Test Report

Applicant: ChangWang Technology inc

Contact information: guang dong sheng dong wan shi tang sha zhen qing hu tou ren min lu 37hao zhi yi

The following sample(s) was (were) submitted and identified by client as:

Sample Name	:	MINIPC Microcomputer MINIPC
Model No.	:	MINIPC-M1
Series Model	:	MINIPC,ROUTE,M1,NAS,MINIPC-P1,MINIPC-P2,MINIPC-P3,MINIPC-P4, MINIPC-P5,MINIPC-P6,MINIPC-P7,MINIPC-P8,MINIPC-P9
Trade mark	:	GAMTEE
Manufacturer	:	ChangWang Technology inc
Address	:	guang dong sheng dong wan shi tang sha zhen qing hu tou ren min lu 37hao zhi yi
Received Date	:	Nov. 24, 2023
Testing Period	:	From Nov. 24, 2023 to Nov. 30, 2023
Test Request	:	Please refer to next page(s).
Test Result(s)	:	Please refer to next page(s).

Shen Zhen UONE Test Co., LTD.

Prepared by	Checked by	Approved by
Max	Thea	Hedy
Max Wu	Thea Ye	Hedy Xu

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Test Report

Summary of Test Results (Tested parts are required partially by client):

TEST REQUEST	CONCLUSION
RoHS Directive 2011/65/EU and its subsequent amendments Directive (EU) 2015/863	
(1) To determine Lead (Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls (PBBs) and Polybrominated DiphenylEthers (PBDEs) content by screening test and chemical test	**PASS**
(2) To determine Phthalates (DBP, BBP, DEHP, DIBP) content by chemical test	**PASS**

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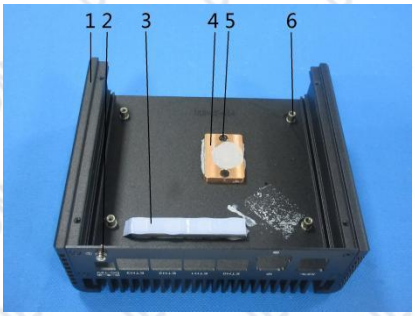
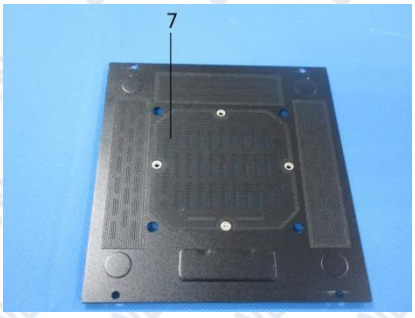
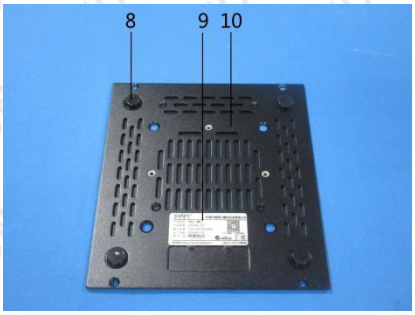
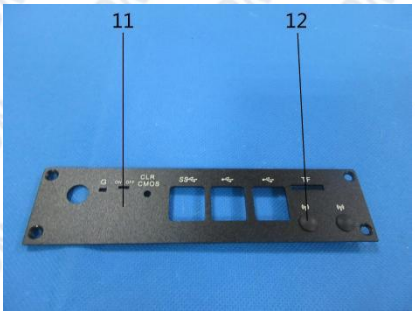
Test Material List

Material No.	Description (Location)	Photo(s) of tested materials
1	Silvery metal with black coating(shell)	
2	Silvery metal(screw)	
3	Light blue silicone	
4	Coppery metal(plate)	
5	Silvery metal with black coating(screw)	
6	Silvery metal(nut)	
7	Silvery metal with black coating	
8	Black plastic	
9	White adhesive plastic with black printing(label)	
10	Silvery metal with black coating(plate)	
11	Silvery metal with black-white coating	
12	Black plastic	

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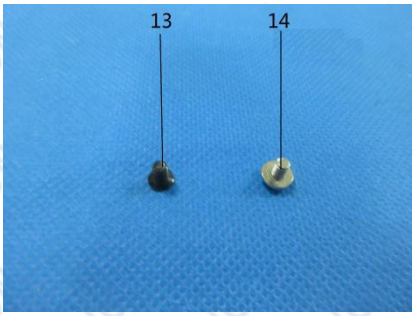
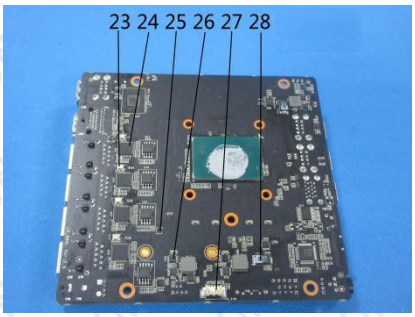
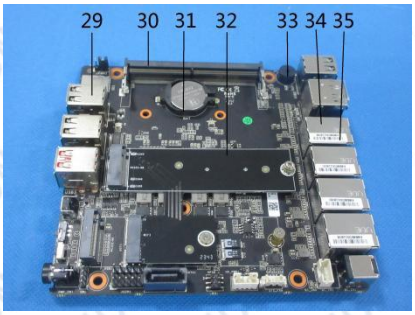
Material No.	Description (Location)	Photo(s) of tested materials
13	Silvery metal with black coating(screw)	
14	Silvery metal(screw)	
15	Silvery metal(solder)	
16	Black PCB	
17	Black body(triode)	
18	Brown body(capacitor)	
19	Gray body(resistor)	
20	Black body(IC)	
21	Black body(IC)	
22	Black body(resistor)	
23	Silvery body(crystal)	
24	Black body(IC)	
25	Black body(IC)	
26	Black body(IC)	
27	White plastic	
28	Black-white body(EC)	
29	Silvery metal(shell)	
30	Black plastic	
31	Black plastic	
32	Black PCB	
33	Black plastic(shell)	
34	Silvery metal(shell)	
35	White adhesive plastic with black printing(label)	

Test Result(s):

(1) Lead (Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls (PBBs) and Polybrominated DiphenylEthers (PBDEs)

Test Method: IEC62321-3-1: 2013, IEC62321-4: 2013+A1:2017, IEC62321-5: 2013, IEC62321-6: 2015,IEC 62321-7-1:2015, IEC 62321-7-2: 2017, analyzed by EDXRF & ICP-OES & GC-MS & UV-Vis.

No.	EDXRF Result (1)					Chemical Result (2) (mg/kg)	Remark(3)	Conclusion
	Pb	Cd	Hg	Cr	Br			
1	BL	BL	BL	BL	NA	—	—	PASS
2	BL	BL	BL	BL	NA	—	—	PASS
3	BL	BL	BL	BL	BL	—	—	PASS
4	BL	BL	BL	BL	NA	—	—	PASS
5	BL	BL	BL	BL	NA	—	—	PASS
6	BL	BL	BL	BL	NA	—	—	PASS
7	BL	BL	BL	BL	NA	—	—	PASS
8	BL	BL	BL	BL	BL	—	—	PASS
9	BL	BL	BL	BL	BL	—	—	PASS
10	BL	BL	BL	BL	NA	—	—	PASS
11	BL	BL	BL	BL	NA	—	—	PASS
12	BL	BL	BL	BL	BL	—	—	PASS
13	BL	BL	BL	BL	NA	—	—	PASS
14	BL	BL	BL	BL	NA	—	—	PASS
15	BL	BL	BL	BL	NA	—	—	PASS
16	BL	BL	BL	BL	X	PBBs: N.D. PBDEs: N.D.	—	PASS
17	BL	BL	BL	BL	BL	—	—	PASS
18	BL	BL	BL	BL	BL	—	—	PASS
19	BL	BL	BL	BL	BL	—	—	PASS
20	BL	BL	BL	BL	BL	—	—	PASS
21	BL	BL	BL	BL	BL	—	—	PASS
22	BL	BL	BL	BL	BL	—	—	PASS

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No.	EDXRF Result (1)					Chemical Result (2) (mg/kg)	Remark(3)	Conclusion
	Pb	Cd	Hg	Cr	Br			
23	BL	BL	BL	BL	BL	—	—	PASS
24	BL	BL	BL	BL	BL	—	—	PASS
25	BL	BL	BL	BL	BL	—	—	PASS
26	BL	BL	BL	BL	BL	—	—	PASS
27	BL	BL	BL	BL	BL	—	—	PASS
28	BL	BL	BL	BL	BL	—	—	PASS
29	BL	BL	BL	BL	NA	—	—	PASS
30	BL	BL	BL	BL	BL	—	—	PASS
31	BL	BL	BL	BL	BL	—	—	PASS
32	BL	BL	BL	BL	BL	—	—	PASS
33	BL	BL	BL	BL	BL	—	—	PASS
34	BL	BL	BL	BL	NA	—	—	PASS
35	BL	BL	BL	BL	BL	—	—	PASS

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Remark:

(1) ①Results are obtained by EDXRF for primary screening, and further wet 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 an inconclusive result was found (as "X" in below table) (unit: mg/kg).

②OL = Over Limit, BL = Below Limit, X = Inconclusive, NA = Not Applicable.

③The EDXRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.

Element	Polymer	Metal	Composite Materials
Cd	BL ≤(70-3σ)< X <(130+3σ)≤ OL	BL ≤(70-3σ)< X <(130+3σ)≤ OL	LOD < X <(150+3σ)≤ OL
Pb	BL ≤(700-3σ)< X <(1300+3σ)≤ OL	BL ≤(700-3σ)< X <(1300+3σ)≤ OL	BL ≤(500-3σ)< X <(1500+3σ)≤ OL
Hg	BL ≤(700-3σ)< X <(1300+3σ)≤ OL	BL ≤(700-3σ)< X <(1300+3σ)≤ OL	BL ≤(500-3σ)< X <(1500+3σ)≤ OL
Br	BL ≤ (300-3σ)< X	NA	BL ≤ (250-3σ)< X
Cr	BL ≤ (700-3σ)< X	BL ≤ (700-3σ)< X	BL ≤ (500-3σ)< X

Units and limits in EU RoHS Directive 2011/65/EU:

Element	Pb	Cd	Hg	Cr(VI)	PBBs(single)	PBDEs(single)
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Limit	1000	100	1000	1000	1000	1000

(2) ① mg/kg = ppm = 0.0001%, N.D. = Not Detected (Less than MDL).

②Unit and MDL (Method detection limit) in wet chemical test.

Element	Pb	Cd	Hg	Cr(VI)	PBBs(single)	PBDEs(single)
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MDL	2	2	2	8	5	5

③According to IEC 62321-7-1:2015, result on Cr(VI) for metal sample is shown as Positive/Negative. Negative = Absence of Cr(VI) coating, Positive = Presence of Cr(VI) coating.
Storage condition and production date of the tested sample are unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

④ According to IEC 62321-3-1:2013, this column represents the results of wet chem test.

(3) This column represents the exempted decoration of material or other related testing sample's information.

(2) Phthalates (DBP, BBP, DEHP, DIBP) content

Test Method: IEC 62321-8: 2017, analyzed by gas chromatographic- mass spectrometer (GC-MS).

Substances	DBP	BBP	DEHP	DIBP	Conclusion
CAS No.	84-74-2	85-68-7	117-81-7	84-69-5	
Limit (mg/kg)	1000	1000	1000	1000	
MDL (mg/kg)	20	20	20	20	
Material No.	Result (mg/kg)				
3	N.D.	N.D.	N.D.	N.D.	PASS
8	N.D.	N.D.	N.D.	N.D.	PASS
9	N.D.	N.D.	N.D.	N.D.	PASS
12	N.D.	N.D.	N.D.	N.D.	PASS
16	N.D.	N.D.	N.D.	N.D.	PASS
17	N.D.	N.D.	N.D.	N.D.	PASS
18	N.D.	N.D.	N.D.	N.D.	PASS
19	N.D.	N.D.	N.D.	N.D.	PASS
20	N.D.	N.D.	N.D.	N.D.	PASS
21	N.D.	N.D.	N.D.	N.D.	PASS
22	N.D.	N.D.	N.D.	N.D.	PASS
23	N.D.	N.D.	N.D.	N.D.	PASS
24	N.D.	N.D.	N.D.	N.D.	PASS
25	N.D.	N.D.	N.D.	N.D.	PASS
26	N.D.	N.D.	N.D.	N.D.	PASS
27	N.D.	N.D.	N.D.	N.D.	PASS
28	N.D.	N.D.	N.D.	N.D.	PASS
30	N.D.	N.D.	N.D.	N.D.	PASS
31	N.D.	N.D.	N.D.	N.D.	PASS
32	N.D.	N.D.	N.D.	N.D.	PASS

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Substances	DBP	BBP	DEHP	DIBP	Conclusion
CAS No.	84-74-2	85-68-7	117-81-7	84-69-5	
Limit (mg/kg)	1000	1000	1000	1000	
MDL (mg/kg)	20	20	20	20	
Material No.	Result (mg/kg)				
33	N.D.	N.D.	N.D.	N.D.	PASS
35	N.D.	N.D.	N.D.	N.D.	PASS

Note:
1. mg/kg = milligram per kilogram (ppm).
2. MDL= method detection limit.
3. N.D.=not detected(less than MDL).

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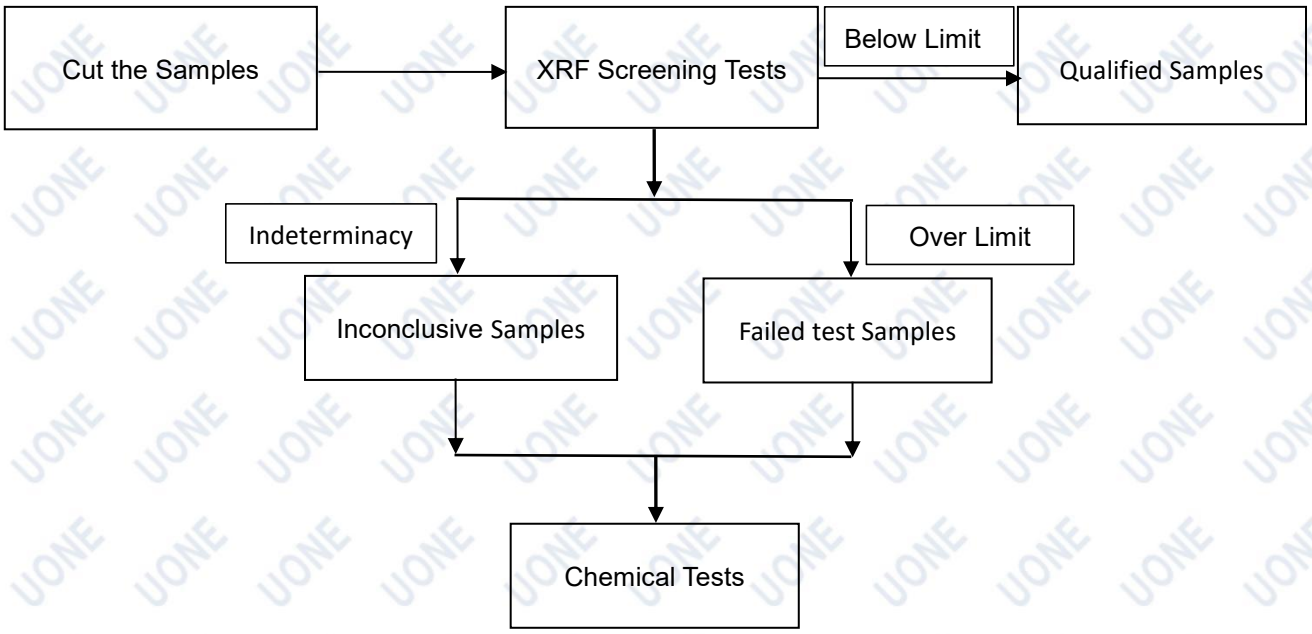
Test Process Flow

1. XRF scan



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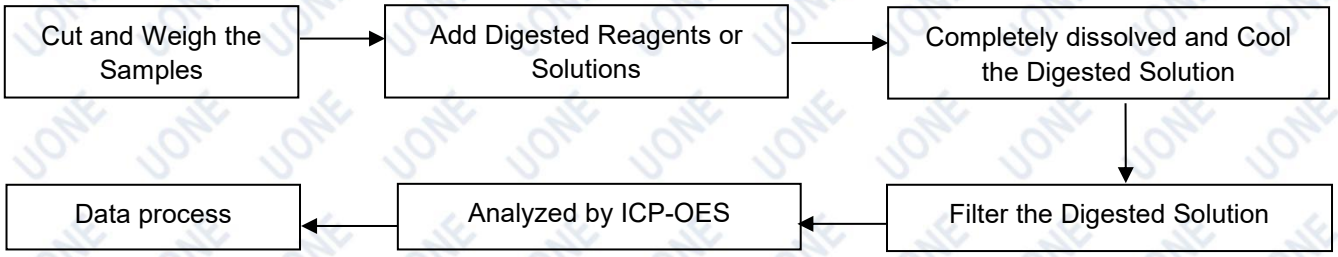
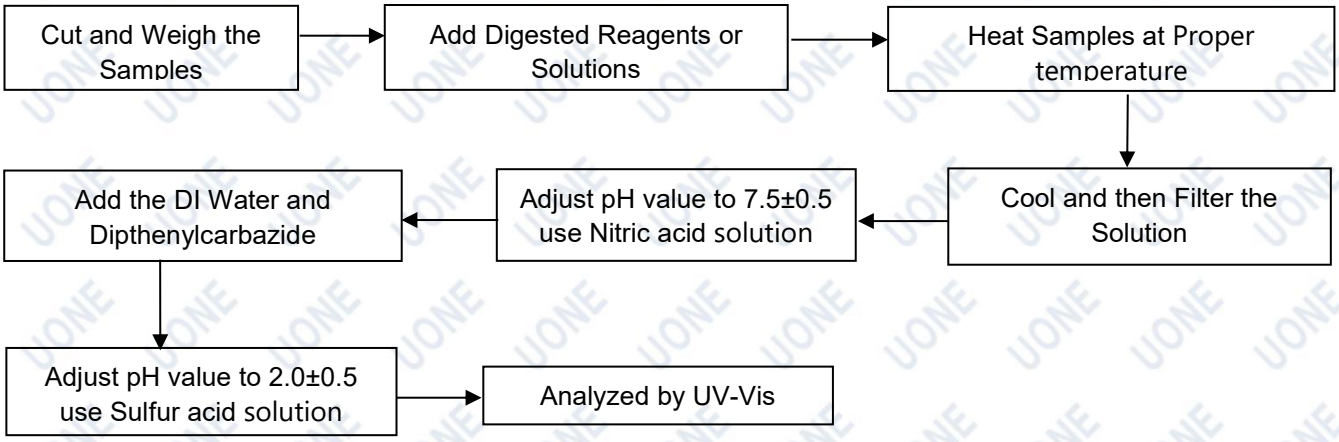
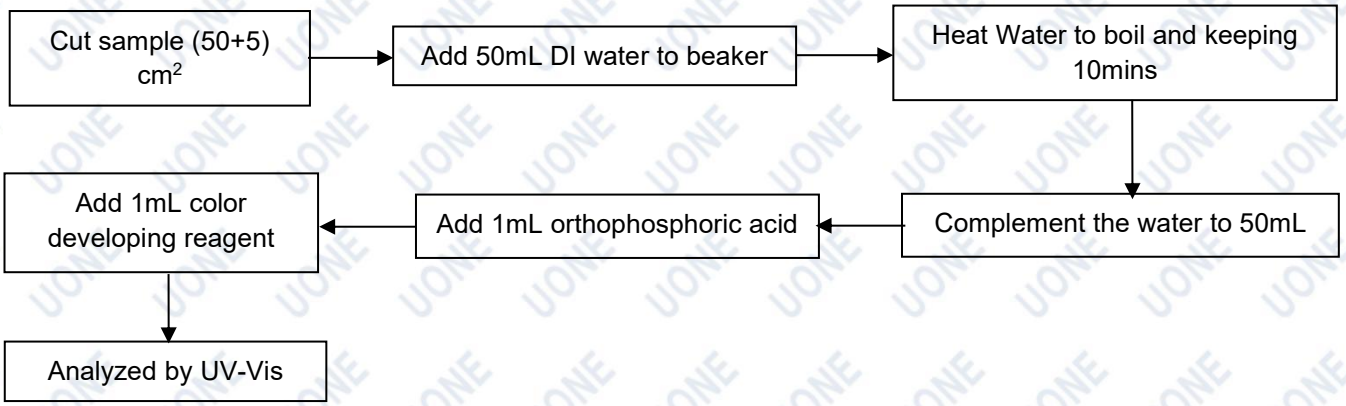
2. Lead, Cadmium, Mercury



3. Hexavalent Chromium (Non-metal)



Hexavalent Chromium (Metal)



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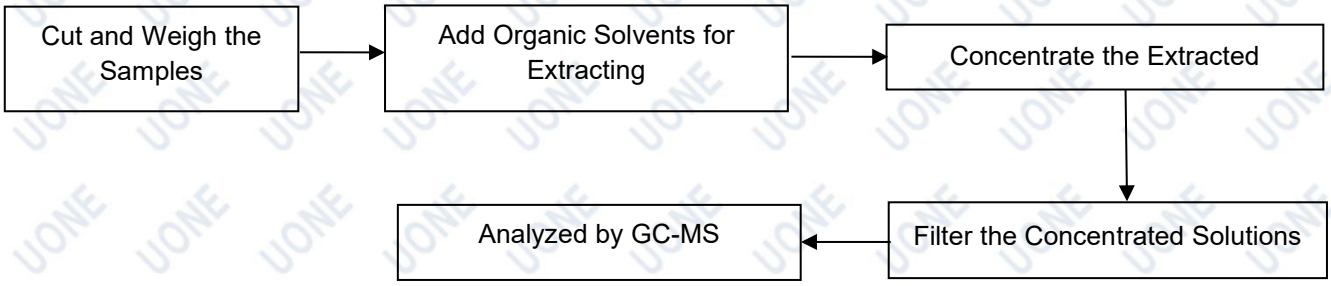
4. PBBs & PBDEs, Phthalates



Photo(s) of Sample:

End of Report

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Statement

1. The information listed on the first page of this test report, except the date of receipt, test date, test result and test conclusion, is provided by the client. The client shall be responsible for the representativeness of sample and authenticity of materials, for which UONE shall bear no responsibilities.

2. The test conclusion of this report are only applicable to the test samples submitted for inspection, and the samples submitted for inspection are only kept for 30 days, and the company does not bear other joint and several liabilities other than the test results.

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5. Objection should be issued in 15 days upon receiving the report, overdue opinion is inadmissible.

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