TEST REPORT

LAB NO. : **(8822)138-0061**
DATE : **Aug 8, 2022**

Applicant Name:	**ZHIWEI ROBOTICS CORP.**
Applicant Address:	ROOM 603, 2 BOYUN ROAD, PUDONG, SHANGHAI P.R. CHINA
Date of Submission:	MAY 17, 2022
Test Period:	MAY 17, 2022 TO AUG 8, 2022
Sample Description:	LATTEPANDA 3 DELTA IS A POCKET-SIZED HACKABLE COMPUTER FOR MEGA CREATIVITY WHICH FEATURES THE LATEST INTEL 11TH GENERATION MOBILE QUAD-CORE PROCESSOR N5105 WITH UP TO 2.9GHZ BURST FREQUENCY.

Manufacturer :	上海智位机器人股份有限公司	Country of Origin:	中国
SKN/SKU No.:	DFR0981 DFR0982	Sample Size:	3
Vendor:	成都极趣科技有限公司		

BUREAU VERITAS SHENZHEN CO.,LTD
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REMARK

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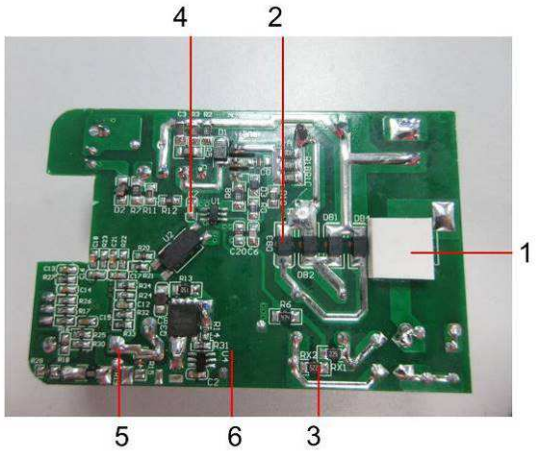
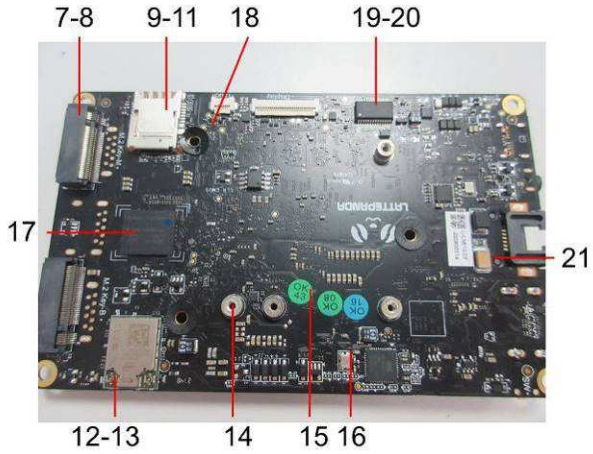
SUMMARY OF TEST RESULTS

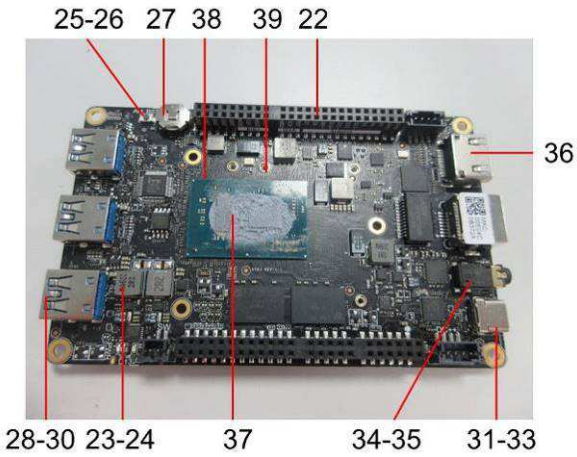
TEST REQUESTED	CONCLUSION	REMARK
European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendment Directive (EU)2015/863	PASS	-

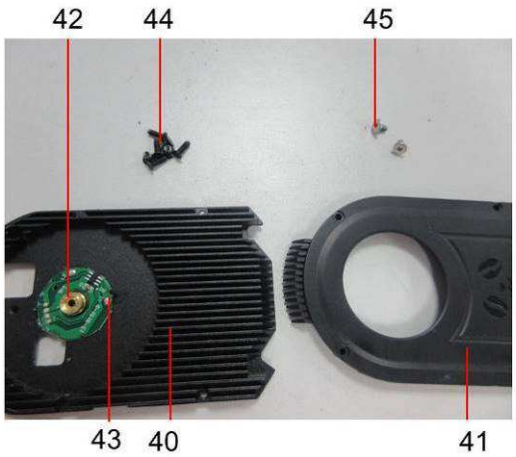
Photo of the Submitted Sample

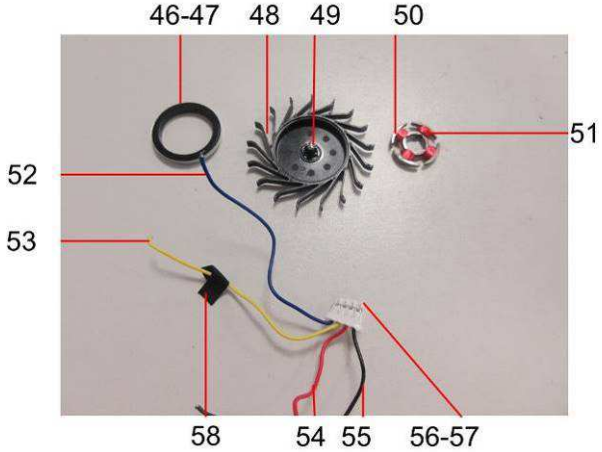
Photo of Test Item(s)











Component Description List

Test Item(s)	Component Description(s)	Location	Style(s)
1	White soft plastic	Gasket, PCB	-
2	Black body	General diode, PCB	-
3	Black printed white plastic	SMD resistor, PCB	-
4	Brown body	SMD capacitor, PCB	-
5	Silvery solder	Solder, PCB	-
6	Green PCB	PCB	-
7	Black plastic	Socket, PCB	-
8	Coppery metal	Pin, socket, PCB	-
9	Silvery metal	Cover, socket, PCB	-
10	Golden metal	Pin, socket, PCB	-
11	White plastic	Pin holder, socket, PCB	-
12	Golden metal	Socket, PCB	-
13	Black plastic	Socket, PCB	-
14	Silvery metal	Nut, PCB	-
15	Black printed green paper	Sticker, PCB	-
16	Silvery/coppery body	SMD EC, PCB	-
17	Black body	SMD IC, PCB	-
18	Black plated silvery metal	Ring, PCB	-
19	Black body	IC, PCB	-
20	Silvery metal	Pin, IC, PCB	-
21	Yellow body	EC, PCB	-
22	Black plastic	Socket, PCB	-
23	Grey metal	Inductor, PCB	-
24	Coppery metal	Coil, inductor, PCB	-
25	Black plastic	Touch switch, PCB	-
26	Silvery metal	Touch switch, PCB	-
27	Silvery metal	Cover, battery, PCB	-
28	Silvery metal	Cover, USB plug, PCB	-
29	Silvery metal	Pin, USB plug, PCB	-
30	Blue plastic	Pin holder, USB plug, PCB	-
31	Silvery metal	Pin, type c plug, PCB	-
32	Black plastic	Pin holder, type c plug, PCB	-
33	Silvery metal	Cover, type c plug, PCB	-
34	Black plastic	Socket, PCB	-
35	Golden metal	Pin, socket, PCB	-
36	Black plastic	Pin holder, USB plug, PCB	-
37	Grey soft plastic	Heat sink, PCB	-
38	Blue PCB	PCB	-
39	Black PCB	PCB	-
40	Black plated silvery metal	Cover, motor	-

Test Item(s)	Component Description(s)	Location	Style(s)
41	Black plastic	Housing, motor	-
42	Golden metal	Nut, PCB, motor	-
43	Silvery solder	Solder, PCB, motor	-
44	Black plated silvery metal	Screw, motor	-
45	Silvery metal	Screw, motor	-
46	Black magnet	Magnet, motor	-
47	Silvery metal	Case motor	-
48	Black plastic	Gear, motor	-
49	Silvery metal	Shaft, motor	-
50	Silvery metal	Plate, motor	-
51	Red metal	Coil, motor	-
52	Blue soft plastic	Wire insulation, cable, motor	-
53	Yellow soft plastic	Wire insulation, cable, motor	-
54	Red soft plastic	Wire insulation, cable, motor	-
55	Black soft plastic	Wire insulation, cable, motor	-
56	White plastic	Socket, motor	-
57	Silvery metal	Pin, socket, motor	-
58	Black fabric	Tape, socket, motor	-

TEST RESULT

Compliance Test – 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 (EU)2015/863

Test Method : See Appendix.

-	Result (s)									
Parameter	**Lead (Pb)**	**Mercury (Hg)**	**Cadmium (Cd)**	**Chromium VI (Cr VI)**	**PBBs & PBDEs**	**BBP**	**DBP**	**DEHP**	**DIBP**	**Conclusion**
Unit	mg/kg									-
Test Item(s)	-	-	-	-	-	-	-	-	-	-
1	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
2	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
3	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
4	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
5	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
6	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
7	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
8	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
9	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
10	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
11	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
12	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
13	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
14	27230	BL	BL	BL	NA	NA	NA	NA	NA	EXEMPTED#
15	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
16	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
17	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
18	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
19	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
20	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
21	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
22	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
23	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
24	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
25	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
26	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
27	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
28	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
29	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
30	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS

-	Result (s)									
Parameter	**Lead (Pb)**	**Mercury (Hg)**	**Cadmium (Cd)**	**Chromium VI (Cr VI)**	**PBBs & PBDEs**	**BBP**	**DBP**	**DEHP**	**DIBP**	**Conclusion**
Unit	mg/kg									-
Test Item(s)	-	-	-	-	-	-	-	-	-	-
31	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
32	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
33	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
34	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
35	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
36	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
37	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
38	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
39	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
40	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
41	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
42	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
43	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
44	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
45	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
46	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
47	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
48	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
49	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
50	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
51	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
52	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
53	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
54	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
55	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
56	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
57	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
58	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS

Note / Key:

BL = Below limit OL = Over limit ND = Not detected NA = Not applicable
mg/kg = milligram(s) per kilogram = ppm = part(s) per million
Detection Limit : See Appendix.

TEST RESULT

Remark:

- *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.
- *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 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 Council Directive 2011/65/EU, Article 4(1).
- 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) 14 was (were) claimed as is by client (received as is). Therefore, this (these) Test Item(s) containing the found lead level should be exempted.

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)				Maximum Allowable Limit (mg/kg)
		X-ray fluorescence (XRF)[a]			Wet Chemistry	
		Plastic	Metal/Glass/ Ceramic	Others		
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[j]	Each 1000

	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 ***