

Shenzhen Toby Testing Co.,Ltd. Rm.307-309, 311, Bldg.2, Huahan Sci-tech Industrial Park, No.19 Lanjin 4th Road, Heping Community, Pingshan St., Pingshan District, Shenzhen Tel: (86) 0755-28681350 Http://www.toby.org.cn

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:	

CLIENT INFORMATION: Applicant: Applicant Address: Date of Receipt: Date of Test:

Fuzhou Victory Technology CO., LTD Floor 15,11#Yijing Garden, Fufei RD., Fuzhou, Fujian. China June 03,2021 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

Xiao Shan Ni

Xiaoshan Ni(Supervisor)



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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≤70-3σ <d<130+3σ≤f< td=""><td>P≤70-3σ<d<130+3σ≤f< td=""><td>P≤50-3σ<d<150+3σ≤f< td=""></d<150+3σ≤f<></td></d<130+3σ≤f<></td></d<130+3σ≤f<>	P≤70-3σ <d<130+3σ≤f< td=""><td>P≤50-3σ<d<150+3σ≤f< td=""></d<150+3σ≤f<></td></d<130+3σ≤f<>	P≤50-3σ <d<150+3σ≤f< td=""></d<150+3σ≤f<>
Pb	P≤700-3σ <d<1300+3σ≤f< td=""><td>P≤700-3σ<d<1300+3σ≤f< td=""><td>P≤500-3σ<d<1500+3σ≤f< td=""></d<1500+3σ≤f<></td></d<1300+3σ≤f<></td></d<1300+3σ≤f<>	P≤700-3σ <d<1300+3σ≤f< td=""><td>P≤500-3σ<d<1500+3σ≤f< td=""></d<1500+3σ≤f<></td></d<1300+3σ≤f<>	P≤500-3σ <d<1500+3σ≤f< td=""></d<1500+3σ≤f<>
Hg	P≤700-3σ <d<1300+3σ≤f< td=""><td>P≤700-3σ<d<1300+3σ≤f< td=""><td>P≤500-3σ<d<1500+3σ≤f< td=""></d<1500+3σ≤f<></td></d<1300+3σ≤f<></td></d<1300+3σ≤f<>	P≤700-3σ <d<1300+3σ≤f< td=""><td>P≤500-3σ<d<1500+3σ≤f< td=""></d<1500+3σ≤f<></td></d<1300+3σ≤f<>	P≤500-3σ <d<1500+3σ≤f< td=""></d<1500+3σ≤f<>
Br	P≤300-3σ <d< td=""><td></td><td>P≤250-3σ<d< td=""></d<></td></d<>		P≤250-3σ <d< td=""></d<>
Cr	P≤700-3σ <d< td=""><td>P≤700-3σ<d< td=""><td>P≤500-3σ<d< td=""></d<></td></d<></td></d<>	P≤700-3σ <d< td=""><td>P≤500-3σ<d< td=""></d<></td></d<>	P≤500-3σ <d< td=""></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)erne ana mi		lical toot					
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

(b)Unit and MDL in wet chemical test

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/cm²

(c) ▼=Metal sample

- a. The sample is negative for Cr⁶⁺ the Cr⁶⁺ concentration is below the limit 0.10ug/cm². The coating is considered a non-Cr6+ based coating.
- b. The sample positive for Cr⁶⁺ if the Cr⁶⁺ concentration is greater than 0.13ug/cm². The sample coating is considered to contain Cr6+.
- c. The result between 0.10ug/cm² and 0.13ug/cm² 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.	FXRF screening and chem Part Description	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
	E CITA	Pb	Р		No.	2011
A Second		Cd	Р			CHU S
P.		Hg	Р			
P1	Black plastic cover	Cr(Cr ⁶⁺)	Р		Comply	/
		Br(PBBs&PBDEs)	Р		NUL	A.
		DBP,BBP,DEHP,DIBP		N.D.	-	Chin D
-		Pb	P	12		A Charles
		Cd	Р		51 N	
HUL		Hg	Р			
P2	Black plastic sole	Cr(Cr ⁶⁺)	Р	N	Comply	
		Br(PBBs&PBDEs)	Р			1012
		DBP,BBP,DEHP,DIBP		N.D.		
115		Pb	Р			
1 and		Cd	Р	20715	100	
		Hg	Р			
P3	Black plastic panel	Cr(Cr ⁶⁺)	Р		Comply	/
		Br(PBBs&PBDEs)	Р			5
191		DBP,BBP,DEHP,DIBP		N.D.		
		Pb	Р			
10		Cd	P		1. C.	
		Hg	P		NUL	1
P4	Clear plastic sticker	Cr(Cr ⁶⁺)	P		Comply	
-		Br(PBBs&PBDEs)	P			
1		DBP,BBP,DEHP,DIBP		N.D.		
		Pb	P			
630		Cd	P		Ver	
		Hg	Р			
P5	Silvery battery	Cr(Cr ⁶⁺)	P	<u></u>	Comply	
6:10		Br(PBBs&PBDEs)				62
102		DBP,BBP,DEHP,DIBP				
		Pb	P			
		Cd			GIN	
			P			
P6	Red plastic ring	Hg	Р		Comply	1
ALC: NO		Cr(Cr ⁶⁺)	Р			
e		Br(PBBs&PBDEs)	Р		in the	
		DBP,BBP,DEHP,DIBP		N.D.		2
		Pb	Р			50
3-10		Cd	Р	····		STILL?
P7	Black plastic button	Hg	Р		Comply	1
1070		Cr(Cr ⁶⁺)	< P		Comply	
123		Br(PBBs&PBDEs)	Р	(1)		
	CILLUP 2	DBP,BBP,DEHP,DIBP		N.D.		201
		Pb	Р	· · · ·		
-		Cd	Р		Comply	
NIL		Hg	Р	()		
P8	Silvery metal screw	Cr(Cr ⁶⁺)	D	Negative		
		Br(PBBs&PBDEs)				



		X-ray	Results of	Conclusion	Sample
Part Description	Element	Screening	chemical test	on RoHS EU	Resubmitted
	Pb	Р		60.3	
	Cd	Р		1111	
Black plastic leather	Hg	Р		Comply	
Diack plastic leather	Cr(Cr ⁶⁺)	Р		Comply	/
	Br(PBBs&PBDEs)	P			
	DBP,BBP,DEHP,DIBP		N.D.		
	Pb	Р			
	Cd	Р		5	
Pod plactic loathor	Hg	Р		Comply	,
	Cr(Cr ⁶⁺)	Р		Comply	/
	Br(PBBs&PBDEs)	Р			
GIUL	DBP,BBP,DEHP,DIBP	5	N.D.	110	
A A	Pb	Р	/		A CONTRACTOR
	Cd	Р			6.11
M/bite plactic shall	Hg	Р		Comply	
white plastic shell	Cr(Cr ⁶⁺)	Р		Comply	/
	Br(PBBs&PBDEs)	P		GUL	2
	DBP,BBP,DEHP,DIBP		N.D.		
A 12	Pb	Р			CHIL
	Cd	P			1
176A-P	Hg	Р	/	Comply	
	Cr(Cr ⁶⁺)	Р			
	Br(PBBs&PBDEs)	Р			
	DBP,BBP,DEHP,DIBP		N.D.		110
	Pb	Р		Comply	
	Cd	Р			
45754.0.0	Hg	Р	V		
1575AS-0	Cr(Cr ⁶⁺)	Р			
	Br(PBBs&PBDEs)	Р			
	DBP,BBP,DEHP,DIBP		N.D.		
181	Pb	Р			
	Cd	Р			
	Hg	Р			
IC1	Cr(Cr ⁶⁺)	Р		Comply	
	Br(PBBs&PBDEs)	Р			AIR
	DBP,BBP,DEHP,DIBP		N.D.	i an	
	Pb	Р		MIL	
	Cd	Р			(GA)
	Hg	Р			
Silvery sheet metal	Cr(Cr ⁶⁺)	Р		Comply	
	Br(PBBs&PBDEs)	S X		ALL S	
	DBP,BBP,DEHP,DIBP		\		
LIHIL	Pb	Р			CIND
	Cd	Р	522		V
		Р			
IC2		P		Comply	/
MOBI		1.07			12.
	DBP,BBP,DEHP,DIBP		N.D.		
	Part Description Black plastic leather Red plastic leather White plastic shell 176A-P 1575AS-0 IC1 Silvery sheet metal	PbCdHgCr(Cr ⁶⁺)Br(PBB&PDEHP,DIBPPbCdHgCdHgCdBr(PBB&PDEHP,DIBPPbCdBr(PBB&PDEHP,DIBPPbCdHgCr(Cr ⁶⁺)Br(PBB&PDEHP,DIBPPbCdHgCr(Cr ⁶⁺)Br(PBB&PDEHP,DIBPPbCdHgCr(Cr ⁶⁺)Br(PBB&PDEHP,DIBPPbCdHgCr(Cr ⁶⁺)Br(PBB&PDEHP,DIBPPbCdHgCr(Cr ⁶⁺)Br(PBB&PDEHP,DIBPPbCdHgCr(Cr ⁶⁺)Br(PBB&PDEHP,DIBPPbCdHgCdHgCr(Cr ⁶⁺)Br(PBB&PDEHP,DIBPDBP,BBP,DEHP,DIBPDBP,BBP,DEHP,DIBPDBP,BBP,DEHP,DIBPDBP,BBP,DEHP,DIBPDBP,BBP,DEHP,DIBPCdHgCr(Cr ⁶⁺)Br(PBB&PBES)DBP,BBP,DEHP,DIBPPbCdHgCr(Cr ⁶⁺)Br(PBB&PBES)DBP,BBP,DEHP,DIBPPbCdHgCr(Cr ⁶⁺)Br(PBB&PBES)DBP,BBP,DEHP,DIBPPbCdHgCr(Cr ⁶⁺)Br(PBB&PBES)Br(PBB&PBES)Br(PBB&PBES) </td <td>Pb Pb Black plastic leather Pb P Br(PBBs&PBDEs) P Br(PBBs&PBDEs) P Br(PBBs&PBDEs) P Cd P Red plastic leather Pb P Cd P Br(PBBs&PBDEs) P DBP,BBP,DEHP,DIBP Br(PBBs&PBDEs) P Cd P Br(PBBs&PBDEs) P Cd P Br(PBBs&PBDEs) P Cd P Br(PBBs&PBDEs) P DBP,BBP,DEHP,DIBP Br(PBBs&PBDEs) P Cd P Br(PBBs&PBDEs) P Cd P Cd P Br(PBBs&PBDEs) P Cd P Cd P Cd P Br(PBBs&PBDEs) P Cd P Br(PBBs&PDEHP,DIBP Br(PBB</td> <td>Part DescriptionScreeningchemical testPbPCdPHgPBr(PB8s&PBDEs)PBr(PB8s&PBDEs)PBr(PB8s&PBDEs)PCdPBr(PB8s&PBDEs)PBr(BB8s&PBDEs)PBr(BB8s&PBDEs)PBr(BB8s&PBDEs)PBr(BB8s&PBDEs)PBr(BB8s&PBDEs)PBr(BB8s&PBD</td> <td>Part DescriptionElementScreeningchemical teston RoHS EUPbPAntipication of the second of the secon</td>	Pb Pb Black plastic leather Pb P Br(PBBs&PBDEs) P Br(PBBs&PBDEs) P Br(PBBs&PBDEs) P Cd P Red plastic leather Pb P Cd P Br(PBBs&PBDEs) P DBP,BBP,DEHP,DIBP Br(PBBs&PBDEs) P Cd P Br(PBBs&PBDEs) P Cd P Br(PBBs&PBDEs) P Cd P Br(PBBs&PBDEs) P DBP,BBP,DEHP,DIBP Br(PBBs&PBDEs) P Cd P Br(PBBs&PBDEs) P Cd P Cd P Br(PBBs&PBDEs) P Cd P Cd P Cd P Br(PBBs&PBDEs) P Cd P Br(PBBs&PDEHP,DIBP Br(PBB	Part DescriptionScreeningchemical testPbPCdPHgPBr(PB8s&PBDEs)PBr(PB8s&PBDEs)PBr(PB8s&PBDEs)PCdPBr(PB8s&PBDEs)PBr(BB8s&PBDEs)PBr(BB8s&PBDEs)PBr(BB8s&PBDEs)PBr(BB8s&PBDEs)PBr(BB8s&PBDEs)PBr(BB8s&PBD	Part DescriptionElementScreeningchemical teston RoHS EUPbPAntipication of the second of the secon



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Part No.	Part Description	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
		Pb	P			
		Cd	Р		HUL	
		Hg	Р			
P17	Black inductance	Cr(Cr ⁶⁺)	Р		Comply	/
		Br(PBBs&PBDEs)	Р		1200	
V V		DBP,BBP,DEHP,DIBP	N	N.D.		
	61112	Pb	Р	\		
		Cd	Р		5	
P.O	100	Hg	Р			
P18	IC3	Cr(Cr ⁶⁺)	Р	1	Comply	/
		Br(PBBs&PBDEs)	V			
		DBP,BBP,DEHP,DIBP		·		11.5
	all all	Pb	Р	9		Asses
α_{12}		Cd	Р			
N.		Hg	Р	1 ())		
P19	White inductance	Cr(Cr ⁶⁺)	Р		Comply	/
		Br(PBBs&PBDEs)	Р		(ALL)	2
510		DBP,BBP,DEHP,DIBP		N.D.		
10.00	~ \	Pb	Р			CONT.
		Cd	Р		Comply	1
Doo	IC4	Hg	Р			
P20		Cr(Cr ⁶⁺)	Р			
		Br(PBBs&PBDEs)	Р			- ALAS
		DBP,BBP,DEHP,DIBP		N.D.		
600		Pb	Р		Comply	0
NIG		Cd	Р			
P21	IC5	Hg	Р	\\		
FZ1	105	Cr(Cr ⁶⁺)	D	Negative		
		Br(PBBs&PBDEs)	Р			
110		DBP,BBP,DEHP,DIBP		N.D.		
		Pb	Р	14 C		~
		Cd	P			
P22	Silvery metal case	Hg	Р		Comply	
FZZ	Silvery metal case	Cr(Cr ⁶⁺)	D	Negative	Comply	/
A CONTRACTOR		Br(PBBs&PBDEs)		20 A D	9	MAG
0		DBP,BBP,DEHP,DIBP			120	
		Pb	Р		2010	
		Cd	Р			65
P23	white plastic slider	Hg	Р		Comply	
F23	white plastic slider	Cr(Cr ⁶⁺)	Р		Comply	/
107		Br(PBBs&PBDEs)	P		14.9	
		DBP,BBP,DEHP,DIBP		N.D.		
	GUILE	Pb	Р	<u></u>		2149
		Cd	Р	· · · ·		
DOA	٨٠٠٠	Hg	Р		Committee	
P24	Audion	Cr(Cr ⁶⁺)	Р		Comply	/
		Br(PBBs&PBDEs)	Р			N 12
		DBP,BBP,DEHP,DIBP		N.D.		52



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Part No.	Part Description	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
		Pb	Р			
		Cd	Р		N.C.	
Doc	Disalansistan	Hg	Р		Ormalia	
P25	Black resistance	Cr(Cr ⁶⁺)	Р		Comply	/
		Br(PBBs&PBDEs)	Р			
- 11		DBP,BBP,DEHP,DIBP		N.D.		
No.		Pb	Р	N		
		Cd	Р		5	
D aa		Hg	Р			
P26	Yellow patch capacitor	Cr(Cr ⁶⁺)	Р	6	Comply	/
0.200		Br(PBBs&PBDEs)	Р			
	GILLE	DBP,BBP,DEHP,DIBP		N.D.	11	
1.2		Pb	P			1.50
1.2		Cd	Р			
	IC6	Hg	Р	1 (4.1)	Comply	
P27		Cr(Cr ⁶⁺)	Р			/
		Br(PBBs&PBDEs)	Р			3
		DBP,BBP,DEHP,DIBP		N.D.		125
1200		Pb	Р	20 H S S	Comply	CU
		Cd	Р			
		Hg	Р			
P28	Green wood	Cr(Cr ⁶⁺)	Р			
31	GUIL	Br(PBBs&PBDEs)	D	N.D.		
		DBP,BBP,DEHP,DIBP		N.D.		NUE
100		Pb	Р		CALL S	6
NN		Cd	Р		1000	
6	Green metal coating	Hg	Р	- ··· · · ·	Comply	
P29		Cr(Cr ⁶⁺)	Р	N		
		Br(PBBs&PBDEs)				
110		DBP,BBP,DEHP,DIBP				
200		Pb	Р			
		Cd	Р			
		Hg	Р	🦳	UH0	100
P30	Silvery metal solder	Cr(Cr ⁶⁺)	P		Comply	1
		Br(PBBs&PBDEs)		201105		1 N.
0		DBP,BBP,DEHP,DIBP			100	1 Vister

Remark:

1, *= 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). 2, &=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,

(DirEteixlei 220) 121/1652/Edd) ronic 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). Report No.: TBT-CHE2106006 TB-RF-077-4.0



Sample Photo



ft 20 176A-P

> Verify only the photos on the original report. ***** END OF REPORT *****

Report No.: TBT-CHE2106006 TB-RF-077-4.0