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CNAS L6478



# TEST REPORT

**Report No.** ..... : WTF25F06167114R1X1C  
**Job No.** ..... : FSW2506261279CJ  
**Applicant** ..... : Mid Ocean Brands B.V.  
**Address** ..... : Unit 711-716, 7/F., Tower A, 83 King Lam Street, Cheung Sha  
Wan, Kowloon, Hong Kong.  
**Manufacturer** ..... : 114276  
**Sample Name** ..... : Solar hand crank radio torch  
**Sample Model** ..... : MO2746  
**Test Requested** ..... : With reference to EU RoHS Directive 2011/65/EU and its  
amendment Directive EU 2015/863, to determine the Pb, Cd, Hg,  
Cr<sup>6+</sup>, PBBs, PBDEs, DBP, BBP, DEHP, DIBP content in the  
submitted sample.  
**Test Method** ..... : Refer to next page (s)  
**Test Conclusion** ..... : **Pass**  
**Date of Receipt Sample** ..... : 2025-06-26 & 2025-07-12 & 2025-07-24 & 2025-08-27  
**Testing Period** ..... : 2025-06-26 to 2025-07-07 & 2025-07-12 to 2025-07-22 &  
2025-07-24 to 2025-07-30 & 2025-08-27 to 2025-08-30  
**Date of Issue** ..... : 2025-09-01  
**Test Result** ..... : Refer to next page (s)  
**Note** ..... : This report is based on Waltek test report WTF25F06167114R1C  
for revising, and replaced report WTF25F06167114R1C.

## Prepared By:

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Signed for and on behalf of  
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Swing Liang



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**Sample photo:**





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

Test Method/Equipment:

- 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

| Part No. | Part Description                             | Result of XRF |    |    |    |    | Result of Wet Chemical Testing (mg/kg) |
|----------|----------------------------------------------|---------------|----|----|----|----|----------------------------------------|
|          |                                              | Cd            | Pb | Hg | Cr | Br |                                        |
| 1        | Black plastic shell                          | BL            | BL | BL | BL | BL | NA                                     |
| 2        | Transparent plastic sheet with black surface | BL            | BL | BL | BL | BL | NA                                     |
| 3        | Black plastic shell                          | BL            | BL | BL | BL | BL | NA                                     |
| 4        | Black plastic part                           | BL            | BL | BL | BL | IN | PBBs: ND<br>PBDEs: ND                  |
| 5        | Black plastic shell                          | BL            | BL | BL | BL | BL | NA                                     |
| 6        | Silvery metal screw with black surface       | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : Negative            |
| 7        | Black fabric wire                            | BL            | BL | BL | BL | BL | NA                                     |
| 8        | Black fabric wire                            | BL            | BL | BL | BL | BL | NA                                     |
| 9        | Black plastic shell                          | BL            | BL | BL | BL | BL | NA                                     |
| 10       | Black soft plastic button                    | BL            | BL | BL | BL | BL | NA                                     |
| 11       | Silvery metal shell                          | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : Negative            |
| 12       | Transparent plastic shell                    | BL            | BL | BL | BL | BL | NA                                     |
| 13       | Silvery metal screw                          | BL            | BL | BL | BL | -- | NA                                     |



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| Part No. | Part Description              | Result of XRF |    |    |    |    | Result of Wet Chemical Testing (mg/kg) |
|----------|-------------------------------|---------------|----|----|----|----|----------------------------------------|
|          |                               | Cd            | Pb | Hg | Cr | Br |                                        |
| 14       | Black plastic shell           | BL            | BL | BL | BL | IN | PBBs: ND<br>PBDEs: 163                 |
| 15       | Black plastic shell           | BL            | BL | BL | BL | IN | PBBs: ND<br>PBDEs: 308                 |
| 16       | Silvery metal axle            | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : Negative            |
| 17       | Transparent plastic shell     | BL            | BL | BL | BL | BL | NA                                     |
| 18       | Black soft plastic shell      | BL            | BL | BL | BL | BL | NA                                     |
| 19       | Blue plastic film             | BL            | BL | BL | BL | BL | NA                                     |
| 20       | Black sponge adhesive tape    | BL            | BL | BL | BL | BL | NA                                     |
| 21       | Black plastic wire covering   | BL            | BL | BL | BL | BL | NA                                     |
| 22       | Red plastic wire covering     | BL            | BL | BL | BL | BL | NA                                     |
| 23       | Silvery metal wire            | BL            | BL | BL | BL | -- | NA                                     |
| 24       | White plastic shell(plug)     | BL            | BL | BL | BL | BL | NA                                     |
| 25       | Silvery metal pin(plug)       | BL            | BL | BL | BL | -- | NA                                     |
| 26       | Red paper sheet with adhesive | BL            | BL | BL | BL | BL | NA                                     |
| 27       | Purple plastic film           | BL            | BL | BL | BL | BL | NA                                     |
| 28       | White plastic gasket          | BL            | BL | BL | BL | BL | NA                                     |
| 29       | White plastic part            | BL            | BL | BL | BL | BL | NA                                     |
| 30       | Black dry glue                | BL            | BL | BL | BL | BL | NA                                     |
| 31       | Black sponge sheet            | BL            | BL | BL | BL | BL | NA                                     |



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| Part No. | Part Description                         | Result of XRF |    |    |    |    | Result of Wet Chemical Testing (mg/kg) |
|----------|------------------------------------------|---------------|----|----|----|----|----------------------------------------|
|          |                                          | Cd            | Pb | Hg | Cr | Br |                                        |
| 32       | Solder                                   | BL            | IN | BL | BL | -- | Pb: 80                                 |
| 33       | Yellow transparent dry glue              | BL            | BL | BL | BL | BL | NA                                     |
| 34       | Silvery metal shell                      | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : Negative            |
| 35       | Green PCB                                | BL            | BL | BL | BL | BL | NA                                     |
| 36       | Black plastic film                       | BL            | BL | BL | BL | BL | NA                                     |
| 37       | Black plastic rim                        | BL            | BL | BL | BL | BL | NA                                     |
| 38       | Coppery metal wire                       | BL            | BL | BL | BL | -- | NA                                     |
| 39       | Brown paper shell                        | BL            | BL | BL | BL | BL | NA                                     |
| 40       | Silvery magnetic block                   | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : ND                  |
| 41       | Transparent dry glue                     | BL            | BL | BL | BL | BL | NA                                     |
| 42       | Black-green PCB                          | BL            | BL | BL | BL | BL | NA                                     |
| 43       | Green PCB                                | BL            | BL | BL | BL | BL | NA                                     |
| 44       | Black plastic shell with silvery plating | BL            | BL | BL | BL | BL | NA                                     |
| 45       | Transparent LED                          | BL            | BL | BL | BL | BL | NA                                     |
| 46       | Off-with plastic shell(socket)           | BL            | BL | BL | BL | BL | NA                                     |
| 47       | silvery metal pin(socket)                | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : Negative            |
| 48       | Black plastic shell                      | BL            | BL | BL | BL | BL | NA                                     |
| 49       | Black plastic part(button)               | BL            | BL | BL | BL | BL | NA                                     |



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| Part No. | Part Description                                                 | Result of XRF |    |    |    |    | Result of Wet Chemical Testing (mg/kg) |
|----------|------------------------------------------------------------------|---------------|----|----|----|----|----------------------------------------|
|          |                                                                  | Cd            | Pb | Hg | Cr | Br |                                        |
| 50       | Brown plastic sheet(button)                                      | BL            | BL | BL | BL | BL | NA                                     |
| 51       | Silvery metal shell(button)                                      | BL            | BL | BL | BL | -- | NA                                     |
| 52       | Silvery metal sheet(button)                                      | BL            | BL | BL | BL | -- | NA                                     |
| 53       | Silvery metal spring(button)                                     | BL            | BL | BL | BL | -- | NA                                     |
| 54       | Silvery metal ball(button)                                       | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : Negative            |
| 55       | Chip IC                                                          | BL            | BL | BL | BL | BL | NA                                     |
| 56       | Black plastic core(socket)                                       | BL            | BL | BL | BL | BL | NA                                     |
| 57       | Silvery metal shell(socket)                                      | BL            | BL | BL | BL | -- | NA                                     |
| 58       | Silvery metal pin(socket)                                        | BL            | BL | BL | BL | -- | NA                                     |
| 59       | Chip capacitor                                                   | BL            | BL | BL | BL | BL | NA                                     |
| 60       | Chip diode                                                       | BL            | BL | BL | BL | BL | NA                                     |
| 61       | Chip audion                                                      | BL            | BL | BL | BL | BL | NA                                     |
| 62       | Chip IC                                                          | BL            | BL | BL | BL | BL | NA                                     |
| 63       | Chip IC                                                          | BL            | BL | BL | BL | BL | NA                                     |
| 64       | Black plastic base(electrolytic capacitor)                       | BL            | BL | BL | BL | BL | NA                                     |
| 65       | Black rubber stopper(electrolytic capacitor)                     | BL            | BL | BL | BL | BL | NA                                     |
| 66       | Brown paper(electrolytic capacitor)                              | BL            | BL | BL | BL | BL | NA                                     |
| 67       | Silvery metal shell with black printing (electrolytic capacitor) | BL            | BL | BL | BL | -- | NA                                     |



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| Part No. | Part Description                                | Result of XRF |    |    |    |    | Result of Wet Chemical Testing (mg/kg) |
|----------|-------------------------------------------------|---------------|----|----|----|----|----------------------------------------|
|          |                                                 | Cd            | Pb | Hg | Cr | Br |                                        |
| 68       | Silvery metal pin(electrolytic capacitor)       | BL            | BL | BL | BL | -- | NA                                     |
| 69       | Grey metal foil(electrolytic capacitor)         | BL            | BL | BL | BL | -- | NA                                     |
| 70       | Silvery-grey metal foil(electrolytic capacitor) | BL            | BL | BL | BL | -- | NA                                     |
| 71       | Chip resistor                                   | BL            | IN | BL | BL | BL | Pb:560                                 |
| 72       | Coppery varnished wire(inductor)                | BL            | BL | BL | BL | BL | NA                                     |
| 73       | Black magnetic core(inductor)                   | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : ND                  |
| 74       | Black plastic core(socket)                      | BL            | BL | BL | BL | BL | NA                                     |
| 75       | Silvery metal shell(socket)                     | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : Negative            |
| 76       | Silvery metal pin(socket)                       | BL            | BL | BL | BL | -- | NA                                     |
| 77       | Chip LED                                        | BL            | BL | BL | BL | BL | NA                                     |
| 78       | Green PCB                                       | BL            | BL | BL | BL | BL | NA                                     |
| 79       | Brown plastic sheet                             | BL            | BL | BL | BL | BL | NA                                     |
| 80       | Silvery metal part                              | BL            | BL | BL | BL | -- | NA                                     |
| 81       | Black plastic shell                             | BL            | BL | BL | BL | IN | PBBs: ND<br>PBDEs: ND                  |
| 82       | Black-green PCB                                 | BL            | BL | BL | BL | IN | PBDEs: ND<br>PBBs: ND                  |
| 83       | Silvery metal pin                               | BL            | BL | BL | BL | -- | NA                                     |
| 84       | Brown plastic sheet                             | BL            | BL | BL | BL | BL | NA                                     |
| 85       | Silvery metal pin                               | BL            | BL | BL | BL | -- | NA                                     |



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| Part No. | Part Description                       | Result of XRF |    |    |    |    | Result of Wet Chemical Testing (mg/kg) |
|----------|----------------------------------------|---------------|----|----|----|----|----------------------------------------|
|          |                                        | Cd            | Pb | Hg | Cr | Br |                                        |
| 86       | Silvery metal sheet                    | BL            | BL | BL | BL | -- | NA                                     |
| 87       | Silvery metal sheet                    | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : Negative            |
| 88       | Silvery crystal oscillator             | BL            | BL | BL | BL | BL | NA                                     |
| 89       | Black plastic shell(button)            | BL            | BL | BL | BL | BL | NA                                     |
| 90       | Silvery metal shell(button)            | BL            | BL | BL | BL | -- | NA                                     |
| 91       | Silvery metal sheet(button)            | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : Negative            |
| 92       | Coppery varnished wire with white glue | BL            | BL | BL | BL | BL | NA                                     |
| 93       | Black magnetic core                    | BL            | BL | BL | BL | -- | NA                                     |
| 94       | Transparent plastic shell              | BL            | BL | BL | BL | BL | NA                                     |
| 95       | White plastic shell                    | BL            | BL | BL | BL | BL | NA                                     |
| 96       | Transparent dry glue                   | BL            | BL | BL | BL | BL | NA                                     |
| 97       | Dark green paper sheet                 | BL            | BL | BL | BL | BL | NA                                     |
| 98       | Black plastic wire covering            | BL            | BL | BL | BL | BL | NA                                     |
| 99       | Black plastic wire covering            | BL            | BL | BL | BL | BL | NA                                     |
| 100      | Silvery metal shell                    | BL            | BL | BL | BL | -- | NA                                     |
| 101      | Silvery metal shell                    | BL            | BL | BL | BL | -- | NA                                     |
| 102      | Silvery metal terminal block           | BL            | BL | BL | BL | -- | NA                                     |
| 103      | Golden metal part                      | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : Negative            |



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| Part No. | Part Description                               | Result of XRF |    |    |    |    | Result of Wet Chemical Testing (mg/kg) |
|----------|------------------------------------------------|---------------|----|----|----|----|----------------------------------------|
|          |                                                | Cd            | Pb | Hg | Cr | Br |                                        |
| 104      | Silvery metal bucket with black surface        | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : Negative            |
| 105      | Black plastic gasket                           | BL            | BL | BL | BL | BL | NA                                     |
| 106      | Dark silvery metal gear                        | BL            | BL | BL | BL | -- | NA                                     |
| 107      | White plastic gear                             | BL            | BL | BL | BL | BL | NA                                     |
| 108      | Black plastic gasket                           | BL            | BL | BL | BL | BL | NA                                     |
| 109      | Brown dry glue                                 | BL            | BL | BL | BL | BL | NA                                     |
| 110      | Silvery metal axle                             | BL            | BL | BL | BL | -- | NA                                     |
| 111      | Black magnetic rim                             | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : ND                  |
| 112      | Coppery varnished wire                         | BL            | BL | BL | BL | BL | NA                                     |
| 113      | Silvery metal axle                             | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : Negative            |
| 114      | Silvery silicon steel sheet with green surface | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : Negative            |
| 115(R1)  | Yellow transparent dry glue                    | BL            | BL | BL | BL | BL | NA                                     |
| 116      | Silvery metal part                             | BL            | BL | BL | BL | -- | NA                                     |
| 117      | Black plastic wire jacket                      | BL            | BL | BL | BL | BL | NA                                     |
| 118      | Black plastic jacket(USB plug)                 | BL            | BL | BL | BL | BL | NA                                     |
| 119      | Silvery metal shell(USB plug)                  | BL            | BL | BL | BL | -- | NA                                     |
| 120      | White plastic core(USB plug)                   | BL            | BL | BL | BL | BL | NA                                     |
| 121      | Silvery metal pin(USB plug)                    | BL            | BL | BL | BL | -- | NA                                     |



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| Part No. | Part Description                  | Result of XRF |    |    |    |    | Result of Wet Chemical Testing (mg/kg) |
|----------|-----------------------------------|---------------|----|----|----|----|----------------------------------------|
|          |                                   | Cd            | Pb | Hg | Cr | Br |                                        |
| 122      | Solder(USB plug)                  | BL            | BL | BL | BL | -- | NA                                     |
| 123      | Copper metal wire                 | BL            | BL | BL | BL | -- | NA                                     |
| 124      | Red plastic wire covering         | BL            | BL | BL | BL | BL | NA                                     |
| 125      | Black plastic wire covering       | BL            | BL | BL | BL | BL | NA                                     |
| 126      | Silvery metal shell(Type-C plug)  | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : Negative            |
| 127      | Black plastic jacket(Type-C plug) | BL            | BL | BL | BL | BL | NA                                     |
| 128      | Solder(Type-C plug)               | BL            | BL | BL | BL | -- | NA                                     |
| 129      | Black plastic core(Type-C plug)   | BL            | BL | BL | BL | BL | NA                                     |
| 130      | Silvery metal pin(Type-C plug)    | BL            | BL | BL | IN | -- | Cr <sup>6+</sup> : Negative            |
| 131      | Green PCB(Type-C plug)            | BL            | BL | BL | BL | IN | PBBs: ND<br>PBDEs: ND                  |
| 132      | Green plastic shell               | BL            | BL | BL | BL | BL | NA                                     |
| 133      | Silvery metal sheet               | BL            | BL | BL | BL | -- | NA                                     |
| 134      | Solder                            | BL            | IN | BL | BL | -- | Pb:96                                  |
| 135      | Green PCB                         | BL            | BL | BL | BL | IN | PBBs: ND<br>PBDEs: ND                  |
| 136      | Chip IC                           | BL            | BL | BL | BL | BL | NA                                     |
| 137      | Chip resistor                     | BL            | BL | BL | IN | BL | Cr <sup>6+</sup> : ND                  |
| 138      | Chip EC                           | BL            | BL | BL | BL | BL | NA                                     |
| 139      | Chip capacitor                    | BL            | BL | BL | BL | BL | NA                                     |



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## 2. Phthalates

Test Method/Equipment:

1) With reference to IEC 62321-8:2017, determination of DBP, BBP, DEHP, DIBP by GC-MS

| Serial No. | Part No.                         | Result (mg/kg) |     |      |      |
|------------|----------------------------------|----------------|-----|------|------|
|            |                                  | DBP            | BBP | DEHP | DIBP |
| T01        | 1+2+3+4+5 <sup>△</sup>           | ND             | ND  | ND   | ND   |
| T02        | 7+8 <sup>△</sup>                 | ND             | ND  | ND   | ND   |
| T03        | 9+12+14+15+17 <sup>△</sup>       | ND             | ND  | ND   | ND   |
| T04        | 10+18+21 <sup>△</sup>            | ND             | ND  | ND   | ND   |
| T05        | 19+27+36 <sup>△</sup>            | ND             | ND  | ND   | ND   |
| T06        | 20                               | ND             | ND  | ND   | ND   |
| T07        | 22+65+98 <sup>△</sup>            | 162            | ND  | ND   | ND   |
| T08        | 24+28+29+37+44 <sup>△</sup>      | ND             | ND  | ND   | ND   |
| T09        | 26+39+66+97 <sup>△</sup>         | ND             | ND  | ND   | ND   |
| T10        | 30+33+41+96+109 <sup>△</sup>     | 153            | ND  | ND   | ND   |
| T11        | 31                               | ND             | ND  | ND   | ND   |
| T12        | 35+42+43+78+131 <sup>△</sup>     | ND             | ND  | ND   | ND   |
| T13        | 45+46+48+49+50 <sup>△</sup>      | ND             | ND  | ND   | ND   |
| T14        | 55+59+60+61+62 <sup>△</sup>      | ND             | ND  | ND   | ND   |
| T15        | 56+64+74+79+81 <sup>△</sup>      | ND             | ND  | ND   | ND   |
| T16        | 63+71+77+88 <sup>△</sup>         | ND             | ND  | ND   | ND   |
| T17        | 72+92+112 <sup>△</sup>           | ND             | ND  | ND   | ND   |
| T18        | 82                               | ND             | ND  | ND   | ND   |
| T19        | 84+89+94+95+105 <sup>△</sup>     | ND             | ND  | ND   | ND   |
| T20        | 99+117+118 <sup>△</sup>          | ND             | ND  | ND   | ND   |
| T21        | 107+108+120+129+132 <sup>△</sup> | ND             | ND  | ND   | ND   |
| T22        | 115(R1)                          | ND             | ND  | ND   | ND   |
| T23        | 124+125+127 <sup>△</sup>         | ND             | ND  | ND   | ND   |
| T24        | 6                                | --             | --  | --   | --   |
| T25        | 11                               | --             | --  | --   | --   |
| T26        | 13                               | --             | --  | --   | --   |
| T27        | 16                               | --             | --  | --   | --   |
| T28        | 23                               | --             | --  | --   | --   |
| T29        | 25                               | --             | --  | --   | --   |
| T30        | 32                               | --             | --  | --   | --   |
| T31        | 34                               | --             | --  | --   | --   |
| T32        | 38                               | --             | --  | --   | --   |
| T33        | 40                               | --             | --  | --   | --   |
| T34        | 47                               | --             | --  | --   | --   |
| T35        | 51                               | --             | --  | --   | --   |



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| Serial No. | Part No. | Result (mg/kg) |     |      |      |
|------------|----------|----------------|-----|------|------|
|            |          | DBP            | BBP | DEHP | DIBP |
| T36        | 52       | --             | --  | --   | --   |
| T37        | 53       | --             | --  | --   | --   |
| T38        | 54       | --             | --  | --   | --   |
| T39        | 57       | --             | --  | --   | --   |
| T40        | 58       | --             | --  | --   | --   |
| T41        | 67       | --             | --  | --   | --   |
| T42        | 68       | --             | --  | --   | --   |
| T43        | 69       | --             | --  | --   | --   |
| T44        | 70       | --             | --  | --   | --   |
| T45        | 73       | --             | --  | --   | --   |
| T46        | 75       | --             | --  | --   | --   |
| T47        | 76       | --             | --  | --   | --   |
| T48        | 80       | --             | --  | --   | --   |
| T49        | 83       | --             | --  | --   | --   |
| T50        | 85       | --             | --  | --   | --   |
| T51        | 86       | --             | --  | --   | --   |
| T52        | 87       | --             | --  | --   | --   |
| T53        | 90       | --             | --  | --   | --   |
| T54        | 91       | --             | --  | --   | --   |
| T55        | 93       | --             | --  | --   | --   |
| T56        | 100      | --             | --  | --   | --   |
| T57        | 101      | --             | --  | --   | --   |
| T58        | 102      | --             | --  | --   | --   |
| T59        | 103      | --             | --  | --   | --   |
| T60        | 104      | --             | --  | --   | --   |
| T61        | 106      | --             | --  | --   | --   |
| T62        | 110      | --             | --  | --   | --   |
| T63        | 111      | --             | --  | --   | --   |
| T64        | 113      | --             | --  | --   | --   |
| T65        | 114      | --             | --  | --   | --   |
| T66        | 116      | --             | --  | --   | --   |
| T67        | 119      | --             | --  | --   | --   |
| T68        | 121      | --             | --  | --   | --   |
| T69        | 122      | --             | --  | --   | --   |
| T70        | 123      | --             | --  | --   | --   |
| T71        | 126      | --             | --  | --   | --   |



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| Serial No. | Part No.                     | Result (mg/kg) |     |      |      |
|------------|------------------------------|----------------|-----|------|------|
|            |                              | DBP            | BBP | DEHP | DIBP |
| T72        | 128                          | --             | --  | --   | --   |
| T73        | 130                          | --             | --  | --   | --   |
| T74        | 135                          | ND             | ND  | ND   | ND   |
| T75        | 136+137+138+139 <sup>△</sup> | ND             | ND  | ND   | ND   |
| T76        | 133                          | --             | --  | --   | --   |
| T77        | 134                          | --             | --  | --   | --   |

**Remark:**

- (1) Results are obtained by XRF 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

- (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) -- = Not Regulated
- (8) LOQ = Limit of quantitation.

| Test Items | Pb    | Cd    | Hg    | Cr <sup>6+</sup> |                    | PBB   | PBDE  | DBP   | BBP   | DEHP  | DIBP  |
|------------|-------|-------|-------|------------------|--------------------|-------|-------|-------|-------|-------|-------|
| Units      | mg/kg | mg/kg | mg/kg | mg/kg            | μg/cm <sup>2</sup> | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| LOQ        | 2     | 2     | 2     | 8                | 0.1                | 5     | 5     | 50    | 50    | 50    | 50    |



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The LOQ for single compound of PBBs and PBDEs is 5mg/kg, LOQ of  $\text{Cr}^{6+}$  for polymer and composite sample is 8mg/kg and LOQ of  $\text{Cr}^{6+}$  for metal sample is  $0.1\mu\text{g}/\text{cm}^2$ .

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

Boiling water extraction:

Negative = Absence of  $\text{Cr}^{6+}$  coating, the detected concentration in boiling water extraction solution is less than  $0.10\mu\text{g}/\text{cm}^2$ .

Positive = Presence of  $\text{Cr}^{6+}$  coating, the detected concentration in boiling water extraction solution is greater than  $0.13\mu\text{g}/\text{cm}^2$ .

Information on storage conditions and production date of the tested sample is unavailable and thus  $\text{Cr}^{6+}$  results represent status of the sample at the time of testing.

(10) 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) ( $\text{Cr}^{6+}$ )     | 0.1% (1000 mg/kg) |
| Polybrominated Biphenyls (PBBs)        | 0.1% (1000 mg/kg) |
| Polybrominated Diphenyl Ethers (PBDEs) | 0.1% (1000 mg/kg) |
| 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) |

(11) Abbreviation:

"Pb" denotes Lead, "Cd" denotes Cadmium, "Hg" denotes Mercury, "Cr" denotes Chromium, " $\text{Cr}^{6+}$ " denotes Hexavalent Chromium, "Br" denotes Bromine, "PBBs" denotes Total Polybrominated Biphenyls, "PBDEs" denotes Total Polybrominated Diphenyl Ethers.

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

- (12) " $\Delta$ "=As per applicant's requirement, the testing was conducted based on mixed components by weight in equal ratio, results are calculated by the minimum weight of mixed components.

- (13) For specimen 115(R1): The result(s) was(were) based on the wet weight of the raw material.

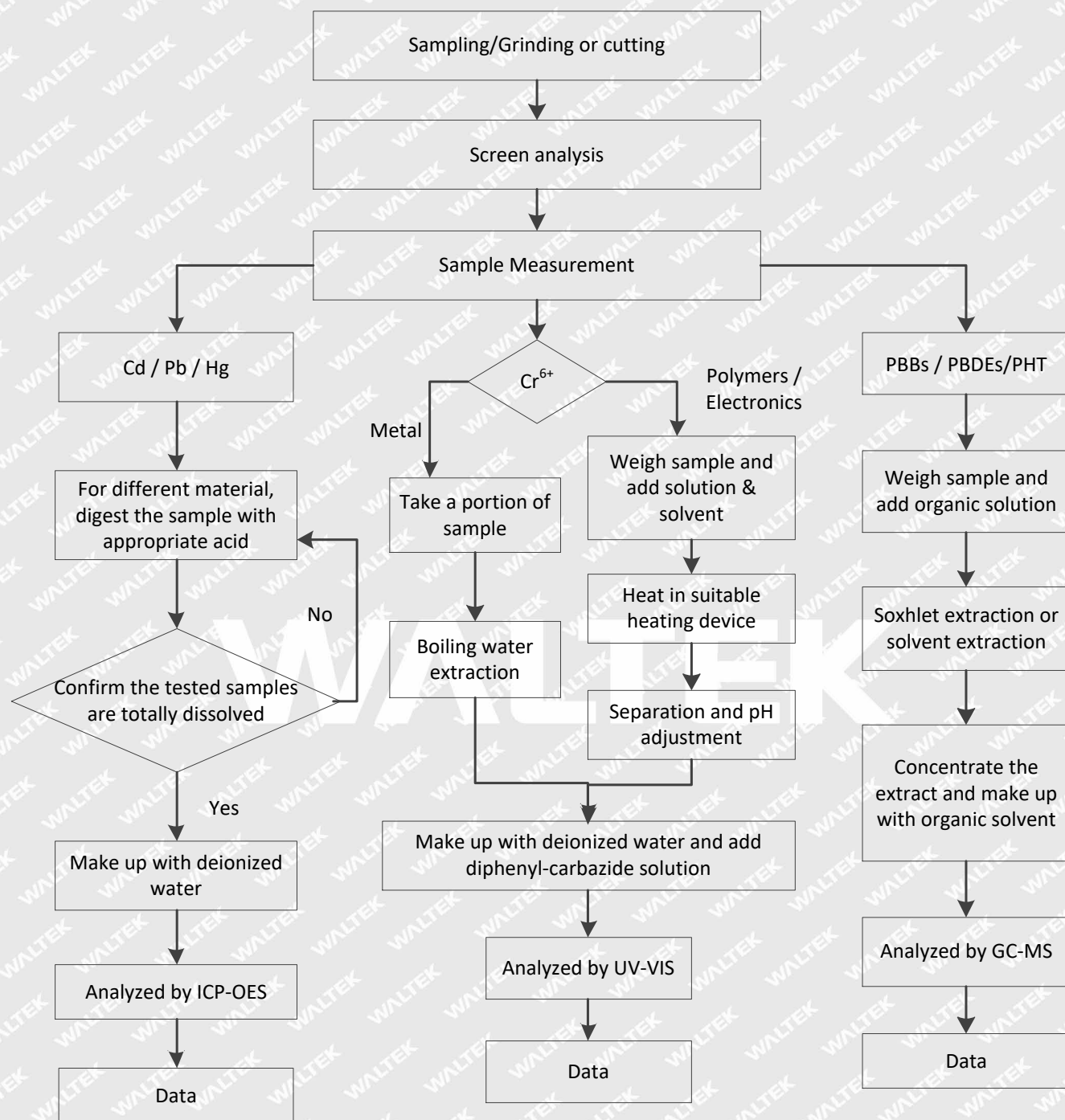
- (14) As per client's requirement, results of specimen No.1 to No.132 are quoted from report No.WTF25F06167114C specimen No.1 to No.132.



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### Testing Flow chart:

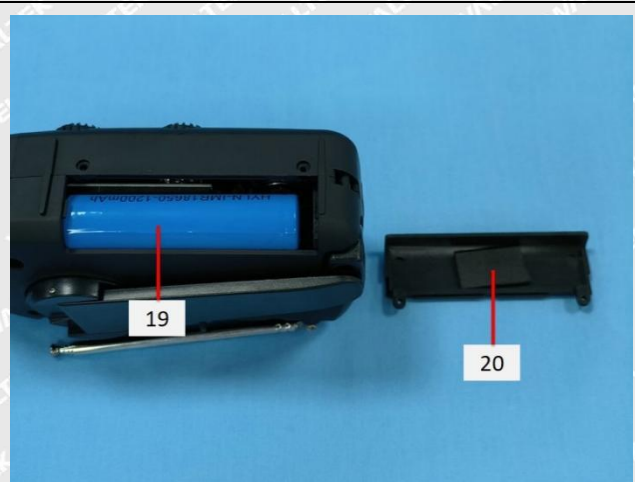
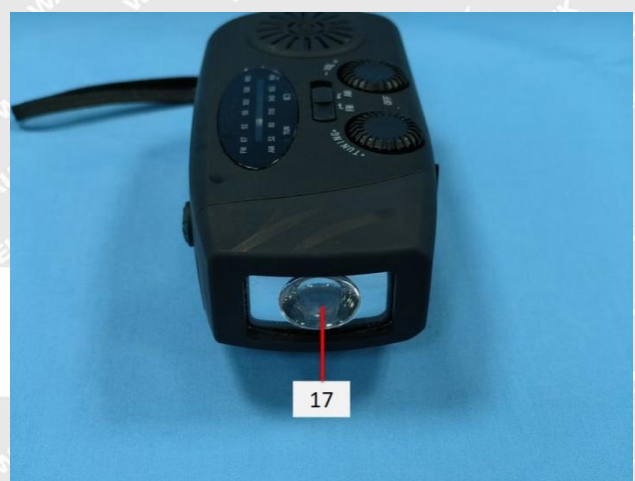
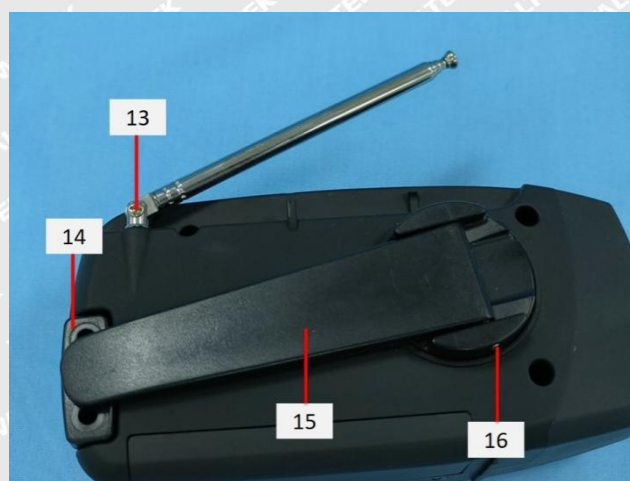




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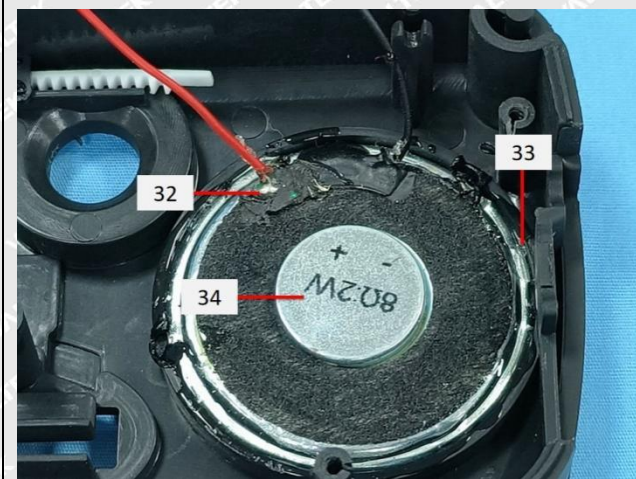
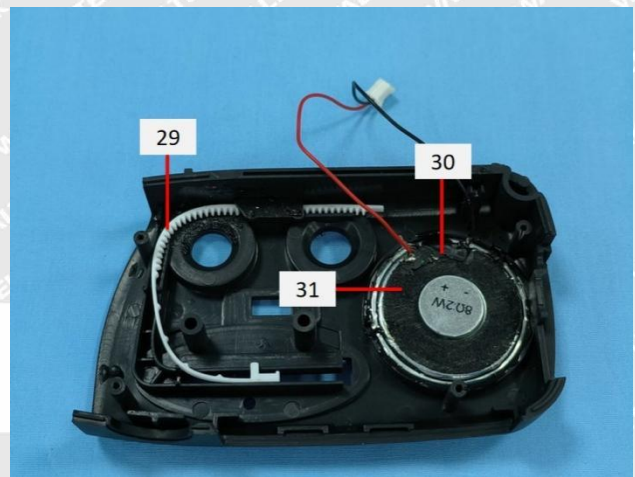
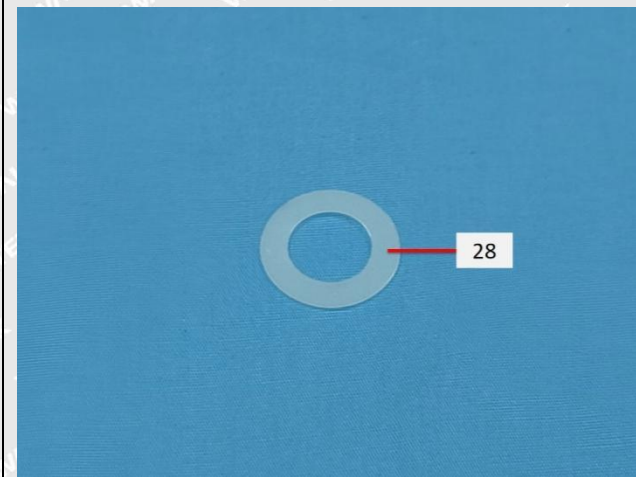
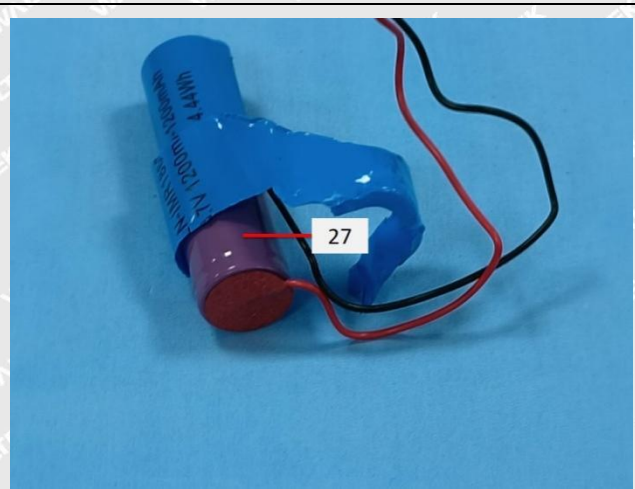
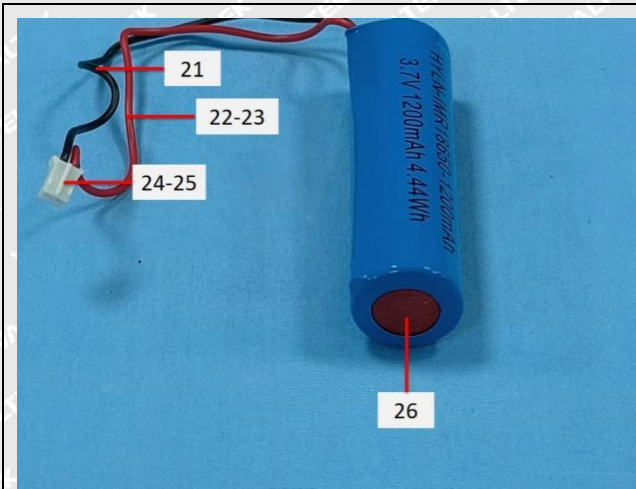
**Photograph of parts tested:**





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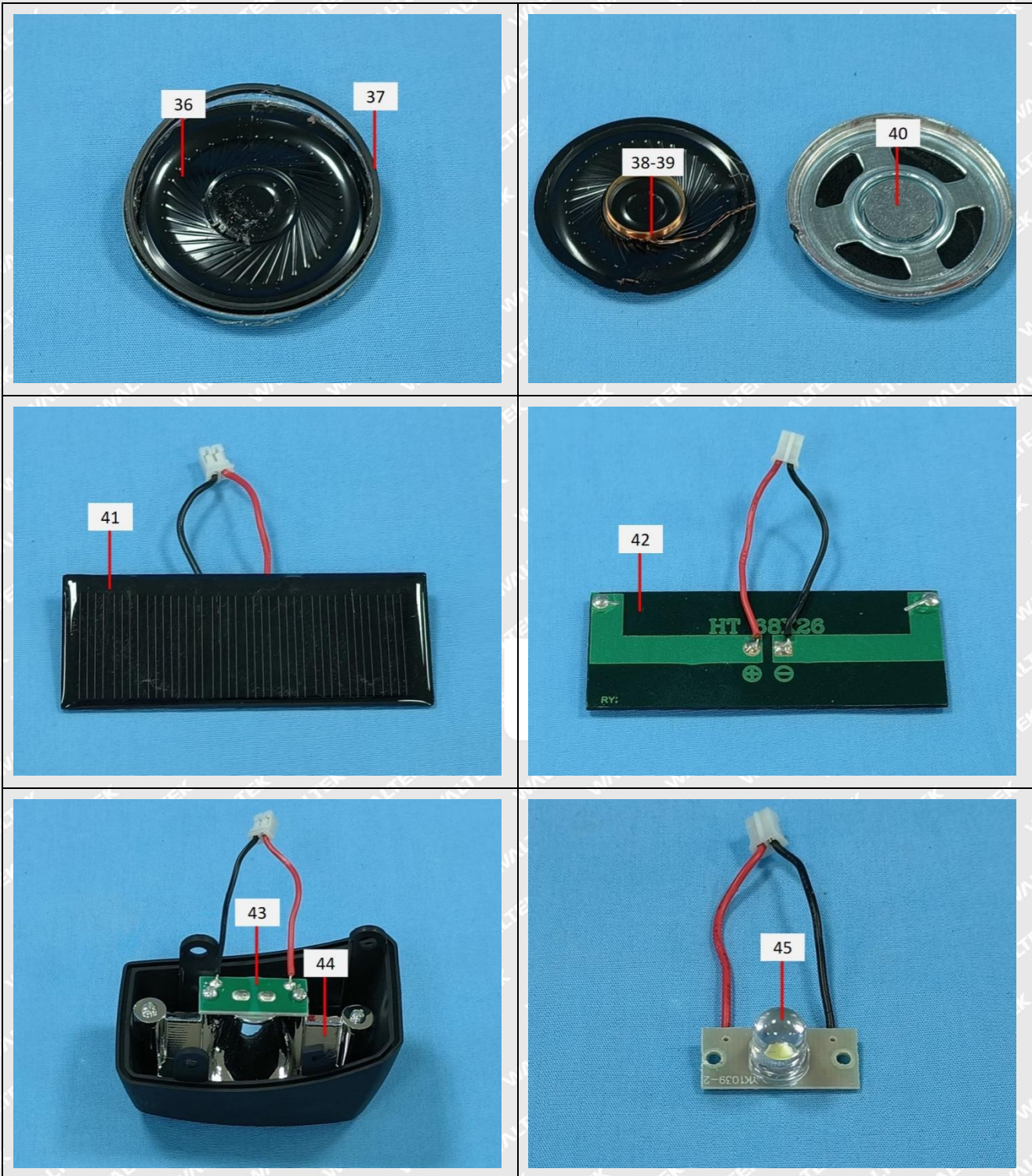
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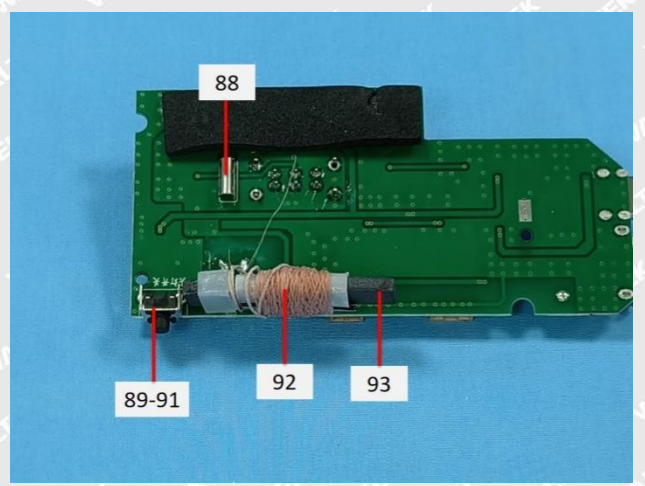
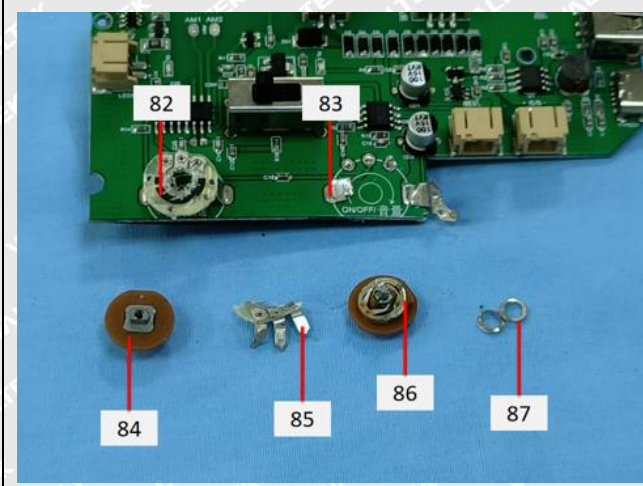
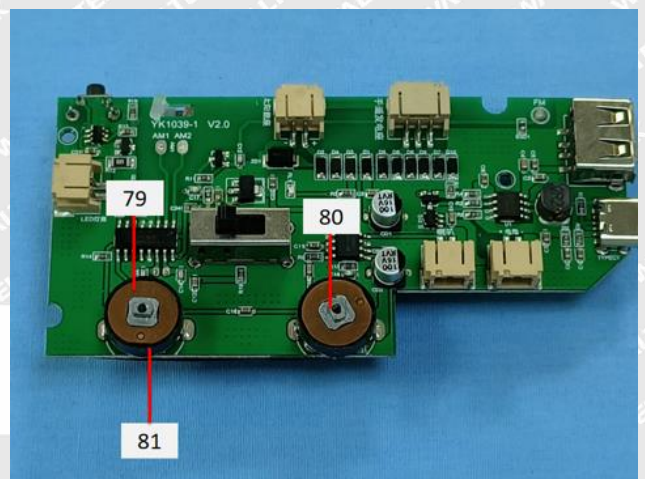
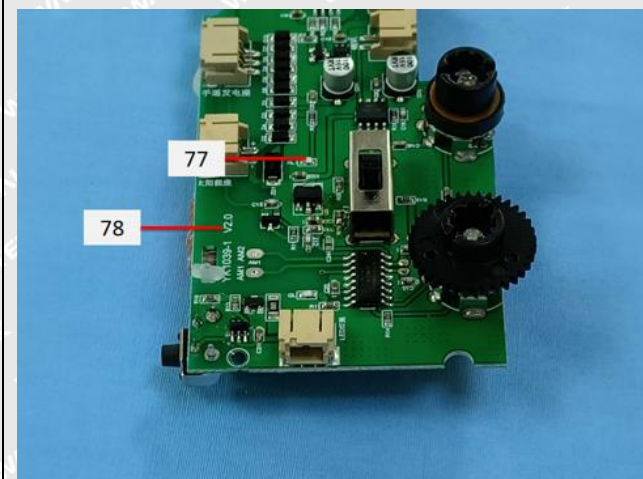
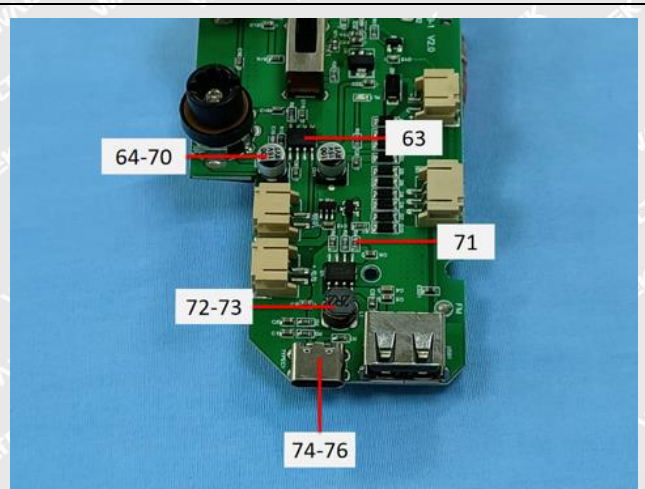
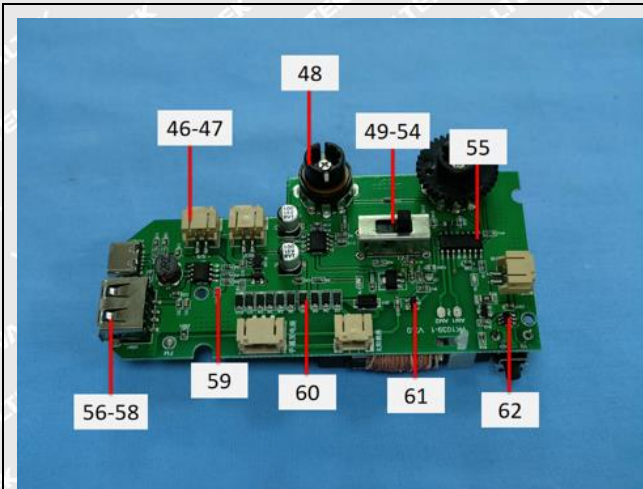
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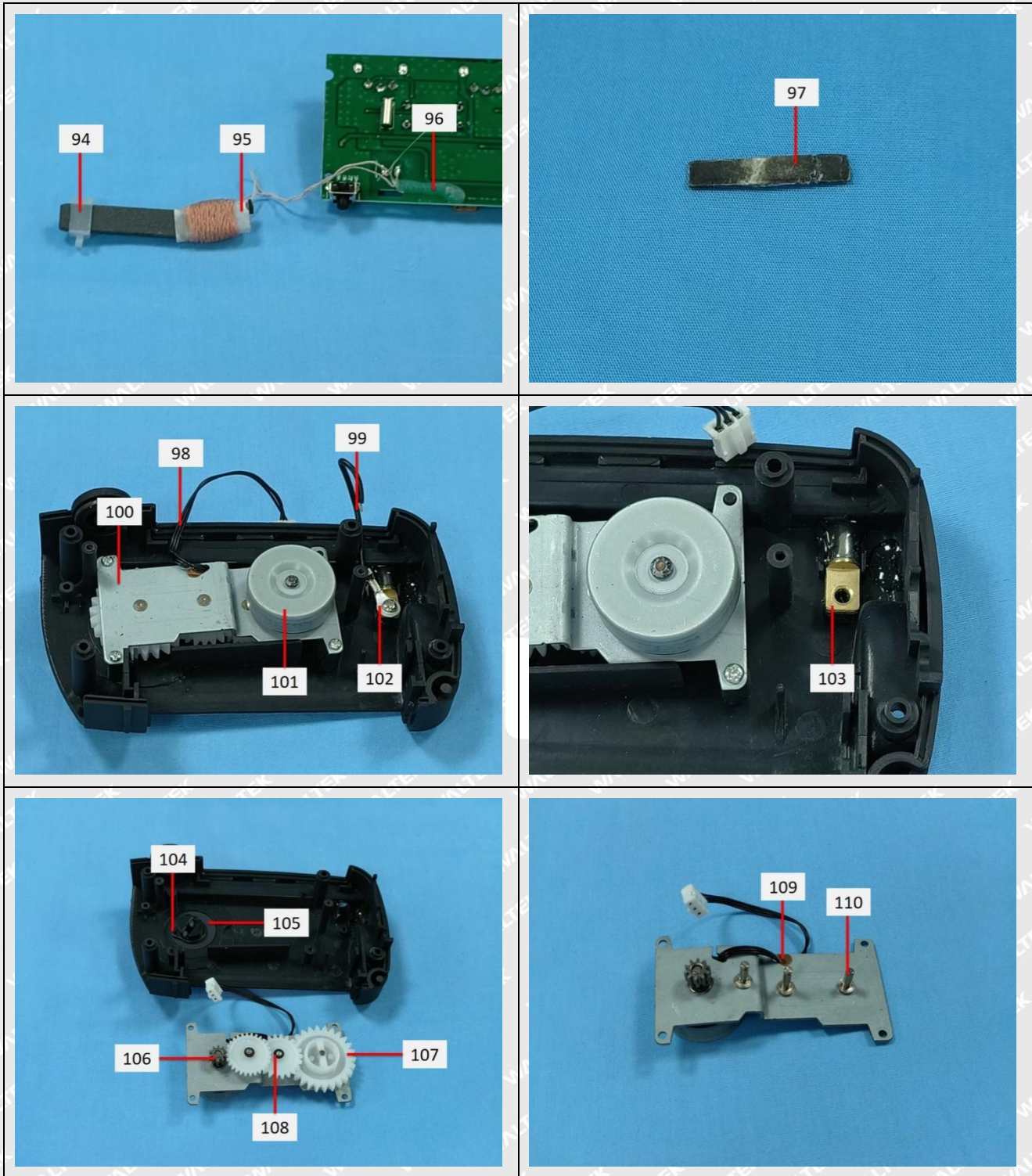
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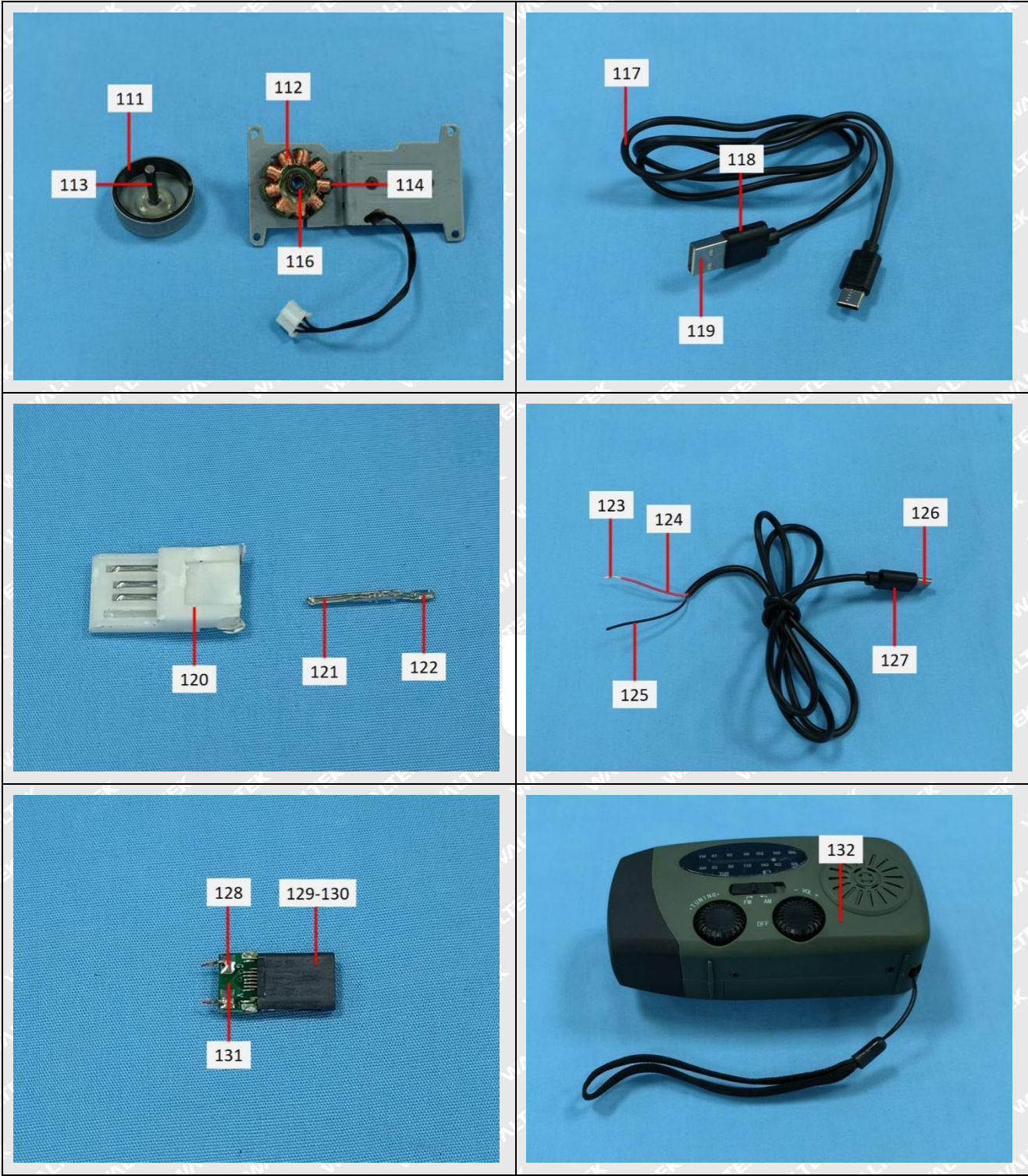
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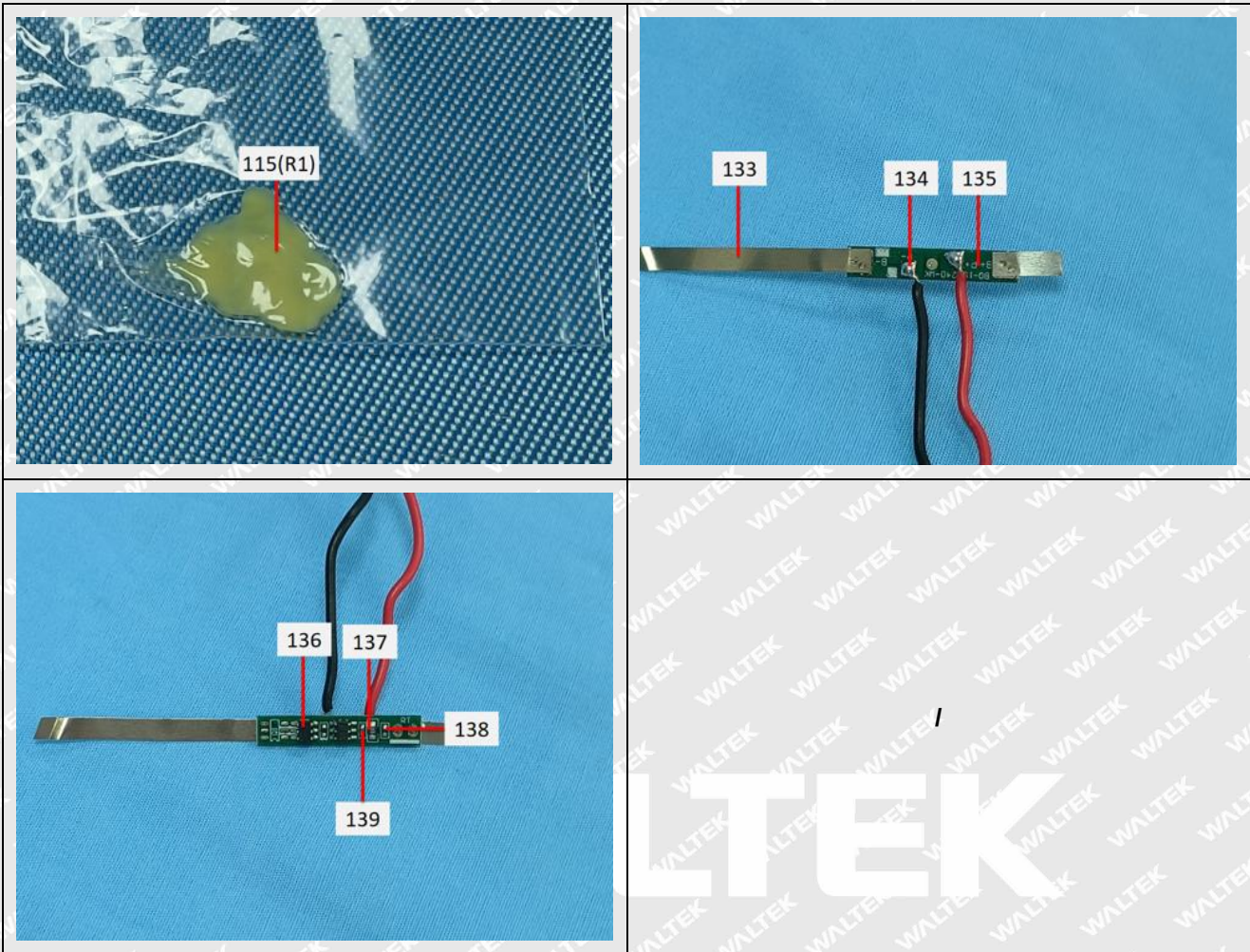
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===== End of Report =====

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