

TEST REPORT

Test Report No. : 3196355.50QS
Project no. : 3196355

Client : FINATECH ENTREPRISES
1 rue Pierre et Marie Curie

Date sample received : 2016.09.22 / 2016.10.18

Product : Portable unit equipment

Product description : Please refer to next page(s).

Test Requested : Test of RoHS conformity (2011/65/EU)

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

Result : Please refer to next page(s).

Conclusion : Requirement passed

Testing Period : 2016.09.22—2016.10.20

Signed for and on behalf of
DEKRA Testing and Certification (Shanghai) Ltd

Yu Feixiong (郁飞雄)
Project Manager



Shao Baijun (邵柏君)
Test Engineer

Picture of the product



TEST RESULTS

sample -no.	sample designation	Pb (%)	Cd (%)	Hg (%)	Cr VI (%)	PBB (%)	PBDE (%)
001	black plastic(shell)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
002	golden metal(pin)	2.9 ¹ a)	< 0.01	< 0.1	< 0.1	N/A	N/A
003	black plastic(stopper)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
004	transparent plastic(cover-1)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
005	transparent plastic(cover-2)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
006	white LED board(body)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
007	yellow LED(body)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
008	beige plastic(socket)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1 ²	< 0.1 ²
009	black IC(body)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
010	brown chip capacitor(body)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
011	black chip diode(body)	1.7 ¹ b)	< 0.01	< 0.1	< 0.1	< 0.1 ²	< 0.1 ²
012	black chip audion(body)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
013	black chip resistor(body)	< 0.1 ¹	< 0.01	< 0.1	< 0.1	< 0.1 ²	< 0.1 ²
014	brown chip capacitor(body)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1 ²	< 0.1 ²
015	silvery metal(contact piece)	< 0.1	< 0.01	< 0.1	< 0.1 ³	N/A	N/A
016	gray metal(shell)(socket)	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A
017	golden metal(pin)(socket)	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A
018	black plastic(bracket)(socket)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
019	red plastic(key)(switch)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
020	black plastic(shell)(switch)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
021	silvery metal(elastic piece)(switch)	< 0.1	< 0.01	< 0.1	< 0.1 ³	N/A	N/A
022	silvery metal(cover)(switch)	< 0.1	< 0.01	< 0.1	< 0.1 ³	N/A	N/A
023	black ferrite(inductor)	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A
024	copper-colored metal(loop)(inductor)	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A
025	black foam(battery)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1 ²	< 0.1 ²
026	brown transparent plastic(adhesive tape)(battery)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
027	white plastic(joint)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
028	black plastic(jacket)(wire)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
029	red plastic(jacket)(wire)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
030	silvery metal(coil)(wire)	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A
031	silvery metal(contact piece)(battery)	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A
032	silvery metal(soldering	< 0.1 ¹	< 0.01 ⁴	< 0.1 ⁵	< 0.1 ³	N/A	N/A

tin)(PCB)							
033	black IC-1(body)(PCB)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
034	black IC-2(body)(PCB)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1
035	green PCB(body)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1 ²	< 0.1 ²

1) The analysis by X-ray fluorescence spectrometry showed a detection for Pb. The verification and quantification of Pb was performed by ICP-OES.

2) The analysis by X-ray fluorescence spectrometry showed a detection for Br. The verification and quantification of PBB/PBDE was performed by GC-MS.

3) The analysis by X-ray fluorescence spectrometry showed a detection for Cr. The verification and quantification of Cr (VI) was performed by photometric analysis.

4) The analysis by X-ray fluorescence spectrometry showed a detection for Cd. The verification and quantification of Cd was performed by ICP-OES.

5) The analysis by X-ray fluorescence spectrometry showed a detection for Hg. The verification and quantification of Hg was performed by ICP-OES.

N/A: Not applicable

a) The annex to directive 2011/65/EU (exemptions of RoHS-directive) contains following point:

“6 (c) Copper alloy containing up to 4 % lead by weight.”

b) The annex to directive 2011/65/EU (exemptions of RoHS-directive) contains following point:

“7(a), Lead in high melting temperature type solders (i.e. lead- based alloys containing 85 % by weight or more lead)”

Description of the analysis procedure (brief version):

Test of RoHS conformity

The measurements are performed according to IEC 62321-3-1 : 2013, “Electrotechnical products - Determination of levels of six regulated substances”.

The product is divided in single material samples. The materials are analysed on different parameters of the RoHS-directive to assure that the complete product is RoHS-conform or not. At first a XRF (X-ray fluorescence spectrometry) screening is performed. For every sample following statements can be made.

Table: Screening limits in mg/kg for regulated elements in various matrices

Element	Polymers	Metals	Composite Material
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	$BL \leq (300-3\sigma) < X$		$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

Below limit (**BL**): the tested material complies to the RoHS directive.

Inconclusive (**X**): If the level of the measurement is around the maximum allowed, or if the level for Chrome or Bromine is too high, other more accurate methods are needed to determine the exact level or the composition of Chrome and Bromine.

Over limit (**OL**): If the level of lead, mercury or cadmium is well above the maximum allowed levels (the XRF uncertainty is taken into account), the tested material does not comply with the RoHS directive.

In case of **inconclusive** XRF results, following analysis procedures are applied:

In order to examine the material samples for the heavy metals cadmium, lead and mercury they are digested in acid and the solutions are used to carry out the analysis for the heavy metals by ICP-OES or atomic-absorption spectroscopy.

Hexavalent chromium is checked by extracting the sample with water at 100 °C (determination of Cr VI in colorless and colored chromate coating on metals) respectively with alkaline extraction at 90-95 °C (determination of Cr VI in polymers and electronic components) followed by photometric analysis.

In the case of metallic components with a surface coating containing hexavalent Chromium (passivation) the concentration is expressed in mg of Chromium VI per component. In order to obtain further information about the concentration on the surface coating it is necessary to know the weight per unit area of the coating and the surface area of the component. Information about surface coatings is to be provided by the client.

The examination for bromine-based flame retardant products is carried out by gas chromatography-mass spectrometry after extraction by solvents; this involves the individual analysis and quantification of the substances specified in the RoHS. The current valid regulations relating to exceptions in respect of the analysed substances are to be taken into account by the client.

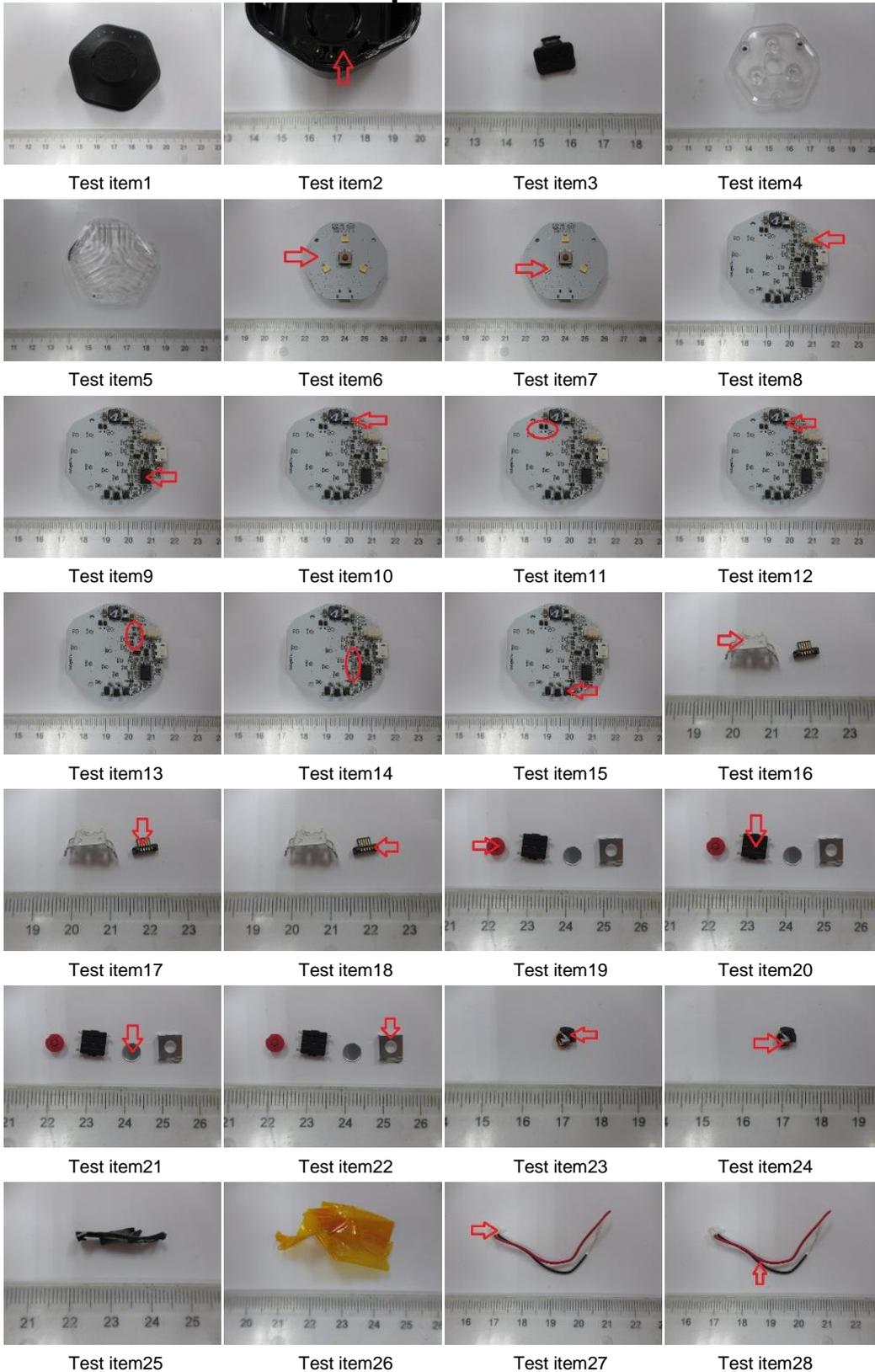
The following Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) are analyzed:

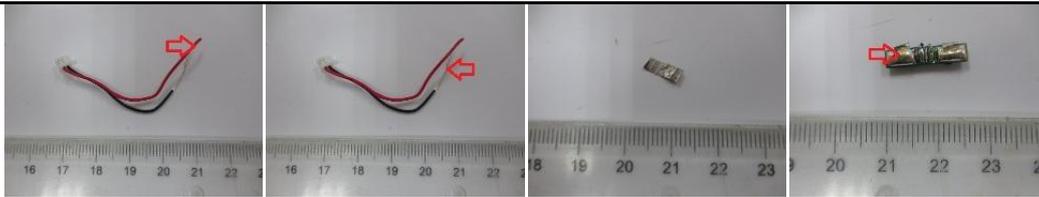
2-Bromobiphenyl PBB2, Dibromobiphenyl PBB15, Tribromobiphenyl PBB30, Tetrabromobiphenyl PBB52, Pentabromobiphenyl PBB103, Hexabromobiphenyl PBB153, Heptabromobiphenyl PBB250, Octabromobiphenyl PBB250, Nonabromobiphenyl PBB250, Decabromobiphenyl PBB209, Bromodiphenylether BDE2, Dibromodiphenylether BDE15, Tribromodiphenylether BDE30, Tetrabromodiphenylether BDE62, Pentabromodiphenylether BDE99, Hexabromodiphenylether BDE153, Heptabromodiphenylether BDE183, Octabromodiphenylether BDE203, Nonabromodiphenylether BDE206, Decabromodiphenylether BDE209.

Limits according to RoHS (2011/65/EU) / Test methods (additional chemical analysis):

Parameter	Limits according to RoHS	Test method
Cadmium	0,01 % (100 mg/kg or 0,1 g/kg)	IEC62321-5:2013
Lead	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-5:2013
Hexavalent Chromium	0,1 % (1000 mg/kg or 1 g/kg)	Metal: IEC62321-7-1:2015 Non-metal: IEC62321:2008
Mercury	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-4:2013
PBB and PBDE	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-6:2015

Sample Photos



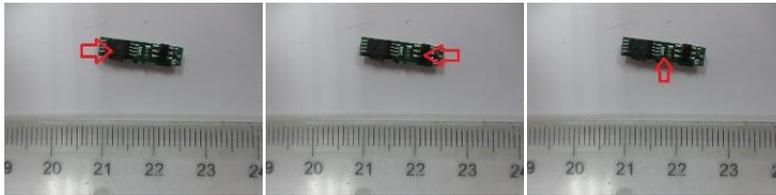


Test item29

Test item30

Test item31

Test item32



Test item33

Test item34

Test item35

---End of Report---

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