供应商名称: 诚易电子有限公司

产品承认书



Specification for Approval

客户名称 Client Name: _	百富计算机技术(深圳)有限公司		
品 牌 Brand Name:	INPAQ		
原厂料号 Part No:	ACA-5036-A2-CC-S		
物料规格&描叙 Part Description:	2. 4GHz-Chip天线-ACA-5036-A2-CC-S-INPAQ		
产品制造商(全称) Manufacturer:	禾邦电子(苏州)有限公司		
生产企业: Name of factory:	· · · · · · · · · · · · · · · · · · ·		
百富物料类别 PAX Part Name:	天线		
百富物料编号 PAX Materiel No.:	200212000000052		
百富物料描述 PAX Description:	2. 4GHz-Chip 天线-ACA- 5036-A2-CC-S-INPAQ		
百富采用原因 PAX Import Reason:			
供 应 商	签 章 客 户 签 章		
COMPANIE TO THE PROPERTY OF T	承认: 美介文体 2018,1、3 确认: 董江林 ·		

供应商联系地址:香港中环德辅道中88号中环21楼C室

供应商联系人: 刘晓

联系电话及传真: 13502843315



品名:<u>ACA-5036-A2-CC-S</u> <u>History List</u>

	4-3030-AZ-CC-	<u> </u>			HISTOLY FIST
版本	修訂者	修訂頁次	修訂內容	申請日期	生效日期
REV.	EDITOR	PAGE	ITEMS OF CHANGE	DATE	VALID DATE
A5	吳爲盛	P8	更正包材規格	2012/12/25	2013/1/3
A6	吳爲盛	P8	更正包材規格	2013/08/07	2013/8/16

ACA-5036-A2-CC-S Specification

1. APPLICATION:

WLAN, 802.11b/g, Bluetooth, etc...

2. Explanation of part number :

$$\frac{AC}{(1)} \quad \frac{A}{(2)} \quad - \quad \frac{5036}{(3)} \quad - \quad \frac{A2}{(4)} \quad - \quad \frac{CC}{(5)} \quad - \quad \frac{S}{(6)} \quad (7)$$

(1) Product Type: Chip Antenna

(2) Center Frequency/Band Code: A--2.45GHz group

(3) Size Code: 5.0mm(Length) x 3.6mm(Width)

(4) Design Revision Code: Rev.2
(5) CC= Coupling Ceramics Type
(6) Special Code: S=RoHS Compliant
(7) Suffix For Special Requirements

3. Electrical Specification:

ITEM		SPECIFICATION
Frequency Band		2.40GHz~2.50GHz
VSWF	}	Less than 2.5
Polarization		Linear
*Peak Gain	Layout A	3 dBi Typ.
	Layout B	2.1 dBi Typ.
*Peak Efficiency	Layout A	80% Typ.
reak Efficiency	Layout B	74% Typ
Impedance		50Ω Typ.

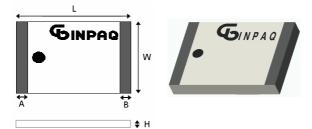
^{*} Test condition: Test board size 80*40 mm

Matching circuit: Pi matching circuit will be required

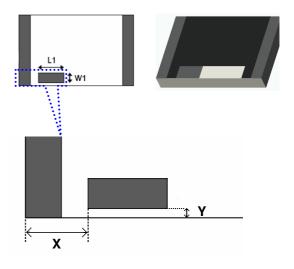
UNLESS OTHER SPECIFIED	TOLERANCES ON :			
$X=\pm$ $X.X=\pm$	X.XX=	G ₂	INPAQ TECHNOLOGY CO)., LTD.
ANGLES=±	HOLEDIA=±			ŕ
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DRAWN BY:吳爲盛之人	CHECKED BY:楊奇峯 ^ሬ -‴ỗ		OLOGY CO.,LTD.AND SHALL NOT BE REPR IE BASIS FOR THE MANUFACTURE OF	
DESIGNED BY: 謝立庭して	APPROVED BY:蘇志銘 ^下 っ	APPARATUS (OR DEVICES WITHOUT PERMISSION	
TITLE: ACA-5036-A2-CC-S Specification		DOCUMENT	ENS000023010	SPEC REV.
TITLE: ACA-3030-A2-CC-3 Specification		NO	L143000023010	۸۵

4. Physical Dimension : (Unit:mm)

TOP view



Bottom view



Chip Antenna	L	W	Α	В	L1	W1	Н	Х	Υ
ACA5036	5.2±0.3	3.7±0.3	0.45±0.25	0.45±0.25	1.1±0.20	0.55±0.20	0.70±0.15	0.85±0.25	0.12±0.06

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ANGLES=±		HOLEDIA=±	
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DESIGNED BY	:謝立庭して	APPROVED BY:蘇志銘 [™]	
TITLE: ACA-5036-A2-CC-S Specification			П

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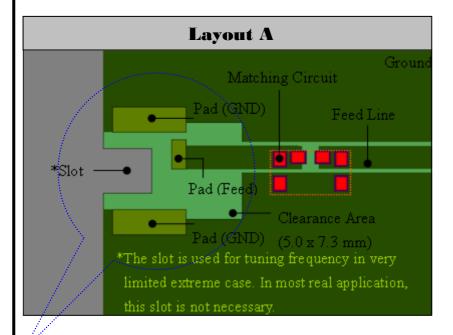
INPAQ TECHNOLOGY CO., LTD.

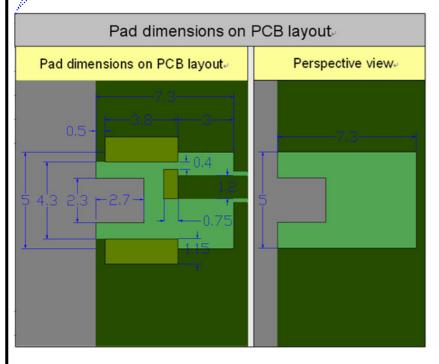
THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

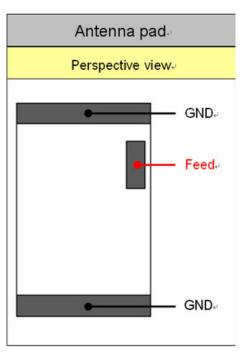
DOCUMENT	ENS000023010
NO.	EN3000023010

SPEC REV.

5. Recommend PCB Layout : (Unit:mm)







PCB pad dimensions

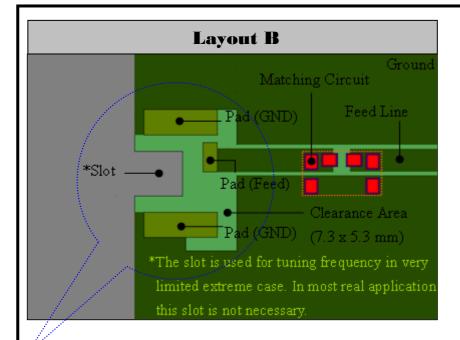
Terminal name	Terminal Dimensions
Pad (Feed)	1.65 X 0.75
Pad (GND)	3.8 X 1.15
Pad (GND)	3.8 X 1.15

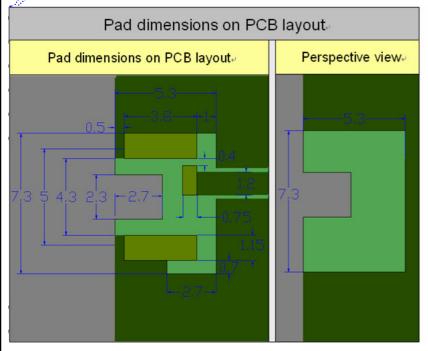
Antenna pad dimensions

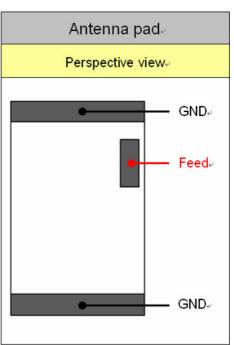
Terminal name	Terminal Dimensions
Feed	1.1 X 0.55
GND	3.7 X 0.45
GND	3.7 X 0.45

UNLESS OTHER SPECIFIED	TOLERANCES ON :			
$X=\pm$ $X.X=\pm$	X.XX =	G	INPAQ TECHNOLOGY CO)., LTD.
ANGLES=±	HOLEDIA=±			
SCALE:	UNIT : mm		IGS AND SPECIFICATIONS ARE THE PRO	
DRAWN BY:吳爲盛দ্মী	CHECKED BY:楊奇峯 ^煌 ‴》		OLOGY CO.,LTD.AND SHALL NOT BE REPRITE BASIS FOR THE MANUFACTURE OF	
DESIGNED BY:謝立庭して	APPROVED BY:蘇志銘 [™] つ	APPARATUS (OR DEVICES WITHOUT PERMISSION	
TITLE: ACA-5036-A2-CC-S Specification		DOCUMENT	ENS000023010	SPEC REV.
TITLE : AOA-3000-A2-00-0 Opecification		NO.	L143000023010	A6

PAGE 3 OF 10







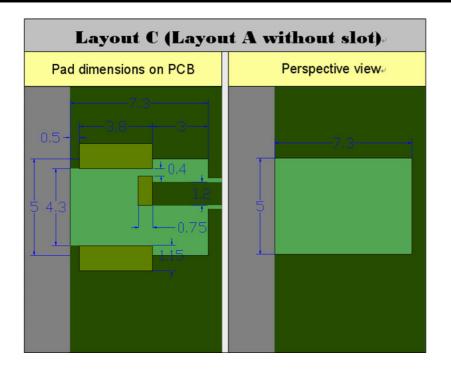
PCB pad dimensions

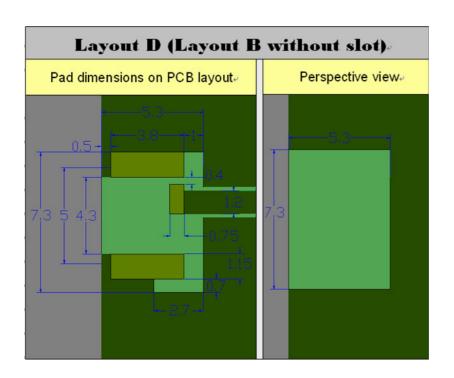
Terminal name	Terminal Dimensions
Pad (Feed)	1.65 X 0.75
Pad (GND)	3.8 X 1.15
Pad (GND)	3.8 X 1.15

Antenna pad dimensions

Term	inal name	Terminal Dimensions
	Feed	1.1 X 0.55
	GND	3.7 X 0.45
	GND	3.7 X 0.45

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DESIGNED BY:謝立庭して	APPROVED BY:蘇志銘 [™] つ			
TITLE: ACA-5036-A2-CC-S Specification		DOCUMENT	ENS000023010	SPEC REV.
TITLE: AGA-3030-AZ-GG-3 Specification		NO.	L143000023010	A6

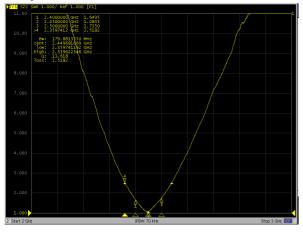




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$X=\pm$ $X.X=\pm$	X.XX =	G ₂	INPAQ TECHNOLOGY CO)., LTD.
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DESIGNED BY:謝立庭	APPROVED BY:蘇志銘 ^下 っ	APPARATUS OR DEVICES WITHOUT PERMISSION		
TITLE: ACA-5036-A2-CC-S Specification		DOCUMENT	ENS000023010	SPEC REV.
THEE I AGA GOOD AL GO	o opcomodition	NO.	LN3000023010	A6

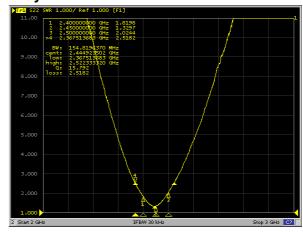
6. Electrical Characteristics:

Layout A: VSWR



Mark	Frequency	VSWR
1	2400 MHz	1.65
2	2450 MHz	1.08
3	2500 MHz	1.73

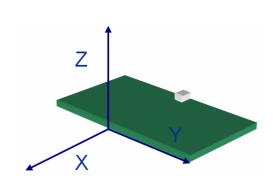
Layout B: VSWR



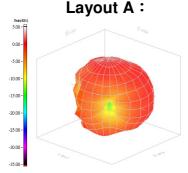
Mark	Frequency	VSWR
1	2400 MHz	1.82
2	2450 MHz	1.33
3	2500 MHz	2.02

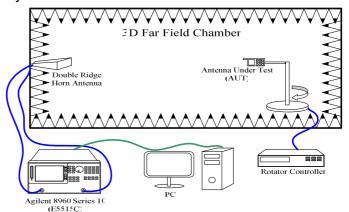
Radiation Pattern

The Gain pattern is measured in INPAQ's FAR-field chamber. DUT is placed on the table of rotator, a standard horn antenna and Vector Network Analyzer is used to collect data.



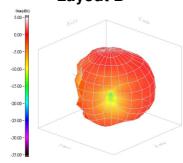
3D Gain Pattern (2450 MHz)





3D Chamber Definition

Layout B:



UNLESS OTHER SPECI	FIED TOLERANCES ON:	
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ANGLES=±	HOLEDIA=±	
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TITLE: ACA-5036-A2-CC-S Specification



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DOCUMENT	ENS000023010
NO.	EN3000023010

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SPEC REV.

X-Y Plane X-Z Plane Layout A Layout A - Layout B Layout B 330 330 0 --5 -5 -10 -10 -300 -15 -15 -20 -20 -25 -25 -30 270 -30 -25 -25 -20 -20 -15 -15 -10 -10 --5 -5 0 -0 -210 180 180 Y-Z Plane Layout A 0 Layout B 330 0 --5 --10 -300 -15 -20 -25 -30 -25 -20 -15 240 -10 --5 -UNLESS OTHER SPECIFIED TOLERANCES ON: INPAQ TECHNOLOGY CO., LTD. $X = \pm$ $X.X=\pm$ X.XX =ANGLES=± **HOLEDIA**=± SCALE: ----UNIT: mm THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF DRAWN BY: 吳爲盛 📈 CHECKED BY:楊奇峯^{ヒーハッ}ჽ **APPARATUS OR DEVICES WITHOUT PERMISSION** DESIGNED BY:謝立庭して APPROVED BY:蘇志銘 ̄つ **DOCUMENT** SPEC REV.

TITLE: ACA-5036-A2-CC-S Specification

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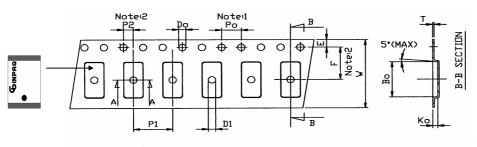
ENS000023010

NO.

7. Taping Package and Label Marking: (unit: mm)

(1) Quantity/Reel: 2000pcs/Reel

(2) Carrier tape dimensions



Symbol	Spec.
Ро	4.00±0.1
P1	8.00±0.1
P2	2.00±0.05
Do	1.55±0.05
D1	1.50(MIN)
Е	1. 75±0. 1
F	5.50±0.05
10Po	40.00±0.2
W	12.00±0.1
T	0. 25±0. 05

 $A0 = 4.10 \pm 0.10$ mm

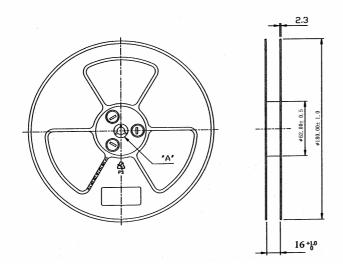
 $B0 = 5.60 \pm 0.10$ mm

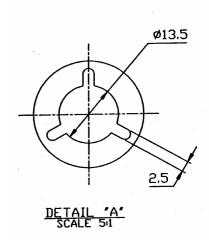
K0=<u>1.02+0.10</u> mm

Notice:

- 1. 10 Sprocket hole pitch cumulative tolerance is ±0.1mm
- Pocket position relative to sprocket hole measured as true position of pocket not pocket hole.
 Ao & Bo measured on a place 0.3mm above the boltom of the pocket to top surface of the carrier.
- Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
- Carrier camber shall be not than 1mm per 100mm through a length of 250mm.

(3) Taping reel dimensions





UNLESS OTH	ER SPECIFIEI	D TOLERANCES ON :	
$X = \pm$	$X.X = \pm$	X.XX =	
ANGLES=±		HOLEDIA=±	
SCALE:		UNIT : mm	THIS
DRAWN BY:	吳爲盛년	CHECKED BY:楊奇峯ँँँँ	INPAQ USED
DESIGNED BY	/:謝立庭して	APPROVED BY:蘇志銘 ^{万つ}	APPAF
TITLE : ACA	-5036-A2-C0	C-S Specification	DOCU
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UMENT ENS000023010 NO.

SPEC REV. **A6**

8. Environmental Characteristics

(1) Reliability Test

Item	Condition	Specification
Thermal shock	 30±3 minutes at -40 °C±5 °C, Convert to +105 °C (5 minutes) 30±3 minutes at +105 °C±5 °C, Convert to -40 °C (5 minutes) Total 100 continuous cycles 	No apparent damage Fulfill the electrical spec. after test.
Humidity resistance	 Humidity: 85% R.H. Temperature: 85±5°C Time: 1000 hours. 	No apparent damage Fulfill the electrical spec. after test.
High temperature resistance	 Temperature: 150 ℃±5 ℃ Time: 1000 hours. 	No apparent damage Fulfill the electrical spec. after test.
Low temperature resistance	 Temperature: -40 ℃±5 ℃ Time: 1000 hours. 	No apparent damage Fulfill the electrical spec. after test.
Soldering heat resistance	 Solder bath temperature : 260±5°C Bathing time: 10±1 seconds 	No apparent damage
Solderability	The dipped surface of the terminal shall be at least 95% covered with solder after dipped in solder bath of 245±5℃ for 3±1 seconds.	No apparent damage

(2) Storage condition

(a) At warehouse:

The temperature should be within $0 \sim 30^{\circ}\text{C}$ and humidity should be less than 60% RH. The product should be used within 1 year from the time of delivery.

(b) On board:

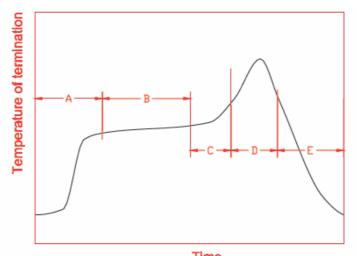
The temperature should be within -40~85°C and humidity should be less than 85% RH.

(3) Operating temperature range

Operating temperature range : -40°C to +105°C.

UNLESS OTHER SPECIFIED TOLERANCES ON:				
$X=\pm$ $X.X=\pm$	X.XX =	(5	INPAQ TECHNOLOGY CO)., LTD.
ANGLES=±	HOLEDIA=±			
SCALE: UNIT: mm THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF				
DRAWN BY:吳爲盛ばฝ CHECKED BY:楊奇峯 ^に ‴ δ		INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF		
DESIGNED BY:謝立庭し APPROVED BY:蘇志銘 APPARATUS OR DEVICES WITHOUT PERMISSION				
TITLE: ACA-5036-A2-CC-S Specification		DOCUMENT	ENS000023010	SPEC REV.
		NO.	L145000025010	A6

9. Recommended reflow soldering



Time The normal to Preheating 1st rising temperature 30s to 60s temperature В Preheating 140°C to 160°C 60s to 120s 2nd rising temperature Preheating to 200°C С 20s to 40s 50s∼60s if 220°C if 230°C 40s~50s if 240°C 30s~40s D Main heating 20s~40s if 250°C if 260°C 20s~40s 200°C to 100°C 1°C/s ~ 4°C/s Regular cooling

(1) Soldering gun procedure

Note the follows, in case of using solder gun for replacement.

- (a) The tip temperature must be less than 350°C for the period within 3 seconds by using soldering gun under 30 W.
- (b) The soldering gun tip shall not touch this product directly.

(2) Soldering volume

Note that excess of soldering volume will easily get crack the body of this product.

UNLESS OTHER SPECIFIED TOLERANCES ON:				
$X=\pm$ $X.X=\pm$	X.XX =	(Ja	INPAQ TECHNOLOGY CO)., LTD.
ANGLES=±	HOLEDIA=±			
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DRAWN BY:吳爲盛ばぬ CHECKED BY:楊奇峯だげる		INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF		
DESIGNED BY:謝立庭して	APPROVED BY:蘇志銘 ^下 つ	APPARATUS OR DEVICES WITHOUT PERMISSION		
TITLE: ACA-5036-A2-CC-S Specification		DOCUMENT	ENS000023010	SPEC REV.
TITLE: ACA-5036-AZ-CC-5 Specification		NO.	LN3000023010	A6

^{*}reference: J-STD-020C



Test Report 測試報告

: TWNC00618628S1 Number

報告號碼

Applicant 申請廠商: Inpaq Technology Co.,Ltd. : Jul 27, 2017 Date 日期

No. 11, Ke-Yi St.,

This is to supersede Chunan, Miaoli, Taiwan, R.O.C. Report No. TWNC00618628

Dated Jul 12, 2017

此份報告取代報告號碼 TWNC00618628

日期 2017 年 7 月 12 日

Sample Description 樣品敘述:

One (1) group of submitted samples said to be:

以下測試樣品乃供應商所提供及確認:

Sample Description : ACA 5036 Series, ACD 5036 Series, ACK 5036 Series, ACL 5036 Series,

樣品名稱 ACM3 5036 Series, ACM4 5036 Series

Date Sample Received : Jul 05, 2017

收件日期

Date Test Started : Jul 05, 2017

開始測試日期

Test Conducted 測試執行:

As requested by the applicant, for details please refer to attached pages.

依申請商之要求,細節請參考附頁.

Authorized by:

On Behalf of Intertek Testing Service

Taiwan Limited

Matt Wang Sr. Manager









: TWNC00618628S1

Test Conducted 測試內容:

Test Result Summary 測試結果:

Tese Result Summary Ashruman i	1	T		1
<u>Test Item</u> <u>測試項目</u>	<u>Unit</u> 單位	<u>Test Method</u> <u>測試方法</u>	Result 結果 Black/off-white electronic component (mixed all parts)	<u>RL</u>
Heavy Metal 重金屬		,	l	
Cadmium (Cd) Content 鎘含量	ppm	With reference to IEC 62321-5: 2013, by microwave or acid digestion and determined by ICP-OES. 参考 IEC 62321-5: 2013,以微波或酸液消化法消化樣品並用感應耦合電漿原子發射光譜儀分析。	ND	2
Lead (Pb) Content 鉛含量	ppm	With reference to IEC 62321-5: 2013, by microwave or acid digestion and determined by ICP-OES. 参考 IEC 62321-5: 2013,以微波或酸液消化法消化樣品並用感應耦合電漿原子發射光譜儀分析。	ND	2
Mercury (Hg) Content 汞含量	ppm	With reference to IEC 62321-4: 2013, by microwave or acid digestion and determined by ICP-OES. 参考 IEC 62321-4: 2013,以微波或酸液消化法消化樣品並用感應耦合電漿原子發射光譜儀分析。	ND	2
Chromium VI (Cr ⁶⁺) Content 六價鉻含量	ppm	With reference to IEC 62321-7-2: 2017, organic solvent was used to dissolve or swell sample matrix, followed by alkaline digestion and determined by UV-Vis Spectrophotometer. 参考 IEC 62321-7-2:2017,以有機溶劑溶解或使樣品基質膨脹,再進行鹼液消化,用紫外光-可見光分光光度計分析。	ND	8







: TWNC00618628S1

Test Conducted 測試內容:

Test Item			<u> </u>	Result 結果	
Polybrominated Biphenyls (PBBs) 多溴蘇苯	Test Item	Unit	Test Method	·	
Polybrominated Biphenyls (PBBs) 多溴聯苯				-	<u>RL</u>
Polybrominated Biphenyls (PBBs) 多漢聯苯	<u>例此有口</u>	<u> </u>	(別成)(公	· · · · · · · · · · · · · · · · · · ·	
Monobrominated Biphenyls (DiBB) 三溴聯苯	Dolyhrominatod Binhonyle (DDI	 	<u> </u> & -1st:	(Illixed all parts)	
MonoBB 單溴聯苯)5 <i>) </i>	[本 		
Dibrominated Biphenyls (DiBB) 三溴聯苯 Dpm (TriBDB) 三溴聯苯 Dpm (TetraBDB) 三溴酚苯 Dpm (TetraBB) 四溴酚苯 Dpm (TetraBB) 四溴酚苯 Dpm (TextaBB) 四溴酚苯 Dpm (TextaBB) 四溴酚苯 Dpm (TextaBB) 四溴酚苯 Dpm (TextaBB) 五溴酚苯 Dxpm (DxtaBB) 九溴酚苯 Dxpm (DxtaBB) 九溴酚苯 Dxpm (DxtaBB) 九溴酚苯 Dxpm (DxtaBB) 12 Dxpm (DxtaBB) 12 Dxpm (DxtaBB) 12 Dxpm (DxtaBB) 12 Dxpm (DxtaBB) Dxpm (DxtaBBB) Dxpm (DxtaBBB) Dxpm (DxtaBBB) Dxpm (DxtaBBB) Dxpm (DxtaBBB (DxtaBBBB) Dxpm (DxtaBBBB (DxtaBBBBBB (DxtaBBBBBBB (DxtaBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB		ppm		ND	5
Collaby 決勝本 Child Chi	Dibrominated Biphenyls	nnm		ND	Г
Titles	(DiBB) 二溴聯苯	ррпп		ND	5
Circinab 三溴聯苯		ppm		ND	5
TetraBB 四溴聯苯	(TriBB) 二溴聯本	FF			
Pentabrominated Biphenyls (PentaBB) 五溴聯苯 ppm (Hexabrominated Biphenyls (HexaBB) 六溴聯苯 ppm (Heptabrominated Biphenyls (HeptaBB) 七溴聯苯 ppm (Octabrominated Biphenyls (OctaBB) 八溴聯苯 ppm (Nonabrominated Biphenyls (NonaBB) 九溴聯苯 ppm Nonabrominated Biphenyl (DecaBB) 十溴聯苯 ppm Nonabrominated Diphenyl Ethers (MonoBDE) 單溴聯苯醚 ppm Nonbrominated Diphenyl Ethers (MonoBDE) 型溴聯苯醚 ppm Nobrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚 Ppm Nobrominated Diphenyl Ethers (PBDE) 2溴聯苯醚 ppm Nobrominated Diphenyl Ethers (PBDE) 23, 为为以为以为以为以为以为以为以为以为以为以为以为以为以为以为以为以为以为以为		ppm		ND	5
(PentaBB) 五溴聯苯			further HPLC-DAD confirmation		
Hexabrominated Biphenyls (HexaBB) 六溴聯苯		ppm		ND	5
Heptabrominated Biphenyls ppm	Hexabrominated Biphenyls	nnm	參考 IEC 62321-6: 2015,以溶	ND	5
(HeptaBB) 七溴聯苯 ppm		ррііі	劑萃取並用氣相層析質譜儀分	IND	J
Cotabrominated Biphenyls		ppm		ND	5
ND S Nonabrominated Biphenyls ND S					
Nonabrominated Biphenyls (NonaBB) 九溴聯苯		ppm	成(C) 人	ND	5
(NonaBB) 九溴聯苯				ND	-
DecaBB 十溴聯苯		ppm		ND	5
Polybrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚		nnm		ND	5
Monobrominated Diphenyl Ethers (MonoBDE) 單溴聯苯醚				ND	<u> </u>
MonoBDE 單溴聯苯醚		's (PBDE	5) 多溴聯苯醚		
Dibrominated Diphenyl Ethers (DiBDE) 二溴聯苯醚		ppm		ND	5
DiBDE 二溴聯苯醚					
Tribrominated Diphenyl Ethers (TriBDE) 三溴聯苯醚ppmWith reference to IEC 62321- 6: 2015, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary.ND5PentaBDE) 五溴聯苯醚ppmND5Hexabrominated Diphenyl Ethers (HexaBDE) 六溴聯苯醚ppmND5HeptaBDE) 七溴聯苯醚ppmMD5Octabrominated Diphenyl Ethers (OctaBDE) 八溴聯苯醚ppmND5Octabrominated Diphenyl Ethers (NonaBDE) 九溴聯苯醚ppmND5ND5ND5ND5ND5		ppm		ND	5
Contaborominated Diphenyl Ethers (HeptaBDE) 八溴聯苯醚	Tribrominated Diphenyl Ethers		1	ND	Г
(TetraBDE) 四溴聯苯醚ppmPentabrominated Diphenyl Ethers (PentaBDE) 五溴聯苯醚ppmHexabrominated Diphenyl Ethers (HexaBDE) 六溴聯苯醚ppmHeptabrominated Diphenyl Ethers (HeptaBDE) 七溴聯苯醚ppmOctabrominated Diphenyl Ethers (OctaBDE) 八溴聯苯醚ppmND5	(TriBDE) 三溴聯苯醚	ррпп		ND	5
Contable 四溴聯苯醚		ppm	6: 2015, by solvent extraction	ND	5
(PentaBDE) 五溴聯苯醚ppmwhen necessary.ND5Hexabrominated Diphenyl Ethers (HexaBDE) 六溴聯苯醚ppm参考 IEC 62321-6: 2015,以溶劑萃取並用氣相層析質譜儀分析,必要時會以高效液相層析儀光二極體陣列偵測儀進行確認。ND5Octabrominated Diphenyl Ethers (OctaBDE) 八溴聯苯醚ppmND5Nonabrominated Diphenyl Ethers (NonaBDE) 九溴聯苯醚ppmND5Decabrominated Diphenyl Ethers (NonaBDE) 九溴聯苯醚ppmND5		PP	and determined by GC-MS and		
Hexabrominated Diphenyl Ethers (HeptaBDE) 六溴聯苯醚		ppm		ND	5
(HexaBDE) 六溴聯苯醚ppm劑萃取並用氣相層析質譜儀分析,必要時會以高效液相層析儀光二極體陣列偵測儀進行確認。HeptaBDE) 七溴聯苯醚ppm板,必要時會以高效液相層析儀光二極體陣列偵測儀進行確認。OctaBDE) 八溴聯苯醚ppmND5Nonabrominated Diphenyl Ethers (NonaBDE) 九溴聯苯醚ppmND5Decaprominated Diphenyl EtherppmND5			參考 IEC 62321-6: 2015,以溶 劑萃取並用氣相層析質譜儀分 析,必要時會以高效液相層析 儀光二極體陣列偵測儀進行確		_
Heptabrominated Diphenyl Ethers (HeptaBDE) 七溴聯苯醚ppm析,必要時會以高效液相層析 儀光二極體陣列偵測儀進行確ND5Octabrominated Diphenyl Ethers (Nonabrominated Diphenyl Ethers (NonaBDE) 九溴聯苯醚ppmND5Decaprominated Diphenyl Ether (Nonabrominated Diphenyl Ethers (Nonabrominated Diphenyl Ethers (Nonabrominated Diphenyl EthersppmND5	(HexaBDE) 六溴聯苯醚	ppm		ND	5
(HeptaBDE) 七溴聯苯醚 ppm Octabrominated Diphenyl Ethers (OctaBDE) 八溴聯苯醚 ppm Nonabrominated Diphenyl Ethers (NonaBDE) 九溴聯苯醚 ppm Decahrominated Diphenyl Ethers ppm	Heptabrominated Diphenyl Ethers	ppm		ND	Е
(OctaBDE) 八溴聯苯醚	(HeptaBDE) 七溴聯苯醚			NU	<u> </u>
Nonabrominated Diphenyl Ethers Nonabrominated Diphenyl Ethers Nonabrominated Diphenyl Ethers Nonabrominated Diphenyl Ether Nonabrominated Diphenyl		ppm		ND	5
(NonaBDE) 九溴聯苯醚 Ppm Decahrominated Diphenyl Ether		PP			
Decahrominated Diphenyl Ether	. ,	ppm		ND	5
	Decabrominated Diphenyl Ether				
Decable of militated Dipiterly Ether ppm ND 5		ppm		ND	5





11492 台北市內湖區瑞光路 423 號 8 樓



: TWNC00618628S1

Test Conducted 測試內容:

			Result 結果	
<u>Test Item</u>	<u>Unit</u>	Test Method	Black/off-white electronic	<u>RL</u>
測試項目	單位	<u>測試方法</u>	component	<u>1XE</u>
			(mixed all parts)	
Phthalates 鄰苯二甲酸酯				
Di(2-ethylhexyl) Phthalate (DEHP) 鄰苯二甲酸二(2-乙基己基)酯	ppm	With reference to IEC 62321-8:2017, by solvent extraction and determined by GC-MS. 参考 IEC 62321-8:2017,以溶 劑萃取並用氣相層析質譜儀分析。	ND	50
Dibutyl Phthalate (DBP) 鄰苯二甲酸二丁酯	ppm		ND	50
Benzyl Butyl Phthalate (BBP) 鄰苯二甲酸苯基丁酯	ppm		ND	50
Di-(Iso-Nonyl) Phthalate (DINP) 鄰苯二甲酸二異壬酯	ppm		ND	50
Diisobutyl Phthalate (DIBP) 鄰苯二甲酸二異丁酯	ppm		ND	50
Halogen Content 鹵素含量				
Fluorine (F) 氟	ppm	With reference to EN 14582:2016 by combustion bomb with oxygen and determined by Ion Chromatography. 参考 EN 14582:2016,以氧彈 燃燒集氣法並用離子層析儀分析。	ND	50
Chlorine (CI) 氯	ppm		ND	50
Bromine (Br) 溴	ppm		ND	50
Iodine (I) 碘	ppm		ND	50
Others 其他				
Hexabromo cyclododecane (HBCDD) 六溴環十二烷	ppm	With reference to USEPA 3540C, by solvent extraction and determined by GC-MS. 参考 USEPA 3540C,以溶劑萃取並用氣相層析質譜儀分析。	ND	10

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg

備註

百萬分之一,依據測試樣品重量計算 = 毫克/公斤

ND = Not detected 未檢測出

RL = Reporting limit, quantitation limit of analyte in sample

報告極限,測試樣品之定量偵測極限

Responsibility of Chemist 分析人員 : Pelny Hsiao/ Vita Fu

Date Sample Received 樣品收件日期 : Jul 05, 2017

Test Period 樣品測試期間 : Jul 05, 2017 to Jul 12, 2017







Number

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報告號碼

Test Conducted 測試內容:

RoHS Limit RoHS 限值

Restricted Substances 限用物質	<u>Limits 限值</u>
Cadmium (Cd) content 鎘含量	0.01% (100ppm)
Lead (Pb) content 鉛含量	0.1% (1000ppm)
Mercury (Hg) content 汞含量	0.1% (1000ppm)
Chromium VI (Cr ⁶⁺) content 六價鉻含量	0.1% (1000ppm)
Polybrominated Biphenyls (PBBs) 多溴聯苯	0.1% (1000ppm)
Polybrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚	0.1% (1000ppm)
Di(2-ethylhexyl) Phthalate (DEHP) 鄰苯二甲酸二(2-乙基己基)酯	0.1% (1000ppm)
Dibutyl Phthalate (DBP) 鄰苯二甲酸二丁酯	0.1% (1000ppm)
Benzyl Butyl Phthalate (BBP) 鄰苯二甲酸苯基丁酯	0.1% (1000ppm)
Diisobutyl Phthalate (DIBP) 鄰苯二甲酸二異丁酯	0.1% (1000ppm)

The limits were quoted from Annex II of 2011/65/EU and Amendment (EU) 2015/863 for homogeneous material. 本限值是依據歐盟指令 2011/65/EU 及其更新指令(EU) 2015/863 之附錄二針對均質材質所訂定。







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Test Conducted 測試內容:

Measurement Flowchart 測試流程圖:

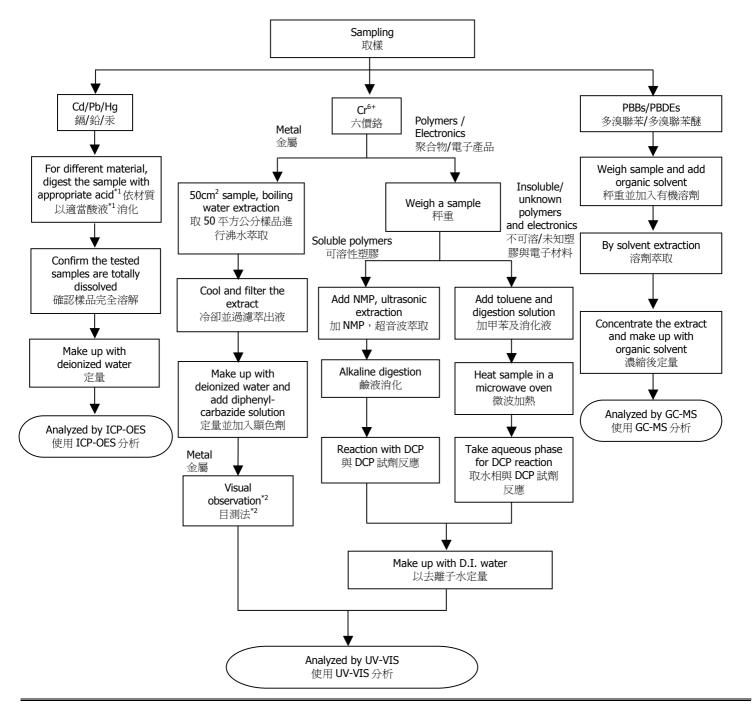
Test for Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Content RoHS 六項測試

Reference Method 參考方法: Cd/Pb: IEC 62321-5:2013; Hg: IEC 62321-4:2013;

Chromium (VI): IEC 62321-7-1:2015 (boiling water extraction);

Chromium (VI): IEC 62321-7-2:2017 (solvent and alkaline extraction);

PBBs/PBDEs: IEC 62321-6:2015











Number

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報告號碼

Test Conducted 測試內容:

Remarks 備註:

*1: List of Appropriate Acid 各材質添加酸液如下表:

or rippropriate read Englishment (Chin)		
Material 材質	Acid Added for Digestion 添加酸液種類	
Polymers 聚合物	$HNO_{3,}HCI,HF,H_2O_{2,}H_3BO_3$ 硝酸、鹽酸、氫氟酸、雙氧水、硼酸	
Metals 金屬	HNO _{3,} HCI,HF 硝酸、鹽酸、氫氟酸	
Electronics 電子產品	HNO _{3,} HCl,H ₂ O _{2,} HBF ₄ 硝酸、鹽酸、雙氧水、氟硼酸	

*2: If sample solution is significantly more intense than $0.13 \ \mu g/cm^2$ equivalent comparison standard, Chromium VI would be determined as detected, the result of visual observation is positive.

當待測樣品溶液顏色明顯比 0.13 μg/cm² 深,採用目測法判定六價鉻結果爲陽性。





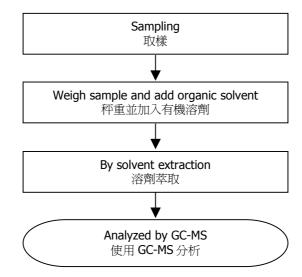


: TWNC00618628S1

Test Conducted 測試內容:

Measurement Flowchart 測試流程圖:

Test for Phthalates Content 鄰苯二甲酸酯測試 Reference Method 參考方法: IEC 62321-8:2017







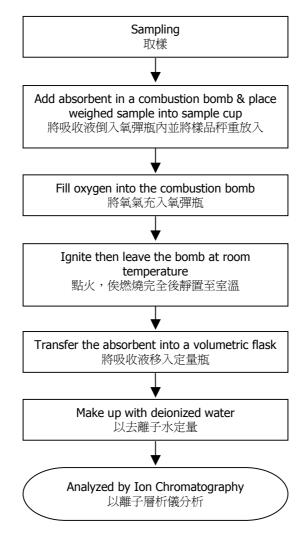


: TWNC00618628S1

Test Conducted 測試內容:

Measurement Flowchart 測試流程圖:

Test for Halogen Content 鹵素測試 Reference Method 參考方法: EN 14582







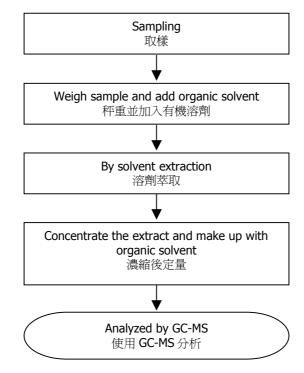


: TWNC00618628S1

Test Conducted 測試內容:

Measurement Flowchart 測試流程圖:

Test for Hexabromocyclododecane (HBCDD) Content 六溴環十二烷 Reference Method 參考方法: USEPA 3540C



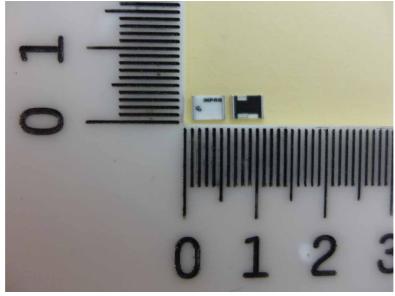






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End of Report

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