

## TEST REPORT

**SAMPLE INFORMATION:**

Sample Name: Professional HD GNSS Data Logger  
Trade Mark: Columbus  
Basic Model NO.: P-10 Pro  
Series Model NO.: P-10 Pro Max, P-10 Pro+, P-10S Pro  
Manufacturer: Fuzhou Victory Technology CO.,LTD  
Manufacturer Address: Floor 15,11#Yijing Garden, Fufei RD., Fuzhou, Fujian. China

**CLIENT INFORMATION:**

Applicant: Fuzhou Victory Technology CO.,LTD  
Applicant Address: Floor 15,11#Yijing Garden, Fufei RD., Fuzhou, Fujian. China  
Date of Receipt: June 03,2021  
Date of Test: June 03,2021-June 18,2021

**Test Requested:**

With reference to RoHS Directive 2015/863/EU amending 2011/65/EU.

Test Method: Please refer to next page(s).

Test Results: Please refer to next page(s).

**Summary**

As requested by applicant, the submitted sample was/were tested,with is listed as specimen description in the following page.the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs),Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis (2-ethylhexyl) phthalate (DEHP), Dibutyl phthalate (DBP), Butylbenzyl Phthalate (BBP), Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

**Conclusion****PASS**

Signed for Shenzhen TOBY



Xiaoshan Ni(Supervisor)



**Remark:**

(1) There are the results on total Br while tset items on restricted substances are PBBs and PBDEs. There are the results on total Cr while tset items on restricted substances Cr(VI)

(2) Results are obtained by EDXRF for primary screening, and futher chemical testing by ICP-OES (for Cd, Pb, Hg),UV-Vis (for Cr(VI) and GC-MS (for PBBs,PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC62321-3-1:2013 (unit:mg.kg)

Element	Polymer Materials	Metal Materials	Composite Materials
Cd	$P \leq 70-3\sigma < D < 130+3\sigma \leq F$	$P \leq 70-3\sigma < D < 130+3\sigma \leq F$	$P \leq 50-3\sigma < D < 150+3\sigma \leq F$
Pb	$P \leq 700-3\sigma < D < 1300+3\sigma \leq F$	$P \leq 700-3\sigma < D < 1300+3\sigma \leq F$	$P \leq 500-3\sigma < D < 1500+3\sigma \leq F$
Hg	$P \leq 700-3\sigma < D < 1300+3\sigma \leq F$	$P \leq 700-3\sigma < D < 1300+3\sigma \leq F$	$P \leq 500-3\sigma < D < 1500+3\sigma \leq F$
Br	$P \leq 300-3\sigma < D$	----	$P \leq 250-3\sigma < D$
Cr	$P \leq 700-3\sigma < D$	$P \leq 700-3\sigma < D$	$P \leq 500-3\sigma < D$

(a) P = Below Limit, F = Over Limit, D=Inconclusive, LOD=Limit of Detection, ----=Not regulated.

(b)The XRF screening test for RoHS elements- the reading may be different to actual content in the sample be of non-uniformity composition

(3) Chemical Method

① With reference to IEC 62321-5:2013, determination of Cadmium,Lead by ICP-OES.

② With reference to IEC 62321-4:2013+AMD1:2017 CSV, determination of Mercury by ICP-OES.

③ With reference to IEC 62321-7-2:2017, determination of Hexavalent Chromium by UV-Vis.

④ With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.

⑤ With reference to IEC 62321-8:2017, determination of Phthalates by GC-MS.

(4) (a) mg/kg=0.0001%,MDL=MDL=Method Detection Limit,(3)ND=Not Detected(<MDL),(4)----=Not Regulated

(b)Unit and MDL in wet chemical test

Test Item	Pb	Cd	Hg	DBP	BBP	DEHP	DIBP
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MDL	10	10	10	100	100	100	100

The MDL for single compound of PBBs and PBDEs is 100 mg/kg

MDL of Cr(VI) for polymer and composite anmple is 10 mg/kg

MDL of Cr(VI) for metal sample is 0.10ug/cm<sup>2</sup>

(c) ▼=Metal sample

a. The sample is negative for Cr<sup>6+</sup> - the Cr<sup>6+</sup> concentration is below the limit 0.10ug/cm<sup>2</sup>. The coating is considered a non-Cr<sup>6+</sup> based coating.

b. The sample positive for Cr<sup>6+</sup> if the Cr<sup>6+</sup> concentration is greater than 0.13ug/cm<sup>2</sup>. The sample coating is considered to contain Cr<sup>6+</sup>.

c. The result between 0.10ug/cm<sup>2</sup> and 0.13ug/cm<sup>2</sup> is considered to be inconclusive unavoidable coating variations may influence the determination.

### Test Results and Sample Description

The results of XRF screening and chemical test (Unit: mg/kg)

Part No.	Part Description	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
P1	Black plastic cover	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P2	Black plastic sole	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P3	Black plastic panel	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P4	Clear plastic sticker	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P5	Silvery battery	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	---	---		
		DBP,BBP,DEHP,DIBP	---	---		
P6	Red plastic ring	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P7	Black plastic button	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P8	Silvery metal screw	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	D	Negative		
		Br(PBBs&PBDEs)	---	---		
		DBP,BBP,DEHP,DIBP	---	---		

Part No.	Part Description	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
P9	Black plastic leather	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P10	Red plastic leather	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P11	White plastic shell	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P12	176A-P	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P13	1575AS-0	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P14	IC1	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P15	Silvery sheet metal	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	---	---		
		DBP,BBP,DEHP,DIBP	---	---		
P16	IC2	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		

Part No.	Part Description	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
P17	Black inductance	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P18	IC3	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	---	---		
		DBP,BBP,DEHP,DIBP	---	---		
P19	White inductance	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P20	IC4	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P21	IC5	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	D	Negative		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P22	Silvery metal case	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	D	Negative		
		Br(PBBs&PBDEs)	---	---		
		DBP,BBP,DEHP,DIBP	---	---		
P23	white plastic slider	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P24	Audion	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		

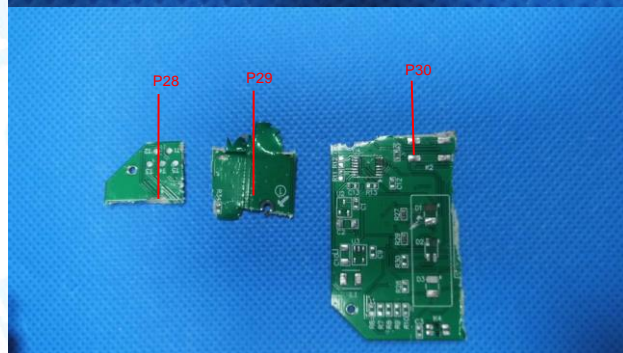
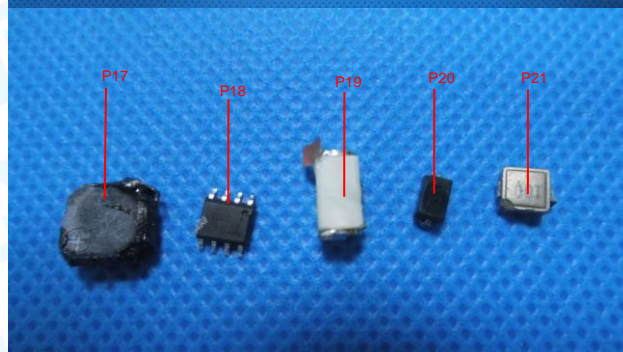
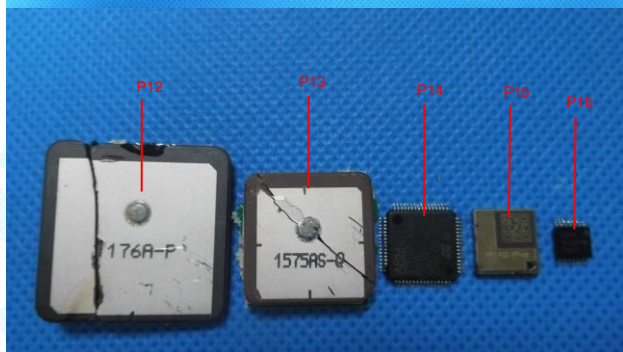
Part No.	Part Description	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
P25	Black resistance	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P26	Yellow patch capacitor	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P27	IC6	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	P	---		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P28	Green wood	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	D	N.D.		
		DBP,BBP,DEHP,DIBP	---	N.D.		
P29	Green metal coating	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	---	---		
		DBP,BBP,DEHP,DIBP	---	---		
P30	Silvery metal solder	Pb	P	---	Comply	/
		Cd	P	---		
		Hg	P	---		
		Cr(Cr <sup>6+</sup> )	P	---		
		Br(PBBs&PBDEs)	---	---		
		DBP,BBP,DEHP,DIBP	---	---		

**Remark:**

- \*= Lead in copper alloy containing up to 4% lead by weight. The item is exempted from the requirements of the item 6(c) in ANNEX III, (Directive 2011/65/EU).
- &=Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead, The item is exempted from the requirements of the item 7(a) in ANNEX III, (Directive 2011/65/EU) electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.

The item is exempted from the requirements of the item 7(c)-I in ANNEX III, (Directive 2011/65/EU).

### Sample Photo



Verify only the photos on the original report.

\*\*\*\*\* END OF REPORT \*\*\*\*\*