Report No.: SZARR190404038-01

# Test Report

| | | |
|---|---|---|
| Client Name | : | Jinan USR IOT Technology Limited |
| Address | : | Room 203, 205, 208. Floor 2, Wuzhou Scientific Research Building, No.1100 Shunfeng Street, Gaoxin District, Jinan, Shandong, 250101, China |
| Product Name | : | Serial to Ethernet converter |
| Date | : | May. 10, 2019 |

## Shenzhen Anbotek Compliance Laboratory Limited

# Test Report



| | | |
|---|---|---|
| **Applicant** | : | Jinan USR IOT Technology Limited |
| **Address** | : | Room 203, 205, 208. Floor 2, Wuzhou Scientific Research Building, No.1100 Shunfeng Street, Gaoxin District, Jinan, Shandong, 250101, China |

**The submitted sample and sample information was/were submitted and identified by/on the behalf of the client**

| | | |
|---|---|---|
| **Sample Name** | : | Serial to Ethernet converter |
| **Model No.** | : | USR-TCP232-410S(Main test), USR-TCP232-302, USR-TCP232-304, USR-TCP232-306, USR-N510, USR-N520, USR-N540, USR-N580, USR-N668, USR-M511 |
| **Manufacturer** | : | Jinan USR IOT Technology Limited |
| **Sample Received Date** | : | Apr. 04, 2019 |
| **Testing Period** | : | Apr. 04, 2019 to Apr. 25, 2019 |
| **Test Requested** | : | As specified by client, to test the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyl(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Diisobutyl phthalate (DIBP), Dibutyl phthalate(DBP), Benzyl butyl phthalate(BBP), Di-2-ethylhexyl phthalate(DEHP) in the submitted sample in accordance with the RoHS Directive 2011/65/EU and amendment Commission Delegated Directive (EU) 2015/863 with effective from 22 July 2019. |

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

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

Tested by Liqing Yang — Liqing Yang, Test engineer

Reviewed by Niki You — Niki You, Test engineer

Leo Li, Authorized signatory

Anbotek (SZ) Compliance Laboratory limited * Approved *

# Test Report



**Test Method:**

**A. XRF Screening Test**

XRF screening limits in mg/kg for regulated elements according to IEC 62321-3-1:2013.

| Element | Limit of IEC 62321-3-1:2013 Unit (mg/kg) | | |
|---|---|---|---|
| | Polymers | Metals | Composite material |
| Cd | BL≤(70-3σ)<X <(130+3σ)≤OL | BL≤(70-3σ) <X <(130+3σ)≤OL | LOD<X <(150+3σ)≤OL |
| Pb | BL≤(700-3σ) <X <(1300+3σ)≤OL | BL≤(700-3σ) <X <(1300+3σ)≤OL | BL≤(500-3σ)<X <(1500+3σ)≤OL |
| Hg | BL≤(700-3σ)<X <(1300+3σ)≤OL | BL≤(700-3σ)<X <(1300+3σ)≤OL | BL≤(500-3σ)<X <(1500+3σ)≤OL |
| Br | BL≤(300-3σ)< X | N.A. | BL≤(250-3σ)< X |
| Cr | BL≤(700-3σ)< X | BL≤(700-3σ)< X | BL≤(500-3σ)< X |

**Note:**

-N.A. = Not Applicable

-BL = Under the XRF screening limit

-OL = Further chemical test will be conducted while result is above the screening limit

-X= The symbol “X” marks the region where further investigation is necessary

-3σ= The reproducibility of analytical instruments

-LOD= Detection limit

**B. Chemical Test**

| Test Item(s) | Test Method | Measured Equipment(s) | MDL | Limit |
|---|---|---|---|---|
| Lead (Pb) | IEC 62321-5:2013 | ICP-OES | 2 mg/kg | 1000 mg/kg |
| Cadmium (Cd) | IEC 62321-5:2013 | | 2 mg/kg | 100 mg/kg |
| Mercury (Hg) | IEC 62321-4:2013+AMD1:2017 | | 2 mg/kg | 1000 mg/kg |
| Hexavalent Chromium Cr(VI) | IEC 62321-7-1:2015 | UV-VIS | 0.10μg/cm$^2$ | 1000 mg/kg |
| | IEC 62321-7-2:2017 | | 2 mg/kg | |
| Polybrominated Biphenyls (PBBs) | IEC 62321-6:2015 | GC-MS | 5 mg/kg | 1000 mg/kg |
| Polybrominated Diphenyl Ethers (PBDEs) | IEC 62321-6:2015 | | 5 mg/kg | 1000 mg/kg |
| Phthalates (DIBP, DBP, BBP, DEHP) | IEC 62321-8:2017 | | 50 mg/kg | 1000 mg/kg |

# Test Report



**Test Results:**

| Sample No. | Sample Description | Tested Items | XRF Screening Test | Chemical Test Unit (mg/kg) | Conclusion |
|---|---|---|---|---|---|
| 1 | Metal shell with black coating | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |
| 2 | Silvery label | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |
| 3 | Metal screw with black coating | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |

# Test Report



| Sample No. | Sample Description | Tested Items | XRF Screening Test Unit (mg/kg) | Chemical Test Unit (mg/kg) | Conclusion |
|---|---|---|---|---|---|
| 4 | Blue plastic gummed paper | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |
| 5 | Silvery metal screw | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |
| 6 | Green plastic shell | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | X | N.D. | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |

# Test Report



| Sample No. | Sample Description | Tested Items | XRF Screening Test Unit (mg/kg) | Chemical Test Unit (mg/kg) | Conclusion |
|---|---|---|---|---|---|
| 7 | Silvery metal screw | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |
| 8 | Silvery metal block | Pb | OL | 26530* | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |
| 9 | Silvery metal contact plate | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |

# Test Report



| Sample No. | Sample Description | Tested Items | XRF Screening Test Unit (mg/kg) | Chemical Test Unit (mg/kg) | Conclusion |
|---|---|---|---|---|---|
| 10 | Black plastic shell | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | X | N.D. | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |
| 11 | Silvery metal rod | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |
| 12 | Black plastic pedestal | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |

# Test Report



| Sample No. | Sample Description | Tested Items | XRF Screening Test Unit (mg/kg) | Chemical Test Unit (mg/kg) | Conclusion |
|---|---|---|---|---|---|
| 13 | Silvery metal shrapnel | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | X | Negative | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |
| 14 | Silvery metal shell | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |
| 15 | Black plastic key | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |

# Test Report



| Sample No. | Sample Description | Tested Items | XRF Screening Test Unit (mg/kg) | Chemical Test Unit (mg/kg) | Conclusion |
|---|---|---|---|---|---|
| 16 | Black plastic shell | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | X | N.D. | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |
| 17 | Yellow LED | Pb | BL | / | PASS |
| | | Cd | LOD | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |
| 18 | Green LED | Pb | BL | / | PASS |
| | | Cd | LOD | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |

# Test Report



| Sample No. | Sample Description | Tested Items | XRF Screening Test Unit (mg/kg) | Chemical Test Unit (mg/kg) | Conclusion |
|---|---|---|---|---|---|
| 19 | Silvery metal shell | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |
| 20 | Black plastic pedestal | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | X | N.D. | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |
| 21 | Copper-colored contact pin | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |

# Test Report



| Sample No. | Sample Description | Tested Items | XRF Screening Test Unit (mg/kg) | Chemical Test Unit (mg/kg) | Conclusion |
|---|---|---|---|---|---|
| 22 | Silvery metal shell | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |
| 23 | Silvery metal screw | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |
| 24 | Black plastic shell | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |

# Test Report



| Sample No. | Sample Description | Tested Items | XRF Screening Test Unit (mg/kg) | Chemical Test Unit (mg/kg) | Conclusion |
|---|---|---|---|---|---|
| 25 | Silvery metal shell | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |
| 26 | Black rubber plug | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |
| 27 | Silvery foil paper | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |

# Test Report



| Sample No. | Sample Description | Tested Items | XRF Screening Test Unit (mg/kg) | Chemical Test Unit (mg/kg) | Conclusion |
|---|---|---|---|---|---|
| 28 | Grey foil paper | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |
| 29 | Yellow paper | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |
| 30 | Pin | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |

# Test Report



| Sample No. | Sample Description | Tested Items | XRF Screening Test Unit (mg/kg) | Chemical Test Unit (mg/kg) | Conclusion |
|---|---|---|---|---|---|
| 31 | Red LED | Pb | BL | / | PASS |
| | | Cd | LOD | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |
| 32 | Green LED | Pb | BL | / | PASS |
| | | Cd | LOD | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |
| 33 | Translucent plastic shell | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |

# Test Report



| Sample No. | Sample Description | Tested Items | XRF Screening Test Unit (mg/kg) | Chemical Test Unit (mg/kg) | Conclusion |
|---|---|---|---|---|---|
| 34 | Crystal oscillator | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |
| 35 | Square IC | Pb | BL | / | PASS |
| | | Cd | LOD | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |
| 36 | Black plastic block | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | X | N.D. | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |

# Test Report



| Sample No. | Sample Description | Tested Items | XRF Screening Test Unit (mg/kg) | Chemical Test Unit (mg/kg) | Conclusion |
|---|---|---|---|---|---|
| 37 | White component | Pb | BL | / | PASS |
| | | Cd | LOD | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |
| 38 | Chip resistor | Pb | BL | / | PASS |
| | | Cd | LOD | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | X | N.D. | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |
| 39 | Tantalum capacitor | Pb | BL | / | PASS |
| | | Cd | LOD | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |

# Test Report



| Sample No. | Sample Description | Tested Items | XRF Screening Test Unit (mg/kg) | Chemical Test Unit (mg/kg) | Conclusion |
|---|---|---|---|---|---|
| 40 | Glass diode | Pb | OL* | / | PASS |
| | | Cd | LOD | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |
| 41 | Chip diode | Pb | BL | / | PASS |
| | | Cd | LOD | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | BL | / | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |
| 42 | Green PCB board | Pb | BL | / | PASS |
| | | Cd | LOD | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | X | N.D. | |
| | | DBP | N.A. | N.D. | |
| | | BBP | N.A. | N.D. | |
| | | DEHP | N.A. | N.D. | |
| | | DIBP | N.A. | N.D. | |

# Test Report



| Sample No. | Sample Description | Tested Items | XRF Screening Test Unit (mg/kg) | Chemical Test Unit (mg/kg) | Conclusion |
|---|---|---|---|---|---|
| 43 | Soldering tin | Pb | BL | / | PASS |
| | | Cd | BL | / | |
| | | Hg | BL | / | |
| | | Cr(Cr(VI) ) | BL | / | |
| | | Br(PBBs&PBDEs) | N.A. | / | |
| | | DBP | N.A. | / | |
| | | BBP | N.A. | / | |
| | | DEHP | N.A. | / | |
| | | DIBP | N.A. | / | |

**Note:**

- The screening results are only used for reference.
- When conducting the test for PBBs&PBDEs, XRF was introduced to screen Br Exclusively; When conducting the test for Hexavalent Chromium, XRF was introduced to screen Chromium exclusively.

-BL = Under the XRF screening limit

-OL = Further chemical test will be conducted while result is above the screening limit

-X= The symbol “X” marks the region where further investigation is necessary

-LOD= Detection limit

-MDL = Method Detection Limit

-N.A. = Not Applicable

-N.D. = Not Detected (<MDL)

-/=Not tested

-mg/kg = ppm = parts per million

- μg/cm$^2$ = microgramme per square centimetre

-Negative = Absence of Cr(VI) , the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.10ug/cm$^2$.

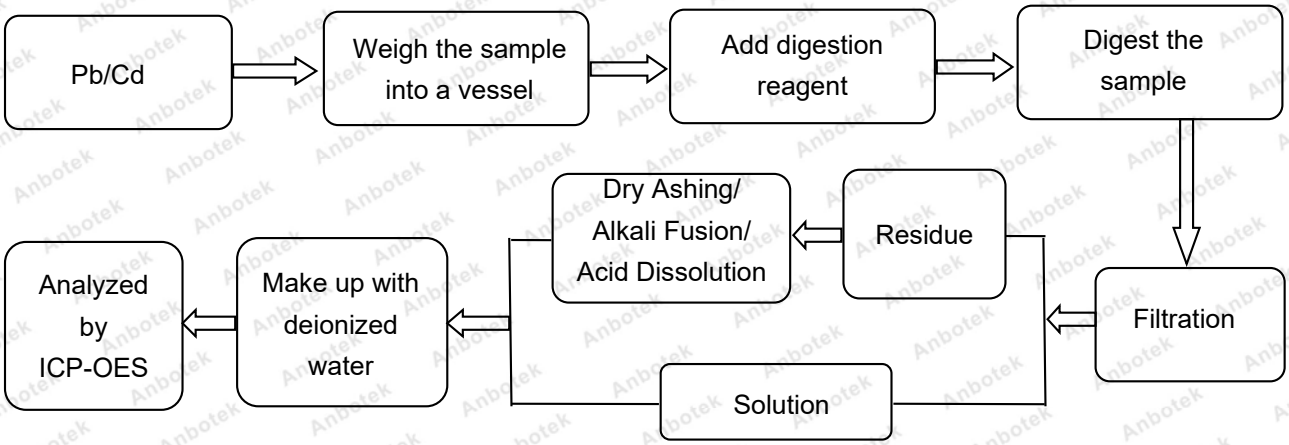
-Positive = Presence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is equal to or greater than 0.13ug/cm$^2$.

- *According to the product specification provided from client, the submitted sample of specimen No.8 is copper alloy containing up to 4% Lead by weight which is exempted by RoHS regulatory (Directive 2011/65/EU of The European Parliament and of The Council of 8 June 2011).

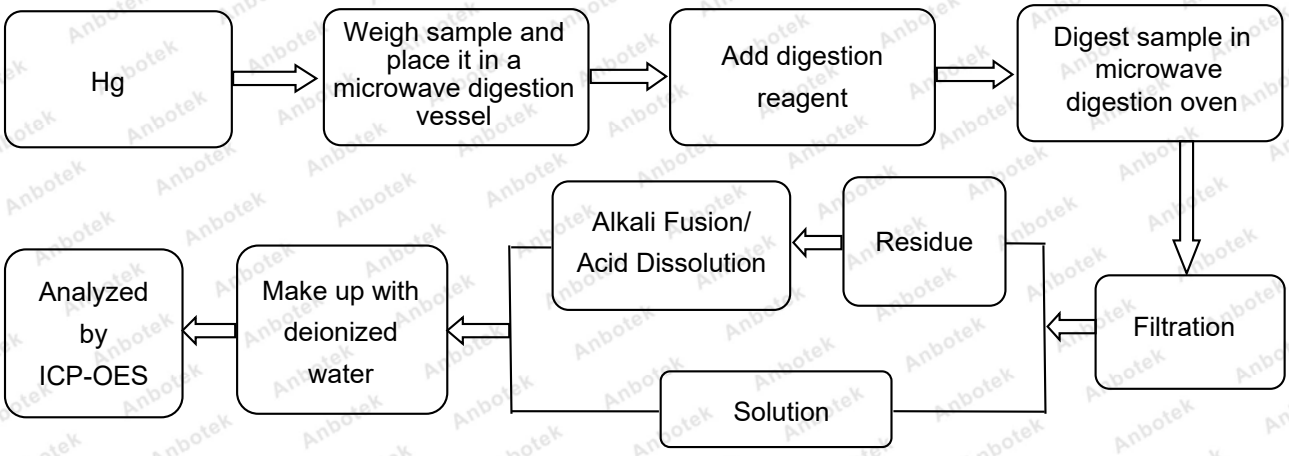
- **According to the product specification provided from client, it is possible the source of lead in specimen No.40 is derived from the glass material of that electronic component which is exempted by RoHS regulatory (Directive 2011/65/EU of The European Parliament and of The Council of 8 June 2011).

**Test Process:**

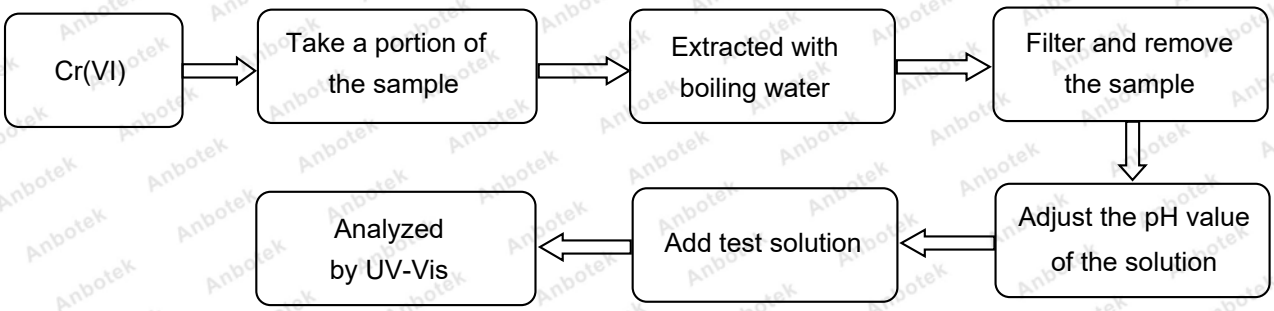
◆ **IEC 62321-5:2013**



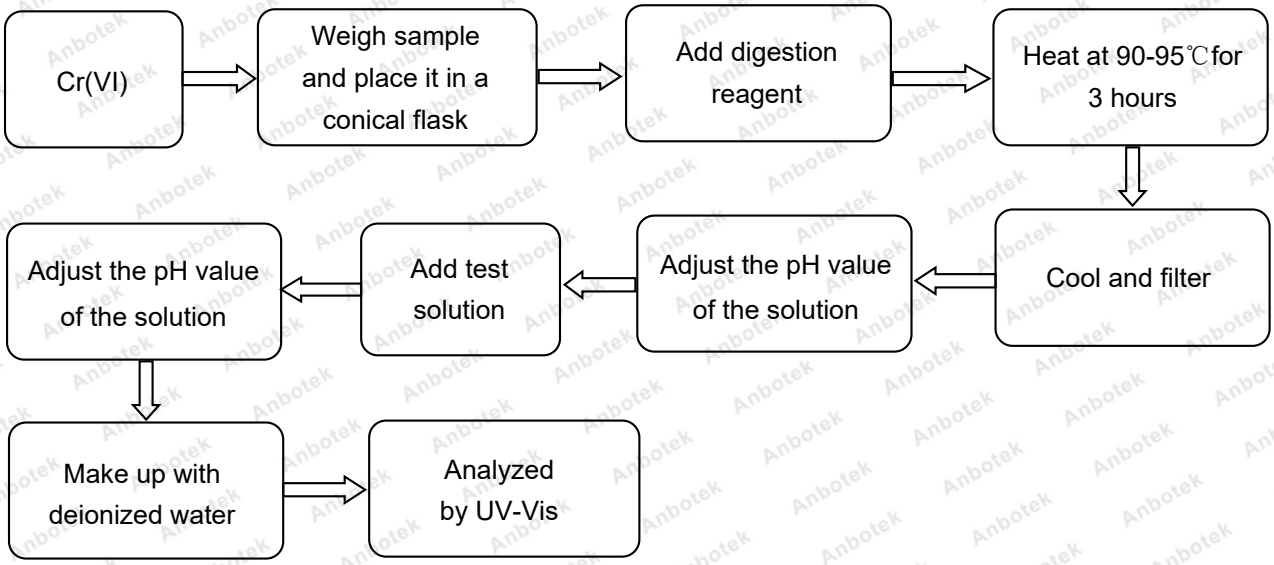

◆ **IEC 62321-4:2013+AMD1:2017**



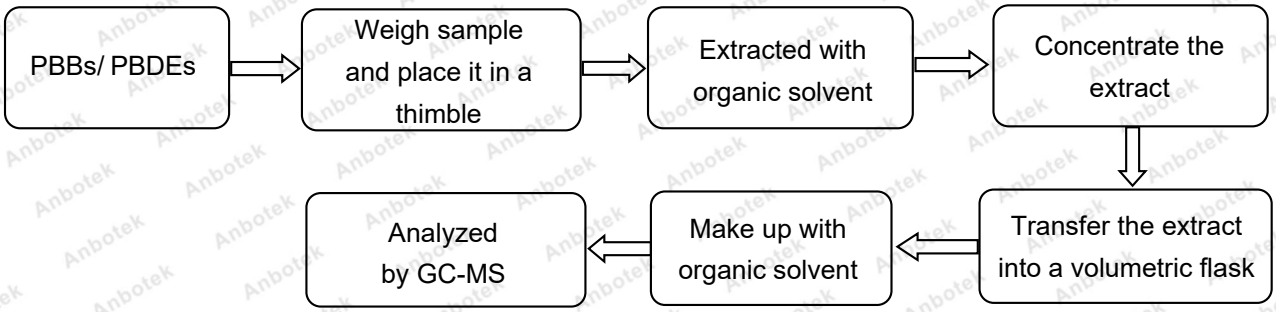

◆ **IEC 62321-7-1:2015**



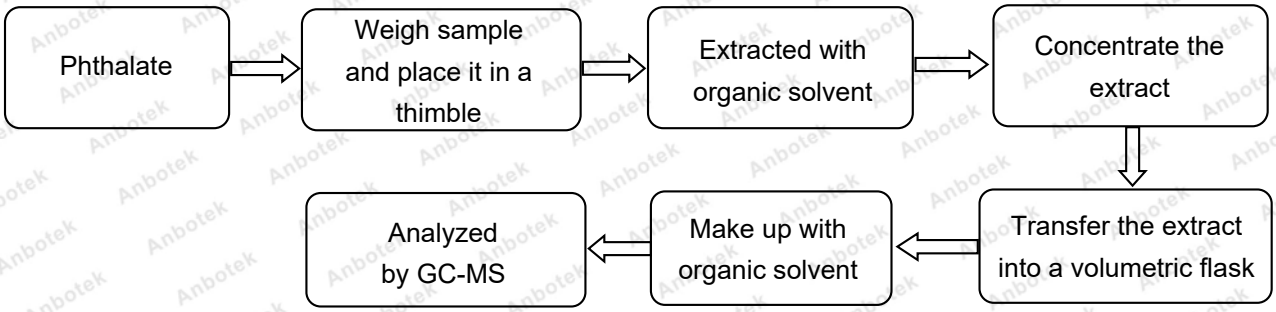
◆ **IEC 62321-7-2:2017**




◆ **IEC 62321-6:2015**



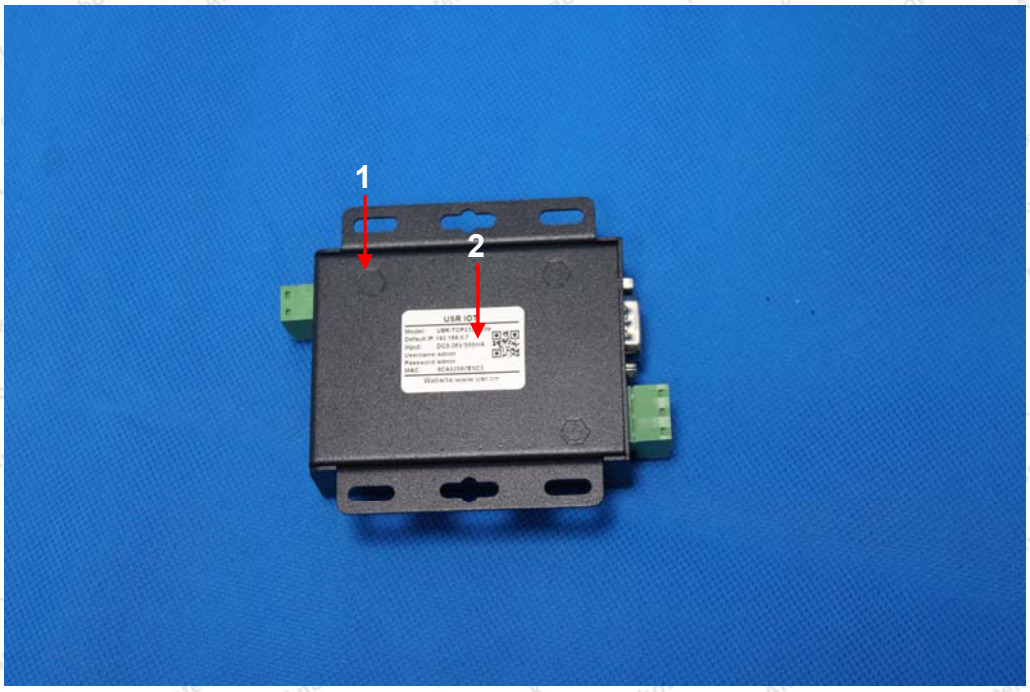

◆ **IEC 62321-8:2017**

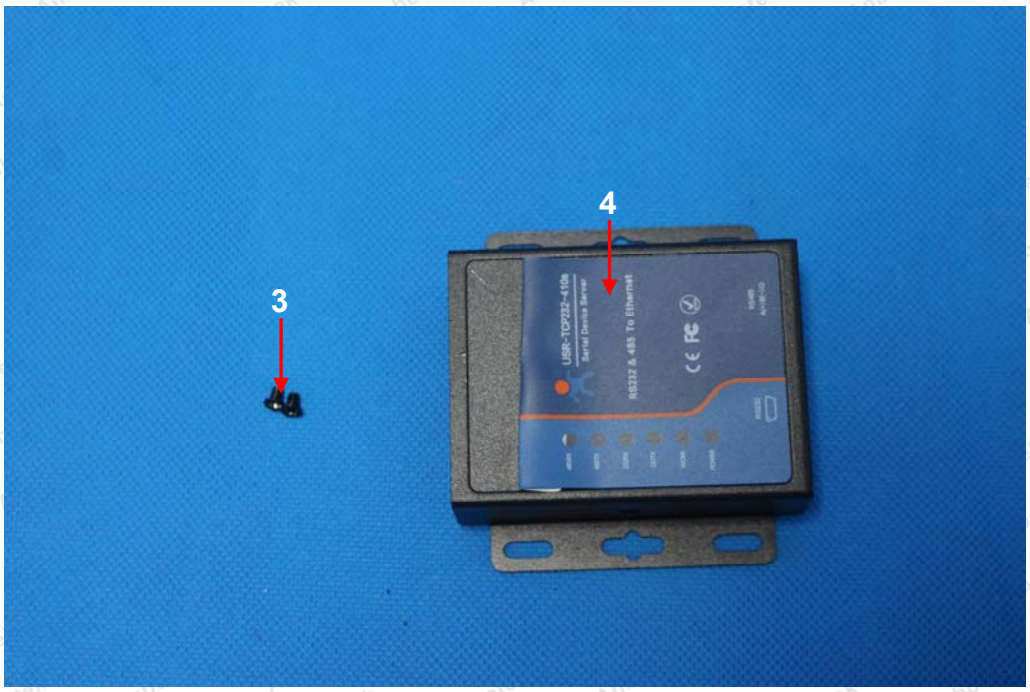


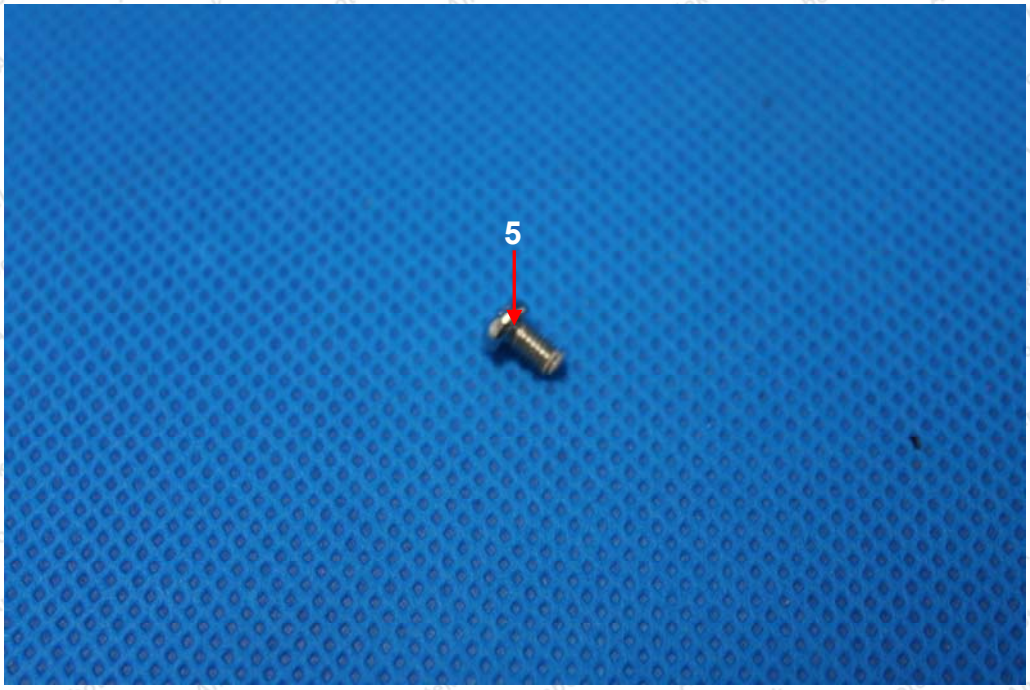
**Photograph of Sample**

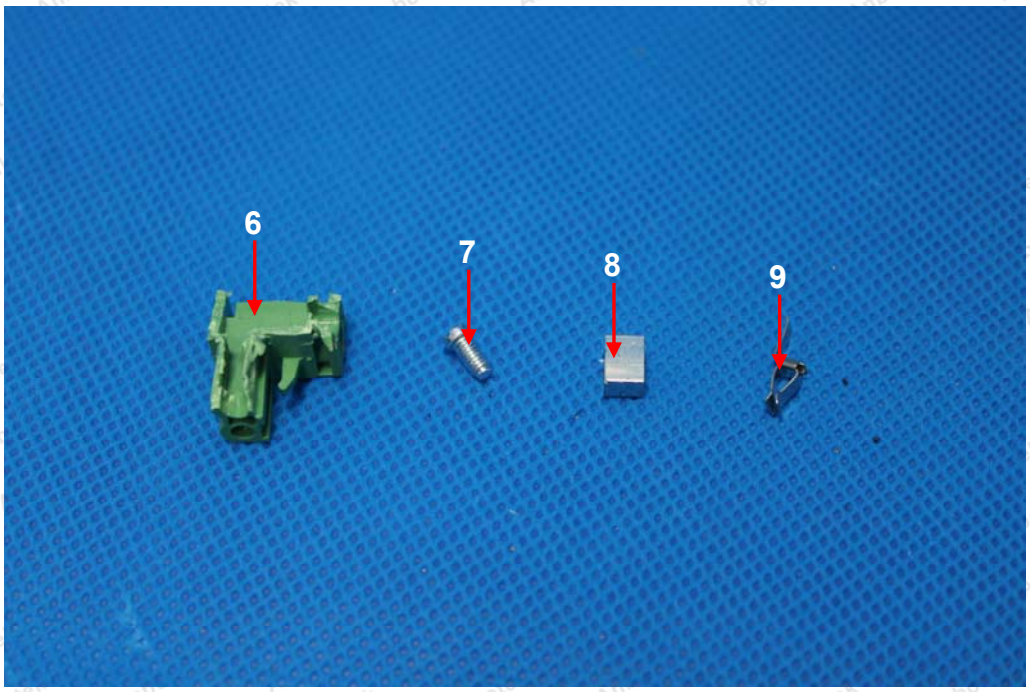


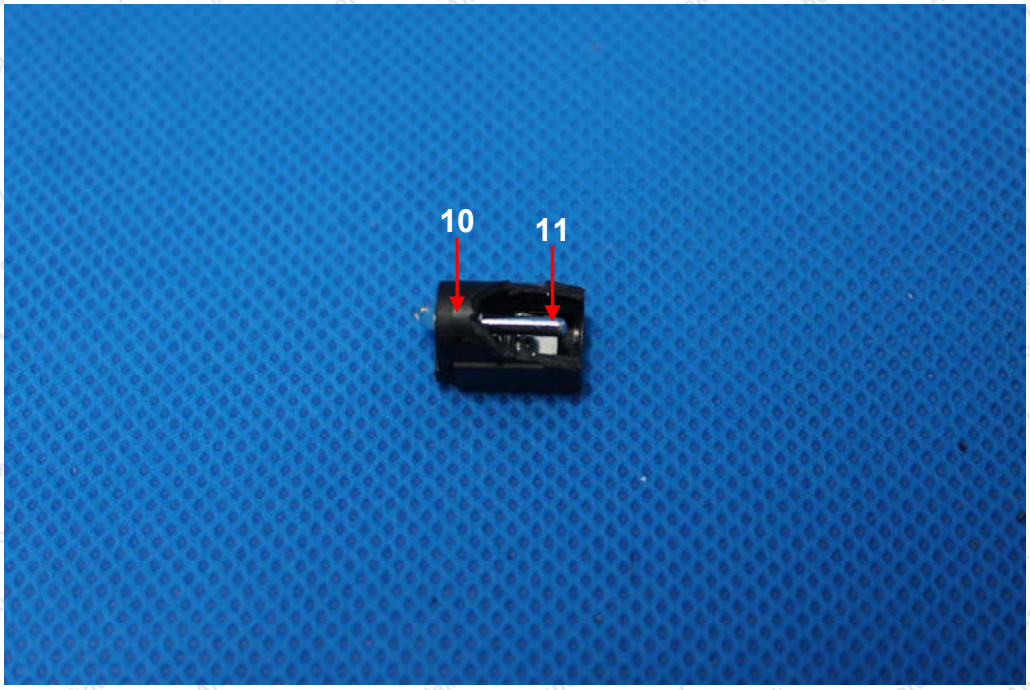

**Photo(s) of the tested component(s)**

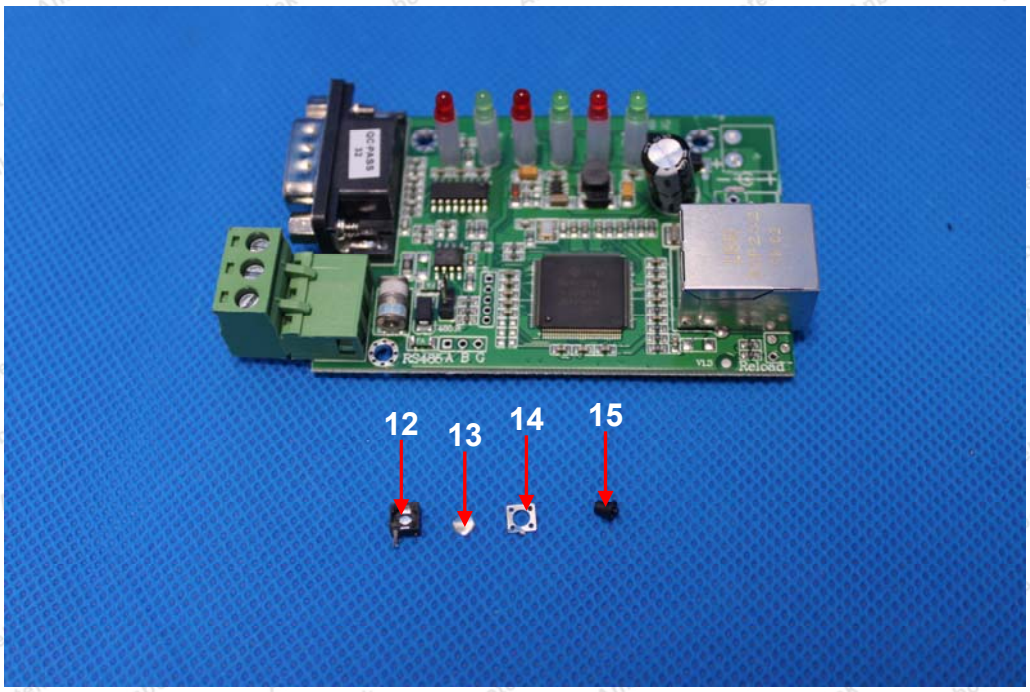


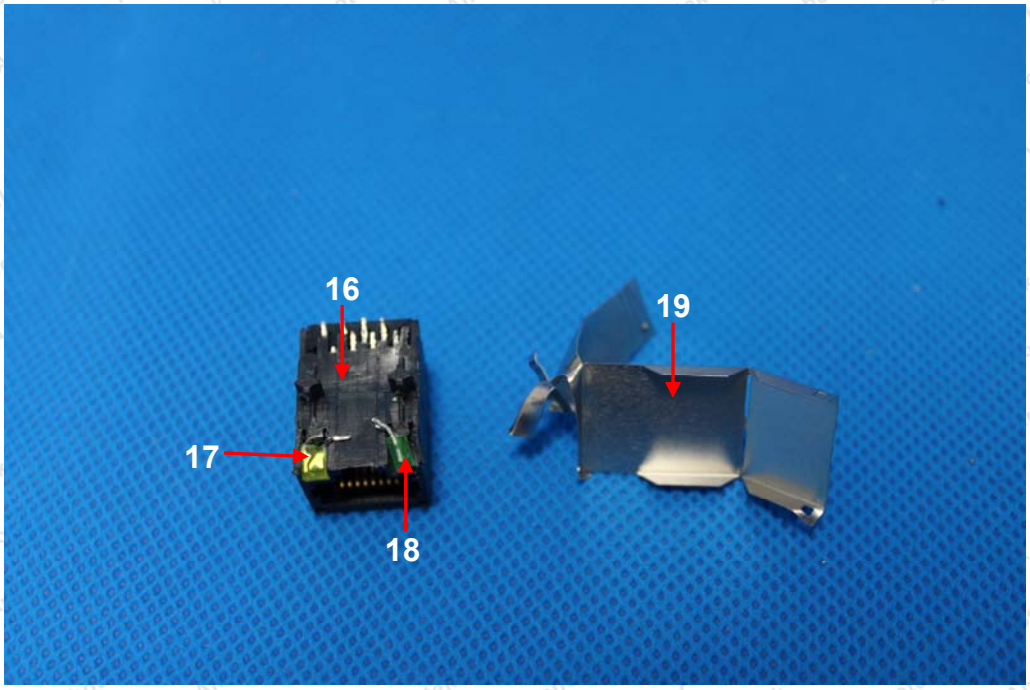

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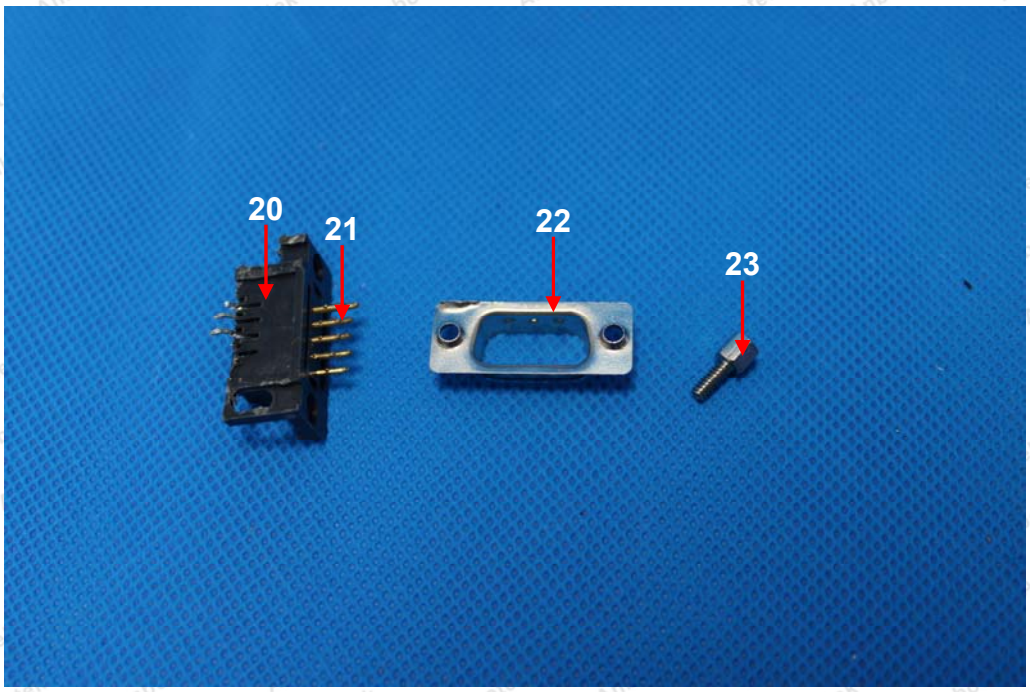

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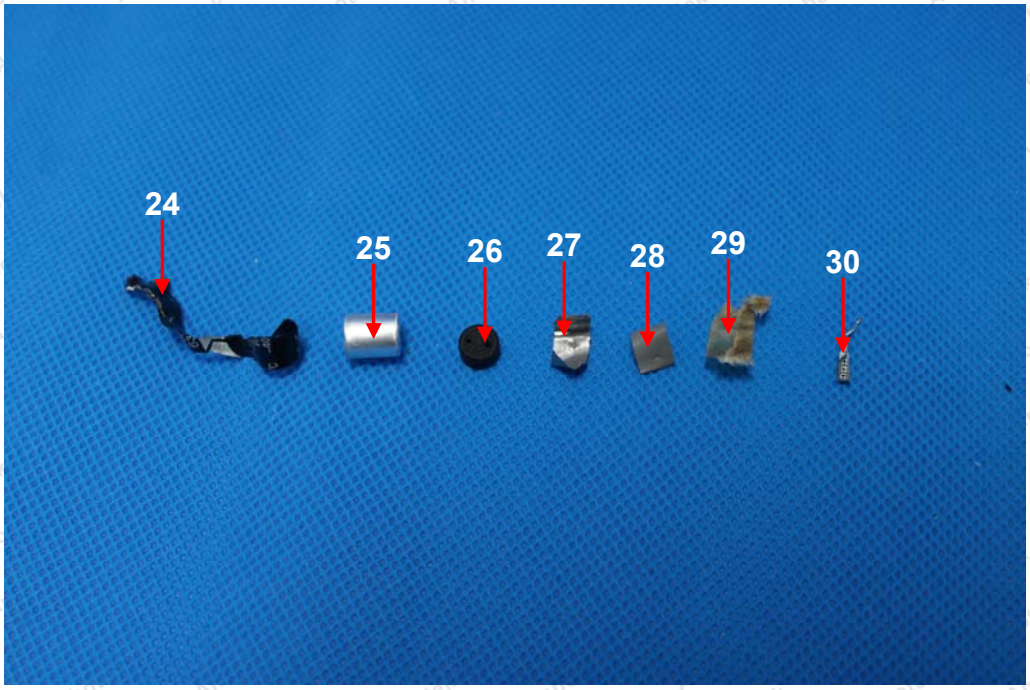

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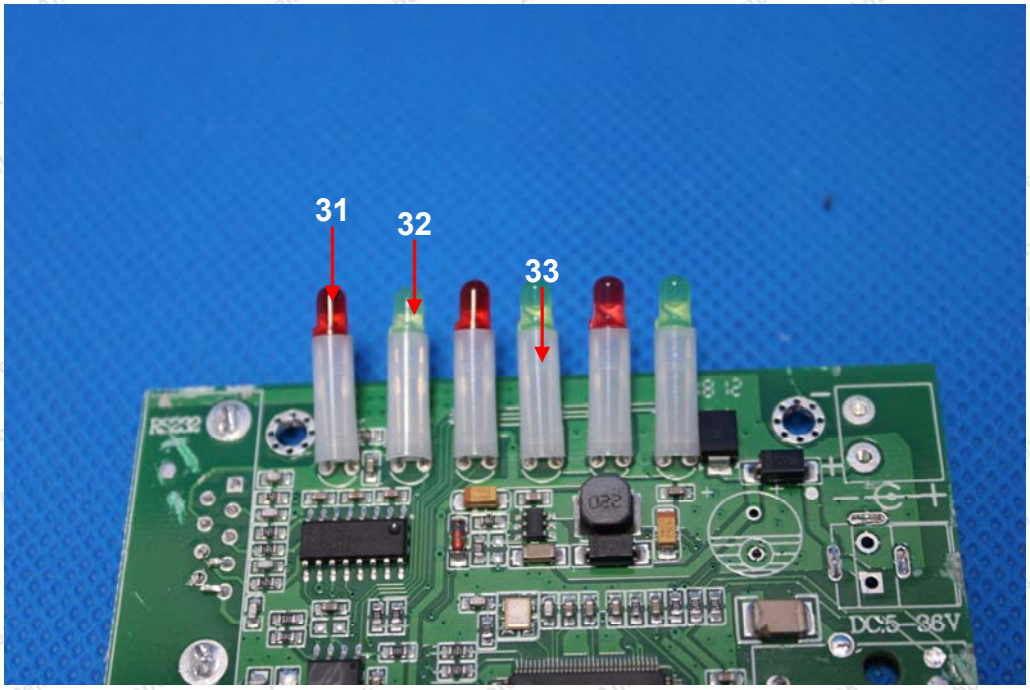

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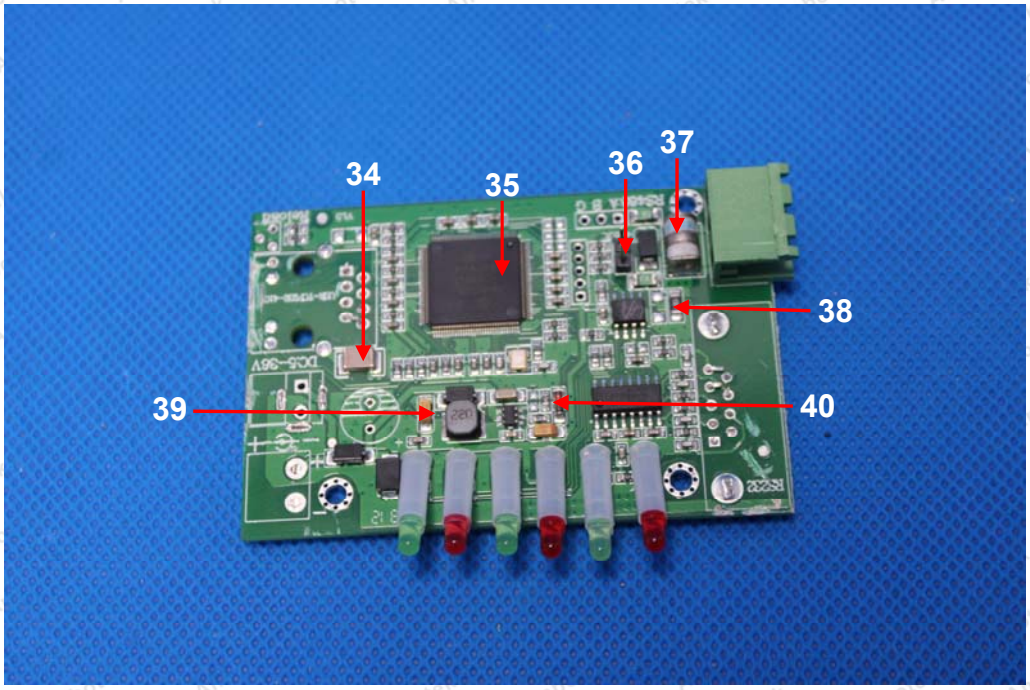

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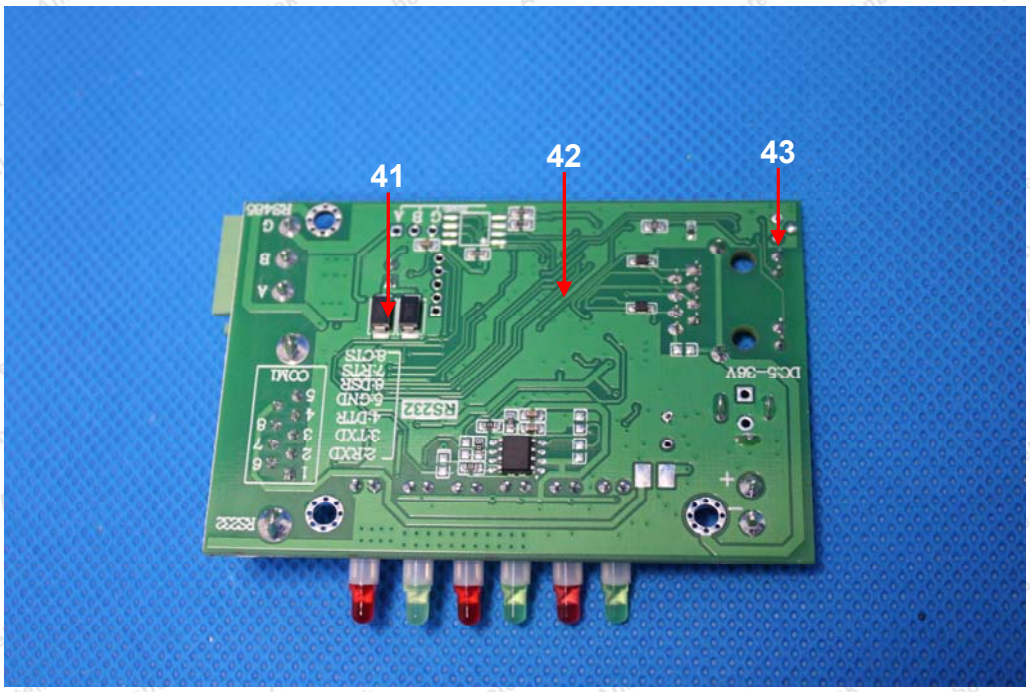

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DC:5-36V


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

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