

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 1 of 40

Applicant: Shenzhen PULUZ Technology Limited

Address: No.21 FengHuang Industrial Park, FengHuang Road, Pinghu, Longgang,
Shenzhen, China

The following sample was submitted and identified by/on behalf of the client as:

Sample Name: PULUZ Memory Card Case

Model No.: PU360L

Client Reference Information: PU360R, PU360Y, PU362L, PU362Y, PU362R

Manufacturer: Shenzhen PULUZ Technology Limited

Factory: Shenzhen PULUZ Technology Limited

Address: No.21 FengHuang Industrial Park, FengHuang Road, Pinghu, Longgang,
Shenzhen, China

Trade Mark: 

Sample Received Date: 2018.01.09

Testing Period: 2018.01.09-2018.02.07

Test Requested: According to customer's requirements, Split the sample and determine the Pb, Cd, Hg, Cr(VI), PBBs & PBDEs content of the parts.

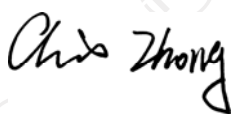
Test Method:

1. Sample prepared with reference to IEC 62321-2:2013
2. Sample Screening testing with reference to IEC 62321-3-1:2013
3. Wet Chemical Test Method
 - a. Determination of Lead ,Cadmium by ICP-OES with reference to IEC 62321-5:2013
 - b. Determination of Mercury by ICP-OES with reference to IEC 62321-4:2013
 - c. Determination of Hexavalent Chromium in colourless and coloured corrosion-protected coatings on metals by UV-VIS method reference to IEC 62321-7-1:2015
 - d. Determination of Hexavalent Chromium in polymers and electronics by UV-Vis Method with reference to IEC 62321-7-2:2017
 - e. Determination of PBBs and PBDEs by GC-MS with reference to IEC 62321-6:2015

Test Result(s): Please refer to the following page(s).

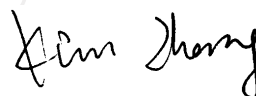
Conclusion: Base upon the performed tests by submitted sample, the test results comply with the limits as set by Directive (EU) 2015/863 - Amendment of EU RoHS Directive 2011/65/EU (RoHS 2.0) Annex II.

Checked by



Chris Zhong

Signed for and on behalf of TCT



Kim Zhang

Technical Manager



Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 2 of 40

Test Result(s):

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
1 ^(R)	White soft plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Feb. 05, 2018
2	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
3	White plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
4	Silvery color metal pin	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
5 ^(R)	Solder	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Feb. 05, 2018

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 3 of 40

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
6 ^(R)	White soft plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Feb. 05, 2018
7	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- N.D. --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018 Jan. 12, 2018
8 ^(R)	Solder	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Feb. 05, 2018
9	Grey plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. N.D.	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018 Jan. 12, 2018
10	Black plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. N.D.	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018 Jan. 12, 2018

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 4 of 40

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
11	Silvery color metal pin	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- N.D. --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018 Jan. 12, 2018
12	Copper color metal wire core	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
13	White plastic jacket	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
14 ^(R)	White plastic jacket	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Feb. 05, 2018
15	White plastic film	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 5 of 40

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
16	Grey plastic film	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
17	Black plastic label	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
18 ^(R)	Black plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. 254	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018 Jan. 12, 2018
19	Silvery color metal screw	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
20	Transparent LED	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. N.D.	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018 Jan. 12, 2018

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 6 of 40

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
21	Silvery color metal spring	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
22 ^(R)	Solder	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Feb. 05, 2018
23	Green PCB	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
24	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- N.D. --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018 Jan. 12, 2018
25	Copper color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	OL ^① BL BL BL --- ---	2.69x10 ⁴ --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018 Jan. 12, 2018

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 7 of 40

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
26	Black plastic	Pb	BL	---	Comply	Jan. 11, 2018 Jan. 12, 2018
		Cd	BL	---	Comply	
		Hg	BL	---	Comply	
		Cr(VI)	BL	---	Comply	
		PBBs	IN	N.D.	Comply	
		PBDEs	IN	N.D.	Comply	
27	Silvery color metal screw	Pb	BL	---	Comply	Jan. 11, 2018 Jan. 12, 2018
		Cd	BL	---	Comply	
		Hg	BL	---	Comply	
		Cr(VI)	IN	N.D.	Comply	
		PBBs	---	---	NA	
		PBDEs	---	---	NA	
28	Black soft plastic	Pb	BL	---	Comply	Jan. 11, 2018
		Cd	BL	---	Comply	
		Hg	BL	---	Comply	
		Cr(VI)	BL	---	Comply	
		PBBs	BL	---	Comply	
		PBDEs	BL	---	Comply	
29	Silvery color metal with black coating	Pb	BL	---	Comply	Jan. 11, 2018 Jan. 12, 2018
		Cd	BL	---	Comply	
		Hg	BL	---	Comply	
		Cr(VI)	IN	N.D.	Comply	
		PBBs	---	---	NA	
		PBDEs	---	---	NA	
30	Black soft plastic	Pb	BL	---	Comply	Jan. 11, 2018
		Cd	BL	---	Comply	
		Hg	BL	---	Comply	
		Cr(VI)	BL	---	Comply	
		PBBs	BL	---	Comply	
		PBDEs	BL	---	Comply	

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 8 of 40

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
31	Black plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
32	Grey plastic with silvery color coating	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
33	Black plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
34	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
35	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 9 of 40

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
36	Black plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
37	Silvery color metal pin	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
38	Copper color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
39	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- N.D. --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018 Jan. 12, 2018
40	Black plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 10 of 40

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
41	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- N.D. --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018 Jan. 12, 2018
42	Black electronic component	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. N.D.	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018 Jan. 12, 2018
43	Black electronic component	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
44	Brown electronic component	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
45	Silvery color electronic component	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 11 of 40

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
46	Cream plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
47	Solder	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
48	Blue PCB	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. N.D.	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018 Jan. 12, 2018
49	Black soft plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
50	Blue plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 12 of 40

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
51	Black plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
52	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- N.D. --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018 Jan. 12, 2018
53	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- N.D. --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018 Jan. 12, 2018
54	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- N.D. --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018 Jan. 12, 2018
55	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 13 of 40

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
56	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
57	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
58	Black plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
59	Silvery color metal spring	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
60	Black plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 14 of 40

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
61	Black plastic jacket	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
62	Red plastic jacket	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
63	White plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
64	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
65	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 15 of 40

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
66	White plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
67	White plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
68	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
69	Copper color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
70	Solder	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 16 of 40

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
71	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018
72	Green plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
73	Copper color enamelled wire	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
74	White plastic	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018
75	Silvery color metal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply NA NA	Jan. 11, 2018

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 17 of 40

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing (2) (mg/kg)	Conclusion on RoHS	Data Submitted / Resubmitted Date
76	Black soft magnets	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Jan. 11, 2018

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 18 of 40

Remark:

(1) (a) It is the result on total Br while test item on restricted substances is PBBs/PBDEs. It is the result on total Cr while test item on restricted substances is Cr⁶⁺.

(b) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP-OES (for Cd, Pb, Hg), UV-Vis (for Cr⁶⁺) and GC/MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC62321-3-1:2013 (unit: mg/kg)

Element	Polymer	Metal	Composite Materials
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	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

(c) BL = Below Limit, OL = Over Limit, IN = Inconclusive, LOD = Limit of Detection, -- = Not Regulated, NA = Not Applicable.

(d) The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.

(2) (a) 1mg/kg = 1ppm = 0.0001%, N.D.= Not Detected (<MDL), --- = Not Conducted.

(b) Unit and Method Detection Limit (MDL) in wet chemical test

Test Items	Pb	Cd	Hg
Units	mg/kg	mg/kg	mg/kg
MDL	2	2	2

The MDL for single compound of PBBs & PBDEs is 5 mg/kg and MDL of Cr⁶⁺ for polymer & composite sample is 2 mg/kg.

(c) When Cr⁶⁺ for metal sample is testing according to IEC 62321-7-1:2015, the unit is $\mu\text{g}/\text{cm}^2$, and the MDL is 0,10 $\mu\text{g}/\text{cm}^2$. When the Cr (VI) concentration is > the 0,13 $\mu\text{g}/\text{cm}^2$, the sample is positive for Cr(VI) and considered to contain Cr(VI); when the Cr (VI) concentration is N.D.(< the 0,10 $\mu\text{g}/\text{cm}^2$), the sample is negative for Cr(VI) and considered a non-Cr(VI) based coating; when the Cr (VI) concentration is $\geq$ the 0,10 $\mu\text{g}/\text{cm}^2$ and $\leq$ the 0,13 $\mu\text{g}/\text{cm}^2$, the result is considered to be inconclusive - Unavoidable coating variations may influence the determination.

(d) ^①RoHS Exemption: 6(c), Copper alloy containing up to 4 % lead by weight.

^(R)=Re-submitted sample.

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 19 of 40

(3) The maximum permissible limit is quoted from the Directive (EU) 2015/863 - Amendment of EU RoHS Directive 2011/65/EU (RoHS 2.0) Annex II.

RoHS Restricted Substances	Maximum Concentration Value (by weight in homogenous materials)
Lead (Pb)	0.1%
Cadmium (Cd)	0.01%
Mercury (Hg)	0.1%
Hexavalent Chromium (Cr VI)	0.1%
Polybrominated biphenyls (PBBs)	0.1%
Polybrominated diphenylethers (PBDEs)	0.1%

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 20 of 40

RoHS Exemptions

Exemptions	
RoHS Directive 2011/65/EU ANNEX III	
Exemption Items	Expires Date
1, Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):	
1(a), For general lighting purposes < 30 W:3.5 mg	2,5 mg shall be used per burner after 31 December 2012
1(b), For general lighting purposes ≥ 30 W and < 50W:3.5mg	
1(c), For general lighting purposes ≥ 50 W and < 150 W: 5 mg	
1(d), For general lighting purposes ≥ 150 W: 15 mg	
1(e), For general lighting purposes with circular or square structural shape and tube diameter ≤ 17 mm: 7 mg	
1(f), For special purposes: 5 mg	
2(a), Mercury in double-capped linear fluorescent lamps for general lighting purposes not exceeding (per lamp):	
2(a)(1), Tri-band phosphor with normal lifetime and a tube diameter < 9 mm (e.g. T2): 4 mg	
2(a)(2), Tri-band phosphor with normal lifetime and a tube diameter ≥ 9 mm and ≤ 17 mm (e.g. T5): 3 mg	
2(a)(3), Tri-band phosphor with normal lifetime and a tube diameter > 17 mm and ≤ 28 mm (e.g. T8):3.5mg	
2(a)(4), Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 5 mg	Expires on 31 December 2012; 3,5 mg may be used per lamp after 31 December 2012
2(a)(5), Tri-band phosphor with long lifetime (≥ 25 000 h): 5 mg	
2(b), Mercury in other fluorescent lamps not exceeding (per lamp):	
2(b)(2), Non-linear halophosphate lamps (all diameters): 15 mg	Expires on 13 April 2016
2(b)(3), Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9):15mg	
2(b)(4), Lamps for other general lighting and special purposes (e.g. induction lamps):15mg	
3, Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp):	
3(a), Short length (≤500 mm):3.5mg	
3(b), Medium length (> 500 mm and ≤ 1 500 mm):5mg	
3(c), Long length (> 1 500 mm):13mg	
4(a), Mercury in other low pressure discharge lamps (per lamp):15mg	
4(b), Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra > 60:	
4(b) -I, P ≤155 W:30mg	
4(b) -II, 155 W < P ≤ 405 W:40mg	
4(b) -III, P > 405 W:40mg	
4(c), Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner):	
4(c)-I, P ≤ 155 W:25mg	

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 21 of 40

Exemptions	
RoHS Directive 2011/65/EU ANNEX III	
Exemption Items	Expires Date
4(c)-II, 155 W < P ≤ 405 W:30mg	
4(c)-III, P > 405 W:40mg	
4(d), Mercury in High Pressure Mercury (vapour) lamps (HPMV)	Expires on 13 April 2015
4(e), Mercury in metal halide lamps (MH)	
4(f), Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	
5(a), Lead in glass of cathode ray tubes	
5(b), Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	
6(a), Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0,35 % lead by weight	
6(b), Lead as an alloying element in aluminium containing up to 0,4 % lead by weight	
6(c), Copper alloy containing up to 4 % lead by weight	
7(a), Lead in high melting temperature type solders (i.e. lead- based alloys containing 85 % by weight or more lead)	
7(b), Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications	
7(c)-I, Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound	
7(c)-II, Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	
7(c)-III, Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
7(c)-IV, Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors	Expires on 21 July 2016
8(a), Cadmium and its compounds in one shot pellet type thermal cut-offs	Expires on 1 January 2012 and after that date may be used in spare parts for EEE placed on the market before 1 January 2012
8(b), Cadmium and its compounds in electrical contacts	
9, Hexavalent chromium as an anticorrosion agent of the carbon steel cooling system in absorption refrigerators up to 0,75 % by weight in the cooling solution	
9(b), Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications	
11(a), Lead used in C-press compliant pin connector systems	May be used in spare parts for EEE placed on the market before 24 September 2010

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 22 of 40

Exemptions	
RoHS Directive 2011/65/EU ANNEX III	
Exemption Items	Expires Date
11(b), Lead used in other than C-press compliant pin connector systems	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
12, Lead as a coating material for the thermal conduction module C-ring	May be used in spare parts for EEE placed on the market before 24 September 2010
13(a), Lead in white glasses used for optical applications	
13(b), Cadmium and lead in filter glasses and glasses used for reflectance standards	
14, Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80 % and less than 85 % by weight	Expires on 1 January 2011 and after that date may be used in spare parts for EEE placed on the market before 1 January 2011
15, Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	
16, Lead in linear incandescent lamps with silicate coated tubes	Expires on 1 September 2013
17, Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications	
18(b), Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP ($\text{BaSi}_2\text{O}_5:\text{Pb}$)	
21, Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	
23, Lead in finishes of fine pitch components other than connectors with a pitch of 0,65 mm and less	May be used in spare parts for EEE placed on the market before 24 September 2010
24, Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	
25, Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	
29, Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC ⁽¹⁾	
30, Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high-powered loudspeakers with sound pressure levels of 100 dB (A) and more	
31, Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting)	
32, Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	
33, Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers	
34, Lead in cermet-based trimmer potentiometer elements	

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 23 of 40

Exemptions	
RoHS Directive 2011/65/EU ANNEX III	
Exemption Items	Expires Date
37, Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	
38, Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	
39, Cadmium in colour converting II-VI LEDs (< 10 µg Cd per mm ² of light-emitting area) for use in solid state illumination or display systems	Expires on 1 July 2014
40, Cadmium in photoresistors for analogue optocouplers applied in professional audio equipment	Expires on 31 December 2013
Note: 1. ⁽¹⁾ OJ L 326, 29.12.1969, p.36. 2. For the purposes of Directive 2011/65/EU, a maximum concentration value of 0,1 % by weight in homogeneous materials for lead, mercury, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE) and of 0,01 % by weight in homogeneous materials for cadmium shall be tolerated.	

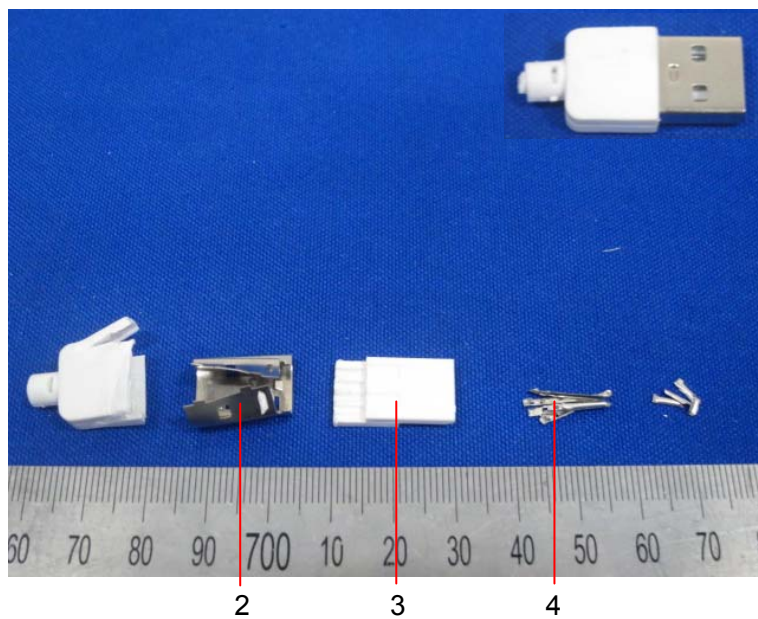
Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 24 of 40

Photo(s) of the sample(s)

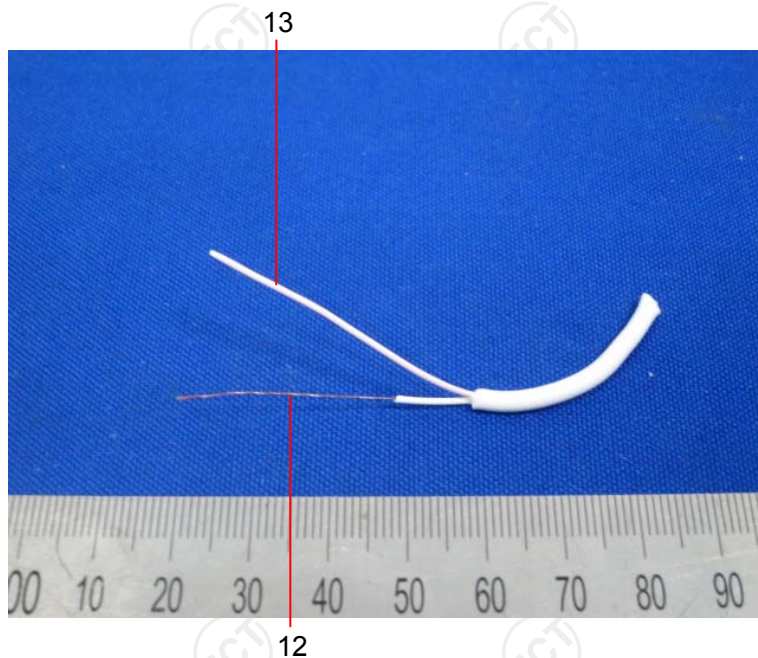
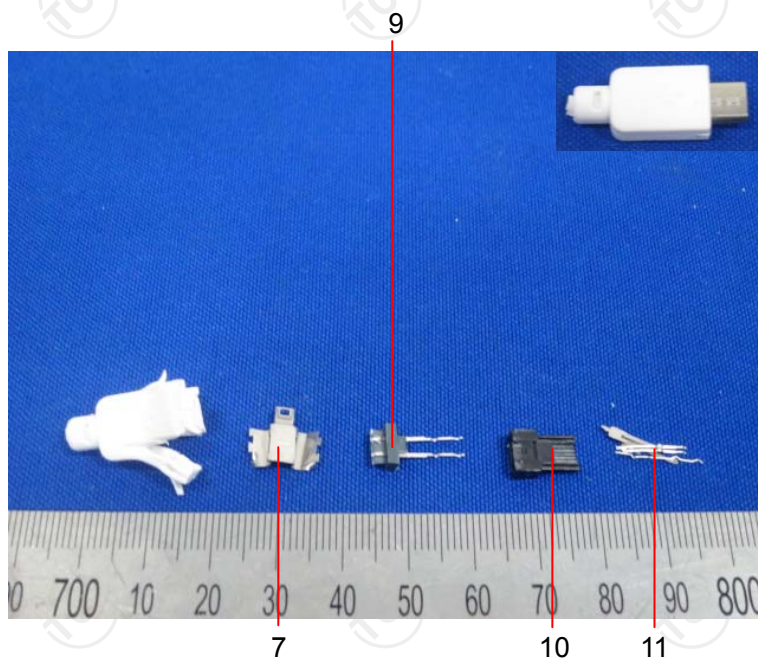


Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 25 of 40

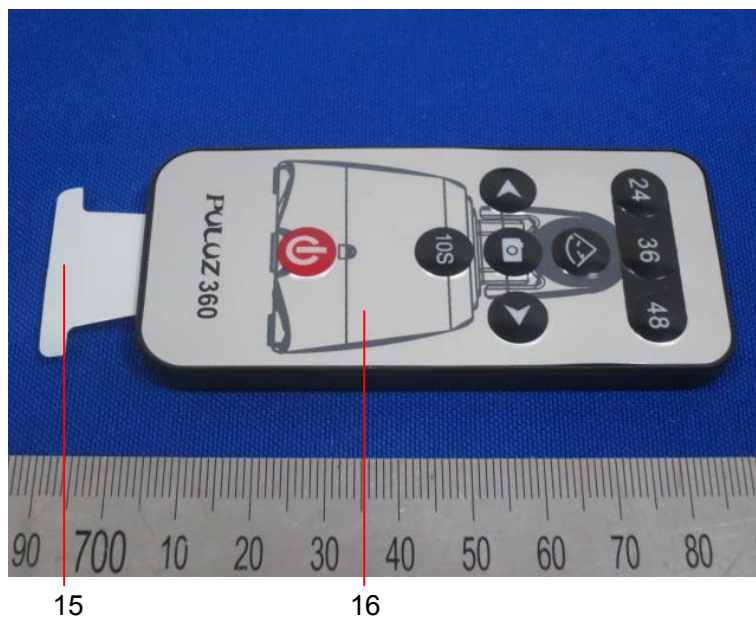


Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 26 of 40

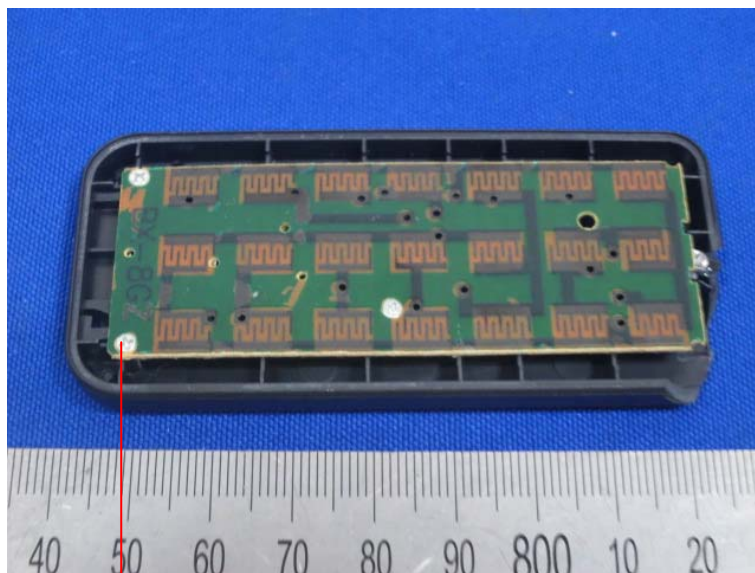


Test Report

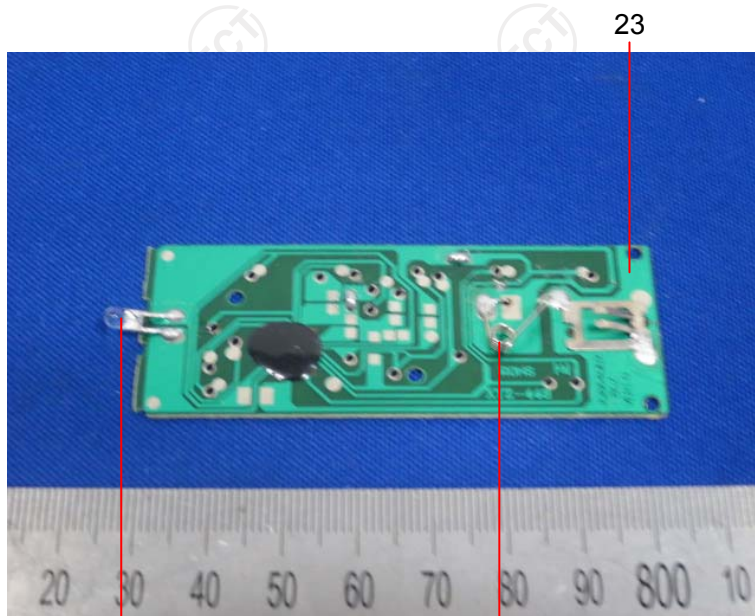
Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 27 of 40



19



20

21

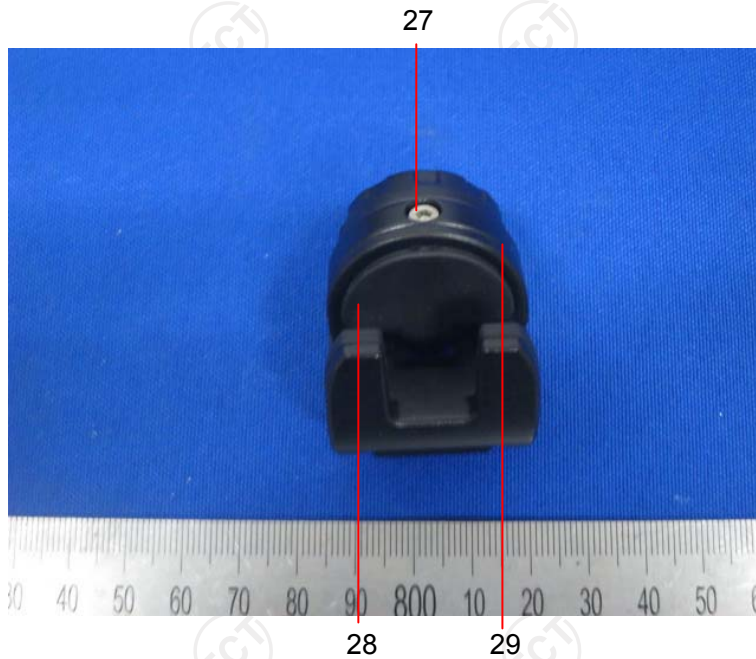
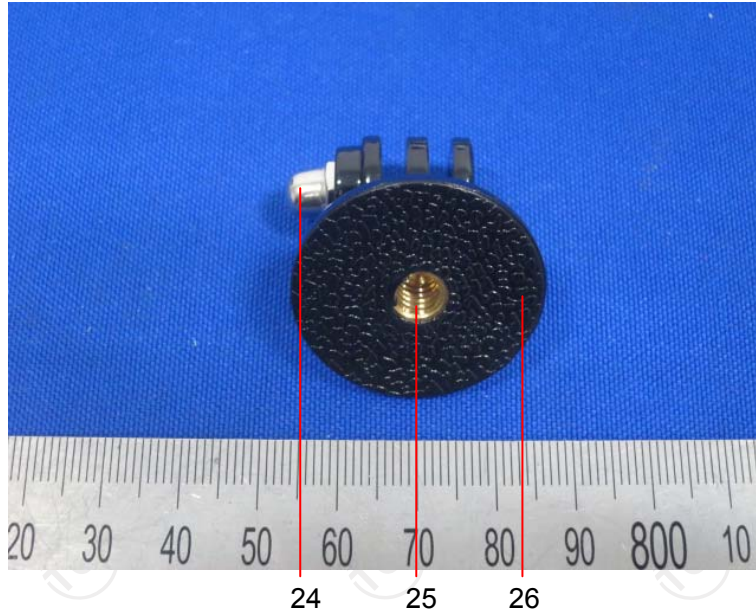
23

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 28 of 40

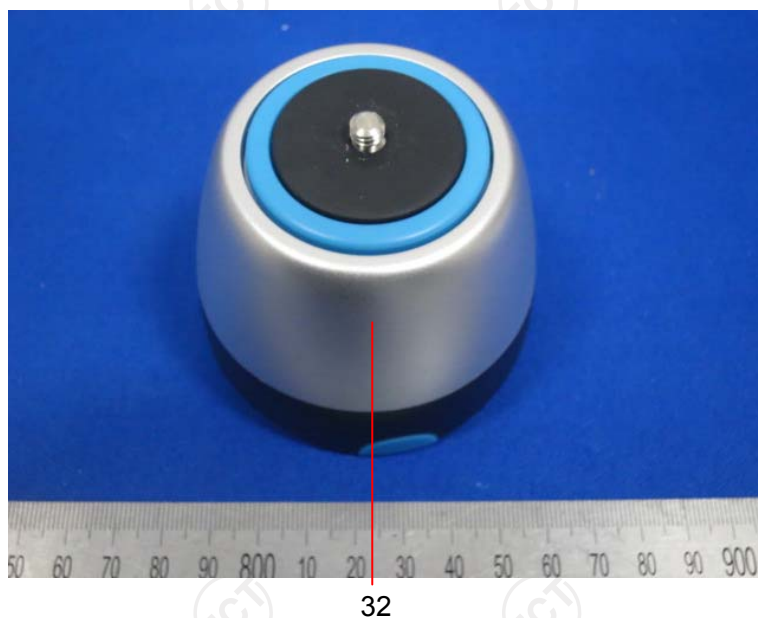
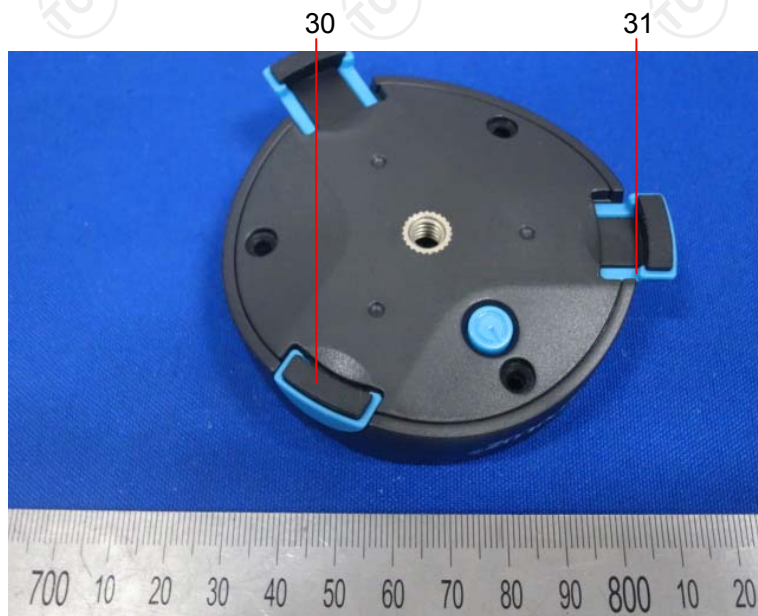


Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 29 of 40

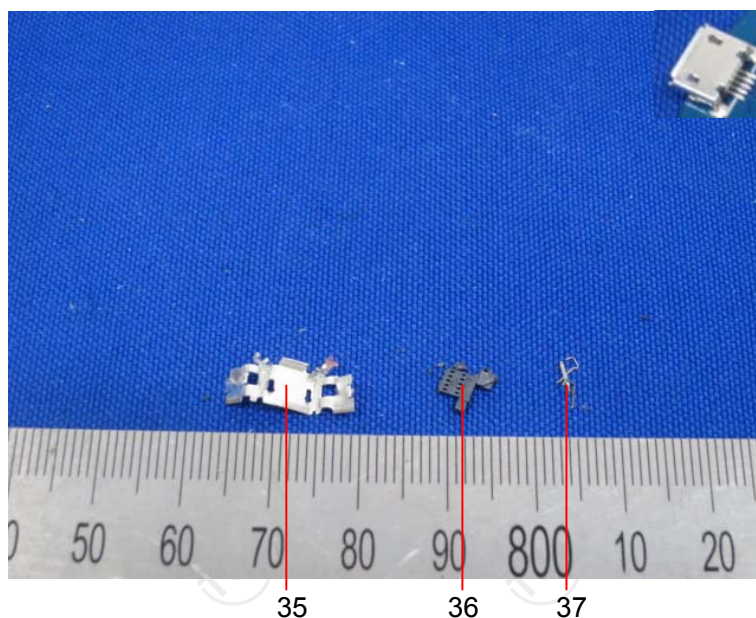


Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 30 of 40

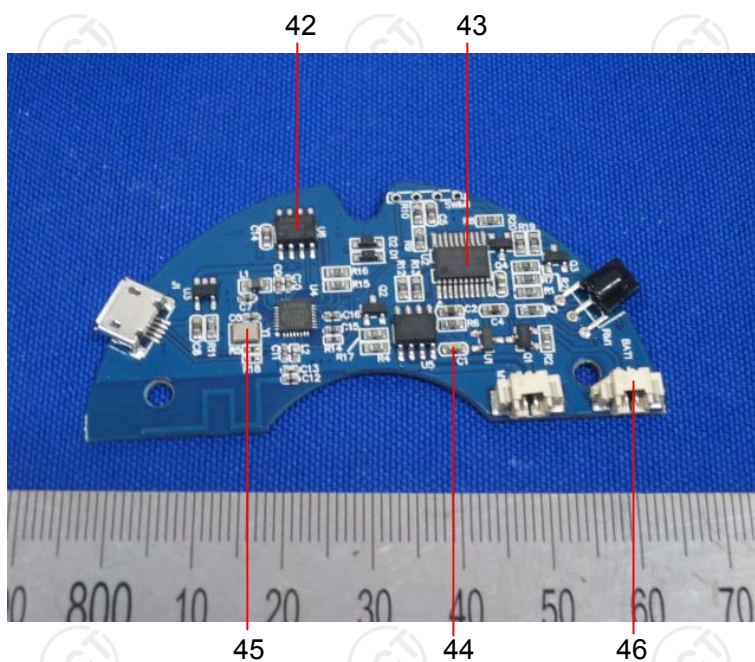
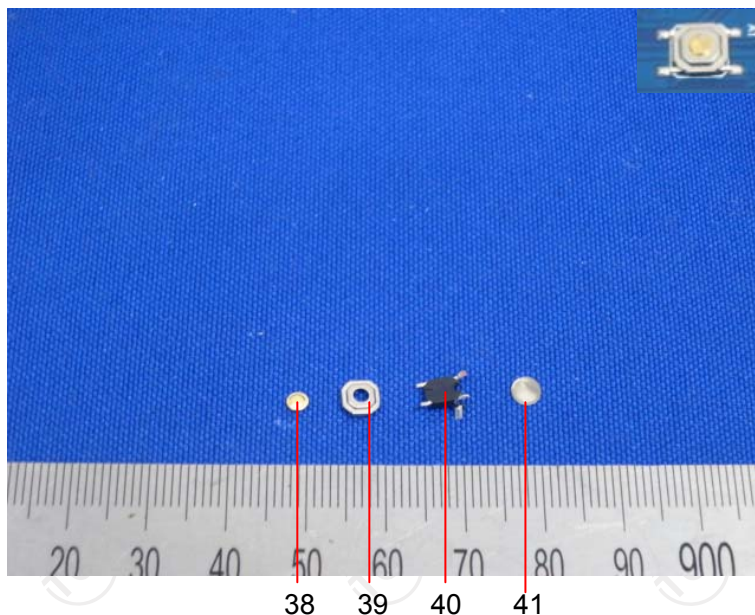


Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 31 of 40

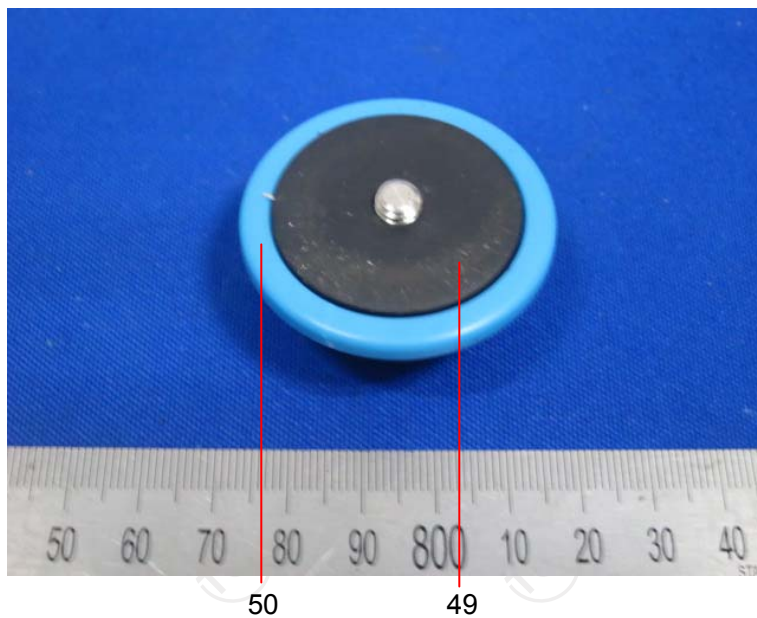
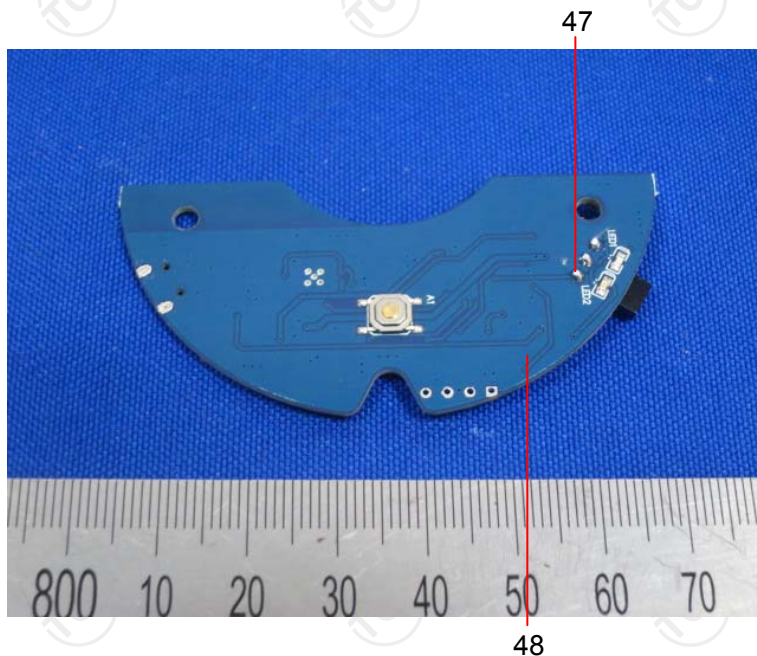


Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 32 of 40

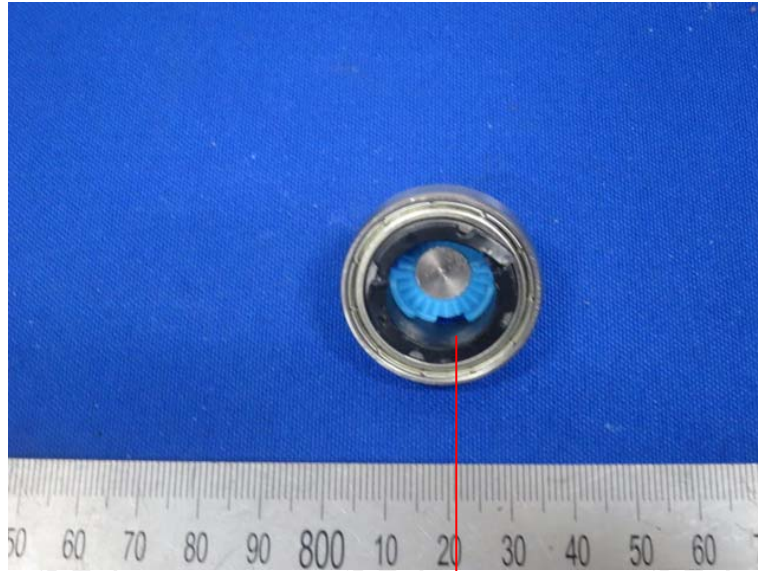


Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 33 of 40



51



52

53

54

55

56

Test Report

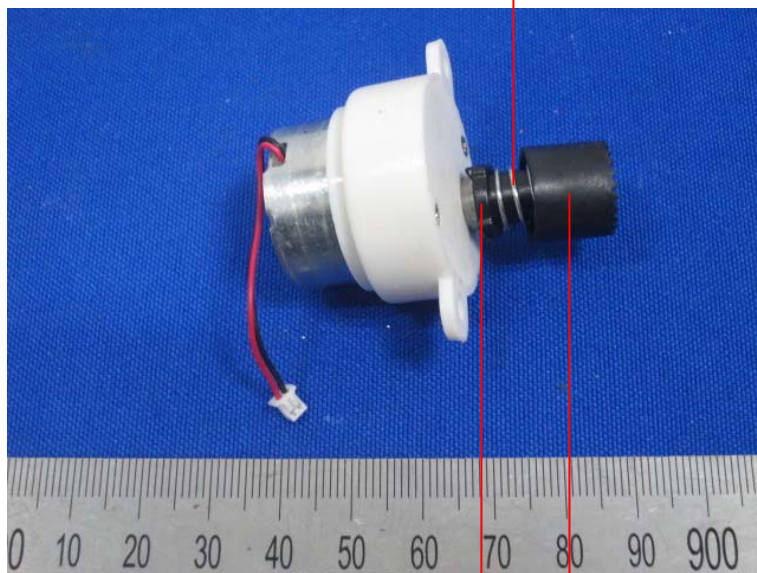
Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 34 of 40



57



59

60

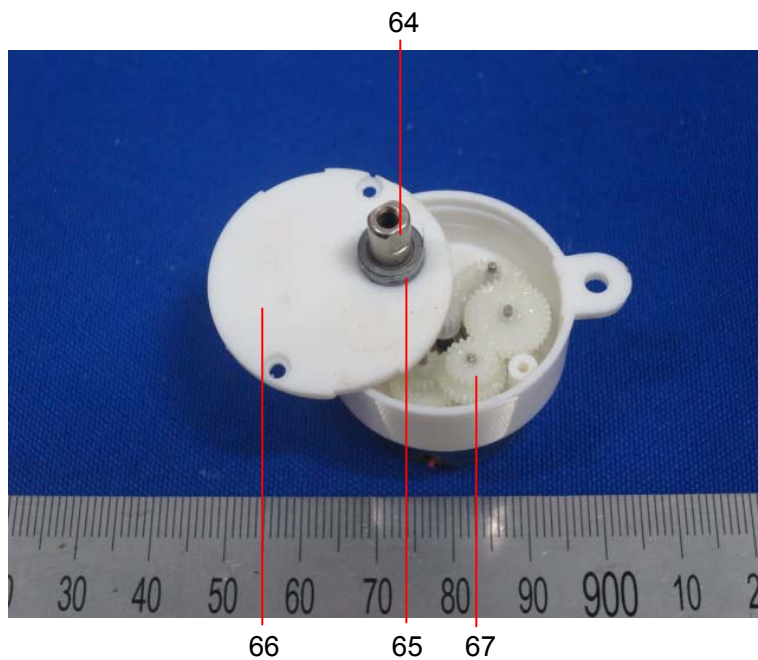
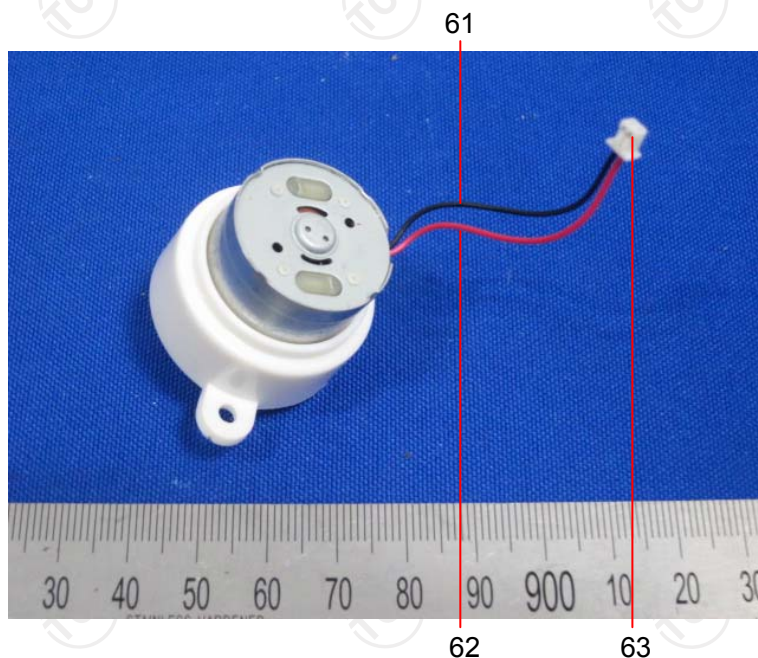
58

Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 35 of 40

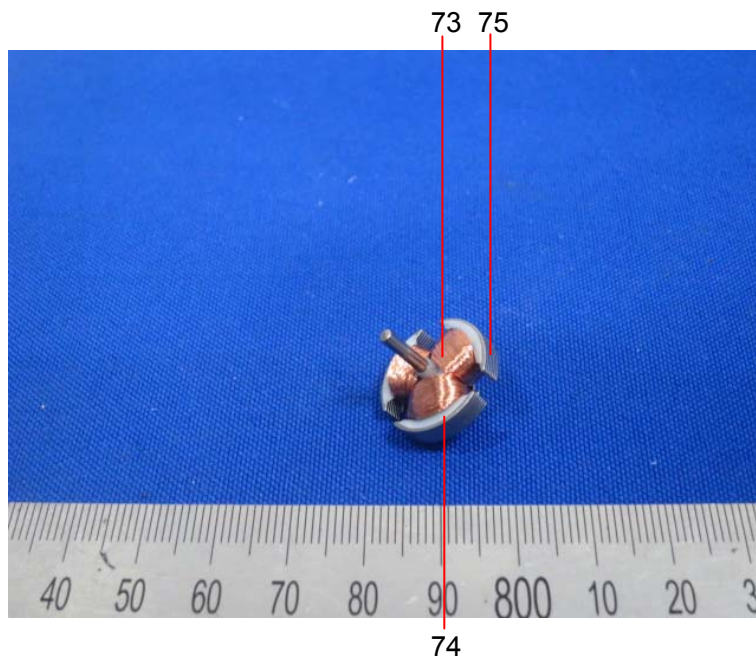
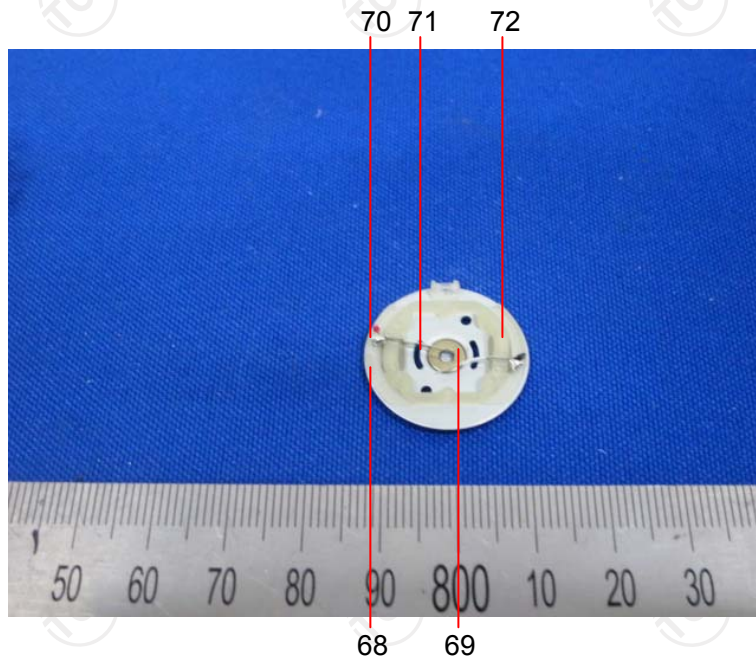


Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 36 of 40

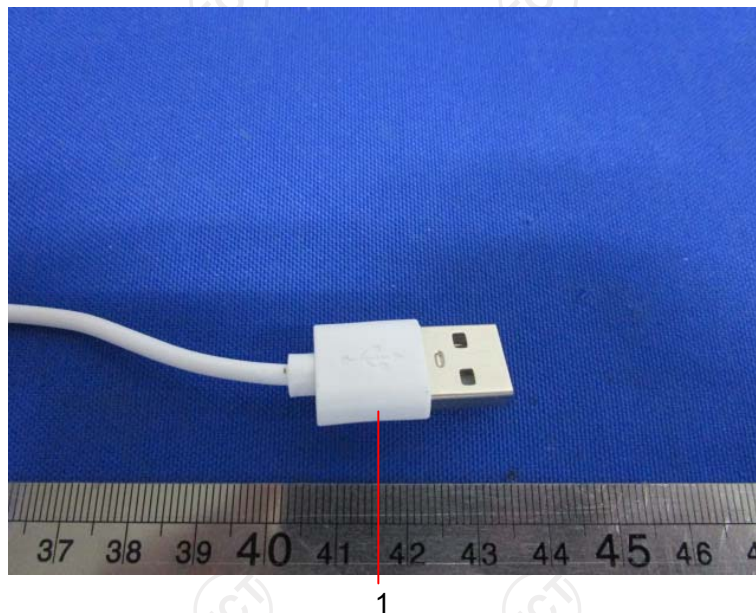
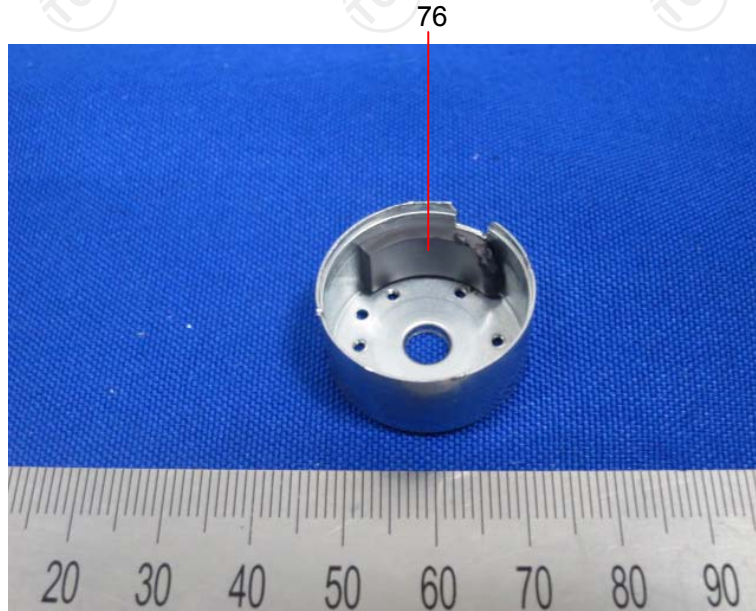


Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 37 of 40

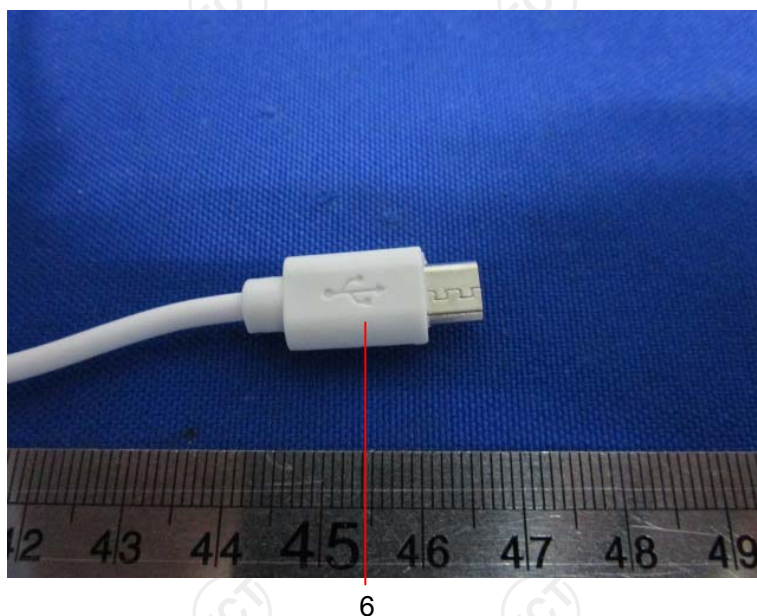
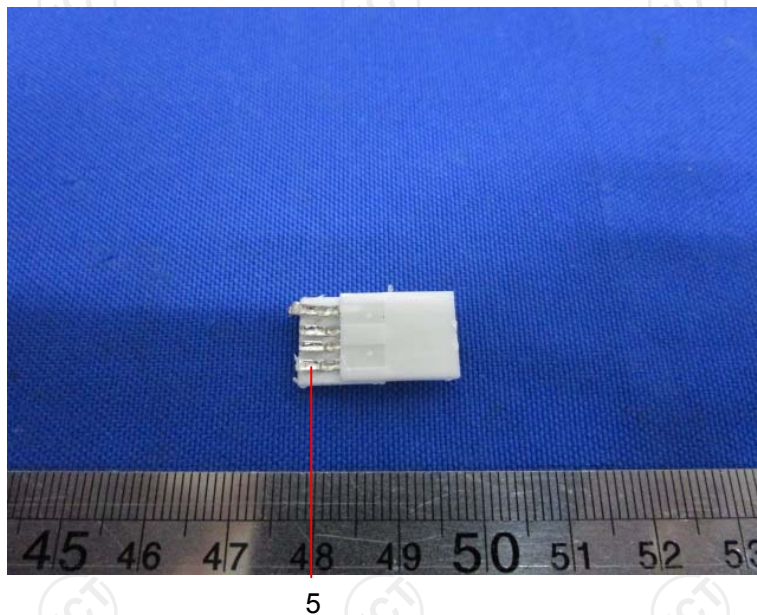


Test Report

Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 38 of 40

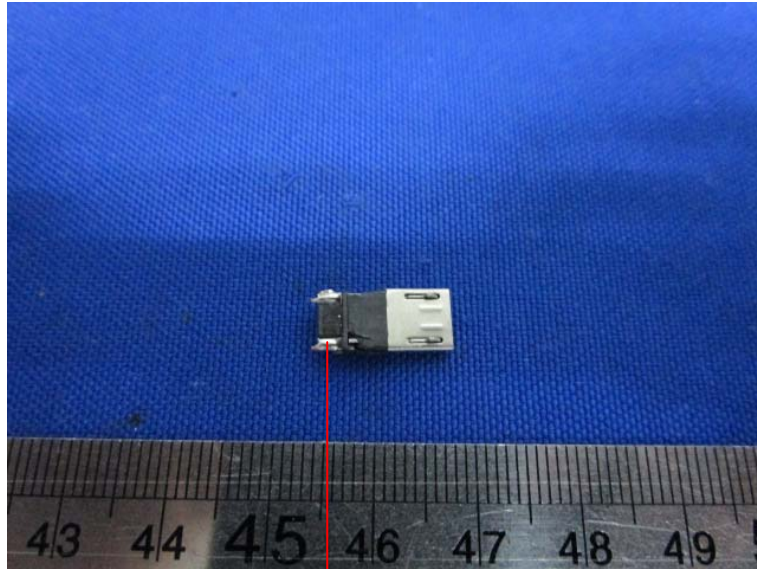


Test Report

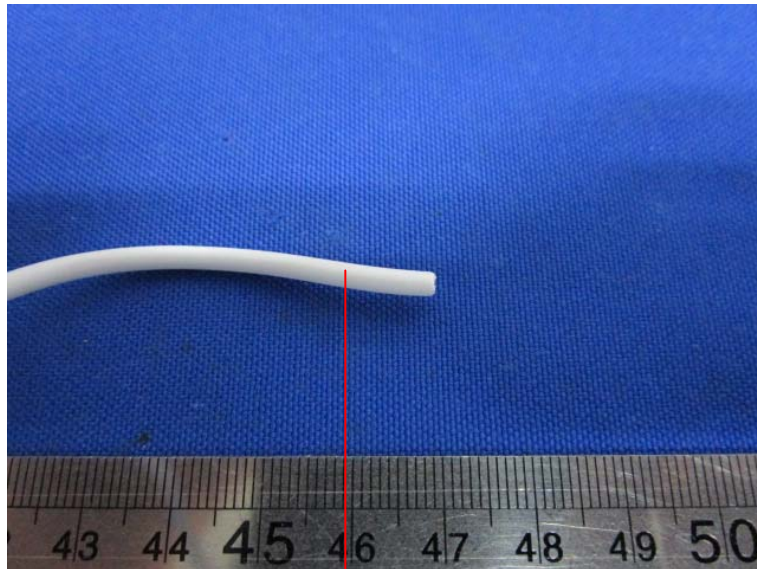
Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 39 of 40



8



14

Test Report

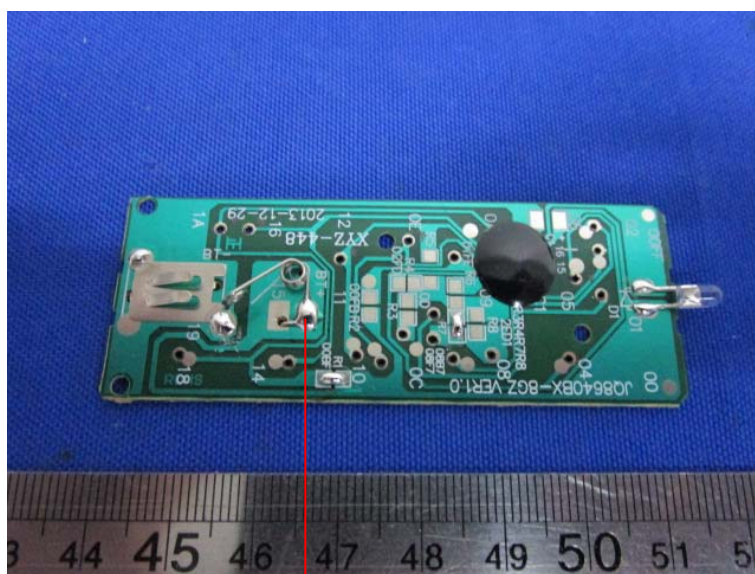
Report No. : TCT180109C015

Date : Feb. 07, 2018

Page No.: 40 of 40



18



22

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

Remark: This report is considered invalidated without the Special Seal for Inspection of the TCT. This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample(s) tested. Without written approval of TCT, this test report shall not be copied except in full and published as advertisement.