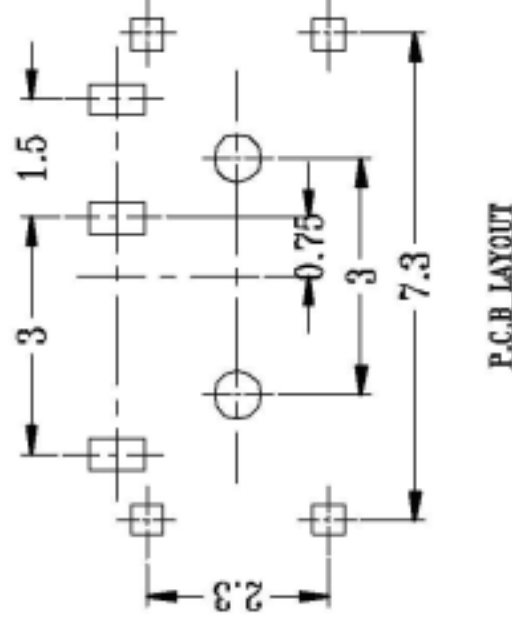
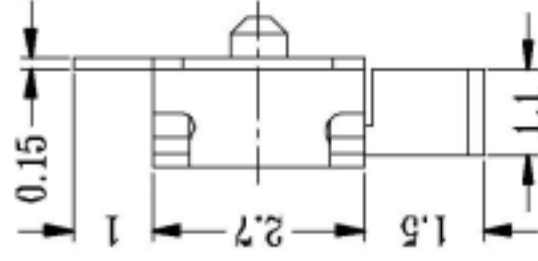
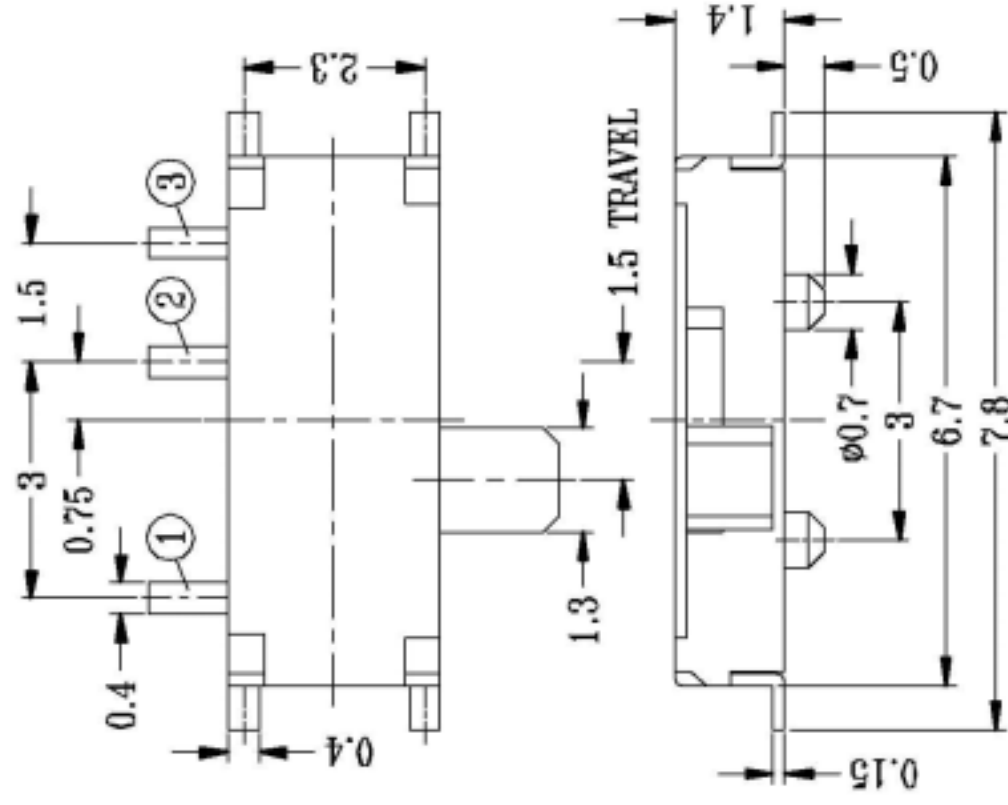




CAD FILE:



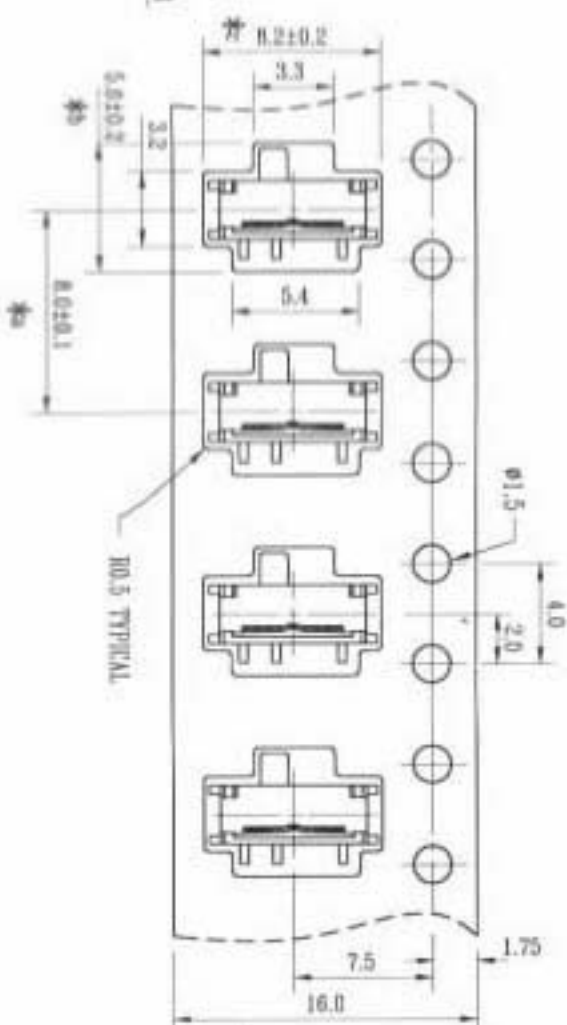
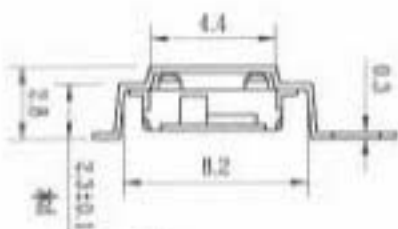
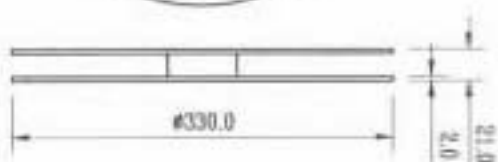
## SCHEMATIC

## P.C.B. LAYOUT

[illegible]



CND FILE#

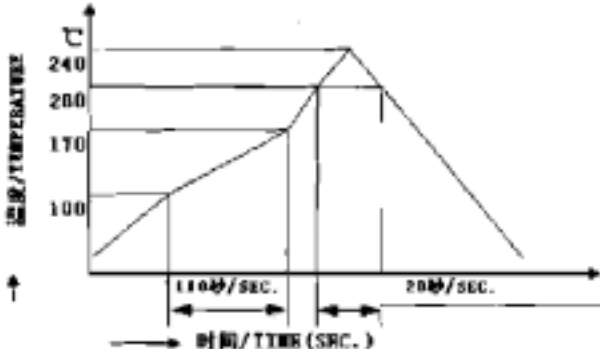


注:“8”表示關鍵尺寸(4個)。

8				TOLERANCE			
7				UNLESS SPECIFIED			
6				WITHIN: 1.5±0.1mm			
5				OVER: 1.5±0.2mm		ISSUE	DATE
4	MX12C02PA CONTACT	PHS ES210B-FH	1	AG CLAD	TITLE : MINI SLIDE SWITCH	VIT : MM	
3	MX12C02PA COVER	0.15mm SLCS	1	AG PLATED			DESCRPTIONS
2	MX12C02PA CASE	PHB/4# BRASS STRIP	1	BLACK/AG PLATED	MODEL: MX12C02-PA(PB) 包裝圖	1/E: 10:1	DWG NO.: SP-DK-MX12C02PA-00a
1	MX12C02PA(PB) KUNB	NYLON	1	BLUE			DWN.
	PART NAME	MATERIAL	QTY	FINISHING	HUAIYANG CO., LTD.		
							CHK'D
							APPD.

HUI YANG CO.,LTD.		文件编号	SF-SP-8205
SPECIFICATION 规格书		发布日期	2007 年 01 月 23 日
		第 A 版	第 1 页 共 3 页
MODEL NO. 产品名称 : MK-12C02			
DRAWN 制 订		周燕柳	APRD. 审 批 
1. RATING (额定值)		: DC 6V 0.3A	
2. FUNCTION (接觸型式)		: 1P2T	
3. TIMING (時間特性)			
4. ELECTRICAL CHARACTERISTICS (电气性能规格)			
ITEM 项目		TEST CONDITIONS 测试条件	PERFORMANCE 规格
4.1	CONTACT RESISTANCE 接触电阻	MEASURED AT 1KH <sub>z</sub> SMALL CURRENT (100mA OR LESS) 在 1KH <sub>z</sub> 微小电流 (100mA 以下) 测试。	70mΩ MAX. 70 毫歐以下。
4.2	INSULATION RESISTANCE 絕緣电阻	APPLY A VOLTAGE OF 500V DC SHALL BE APPLIED FOR 1 MIN AFTER WHICH MEASUREMENT BE MADE: (1) BETWEEN TERMINALS. (2) BETWEEN INDIVIDUAL TERMINAL AND FRAME. 輸入 500V DC 電壓 1 分鐘, 按以下接觸方法測試: (1) 排腳相互之間 (2) 排腳與外殼之間	100MΩ MIN. 100 兆歐以上。
4.3	DIELECTRIC STRENGTH 耐電壓	AC 500V rms (50-60Hz) FOR 1 MIN TRIP CURRENT: 0.5 mA (1) BETWEEN TERMINALS. (2) BETWEEN INDIVIDUAL TERMINAL AND FRAME. 輸入 AC 500V (50-60Hz) 電壓, 1 分鐘感度電流為 0.5mA, 按以下 接觸方法測試: (1) 排腳相互之間 (2) 排腳與外殼之間	WITHOUT DAMAGE TO PARTS ARCING OR BREAKDOWN ETC. 沒有絕緣破壞等異常。
5. MECHANICAL CHARACTERISTICS (機械性能規格)			
ITEM 项目		TEST CONDITIONS 測試條件	PERFORMANCE 規格
5.1	OPERATING FORCE 作動力		200gf±100gf
5.2	TERMINAL STRENGTH 端子強度	A STATIC LOAD OF 300gf SHALL BE APPLIED TO THE TERMINAL FOR 1 MIN. IN ANY DIRECTION 在排腳端任意一個方向加 300gf 力度測試, 時間為 1 分钟。	MECHANICAL AND ELECTRICAL CHARACTERISTICS SHALL BE SATISFIED WITHOUT DAMAGE OR EXCESSIVE LOOSENESS OF ACTUATOR. 在端子中沒有裂開、鬆動等異常, 滿足于機械、電器性能。

HUI YANG CO.,LTD.		文件编号	SF-SP-8205
		发布日期	2007 年 01 月 23 日
SPECIFICATION 规格书		第 A 版	第 2 页 共 3 页
5.3	STANDARD ATMOSPHERIC CONDITIONS  测试标准状态	UNLESS OTHERWISE SPECIFIED, THE STANDARD RANGE OF ATMOSPHERIC CONDITIONS FOR MAKING MEASUREMENTS AND TESTS ARE AS FOLLOWS: (1) AMBIENT TEMPERATURE: 5℃ TO 35℃ (2) RELATIVE HUMIDITY : 45% TO 85% (3) AIR PRESSURE : 80Kpa TO 106Kpa 在沒有指定的情況下測試溫度、濕度、氣壓如下: (1) 溫度為 5~35℃ (2) 濕度為 45%~85% (3) 氣壓為 80Kpa~106Kpa	
5.4	PRACTICAL TEMPERATURE RANGE  使用溫度範圍	-10℃~+60℃. 在-10℃~+60℃溫度內使用.	
6. DURABILITY (耐久性)			
ITEM 项目		TEST CONDITIONS 测试条件	PERFORMANCE 规格
6.1	LIFE TEST 壽命試驗	WITHOUT LOAD: AN ACTUATOR SHALL BE SUBJECT TO 10,000 CYCLES AT A SPEED OF 15 TO 18 CYCLES FOR 1 MIN. 無負荷: 操作者以每分鐘 15~18 回的頻率作 10,000 回之無負 荷測試.	(1) CONTACT RESISTANCE SHALL BE 200mΩ MAX. (2) MECHANICAL AND ELECTRICAL CHARACTERISTICS SHALL BE SATISFIED. (1) 接觸電阻不能超于 200mΩ. (2) 其它、滿足于機械、電器性能.
6.2	HEAT TEST 耐熱試驗	THE SWITCH SHALL BE STORED AT A TEMPERATURE OF 80±2℃ FOR 96 HOURS AND THEN IT SHALL BE SUBJECTED TO THE CONTROLLED RECOVERY CONDITIONS FOR 1 HOUR AFTER WHICH MEASUREMENT SHALL BE MADE. 放置在溫度 80±2℃中測試 96 小時后,再放置正常 室溫中 1 小時來測定	WITHOUT DEFORMATION OF CASE OR EXCESSIVE LOOSENESS OF TEMINALS ELECTRICAL CHARACTERISTICS SHALL BE SATISFIED. 本體無變形,能滿足于機械、電器性能.
6.3	COLD TEST 耐冷試驗	THE SWITCH SHALL BE STORED AT A TEMPERATURE OF -20±3℃ FOR 96 HOURS AND THEN IT SHALL BE SUBJECTED TO THE CONTROLLED RECOVER CONDITIONS FOR 1 HOUR AFTER WHICH MEASUREMENT SHALL BE MADE. 放置在溫度 -20±3℃中 96 小時后,再放置常溫常濕 中 1 小時來測定.	

HUI YANG CO.,LTD.		文件编号	SF-SP-8205
		发布日期	2007 年 01 月 23 日
SPECIFICATION 规格书		第 A 版	第 3 页 共 3 页
ITEM 项目	TEST CONDITIONS 测试条件		PERFORMANCE 规格
6.4	HUMIDITY TEST 潮濕試驗	<p>THE SWITCH SHALL BE STORED AT A TEMPERATURE OF <math>40\pm 2^{\circ}\text{C}</math> AND A HUMIDITY OF 90% TO 95% FOR 96 HOURS, THEN THE SWITCH SHALL BE MAINTAINED AT STANDARD ATMOSPHERIC CONDITION FOR 1 HOUR AFTER WHICH MEASUREMENT SHALL BE MADE.</p> <p>放置 <math>40\pm 2^{\circ}\text{C}</math> 的相對濕度為 90%~95% 環境中 96 小時后, 再將樣版放在正常環境 1 小時后進行測試。</p>	<p>THERE SHALL BE NO DAMAGE ON APPEARANCE.</p> <p>MECHANICAL AND ELECTRICAL CHARACTERISTICS SHALL BE SATISFIED.</p> <p>外觀無異常, 滿足于機械, 電器性能。</p>
6.5	SOLDERING CONDITIONS 焊錫條件	<p>HAND SOLDERING:</p> <p>(1). DEVICE: SOLDER IRON</p> <p>A. <math>350^{\circ}\text{C}</math> Max. 3sec. Max.</p> <p>B. <math>270^{\circ}\text{C}</math> Max. 5sec. Max.</p> <p>手焊:</p> <p>(1) 工具: 烙鐵</p> <p>A. <math>350^{\circ}\text{C}</math> Max. 3sec. Max.</p> <p>B. <math>270^{\circ}\text{C}</math> Max. 5sec. Max.</p> <p>(2) REFLOW SOLDERING</p> <p>回流焊</p> <p><math>240^{\circ}\text{C}</math> Max. 3sec. Max.</p> 	<p>THERE SHALL BE NO DAMAGE ON APPEARANCE.</p> <p>MECHANICAL AND ELECTRICAL CHARACTERISTICS SHALL BE SATISFIED.</p> <p>外觀無異常, 滿足于機械, 電器性能。</p>



## Test Report

No. 2052628/EC

Date : Feb 27 2006

Page 1 of 4

Report on the submitted sample said to be PLASTIC MATERIAL – NYLON 46.

SGS Job No. : 1978188  
Buyer : SONY  
Country of Origin : CHINA  
Country of Destination : JAPAN  
Sample Receiving Date : FEB 14 2006  
Testing Period : FEB 15 - 18 2006

Test Requested : With reference to SONY SS-00259

- 1) To determine the Cadmium Content in the submitted sample.
- 2) To determine the Lead Content in the submitted sample.
- 3) To determine the Mercury Content in the submitted sample.
- 4) To determine the Hexavalent Chromium Content on the submitted sample.
- 5) To determine the Cadmium, Lead and Mercury content in the submitted metal sample.
- 6) Determination of PBBs (polybrominated biphenyls), PBDEs (Polybrominated diphenylethers) of the submitted sample.
- 7) To determine of PCBs (Polychlorinated biphenyl) of submitted sample.

Pre-conditioning and Measurement Method :

- 1-3) With reference to EPA Method 3051/ 3052.  
Analysis was performed by Inductively Coupled Argon Plasma-Atomic Emission Spectrometry (ICP-AES).
- 4) With reference to EPA Method 3060A & 7196A.  
The sample was alkaline digested by using EPA Method 3060A, and then analyzed by using Colorimetric method 7196A (by UV-Vis Spectrophotometer).
- 5) With reference to SGS in-House Method. The sample was digested by acid. Analysis was performed by Inductively Coupled Argon Plasma - Atomic Emission Spectrometry (ICP-AES) or Atomic Absorption Spectrometry.
- 5) With reference to EPA Method 3540C/ 3550C. Analysis was performed by GC/MS or LC/ MS.
- 7) With reference to SGS in-house method. Analysis was performed by GC/ECD.

Test Results : 1-7) Please refer to the next page

Signed for and on behalf of  
SGS Hong Kong Ltd

Ho Ka Ping, Family  
Laboratory Executive

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.

H12866549



## Test Report

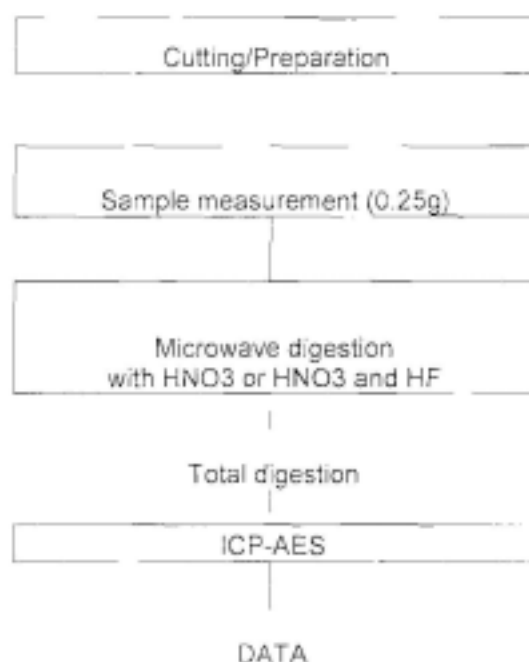
No. 2052628/EC

Date : Feb 27 2006

Page 3 of 4

### Flow chart of digestion

(EPA 3051/3052 for Cd, Pb)



The samples were dissolved totally by pre-conditioning method according to above flow chart.

Operator Chow Fuk Fung

Section Chief Lee Fung Mei, Miranda



## Test Report

No. 2052628/EC.

Date : Feb 27 2006

Page 2 of 4

### Test Results

1-5)

Test Item	Black Plastic	Detection Limit
Cadmium (Cd)	ND	2 ppm
Lead (Pb)	ND	2 ppm
Mercury (Hg)	ND	2 ppm
Hexavalent Chromium (Cr <sup>6+</sup> )	ND	2 ppm

(Results shown are of the total weight of samples)

Note : ppm = mg/kg

ND = Not Detected

Not detected is reported when the reading is less than detection limit value

6)

Flame Retardants	Black Plastic	Detection Limit
<b>Polybrominated Biphenyls (PBBs)</b>	---	---
Monobromobiphenyl	ND	5 ppm
Dibromobiphenyl	ND	5 ppm
Tribromobiphenyl	ND	5 ppm
Tetrabromobiphenyl	ND	5 ppm
Pentabromobiphenyl	ND	5 ppm
Hexabromobiphenyl	ND	5 ppm
Heptabromobiphenyl	ND	5 ppm
Octabromobiphenyl	ND	5 ppm
Nonabromobiphenyl	ND	5 ppm
Decabromobiphenyl	ND	5 ppm
<b>Polybrominated Diphenylethers (PBDEs)</b>	---	---
Monobromodiphenyl ether	ND	5 ppm
Dibromodiphenyl ether	ND	5 ppm
Tribromodiphenyl ether	ND	5 ppm
Tetrabromodiphenyl ether	ND	5 ppm
Pentabromodiphenyl ether	ND	5 ppm
Hexabromodiphenyl ether	ND	5 ppm
Heptabromodiphenyl ether	ND	5 ppm
Octabromodiphenyl ether	ND	5 ppm
Nonabromodiphenyl ether	ND	5 ppm
Decabromodiphenyl ether	ND	5 ppm

Note : ppm = mg/kg

ND = Not Detected

Not detected is reported when the reading is less than detection limit value

7)

Compounds	Black Plastic	Detection Limit
PCBs (Polychlorinated Biphenyls)	ND	5 ppm

Note : ppm = mg/kg

ND = Not Detected

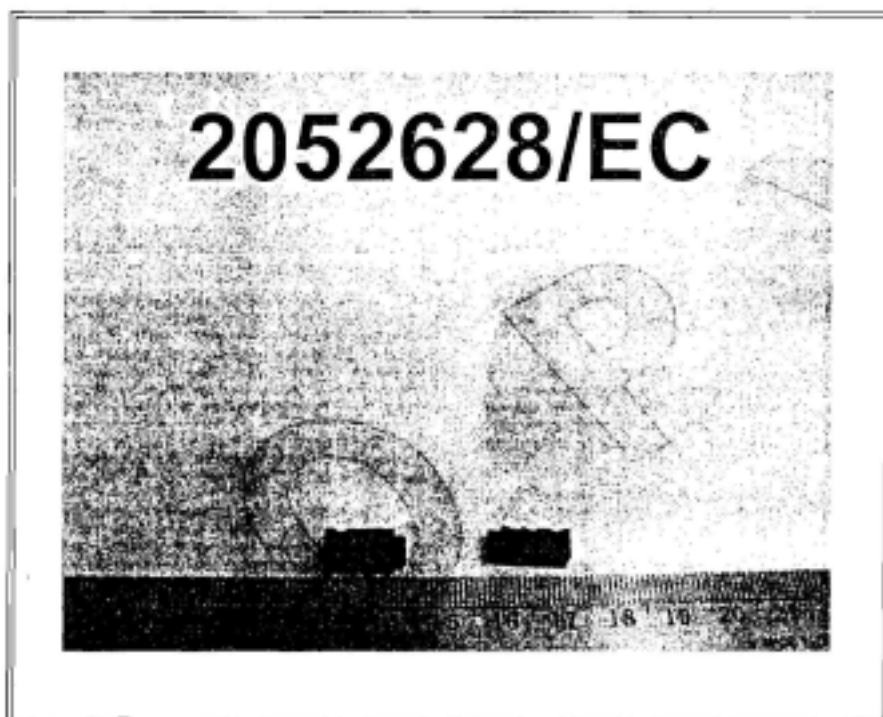
Not detected was reported when the reading is less than detection limit value

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.

H12866550



PHOTO APPENDIX



SGS authenticate the photo on original report only

\*\*\* End of Report \*\*\*



## Test Report

No. 2052637/EC

Date: Feb 20 2006

Page 1 of 2

Report on the submitted sample said to be SUS - AG PLATED.

SGS Job No. : 1978270  
Buyer : SONY

Country of Origin : CHINA  
Country of Destination : JAPAN  
Sample Receiving Date : FEB 14 2006  
Testing Period : FEB 15 - 20 2006

Test Requested : 1) To determine the Cadmium content in the submitted sample.  
2) To determine the Lead content in the submitted sample.  
3) To determine the Mercury content in the submitted sample.  
4) To determine the Hexavalent Chromium content on the submitted sample.

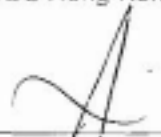
Test Method : 1-3) With reference to SGS in-House Method. The sample was digested by acid. Analysis was performed by Inductively Coupled Argon Plasma - Atomic Emission Spectrometry (ICP-AES) or Atomic Absorption Spectrometry.  
4) With reference to EPA Method 3060A & 7196A. The sample was alkaline digested by using EPA Method 3060A, and then analyzed by using Colorimetric method 7196A (by UV-Vis Spectrophotometer).

Test Results	Test Item	Silvery Metal	Detection Limit
1)	Cadmium (Cd) Content	ND	2 ppm
2)	Lead (Pb) Content	23ppm	2 ppm
3)	Mercury (Hg) Content	ND	2 ppm
4)	Hexavalent Chromium (Cr 6+) Content	ND	2 ppm

(Results shown are of the total weight of samples)

Notes : ppm = mg/kg  
ND = Not Detected  
Not detected is reported when the reading is less than detection limit value

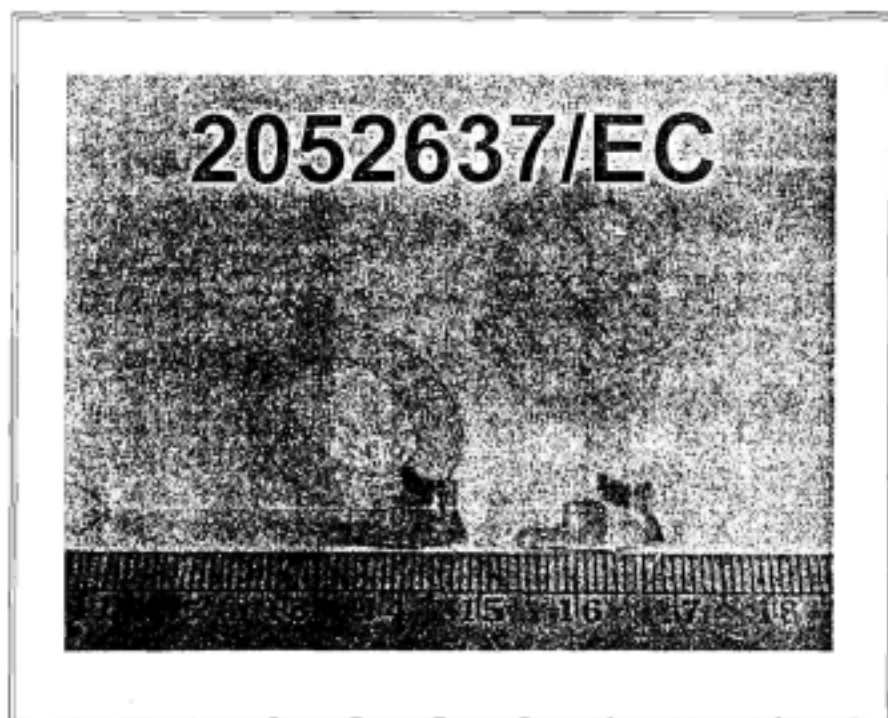
Signed for and on behalf of  
SGS Hong Kong Ltd

  
Ho Ka Ting, Family  
Laboratory Executive

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.

H12773464

PHOTO APPENDIX



SGS authenticate the photo on original report only

\*\*\* End of Report \*\*\*



## Test Report

No. 2052648/EC.

Date : Feb 20 2006

Page 1 of 2

Report on the submitted sample said to be PBS - AG CLAD.

SGS Job No. : 1978270  
Buyer : SONY  
Country of Origin : CHINA  
Country of Destination : JAPAN  
Sample Receiving Date : FEB 14 2006  
Testing Period : FEB 15 - 20 2006

Test Requested : 1) To determine the Cadmium content in the submitted sample.  
2) To determine the Lead content in the submitted sample.  
3) To determine the Mercury content in the submitted sample.  
4) To determine the Hexavalent Chromium content on the submitted sample.


Test Method : 1-3) With reference to SGS in-House Method. The sample was digested by acid. Analysis was performed by Inductively Coupled Argon Plasma - Atomic Emission Spectrometry (ICP-AES) or Atomic Absorption Spectrometry.  
4) With reference to EPA Method 3060A & 7196A. The sample was alkaline digested by using EPA Method 3060A, and then analyzed by using Colorimetric method 7196A (by UV-Vis Spectrophotometer).

Test Results	Test Item	Coppery Metal	Detection Limit
1)	Cadmium (Cd) Content	ND	2 ppm
2)	Lead (Pb) Content	14ppm	2 ppm
3)	Mercury (Hg) Content	ND	2 ppm
4)	Hexavalent Chromium (Cr 6+) Content	ND	2 ppm

(Results shown are of the total weight of samples)

Notes : ppm = mg/kg  
ND = Not Detected  
Not detected is reported when the reading is less than detection limit value

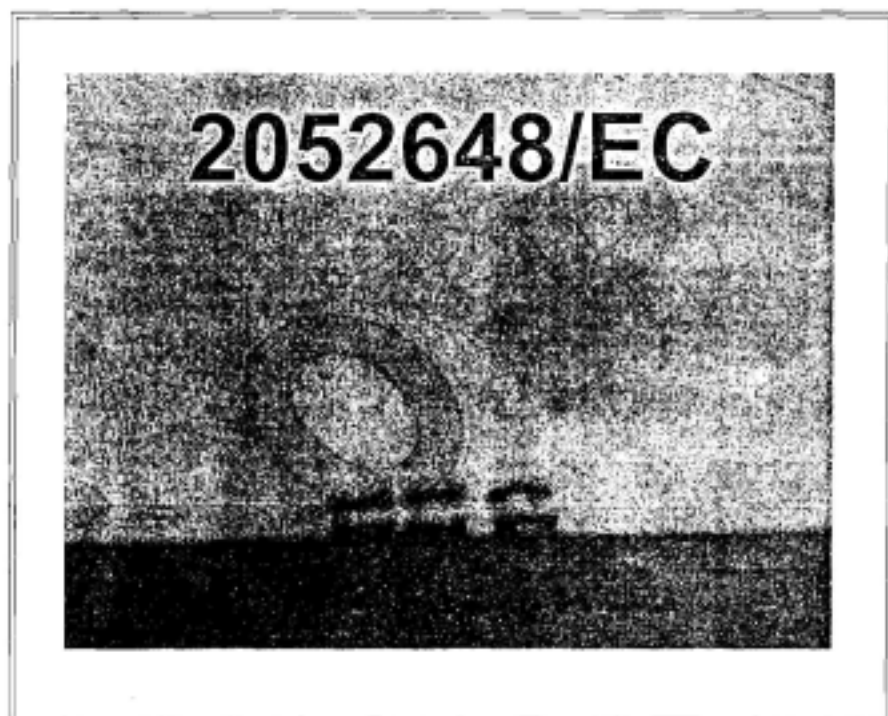
Signed for and on behalf of  
SGS Hong Kong Ltd

  
Ho Ka Ting, Family  
Laboratory Executive

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.

H12773488

## PHOTO APPENDIX



SGS authenticate the photo on original report only

\*\*\* End of Report \*\*\*



## Test Report

No. 2052644/EC

Date : Feb 20 2006

Page 1 of 2

Report on the submitted sample said to be BRASS STRIP - AG PLATED OVER NI PLATED.

SGS Job No. : 1978270  
Buyer : SONY  
Country of Origin : CHINA  
Country of Destination : JAPAN  
Sample Receiving Date : FEB 14 2006  
Testing Period : FEB 15 - 20 2006

Test Requested : 1) To determine the Cadmium content in the submitted sample.  
2) To determine the Lead content in the submitted sample.  
3) To determine the Mercury content in the submitted sample.  
4) To determine the Hexavalent Chromium content on the submitted sample.

Test Method : 1-3) With reference to SGS in-House Method. The sample was digested by acid. Analysis was performed by Inductively Coupled Argon Plasma - Atomic Emission Spectrometry (ICP-AES) or Atomic Absorption Spectrometry.  
4) With reference to EPA Method 3060A & 7196A. The sample was alkaline digested by using EPA Method 3060A, and then analyzed by using Colorimetric method 7196A (by UV-Vis Spectrophotometer).

Test Results	Test Item	Silvery Metal	Detection Limit
1)	Cadmium (Cd) Content	5ppm	2 ppm
2)	Lead (Pb) Content	50ppm	2 ppm
3)	Mercury (Hg) Content	ND	2 ppm
4)	Hexavalent Chromium (Cr 6+) Content	ND	2 ppm

(Results shown are of the total weight of samples)

Notes : ppm = mg/kg  
ND = Not Detected  
Not detected is reported when the reading is less than detection limit value

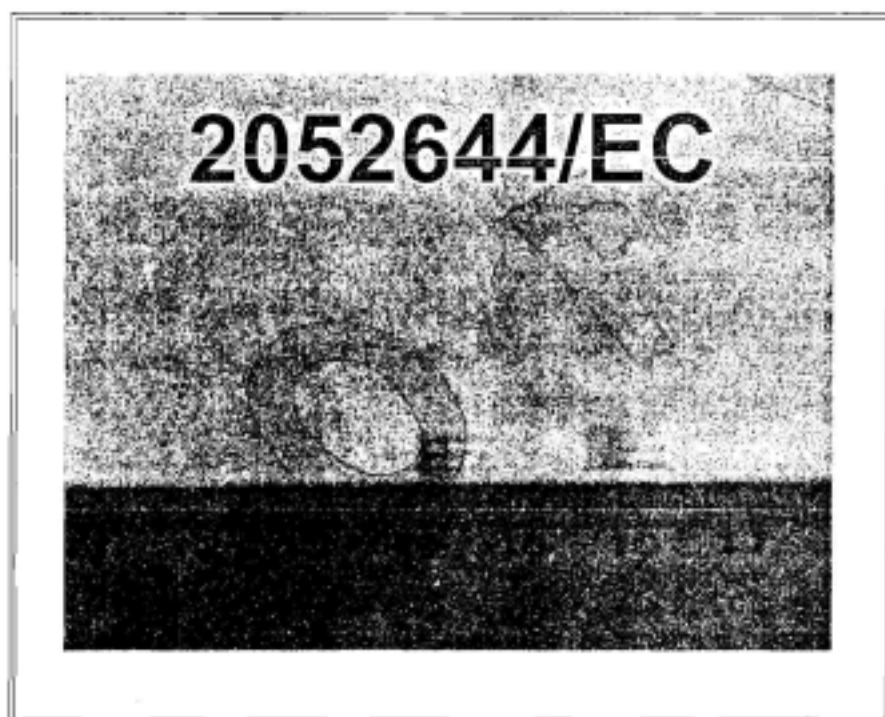
Signed for and on behalf of  
SGS Hong Kong Ltd

Ho Ka Ting, Family  
Laboratory Executive

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.

H12773480

## PHOTO APPENDIX



SGS authenticate the photo on original report only

\*\*\* End of Report \*\*\*