# Initial Sample Release

FREEPORT

**TITLE NO:RDD042**

| | | | |
|---|---|---|---|
| **Part Name** | HDMI Receptacle SMT type without flange | **Document No** | ISR080125-1 |
| **EDA Part No./Rev** | 51U019S-325N-AR-B | **Customer Part No.** | |

**Reason for Initial Sample:**

- ☑ Initial Submission
- ☐ Engineer Change(s)
- ☐ Change in Optional Construction or Material
- ☐ Process Change
- ☐ Additional, Replacement, or Refurbished Tooling
- ☐ Change Subcontractor Source
- ☐ Tooling tranfer
- ☐ Correction of Discrepancy(Resubmission No. _____ )
- ☐ Parts Produced of Addition Location
- ☐ Other, please Specify_____

**Manufacturing Information:**

| | | | |
|---|---|---|---|
| **Name** | FREEPORT | **Vendor code** | |
| Address | Wusha the 6th Industrial Zone, Wu Sha Village, Chang-An Town,Dongguan City, Guangdong Province, China 523806 | | |

**Customer Information:**

| | | | |
|---|---|---|---|
| **Name** | | **Buyer** | |
| **Address** | | **Customer code** | |
| **Sample Acceptance Level** | LEVEL 2 | **Application** | |

**Results:**

The results for 1. dimensional measurements ☑ 2. Material report ☑ 3. E.S tests ☐

Meet all drawing and specification requirement

- ☑ Yes
- ☐ No (see comment below)

**Submission Checklist:**

- ☐ Checked Print
- ☑ Auxiliary Drawing/Sketches
- ☑ Correct Number of Samples
- ☑ Dimensional Results
- ☐ Control plan
- ☐ Process Capability Results
- ☐ Process Flow Design
- ☐ Gauge(Measurement) Studies
- ☑ Material test Results
- ☑ Certifications
- ☐ (E.S) test Results
- ☑ Product Engineering Approval

**Comments:**

This samples meet all drawing and specification requirement.

**Declaration:**

We Confirm that the samples represented by this Initial Sample Release are representive of our part and have been made to the applicable customer drawing and specification from specified material.

**Supplier Authorized Signature:** Peterhu **Date:** 26-JAN-08

**Print Name :** Peterhu **Title:** Engineer manager **Phone No.:** 86-769-85428686-2701

**For Customer Only**

☐ **Approval** ☐ **Reject**

**Part Disposition**

**Customer Name:** _____ **Customer Signature:** _____ **Date:** _____

# APPROVAL SHEET

**CUSTOMER**：

**PART NAME**：HDMI receptacle SMT type without flange

**PART NO.** ： 51U019S-325N-AR-B

**CUSTOMER P/N**： 1 4 2 8 2 5 9

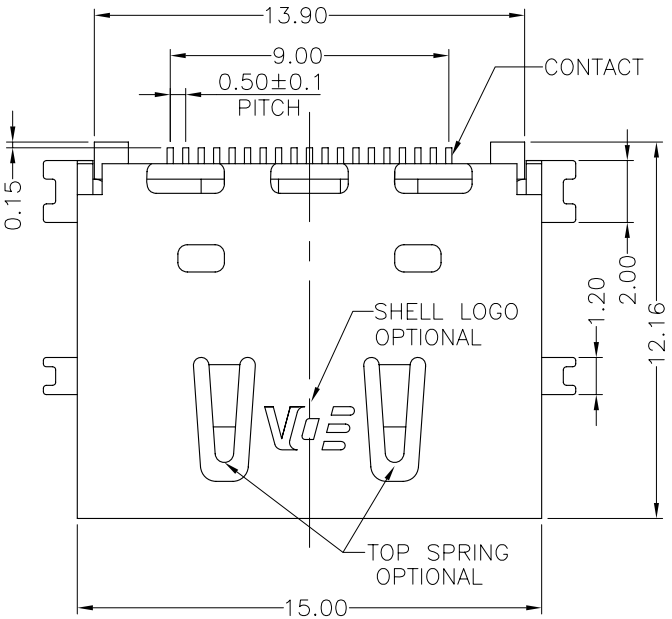
| MANUFACTURER SIGNATURE | | | CUSTOMER SIGNATURE |
|---|---|---|---|
| SALES REP. | R & D DEPT. | QA DEPT. | |
| Jamie | Peterhu | Handy | |
| DATE：01/26/08 | DATE：01/26/08 | DATE：01/26/08 | DATE： / / |

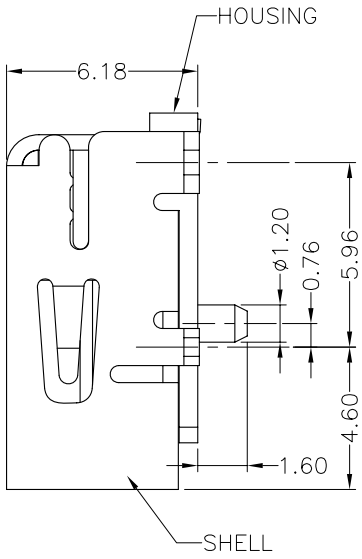
*FREEPORT*

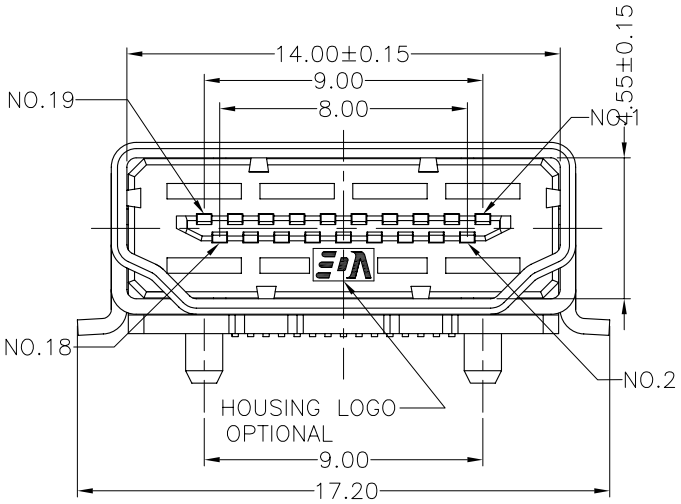
Wusha the 6th Industrial Zone, Wu Sha Village, Chang-An Town,
Dongguan City, Guangdong Province, China 523806
Tel: 86-769-85428686 Fax: 86-769-85428700

# CONTENTS

| REV | ZONE | LTR | DESCRIPTION | DATE | REVISER | APPD |
|---|---|---|---|---|---|---|
| 2 | D6 | ⚠1 | 新增鐵殼電鍍碼"4"和"L" | 1/4.06 | ZW | PETERHU |
| 3 | D6 | ⚠2 | MODIFY ORDERING INFORMATION | 01/25.06 | WINDER | PETERHU |




LEAD FREE

## ORDERING INFORMATION

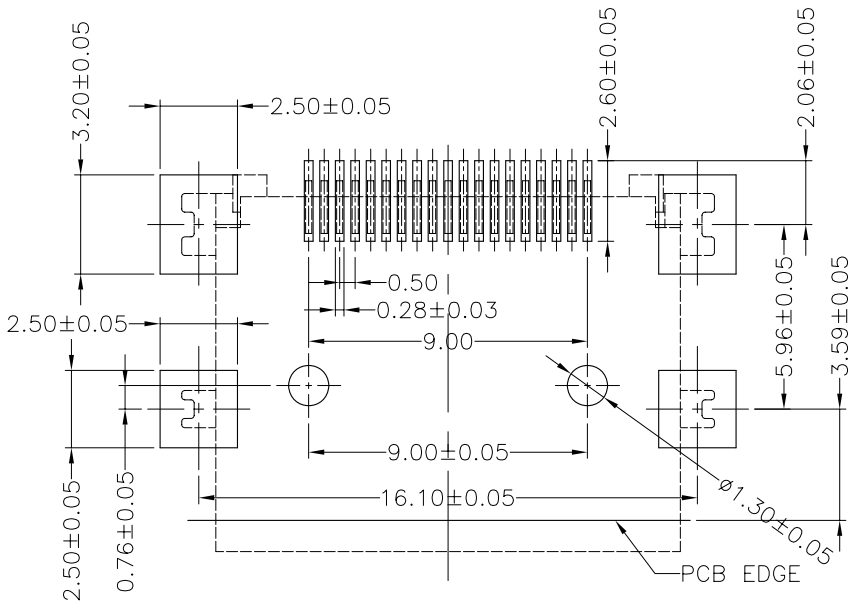
51 U 019 S – 3 * 4 N – B (R) – (B)

(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11)

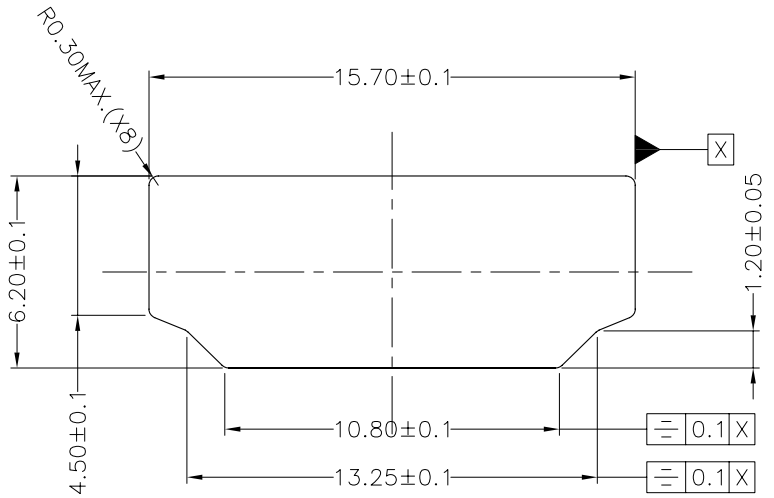
1. SERIES NO.
   51: HDMI CONNECTOR
2. TAIL CONSTRUCTION TYPE
   U: SMT TYPE
3. NUMBER OF PIN
   019: 19 POSITIONS
4. CONTACT & CONNECTIONG TYPES:
   S: SOCKET
5. : COLOR CODES
   3: BLACK
6. CONTACT PLATING:
   0: GOLD FLASH OVER NICKEL
   2:15u" GOLD OVER NICKEL
   3: 30u" GOLD OVER NICKEL
7. SHELL CONSTRUCTION
   4: WITHOUT FLANGE AND WITHOUT TOP SPRING SOLDER TAIL IS SMT TYPE
   5: WITHOUT FLANGE AND WITH TOP SPRING SOLDER TAIL IS SMT TYPE
8. SHELL PLATING
   ⚠1 T: TIN PLATED OVER NICKEL
   N: NICKEL PLATED
   L: 3u" GOLD PLATED OVER NICKEL
   4: GOLD FLASH PLATED OVER NICKEL
9. SUFFIX NO.1
   ⚠2 A: ONLY HOUSING WITH FREEPORT LOGO
   B: WITHOUT FREEPORT LOGO
   C: HOUSING AND SHELL WITH FREEPORT LOGO
10. SUFFIX NO.2
    ⚠2 NONE: PVC TRAY PACKAGE
    R: TAPE REEL PACKAGE
11. SUFFIX NO.3
    ⚠2 NONE: SHELL MATERIAL IS PHOSPHOR BRONZE
    B: SHELL MATERIAL IS BRASS

| | | | |
|---|---|---|---|
| MATERIAL | TOLERANCE UNSPECIFIED<br>. . . ±<br>. . ±0.20<br>. ±0.25<br>. ±<br>ANGLE ± 1° | FREEPORT | |
| FINISH | DRAWN Winder 02/13.04<br>DESIGNER Winder 02/13.04<br>CHECKED winder<br>APPROVED peter3/2'06 | SCALE 1:1 / UNIT mm | |
| | | NAME HDMI RECEPTACLE SMT TYPE WITHOUT FLANGE 19PIN | SHEET 1/2 |
| | | DRAWING NO. R-S151U-2 | REV 3 |
| | | A4 | RS151U21 |

| REV | ZONE | LTR | DESCRIPTION | DATE | REVISER | APPD |
|---|---|---|---|---|---|---|
| 2 | D6 | 1 | ADD PACKING TYPE TO ORDERING | 08/23.04 | WINDER | PETERHU |




RECOMMENDED PCB LAYOUT (THICKNESS=1.6±0.15mm)




REFERENCE PANEL CUT OUT DIMENSION

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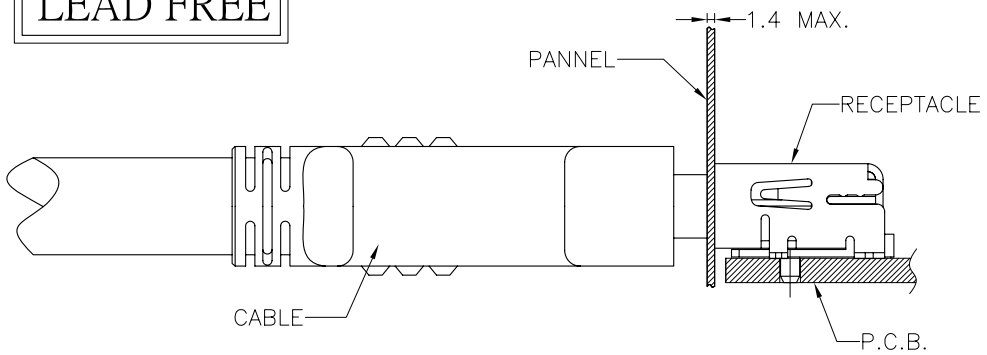


REFERENCE MOUNT DIMENSION

REMARKS:

1. MATERIAL:
   - 1.1 HOUSING: HIGH TEMPERATURE THERMOPLASTIC UL 94V-0 RATED.
   - 1.2 CONTACT: COPPER ALLOY
2. PLATING:
   - 2.1 CONTACT: GOLD PLATED OVER NICKEL ON CONTACT AREA AND 100u" MIN. TIN PLATED OVER NICKEL ON SOLDER TAILS
   - 2.2 SHELL: TIN PLATED OVER NICKEL OR NICKEL PLATED

| | | | |
|---|---|---|---|
| MATERIAL | TOLERANCE UNSPECIFIED ± ±0.20 ±0.25 ± ANGLE ± 1° | FREEPORT | |
| FINISH | DRAWN Winder 02/13.04 | SCALE 1:1 | UNIT mm |
| | DESIGNER Winder 02/13.04 | NAME HDMI RECEPTACLE SMT TYPE WITHOUT FLANGE 19PIN | SHEET 2/2 |
| | CHECKED winder | | |
| | APPROVED peter3/1'06 | DRAWING NO. R-S151U-2 | REV 3 |
| | | A4 | RS151U22 |

FREEPORT

# Sample Inspection Record

(Important Dimension Inspection)

Part Name: HDMI Receptacle SMT type,without flange



Part No. : 51U019S-325N-AR-B

Date: 2008/01/25

| NO. | Drawing Position | Specification | | Inspection Result | | | | | | | | | Judgment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| 1 | B5 | 4.40 | 4.80 | 4. 62 | 4. 65 | 4. 65 | 4. 69 | 4. 65 | 4. 68 | 4. 65 | 4. 65 | 4. 66 | |
| | | | | 4. 64 | 4. 65 | 4. 63 | 4. 65 | 4. 64 | | | | | OK |
| | | | | AVG= | 4. 65 | | σ = | 0. 018 | | CPK= | 4. 7268 | | |
| | | | | | | | | | | | | | |
| 2 | B5 | 5.76 | 6.16 | 5. 95 | 5. 92 | 5. 92 | 5. 92 | 5. 92 | 5. 91 | 5. 92 | 5. 90 | 5. 92 | |
| | | | | 5.92 | 5. 92 | 5. 91 | 5. 92 | 5. 92 | | | | | OK |
| | | | | AVG= | 5. 92 | | σ = | 0. 011 | | CPK= | 4.8656 | | |
| | | | | | | | | | | | | | |
| 3 | C2 | 13.85 | 14.15 | 14. 04 | 14. 05 | 14. 05 | 14. 04 | 14. 05 | 14. 03 | 14. 04 | 14. 02 | 14. 02 | |
| | | | | 14. 03 | 14. 02 | 14. 01 | 14. 03 | 14. 01 | | | | | OK |
| | | | | AVG= | 14. 03 | | σ = | 0. 014 | | CPK= | 3.9953 | | |
| | | | | | | | | | | | | | |
| 4 | D3 | 4.40 | 4.70 | 4. 56 | 4. 54 | 4. 53 | 4. 54 | 4. 54 | 4. 52 | 4. 56 | 4. 52 | 4. 56 | |
| | | | | 4. 57 | 4. 56 | 4. 54 | 4. 57 | 4. 56 | | | | | OK |
| | | | | AVG= | 4. 55 | | σ = | 0. 017 | | CPK= | 3.9227 | | |
| | | | | | | | | | | | | | |
| 5 | E2 | 8.80 | 9.20 | 9. 01 | 9. 01 | 9. 01 | 9. 02 | 9. 01 | 9. 01 | 9. 02 | 9. 02 | 9. 01 | |
| | | | | 9. 01 | 9. 02 | 9. 01 | 9. 01 | 9. 02 | | | | | 0K |
| | | | | AVG= | 9. 0 | | σ = | 0. 005 | | CPK= | 12.497 | | |
| | | | | | | | | | | | | | |
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APPROVED BY: Peter Hu

PREPARED BY: Winder Wang

FREEPORT

# Sample Inspection Record

(DIMENSION INSPECTION)

Part Name: HDMI Receptacle SMT type,without flange 

Part No. : 51U019S-325N-AR-B Date:2008/01/25

| NO. | Drawing Position | Specification | Inspection Result | | | | | Judgment |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | |
| 1 | A2 | 13.90±0.20 | 13.90 | 13.89 | 13.89 | 13.90 | 13.88 | OK |
| 2 | A2 | 9.00±0.20 | 8.98 | 8.94 | 8.95 | 8.98 | 9.00 | OK |
| 3 | A1 | 0.50(PITCH) | 100% Inspection by tool | | | | | OK |
| 4 | B3 | 1.20±0.20 | 1.24 | 1.29 | 1.22 | 1.23 | 1.23 | OK |
| 5 | B3 | 2.00±0.20 | 2.03 | 2.02 | 2.03 | 2.03 | 2.07 | OK |
| 6 | B3 | 12.16±0.20 | 12.25 | 12.22 | 12.27 | 12.24 | 12.25 | OK |
| 7 | C2 | 15.00±0.20 | 15.09 | 15.09 | 15.09 | 15.09 | 15.10 | OK |
| 8 | C2 | 14.00±0.15 | 14.04 | 14.01 | 14.05 | 14.04 | 14.05 | OK |
| 9 | D2 | 9.00±0.20 | 8.93 | 8.91 | 8.94 | 8.92 | 8.96 | OK |
| 10 | D3 | 4.55±0.15 | 4.56 | 4.54 | 4.53 | 4.54 | 4.55 | OK |
| 11 | E2 | 8.00±0.20 | 7.91 | 7.92 | 7.89 | 7.89 | 7.90 | OK |
| 12 | E2 | 5.00±0.20 | 5.01 | 5.01 | 5.01 | 5.02 | 5.01 | OK |
| 13 | E2 | 17.20±0.20 | 17.16 | 17.21 | 17.18 | 17.19 | 17.17 | OK |
| 14 | A4 | 6.18±0.20 | 6.24 | 6.20 | 6.18 | 6.24 | 6.18 | OK |
| 15 | B5 | 0.76±0.20 | 0.78 | 0.74 | 0.75 | 0.77 | 0.73 | OK |
| 16 | B5 | 4.60±0.20 | 4.63 | 4.68 | 4.66 | 4.70 | 4.65 | OK |
| 17 | B5 | Φ1.20±0.20 | 1.21 | 1.21 | 1.21 | 1.22 | 1.21 | OK |
| 18 | B5 | 1.60±0.20 | 1.61 | 1.62 | 1.59 | 1.58 | 1.57 | OK |
| 19 | B5 | 5.96±0.20 | 5.94 | 5.92 | 5.92 | 5.90 | 5.92 | OK |
| 20 | | | | | | | | |
| 21 | | | | | | | | |
| 22 | | | | | | | | |
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Approved by: Peter Hu Prepared by: Winder Wang

# ***PRODUCT SPECIFICATION***

1. Scope

1.1 Content

This specification is designated the Performance, Tests and quality requirements for High-Definition Multimedia Interface(HDMI) Connector.

1.2 Design and Construction

Product shall be conformed the Design, Construction and Physical dimensions shown as product drawing.

2. Material

2.1 Connector

Contact ：Copper alloy , Selective gold plated on contact area and Tin plated on solder tail , Nickel underplate.

Housing ：High Temperature Thermoplastic, UL94V-0 rated.

Shell ：Copper alloy, Tin plated,Nickel plated or Au plated.

3. Current Rating ：0.5A per contact minimum

Operating temperature ：-25℃ ～ +85℃

| REV. | ECN. NO. | APPO. |
|---|---|---|
| | | |

| FREEPORT | |
|---|---|
| TITLE : HDMI Receptacle | APPO.： Peterhu 03/23/04 |
| | CHKD.：Peterhu 03/23/04 |
| PART NO.： 51***S-****-* | DR ：Winder Wang 03/23/04 |
| DOC NO.：PSF-51S002 | REV.：1 SHEET：1/4 |

4. Test description

| ITEM | TEST DESCRIPTION | REQUIREMENT | PROCEDURE |
|---|---|---|---|
| 1 | Visual Inspection<br>Refer to<br>1. RS-364-18 | The inspection results should be compliant with the individual specification. | Before the qualification test, all these components shall be examined the Features, Construction as per applicable specification and documents. |
| 2 | Low Level Contact Resistance (Contact):<br>Refer to:<br>1. RS-364-23 | Contact:<br>30 mΩ maximum | Mate connectors:<br>Measure by dry circuit,<br>20mV maximum, 10mA. |
| | Contact Resistance(shell)<br>Refer to:<br>1.RS-364-06A-83 | Shell:<br>50 mΩ maximum | Shell:<br>Measure by open circuit,<br>5V maximum, 100mA |
| 3 | Insulation Resistance<br>Refer to:<br>1. RS-364-21<br>2. MIL-STD-202F<br>3. MIL-STD-1344A 3001.1 | 100 Mohms minimum (unmated)<br><br>10Mohms minimum (mated) | Unmated connectors, Apply 500Volts AC (RMS.) between adjacent terminal or ground.<br>Mated connectors, Apply 150Volts DC between adjacent terminal or ground. |
| 4 | Dielectric Withstanding Voltage<br>Refer to:<br>1. RS-364-20<br>2. MIL-STD-202F 301<br>3. MIL-STD-1344A 3001.1 | no evidence of Flashover or break-down. | Unmated: Unmated connector, apply 500Volts AC(RMS.) between adjacent terminal or ground.<br><br>Mated: mated connector, apply 300Volts AC(RMS.) between adjacent terminal or ground. |
| 5 | Solderability<br>Refer to:<br>MIL-STD-202F-208F | The tail of contact is covered by continuous new solder. and the area of "Voids Solder" cannot exceed 5% of total area. | Immersed the contact of connector into the molten-Tin oven as below condition,<br>-Temp of Tin Oven: 245℃<br>-Speed: 25.4mm/sec<br>-Time: 5 seconds |
| 6 | Durability<br>Refer to :<br>1.RS – 364 – 09<br>2.MIL – STD – 1344A 2016 | Contact resistance change from initial requirement:<br>Contact: 30 milliohm maximum.<br>Shell: 50 milliohm maximum. | The mated specimen are tested 10,000 cycles between mating and unmating at a rate of 100±50 cycles per hour. |

| REV. | ECN. NO. | APPO. |
|---|---|---|
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|---|---|---|
| FREEPORT | | |
| TITLE:<br>HDMI Receptacle | APPO. : Peterhu 02/23/04 | |
| | CHKD. : Peterhu 02/23/04 | |
| PART NO. : 51***S-****-* | DR. : Winder Wang 02/23/04 | |
| DOC NO. : PSF-51S002 | REV. : 1 | SHEET : 2/4 |

| ITEM | TEST DESCRIPTION | REQUIREMENT | PROCEDURE |
|---|---|---|---|
| 7 | Humidity<br>Refer to:<br>1.RS – 364 – 31<br>2.MIL – STD – 202F 103B<br>3.MIL – STD – 1344A 1002.2 | Appearance: No Damage<br><br>Contact Resistance change from initial requirement:<br>Contact: 30 milliohm maximum.<br>Shell: 50 milliohm maximum | A : Mate connectors together and repeat the test specified in illustration Ⅰ up to 4 cycles. Upon completion of the test, specimens shall be conditioned at ambient room conditions for 24 hours, after which the specified measurements shall be preformed.<br>Temperature: +25℃~+85℃<br>Relative Humidity: 80%~95%<br>Duration: 4 cycles(96hours) |
| | | Appearance: No Damage<br>Contact resistance change from initial requirement:<br>Contact: 30 milliohm maximum.<br>Shell: 50 milliohm maximum<br>Insulation Resistance:<br>Must meet Item 3 | B : Unmate each connectors and repeat the test specified in illustration Ⅰ up to 4 cycles. Upon completion of the test, specimens shall be conditioned at ambient room conditions for 24 hours, after which the specified measurements shall be preformed.<br>Temperature: +25℃~+85℃<br>Relative Humidity: 80%~95%<br>Duration: 4 cycles(96hours) |
| 8 | Insertion Force & Withdrawal Force<br>Refer to:<br>1.RS-364-37<br>2.MIL-STD-1344A-2013.1 | Insertion force is 4.5kgf maximum.<br>Withdrawal force is 1.0~4.0kgf after 2,000 cycles and 0.5~4.0kgf after 2001~10000 cycles | The specimen are mounted to mounting fixtures by the normal mounting menas. The peak force shall be recorded at the maximum rate of 25±3mm per minute |
| 9 | Salt Spray<br>Refer to:<br>1.RS – 364 – 26<br>2.MIL – STD – 202F 101D<br>3.MIL – STD – 1344A 1001.1 | After the Salt Spray test , The connectors shall meet the requirements of contact resistance and insulation resistance , etc. | The connector specimen are testing with the 5% Salt Water (NaC1) , 6.5 – 7.2 PH , for 48 hours of Salt Spray test. |
| 10 | Temperature Life<br>Refer to:<br>1. RS-364-17 | Appearance: No Damage<br>Contact resistance change from initial requirement:<br>Contact: 30 milliohm max.<br>Shell: 50 milliohm max. | Mate connectors and expose to 105±2℃ for 240 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. |

| REV. | ECN. NO. | APPO. |
|---|---|---|
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FREEPORT

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|---|---|
| TITLE: HDMI Receptacle | APPO. : Peterhu 02/23/04 |
| | CHKD. : Peterhu 02/23/04 |
| PART NO. : 51***S-****-* | DR. : Winder Wang 02/23/04 |
| DOC NO. : PSF-51S002 | REV. : 1 SHEET : 3/4 |

5. Test sequences:

| Test of Examination | Test Group | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | E |
| | Test Sequence | | | | |
| Visual Inspection | 1 , 7 | 1,7 | 1,5 | 1,5 | 1,3 |
| Low Level Contact Resistance | 2 , 6 | | 2,4 | 2,4 | |
| Insulation Resistance | | 2,5 | | | |
| Dielectric Withstanding Voltage | | 3,6 | | | |
| Solderability | | | | | 2 |
| Durability | 4 | | | | |
| Humidity | | 4 | | | |
| Mating & Unmating Force | 3, 5 | | | | |
| Salt Spray | | | 3 | | |
| Temperature Life | | | | 3 | |

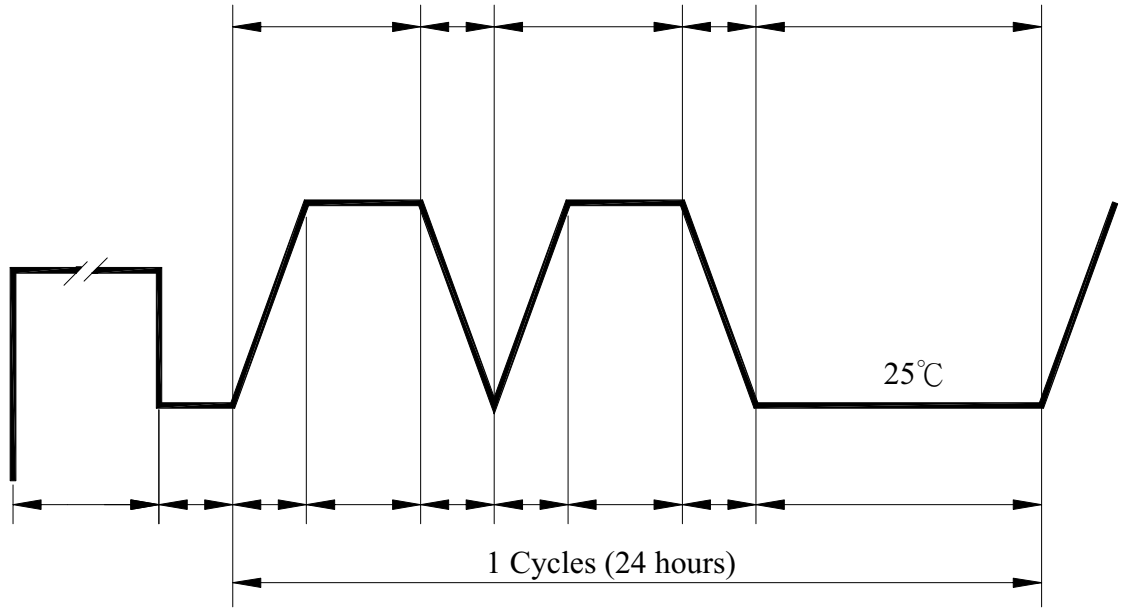


**ILLUSTRATION I**

| REV. | ECN. NO. | APPO. |
|---|---|---|
| | | |

**FREEPORT**

| | |
|---|---|
| TITLE : HDMI Receptacle | APPO. : Peterhu 02/23/04 |
| | CHKD. : Peterhu 02/23/04 |
| PART NO. : 51***S-****-* | DR. : Winder Wang 02/23/04 |
| DOC NO. : PSF-51S002 | REV. : 1 SHEET : 4/4 |

FREEPORT
聯 基

| Report No. | TR05100901/LAB | Tatal Pages | 8 |
|---|---|---|---|
| 報告編號 | TR05100901/LAB | 總 頁 數 | 8 |

# TEST REPORT
# 測 試 報 告

Client : _____

客 戶 : _____

Model/Type : 51U019S-325N-AR-B

型號/規格 : 51U019S-325N-AR-B

Category : Reliability Test

測試類別 : 信賴度測試

Date : 2007/12/22

日 期 : 2007年12月22日


東 莞 長 安 聯 基 電 業 制 品 厂 QA 部實驗室

DongGuan ChangAn FREEPORT Resources Enterprise Corp QA Laboratory

6th Industrial Area, Wu Sha,ChangAn Town,
DongGuan City, GuangDong China 523857
TEL:86-76985428686 FAX:86-76985428700

中國.廣東省.東莞市.
長安鎮鳥沙第六工業區 郵編：523857
電話:86-7695428686 傳真:86-76985428700

FREEPORT
聯基

| | | |
|---|---|---|
| Applicant | ： | Engineering Dept |
| 申請者 | ： | 工程部 |
| Sample Model/Type | ： | 51U019S-324N-AR-B/51U019S-325N-AR-B |
| 樣品型號/規格 | ： | 51U019S-324N-AR-B/51U019S-325N-AR-B |
| Sample of Receiving Date | ： | 2007/12/10 |
| 收件日期 | ： | 2007年12月10日 |
| Testing Period | ： | 2007/12/10-2007/12/22 |
| 測試時間 | ： | 2007年12月10日至12月22日 |

Test Requested ： To determination the Reliability of the submitted sample.
測試要求 ： 對送測試樣品進行信賴度測試。

Test Method ： As Product Specification,with reference to MIL-STD-1344A/202F.
測試方法 ： 根据**產品規格書**，參照 MIL-STD-1344A/202F測試標准。

Results ： 測試結果

| | |
|---|---|
| 1.Electrical Test | OK |
| 電气性測試 | 合格 |
| 2.Mechanical Test | OK |
| 机械性能測試 | 合格 |
| a.Mating and Unmating Force test | |
| 插拔力試驗 | |
| b.Durability test | |
| 耐久性壽命試驗 | |
| 3.Environmental Test | |
| 環境測試 | |
| a.Temperature Life test | OK |
| 高溫老化試驗 | 合格 |
| b.Salt Spray test | OK |
| 鹽水噴霧試驗 | 合格 |
| c.Soldering test | OK |
| 焊接附著性試驗 | 合格 |
| d.Humidity Test | OK |
| 恒溫恒濕試驗 | 合格 |

Please refer to next page
請參見下頁。

Conclusion ： When test as specified, the submitted samples comply with the stated requirement of the Product Specification .
結論 ： 按規定要求完成測試后，送檢樣品附合**產品規格書**的要求。

| 核　准: | 審　核: | 作　成: |
|---|---|---|
| APPROVED BY : JAMESLI | CHECKED BY :HANDY | OPERATED BY :dengshaochun |

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## Test Result

**測試結果**

The test sequence/group and result of TABLE I is based on the Product Specification of the receive samples and have been using in this test.

本次測試的測試群組、順序及結果如表I，該表基于送檢樣品的**產品規格書**制定。

# TABLE Ⅰ： Test Sequence/Group & Result

| Test of Examination | Test Group | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | A | | B | | C | | D | | E | |
| | Sequence | Result | Sequence | Result | Sequence | Result | Sequence | Result | Sequence | Result |
| Visual Inspection<br>外觀檢查 | 1 , 7 | OK | 1 , 7 | OK | 1 , 5 | OK | 1 , 5 | OK | 1 , 3 | OK |
| Low Level Contact Resistance<br>低階接触阻抗測試 | 2 , 6 | OK | | | 2 , 4 | OK | 2 , 4 | OK | | |
| Insulation Resistance<br>絕緣阻抗測試 | | | 2 , 5 | OK | | | | | | |
| Dielectric Withstanding Voltage<br>耐電壓測試 | | | 3 , 6 | OK | | | | | | |
| Mating and unmating force<br>插拔力測試 | 3 , 5 | OK | | | | | | | | |
| Durability<br>耐久性壽命測試 | 4 | OK | | | | | | | | |
| Temperature-Humidity Test<br>恒溫恒濕測試 | | | 4 | OK | | | | | | |
| Salt Spray<br>鹽水噴霧測試 | | | | | 3 | OK | | | | |
| Solderability<br>焊錫附著性測試 | | | | | | | | | 2 | OK |
| Temperature Life<br>高溫老化測試 | | | | | | | 3 | OK | | |
| Note<br>備注 | See Affix A for details | | See Affix B for details | | See Affix C for details | | See Affix D for details | | See Affix E for details | |

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# Test Recording Sheet
# 測 試 記 錄 表

| | | | | | |
|---|---|---|---|---|---|
| Product Name<br>產品名稱 | Connector<br>連接器 | Client<br>客戶 | | Sample Group<br>試樣群組 | A |
| Moldel/Type<br>型號/規格 | 51U019S-325N-AR-B | Manufacture<br>制造商 | FREEPORT | Test Date<br>測試時間 | 2007/12/12 |
| Instrument &<br>Calibration due date<br>測試設備及<br>校正有效期 | Auto-Mating&Unmating Force Tester (2007/12/30)<br>Digital Low Resisitance Ohmmeter (2007/12/30) | | | Test<br>Environment<br>測試環境 | 65 %RH<br>25 ℃ |
| Test Item<br>測試項目 | Mating&Unmating Force Test and Durability Test<br>插拔力測試及耐久性壽命測試 | | | Sample Q'ty<br>樣品數量 | 1 |

**Requirement**
**測試要求**

1.Low Level Contact Resistance (20mV ≦10mA)
Initial: Contact≦30mΩ Shell≦50mΩ
After Test: Contact |△| 30mΩmax
2. Recorded the peak force at the rate of 25±3mm per minute
3.Mated and unmated 10000 cycles at a rate of 100±50 cycles per hour
Initial test : Mating force ≦ 4.5Kgf, Unmating force ≧1.0Kgf
After test: Mating force ≦ 4.0Kgf Unmating force ≧ 0.5Kgf

**Result of measurement**
**測 試 結 果**

1.Low Level Contact Resistance

| Pin No. | Specification | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Shell | Judgement |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $R_i$ | 30mΩ max | 25 | 25 | 23 | 24 | 25 | 25 | 24 | 24 | 24 | 24 | 23 | 24 | 24 | 25 | 24 | 23 | 25 | 26 | 26 | 3 | OK |
| $R_f$ | 60 mΩ max | 26 | 25 | 24 | 25 | 27 | 26 | 27 | 26 | 25 | 26 | 23 | 25 | 25 | 25 | 27 | 25 | 26 | 26 | 26 | 5 | OK |
| \|Δ\| | 30mΩ max | 1 | 0 | 1 | 1 | 2 | 1 | 3 | 2 | 1 | 2 | 0 | 1 | 1 | 0 | 3 | 2 | 1 | 0 | 0 | 2 | OK |

2.Mating &Unmating force

| | Specification | | test result (3times) | | | judgment |
|---|---|---|---|---|---|---|
| Initial | Mating force | 4.5 kgf max | 1.02 | 1.1 | 1.05 | OK |
| | Unmating force | 1.0 kgf min | 1.85 | 1.86 | 1.72 | OK |
| | Specification | | test result (3times) | | | judgment |
| Final | Mating force | 4.0 kgf max | 0.75 | 1.15 | 0.82 | OK |
| | Unmating force | 0.5 kgf min | 0.84 | 0.95 | 0.79 | OK |

3.Visual Inspection

| | Initial | Final |
|---|---|---|
| Result | No appearance defects | No appearance defects |
| Judgement | OK | OK |

**Note:**
**備注:**

FREEPORT Resources Enterprise Corp
Qulity Department Laboratory
中國.廣東省.東莞市.長安鎮鳥沙第六工業區 郵編: 523857 電話:86-7695428686 傳真:86-7695428700
6th Industrial Area, Wu Sha, ChangAn Town, DongGuan China 523857 TEL:86-76985428686 FAX:86-7698542870

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# Test Recording Sheet
# 測 試 記 錄 表

| | | | | | |
|---|---|---|---|---|---|
| Product Name<br>產品名稱 | Connector<br>連接器 | Client<br>客戶 | | Sample Group<br>試樣群組 | B |
| Moldel/Type<br>型號/規格 | 51U019S-325N-AR-B | Manufacture<br>制造商 | FREEPORT | Test Date<br>測試時間 | 2007/12/15 |
| Instrument &<br>Calibration due date<br>測試設備及<br>校正有效期 | Withstanding Voltage Tester (2007/12/30)<br>High Resistance Meter (2007/12/30)<br>HORAD Humibility Tester (2007/12/30) | | | Test<br>Environment<br>測試環境 | 65 %RH<br>25 ℃ |
| Test Item<br>測試項目 | Withstanding Voltage Test & Temperature-Humidity Test<br>耐電壓測試及恒溫恒濕測試 | | | Sample Q'ty<br>樣品數量 | 1 |

**Requirement**
**測試要求**

1. Tested with the duration of 96 hours in cycling Tepmerature-Humidity test.
2. Using 500V AC RMS(mated 300V) dielectric withstanding voltage for one minute to test between adjacent contacts.
3. Using 500V DC(mated 150V) for one minute to test the Insulation Resistance between adjacent contacts,100 MΩ Min(mated 10MΩ Min).

**Result of measurement**
**測 試 結 果**

1.Withstanding Voltage & Resistance Test

| | Initial | Final |
|---|---|---|
| Withstanding Voltage(Unmated) | No evidence of flash marks is over or break-down . | No evidence of flash marks is over or break-down . |
| Withstanding Voltage(Mated) | No evidence of flash marks is over or break-down . | No evidence of flash marks is over or break-down . |
| Resistance(Unmated) | 100MΩ Min | 100MΩ Min |
| Resistance(Mated) | 10MΩ Min | 10MΩ Min |
| Judgement | OK | OK |

2.Visual Inspection

| | Initial | Final |
|---|---|---|
| Result | No appearance defects | No appearance defects |
| Judgement | OK | OK |

**Note:**
**備注:**

FREEPORT Resources Enterprise Corp
Qulity Department Laboratory
中國.廣東省.東莞市.長安鎮鳥沙第六工業區 郵編: 523857 電話:86-7695428686 傳真:86-7695428700
6th Industrial Area, Wu Sha,ChangAn Town,DongGuan China 523857 TEL:86-7695428686 FAX:86-7695428700

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# Test Recording Sheet
# 測 試 記 錄 表

| | | | | | |
|---|---|---|---|---|---|
| Product Name<br>產品名稱 | Connector<br>連接器 | Client<br>客戶 | | Sample Group<br>試樣群組 | C |
| Moldel/Type<br>型號/規格 | 51U019S-325N-AR-B | Manufacture<br>制造商 | FREEPORT | Test Date<br>測試時間 | 2007/12/16 |
| Instrument &<br>Calibration due date<br>測試設備及<br>校正有效期 | Salt Spray Tester (2007/12/30)<br>Digital Low Resisitance Ohmmeter (2007/12/30) | | | Test Environment<br>測試環境 | 65 %RH<br>25 ℃ |
| Test Item<br>測試項目 | Salt spray test<br>鹽水噴霧測試 | | | Sample Q'ty<br>樣品數量 | 1 |

**Requirement**
測試要求

1.Low Level Contact Resistance (20mV ≦10mA)
Initial: Contact≦30mΩ Shell≦50mΩ
After Test: Contact |△| 30mΩmax
2. Salt spray test
- Salt solution : 5% salt water, PH 6.5~7.2
- Corrosion time : 48 hours
- Temperature of test chamber : 35±2 ℃
- Temperature of air supply : 47±2 ℃
- Compressed air pressure : 1.0 Kg/cm$^2$
- Collected rate : 1~2 ml/80 cm$^2$/hour

**Result of measurement**
測 試 結 果

1. L.L.C.R.

| Pin No. | Specification | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Shell | Judgement |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $R_i$ | 30mΩ max | 27 | 26 | 25 | 25 | 25 | 26 | 27 | 26 | 25 | 25 | 25 | 24 | 26 | 24 | 25 | 24 | 26 | 24 | 27 | 4 | OK |
| $R_f$ | 60 mΩ max | 28 | 27 | 26 | 26 | 27 | 27 | 28 | 27 | 27 | 26 | 28 | 26 | 27 | 26 | 27 | 25 | 27 | 27 | 28 | 4 | OK |
| \|△\| | 30mΩ max | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 3 | 2 | 1 | 2 | 2 | 1 | 1 | 3 | 1 | 0 | OK |

2.Visual Inspection

Before test, the speciments is compliant with the specification.After test, Inspecting the specimen at 10x magnification,the point of contact is OK.

測試前樣品外觀符合規格要求，鹽霧實驗后, 在10倍放大鏡下觀察,樣品触點表面無不良，判定合格。

**Note:**
備注：

FREEPORT Resources Enterprise Corp
Qulity Department Laboratory
中國.廣東省.東莞市.長安鎮鳥沙第六工業區 郵編：523857 電話:86-7695428686 傳真:86-7695428700
6th Industrial Area, Wu Sha,ChangAn Town,DongGuan China 523857 TEL:86-7695428686 FAX:86-7695428700

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# Test Recording Sheet
# 測 試 記 錄 表

| | | | | | |
|---|---|---|---|---|---|
| Product Name<br>產品名稱 | Connector<br>連接器 | Client<br>客戶 | | Sample Group<br>試樣群組 | D |
| Moldel/Type<br>型號/規格 | 51U019S-325N-AR-B | Manufacture<br>制造商 | FREEPORT | Test Date<br>測試時間 | 2007/12/18 |
| Instrument &<br>Calibration due date<br>測試設備及<br>校正有效期 | SM04 Heat Chamber (2007/12/30)<br>Digital Low Resisitance Ohmmete(2006/12/30) | | | Test Environment<br>測試環境 | 65 %RH<br>25 ℃ |
| Test Item<br>測試項目 | Temperature Life test<br>高溫老化測試 | | | Sample Q'ty<br>樣品數量 | 1 |
| Requirement<br>測試要求 | 1.Low Level Contact Resistance (20mV ≦10mA)<br>Initial: Contact≦30mΩ Shell≦50mΩ<br>After Test: Contact \|△\| 30mΩmax<br>2.Store the mated specimens to temperature environment at 105℃ for 240 hours. | | | | |

Result of measurement
測 試 結 果

1. L.L.C.R.

| Pin No. | Specification | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Shell | Judgement |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $R_i$ | 30mΩ max | 26 | 26 | 27 | 25 | 26 | 24 | 24 | 26 | 25 | 25 | 25 | 26 | 24 | 25 | 24 | 25 | 24 | 24 | 26 | 4 | OK |
| $R_f$ | 60 mΩ max | 28 | 28 | 27 | 25 | 27 | 25 | 25 | 27 | 26 | 27 | 25 | 27 | 25 | 26 | 26 | 26 | 25 | 27 | 27 | 6 | OK |
| \|Δ\| | 30mΩ max | 2 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 3 | 1 | 2 | OK |

2.Visual Inspection

| | Initial | Final |
|---|---|---|
| Result | No appearance defects | No appearance defects |
| Judgement | OK | OK |

Note:
備注:

FREEPORT Resources Enterprise Corp
Qulity Department Laboratory
中國.廣東省.東莞市.長安鎮鳥沙第六工業區 郵編：523857 電話:86-7695428686 傳真:86-7695428700
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FREEPORT
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# Test Recording Sheet
# 測 試 記 錄 表

| | | | | | |
|---|---|---|---|---|---|
| Product Name<br>產品名稱 | Connector<br>連接器 | Client<br>客戶 | | Sample Group<br>試樣群組 | E |
| Moldel/Type<br>型號/規格 | 51U019S-325N-AR-B | Manufacture<br>制造商 | FREEPORT | Test Date<br>測試時間 | 2007/12/18 |
| Instrument &<br>Calibration due date<br>測試設備及<br>校正有效期 | CT-41A Solderport (NCR)<br>DM-6902 Temprature Meter (2007/12/30) | | | Test Environment<br>測試環境 | 65 %RH<br>25 ℃ |
| Test Item<br>測試項目 | Solderability test<br>焊錫附著性測試 | | | Sample Q'ty<br>樣品數量 | 1 |

**Requirement**
測試要求

1.Immersed the contact of the connector into the molten-Tin oven sa below condition:
*Temp. of Tin oven: 245℃ *Speed: 25.4mm/sec. *Time: 5 seconds

2.The tail of contact is covered by continuous new solder and the area of "Voids Solder" cannot exceed 5 % of total area.

**Result of measurement**
測 試 結 果

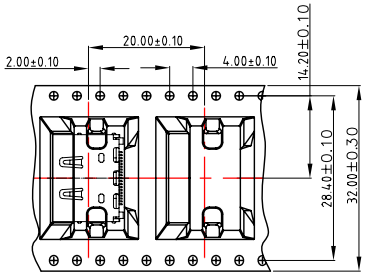
Afer test the solder coating is adherent, bright, smooth and uniform over more than 95% of the test total area, It's OK.

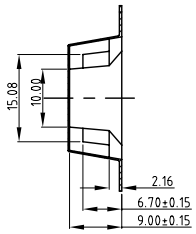
沾錫測試后，試樣沾錫緊密、光滑、均勻且沾錫面積超過測試總面積的95%，判定爲合格。

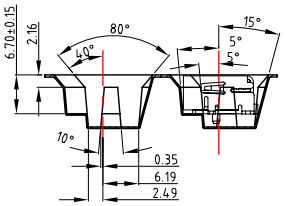
**Note:**
備注：

FREEPORT Resources Enterprise Corp
Qulity Department Laboratory
中國.廣東省.東莞市.長安鎮鳥沙第六工業區 郵編：523857 電話:86-7695428686 傳真:86-7695428700
6th Industrial Area, Wu Sha,ChangAn Town,DongGuan China 523857 TEL:86-7695428686 FAX:86-7695428700

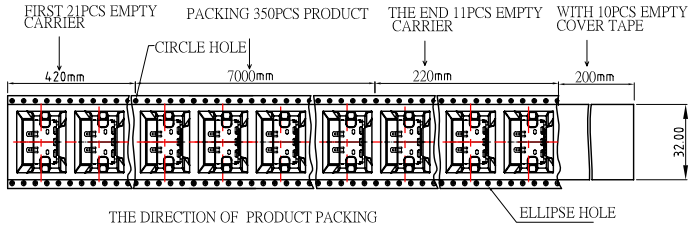
| REV | ZONE | LTR | DESCRIPTION | DATE | REVISER | APPD |
|---|---|---|---|---|---|---|

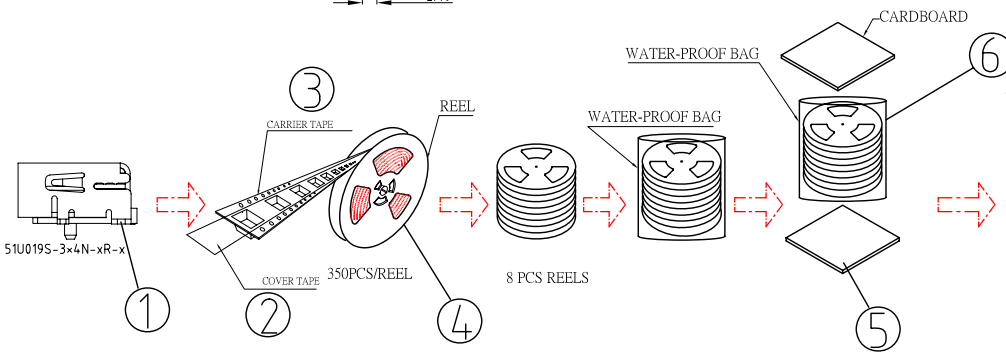


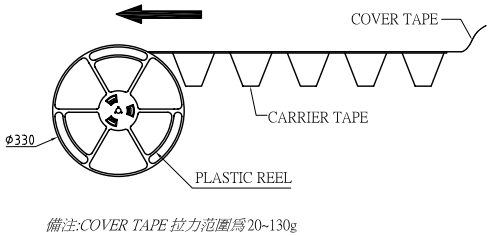




REMARKS:
1. USED ON HDMI 19PIN RECEPTACLE CONNECTOR, SHELL WITH FLANGE
2. PACKING: 350PCS/REEL;
   8 REELS(2800PCS)/CARTON
3. AFTER REELING DIRECTION MUST HAVE 11PCS EMPTY CARRIER.(220mm MIN.)
4. BEFORE UNREELING DIRECTION MUST HAVE 21 PCS EMPTY CARRIER(420mm MIN.)




*備注:COVER TAPE 拉力范圍爲 20~130g*

| NO. | PART NO. | DESCRIPTION | Q'TY | UNIT |
|---|---|---|---|---|
| 8 | X3000306 | CARTON:350*350*325 | 1/2800 | PCS |
| 7 | X9001662 | TRIANGLE PACKING 三角架 402*280 | 4/2800 | PCS |
| 6 | X9001661 | PE-BAG:600*700 | 1 | PCS |
| 5 | X6002010 | CARD BOARD:330*330 | 2/2800 | PCS |
| 4 | X9001673 | REEL:ø330 | 8/2800 | PCS |
| 3 | X9001663 | CARRIER TAPE:24.2m/REEL | 22.12 | mm/PCS |
| 2 | X9001664 | COVER TAPE:T=0.08MM | 22.12 | mm/PCS |
| 1 | 51U019S-3*4*-*R-* | HDMI RECEPTACLE SMT TYPE WITHOUT FLANGE 19PIN | 1 | PCS |

51U019S-3*4*-*R-* (WITHOUT FLANGE) — PART NO.

MATERIAL

FINISH

TOLERANCE UNSPECIFIED
.*** ±
.** ± 0.20
.* ± 0.30
. ±
ANGLE ± 1°

| | | |
|---|---|---|
| DRAWN | VEJAS | 08/01.07 |
| DESIGNER | VEJAS | 08/01.07 |
| CHECKED | Lihaidong | |
| APPROVED | Peterhu | |

FREEPORT

SCALE 1:2 | UNIT mm

NAME: TAPE REEL FOR HDMI RECEPTACLE SHELL WITHOUT FLANGE (PACKING FOR 51U019S-3*4*-*R-*)

SHEET 1/1

DRAWING NO. R-P151U-8

REV 1.0

A4 RP151U81

塑膠
：*LCP*



| 文件編號：CZB01002 |
| --- |
| REV: 1 |

| | | | |
| --- | --- | --- | --- |
| CTE, linear 20°C Transverse to Flow | 49 µm/m-°C | 27.2 µin/in-°F | |
| CTE, linear 100°C | 5 µm/m-°C | 2.78 µin/in-°F | Flow Direction. Value Cross-Flow Is 49 µm/m-°C. |
| Heat Capacity | 0.8 J/g-°C | 0.191 BTU/lb-°F | |
| Thermal Conductivity | 0.27 W/m-K | 1.87 BTU-in/hr-ft²-°F | |
| Melting Point | 335 °C | 635 °F | ASTM D3418 |
| Maximum Service Temperature, Air | 240 °C | 464 °F | UL746B Mechanical w/o impact. |
| Deflection Temperature at 0.46 MPa | 277 °C | 531 °F | ASTM D648 |
| Deflection Temperature at 1.8 MPa | 260 °C | 500 °F | ASTM D648 |
| Glass Temperature | 120 °C | 248 °F | ASTM D3418 |
| UL RTI, Electrical | 240 °C | 464 °F | UL746B at 3.0 mm |
| UL RTI, Mechanical with Impact | 220 °C | 428 °F | UL746B at 3.0 mm |
| UL RTI, Mechanical without Impact | 240 °C | 464 °F | UL746B at 3.0 mm |
| Flammability, UL94 | V-0 | V-0 | V-0 1.5 mm; UL94 (Black/unlubricated <1.5 mm) |
| Oxygen Index | 38 % | 38 % | ASTM D2863 |
| **Processing Properties** | | | |
| Processing Temperature | 350 °C | 662 °F | melt temperature |

**E I DUPONT DE NEMOURS & CO INC**
ENGINEERING POLYMERS CHESTNUT RUN PLAZA PO BOX 80713 WILMINGTON DE 19880

Material Designation: 6130L(f1)

Product Description: Liquid Crystal Polymer (LCP), designated "ZENITE" furnished as pellets.

| Color | Min. Thick. (mm) | Flame Class | HWI | HAI | RTI Elec | RTI Imp | RTI Str | IEC GWIT | IEC GWFI |
|---|---|---|---|---|---|---|---|---|---|
| NC, BK, GY | 1.5 | V-0 | 1 | 4 | 240 | 220 | 240 | 825 | 960 |
| GN, BL | 1.5 | V-0 | 1 | 4 | 240 | 220 | 240 | 825 | 960 |
| | 3.0 | V-0 | 0 | 4 | 240 | 220 | 240 | 875 | 960 |

**CTI:** 3 **IEC CTI** (V): - **HVTR:** 4 **D495:** - **IEC Ball Pressure** (° C): -

**Dielectric Strength** (kV/mm): 21 **Volume Resistivity** ($10^x$ohm-cm): - **Dimensional Stability**(%): -

**ISO Tensile Strength** (MPa): - **ISO Flexural Strength** (MPa): - **ISO Heat Deflection** (° C): -

**ISO Tensile Impact** (kJ/m$^2$): - **ISO Izod Impact** (kJ/m$^2$): - **ISO Charpy Impact** (kJ/m$^2$): -

(f1) Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

NOTE (1) Material designations that are color pigmented may be followed by suffix letters and numbers. (2) Material designations may be prefixed by "ZYT" or "MIN" or "ZEN" or "DEL" or "CRA" or "RYN".

Report Date: 10/11/1989 Underwriters Laboratories Inc®

MINCHALI

# REPORT OF MATERIAL TEST

DATE: FEB.20,2001 (02A032)

Customer: 統翔五金制品廠

Commodity: C 2680 R BRASS STRIP ( H )

Applied Standard: CNS 4383 Brass Sheets,Plates and Strips

ISO 9002:4M8Y035-00
台正字第 3544 號

## Chemical Analysis Test

| Work No. | Size of Product | | | Cu(%) | Fe(%) | Pb(%) | Zn(%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Thickness (mm) | Width (mm) | Length (mm) | | | | | | | |
| | Standard | | | 64.00 - 68.00 | max. 0.050 | max. 0.070 | REM. | | | |
| 02A371A | 0.250 | 609.000 | | 64.790 | 0.035 | 0.008 | REM. | | | |
| 02A371B | 0.250 | 609.000 | | 65.080 | 0.035 | 0.009 | REM. | | | |
| 02A088B | 0.300 | 618.000 | | 65.084 | 0.033 | 0.015 | REM. | | | |
| 01A203B | 0.400 | 618.000 | | 65.296 | 0.035 | 0.010 | REM. | | | |

## Mechanical & Physical Test

| Work No. | Size of Product | | | Dimension Test | | Tension Test | | Hardness Test | Grain Size | Electric Conductirity |
|---|---|---|---|---|---|---|---|---|---|---|
| | Thickness (mm) | Width (mm) | Length (mm) | Thickness (mm) | Width (mm) | Tensile Strength ($kgf/mm^2$) | Elongation (%) | HV | (mm) | (%) |
| | Standard | | | - | (-) 0.10 - (+) 0.00 | min. 53 | - | min. 145 | - | - |
| 02A371A | 0.250 | 609.000 | | GOOD. | GOOD. | 56.00 | 8.14 | 169.0 - 170.0 | - | 22.8 |
| 02A371B | 0.250 | 609.000 | | GOOD. | GOOD. | 55.73 | 8.78 | 171.0 - 172.0 | - | 22.6 |
| 02A088B | 0.300 | 618.000 | | GOOD. | GOOD. | 58.41 | 4.04 | 175.0 - 177.0 | - | 22.3 |
| 01A203B | 0.400 | 618.000 | | GOOD. | GOOD. | 56.61 | 6.08 | 171.0 - 174.0 | - | 23.2 |

QC Supervisor 鄭建益

MINCHALI METAL INDUSTRY CO., LTD.
11, Pei Yuan Road, Chung Li City, Taiwan, R. O. C.
Tel : (03)4526141-5 (03)4526017-9
Fax : (03)4529112 (03)4609625

| Customer: 統翔五金制品廠 | Commodity: C 5191 R PHOSPHOR BRONZE STRIP ( H ) | ISO 9002:4M8Y036-00 台正字第 3545 號 |
|---|---|---|
| Applied Standard: CNS 9503 Phosphor Bronze Sheets,Plates and Strips | | |

## Chemical Analysis Test

| Work No. | Size of Product | | | P(%) | Sn(%) | Cu+Sn+P(%) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Thickness (mm) | Width (mm) | Length (mm) | | | | | | | |
| | Standard | | | 0.030 - 0.350 | 5.50 - 7.00 | min. 99.50 | | | | |
| 24C002B | 0.200 | 610.000 | | 0.160 | 6.066 | 99.959 | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

## Mechanical & Physical Test

| Work No. | Size of Product | | | Dimension Test | | Tension Test | | Hardness Test HV | Grain Size (mm) | Electric Conductirity (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| | Thickness (mm) | Width (mm) | Length (mm) | Thickness (mm) | Width (mm) | Tensile Strength (kgf/mm²) | Elongation (%) | | | |
| | Standard | | | - | (-) 0.10 - (+) 0.00 | min. 58 | - | min. 170 | - | - |
| 24C002B | 0.500 | 610.000 | | GOOD. | GOOD. | 61.07 | 20.34 | 193.0 - 196.0 | - | 15.0 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

**TEST REPORT** NUMBER: SZHJ19129005

APPLICANT: FREEPORT RESOURCES ENTERPRISES CORP DATE: Dec 17, 2007
WUSHA 6TH INDUSTRIAL AREA,
CHANGAN TOWN, DONGGUAN CITY
GUANGDONG PROVINCE

ATTN: LI YA NI

SAMPLE DESCRIPTION:
ONE (1) SUBMITTED SAMPLE SAID TO BE **LCP BLACK.**
TESTED COMPONENT: DARK GREY PLASTIC.
FACTORY : FREEPORT RESOURCES ENTERPRISES CORP.
COUNTRY OF ORIGIN : CHINA.
**********

TESTS CONDUCTED:
AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)
**********

AUTHORIZED BY:
FOR INTERTEK TESTING SERVICES
SHENZHEN LTD.

BEN N.L. LIN
GENERAL MANAGER



**Intertek Testing Services Shenzhen Ltd.-TFH Division**
7/F., ShekouTechnology Main Building, Industrial 7th Road,Shekou,Shenzhen, China
Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

**TEST REPORT** NUMBER: SZHJ19129005

TESTS CONDUCTED

(A) TEST RESULT SUMMARY FOR RoHS DIRECTIVE :

| **TESTING ITEM** | **RESULT** |
|---|---|
| CADMIUM (Cd) CONTENT (mg/kg) | ND(<2) |
| LEAD (Pb) CONTENT (mg/kg) | ND(<2) |
| MERCURY (Hg) CONTENT (mg/kg) | ND(<2) |
| CHROMIUM (VI) ($Cr^{6+}$) CONTENT (mg/kg) (FOR NON-METAL) | ND(<1) |
| POLYBROMINATED BIPHENYLS (PBBs) (mg/kg) | |
| MONOBROMOBIPHENYL (MonoBB) | ND(<5) |
| DIBROMOBIPHENYL (DiBB) | ND(<5) |
| TRIBROMOBIPHENYL (TriBB) | ND(<5) |
| TETRABROMOBIPHENYL (TetraBB) | ND(<5) |
| PENTABROMOBIPHENYL (PentaBB) | ND(<5) |
| HEXABROMOBIPHENYL (HexaBB) | ND(<5) |
| HEPTABROMOBIPHENYL (HeptaBB) | ND(<5) |
| OCTABROMOBIPHENYL (OctaBB) | ND(<5) |
| NONABROMOBIPHENYL (NonaBB) | ND(<5) |
| DECABROMOBIPHENYL (DecaBB) | ND(<5) |
| POLYBROMINATED DIPHENYL ETHERS (PBDEs) (mg/kg) | |
| MONOBROMODIPHENYL ETHER (MonoBDE) | ND(<5) |
| DIBROMODIPHENYL ETHER (DiBDE) | ND(<5) |
| TRIBROMODIPHENYL ETHER (TriBDE) | ND(<5) |
| TETRABROMODIPHENYL ETHER (TetraBDE) | ND(<5) |
| PENTABROMODIPHENYL ETHER (PentaBDE) | ND(<5) |
| HEXABROMODIPHENYL ETHER (HexaBDE) | ND(<5) |
| HEPTABROMODIPHENYL ETHER (HeptaBDE) | ND(<5) |
| OCTABROMODIPHENYL ETHER (OctaBDE) | ND(<5) |
| NONABROMODIPHENYL ETHER (NonaBDE) | ND(<5) |
| DECABROMODIPHENYL ETHER (DecaBDE) | ND(<5) |

mg/kg = MILLIGRAM PER KILOGRAM = ppm
< = LESS THAN
ND = NOT DETECTED

NOTE : DecaBDE IN POLYMERIC APPLICATIONS IS EXEMPTED ACCORDING TO RoHS DIRECTIVE AMENDMENT 2005/717/EC.

**********



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**TEST REPORT** NUMBER: SZHJ19129005

TESTS CONDUCTED

(B) RoHS REQUIREMENT :

| RESTRICTED SUBSTANCES | LIMITS |
|---|---|
| CADMIUM (Cd) | 0.01% (100 ppm) |
| LEAD (Pb) | 0.1% (1000 ppm) |
| MERCURY (Hg) | 0.1% (1000 ppm) |
| CHROMIUM (VI) ($Cr^{6+}$) | 0.1% (1000 ppm) |
| POLYBROMINATED BIPHENYLS (PBBs) | 0.1% (1000 ppm) |
| POLYBROMINATED DIPHENYL EHTERS (PBDEs) | 0.1% (1000 ppm) |

THE ABOVE LIMITS WERE QUOTED FROM 2002/95/EC AND AMENDMENT 2005/618/EC FOR HOMOGENEOUS MATERIAL.

(C) TEST METHOD :

| TESTING ITEM | TESTING METHOD | REPORTING LIMIT |
|---|---|---|
| CADMIUM (Cd) CONTENT | WITH REFERENCE TO IEC 62321 -111/54/CDV, BY ACID DIGESTION AND DETERMINED BY ICP-OES | 2 mg/kg |
| LEAD (Pb) CONTENT | WITH REFERENCE TO IEC 62321 -111/54/CDV, BY ACID DIGESTION AND DETERMINED BY ICP - OES | 2 mg/kg |
| MERCURY (Hg) CONTENT | WITH REFERENCE TO IEC 62321 -111/54/CDV, BY ACID DIGESTION AND DETERMINED BY ICP - OES | 2 mg/kg |
| CHROMIUM (VI) ($Cr^{6+}$) CONTENT (FOR NON-METAL) | WITH REFERENCE TO IEC 62321 -111/54/CDV, BY ALKALINE DIGESTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER | 1 mg/kg |
| POLYBROMINATED BIPHENYLS (PBBs)& POLYBROMINATED DIPHENYL ETHERS (PBDEs) | WITH REFERENCE TO IEC 62321 - 111/54/CDV, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS AND HPLC | 5 mg/kg |

NOTE : TESTS WERE CONDUCTED WITH REFERENCE TO 111/54/CDV VERSION 2006-05-05 WHICH IS STILL A DRAFT METHOD AND SUBJECT TO FUTURE CHANGES PRIOR TO PUBLICATION.

DATE SAMPLE RECEIVED : DEC 11, 2007
TESTING PERIOD : DEC 11, 2007 TO DEC 14, 2007

**********



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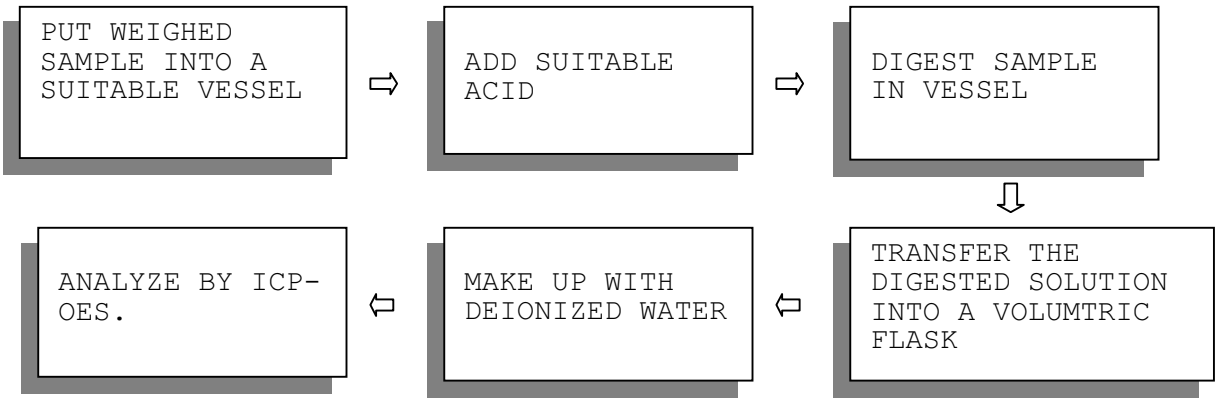
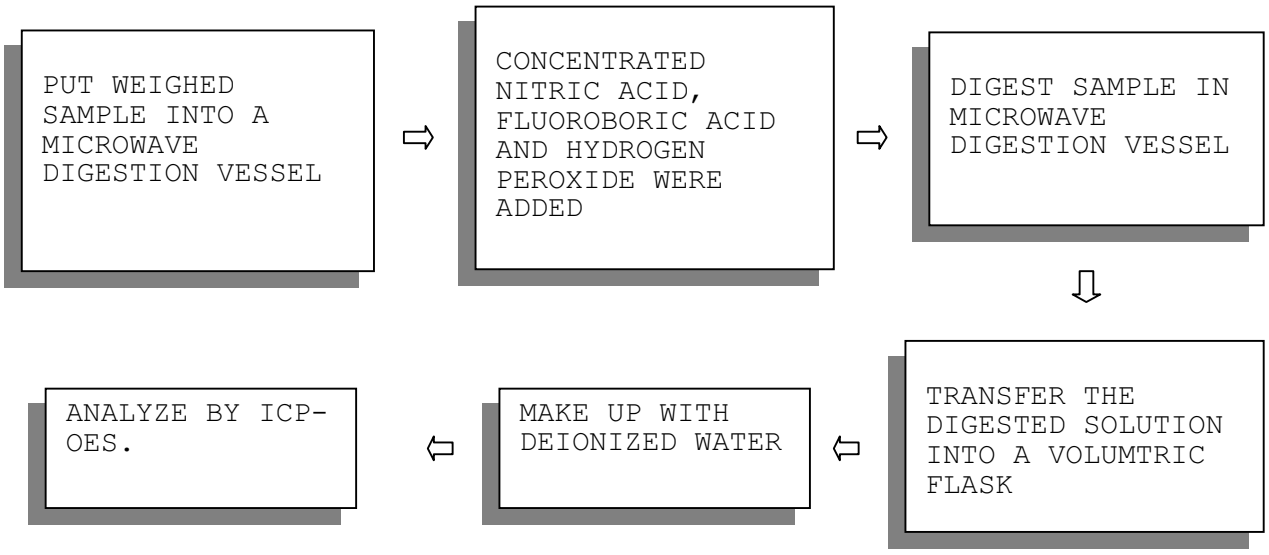
TESTS CONDUCTED

(D) MEASUREMENT FLOWCHART:

1. TEST FOR Cd/Pb CONTENTS:




2. TEST FOR Hg CONTENT:

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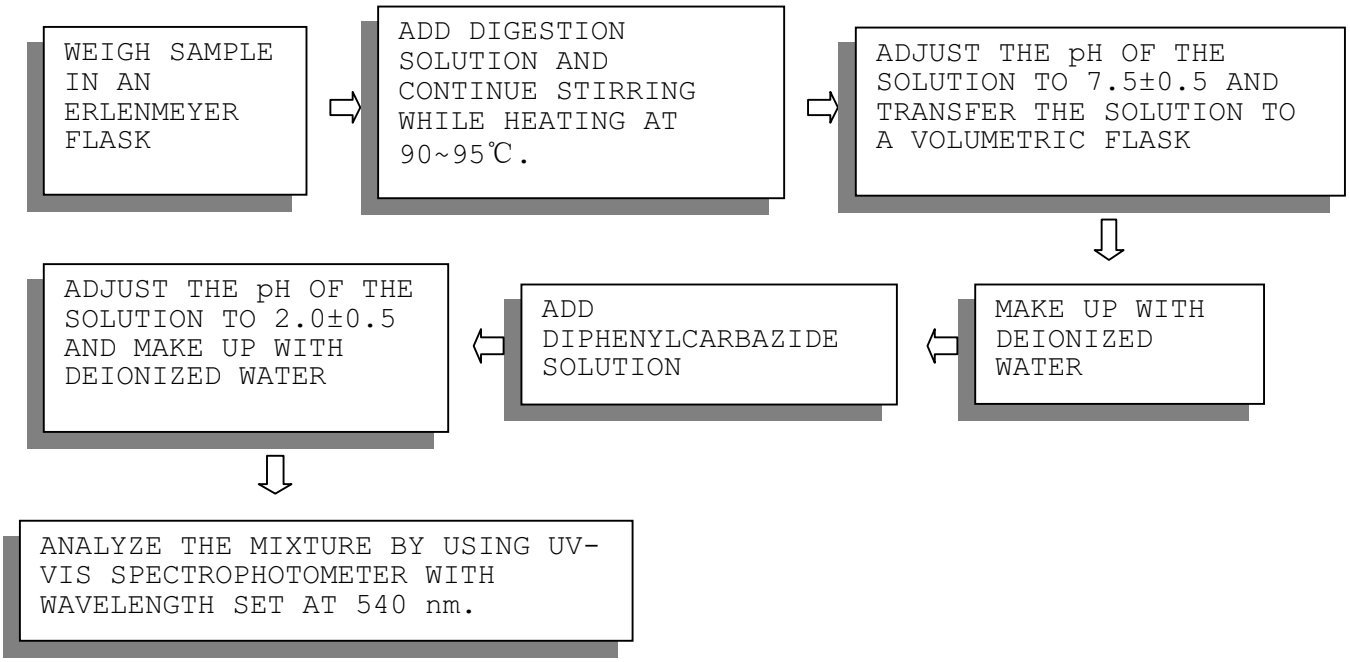
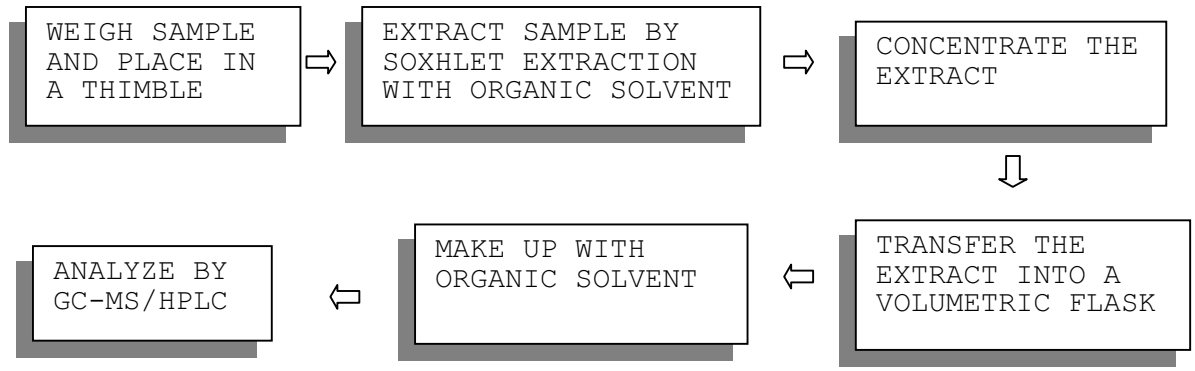
TESTS CONDUCTED

3. TEST FOR CHROMIUM (VI) ($Cr^{6+}$) CONTENT (ALKALINE DIGESTION):




4. TEST FOR PBBs/PBDEs CONTENTS:

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**TEST REPORT** NUMBER: SZHJ19129005

TESTS CONDUCTED


**********

END OF REPORT



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**TEST REPORT** NUMBER: SZHJ19131901

APPLICANT: FREEPORT RESOURCES ENTERPRISES CORP DATE: Dec 17, 2007
WUSHA 6TH INDUSTRIAL AREA,
CHANGAN TOWN, DONGGUAN CITY
GUANGDONG PROVINCE

ATTN: LI YA NI

SAMPLE DESCRIPTION:
ONE (1) SUBMITTED SAMPLE SAID TO BE **SILVER/GOLD COLOR METAL (TERMINAL).**
FACTORY : FREEPORT RESOURCES ENTERPRISES CORP.
COUNTRY OF ORIGIN : CHINA.
**********

TESTS CONDUCTED:
AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)
**********

AUTHORIZED BY:
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**TEST REPORT** NUMBER: SZHJ19131901

TESTS CONDUCTED

(A) TEST RESULT SUMMARY FOR RoHS DIRECTIVE :

| TESTING ITEM | RESULT |
|---|---|
| CADMIUM (Cd) CONTENT (mg/kg) | ND(<2) |
| LEAD (Pb) CONTENT (mg/kg) | ND(<2) |
| MERCURY (Hg) CONTENT (mg/kg) | ND(<2) |
| CHROMIUM (VI)($Cr^{6+}$) RESULT (BY BOILING WATER EXTRACTION ON METAL) (mg/kg WITH $50cm^2$)# | NEGATIVE(<0.02) |

mg/kg = MILLIGRAM PER KILOGRAM = ppm
mg/kg WITH $50cm^2$ = MILLIGRAM PER KILOGRAM WITH 50 SQUARE CENTIMETER
< = LESS THAN
ND = NOT DETECTED

# = ACCORDING TO IEC 62321, A POSITIVE RESULT INDICATES THE PRESENCE OF Cr(VI) COATING. IT IS THE Cr(VI) CONCENTRATION DETECTED IN THE BOILING-WATER-EXTRACTION SOLUTION AND SHOULD NOT BE INTERPRETED AS THE Cr(VI) CONCENTRATION IN THE COATING LAYER OF THE SAMPLE.

(B) RoHS REQUIREMENT :

| RESTRICTED SUBSTANCES | LIMITS |
|---|---|
| CADMIUM (Cd) | 0.01% (100 ppm) |
| LEAD (Pb) | 0.1% (1000 ppm) |
| MERCURY (Hg) | 0.1% (1000 ppm) |
| CHROMIUM (VI) ($Cr^{6+}$) | 0.1% (1000 ppm) |

THE ABOVE LIMITS WERE QUOTED FROM 2002/95/EC AND AMENDMENT 2005/618/EC FOR HOMOGENEOUS MATERIAL.

**********



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**TEST REPORT** NUMBER: SZHJ19131901

TESTS CONDUCTED

(C) TEST METHOD :

| TESTING ITEM | TESTING METHOD | REPORTING LIMIT |
|---|---|---|
| CADMIUM (Cd) CONTENT | WITH REFERENCE TO IEC 62321 -111/54/CDV, BY ACID DIGESTION AND DETERMINED BY ICP-OES | 2 mg/kg |
| LEAD (Pb) CONTENT | WITH REFERENCE TO IEC 62321 -111/54/CDV, BY ACID DIGESTION AND DETERMINED BY ICP - OES | 2 mg/kg |
| MERCURY (Hg) CONTENT | WITH REFERENCE TO IEC 62321 -111/54/CDV, BY ACID DIGESTION AND DETERMINED BY ICP - OES | 2 mg/kg |
| CHROMIUM (VI) ($Cr^{6+}$) CONTENT (FOR METAL) | WITH REFERENCE TO IEC 62321 -111/54/CDV, BY BOILING WATER EXTRACTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER | 0.02mg/kg with 50$cm^2$ |

NOTE : TESTS WERE CONDUCTED WITH REFERENCE TO 111/54/CDV VERSION 2006-05-05 WHICH IS STILL A DRAFT METHOD AND SUBJECT TO FUTURE CHANGES PRIOR TO PUBLICATION.

DATE SAMPLE RECEIVED : DEC 11, 2007
TESTING PERIOD : DEC 11, 2007 TO DEC 14, 2007

**********



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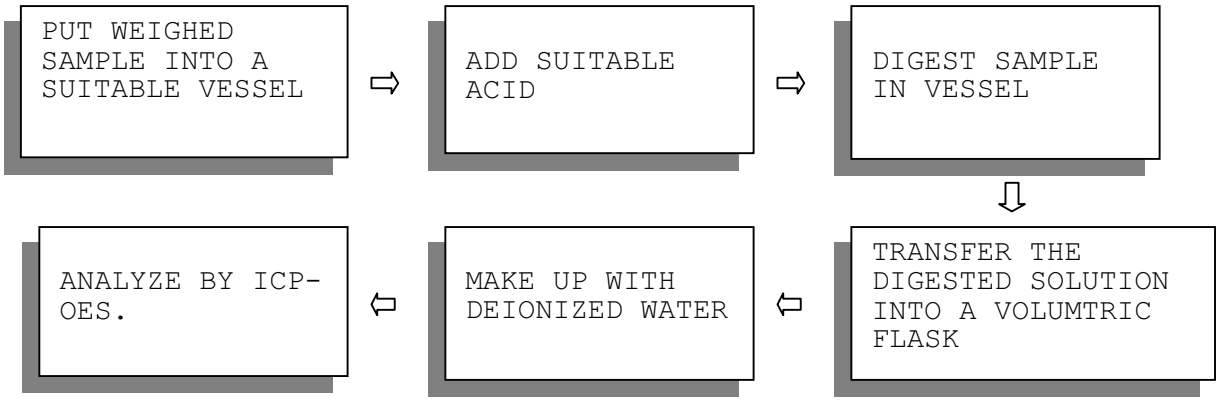
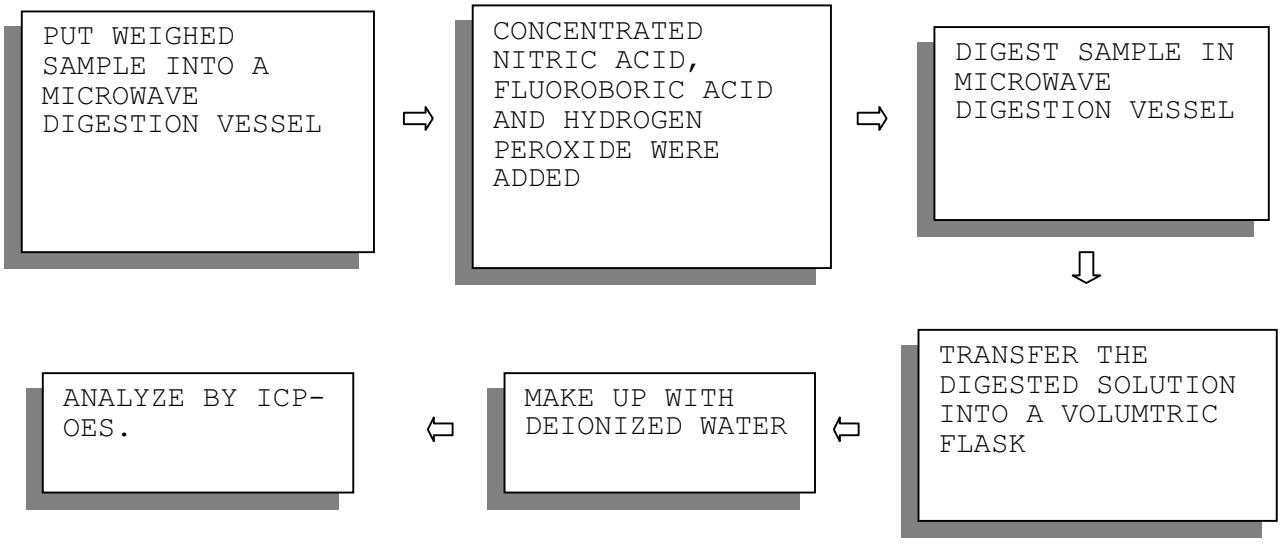
TESTS CONDUCTED

(D) MEASUREMENT FLOWCHART:

1. TEST FOR Cd/Pb CONTENTS:




2. TEST FOR Hg CONTENT:

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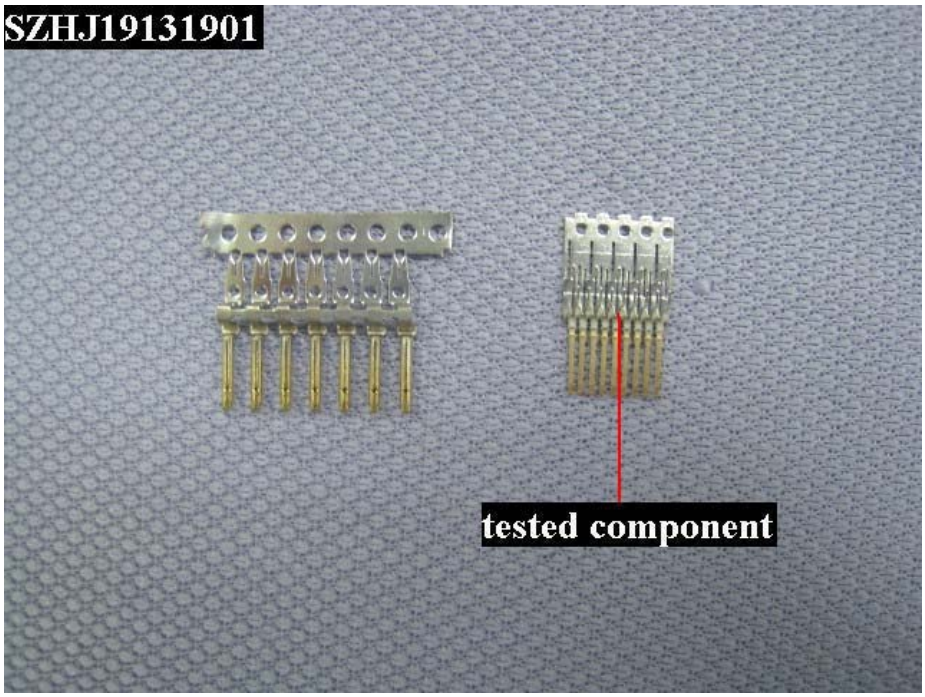
**TEST REPORT** NUMBER: SZHJ19131901

TESTS CONDUCTED

3. TEST FOR CHROMIUM (VI) ($Cr^{6+}$) CONTENT (BOILING WATER EXTRACTION):

MEASURE SURFACE AREA OF TEST SAMPLE ⇨ PUT THE SAMPLE INTO A SUITABLE VESSEL WITH BOILING DEIONIZED WATER, TOTALLY IMMERSE THE SAMPLE AND HEAT 10 MINS ⇨ COOL THE BEAKER AND ITS CONTENT TO ROOM TEMPERATURE ⇩ MAKE UP WITH DEIONIZED WATER ⇦ ADD ORTHOPHOSPHORIC ACID SOLUTION AND DIPHENYLCARBAZIDE SOLUTION ⇦ ANALYZE THE MIXTURE BY USING UV-VIS SPECTROPHOTOMETER WITH WAVELENGTH SET AT 540 nm。

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END OF REPORT



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Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

**TEST REPORT** NUMBER: SZHJ19131905

APPLICANT: FREEPORT RESOURCES ENTERPRISES CORP DATE: Dec 17, 2007
WUSHA 6TH INDUSTRIAL AREA,
CHANGAN TOWN, DONGGUAN CITY
GUANGDONG PROVINCE

ATTN: LI YA NI

SAMPLE DESCRIPTION:
ONE (1) SUBMITTED SAMPLE SAID TO BE **SILVER COLOR METAL (SHELL).**
FACTORY : FREEPORT RESOURCES ENTERPRISES CORP.
COUNTRY OF ORIGIN : CHINA.
**********

TESTS CONDUCTED:
AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)
**********

AUTHORIZED BY:
FOR INTERTEK TESTING SERVICES
SHENZHEN LTD.

BEN N.L. LIN
GENERAL MANAGER



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**TEST REPORT** NUMBER: SZHJ19131905

TESTS CONDUCTED

(A) TEST RESULT SUMMARY FOR RoHS DIRECTIVE :

| **TESTING ITEM** | **RESULT** |
|---|---|
| CADMIUM (Cd) CONTENT (mg/kg) | ND(<2) |
| LEAD (Pb) CONTENT (mg/kg) | 20 |
| MERCURY (Hg) CONTENT (mg/kg) | ND(<2) |
| CHROMIUM (VI)($Cr^{6+}$) RESULT (BY BOILING WATER EXTRACTION ON METAL) (mg/kg WITH $50cm^2$)# | NEGATIVE(<0.02) |

mg/kg = MILLIGRAM PER KILOGRAM = ppm
mg/kg WITH $50cm^2$ = MILLIGRAM PER KILOGRAM WITH 50 SQUARE CENTIMETER
< = LESS THAN
ND = NOT DETECTED

# = ACCORDING TO IEC 62321, A POSITIVE RESULT INDICATES THE PRESENCE OF Cr(VI) COATING. IT IS THE Cr(VI) CONCENTRATION DETECTED IN THE BOILING-WATER-EXTRACTION SOLUTION AND SHOULD NOT BE INTERPRETED AS THE Cr(VI) CONCENTRATION IN THE COATING LAYER OF THE SAMPLE.

(B) RoHS REQUIREMENT :

| **RESTRICTED SUBSTANCES** | **LIMITS** |
|---|---|
| CADMIUM (Cd) | 0.01% (100 ppm) |
| LEAD (Pb) | 0.1% (1000 ppm) |
| MERCURY (Hg) | 0.1% (1000 ppm) |
| CHROMIUM (VI) ($Cr^{6+}$) | 0.1% (1000 ppm) |

THE ABOVE LIMITS WERE QUOTED FROM 2002/95/EC AND AMENDMENT 2005/618/EC FOR HOMOGENEOUS MATERIAL.

**********



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Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

**TEST REPORT** NUMBER: SZHJ19131905

TESTS CONDUCTED

(C) TEST METHOD :

| TESTING ITEM | TESTING METHOD | REPORTING LIMIT |
|---|---|---|
| CADMIUM (Cd) CONTENT | WITH REFERENCE TO IEC 62321 -111/54/CDV, BY ACID DIGESTION AND DETERMINED BY ICP-OES | 2 mg/kg |
| LEAD (Pb) CONTENT | WITH REFERENCE TO IEC 62321 -111/54/CDV, BY ACID DIGESTION AND DETERMINED BY ICP - OES | 2 mg/kg |
| MERCURY (Hg) CONTENT | WITH REFERENCE TO IEC 62321 -111/54/CDV, BY ACID DIGESTION AND DETERMINED BY ICP - OES | 2 mg/kg |
| CHROMIUM (VI) ($Cr^{6+}$) CONTENT (FOR METAL) | WITH REFERENCE TO IEC 62321 -111/54/CDV, BY BOILING WATER EXTRACTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER | 0.02mg/kg with $50cm^2$ |

NOTE : TESTS WERE CONDUCTED WITH REFERENCE TO 111/54/CDV VERSION 2006-05-05 WHICH IS STILL A DRAFT METHOD AND SUBJECT TO FUTURE CHANGES PRIOR TO PUBLICATION.

DATE SAMPLE RECEIVED : DEC 11, 2007
TESTING PERIOD : DEC 11, 2007 TO DEC 14, 2007

**********



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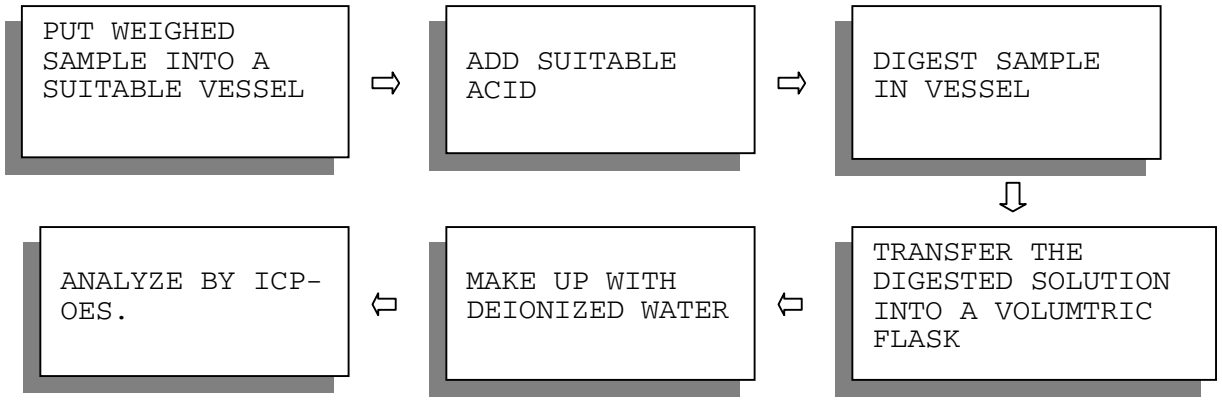
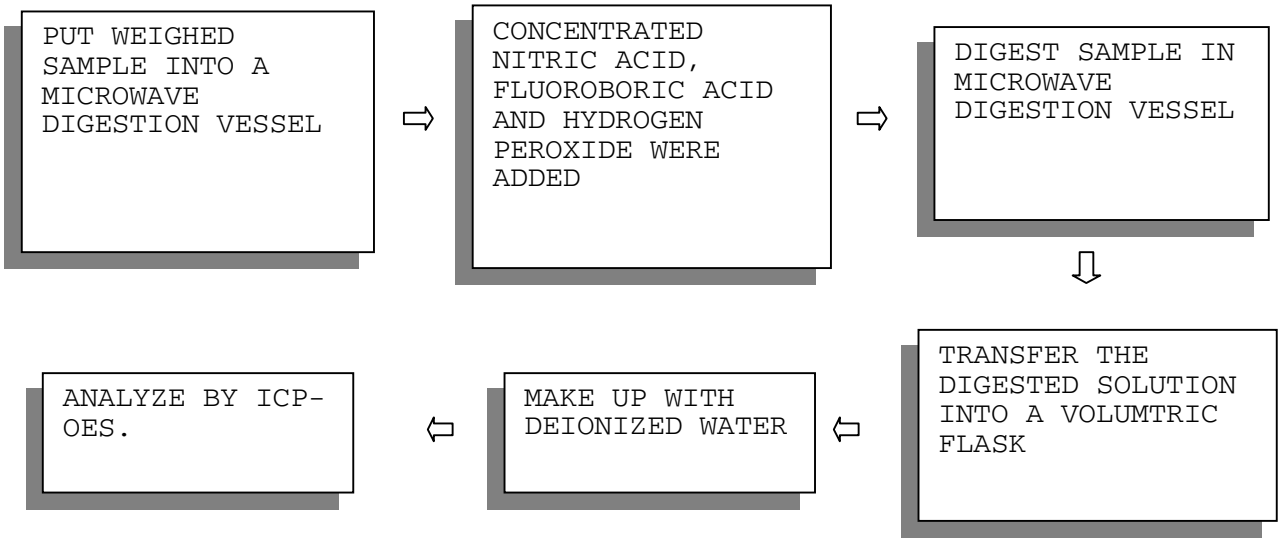
TESTS CONDUCTED

(D) MEASUREMENT FLOWCHART:

1. TEST FOR Cd/Pb CONTENTS:




2. TEST FOR Hg CONTENT:

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**TEST REPORT** NUMBER: SZHJ19131905

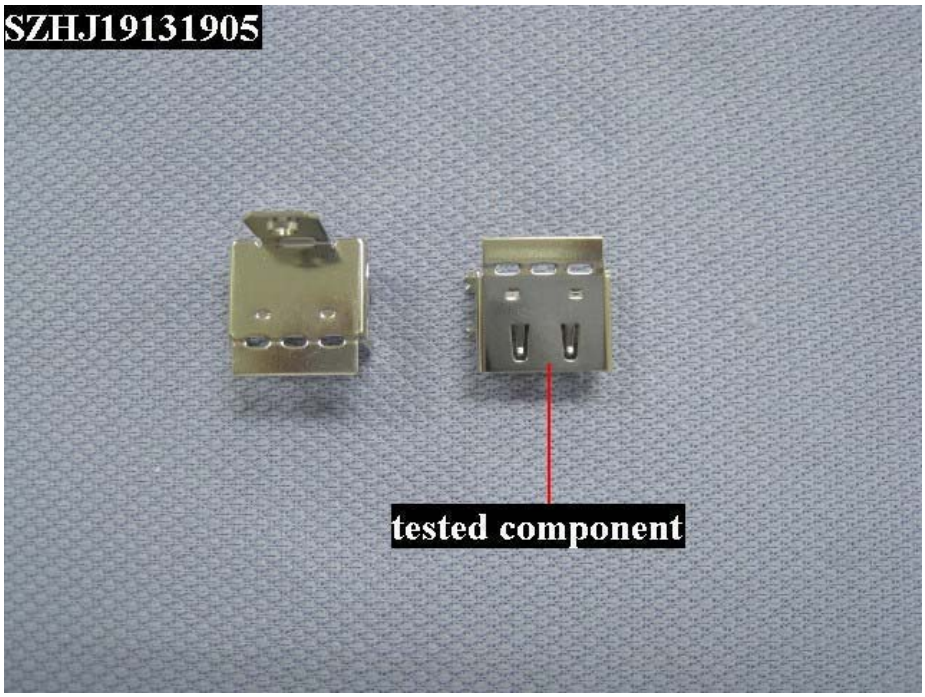
TESTS CONDUCTED

3. TEST FOR CHROMIUM (VI) ($Cr^{6+}$) CONTENT (BOILING WATER EXTRACTION):

MEASURE SURFACE AREA OF TEST SAMPLE ⇨ PUT THE SAMPLE INTO A SUITABLE VESSEL WITH BOILING DEIONIZED WATER, TOTALLY IMMERSE THE SAMPLE AND HEAT 10 MINS ⇨ COOL THE BEAKER AND ITS CONTENT TO ROOM TEMPERATURE

⇩

MAKE UP WITH DEIONIZED WATER ⇦ ADD ORTHOPHOSPHORIC ACID SOLUTION AND DIPHENYLCARBAZIDE SOLUTION ⇦ ANALYZE THE MIXTURE BY USING UV-VIS SPECTROPHOTOMETER WITH WAVELENGTH SET AT 540 nm。

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END OF REPORT



**Intertek Testing Services Shenzhen Ltd.-TFH Division**
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Certificate GB05/64648

The management system of

# Freeport Resources Enterprises Corp.

6th Industrial Area, Wu Sha, Chang An Town,
Dongguan City, Guangdong Province, China

has been assessed and certified as meeting the requirements of

# ISO 14001:2004

For the following activities

**Design and assembly of connectors and cables for activities confined to the production and office of premises**

This certificate is valid from 09 December 2005 until 18 April 2008
Issue 2. Certified since 18 April 2005

Authorised by

P. Earl

UKAS ENVIRONMENTAL MANAGEMENT
005

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