

**Test Report**

UTLR2308026

Date: Aug.11, 2023


Password:PW4736

Page: 1 of 7

Applicant: Guangzhou Xingyi Electronic Technology Co., Ltd.

Address: 8th Floor, Baiyun Torch Building, No.1 Kesheng Road, Taihe Town, Baiyun District, Guangzhou City, Guangdong Province, China

The following samples were submitted and identified on behalf of the clients as

Sample Name: Core-board
Model No.: ATK-CLRK3568F
Brand:  正点原子
Factory name: Guangzhou Xingyi Electronic Technology Co., Ltd.
Address: 8th Floor, Baiyun Torch Building, No.1 Kesheng Road, Taihe Town, Baiyun District, Guangzhou City, Guangdong Province, China
Sample Received Date: Aug.7, 2023
Test Period: Aug.7, 2023 to Aug.11, 2023
Test Method: Please refer to next page(s).
Test Result: Please refer to next page(s).

CONCLUSION :

According to client's request to conduct below tests in the selected parts of the submitted sample:

<u>TEST ITEM</u>	<u>RESULT</u>
1.RoHS Directive 2011/65/EU Annex II amending Annex(EU)2015/863 and amending Annex (EU)2017/2102	
-Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs and PBDEs Content	PASS
-Di-(2-ethylhexyl) phthalate(DEHP), Benzylbutyl phthalate(BBP), Dibutyl phthalate(DBP), Diisobutyl phthalate(DIBP) Content	PASS

Authorized Signatory
Title: Lab Manager

For and on behalf of
Dongguan Universal Testing Technology Co., Ltd.



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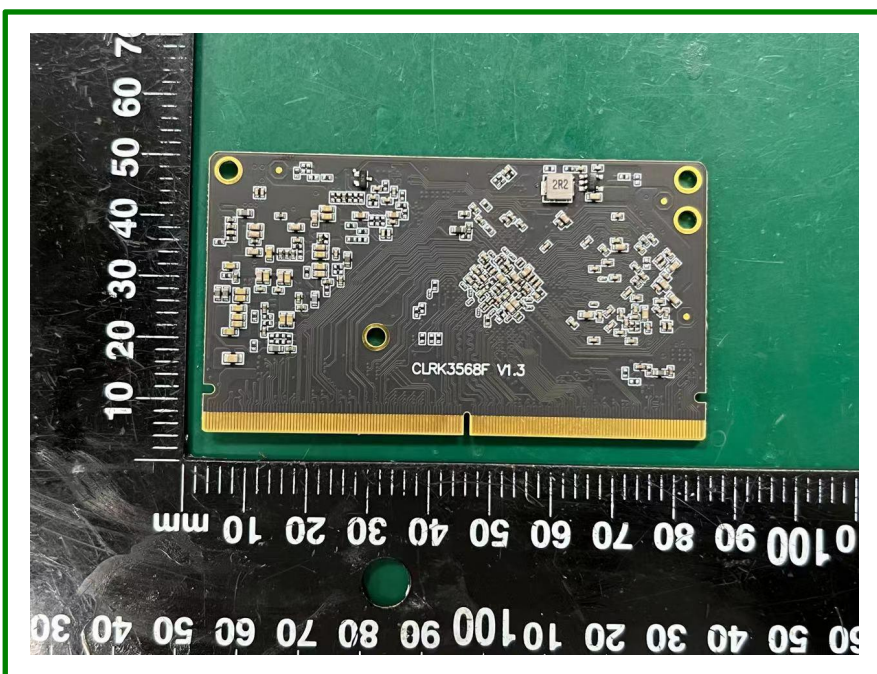
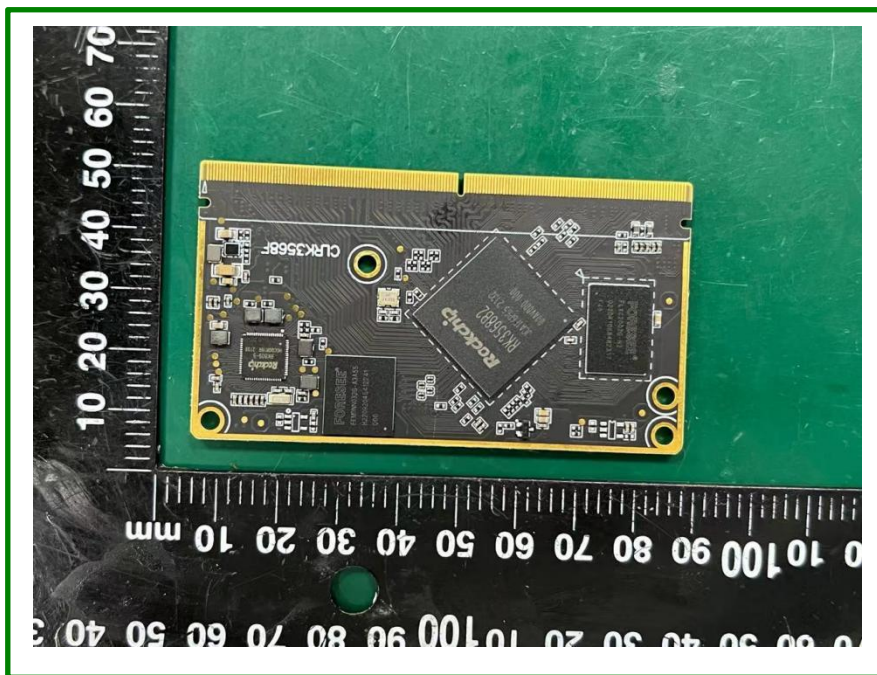
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Photos of submitted sample



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Test Result(s):

Part No.	Part Description
P1	Ferrous metal case inductor
P2	A3A55 black electronic components
P3	RK3568B2 black electronic component
P4	FLXC2002G-N2 black electronic components
P5	Three-pin black electronic component
P6	TSAF gold metal shell electronic components
P7	24.000 gold metal shell electronic components
P8	Brown chip capacitor
P9	Black PCB
P10	Gold metal pin

1.RoHS Directive 2011/65/EU and its amending Directive (EU)2015/863 & Directive (EU)2017/2102

ROHS Restricted Substances	Limit(w/w)
Lead(Pb)	0.1%
Cadmium(Cd)	0.01%
Mercury(Hg)	0.1%
Hexavalent Chromium(Cr VI)	0.1%
Polybromobiphenyls (PBBs)	0.1%
Polybromodiphenyl ethers (PBDEs)	0.1%
Di-(2-ethylhexyl) phthalate(DEHP)	0.1%
Benzylbutyl phthalate(BBP)	0.1%
Dibutyl phthalate(DBP)	0.1%
Diisobutyl phthalate(DIBP)	0.1%

1.Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs and PBDEs Content –RoHS Directive 2011/65/EU and its amending Directive (EU)2015/863 & Directive (EU)2017/2102

Method(s) Used: Please refer to Annex B

PRELIMINARY SCREENING ASSESSMENT

Part No.	Result(s)(mg/kg)				
	Lead	Cadmium	Mercury	Chromium	Bromine
P1	BL	BL	BL	BL	NA
P2	BL	BL	BL	BL	BL
P3	BL	BL	BL	BL	BL
P4	BL	BL	BL	BL	BL
P5	BL	BL	BL	BL	BL
P6	BL	BL	BL	BL	NA

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P7	BL	BL	BL	BL	NA
P8	BL	BL	BL	BL	BL
P9	BL	BL	BL	BL	X
P10	BL	BL	BL	BL	NA

Note(s):

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

2.BL=Below limit; OL=Over limit; NA=Not applicable; X=further chemical testing needed

3.APPENDIX A for interpretation of EDXRF results(Standard IEC62321-3-1)

APPENDIX A

Element	Polymer Materials	Metallic Materials	Composite Materials
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	$BL \leq (300-3\sigma) < X$	NA	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

Note(s): Results was obtained by EDXRF for primary screening. According the APPENDIX A below, further chemical testing by ICP (for Cd, Pb, Hg), UV-VIS (for CrVI) and GCMSD (for PBBs, PBDEs) have to be performed, if the XRF results is in the range defined as inconclusive (X). Further chemical testing is also proposed when results are over limit (OL) in order to have a numeral result to compare to the limits set by the Directive 2011/65/EU.

CHEMICAL TEST

Part No.	Test item	Unit	MDL	Result	Limit	Conclusion
P9	Polybromobiphenyls (PBBs)	mg/kg	50	N.D.	1000	Pass
	Polybromodiphenyl ethers (PBDEs)	mg/kg	50	N.D.	1000	Pass

Note:

1. MDL=Method detection limit

2. mg/kg=milligram per kilogram=ppm

3. N.D.=Not detected(<MDL)

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APPENDIX B

List of Analytes and their Corresponding Test Methods [European Council Directive 2011/65/EU] :		
No.	Name of Analytes	Test Method(s)
1	Lead(Pb), mercury(Hg), cadmium(Cd), total chromium(Cr) and total bromine(Br) using X-ray fluorescence spectrometry	With reference to IEC 62321-3-1:2013
2	Lead (Pb)	With reference to IEC 62321-5:2013
3	Cadmium (Cd)	
4	Mercury (Hg)	With reference to IEC 62321-4:2013/AMD1:2017
5	Chromium VI (Cr VI)	Metal :With reference to IEC 62321-7-1:2015 Polymers & Electronics :With reference to IEC 62321-7-2:2017
6	Polybromobiphenyls (PBBs) - Bromobiphenyl (MonoBB) - Dibromobiphenyl (DiBB) - Tribromobiphenyl (TriBB) - Tetrabromobiphenyl (TetraBB) - Pentabromobiphenyl (PentaBB) - Hexabromobiphenyl (HexaBB) - Heptabromobiphenyl (HeptaBB) - Octabromobiphenyl (OctaBB) - Nonabromobiphenyl (NonaBB) - Decabromobiphenyl (DecaBB)	With reference to IEC 62321-6:2015
7	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)	
[a]	The principle of this method was evaluated and supported by two studies organized by IEC TC 111 WG3. These studies were focused on detecting the presence of Cr VI in the corrosion protection coatings on metallic samples.	



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1.2.Di-(2-ethylhexyl) phthalate(DEHP). Benzylbutyl phthalate(BBP). Dibutyl phthalate(DBP). Diisobutyl phthalate(DIBP) Content- RoHS Directive 2011/65/EU Annex II amending Annex(EU)2015/863 and amending Annex (EU)2017/2102

Test Method: With reference to IEC 62321-8:2017, analysis was performed by GC-MS.

Test Items	Unit	Result	MDL	Limit
		P9		
Di-(2-ethylhexyl) phthalate(DEHP)	mg/kg	N.D.	50	1000
Benzylbutyl phthalate(BBP)	mg/kg	N.D.	50	1000
Dibutyl phthalate(DBP)	mg/kg	N.D.	50	1000
Diisobutyl phthalate(DIBP)	mg/kg	N.D.	50	1000
Conclusion		Pass	-	-

Note:

1. mg/kg = milligram per kilogram= ppm.
2. MDL = Method Detection Limit.
3. N.D. = Not Detected (< MDL)

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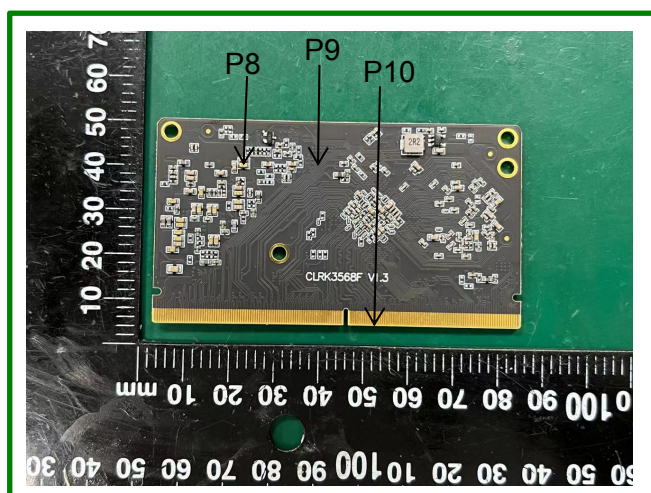
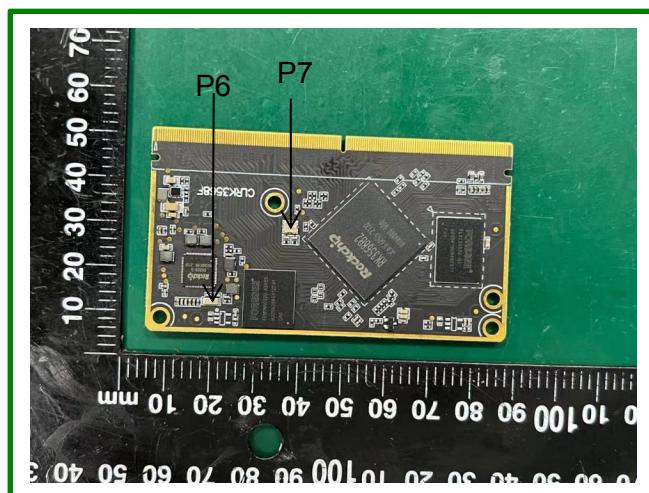
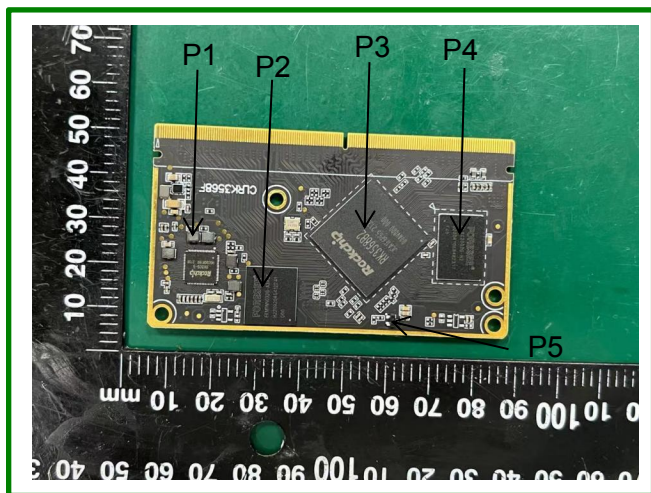
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Parts photos:



***** End of Test Report *****

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