



中国认可  
国际互认  
检测  
TESTING  
CNAS L6478



# TEST REPORT

**Report No.** ..... : WTF22F03050279C

**Applicant**..... : Mid Ocean Brands B.V.

**Address**..... : 7/F., Kings Tower, 111 King Lam Street, Cheung Sha  
Wan, Kowloon, Hong Kong

**Manufacturer** ..... : 109979

**Sample Name** ..... : Foldable wireless charger

**Sample Model**..... : MO6565

**Date of Receipt sample** ..... : 2022-03-23

**Testing period** ..... : 2022-03-23 ~ 2022-03-31

**Date of Issue**..... : 2022-04-21

**Test Result**..... : Refer to next page (s)

## Prepared By:

**Waltek Testing Group (Foshan) Co., Ltd.**

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Signed for and on behalf of  
Waltek Testing Group (Foshan) Co., Ltd.

Swing.Liang



**Test Requested** ..... : In accordance with the RoHS Directive 2011/65/EU and its amendment (EU) No. 2015/863.

**Test Method**..... :  
1) With reference to IEC 62321-2:2021, disassembly, disjunction and mechanical sample preparation  
2) With reference to IEC 62321-3-1:2013, screening – Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry  
3) With reference to IEC 62321-4:2013+AMD1:2017 CSV, determination of Mercury by ICP-OES  
4) With reference to IEC 62321-5:2013, determination of Lead and Cadmium by ICP-OES  
5) With reference to IEC 62321-7-2: 2017 and IEC 62321-7-1: 2015, determination of Hexavalent Chromium by UV-Vis  
6) With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS  
7) With reference to IEC 62321-8:2017, determination of Phthalates content by GC-MS.

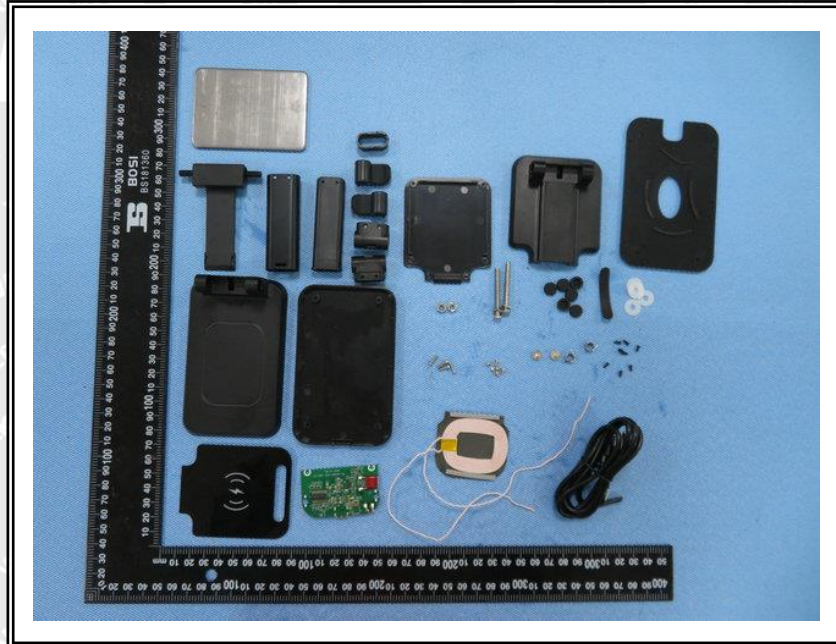
**Test Conclusion** ..... : **Pass** (Based on the performed tests on the submitted samples, the results comply with the RoHS Directive 2011/65/EU and its amendment (EU) No. 2015/863)

**WALTEK**





**Sample Photo(s):**



**Test Results:****1. Lead, Mercury, Cadmium, Hexavalent Chromium, PBBs and PBDEs**

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
1	Silvery metal nut	BL	BL	BL	IN	BL	Cr <sup>6+</sup> : Negative
2	Silvery metal screw	BL	BL	BL	IN	BL	Cr <sup>6+</sup> : Negative
3	Silvery metal ring	BL	BL	BL	IN	BL	Cr <sup>6+</sup> : Negative
4	Black soft plastic sheet	BL	BL	BL	BL	BL	NA
5	Black soft plastic sheet	BL	BL	BL	BL	BL	NA
6	White plastic ring	BL	BL	BL	BL	BL	NA
7	Silvery metal screw	BL	BL	BL	IN	BL	Cr <sup>6+</sup> : Negative
8	Silvery metal screw	BL	BL	BL	IN	BL	Cr <sup>6+</sup> : Negative
9	Silvery metal screw	BL	BL	BL	IN	BL	Cr <sup>6+</sup> : Negative
10	Silvery metal screw	BL	BL	BL	IN	BL	Cr <sup>6+</sup> : Negative
11	Silvery metal screw with black plating	BL	BL	BL	IN	BL	Cr <sup>6+</sup> : Negative
12	Solder	BL	BL	BL	BL	BL	NA
13	Solder	BL	BL	BL	BL	BL	NA
14	Chip inductor	BL	BL	BL	BL	BL	NA
15	Chip LED	BL	BL	BL	BL	BL	NA
16	Chip IC	BL	BL	BL	BL	BL	NA
17	Red body of capacitor	BL	BL	BL	BL	BL	NA
18	Chip diode	BL	BL	BL	BL	BL	NA
19	Chip IC	BL	BL	BL	BL	BL	NA





Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
20	Chip capacitor	BL	BL	BL	BL	BL	NA
21	Chip resistor	BL	BL	BL	IN	BL	Cr <sup>6+</sup> : ND
22	Green PCB	BL	BL	BL	BL	BL	NA
23	Silvery metal shell of socket	BL	BL	BL	IN	BL	Cr <sup>6+</sup> : Negative
24	Silvery metal pin of socket	BL	BL	BL	BL	BL	NA
25	Black plastic core of socket	BL	BL	BL	BL	BL	NA
26	Semi-transparent adhesive glue	BL	BL	BL	BL	BL	NA
27	Dark grey magnetic sheet	BL	BL	BL	IN	BL	Cr <sup>6+</sup> : ND
28	Grey soft plastic strip	BL	BL	BL	BL	BL	NA
29	White fibrous wire covering	BL	BL	BL	BL	BL	NA
30	Coppery metal winding	BL	BL	BL	BL	BL	NA
31	Yellow plastic tape	BL	BL	BL	BL	BL	NA
32	Black plastic buckle	BL	BL	BL	BL	BL	NA
33	Black plastic buckle	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
34	Black plastic holder	BL	BL	BL	BL	BL	NA
35	Silvery metal sleeve with black plating	BL	BL	BL	BL	BL	NA
36	Black plastic shell	BL	BL	BL	BL	BL	NA
37	Black plastic shell	BL	BL	BL	BL	BL	NA
38	Black soft plastic sheet	BL	BL	BL	BL	BL	NA
39	Black plastic shell	BL	BL	BL	BL	BL	NA



Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
40	Black plastic sheet with white printing	BL	BL	BL	BL	BL	NA
41	Transparent adhesive tape	BL	BL	BL	BL	BL	NA
42	Black plastic sheet	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
43	Black soft plastic strip	BL	BL	BL	BL	BL	NA
44	Silvery metal plate	BL	BL	BL	BL	BL	NA
45	Silvery metal shell of plug	BL	BL	BL	BL	BL	NA
46	Coppery metal pin of plug	BL	BL	BL	BL	BL	NA
47	Solder of plug	BL	BL	BL	BL	BL	NA
48	White plastic sheet of plug	BL	BL	BL	BL	BL	NA
49	Black plastic jacket of plug	BL	BL	BL	BL	BL	NA
50	Black plastic wire jacket	BL	BL	BL	BL	BL	NA
51	Green plastic wire covering	BL	BL	BL	BL	BL	NA
52	Pink plastic wire covering	BL	BL	BL	BL	BL	NA
53	Black plastic wire covering	BL	BL	BL	BL	BL	NA
54	White plastic wire covering	BL	BL	BL	BL	BL	NA
55	Coppery metal wire	BL	BL	BL	BL	BL	NA
56	Black plastic jacket of plug	BL	BL	BL	BL	BL	NA
57	Semi-transparent plastic core of plug	BL	BL	BL	BL	BL	NA
58	Silvery metal shell of plug	BL	BL	BL	IN	BL	Cr <sup>6+</sup> : Negative
59	Silvery metal pin of plug	BL	BL	BL	BL	BL	NA





Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
60	Black plastic core of plug	BL	BL	BL	BL	BL	NA
61	Chip resistor of plug	BL	BL	BL	BL	BL	NA
62	Solder of plug	BL	BL	BL	BL	BL	NA
63	Green PCB of plug	BL	BL	BL	BL	BL	NA

**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 IEC 62321-3-1: 2013 (unit: mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	BL ≤ (70-3σ) < IN < (130+3σ) ≤ OL	BL ≤ (70-3σ) < IN < (130+3σ) ≤ OL	LOD < IN < (150+3σ) ≤ OL
Pb	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (500-3σ) < IN < (1500+3σ) ≤ OL
Hg	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (500-3σ) < IN < (1500+3σ) ≤ OL
Cr	BL ≤ (700-3σ) < IN	BL ≤ (700-3σ) < IN	BL ≤ (500-3σ) < IN
Br	BL ≤ (300-3σ) < IN	--	BL ≤ (250-3σ) < 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) mg / kg =milligram per kilogram=ppm, μg/cm<sup>2</sup>= Micrograms per square centimetre.
- (5) ND = Not Detected or lower than limit of quantitation.
- (6) NA = Not Applicable, as the XRF screening test result was below the limit or as the XRF screening directly determine that test result was over the limit, it was not need to conduct the wet chemical testing.
- (7) LOQ = Limit of quantitation.

Test Items	Pb	Cd	Hg	Cr <sup>6+</sup>		PBB	PBDE
Units	mg/kg	mg/kg	mg/kg	mg/kg	μg/cm <sup>2</sup>	mg/kg	mg/kg
LOQ	2	2	2	8	0.1	5	5

The LOQ for single compound of PBBs and PBDEs is 5mg/kg, LOQ of Cr<sup>6+</sup> for polymer and composite sample is 8mg/kg and LOQ of Cr<sup>6+</sup> for metal sample is 0.1μg/cm<sup>2</sup>.



## (8) 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 <sup>6+</sup> )	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)

- (9) According to IEC 62321-7-1:2015, determined of Cr<sup>6+</sup> on metal sample by boiling water extraction test method, and result is shown as Positive/Negative.

Boiling water extraction:

Negative = Absence of Cr<sup>6+</sup> coating, the detected concentration in boiling water extraction solution is less than 0.10ug/cm<sup>2</sup>.

Positive = Presence of Cr<sup>6+</sup> coating, the detected concentration in boiling water extraction solution is greater than 0.13ug/cm<sup>2</sup>.

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.

- (10) Abbreviation:

“Pb” denotes Lead, “Cd” denotes Cadmium, “Hg” denotes Mercury, “Cr” denotes Chromium, “Cr (VI)” denotes Hexavalent Chromium, “Br” denotes Bromine, “PBBs” denotes Total Polybrominated Biphenyls, “PBDEs” denotes Total Polybrominated Diphenyl Ethers.





## 2. Phthalates:

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T01	4	<50	<50	<50	<50
T02	5	<50	<50	<50	<50
T03	6+25+32+34 <sup>△</sup>	<50	<50	<50	<50
T04	14+15+16+17+18 <sup>△</sup>	<50	<50	<50	<50
T05	19+20+21+61 <sup>△</sup>	<50	<50	<50	<50
T06	22+63 <sup>△</sup>	<50	<50	<50	<50
T07	26	<50	<50	82	<50
T08	27	<50	<50	<50	<50
T09	28	<50	<50	<50	<50
T10	29	<50	<50	<50	<50
T11	31	<50	<50	<50	<50
T12	33	<50	<50	<50	<50
T13	36+37+39+40+ <sup>△</sup>	<50	<50	<50	<50
T14	38	<50	<50	<50	<50
T15	41	<50	<50	<50	<50
T16	42	<50	<50	<50	<50
T17	43	<50	<50	<50	<50
T18	48+49+56+57+60 <sup>△</sup>	<50	<50	<50	<50
T19	50	<50	<50	<50	<50
T20	51	<50	<50	<50	<50
T21	52	<50	<50	<50	<50
T22	53	<50	<50	<50	<50
T23	54	<50	<50	<50	<50

### Note:

(1) "<" = less than

(2) mg/kg = milligram per kilogram= ppm

(3) Abbreviation:

"DBP" denotes Dibutyl phthalate, "BBP" denotes Benzyl butyl phthalate (BBP), "DEHP" denotes Bis(2-ethylhexyl)-phthalate, "DIBP" denotes Diisobutyl phthalate, "PHT" denotes Phthalates.

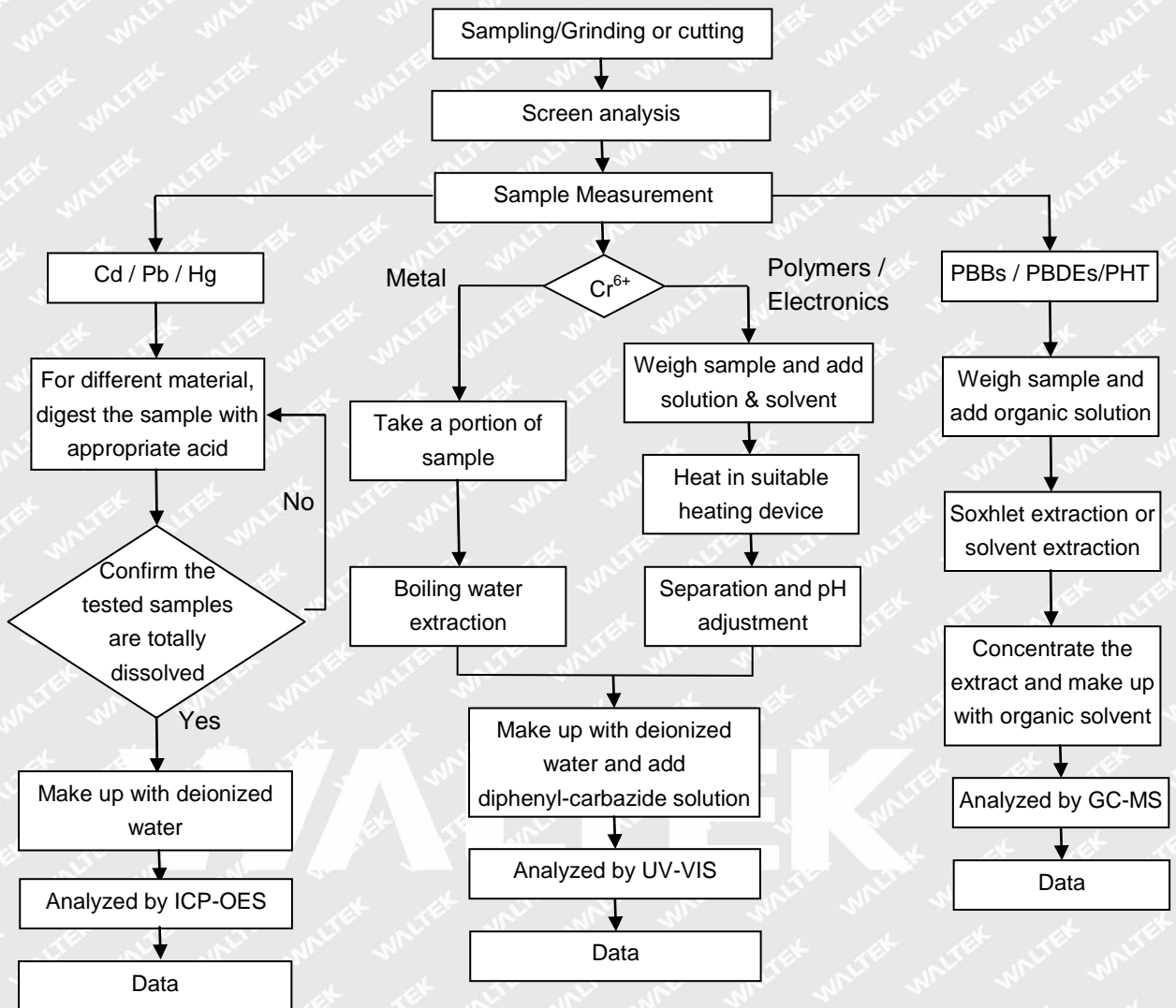
(4) RoHS requirement

Restricted Substances	Limits
Dibutyl phthalate (DBP)	0.1% (1000 mg/kg)
Benzyl butyl phthalate (BBP)	0.1% (1000 mg/kg)
Di(2-ethylhexyl) phthalate (DEHP)	0.1% (1000 mg/kg)
Di-iso-butyl phthalate (DIBP)	0.1% (1000 mg/kg)

(5) "△"= As client's requirement, the testing was conducted based on mixed components. Results are calculated by the minimum weight of mixed components.



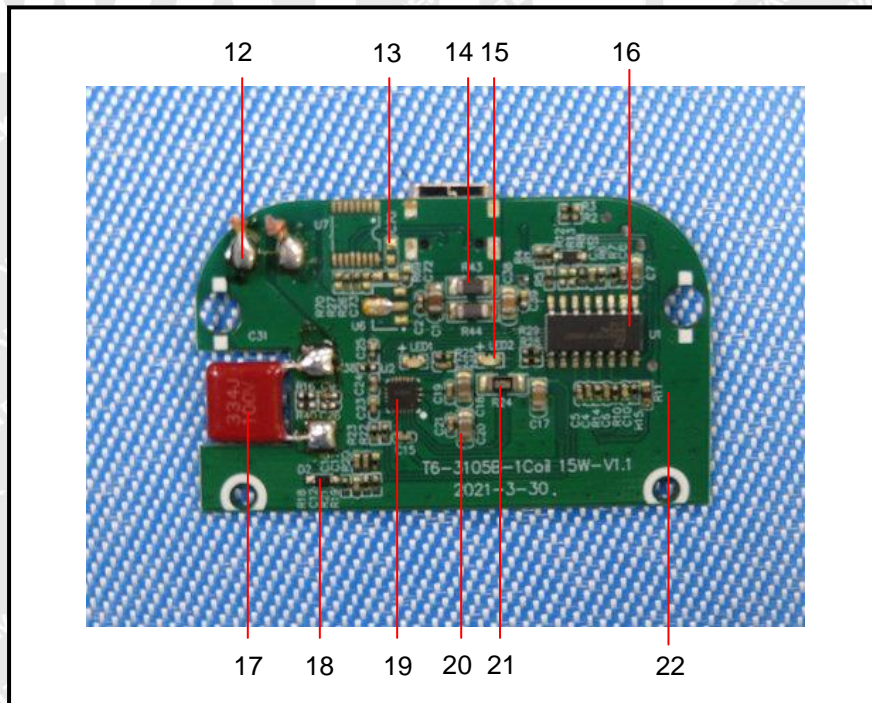
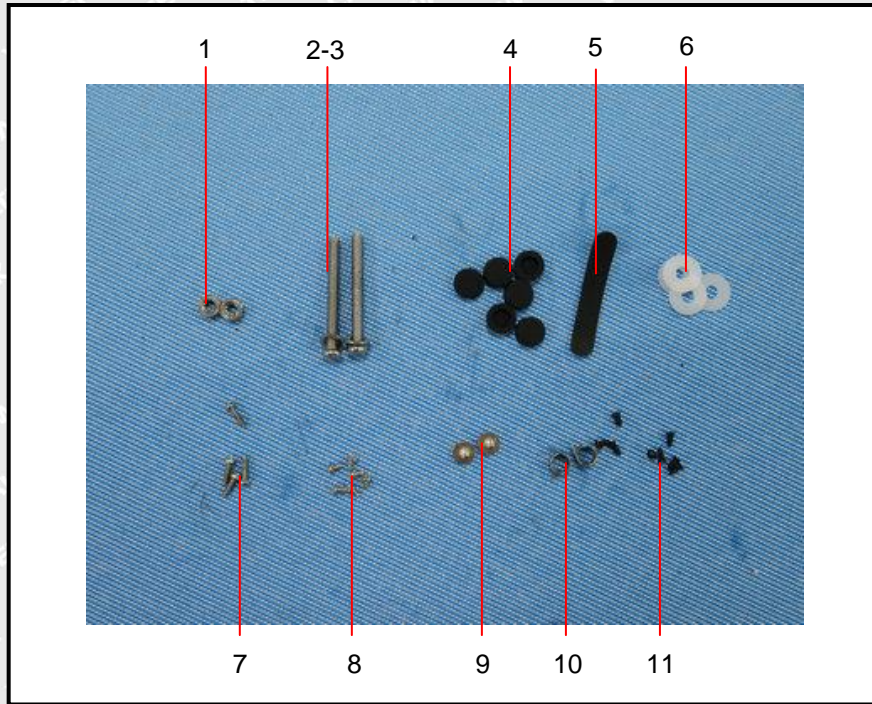
**Measurement Flowchart:**



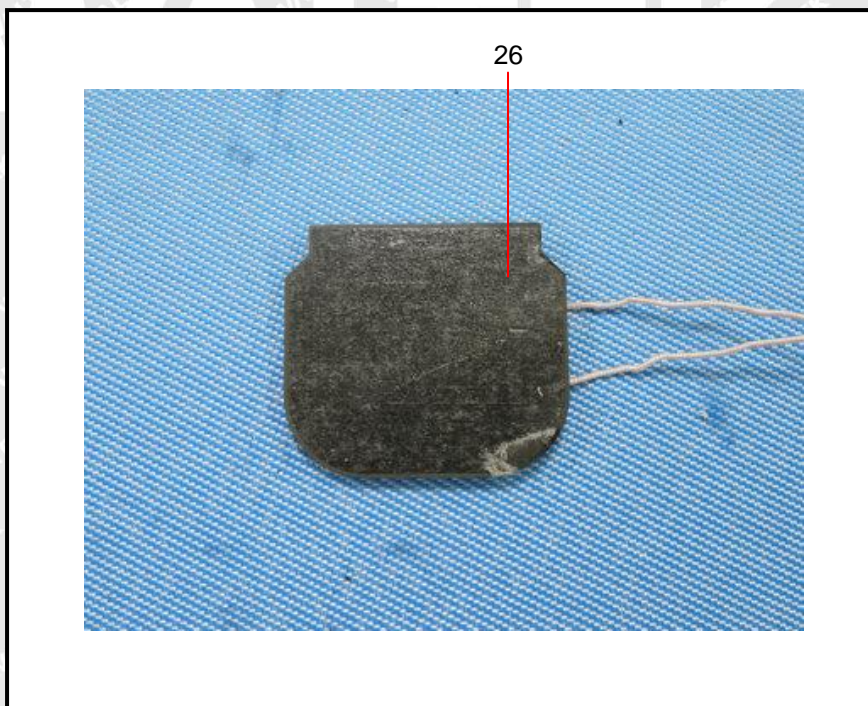
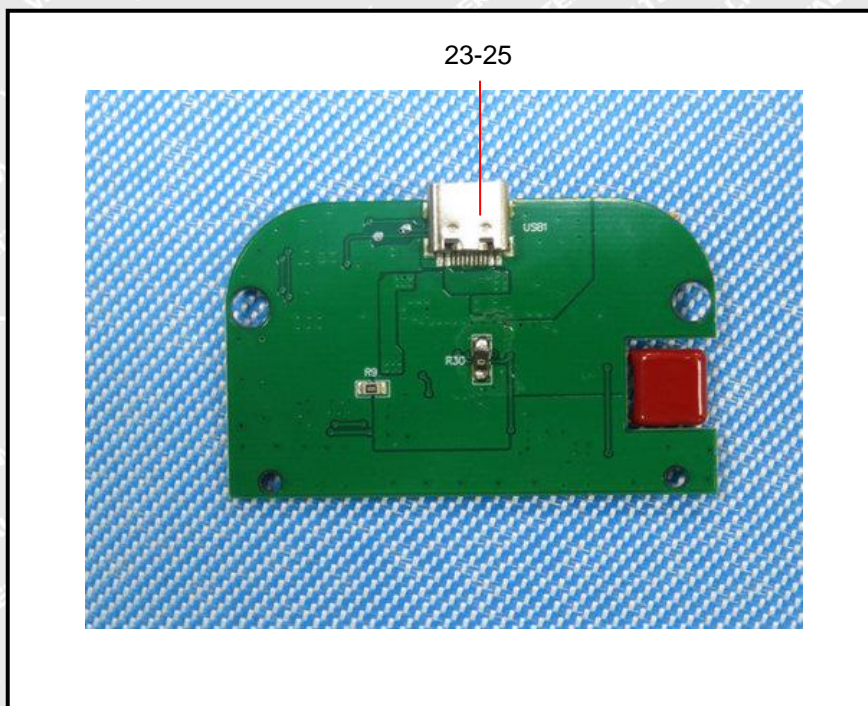




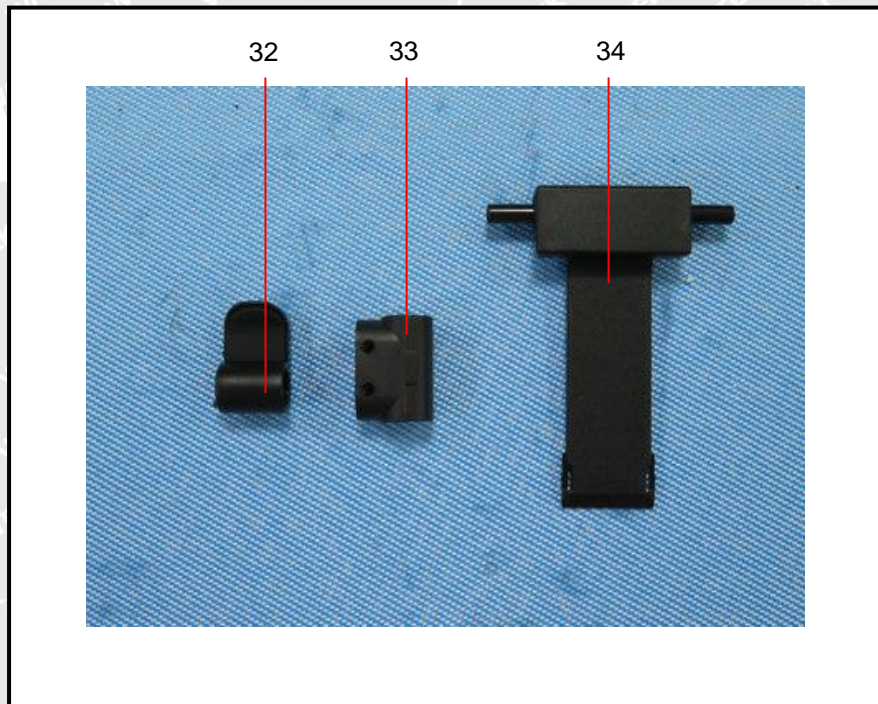
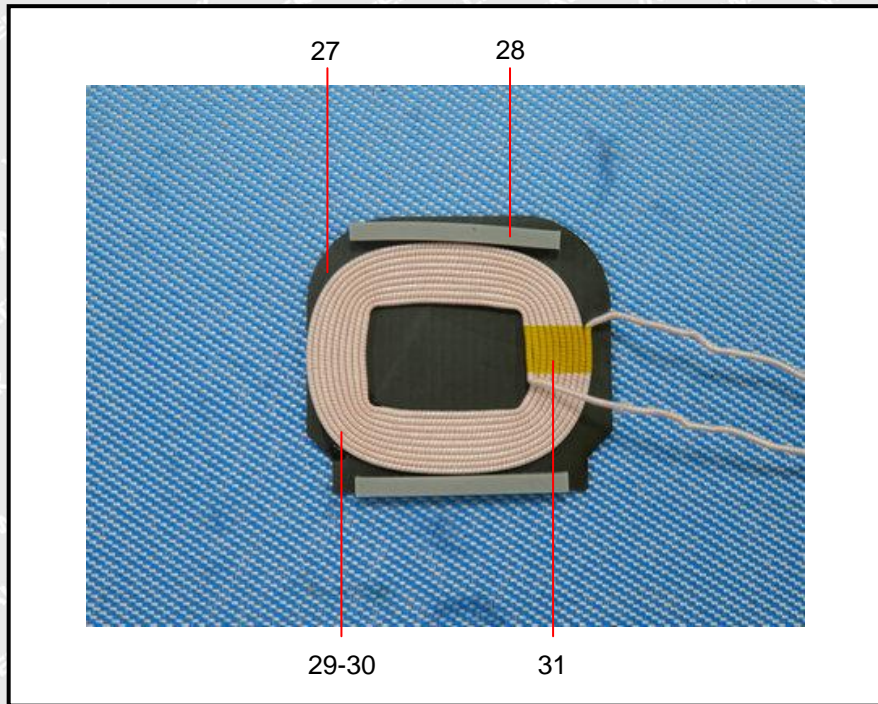
Photograph(s) of parts tested:



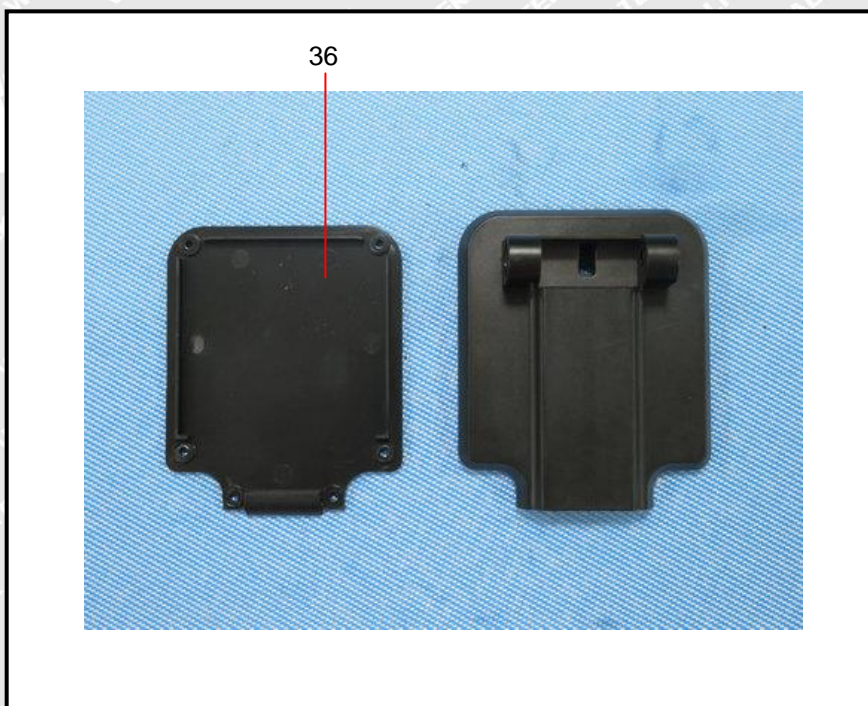
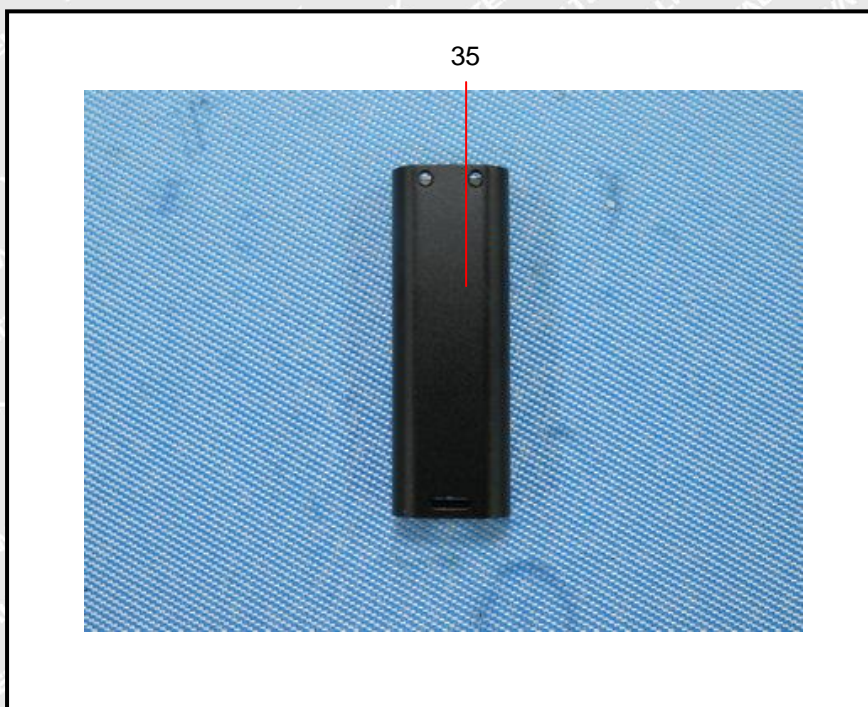




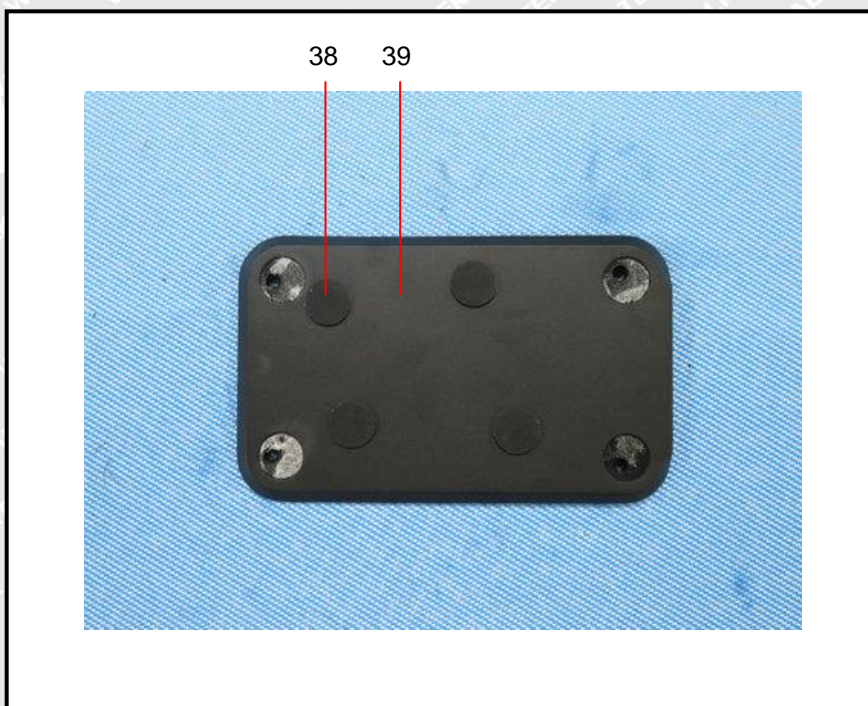




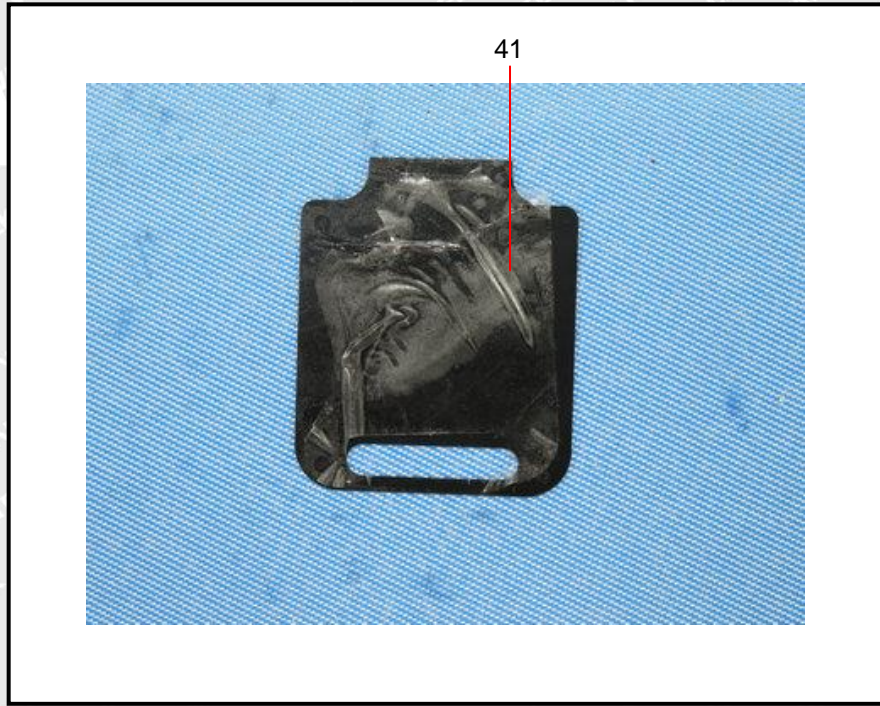
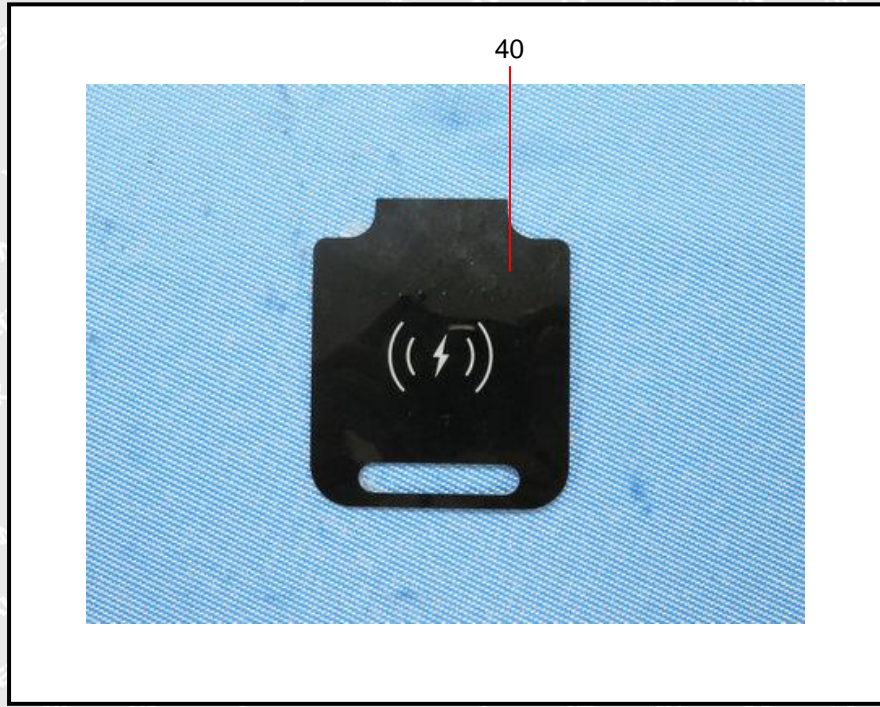




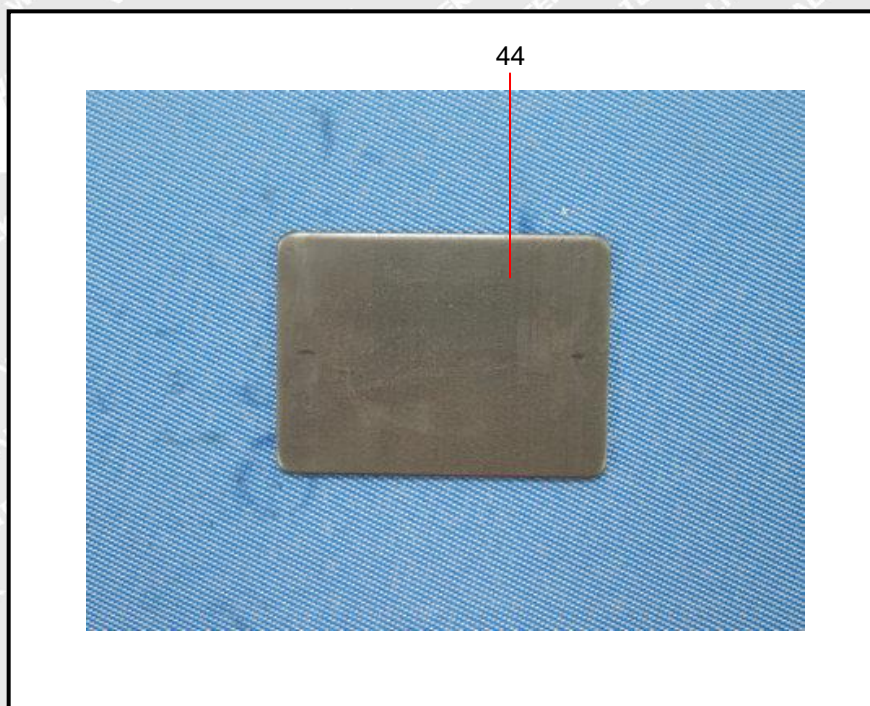
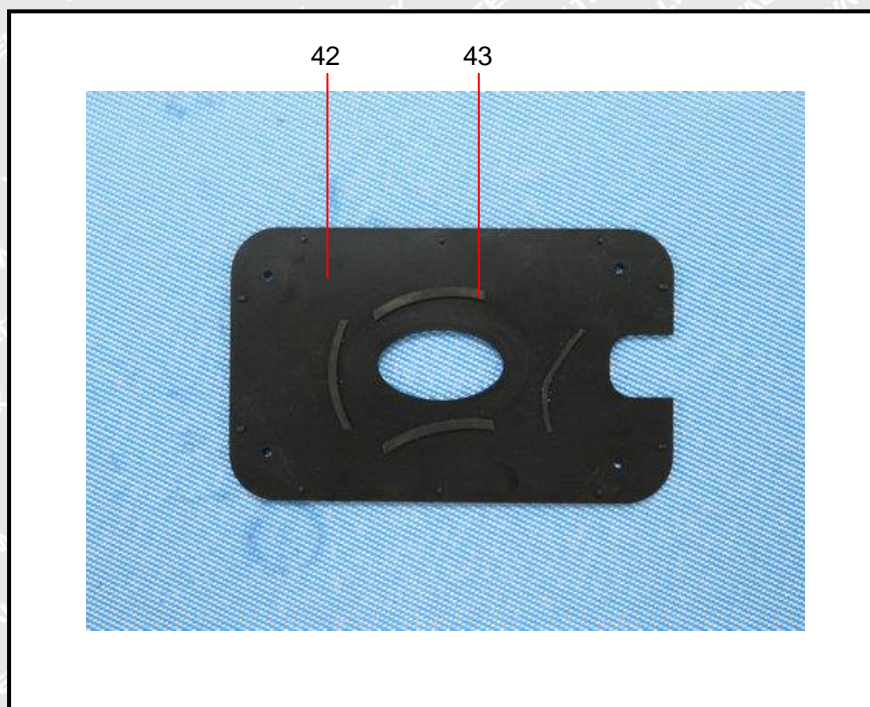




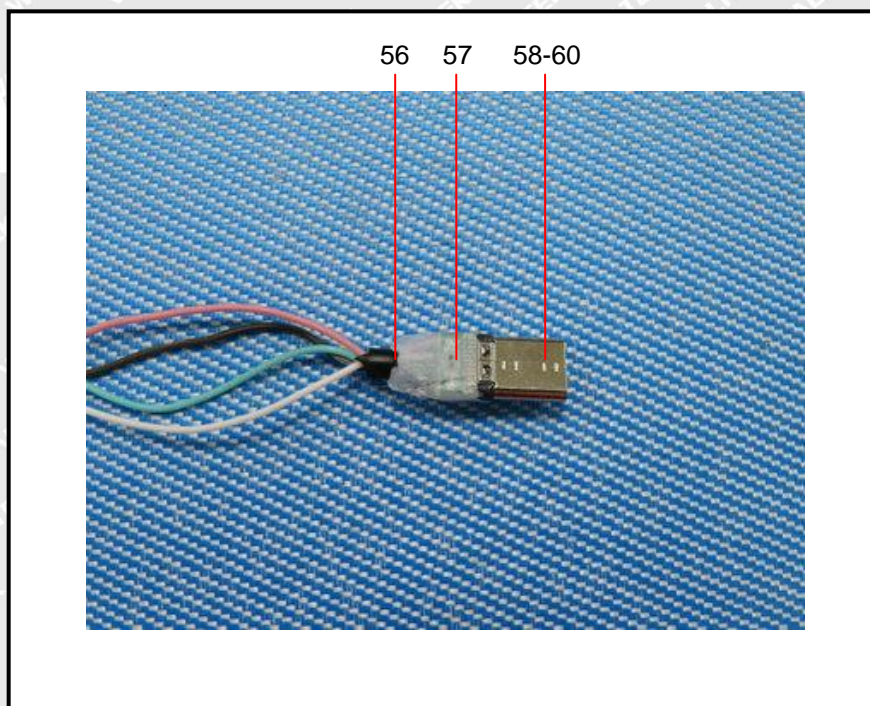
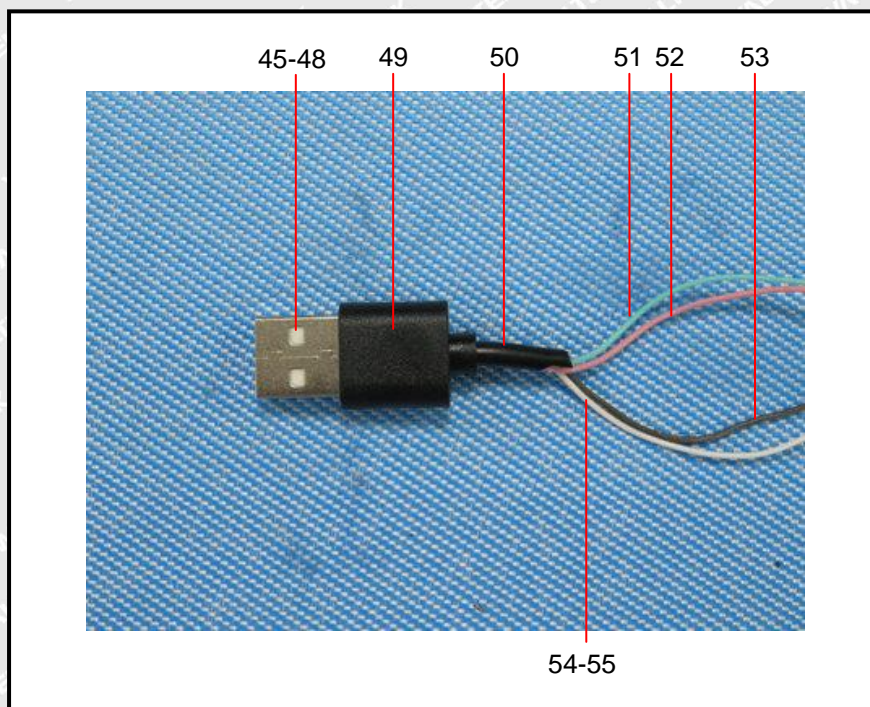




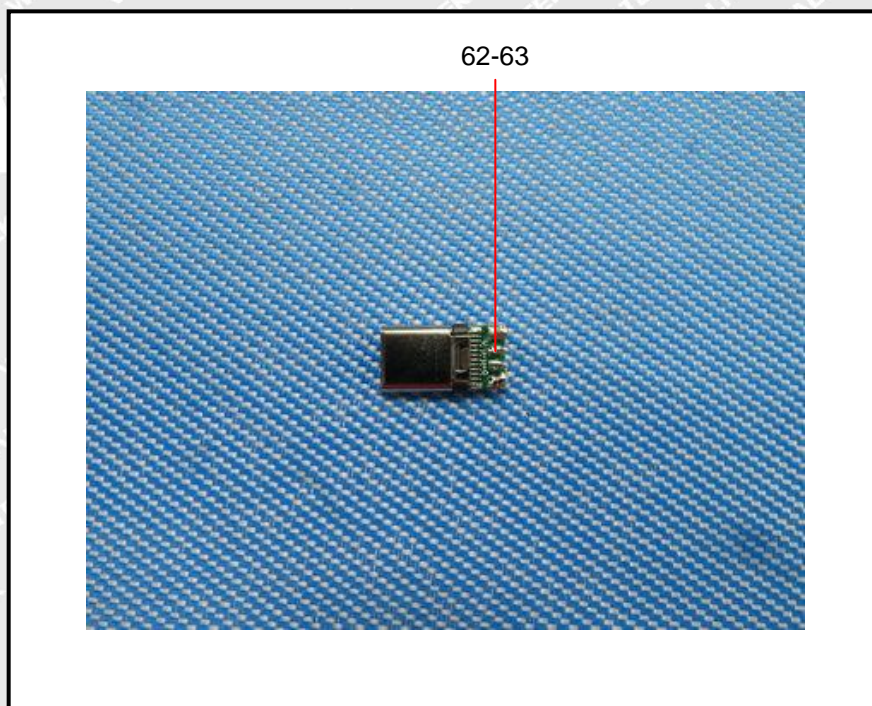
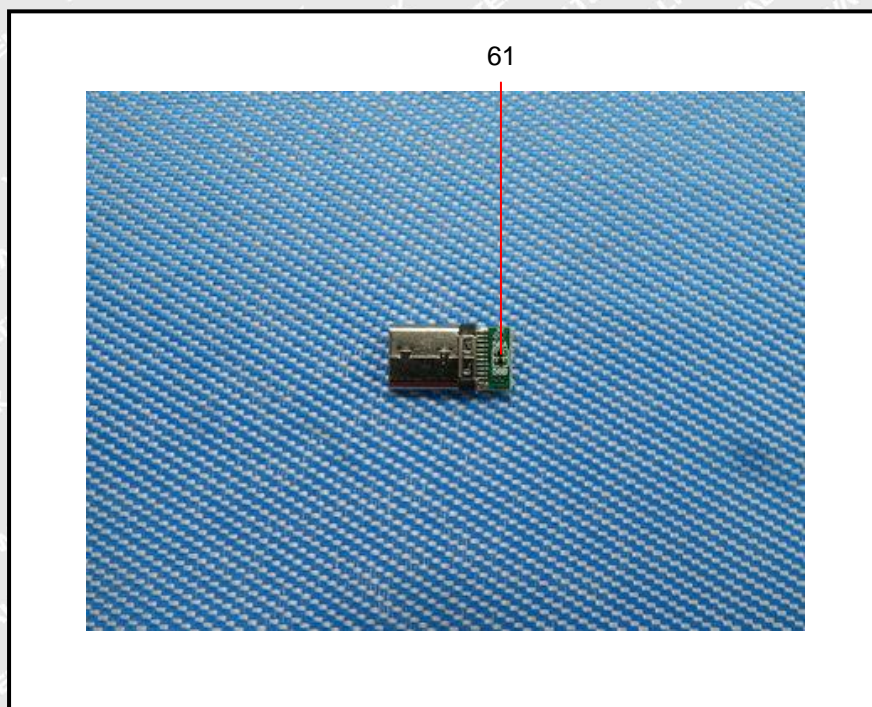














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