中国认可
国际互认
检测
TESTING
CNAS L1744

TEST REPORT

LAB NO. : **(8824)086-0104(R2)**
DATE : **Jun 20, 2024**
PAGE : **1 OF 14**

Applicant Name: **ZHIWEI ROBOTICS CORP. /**
上海智位机器人股份有限公司

Applicant Address: ROOM 603, 2 BOYUN ROAD, PUDONG, SHANGHAI P.R./
上海浦东新区博云路2号浦软大厦603室

Date of Submission: MAR 26, 2024
2024年3月26日

Test Period: MAR 26, 2024 TO APR 20, 2024
2024年3月26日至2024年4月20日

Sample Description: FULL EVA CARRIER FOR LATTEPANDA MU

Style No. : DFR1141
Manufacturer : ZHIWEI ROBOTICS CORP.
上海智位机器人股份有限公司
Country of origin: 上海
Sample Size: 6 PCS

BUREAU VERITAS SHENZHEN CO.,LTD
DONGGUAN BRANCH

Lisa Bai
Analytical lab technical ass. manager

RT/Carmen Xiong

REMARK

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

TEST ON REQUESTED COMPONENT(S)	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 on certain component	PASS	-

Photo of the Submitted Sample

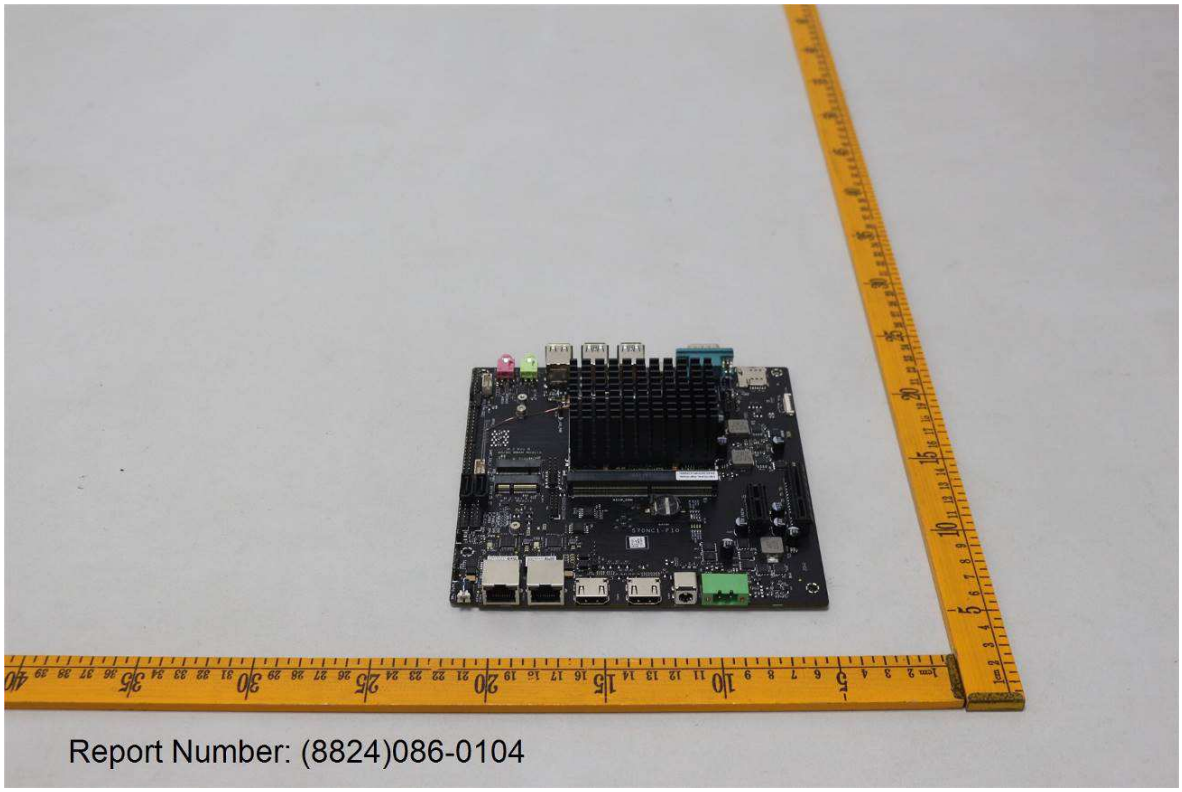
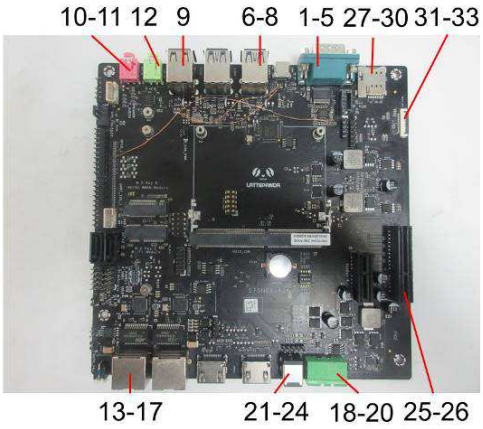
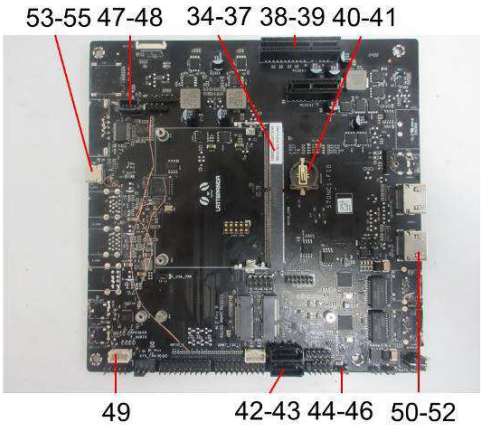
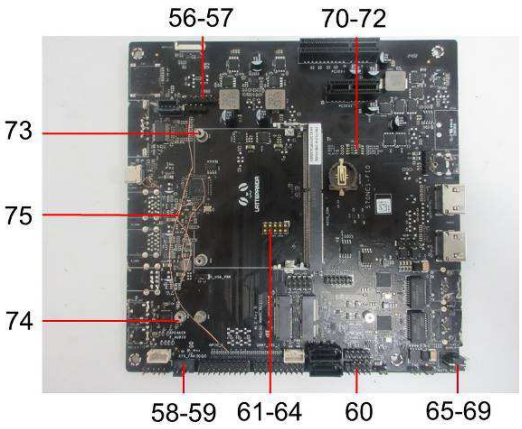
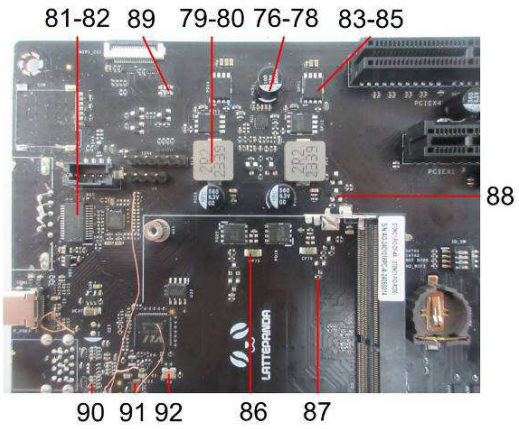


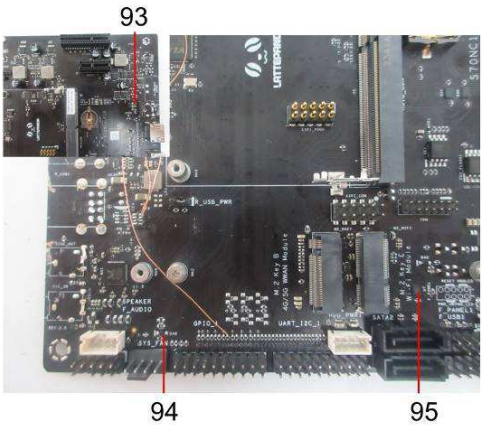
Photo of Test Item(s)











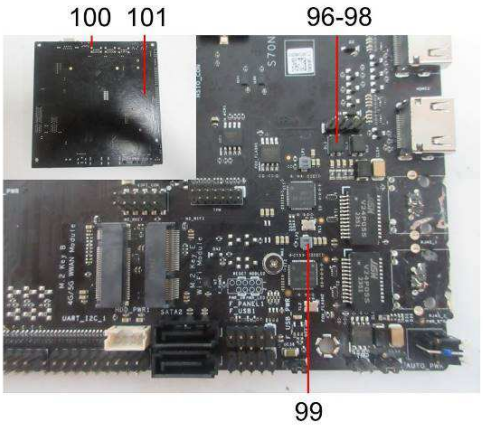
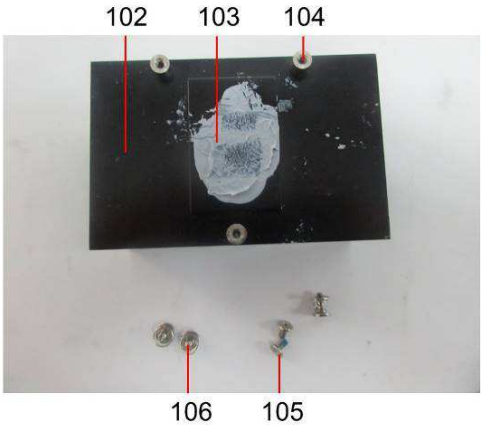


Photo of Test Item(s)



Component Description List

Test Item(s)	Component Description(s)	Location	Style(s)
1	Silvery metal	Holder, socket	
2	Blue plastic	Pin holder, socket	
3	Silvery/golden metal	Pin, socket	
4	Silvery metal	Contact plate, socket	
5	Silvery metal	Screw, socket	
6	Silvery metal	Contact plate,	
7	Blue plastic	Pin holder, socket	
8	Silvery/golden metal	Pin, socket	
9	Black plastic	Pin holder, socket	
10	Pink plastic	Socket	
11	Silvery metal	Pin, socket	
12	Green plastic	Socket	
13	Silvery metal	Contact plate, socket	
14	Black plastic	Pin holder, socket	
15	Silvery/golden metal	Pin, socket	
16	Green/transparent plastic	LED, socket	
17	Silvery metal	Pin, LED, socket	
18	Green plastic	Socket	
19	Silvery metal	Pin, socket	
20	Golden metal	Nut, socket	
21	Silvery metal	Cover, socket	
22	Silvery metal	Contact plate, socket	
23	Golden metal	Pin, socket	
24	Black plastic	Pin holder, socket	
25	Black plastic	Socket	
26	Silvery metal	Pin, socket	
27	Silvery metal	Cover, card socket	
28	Black plastic	Pin holder, card socket	
29	Silvery/golden metal	Pin, card socket	
30	Black plated silvery metal	Spring, card socket	
31	Black plastic	Socket	
32	White plastic	Socket	
33	Silvery metal	Pin, socket	
34	Black printed white plastic	Sticker, socket	
35	Black plastic	Socket	
36	Silvery/golden metal	Pin, socket	

Test Item(s)	Component Description(s)	Location	Style(s)
37	Silvery metal	Holder, socket	
38	Black plastic	Socket	
39	Silvery/golden metal	Pin, socket	
40	White plastic	Battery holder	
41	Silvery metal	Contact plate, battery holder	
42	Black plastic	Socket	
43	Silvery/golden metal	Pin, socket	
44	Black plastic	Socket	
45	Silvery/golden metal	Pin, socket	
46	Silvery metal	Contact plate, socket	
47	Gray plastic	Socket	
48	Silvery/golden metal	Pin, socket	
49	Beige plastic	Socket	
50	Silvery metal	Contact plate, USB plug	
51	Silvery metal	Pin, USB plug	
52	Black plastic	Pin holder, USB plug	
53	Silvery metal	Contact plate, type-c plug	
54	Silvery/golden metal	Pin, type-c plug, cable	
55	Black plastic	Pin holder, type-c plug	
56	Black plastic	Plug	
57	Silvery/golden metal	Pin, plug	
58	Gray plastic	Plug	
59	Silvery metal	Pin, plug	
60	Black plastic	Plug	
61	Golden metal	Terminal, plug	
62	Golden metal	Tube, plug	
63	Golden metal	Spring, plug	
64	Black plastic	Holder, plug	
65	White plastic	Button, switch	
66	Black plastic	Case, switch	
67	Silvery metal	Contact plate, switch	
68	Silvery metal	Pin, switch	
69	Transparent plastic	LED, switch	
70	White plastic	Button, switch	
71	Black plastic	Case, switch	
72	Golden metal	Contact plate, switch	
73	Silvery metal	Nut	
74	Silvery metal	Nut	
75	Coppery metal	Wire	

Test Item(s)	Component Description(s)	Location	Style(s)
76	Black printed silvery body	Electrolyte capacitor	
77	Black soft plastic	Base, electrolyte capacitor	
78	Silvery metal	Pin, electrolyte capacitor	
79	Grey metal	Inductor	
80	Coppery metal	Coil, inductor	
81	Black body	IC	
82	Coppery/silvery metal	Plate, IC	
83	Black body	SMD EC	
84	Silvery solder	Insider solder, SMD EC	
85	Coppery/silvery metal	Plate, SMD EC	
86	Brown body	SMD capacitor	
87	Black body	SMD resistor	
88	Black body	SMD transistor	
89	Black printed white body	SMD resistor	
90	Black printed white body	SMD EC	
91	Brown body	SMD EC	
92	Silvery/golden body	SMD EC	
93	Green printed white body	SMD EC	
94	Black body	SMD diode	
95	Black body	SMD EC	
96	Black body	Diode	
97	Silvery solder	Insider solder, diode	
98	Coppery/silvery metal	Plate, diode	
99	Gray metal	Inductor	
100	Silvery solder	Solder, PCB	
101	Black PCB	PCB	
102	Black plated silvery metal	Holder	
103	Gray grease	Grease, holder	
104	Silvery metal	Nut, screw	
105	Silvery metal	Screw, holder	
106	Silvery metal	Spring, screw, holder	

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	NA	NA	NA	NA	NA	PASS
2	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
3	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
4	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
5	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
6	BL	BL	BL	BL	NA	NA	NA	NA	NA	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	BL	BL*	BL*	BL*	BL*	BL*	PASS
10	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
11	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
12	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
13	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
14	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
15	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
16	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
17	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
18	BL	BL	BL	BL	BL*	BL*	BL*	BL*	BL*	PASS
19	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
20	17960*	BL	BL	BL	NA	NA	NA	NA	NA	EXEMPTED#
21	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
22	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
23	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
24	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
25	BL	BL	BL	BL	BL*	BL*	BL*	BL*	BL*	PASS
26	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
27	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
28	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
29	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
30	BL	BL	BL	BL	NA	NA	NA	NA	NA	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	BL	BL*	BL*	BL*	BL*	PASS
32	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
33	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
34	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
35	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
36	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
37	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
38	BL	BL	BL	BL	BL*	BL*	BL*	BL*	BL*	PASS
39	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
40	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
41	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
42	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
43	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
44	BL	BL	BL	BL	BL*	BL*	BL*	BL*	BL*	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	BL	BL*	BL*	BL*	BL*	PASS
48	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
49	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
50	BL	BL	BL	BL	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	Negative*	NA	NA	NA	NA	NA	PASS
54	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	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
59	29*	BL	BL	BL	NA	NA	NA	NA	NA	PASS
60	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
61	18760*	BL	BL	BL	NA	NA	NA	NA	NA	EXEMPTED#
62	23290*	BL	BL	BL	NA	NA	NA	NA	NA	EXEMPTED#
63	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
64	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
65	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
66	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
67	BL	BL	BL	BL	NA	NA	NA	NA	NA	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)	-	-	-	-	-	-	-	-	-	-
68	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
69	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
70	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
71	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
72	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
73	9320*	BL	BL	BL	NA	NA	NA	NA	NA	EXEMPTED#
74	20440*	BL	BL*	BL	NA	NA	NA	NA	NA	EXEMPTED#
75	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
76	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
77	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
78	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
79	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
80	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
81	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
82	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
83	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
84	OL*	BL	BL	BL	NA	NA	NA	NA	NA	EXEMPTED#
85	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
86	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
87	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
88	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
89	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
90	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
91	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
92	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
93	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
94	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
95	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
96	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
97	OL*	BL	BL	BL	NA	NA	NA	NA	NA	EXEMPTED#
98	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
99	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
100	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
101	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
102	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
103	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
104	BL	BL	BL	BL	NA	NA	NA	NA	NA	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)	-	-	-	-	-	-	-	-	-	-
105	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
106	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS

TEST RESULT

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.

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) 20, 61, 62, 73, 74 was (were) claimed as is by client (received as is). Therefore, this (these) Test Item(s) containing the found lead level should be exempted.
- #According to Annex III of European Council Directive 2011/65/EU, exemptions were granted a few materials and Clause 7(a) is reiterated here “Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead).”. Test Item(s) 84, 97 was (were) claimed as is by client (received as is). Therefore, this (these) Test Item(s) containing the found lead level should be exempted.
- At the request of client, test(s) was conducted on the certain component(s) of the submitted samples(s) / submitted component(s).
- This report is to Supersede BV(Dong guan) report No. (8824)086-0104(R1) dated on Jun 19, 2024.

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: 2021
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 ***