



Verification Report

Report No.: LCS210915015AR

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Applicant : Shanghai Hezhou Communication Technology Co., Ltd.

Address : Room 101, Building 1, 88 Shengrong Road, Pudong New District, Shanghai

Report on the submitted samples said to be:

Sample Name(s) : LTE 模块

Trade Mark : N/A

Part No. : Air724UG

Sample Received Date : September 16, 2021

Testing Period : September 16, 2021 ~ September 24, 2021

Results : Please refer to next page(s).

TEST REQUEST	CONCLUSION
As specified by client, based on the performed tests on submitted sample, the result of Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), PBBs, PBDEs, Dibutyl Phthalate(DBP), Butylbenzyl Phthalate(BBP), Di-2-ethylhexyl Phthalate(DEHP) and Diisobutyl phthalate(DIBP) content comply with the limits set by RoHS Directive 2011/65/EU with amendment (EU) 2015/863.	Pass

Signed for and on behalf of LCS



Young/Laboratory Manager



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Results:

A. EU RoHS Directive 2011/65/EU and its amendment directives

Test method: With reference to IEC 62321-3-1:2013, Screening by X-ray Fluorescence Spectroscopy (XRF)

Sample No.	Sample Description	Results						Date of sample submission/ Resubmission
		Cd	Pb	Hg	Cr▼	Br▼		
						PBBs	PBDEs	
1	Silver metal cover	BL	BL	BL	BL	/	/	2021-09-16
2	Silver metal sheet	BL	BL	BL	BL	/	/	2021-09-16
3	Black ceramic body	BL	BL	BL	BL	BL	BL	2021-09-16
4	Black ceramic body	BL	BL	BL	BL	X	X	2021-09-16
5	Black ceramic body	BL	BL	BL	BL	BL	BL	2021-09-16
6	Solder	BL	BL	BL	BL	/	/	2021-09-16
7	PCB board	BL	BL	BL	BL	X	X	2021-09-16

Note:

- Results were obtained by XRF for primary screening, and further chemical testing by ICP(for Cd, Pb, Hg), UV-Vis(for Cr(VI)) and GC-MS(for PBBs, PBDEs) are recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1:2013(Unit: mg/kg).

Element	Polymers	Metals	Composite material
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	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$
Br	$BL \leq (300-3\sigma) < X$	N/A	$BL \leq (250-3\sigma) < X$

Remark:

- BL= Below Limit
 - OL= Over Limit
 - X= The range of needing to do further testing
 - 3σ= The reproducibility of analytical instruments
 - N/A= Not applicable
 - LOD= Detection limit
- The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.
 - The maximum permissible limit is quoted from the document RoHS Directive 2011/65/EU with amendment (EU) 2015/863.
 - ▼=For restricted substances PBBs and PBDEs, the results show the total Br content, the restricted substance was Cr(VI), and the results showed the total Cr content.



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RoHS Restricted Substances	Maximum Concentration Value (mg/kg) (by weight in homogenous materials)
Cadmium(Cd)	100
Lead(Pb)	1000
Mercury(Hg)	1000
Hexavalent Chromium(Cr(VI))	1000
Polybrominated biphenyls(PBBs)	1000
Polybrominated diphenylethers(PBDEs)	1000
Dibutyl Phthalate(DBP)	1000
Butylbenzyl Phthalate(BBP)	1000
Di-(2-ethylhexyl) Phthalate(DEHP)	1000
Diisobutyl phthalate(DIBP)	1000

Disclaimers:

This XRF Screening report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF screening report is sufficient for its/his/her purposes. The result shown in this XRF screening report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis are required to obtain quantitative data.



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B. EU RoHS Directive 2011/65/EU with amendment (EU) 2015/863 on PBBs, PBDEs, DBP, BBP, DEHP & DIBP content

Test method:

PBBs & PBDEs Content:

With reference to IEC 62321-6:2015, by solvent extraction and analysis was performed by gas chromatographic-mass spectrometer (GC-MS).

DBP, BBP, DEHP & DIBP Content:

With reference to IEC 62321-8:2017, by solvent extraction and analysis was performed by gas chromatographic-mass spectrometer (GC-MS).

1) The test results of DBP, BBP, DEHP & DIBP

Tested Items	Unit	MDL	Results	Limit
			3+4	
Dibutyl Phthalate(DBP) Content	mg/kg	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	mg/kg	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	mg/kg	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	mg/kg	600	N.D.	1000

Tested Items	Unit	MDL	Results		Limit
			5	7	
Dibutyl Phthalate(DBP) Content	mg/kg	100	N.D.	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	mg/kg	100	N.D.	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	mg/kg	100	N.D.	N.D.	1000
Diisobutyl phthalate(DIBP) Content	mg/kg	100	N.D.	N.D.	1000



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2) The test results of PBBs & PBDEs

Tested Items	Unit	MDL	Results		Limit
			4	7	
Polybrominated Biphenyls(PBBs) Content					
Monobromobiphenyl	mg/kg	5	N.D.	N.D.	/
Dibromobiphenyl	mg/kg	5	N.D.	N.D.	/
Tribromobiphenyl	mg/kg	5	N.D.	N.D.	/
Tetrabromobiphenyl	mg/kg	5	N.D.	N.D.	/
Pentabromobiphenyl	mg/kg	5	N.D.	N.D.	/
Hexabromobiphenyl	mg/kg	5	N.D.	N.D.	/
Heptabromobiphenyl	mg/kg	5	N.D.	N.D.	/
Octabromobiphenyl	mg/kg	5	N.D.	N.D.	/
Nonabromodiphenyl	mg/kg	5	N.D.	N.D.	/
Decabromodiphenyl	mg/kg	5	N.D.	N.D.	/
Total content	mg/kg	/	N.D.	N.D.	1000
Polybrominated Diphenylethers(PBDEs) Content					
Monobromodiphenyl ether	mg/kg	5	N.D.	N.D.	/
Dibromodiphenyl ether	mg/kg	5	N.D.	N.D.	/
Tribromodiphenyl ether	mg/kg	5	N.D.	N.D.	/
Tetrabromodiphenyl ether	mg/kg	5	N.D.	N.D.	/
Pentabromodiphenyl ether	mg/kg	5	N.D.	N.D.	/
Hexabromodiphenyl ether	mg/kg	5	N.D.	N.D.	/
Heptabromodiphenyl ether	mg/kg	5	N.D.	N.D.	/
Octabromodiphenyl ether	mg/kg	5	N.D.	N.D.	/
Nonabromodiphenyl ether	mg/kg	5	N.D.	N.D.	/
Decabromodiphenyl ether	mg/kg	5	N.D.	N.D.	/
Total content	mg/kg	/	N.D.	N.D.	1000

Note:

- N.D.=Not Detected(<MDL or LOQ)
- MDL = Method Detection Limit
- mg/kg = ppm=parts per million



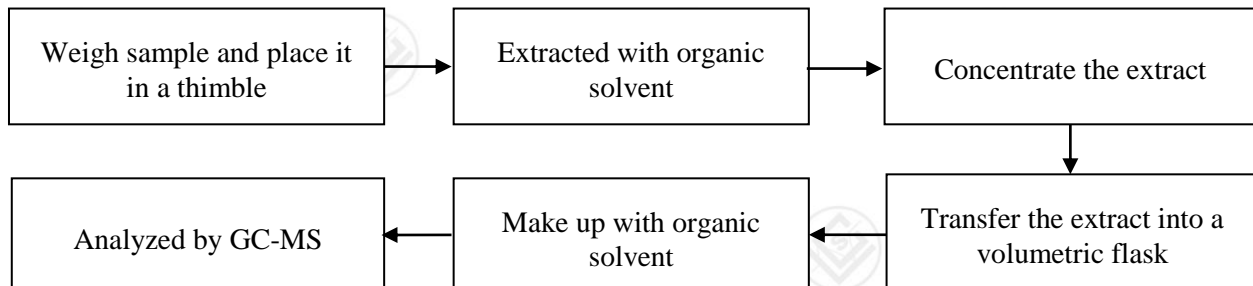
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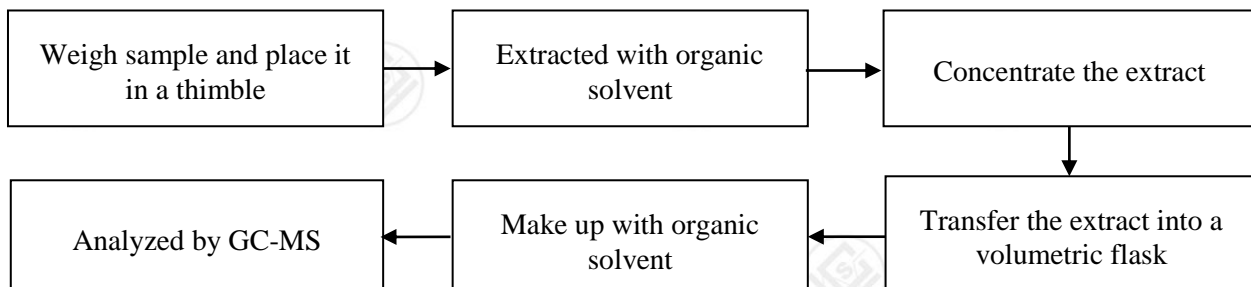
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Test Process

1. Polybrominated Biphenyls(PBBs) & Polybrominated Diphenyl Ethers(PBDEs) : IEC 62321-6:2015



2. Phthalates(DBP, BBP, DEHP & DIBP) : IEC 62321-8:2017



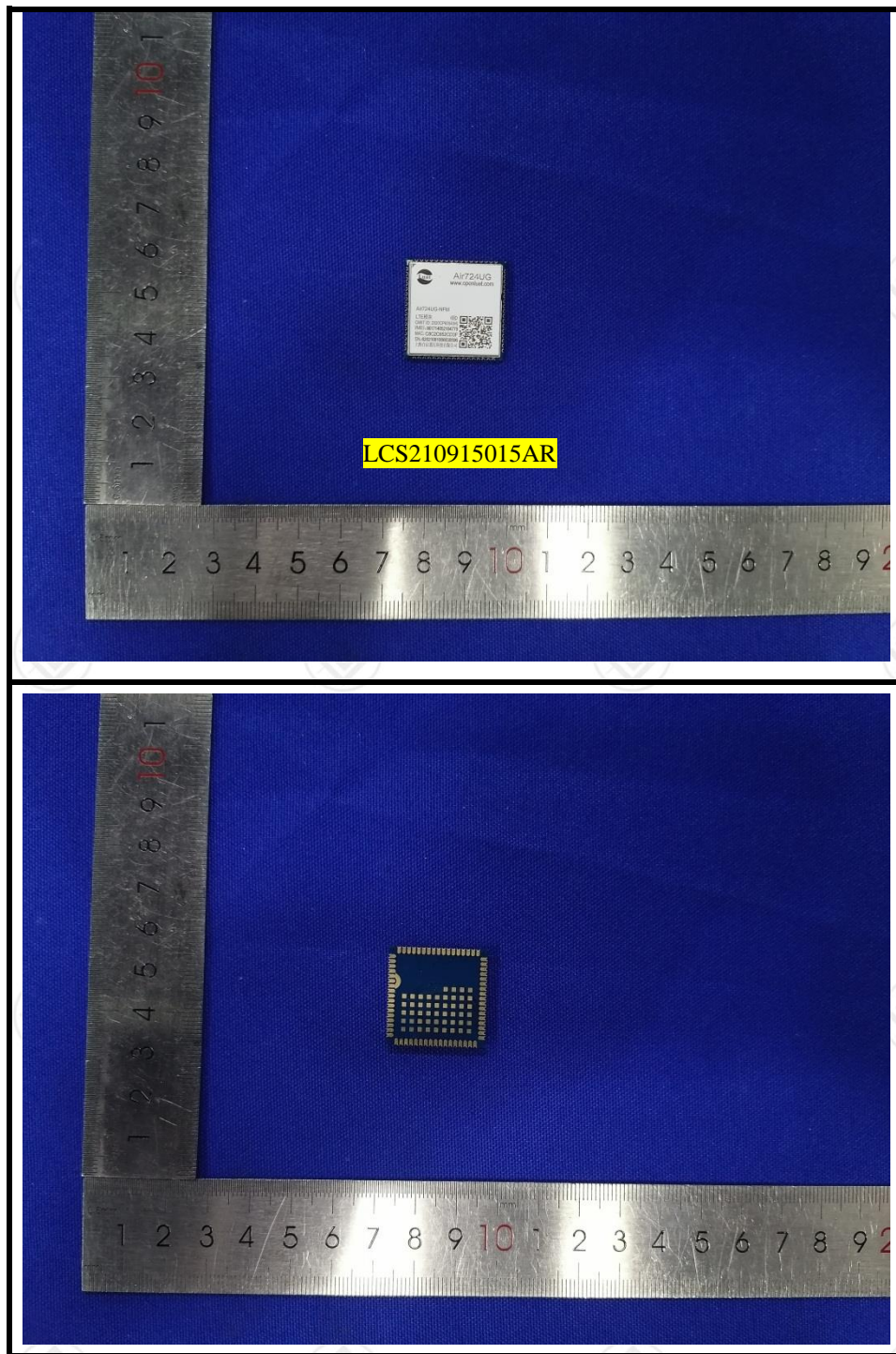


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The photo(s) of the sample

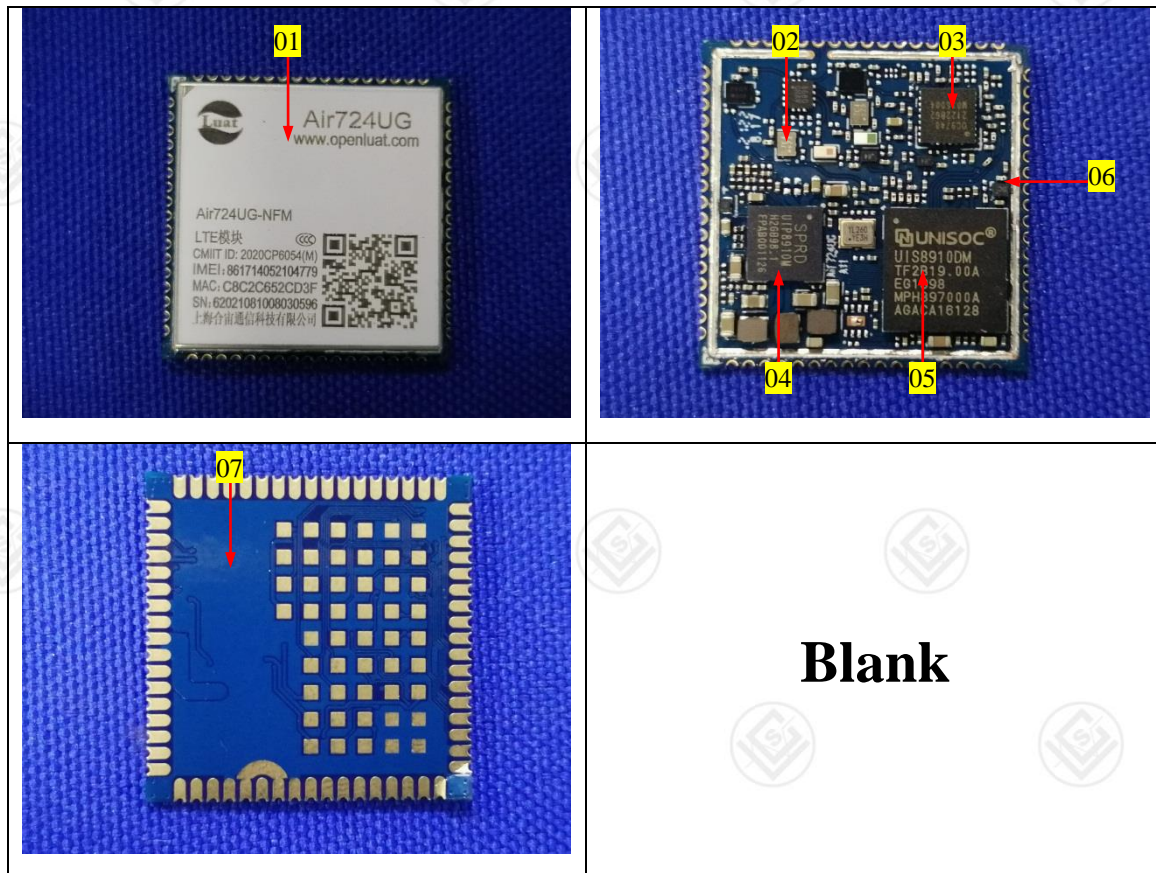




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Statement:

1. The report is considered invalid without approved signature, special seal;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which LCS hasn't verified;
3. The result(s) shown in this report refer only to the sample(s) tested.;
4. Without written approval of LCS, this report can't be reproduced except in full;
5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

*** End of Report ***