

产品规格书

SPECIFICATION

客户：瑞科科技(深圳)有限公司

CUSTOMER: Rakoit Technology (SZ) Co., Ltd.

产品名称：2.4G黑色外置108MM可折叠天线

Product Name: 2.4G black external 108MM folding antenna

供应商：深圳市扬成通信天线有限公司

SUPPLIER NAME: Shenzhen YANGCHENG Communication Antenna CO., LTD

供 应 商 物 料 编 码：YCR-1010-2

Material code: YCR-1010-2

日期：2023.1.12

DATE: 2023.1.12

| 供应商 SUPPLIER | | |
|-------------------|------------------|-------------------|
| 拟制 PREPARED BY | 审核 CHECKED BY | 批准 APPROVED BY |
| | | |

| 客户 CUSTOMER | | |
|-------------------|------------------|-------------------|
| 承认 ACCEPTED BY | 审核 CHECKED BY | 批准 APPROVED BY |
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Address: 2F, No.2 Yungu Street, Yuanshan Street, Longgang District, Longgang District, Shenzhen

ADD:

电话/Telephone Tel:13510698462

Http:

修订履历 REVISION HISTORY

[illegible]

目录

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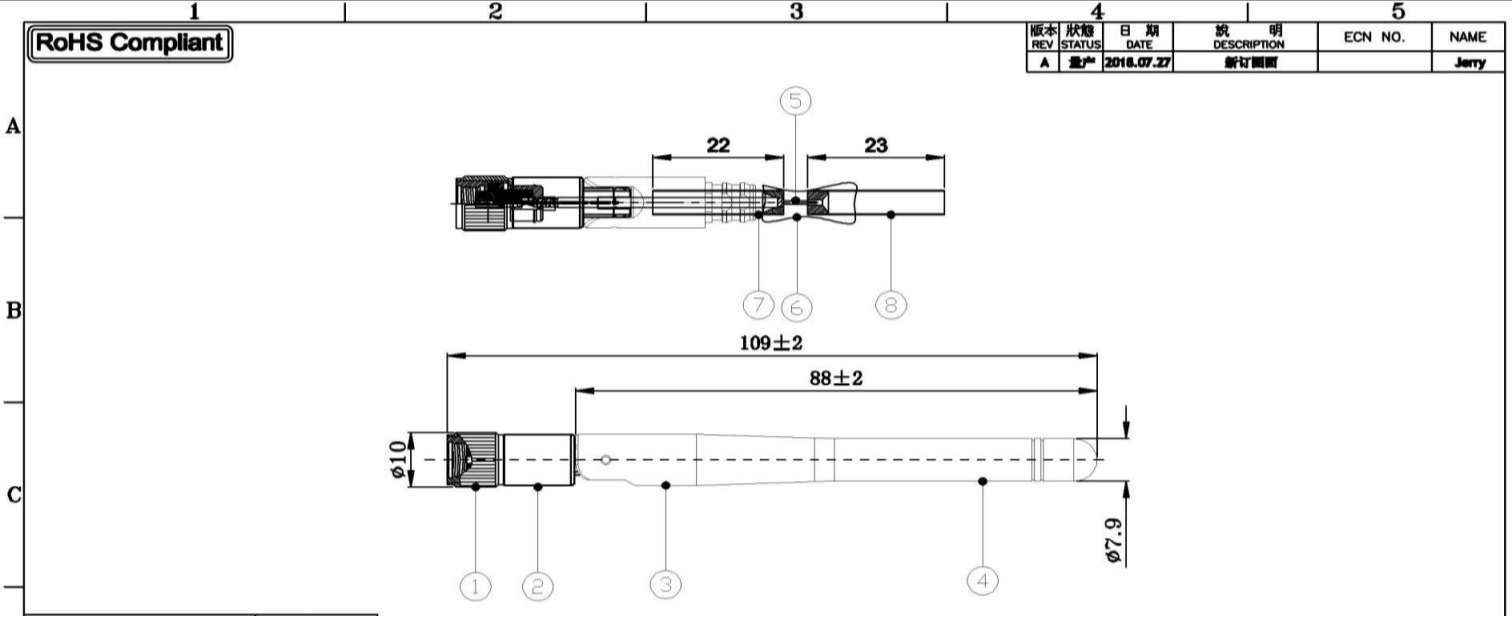
四.产品参数/ Product parameters

2.4G橡胶天线/2.4G rubber antenna

| 表1 | | | |
|-------|---------------------------------------|----------------------------|------------------------------------------------------------|
| NO | 项目 Project | 特性/ Features | 实验室允许附加误差/ Additional errors are allowed in the laboratory |
| 4.1.1 | 接收频率范围 Receiving frequency range | 2.4G-2.5G | — |
| 4.1.2 | 电压驻波比/ Voltage standing wave ratio | 对比波形/ Contrast waveform | — |
| 4.1.3 | 方向性/ directionality | Omni-directional | — |
| 4.1.4 | Radiating element | 1/4 Ware Helical | — |
| 4.1.5 | 线化方式/ Linear mode | Linear Vertical | — |
| 4.1.6 | 功率/ power | 1W | — |
| 4.1.7 | 特性阻抗/ Characteristic impedance | 50 OHM | — |
| 4.1.8 | 接头型号/ Type of joint | SMA | — |
| 4.1.9 | 重量/ weight | 7.57g | ±0.3g |

五.工程图/ Engineering drawing

2.4G橡胶天线/2.4G rubber antenna



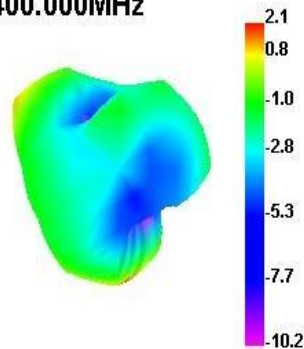
RoHS Compliant

| 版本 REV | 状态 STATUS | 日期 DATE | 说明 DESCRIPTION | ECN NO. | NAME |
|-----------|--------------|------------|-------------------|---------|-------|
| A | 量产 | 2018.07.27 | 新订图面 | | Jerry |

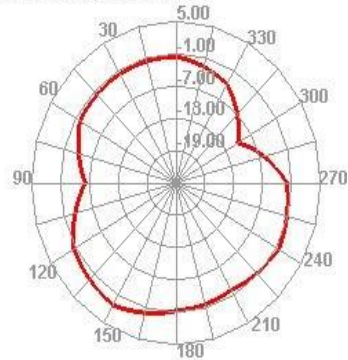
六：暗室测试报告/ Anechoic chamber test report

| Passive Test For 2400-2500 | | | | | | | | | |
|----------------------------|----------|-----------|------------|---------|---------|----------|----------|-------------|-------------|
| Freq (MHz) | Effi (%) | Effi (dB) | Gain (dBi) | UHS (%) | DHS (%) | Max (dB) | Min (dB) | Attenut Hor | Attenut Ver |
| 2400 | 62.4 | -2.05 | 2.06 | 26.7 | 35.695 | 2.06 | -10.16 | 48.55 | 48.51 |
| 2410 | 62 | -2.08 | 1.81 | 26.8 | 35.218 | 1.81 | -9.81 | 48.59 | 48.53 |
| 2420 | 56.2 | -2.5 | 1.17 | 24.5 | 31.7 | 1.17 | -10.26 | 48.73 | 48.42 |
| 2430 | 53.4 | -2.73 | 0.73 | 23.7 | 29.639 | 0.73 | -10.6 | 48.44 | 48.12 |
| 2440 | 60.9 | -2.16 | 1.05 | 27.6 | 33.234 | 1.05 | -9.96 | 48.55 | 48.21 |
| 2450 | 64.7 | -1.89 | 1.02 | 30 | 34.742 | 1.02 | -9.68 | 48.76 | 48.47 |
| 2460 | 60.5 | -2.19 | 0.47 | 28.6 | 31.893 | 0.47 | -10.02 | 49.04 | 48.68 |
| 2470 | 57.3 | -2.42 | 0.19 | 27.4 | 29.903 | 0.19 | -10.08 | 48.91 | 48.68 |
| 2480 | 63.6 | -1.97 | 0.57 | 30.8 | 32.767 | 0.57 | -9.97 | 48.86 | 48.43 |
| 2490 | 73.2 | -1.35 | 1.21 | 36 | 37.26 | 1.21 | -9.61 | 49.07 | 48.72 |
| 2500 | 69.7 | -1.57 | 1.06 | 34.7 | 35.013 | 1.06 | -10.33 | 49.21 | 48.76 |

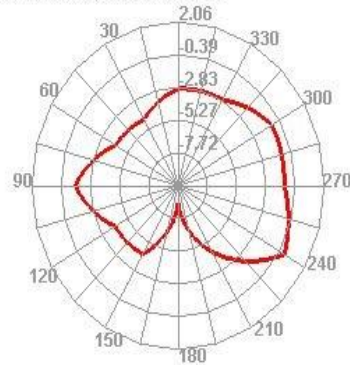
2400.000MHz



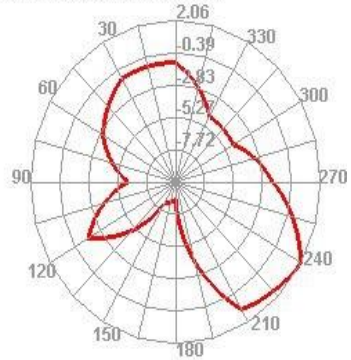
2400.000MHz H



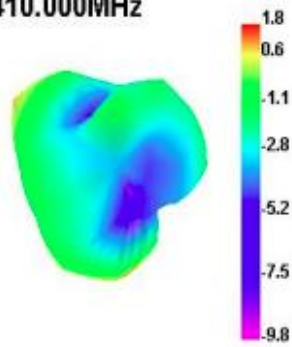
2400.000MHz E1



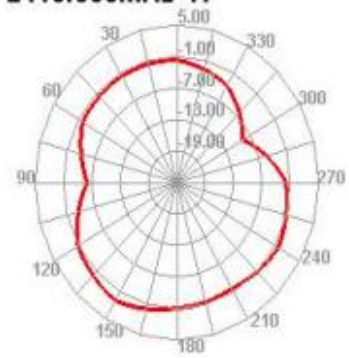
2400.000MHz E2



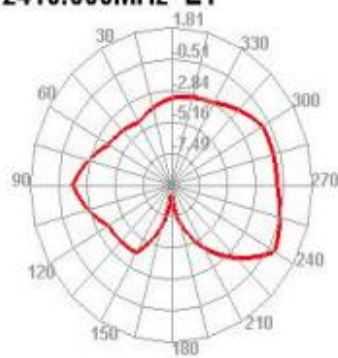
2410.000MHz



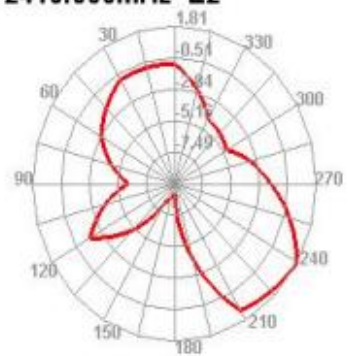
2410.000MHz H



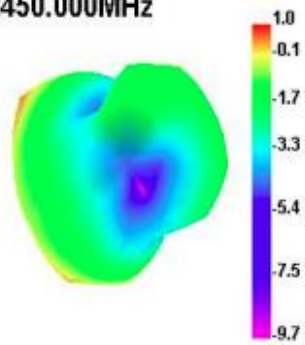
2410.000MHz E1



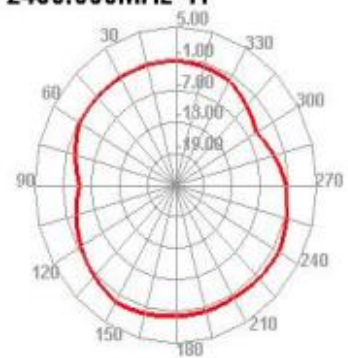
2410.000MHz E2



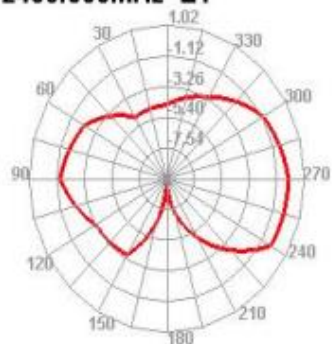
2450.000MHz



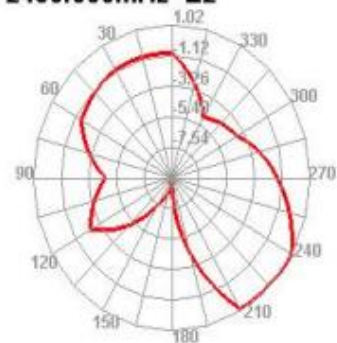
2450.000MHz H



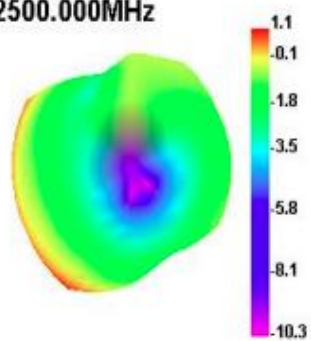
2450.000MHz E1



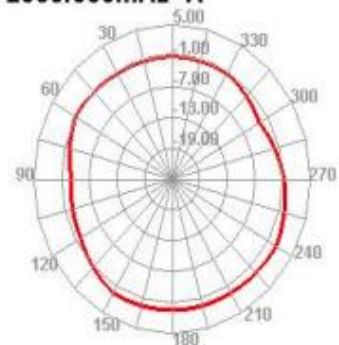
2450.000MHz E2



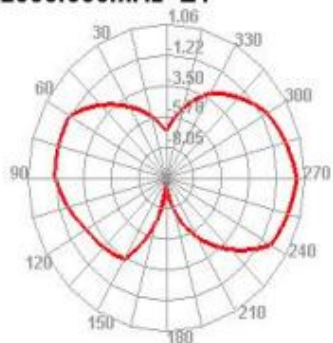
2500.000MHz



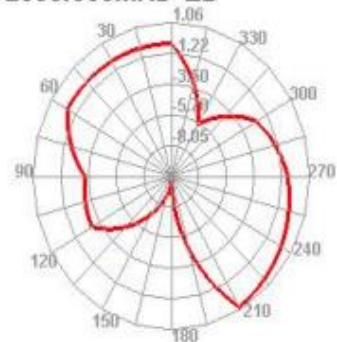
2500.000MHz H



2500.000MHz E1



2500.000MHz E2



十.包装说明报告

PE包装袋 天线100PCS/包、馈线 200PCS/包；

PE bag antenna 100PCS/ package, feeder 200PCS/ package;

外包装标签上须含有以下信息：供应商名称、客户料号、物料名称、RoHS标签、包装数量、生产日期

The outer package label shall contain the following information: supplier name, customer part number, material name, RoHS label, package quantity, production date

Package by PE bags, Antenna 100PCS/ bag, Feeder line200PCS/ bag;

The carton label shall contain the following information: supplier name, customer material number,

1.供方所提供样品及量产物料均需满足上述技术要求

1. Product samples provided by the supplier and the amount of material must meet the technical requirements

2.每页及所有附件每一页均需加盖供方公章确认

2. Each page and all the attachments were confirmed need official seal of the supplier

3.每项页数不够填写时供方可以自行增加

3. Each page not enough to fill out,the supplier can increase on its own

4.技术规格书必须于试产前提供，且需作为物料承认的基本条件

4. Technical specification must be provided prior to trial production, and need to be admitted as the basic condition material

十一：环境测试报告



Test Report

No. SHAEC1811665907

Date: 05 Jun 2018

Page 1 of 4

SUZHOU SHENG FU TECH METAL MATERIALS CO.,LTD
DEV.ZONE,SHAXI TOWN,TAICANG CITY,SUZHOU JIANGSU CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : BRASS METAL

SGS Job No. : SP18-018263 - SUZ
Model No. : C3604
Date of Sample Received : 01 Jun 2018
Testing Period : 01 Jun 2018 - 05 Jun 2018
Test Requested : Selected test(s) as requested by client.
Test Method : Please refer to next page(s).
Test Results : Please refer to next page(s).
Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Dora Hu

Dora Hu
Approved Signatory



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Test Report

No. SHAEC1811665907

Date: 05 Jun 2018

Page 2 of 4

Test Results :

Test Part Description :

| Specimen No. | SGS Sample ID | Description |
|--------------|------------------|--------------|
| SN1 | SHA18-116659.004 | Yellow metal |

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+AMD1:2017, IEC62321-5:2013 and IEC62321-7-1:2015, analyzed by ICP-OES, AAS and UV-Vis .

| Test Item(s) | Limit | Unit | MDL | 004 |
|-------------------------------|-------|--------------------|------|--------|
| Cadmium (Cd) | 100 | mg/kg | 2 | 5 |
| Lead (Pb) | 1000 | mg/kg | 2 | 19872▲ |
| Mercury (Hg) | 1000 | mg/kg | 2 | ND |
| Hexavalent Chromium (Cr(VI))▼ | - | µg/cm ² | 0.10 | ND |

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼ = a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm².
The sample coating is considered to contain CrVI
b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.
- (3) ▲ According to the declaration from the client, Lead (Pb) in No.004 is exempted by EU RoHS directive 2011/65/EU based on [ANNEX III 6(c)]: Copper alloy containing up to 4 % lead by weight.



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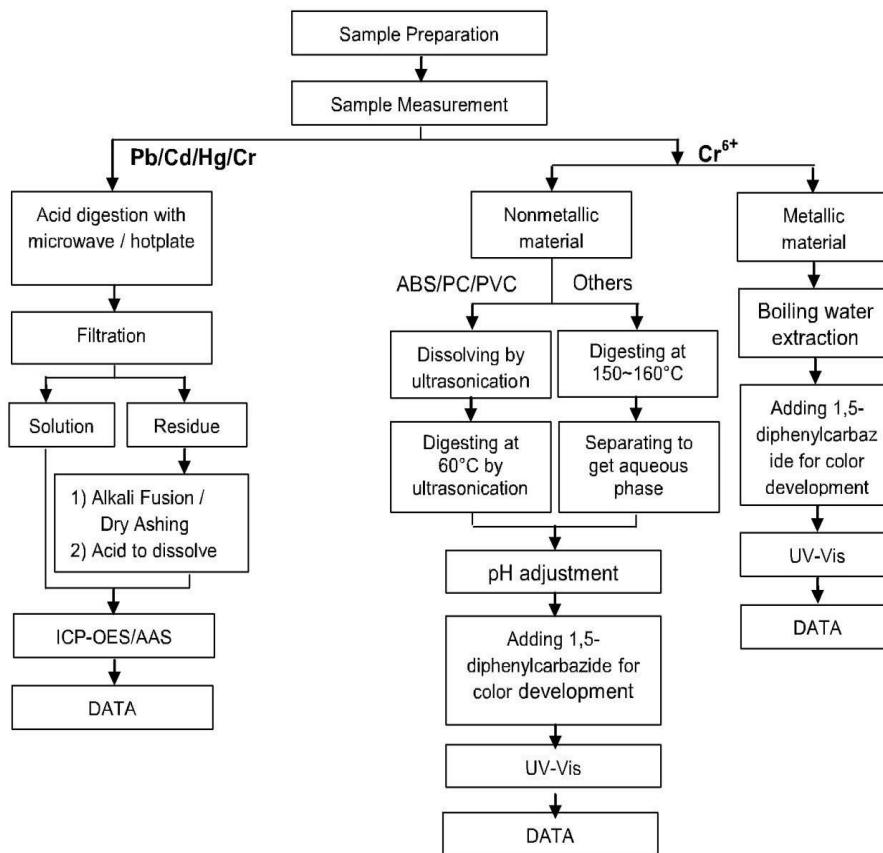
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ATTACHMENTS

Pb/Cd/Hg/Cr⁶⁺ Testing Flow Chart

- 1) Name of the person who made testing: Meria Jin/Xiaolong Yang/Sielina Song
- 2) Name of the person in charge of testing: Jan Shi/Luna Xu/Shara Wang
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)



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Testing Center-Client Laboratory

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Test Report

No. SHAEC1811665907

Date: 05 Jun 2018

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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



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Testing Center China

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Test Report

No. SZXEC1801073602

Date: 13 Jul 2018

Page 1 of 6

SHENZHEN DINGCHENG PLASTIC TECHNOLOGY CO.,LTD.

NO.33 SONGLUO ROAD,SONGGANG STREET,BAO'AN DISTRICT,SHENZHEN CITY

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

SGS Job No. : RP18-010548 - SZ

Date of Sample Received : 10 Jul 2018

Testing Period : 10 Jul 2018 - 13 Jul 2018

Test Requested : Selected test(s) as requested by client.

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

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

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Tina

Tina Fan
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch Testing Center Chemical Laboratory

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Test Report

No. SZXEC1801073602

Date: 13 Jul 2018

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Test Results :

Test Part Description :

| Specimen No. | SGS Sample ID | Description |
|--------------|------------------|----------------------|
| SN1 | SZX18-010736.002 | Black plastic grains |

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC62321-5:2013, IEC62321-7-2:2017, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

| Test Item(s) | Limit | Unit | MDL | 002 |
|------------------------------|-------|-------|-----|-----|
| Cadmium (Cd) | 100 | mg/kg | 2 | ND |
| Lead (Pb) | 1,000 | mg/kg | 2 | ND |
| Mercury (Hg) | 1,000 | mg/kg | 2 | ND |
| Hexavalent Chromium (Cr(VI)) | 1,000 | mg/kg | 8 | ND |
| Sum of PBBs | 1,000 | mg/kg | - | ND |
| Monobromobiphenyl | - | mg/kg | 5 | ND |
| Dibromobiphenyl | - | mg/kg | 5 | ND |
| Tribromobiphenyl | - | mg/kg | 5 | ND |
| Tetrabromobiphenyl | - | mg/kg | 5 | ND |
| Pentabromobiphenyl | - | mg/kg | 5 | ND |
| Hexabromobiphenyl | - | mg/kg | 5 | ND |
| Heptabromobiphenyl | - | mg/kg | 5 | ND |
| Octabromobiphenyl | - | mg/kg | 5 | ND |
| Nonabromobiphenyl | - | mg/kg | 5 | ND |
| Decabromobiphenyl | - | mg/kg | 5 | ND |
| Sum of PBDEs | 1,000 | mg/kg | - | ND |
| Monobromodiphenyl ether | - | mg/kg | 5 | ND |
| Dibromodiphenyl ether | - | mg/kg | 5 | ND |
| Tribromodiphenyl ether | - | mg/kg | 5 | ND |
| Tetrabromodiphenyl ether | - | mg/kg | 5 | ND |
| Pentabromodiphenyl ether | - | mg/kg | 5 | ND |



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| Test Item(s) | Limit | Unit | MDL | 002 |
|------------------------------------|-------|-------|-----|-----|
| Hexabromodiphenyl ether | - | mg/kg | 5 | ND |
| Heptabromodiphenyl ether | - | mg/kg | 5 | ND |
| Octabromodiphenyl ether | - | mg/kg | 5 | ND |
| Nonabromodiphenyl ether | - | mg/kg | 5 | ND |
| Decabromodiphenyl ether | - | mg/kg | 5 | ND |
| Dibutyl Phthalate (DBP) | 1000 | mg/kg | 50 | ND |
| Butyl benzyl Phthalate (BBP) | 1000 | mg/kg | 50 | ND |
| Bis(2-ethylhexyl) Phthalate (DEHP) | 1000 | mg/kg | 50 | ND |
| Diisobutyl Phthalate (DIBP) | 1000 | mg/kg | 50 | ND |

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
IEC 62321 series is equivalent to EN 62321 series

http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25



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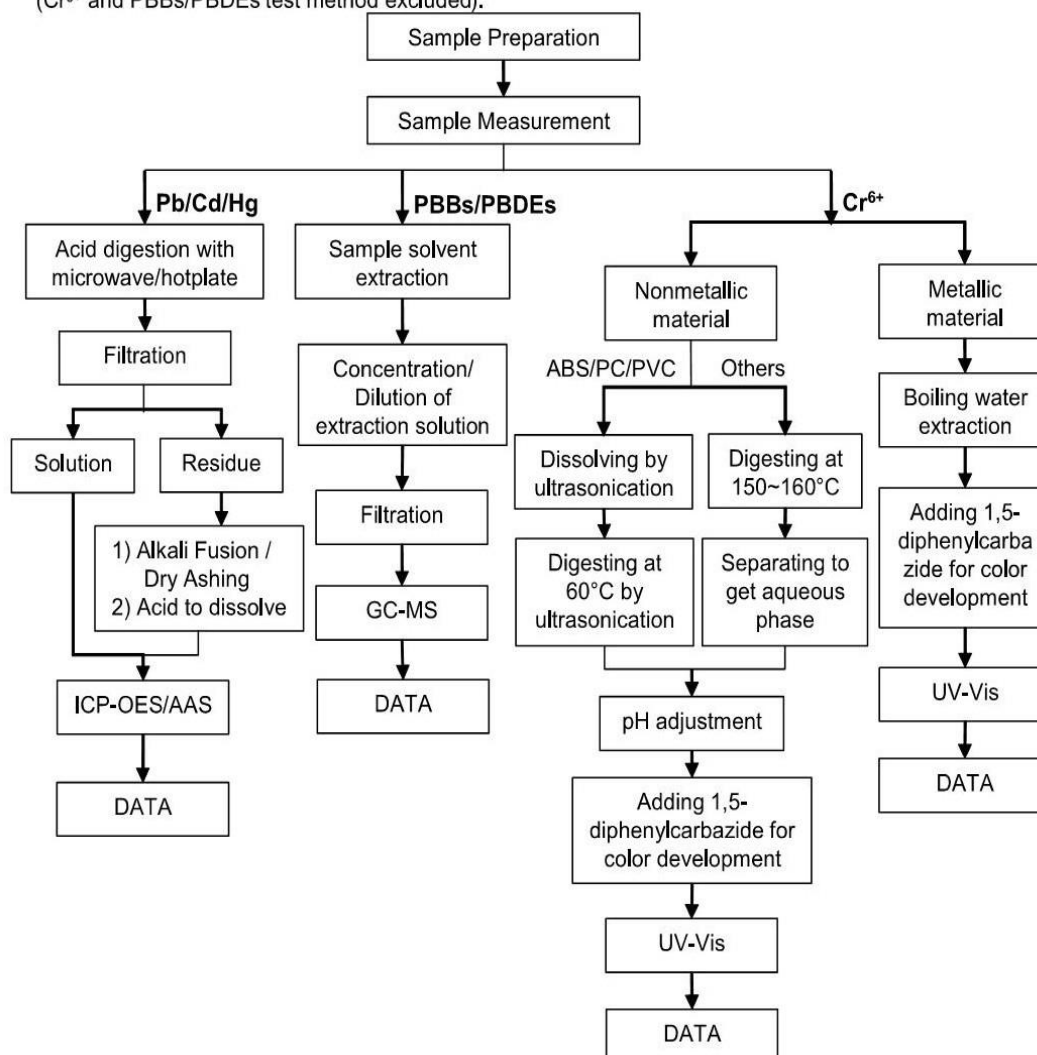
Date: 13 Jul 2018

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ATTACHMENTS

Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) Name of the person who made testing: Winsen Deng / David Mai / Truly Ren
- 2) Name of the person in charge of testing: Zoe Luo / Roje Zhou / Muky Tong
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



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ATTACHMENTS

Phthalates Testing Flow Chart

- 1) Name of the person who made testing: David Mai
- 2) Name of the person in charge of testing: Roje Zhou

Samole cutting / preparation

Sample Measurement

Solvent extraction

Concentration/Dilution

Filtration

GC-MS

DATA



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Sample photo:



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