



**BUREAU
VERITAS**

TEST REPORT

LAB NO. (8820)244-0151
DATE Oct 30, 2020
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APPLICANT : PARTICLE INDUSTRIES, INC
126 POST ST, 4TH FLOOR, SAN FRANCISCO, CA 94108 USA

DATE OF SUBMISSION : AUG 31, 2020

TEST PERIOD : AUG 31, 2020 TO OCT 30, 2020

SAMPLE DESCRIPTION : TRACKER ONE LTE M1

Style No. : ONE402M, ONE404M

Sample Size: 1

SUMMARY OF TEST RESULTS

| TEST REQUESTED | CONCLUSION | REMARK |
|---|------------|--------|
| European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendment Directive 2015/863/EU | PASS | - |



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REMARK

If there are questions or concerns on this report, please contact the following persons:

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Photo of the Submitted Sample



Photo of Test Item(s)

1-9:



10-13:



14-20:



21-41:



42-48:



49-51:



Photo of Test Item(s)

52-77:



78-90:



1-9:



10-13:



14-20:



21-41:



Photo of Test Item(s)

42-48:



49-51:



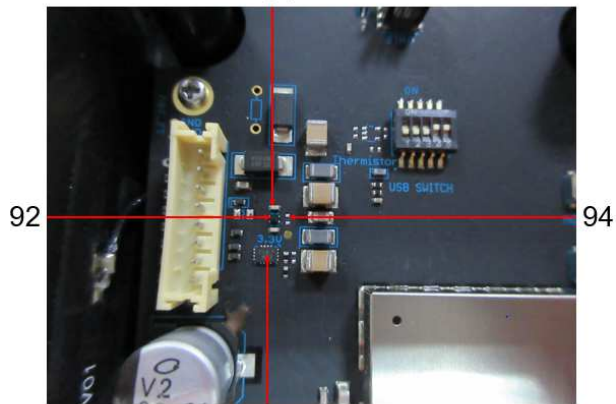
52-77:



78-90:



91



92

94

93



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Component Description List

| Test Item(s) | Component Description(s) | Location | Style(s) |
|--------------|----------------------------------|------------------------------|----------|
| 1 | Black/white/blue coating | Coating, sticker, housing | - |
| 2 | Transparent plastic | Sticker, housing | - |
| 3 | Translucent adhesive | Adhesive, housing | - |
| 4 | Black plastic | Housing | - |
| 5 | Black soft plastic | Gasket, housing | - |
| 6 | Translucent plastic | LED cover, housing | - |
| 7 | Dark grey glue | Glue, LED cover, housing | - |
| 8 | Black plastic | Nut, LED cover, housing | - |
| 9 | Golden metal | Nut, housing | - |
| 10 | Black plastic | Housing | - |
| 11 | Black soft plastic | Frame, housing | - |
| 12 | Black soft plastic with adhesive | Gasket, housing | - |
| 13 | Silvery metal | Screw | - |
| 14 | Golden metal | Plug, cable, FPC | - |
| 15 | Black plastic | Plug, cable, FPC | - |
| 16 | Black soft plastic | Wire jacket, cable, FPC | - |
| 17 | Transparent soft plastic | Wire insulation, cable, FPC | - |
| 18 | Silvery metal | Wire, cable, FPC | - |
| 19 | Silvery solder | Solder, FPC | - |
| 20 | White printed black/brown FPC | FPC | - |
| 21 | Black soft plastic | Cover, plug | - |
| 22 | Silvery metal | Contact plate, plug | - |
| 23 | Silvery metal | Nut, plug | - |
| 24 | Green plastic | Ring, plug | - |
| 25 | Brown glue | Glue, plug | - |
| 26 | Golden metal | Pin, plug | - |
| 27 | Black plastic | Pin holder, plug | - |
| 28 | Silvery solder | Solder, plug | - |
| 29 | Black soft plastic | Heat shrinkable tube, plug | - |
| 30 | Red soft plastic | Wire jacket, cable, plug | - |
| 31 | Red soft plastic | Heat shrinkable tube, plug | - |
| 32 | Red soft plastic | Wire insulation, cable, plug | - |
| 33 | Yellow soft plastic | Wire insulation, cable, plug | - |
| 34 | Blue soft plastic | Wire insulation, cable, plug | - |
| 35 | Orange soft plastic | Wire insulation, cable, plug | - |
| 36 | Brown soft plastic | Wire insulation, cable, plug | - |
| 37 | Green soft plastic | Wire insulation, cable, plug | - |
| 38 | White soft plastic | Wire insulation, cable, plug | - |
| 39 | Black soft plastic | Wire insulation, cable, plug | - |
| 40 | White plastic | Socket, cable, plug | - |
| 41 | Silvery metal | Pin, socket, cable, plug | - |



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Component Description List

| Test Item(s) | Component Description(s) | Location | Style(s) |
|--------------|--|-----------------------------------|----------|
| 42 | Black soft plastic with adhesive | Gasket, battery | - |
| 43 | Yellow/transparent plastic | Adhesive tape, battery | - |
| 44 | Silvery metal | Contact plate, PCB, battery | - |
| 45 | Silvery solder | Solder, PCB, battery | - |
| 46 | Green PCB | PCB, battery | - |
| 47 | Red soft plastic | Wire insulation, cable, battery | - |
| 48 | Black soft plastic | Wire insulation, cable, battery | - |
| 49 | Black/blue/white coated yellow plastic | Sticker, cover, PCB | - |
| 50 | Silvery metal | Cover, PCB | - |
| 51 | Black/red/white coated dark yellow | Sticker, cover, PCB | - |
| 52 | Black printed white body | GNSS antenna, PCB | - |
| 53 | Silvery metal | Pin, GNSS antenna, PCB | - |
| 54 | Black glue | Glue, GNSS antenna, PCB | - |
| 55 | Black plastic | Socket "JTAG", PCB | - |
| 56 | Silvery metal | Pin, socket "JTAG", PCB | - |
| 57 | Light yellow plastic | Socket "GND", PCB | - |
| 58 | Brown plastic | Socket "LiPo", PCB | - |
| 59 | Black plastic | Switch, PCB | - |
| 60 | Brown plastic | Switch, PCB | - |
| 61 | Golden metal | Switch, PCB | - |
| 62 | Black plastic | Touch switch, PCB | - |
| 63 | Silvery metal | Touch switch, PCB | - |
| 64 | Black plastic | Type-c plug, PCB | - |
| 65 | Black soft plastic | Gasket, type-c plug, PCB | - |
| 66 | Golden metal | Pin, type-c plug, PCB | - |
| 67 | Black plastic | Pin holder, type-c plug, PCB | - |
| 68 | Golden metal | Plug, PCB | - |
| 69 | White plastic | Plug, PCB | - |
| 70 | Black printed silvery body | Electrolytic capacitor, PCB | - |
| 71 | Black plastic | Base, electrolytic capacitor, PCB | - |
| 72 | Grey/coppery metal | Inductor, PCB | - |
| 73 | Black body | SMD IC, PCB | - |
| 74 | Brown body | SMD capacitor, PCB | - |
| 75 | Black printed white body | SMD resistor, PCB | - |
| 76 | White/silvery body | SMD LED, PCB | - |
| 77 | Black/white body | SMD LED, PCB | - |
| 78 | Silver fabric | Sleeve, foam, PCB | - |
| 79 | Black foam | Foam, PCB | - |
| 80 | Silvery/golden body | SMD EC, PCB | - |
| 81 | Yellow/brown body | SMD EC, PCB | - |
| 82 | Brown printed white body | SMD EC, PCB | - |



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Component Description List

| Test Item(s) | Component Description(s) | Location | Style(s) |
|---------------------|---------------------------------|-----------------------------|-----------------|
| 83 | White printed brown body | SMD EC, PCB | - |
| 84 | Green PCB | Small green PCB, PCB | - |
| 85 | Black PCB | Small black PCB, PCB | - |
| 86 | Silvery solder | Solder, PCB | - |
| 87 | Black PCB | PCB | - |
| 88 | Blue body | SMD EC, small blue PCB, PCB | - |
| 89 | Silvery body | SMD EC, small blue PCB, PCB | - |
| 90 | Blue PCB | Small blue PCB, PCB | - |
| 91 | Brown body | SMD capacitor, PCB | - |
| 92 | Black body | SMD diode, PCB | - |
| 93 | Black body | SMD IC, PCB | - |
| 94 | Silvery solder | Solder, PCB | - |



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TEST RESULT

| - | Result | | | | | | | | | | - |
|--------------|--------------|-----------------|-----------------|------------------------|------|-------|-----|-----|------|------|------------|
| Parameter | Lead (Pb) | Cadmium (Cd) | Mercury (Hg) | Chromium VI (Cr VI) | PBBs | PBDEs | DBP | BBP | DEHP | DIBP | Conclusion |
| Unit | mg/kg | | | | | | | | | | - |
| Test Item(s) | - | - | - | - | - | - | - | - | - | - | - |
| 91 | BL | BL | BL | BL | NA | NA | NA | NA | NA | NA | PASS |
| 92 | BL | BL | BL | BL | NA | NA | NA | NA | NA | NA | PASS |
| 93 | BL | BL | BL | BL | NA | NA | NA | NA | NA | NA | PASS |
| 94 | BL | BL | BL | BL | NA | NA | NA | NA | NA | NA | PASS |

Note / Key:

ND = Not detected

BL = Below Limit

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

Detection Limit : See Appendix.

“>” = Greater than

NA = Not applicable

“<” = Less than

IN = Inconclusive

OL= Over Limit

Remark:

- The testing approach is listed in table of Appendix.
- * denotes as reported result(s) was (were) performed by wet chemistry method. Others were screened by XRF. For XRF screening, the result(s) of Cr VI was (were) reported as total chromium and the result(s) of PBBs and PBDEs was (were) reported as total bromine. Also, the XRF result(s) may be different to the actual content based on various factors including, but not limit to, sample size, thickness, area, non-uniformity composition, surface flatness.
- According to European Council Directive 2011/65/EU, Article 5 “Adaptation of the Annexes to scientific and technical progress”, exemption(s) should be granted to the materials and components of Test Item(s) in the lists in Annexes III and IV of this directive.
- #According to Annex III of European Council Directive 2011/65/EU, exemptions were granted a few materials and Clause 6(c) is reiterated here “Copper alloy containing up to 4 % lead by weight”. Test Item(s) 9,22,23&26 was (were) claimed as is by client (received as is). Therefore, this (these) Test Item(s) containing the found lead level should be exempted.
- The items 91-94 were provided by client dated on Oct 27, 2020.

APPENDIX

| List of Analytes and their Corresponding Test Methods, Detection Limit and Maximum Allowable Limit [Compliance Test for European Parliament and Council Directive 2011/65/EU] : | | | | | | | |
|--|--|---|---------------------------------|-----|--|-----------------------------------|--|
| No. | Name of Analytes | Detection Limit(mg/kg) | | | | Wet Chemistry | Maximum Allowable Limit(mg /kg) |
| | | X-ray fluorescence (XRF)^[a] | | | Others | | |
| | | Plastic | Metal/Glass/ Ceramic | | | | |
| 1 | Lead (Pb) | 100 | 200 | 200 | 10 ^[b] | 1000 | |
| 2 | Cadmium (Cd) | 50 | 50 | 50 | 10 ^[b] | 100 | |
| 3 | Mercury (Hg) | 100 | 200 | 200 | 10 ^[c] | 1000 | |
| 4 | Chromium (Cr) | 100 | 200 | 200 | NA | NA | |
| 5 | Chromium VI (Cr VI) | NA | NA | NA | See ^[d] /10 ^[e] /3 ^[f,g] | 1000 / Negative ^[h] | |
| 6 | Bromine (Br) | 200 | NA | 200 | NA | NA | |
| 7 | Polybromobiphenyls (PBBs) - Bromobiphenyl (MonoBB) - Dibromobiphenyl (DiBB) - Tribromobiphenyl (TriBB) - Tetrabromobiphenyl (TetraBB) - Pentabromobiphenyl (PentaBB) - Hexabromobiphenyl (HexaBB) - Heptabromobiphenyl (HeptaBB) - Octabromobiphenyl (OctaBB) - Nonabromobiphenyl (NonaBB) - Decabromobiphenyl (DecaBB) | NA | NA | NA | Each 50 ^[i] | Sum 1000 | |
| 8 | Polybromodiphenyl ethers (PBDEs) - Bromodiphenyl ether (MonoBDE) - Dibromodiphenyl ether (DiBDE) - Tribromodiphenyl ether (TriBDE) - Tetrabromodiphenyl ether (TetraBDE) - Pentabromodiphenyl ether (PentaBDE) - Hexabromodiphenyl ether (HexaBDE) - Heptabromodiphenyl ether (HeptaBDE) - Octabromodiphenyl ether (OctaBDE) - Nonabromodiphenyl ether (NonaBDE) - Decabromodiphenyl ether (DecaBDE) | NA | NA | NA | Each 50 ^[i] | Sum 1000 | |
| 9 | - Dibutyl phthalate (DBP) - Butyl benzyl phthalate (BBP) - Di-2-ethylhexyl phthalate (DEHP) - Diisobutyl phthalate (DIBP) | NA | NA | NA | Each 50 ^[i] | Each 1000 | |



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NA = Not applicable IEC = International Electrotechnical Commission

- [a] Test method with reference to International Standard IEC 62321-3-1: 2013.
- [b] Test method with reference to International Standard IEC 62321-5: 2013.
- [c] Test method with reference to International Standard IEC 62321-4:2013+A1:2017.
- [d] Metal - Test method with reference to International Standard IEC 62321-7-1: 2015.
- [e] Polymers and Electronics - Test method with reference to European Standard EN 62321-7-2: 2017.
- [f] Leather - Test method International Standard ISO 17075-1:2017.
- [g] Other Than Metal, Leather, Polymers and Electronics - Test method with reference to International Standard ISO 17075-1:2017.
- [h] Result(s) of Cr VI for metallic material(s) was (were) expressed in term of positive and negative. Negative means the absence of Cr VI on the tested areas and the result(s) was (were) regarded as in compliance with European Parliament and Council Directive 2011/65/EU, Article 4(1). While, positive means the presence of Cr VI on tested areas and the result(s) was (were) regarded as in conflict with European Parliament and Council Directive 2011/65/EU, Article 4(1).
- [i] Test method with reference to International Standard IEC 62321-6: 2015.
- [j] Test method with reference to International Standard IEC 62321-8: 2017.

Testing Approach [Compliance Test for European Parliament and Council Directive 2011/65/EU] :

The testing approach was with reference to the following document(s).

- 1 International Standards IEC 62321-1: 2013 and IEC 62321-2: 2013
- 2 "RoHS Enforcement Guidance Document Version 1" by EU RoHS Enforcement Authorities Informal Network. (May 2006)
- 3 "RoHS Regulations - Government Guidance Notes" by United Kingdom Department for Business Innovation & Skills. (February 2011)
- 4 "Final Report to RoHS substances (Hg, Pb, Cr(VI), Cd, PBB and PBDE) in electrical and electronic equipment in Belgium" by Belgium Federal Public Service Health, Food Chain Safety and Environment. (November 2005)

*** End of Report ***