

XRF Screening And Chemical Confirmation Test Report

Applicant: UNI-TREND TECHNOLOGY (CHINA) CO., LTD.

No 6, Gong Ye Bei 1 st Road, Songshan Lake National High-Tech Industrial Development Zone, Dongguan City, Guangdong Province, China

Sample Description:

The following submitted sample(s) said to be:

Item Name : **AC Digital Power Clamp**
Model No. : UT219P
Date of Sample Received : Nov 8, 2022
Testing Period : Nov 8, 2022 to Nov 28, 2022

Tests conducted:

As requested by the applicant, refer to following page(s) for details.

Conclusion:

Tested Sample	Standard	Result
Tested components of submitted sample	Screening by XRF spectroscopy and chemical confirmation test for RoHS Directive 2011/65/EU and (EU) 2015/863	Pass

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch:
Prepared by:



Bryce Lai
Project Engineer



Reviewed by:



Michael Pang
Asst. Technical Supervisor



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Certain Hazardous Substance in Electrical and Electronic Equipment

Cadmium (Cd), Lead (Pb), Mercury (Hg), Chromium (Cr) and Bromine (Br) content were measured with reference to IEC 62321-3-1 Edition 1.0: 2013 by XRF spectroscopy and chemical confirmation test for RoHS restricted substances. And Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs) and Phthalates content were determined by Gas Chromatographic-Mass Spectrometric (GC-MS).

(A) Results:

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
1	Cd	ND	NA	PBBs : ND PBDEs : ND
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	Inconclusive		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
2	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
3	Cd	ND	NA	PBBs : ND PBDEs : ND
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	Inconclusive		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
4	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
5	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
6	Cd	ND	NA	Cr ⁶⁺ : Negative
	Pb	ND		
	Hg	ND		
	Cr	Inconclusive		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
7	Cd	ND	NA	Pb:26305mg/kg ^{#1}
	Pb	>1300mg/kg		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
8	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
9	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
10a	Cd	ND	NA	Pb:29546mg/kg#1
	Pb	>1300mg/kg		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
10b	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
11	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
12	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
13	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result	
14a	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	ND	NA	NT	
	DEHP	NA			P
	BBP				P
	DBP				P
DIBP	P				
14b	Cd	ND	NA	Pb:28088mg/kg ^{#1}	
	Pb	>1300mg/kg			
	Hg	ND			
	Cr	ND			
	Br	NT	NA	NA	
	DEHP	NA			NA
	BBP				
	DBP				
DIBP					
15	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	ND	NA	NT	
	DEHP	NA			P
	BBP				P
	DBP				P
DIBP	P				
16	Cd	ND	NA	Cr ⁶⁺ : Negative	
	Pb	ND			
	Hg	ND			
	Cr	Inconclusive			
	Br	NT	NA	NA	
	DEHP	NA			NA
	BBP				
	DBP				
DIBP					
17	Cd	ND	NA	PBBs : ND PBDEs : ND	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	Inconclusive	NA	NT	
	DEHP	NA			P
	BBP				P
	DBP				P
DIBP	P				



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result	
18	Cd	ND	NA	Cr ⁶⁺ : Negative	
	Pb	ND			
	Hg	ND			
	Cr	Inconclusive			
	Br	NT	NA	NA	
	DEHP	NA			
	BBP				
	DBP				
DIBP					
19	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	NT	NA	NA	
	DEHP	NA			
	BBP				
	DBP				
DIBP					
20	Cd	ND	NA	PBBs : ND PBDEs : ND	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	Inconclusive	NA	NT	
	DEHP	NA			P
	BBP				P
	DBP				P
DIBP			P		
21	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	ND	NA	NT	
	DEHP	NA			P
	BBP				P
	DBP				P
DIBP			P		
22	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	ND	NA	NT	
	DEHP	NA			ND
	BBP				ND
	DBP				ND
DIBP			ND		



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
23	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
24	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
25	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
26	Cd	ND	NA	Pb:35639mg/kg#1
	Pb	>1300mg/kg		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
27	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			ND
DIBP	ND			



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
28	Cd	ND	NA	Cr ⁶⁺ : Negative
	Pb	ND		
	Hg	ND		
	Cr	Inconclusive		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
29	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
30	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			ND
DIBP	ND			
31	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
32	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
33	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
34a	Cd	ND	NA	PBBs : ND PBDEs : ND
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	Inconclusive		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
34b	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
34c	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
34d	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
34e	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			ND
DIBP	ND			
34f	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP			
	DBP			
DIBP				
34g	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP			
	DBP			
DIBP				
34h	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP			
	DBP			
DIBP				
34i	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP			
	DBP			
DIBP				



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
34j	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
34k	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
34l	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
34m	Cd	ND	NA	PBBs : ND PBDEs : ND
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	Inconclusive		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
34n	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
35	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
36	Cd	ND	NA	PBBs : ND PBDEs : ND
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	Inconclusive		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
37	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
38	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
39a	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
39b	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
40a	Cd	ND	NA	Cr ⁶⁺ : ND
	Pb	>1500mg/kg ^{#2}		
	Hg	ND		
	Cr	Inconclusive		
	Br	ND		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
40b	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
41	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
42	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
43a	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
43b	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	Detected		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
44	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
45	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
46	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
47	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
48a	Cd	ND	NA	PBBs : ND PBDEs : ND
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	Inconclusive		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
48b	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP		NA	
	DBP		NA	
DIBP	NA			
49a	Cd	ND	NA	PBBs : ND PBDEs : ND
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	Inconclusive		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
49b	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP		NA	
	DBP		NA	
DIBP	NA			



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result	
50a	Cd	ND	NA	Cr ⁶⁺ : Negative	
	Pb	ND			
	Hg	ND			
	Cr	Inconclusive			
	Br	NT	NA	NA	
	DEHP	NA			
	BBP				
	DBP				
DIBP					
50b	Cd	ND	NA	NT	
	Pb	>1500mg/kg ^{#2}			
	Hg	ND			
	Cr	ND			
	Br	ND	NA	NA	
	DEHP	NA			
	BBP				
	DBP				
DIBP					
50c	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	NT	NA	NA	
	DEHP	NA			
	BBP				
	DBP				
DIBP					
51	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	ND	NA	NT	
	DEHP	NA			P
	BBP				P
	DBP				P
DIBP			P		
52	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	ND	NA	NT	
	DEHP	NA			P
	BBP				P
	DBP				P
DIBP			P		



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
53a	Cd	ND	NA	PBBs : ND PBDEs : ND
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	Inconclusive		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
53b	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
53c	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
53d	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
53e	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
53f	Cd	ND	NA	PBBs : ND PBDEs : ND
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	Inconclusive		
	DEHP	NA	P	NT
	BBP		P	
	DBP		P	
DIBP	P			
53g	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
54	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
55	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
56	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result	
57	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	ND	NA	NA	
	DEHP	NA			
	BBP				
	DBP				
DIBP					
58a	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	Detected			
	Br	ND	NA	NA	
	DEHP	NA			
	BBP				
	DBP				
DIBP					
58b	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	NT	NA	NA	
	DEHP	NA			
	BBP				
	DBP				
DIBP					
59	Cd	ND	NA	PBBs : ND PBDEs : ND	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	Inconclusive	NA	NT	
	DEHP	NA			P
	BBP				P
	DBP				P
DIBP			P		
60	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	NT	NA	NA	
	DEHP	NA			
	BBP				
	DBP				
DIBP					



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Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result	
61	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	ND	NA	NT	
	DEHP	NA			P
	BBP				P
	DBP				P
DIBP	P				
62	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	NT	NA	NA	
	DEHP	NA			NA
	BBP				
	DBP				
DIBP					
63	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	ND	NA	NT	
	DEHP	NA			P
	BBP				P
	DBP				P
DIBP	P				
64	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	ND	NA	NA	
	DEHP	NA			NA
	BBP				
	DBP				
DIBP					
65	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	ND	NA	NA	
	DEHP	NA			NA
	BBP				
	DBP				
DIBP					



XRF Screening And Chemical Confirmation Test Report

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result	
66	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	ND	NA	NT	
	DEHP	NA			P
	BBP				P
	DBP				P
DIBP	P				
67	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	ND	NA	NA	
	DEHP	NA			NA
	BBP				
	DBP				
DIBP					
68	Cd	ND	NA	PBBs : ND PBDEs : ND	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	Inconclusive	NA	NT	
	DEHP	NA			P
	BBP				P
	DBP				P
DIBP	P				
69	Cd	ND	NA	NT	
	Pb	ND			
	Hg	ND			
	Cr	ND			
	Br	NT	NA	NA	
	DEHP	NA			NA
	BBP				
	DBP				
DIBP					

Detected = Below the lower screening limit of table (B1) and pass

ND = Not detected

NT = Not tested

NA = Not applicable

Negative = The Cr (VI) concentration is less than 0.10 µg/cm². The sample is negative for Cr (VI).



XRF Screening And Chemical Confirmation Test Report

Remark:

(# 1) = As claimed by the declaration submitted from the applicant, the Lead content of the component comes from Copper alloy only. According to EU RoHS Directive (2011/65/EU) Annex III 6(c), Lead in Copper alloy containing up to 4% (40,000 mg/kg) Lead by weight can be exempted.

(# 2) = As claimed by the declaration submitted from the applicant, the Lead content of the components is coming from the constituent of glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or a glass or ceramic matrix compound of the electrical and electronic component only. According to EU RoHS Directive (2011/65/EU) Annex III 7(c)-I, Lead in this component can be exempted.

(B) Screening Limits

(B1). XRF Screening Limits in mg/kg for Regulated Elements in Various Matrices

Element	Polymer Materials	Metallic Materials	Composite Materials
Cd	$P \leq 70 < X < 130 \leq F$	$P \leq 70 < X < 130 \leq F$	$P \leq 70 < X < 150 \leq F$
Pb	$P \leq 700 < X < 1300 \leq F$	$P \leq 700 < X < 1300 \leq F$	$P \leq 500 < X < 1500 \leq F$
Hg	$P \leq 700 < X < 1300 \leq F$	$P \leq 700 < X < 1300 \leq F$	$P \leq 500 < X < 1500 \leq F$
Cr	$P \leq 700 < X$	$P \leq 700 < X$	$P \leq 500 < X$
Br	$P \leq 300 < X$	Not applicable	$P \leq 250 < X$

XRF spectrometry provides information on the total quantity of each element present in the sample, but does not identify compounds or valence states of the elements. Therefore, special attention shall be paid when screening for chromium and bromine, where the result will reflect only the total chromium and total bromine present. The presence of Cr(VI) or the brominated flame retardants PBB or PBDE shall be confirmed by a verification test procedure.

P = Pass

X = Inconclusive result

F = Fail

mg/kg = milligram per kilogram = ppm

(B2). Preliminary screening test will be used for phthalates, if the results exceed the warning area in the following table, further chemical methods will be conducted to confirm the exact content by GC/MS.

Phthalates	Polymer
Bis(2-ethylhexyl) phthalate (DEHP)	$P \leq 600 < X$
Butyl benzyl phthalate (BBP)	$P \leq 600 < X$
Dibutyl phthalate (DBP)	$P \leq 600 < X$
Diisobutyl phthalate (DIBP)	$P \leq 600 < X$

P = Pass

X = Inconclusive result



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(C) Estimated Detection Limits in mg/kg for Regulated Elements in Various Matrices

Element	Polymer Materials	Metallic Materials	Composite Materials
Cd	50	70	70
Pb	100	200	200
Hg	100	200	200
Cr	100	200	200
Br	200	Not applicable	200

Disclaimers:

This XRF Screening and Chemical Confirmation Test Report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF Screening and Chemical Confirmation Test Report is sufficient for its/his/her purposes.

The results shown in this XRF Screening and Chemical Confirmation Test Report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis is required to obtain quantitative data.

(D) Chemical Test Methods:

Test Item	Test Method	Detection Limit
Cadmium (Cd) Content	With reference to IEC 62321-5 Edition 1.0: 2013, by acid digestion and determined by ICP - OES	10 mg/kg
Lead (Pb) Content	With reference to IEC 62321-5 Edition 1.0: 2013, by acid digestion and determined by ICP - OES	10 mg/kg
Mercury (Hg) Content	With reference to IEC 62321-4 Edition 1.1: 2017, by acid digestion and determined by ICP - OES	10 mg/kg
Chromium (VI)(Cr ⁶⁺) Content	With reference to IEC 62321-7-2 Edition 1.0: 2017, Hexavalent chromium – Determination of hexavalent chromium (Cr(VI) in polymers and electronics by the colorimetric method	10 mg/kg
Chromium (VI) (Cr ⁶⁺) Content	With reference to IEC 62321-7-1 Edition 1.0: 2015, by boiling water extraction and determined by UV-VIS spectrophotometer	0.10 µg/cm ²
Polybrominated Biphenyls (PBBs) Content	With reference to IEC 62321-6 Edition 1.0: 2015, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary	100 mg/kg for single compound
Polybrominated Diphenyl Ethers (PBDEs) Content	With reference to IEC 62321-6 Edition 1.0: 2015, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary	100 mg/kg for single compound
Phthalates (DEHP, BBP, DBP, DIBP) Content	With reference to IEC 62321-8 Edition 1.0: 2017, by solvent extraction and determined by GC/MS	100 mg/kg for single compound



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(E) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)
Phthalates (DEHP, BBP, DBP, DIBP)	0.1% (1000 mg/kg)

The above limits were quoted from 2011/65/EU and (EU) 2015/863 for homogeneous material.



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Screened components:

- (1) Black plastic
- (2) Black treated metal(screw)
- (3) Black plastic with white printing
- (4) Red soft plastic
- (5) Black soft plastic
- (6) Black treated metal(screw)
- (7) Golden metal
- (8) Transparent plastic
- (9) Silvery metal(spring)
- (10a) Golden metal
- (10b) Silvery metal(screw)
- (11) Silvery metal(screw)
- (12) Silvery metal
- (13) Silvery metal
- (14a) Red plastic
- (14b) Silvery metal
- (15) Black plastic
- (16) Black treated metal
- (17) Black plastic
- (18) Silvery metal
- (19) Copper color metal
- (20) Black plastic
- (21) Black soft plastic
- (22) Black foam
- (23) Silvery metal(spring)
- (24) Silvery metal(spring)
- (25) Grey soft plastic with multicolor printing
- (26) Golden metal
- (27) White glue
- (28) Silvery metal
- (29) Black plastic
- (30) Brown FPC
- (31) Silvery metal
- (32) Silvery metal(screw)
- (33) Brown ceramic with silvery metal(SMD capacitor)
- (34a) Black plastic
- (34b) Transparent glass
- (34c) Semi-transparent black plastic
- (34d) Transparent plastic
- (34e) Silvery plastic
- (34f) Semi-transparent white plastic
- (34g) Black tape



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- (34h) White plastic
- (34i) Transparent plastic
- (34j) Black soft plastic
- (34k) Transparent plastic & white fiberboard with yellow coating & golden metal(SMD LED)
- (34l) Transparent plastic & white fiberboard with white coating & golden metal(SMD LED)
- (34m) White PCB
- (34n) Solder
- (35) White ceramic with black material & white printing & silvery metal(SMD resistor)
- (36) Black body with silvery metal (SMD triode)
- (37) Black body with silvery metal (IC)
- (38) Black body with silvery metal (SMD diode)
- (39a) Blue body with black printing
- (39b) Silvery metal(pin)
- (40a) Green ceramic body
- (40b) Silvery metal (pin)
- (41) Brown ceramic with silvery metal(SMD capacitor)
- (42) Black body with silvery metal (IC)
- (43a) Silvery metal & quartz & green material
- (43b) Black plastic
- (44) Black body with silvery metal (IC)
- (45) Black body with silvery metal (IC)
- (46) Black body with silvery metal (IC)
- (47) Black body with silvery metal (SMD diode)
- (48a) Black plastic
- (48b) Silvery metal(pin)
- (49a) Black plastic
- (49b) Silvery metal(pin)
- (50a) Silvery metal
- (50b) White ceramic
- (50c) Silvery metal(pin)
- (51) Black body with silvery metal (IC)
- (52) Black body with silvery metal (IC)
- (53a) Black plastic
- (53b) Silvery metal
- (53c) Black magnet
- (53d) Silvery metal
- (53e) Copper color metal wire
- (53f) Green PCB
- (53g) Solder
- (54) Brown ceramic with silvery metal(SMD capacitor)
- (55) Blue body with multicolor printing(resistor)
- (56) White ceramic with black material & white printing & silvery metal(SMD resistor)
- (57) Silvery metal & quartz & green material (SMD crystal)
- (58a) Black magnet

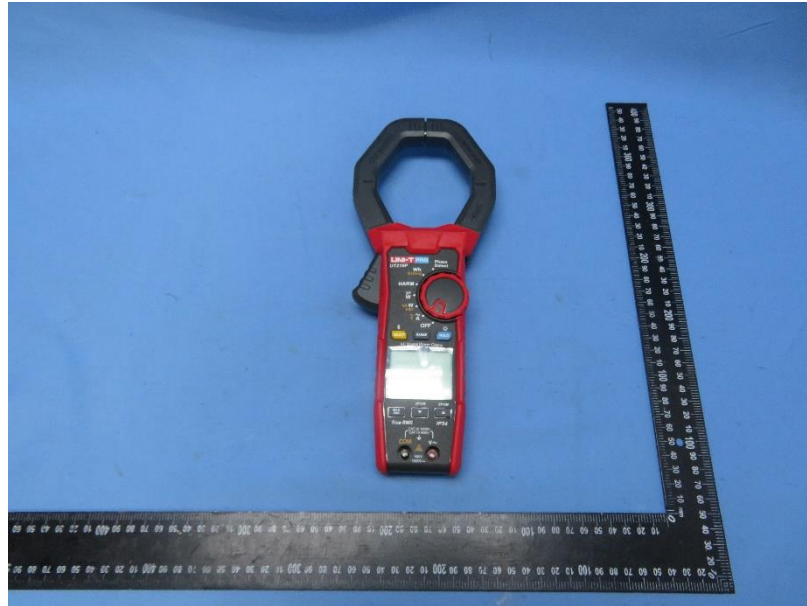


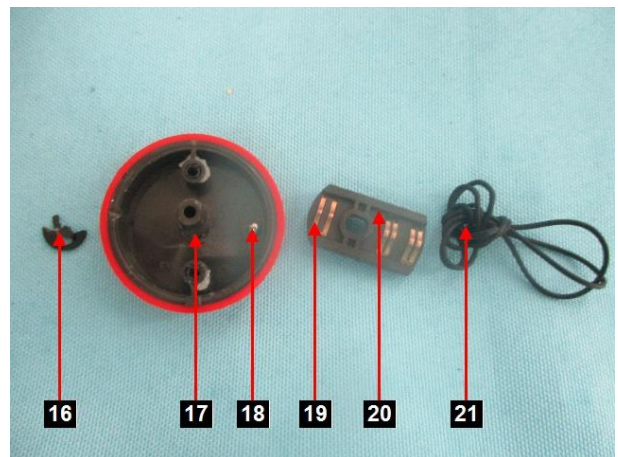
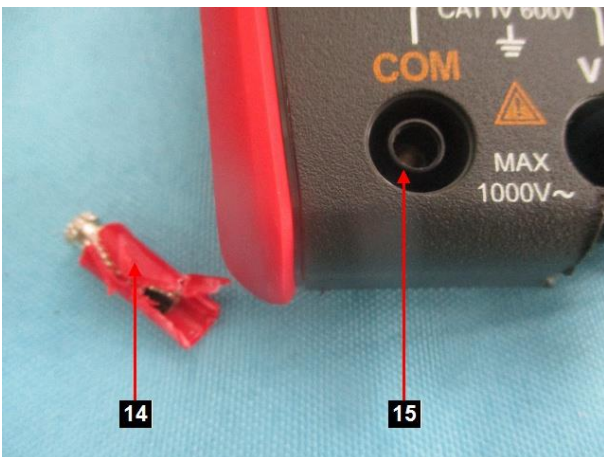
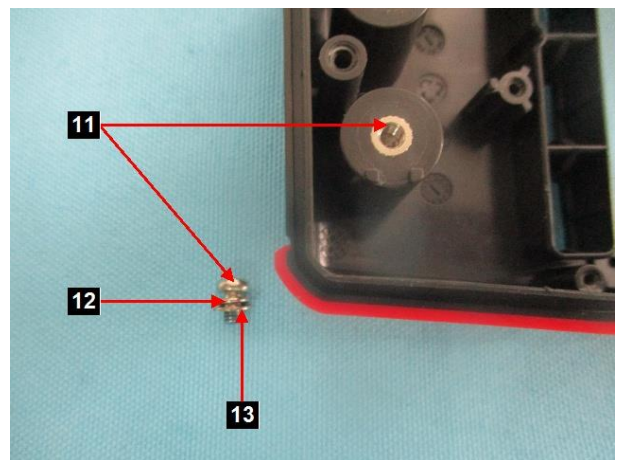
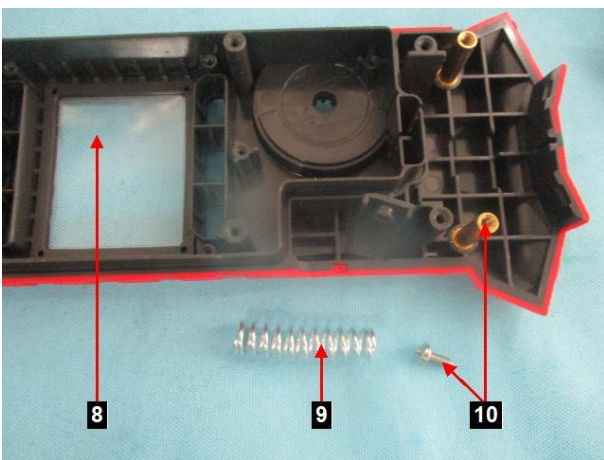
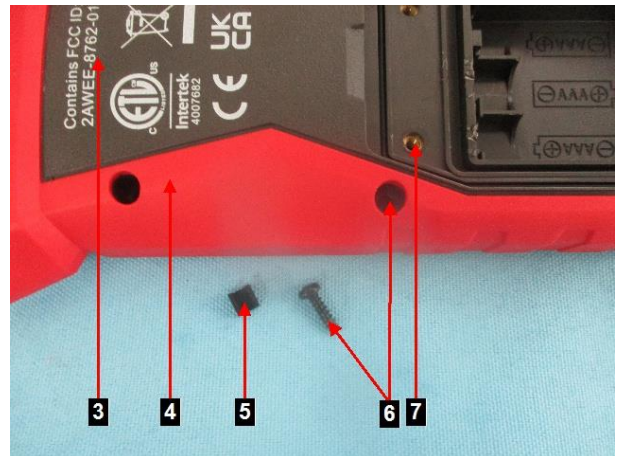
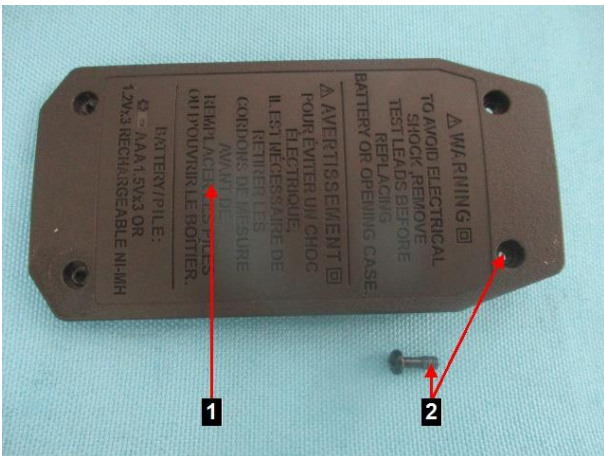
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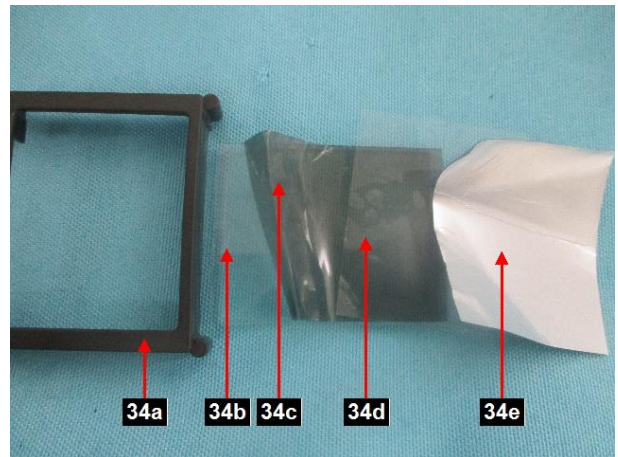
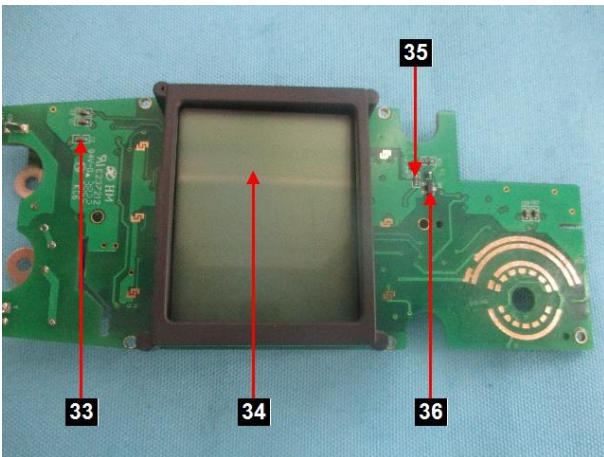
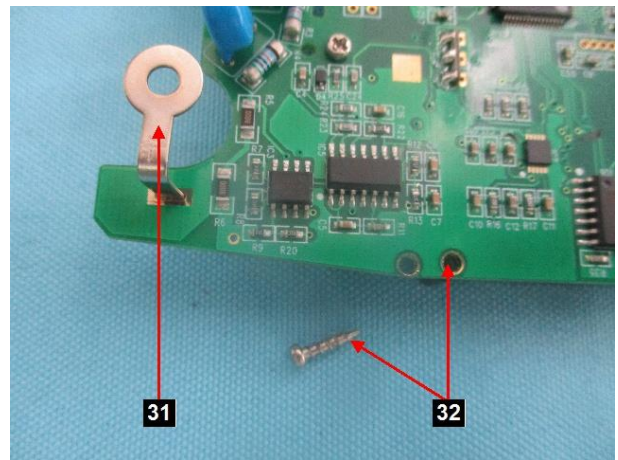
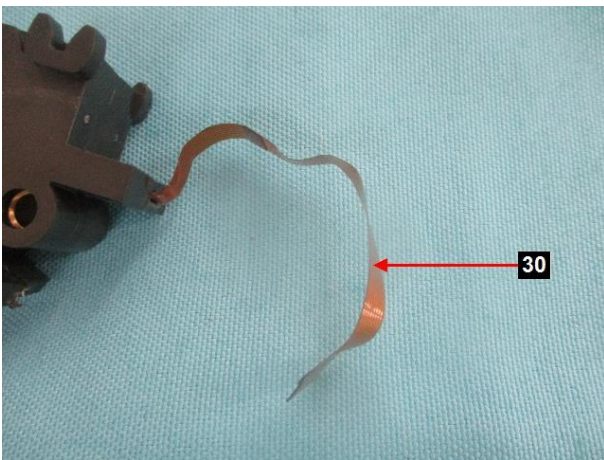
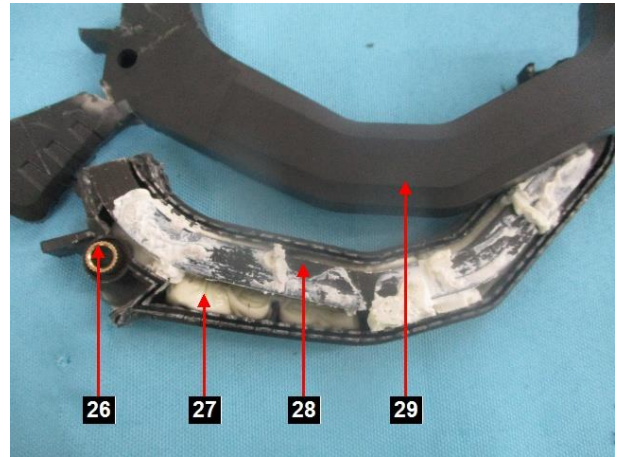
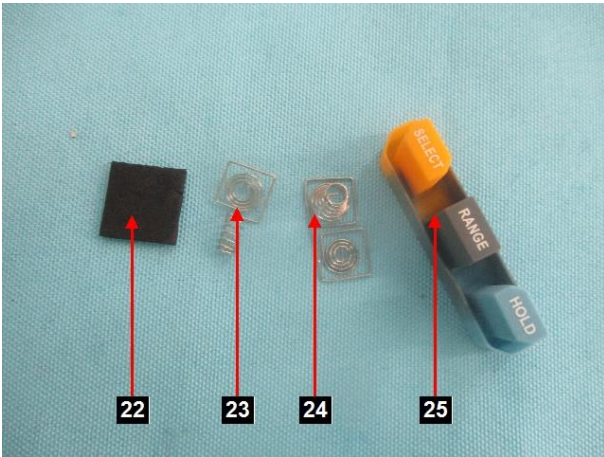
- (58b) Copper color metal wire
- (59) Green PCB
- (60) Solder
- (61) Black plastic
- (62) Silvery metal
- (63) White paper label with black printing and transparent film
- (64) Brown ceramic with silvery metal(SMD capacitor)
- (65) Silvery metal & quartz & green material (SMD crystal)
- (66) Black body with silvery metal (IC)
- (67) Grey ceramic with silvery metal(SMD capacitor)
- (68) Blue PCB
- (69) Solder

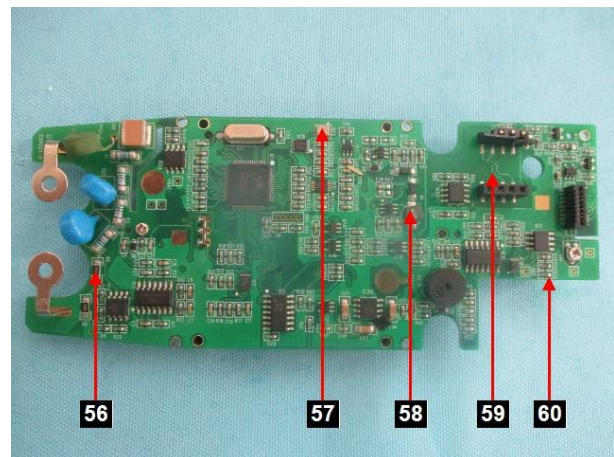
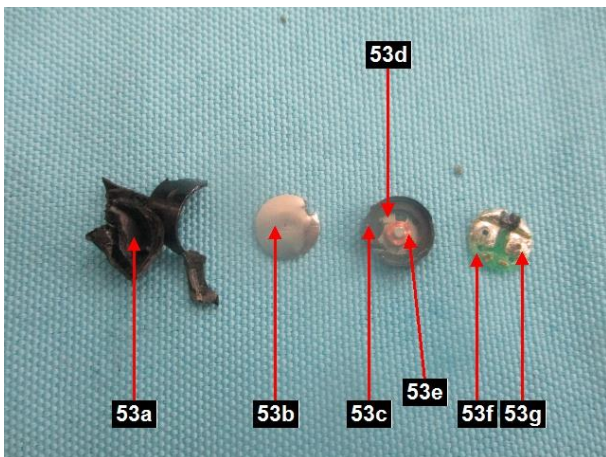
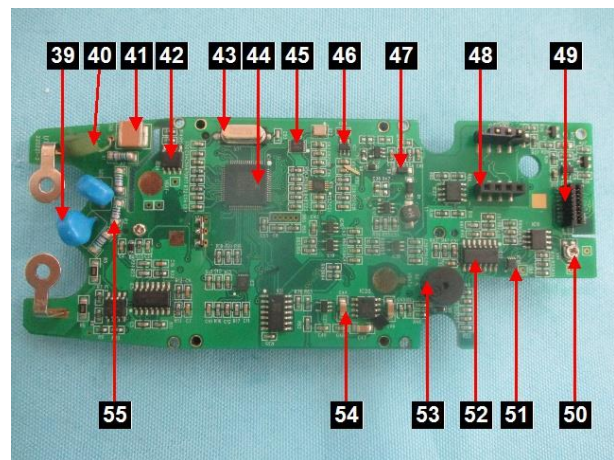
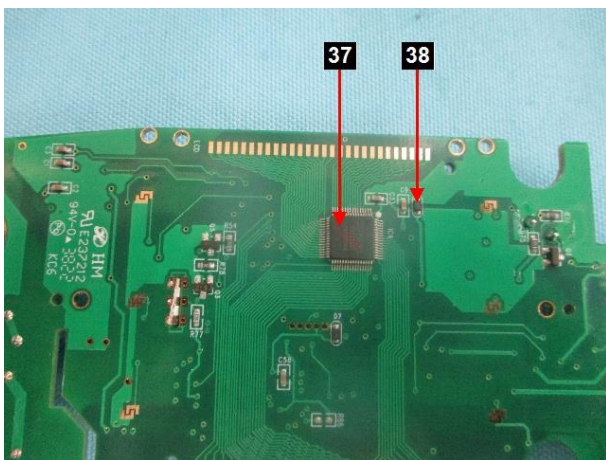
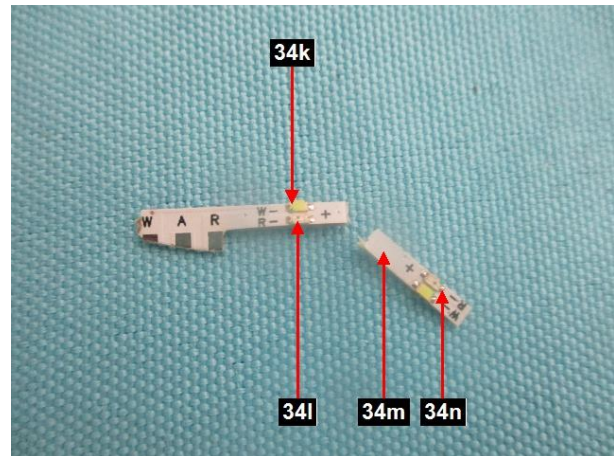
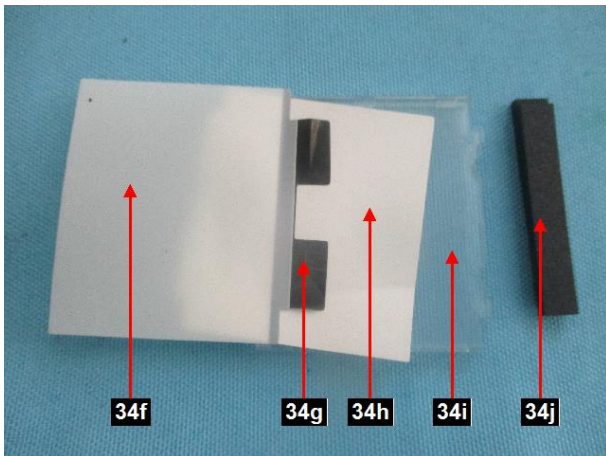


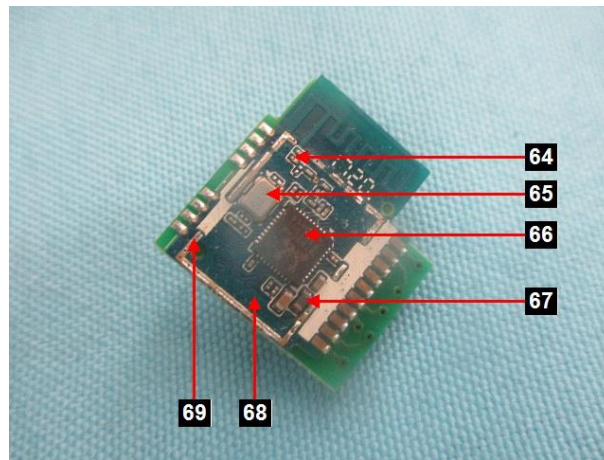
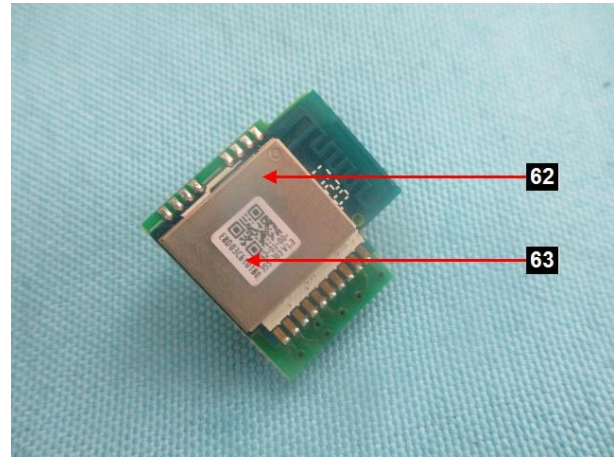
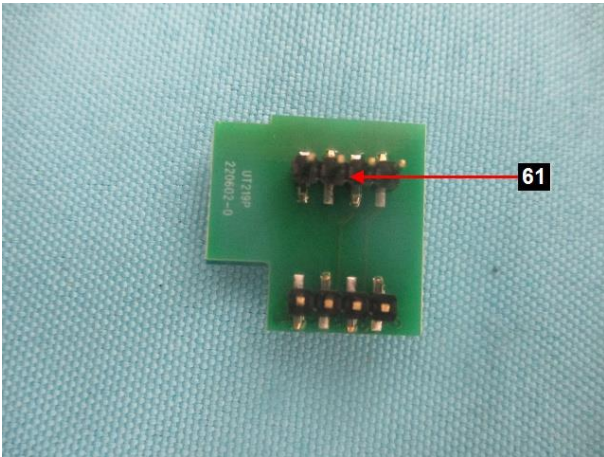
Sample photo











End of report

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