



中国认可  
国际互认  
检测  
TESTING  
CNAS L6478



# TEST REPORT

**Reference No.** ..... : WTF16F0448608A1C  
**Applicant** ..... :  
**Address** ..... :  
**Manufacturer** ..... :  
**Address** ..... :  
**Sample Name** ..... :  
**Model No.** ..... : IT3621-14(4100067379), KC2656-23(4100066734),  
 KC6460-14(4100067379)  
**Test Requested** ..... : In accordance with the RoHS Directive 2011/65/EU  
**Test Method** ..... : With Reference to EN 62321 :2009 Procedures for the Determination of  
 level of Six Regulated Substance in Electrotechnical Products.  
 1) Screening by XRF Spectroscopy  
 2) Wet Chemical Test Method  
 - Determination of Lead, Mercury and Cadmium by ICP-OES  
 - Determination of Hexavalent Chromium by Colorimetric Method  
 - Determination of PBBs and PBDEs by GC-MS  
**Test Conclusion** ..... : Based on the performed tests on the submitted samples, the results  
 comply with the RoHS Directive 2011/65/EU  
**Date of Receipt sample** .... : 2016-04-22 & 2016-05-23  
**Date of Test** ..... : 2016-04-22 to 2016-05-24  
**Date of Issue** ..... : 2016-05-26  
**Test Result** ..... : Please refer to next page (s)

Remarks:  
 The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

**Prepared By:**  
**Waltek Services (Foshan) Co., Ltd.**  
 Address: No. 13-19, 2/F, 2nd Building, Sunlink International Machinery City, Chencun Town, Shunde District, Foshan, Guangdong, China  
 Tel :+86-757-23811398  
 Fax:+86-757-23811381

Compiled by:  
  
 Nelson.Liang / Project Engineer

Approved by:  
  
 Lion.Wang / Lab Manager



**Test Results:**

Part No.	Part Description	Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
1	Silvery metal sheet	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
2	Silvery ceramic sheet	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
3	Solder	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
4	Chip audion	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
5	Blue plastic sleeve of inductor	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
6	Dark grey magnetic core of inductor	Cd	BL	Cr <sup>6+</sup> : ND	Comply
		Pb	BL		
		Hg	BL		
		Cr	IN		
		Br	BL		
7	Coppery metal winding of inductor	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
8	Silvery metal pin of inductor	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		



Part No.	Part Description	Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
9	Silvery metal sheet	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
10	Chip capacitor	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
11	Solder	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
12	Red glass body of diode	Cd	BL	NA	Comply
		Pb	*OL		
		Hg	BL		
		Cr	BL		
		Br	BL		
13	Silvery metal pin of diode	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
14	White ceramic sheet	Cd	BL	PBBs : ND PBDEs : ND	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	IN		
15	Silvery metal pin	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
16	Chip capacitor	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		



Part No.	Part Description	Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
17	Chip resistor	Cd	BL	NA	Comply
		Pb	*OL		
		Hg	BL		
		Cr	BL		
		Br	BL		
18	Chip IC	Cd	BL	PBBs : ND PBDEs : ND	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	IN		
19	Silvery body of oscillator	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
20	Silvery metal pin of oscillator	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
21	Green PCB	Cd	BL	PBBs : ND PBDEs : ND	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	IN		
22	Solder	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
23	White plastic film	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
24	Transparent glass sheet	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		



Part No.	Part Description	Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
25	Transparent FPC	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
26	Silvery metal sheet	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
27	Solder	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
28	Chip capacitor	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
29	Solder	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
30	Chip capacitor	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		
31	Chip resistor	Cd	BL	NA	Comply
		Pb	*OL		
		Hg	BL		
		Cr	BL		
		Br	BL		
32	Transparent FPC	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		



Part No.	Part Description	Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
33	Silvery metal sheet	Cd	BL	NA	Comply
		Pb	BL		
		Hg	BL		
		Cr	BL		
		Br	BL		



# WALTEK

**Remark:**

- (1) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-VIS (for Cr<sup>6+</sup>) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to EN 62321:2009 (unit: mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	$BL \leq (70-3\sigma) < IN < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < IN < (130+3\sigma) \leq OL$	$LOD < IN < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < IN < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < IN < (1500+3\sigma) \leq OL$
Cr	$BL \leq (700-3\sigma) < IN$	$BL \leq (700-3\sigma) < IN$	$BL \leq (500-3\sigma) < IN$
Br	$BL \leq (300-3\sigma) < IN$	--	$BL \leq (250-3\sigma) < IN$

BL= Below Limit                      OL= Over Limit                      LOD = Limit of Detection                      -- = Not Regulated

- (2) "IN" expresses the inconclusive region, and further chemical testing to confirm whether it complies with the requirement of RoHS Directive.
- (3) The XRF screening test for RoHS elements – the reading may be different to the actual content in the sample be of non-uniformity composition.
- (4) ppm = mg / kg, based on the dry weight of tested sample.
- (5) ND = Not Detected, less than the value of Method Detection Limit.
- (6) NA = Not Applicable, as the XRF screening test result was below the limit, it was not need to conduct the wet chemical testing.
- (7) MDL= Method Detection Limit in wet chemical test

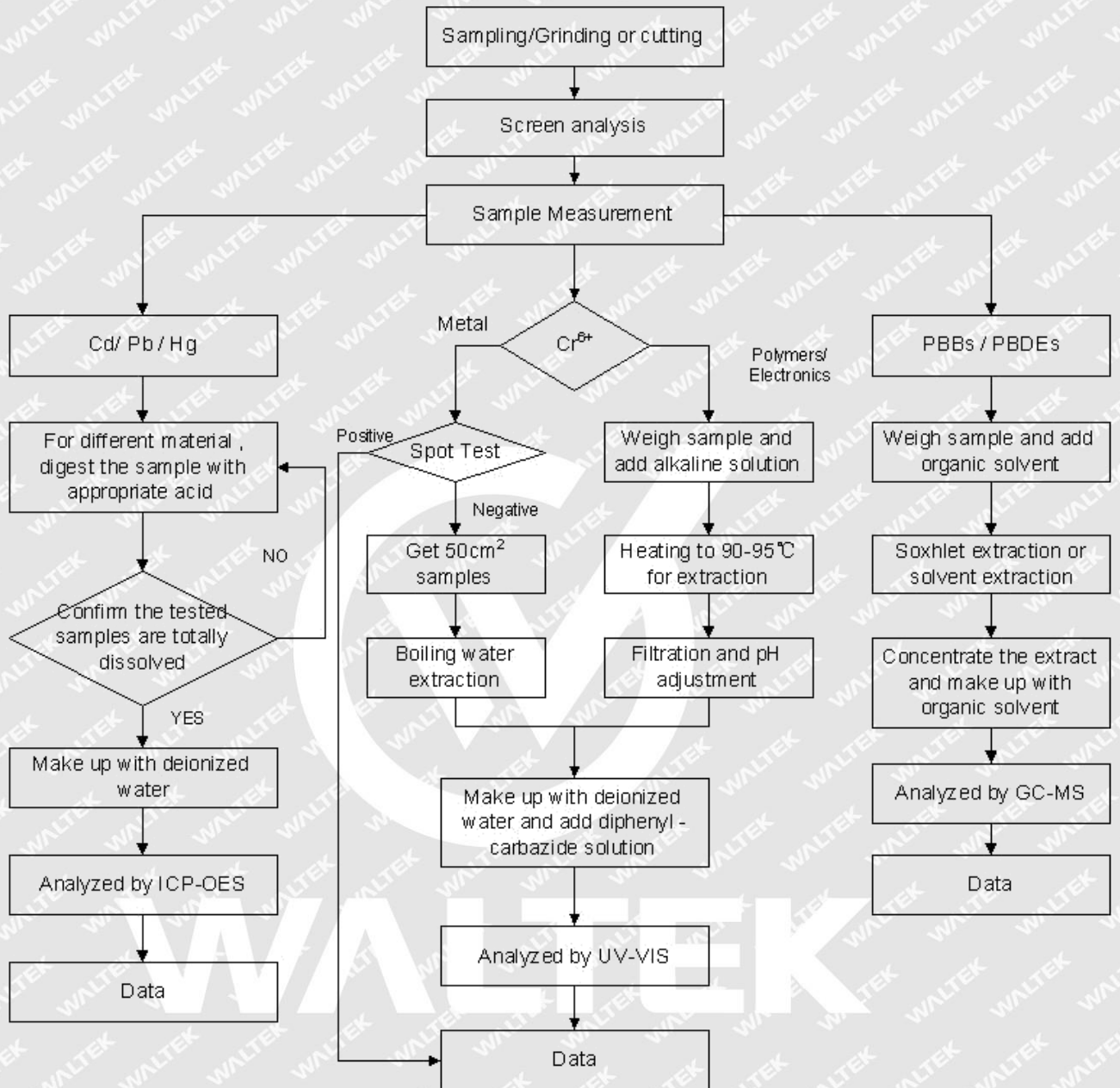
Test Items	Pb	Cd	Hg	Cr <sup>6+</sup>	PBB	PBDE
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MDL	2	2	2	2	5	5

The MDL for single compound of PBBs and PBDEs is 5mg/kg and MDL of Cr<sup>6+</sup> for polymer and composite sample is 2mg/kg.

- (8) According to EN 62321:2009, determined of Cr<sup>6+</sup> on metal sample by spot test /boiling water extraction test method, and result is shown as Positive/Negative.
- Spot test:  
Negative = Absence of Cr<sup>6+</sup> coating, Positive = Presence of Cr<sup>6+</sup> coating.  
(The tested sample should be further verified by boiling water extraction method if the spot test result is Negative or cannot be confirmed.)
- Boiling water extraction:  
Negative = Absence of Cr<sup>6+</sup> coating.  
Positive = Presence of Cr<sup>6+</sup> coating, the detected concentration in boiling water extraction solution is equal or greater than 0.02mg/kg with 50cm<sup>2</sup> sample surface area.  
Information on storage conditions and production date of the tested sample is unavailable and thus Cr<sup>6+</sup> results represent status of the sample at the time of testing.
- (9) \* = According to the declaration from client, the source of lead in test sample could be from the glass or ceramic material of that electronic component which is exempted by Directive 2011/65/EU.



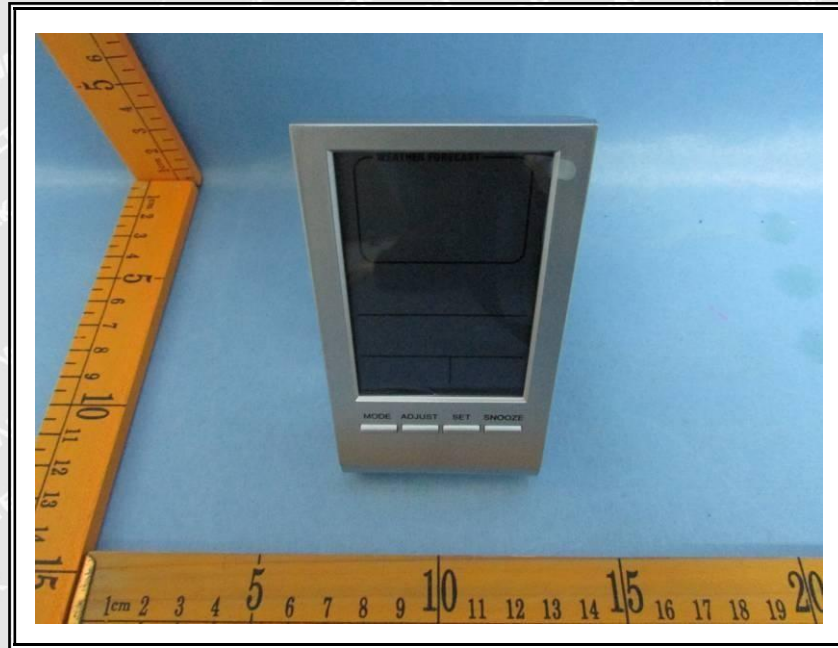
**Measurement Flowchart:**

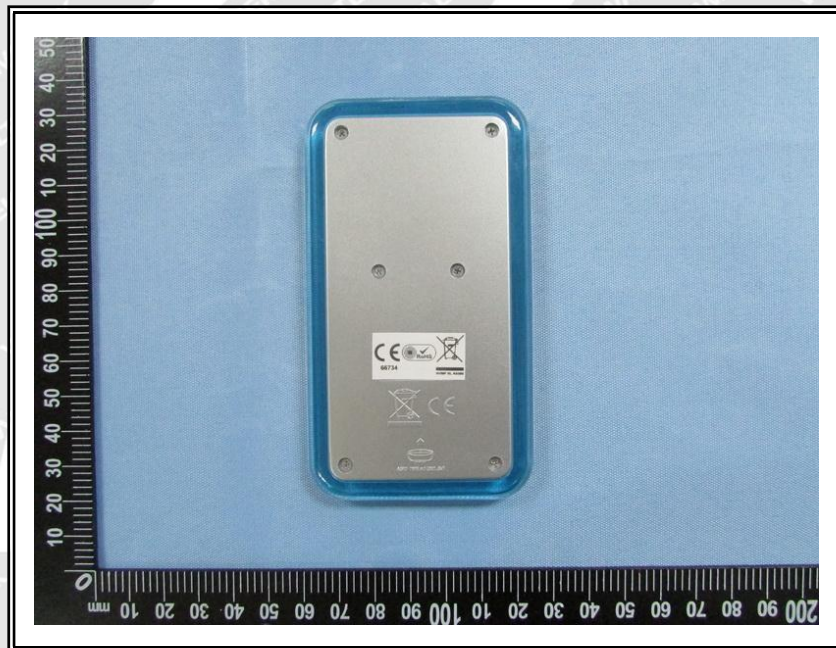


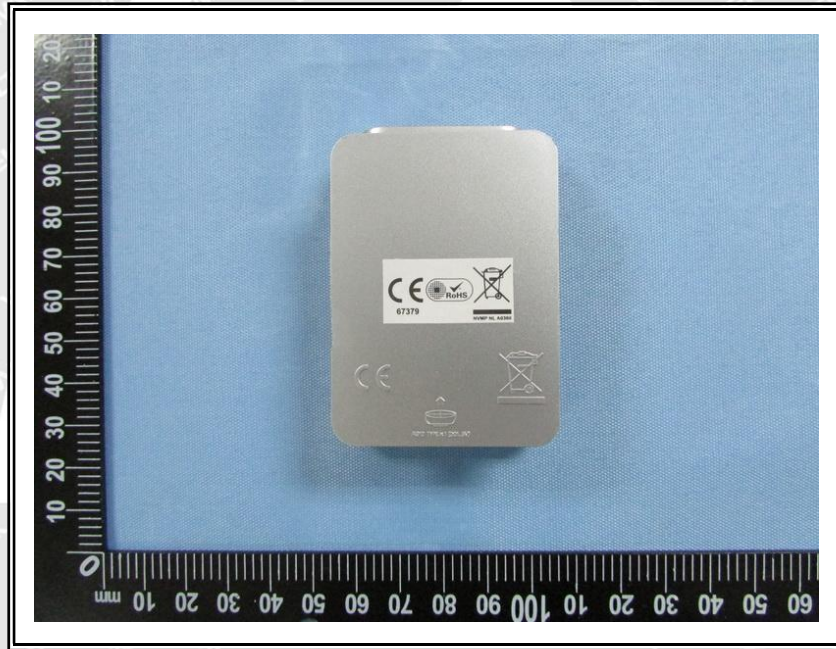




**Sample Photo:**

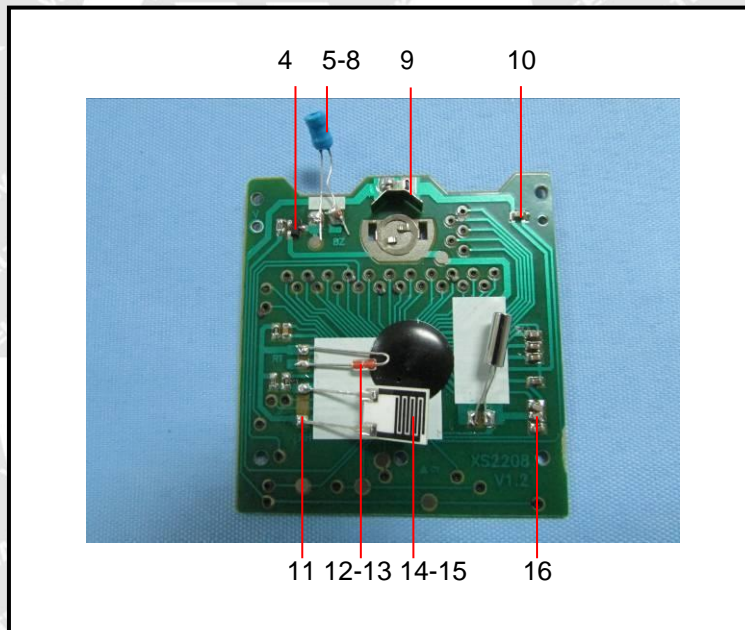
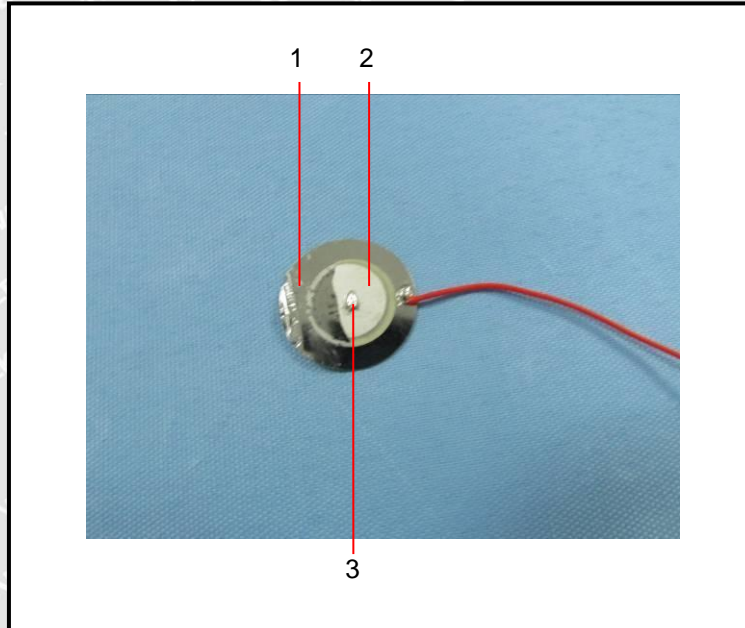


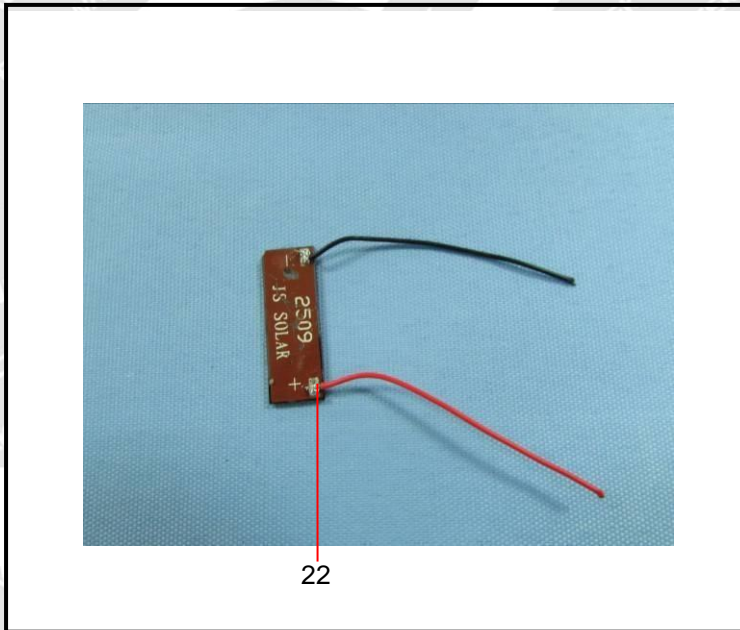
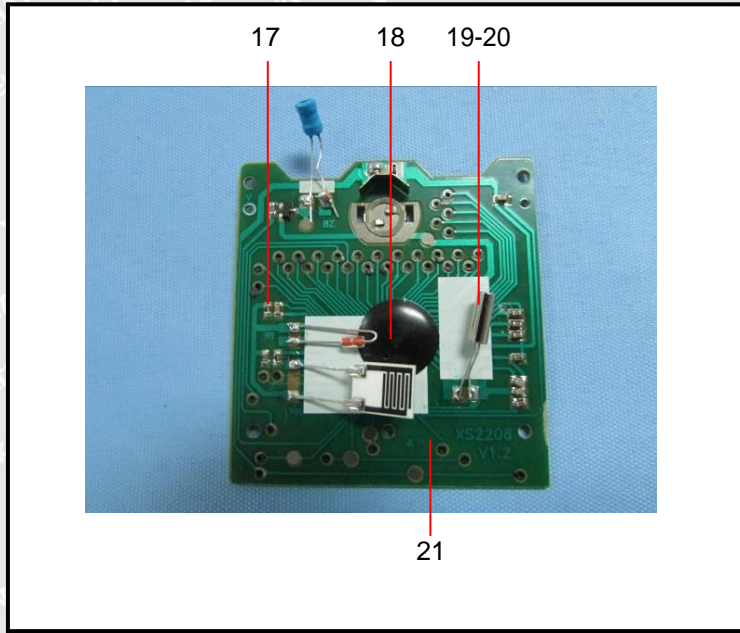


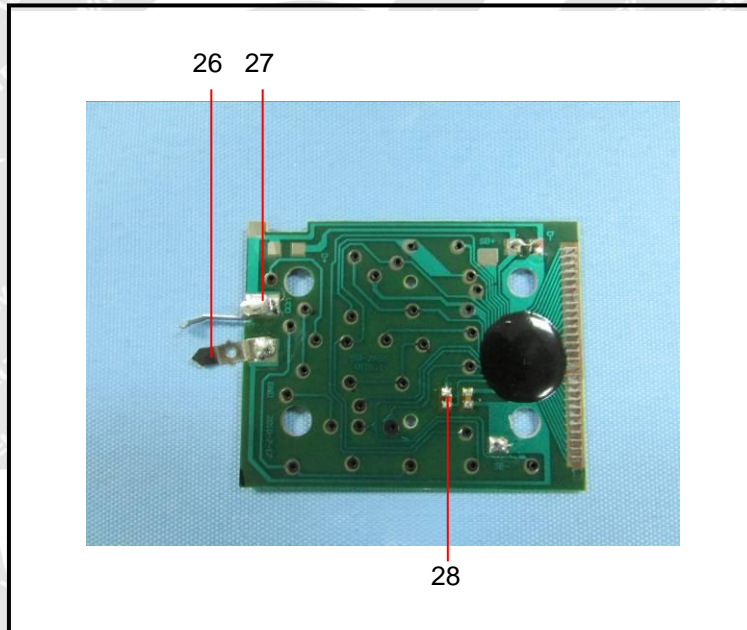
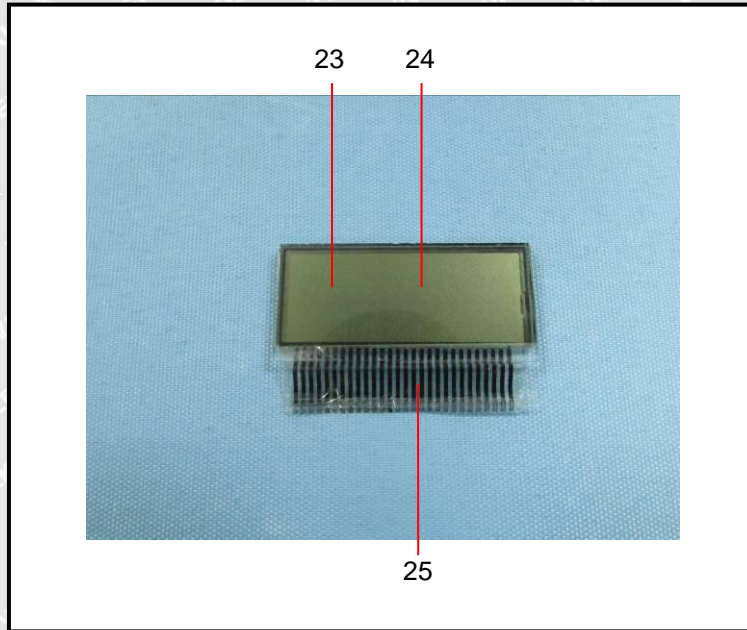


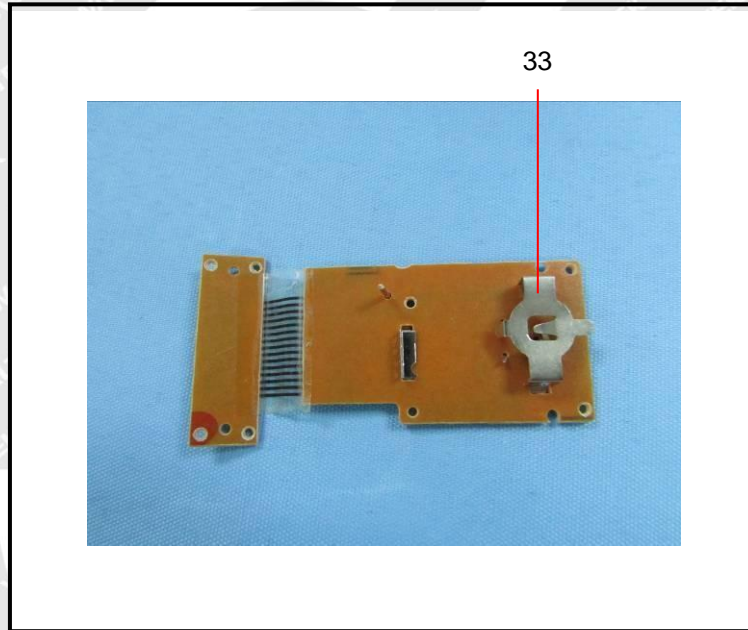
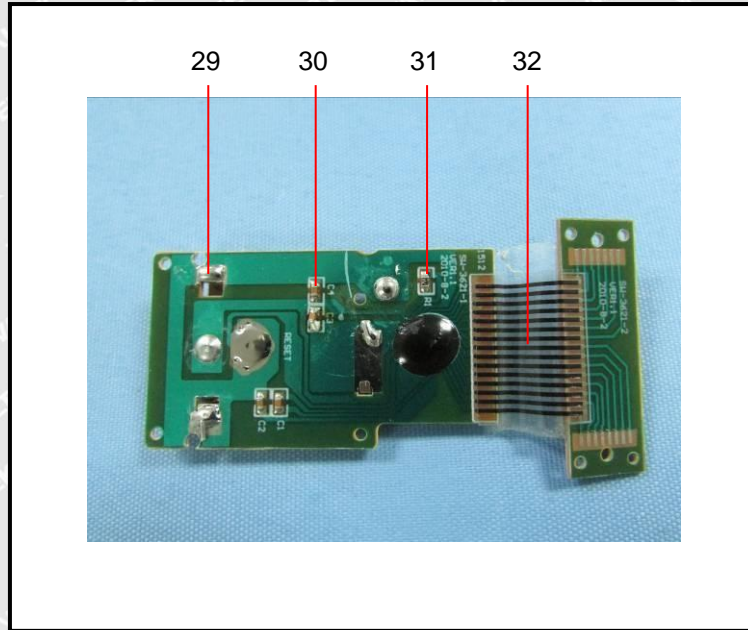


**Photograph of parts tested:**









===== End of Report =====