

UNI-TREND TECHNOLOGY (CHINA) CO.,LTD Applicant:

NO.6, GONG YE BEI 1ST ROAD, SONGSHAN LAKE NATIONAL HIGH-TECH INDUSTRIAL DEVELOPMENT ZONE, DONGGUAN CITY,

GUANGDONG PROVINCE, CHINA

GUSSIE XIANG Attn:

Sample Description:

One (1) piece of submitted sample said to be : Item Name : **Thermal I** Thermal Imager For Smartphone

Item No. UTi260M Reference No. UTi256M China Country of Origin

Jul 12, 2022 & Aug 09, 2022 & Aug 11, 2022 Jul 12, 2022 to Aug 18, 2022 Date Sample Received

Testing Period





Date:

Aug 18, 2022

Tests conducted:

As requested by the applicant, refer to attached page(s) for details.

To be continued









Conclusion:

Tested Sample Standard Result Tested components of Restriction of the use of certain hazardous Pass submitted sample

substance in electrical and electronic equipment (RoHS Directive 2011/65/EU and amendment Commission Delegated Directive (EU) 2015/863)

Restricted Substances Content Requirement in Regulation 3(1) of The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (S.I. 2012

No. 3032) as amended

Authorized by:

For Intertek Testing Services Shenzhen Ltd.

Guangzhou Branch, Hardlines

Victor T.J/Wang Assistant General Manager



Pass

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Intertek Testing Services Shenzhen Limited, Guangzhou Branch



Tests Conducted

RoHS Chemical Test 1

Screening Test by XRF Spectroscopy

Cadmium (Cd), Lead (Pb), Mercury (Hg), Chromium (Cr) and Bromine (Br) content were measured with reference to IEC 62321-3-1 Edition 1.0:2013 by XRF spectroscopy and chemical confirmation test for RoHS restricted substances.

(A) Results:

Screened Components		XRF Results	Chemical Confirmation Result
	Cd	ND	
	Pb	ND	
<u>(1)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(2)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(3)</u>	Hg	ND	NT
	Cr	ND	
	Br	NT	
	Cd	ND	
	Pb	ND	
<u>(4)</u>	Hg	ND	NT
	Cr	ND	
	Br	NT	
<u>(5)</u>	Cd	ND	
	Pb	ND	DDDa : ND
	Hg	ND	PBBs : ND PBDEs : ND
	Cr	ND	1 5525.145
	Br	Inconclusive	







Tests Conducted

Screened Components		XRF Results	Chemical Confirmation Result
	Cd	ND	
	Pb	ND	
<u>(6)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	DDDs : ND
<u>(7)</u>	Hg	ND	PBBs : ND PBDEs : ND
	Cr	ND	T DDE3. ND
	Br	Inconclusive	
	Cd	ND	
	Pb	ND	
<u>(8)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(9)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(10)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	DDD ND
<u>(11)</u>	Hg	ND	PBBs : ND PBDEs : ND
	Cr	ND	T DDES : ND
	Br	Inconclusive	
	Cd	ND	
	Pb	ND	
<u>(12)</u>	Hg	ND	NT
•	Cr	ND	
	Br	ND	





Tests Conducted

Screened Components		XRF Results	Chemical Confirmation Result
	Cd	ND	
	Pb	ND	
<u>(13)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(14)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	PBBs : ND
<u>(15)</u>	Hg	ND	PBDEs : ND
	Cr	ND	
	Br	Inconclusive	
	Cd	ND	
	Pb	ND	
<u>(16)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(17)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	_
<u>(18)</u>	Hg	ND	Cr ⁶⁺ : Negative
	Cr	Inconclusive	
	Br	NT	
<u>(19)</u>	Cd	ND	
	Pb	ND	
	Hg	ND	NT
	Cr	ND	
	Br	ND	



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Tests Conducted

Screened Components		XRF Results	Chemical Confirmation Result
	Cd	ND	
	Pb	ND	
<u>(20)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(21)</u>	Hg	ND	Cr ⁶⁺ : Negative
	Cr	Inconclusive	
	Br	NT	
	Cd	ND	
	Pb	ND	
<u>(22)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(23)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(24)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(25)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(26)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	



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Tests Conducted

Screened Components		XRF Results	Chemical Confirmation Result
	Cd	ND	
	Pb	ND	
<u>(27a)</u>	Hg	ND	Cr ⁶⁺ : Negative
	Cr	Inconclusive	
	Br	NT	
	Cd	ND	
	Pb	ND	
<u>(27b)</u>	Hg	ND	NT
	Cr	ND	
	Br	NT	
	Cd	ND	
	Pb	ND	
<u>(27c)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(28)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(29)</u>	Hg	ND	NT
	Cr	Detected	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(30)</u>	Hg	ND	Cr ⁶⁺ : Negative
	Cr	Inconclusive	
	Br	NT	
	Cd	ND	
	Pb	ND	
<u>(31)</u>	Hg	ND	NT
\	Cr	ND	
	Br	NT	







Tests Conducted

Screened Components		XRF Results	Chemical Confirmation Result
	Cd	ND	
	Pb	ND	
<u>(32)</u>	Hg	ND	NT
	Cr	ND	
	Br	NT	
	Cd	ND	
	Pb	ND	
<u>(33)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(34)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
<u>(35)</u>	Cd	ND	·
	Pb	ND	
	Hg	ND	NT
	Cr	ND	
	Br	NT	





Tests Conducted

(B) Phthalate Screening Test

Non-toys:

Screened Components	Items	Screened Results(phthalates)	Chemical Confirmation Result	
	DEHP	Р		
(4)	BBP	Р	NT	
<u>(1)</u>	DBP	Р	IN I	
	DIBP	Р		
	DEHP	Р		
(E)	BBP	Р	NT	
<u>(5)</u>	DBP	Р	IN I	
	DIBP	Р		
	DEHP	Р		
(7)	BBP	Р	NT	
<u>(7)</u>	DBP	Р	IN I	
	DIBP	Р		
	DEHP	Р		
(0)	BBP	Р	NIT	
<u>(9)</u>	DBP	Р	NT	
	DIBP	Р		
	DEHP	Р		
(40)	BBP	Р	NIT	
<u>(10)</u>	DBP	Р	NT	
	DIBP	Р		
	DEHP	Р		
(4.4)	BBP	Р	NT	
<u>(11)</u>	DBP	Р	IN I	
	DIBP	Р		
	DEHP	Р		
(40)	BBP	Р	NT	
<u>(12)</u>	DBP	Р	IN I	
	DIBP	Р		
	DEHP	Р		
(42)	BBP	Р	NT	
<u>(13)</u>	DBP	Р	INI	
	DIBP	Р		
(14)	DEHP	Р		
	BBP	Р	NT	
	DBP	Р	IN I	
	DIBP	Р		
	DEHP	Р		
(15)	BBP	Р	NIT	
<u>(15)</u>	DBP	Р	NT	
	DIBP	Р		







Tests Conducted

Screened Components	Items	Screened Results(phthalates)	Chemical Confirmation Result
	DEHP	Р	
(46)	BBP	Р	NT
<u>(16)</u>	DBP	Р	IN I
	DIBP	Р	
	DEHP	Р	
(22)	BBP	Р	NIT
<u>(22)</u>	DBP	Р	NT
	DIBP	Р	
	DEHP	Р	
(00)	BBP	Р	NIT
<u>(23)</u>	DBP	Р	NT
	DIBP	Р	
	DEHP	Р	
(0.4)	BBP	Р	NIT
<u>(24)</u>	DBP	P	NT
	DIBP	P	
	DEHP	P	
(0.5)	BBP	P	NIT
<u>(25)</u>	DBP	P	NT
	DIBP	P	
	DEHP	P	
(00)	BBP	P	NIT
<u>(26)</u>	DBP	P	NT
	DIBP	P	
	DEHP	P	
(07.)	BBP	P	NIT
<u>(27c)</u>	DBP	P	NT
	DIBP	P	
	DEHP	P	
(22)	BBP	P	·
<u>(28)</u>	DBP	P	NT
	DIBP	P	
	DEHP	P	
(00)	BBP	P	NIT
<u>(33)</u>	DBP	P	NT
	DIBP	P	
	DEHP	P	
(0.1)	BBP	P	N/
<u>(34)</u>	DBP	P	NT
	DIBP	P	
	וטוט	I	

DBP =Dibutyl phthalate DEHP = Di-(2-ethyl hexyl) phthalate BBP = Benzyl butyl phthalate
DIBP = Di-(iso-butyl) phthalate



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Tests Conducted

Detected = Below the lower screening limit of table (C) and pass

ND = Not detected

NT = Not tested

P = Pass

Negative = A negative test result indicated the concentration of Cr(VI) is less than threshold of 0.10 µg/cm² for boiling-water-extraction procedures by UV-VIS Spectrophotometer analysis. The coating is considered a non-Cr(VI) based coating.

(C) Screening Limits

(C1) XRF Screening limits in mg/kg for Regulated Elements in Various Matrices

Element	Polymer Materials	Metallic Materials	Composite Materials
Cd	P ≤70 < X < 130 ≤ F	P ≤ 70 < X < 130 ≤ F	P ≤ 70 < X < 150 ≤ F
Pb	P ≤ 700 < X < 1300≤ F	P ≤ 700 < X < 1300 ≤ F	P ≤ 500< X < 1500 ≤ F
Hg	P ≤ 700< X < 1300 ≤ F	P ≤ 700 < X < 1300 ≤ F	P ≤ 500 < X < 1500 ≤ F
Cr	P ≤ 700< X	P ≤ 700 < X	P ≤ 500 < X
Br	P ≤ 300< X	Not applicable	P ≤ 250 < X

(C2) Preliminary Screening limits in mg/kg for phthalates test.

Phthalates	Polymer Materials
Dibutyl phthalate (DBP)	P ≤ 600< X
Di-(2-ethyl hexyl) phthalate (DEHP)	P ≤ 600< X
Benzyl butyl phthalate (BBP)	P ≤ 600< X
Di-(iso-butyl) phthalate (DIBP)	P ≤ 600< X

P = Pass

X = Inconclusive result

F = Fail

mg/kg = milligram per kilogram = ppm



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Tests Conducted

(D) Estimated Detection Limits in mg/kg for Regulated Elements in Various Matrices

Element	Polymer Materials	Metallic Materials	Composite Materials
Cd	50	70	70
Pb	100	200	200
Hg	100	200	200
Cr	100	200	200
Br	200	Not applicable	200

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 and Chemical Confirmation Test Report is sufficient for its/his/her purposes.

The results 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 is required to obtain quantitative data.

(E) Chemical Test Methods:

Testing Item	Testing Method	Detection Limit
(PBBs)& Polybrominated	With reference to IEC 62321-6 Edition 1.0:2015, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary	5 mg/kg
Chromium (VI) (Cr ⁶⁺) Content	With reference to IEC 62321-7-1 Edition 1.0:2015, by boiling water extraction and determined by UV-VIS Spectrophotometer	0.10 μg/cm ²
Dibutyl phthalate (DBP) & Di-(2-ethyl hexyl) phthalate (DEHP) & Benzyl butyl phthalate (BBP) & Di-(iso-butyl) phthalate (DIBP)	With reference to IEC 62321-8 Edition 1.0:2017, by Gas Chromatographic-Mass Spectrometric (GC-MS) analysis	50 mg/kg







Tests Conducted

(F) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)
Dibutyl phthalate (DBP)	0.1% (1000 mg/kg)
Di-(2-ethyl hexyl) phthalate (DEHP)	0.1% (1000 mg/kg)
Benzyl butyl phthalate (BBP)	0.1% (1000 mg/kg)
Di-(iso-butyl) phthalate (DIBP)	0.1% (1000 mg/kg)

The above limits were quoted from Directive 2011/65/EU and amendment Commission Delegated Directive (EU) 2015/863 for homogeneous material.

Tested Components: See component list in the last section of this report







Tests Conducted

2 **RoHS Chemical Test**

Screening Test by XRF Spectroscopy

Cadmium (Cd), Lead (Pb), Mercury (Hg), Chromium (Cr) and Bromine (Br) content were measured with reference to IEC 62321-3-1 Edition 1.0:2013 by XRF spectroscopy and chemical confirmation test for RoHS restricted substances.

(A) Results:

Screened Components		XRF Results	Chemical Confirmation Result
	Cd	ND	
	Pb	ND	
<u>(1)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(2)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(3)</u>	Hg	ND	NT
	Cr	ND	
	Br	NT	
	Cd	ND	
	Pb	ND	
<u>(4)</u>	Hg	ND	NT
	Cr	ND	
	Br	NT	
	Cd	ND	
	Pb	ND	DDDa - ND
<u>(5)</u>	Hg	ND	PBBs : ND PBDEs : ND
	Cr	ND	1 5523.115
	Br	Inconclusive	







Tests Conducted

Screened Components		XRF Results	Chemical Confirmation Result
	Cd	ND	
	Pb	ND	
<u>(6)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	PBBs : ND
<u>(7)</u>	Hg	ND	PBBS : ND PBDEs : ND
	Cr	ND	1 5520 : 115
	Br	Inconclusive	
	Cd	ND	
	Pb	ND	
<u>(8)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	1
<u>(9)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(10)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	DDD - ND
<u>(11)</u>	Hg	ND	PBBs : ND PBDEs : ND
	Cr	ND]
	Br	Inconclusive	
	Cd	ND	
	Pb	ND	1
<u>(12)</u>	Hg	ND	NT
	Cr	ND	1
	Br	ND	1



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Tests Conducted

Screened Components		XRF Results	Chemical Confirmation Result
	Cd	ND	
	Pb	ND	
<u>(13)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(14)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	DDD ND
<u>(15)</u>	Hg	ND	PBBs : ND PBDEs : ND
	Cr	ND	T DDE3. ND
	Br	Inconclusive	
	Cd	ND	
	Pb	ND	
<u>(16)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(17)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(18)</u>	Hg	ND	Cr ⁶⁺ : Negative
	Cr	Inconclusive	
	Br	NT	
	Cd	ND	
	Pb	ND	
<u>(19)</u>	Hg	ND	NT
* 	Cr	ND	
	Br	ND	



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Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
	Cd	ND	
	Pb	ND	
(20)	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(21)</u>	Hg	ND	Cr ⁶⁺ : Negative
	Cr	Inconclusive	
	Br	NT	
	Cd	ND	
	Pb	ND	
<u>(22)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(23)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(24)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(25)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(26)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	



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Tests Conducted

Screened Components		XRF Results	Chemical Confirmation Result
	Cd	ND	
	Pb	ND	
<u>(27a)</u>	Hg	ND	Cr ⁶⁺ : Negative
	Cr	Inconclusive	
	Br	NT	
	Cd	ND	
	Pb	ND	
<u>(27b)</u>	Hg	ND	NT
	Cr	ND	
	Br	NT	
	Cd	ND	
	Pb	ND	
<u>(27c)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(28)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(29)</u>	Hg	ND	NT
	Cr	Detected	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(30)</u>	Hg	ND	Cr ⁶⁺ : Negative
	Cr	Inconclusive	
	Br	NT	
	Cd	ND	
	Pb	ND	
<u>(31)</u>	Hg	ND	NT
	Cr	ND	
	Br	NT	



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Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
	Cd	ND	
	Pb	ND	
<u>(32)</u>	Hg	ND	NT
	Cr	ND	
	Br	NT	
	Cd	ND	
	Pb	ND	
<u>(33)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
	Pb	ND	
<u>(34)</u>	Hg	ND	NT
	Cr	ND	
	Br	ND	
	Cd	ND	
<u>(35)</u>	Pb	ND	
	Hg	ND	NT
	Cr	ND	
	Br	NT	



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Intertek Testing Services Shenzhen Limited, Guangzhou Branch



Tests Conducted

(B) Phthalate Screening Test

Non-toys:

Screened Components	Items	Screened Results(phthalates)	Chemical Confirmation Result
	DEHP	Р	
(4)	BBP	Р	NT
<u>(1)</u>	DBP	Р	IN I
	DIBP	Р	
	DEHP	Р	
(E)	BBP	Р	NT
<u>(5)</u>	DBP	Р	IN I
	DIBP	Р	
	DEHP	Р	
(7)	BBP	Р	NT
<u>(7)</u>	DBP	Р	IN I
	DIBP	Р	
	DEHP	Р	
(0)	BBP	Р	NIT
<u>(9)</u>	DBP	Р	NT
	DIBP	Р	
	DEHP	Р	
(40)	BBP	Р	NIT
<u>(10)</u>	DBP	Р	NT
	DIBP	Р	
	DEHP	Р	
(4.4)	BBP	Р	NT
<u>(11)</u>	DBP	Р	IN I
	DIBP	Р	
	DEHP	Р	
(40)	BBP	Р	NT
<u>(12)</u>	DBP	Р	IN I
	DIBP	Р	
	DEHP	Р	
(42)	BBP	Р	NT
<u>(13)</u>	DBP	Р	INI
	DIBP	Р	
	DEHP	Р	
<u>(14)</u>	BBP	Р	NT
	DBP	Р	IN I
	DIBP	Р	
	DEHP	Р	
(15)	BBP	Р	NT
<u>(15)</u>	DBP	Р	IN I
	DIBP	Р	







Tests Conducted

Screened Components	Items	Screened Results(phthalates)	Chemical Confirmation Result
	DEHP	Р	
(4.0)	BBP	Р	NT
<u>(16)</u>	DBP	Р	IN I
	DIBP	Р	
	DEHP	Р	
(22)	BBP	Р	NT
<u>(22)</u>	DBP	Р	IN I
	DIBP	Р	
	DEHP	Р	
(22)	BBP	Р	NT
<u>(23)</u>	DBP	Р	INI
	DIBP	Р	
	DEHP	Р	
(24)	BBP	Р	NT
<u>(24)</u>	DBP	Р	IN I
	DIBP	Р	
	DEHP	Р	
(25)	BBP	Р	NT
<u>(25)</u>	DBP	Р	
	DIBP	Р	
	DEHP	Р	
(26)	BBP	Р	NT
<u>(26)</u>	DBP	Р	INT
	DIBP	Р	
	DEHP	Р	
<u>(27c)</u>	BBP	Р	NT
<u>(276)</u>	DBP	Р	INI
	DIBP	Р	
	DEHP	Р	
(20)	BBP	Р	NT
<u>(28)</u>	DBP	Р	INI
	DIBP	Р	
	DEHP	Р	
<u>(33)</u>	BBP	Р	NT
<u>(33)</u>	DBP	Р	INI
ļ	DIBP	Р	
	DEHP	Р	
<u>(34)</u>	BBP	Р	NT
	DBP	Р	

DBP =Dibutyl phthalate
DEHP = Di-(2-ethyl hexyl) phthalate
BBP = Benzyl butyl phthalate
DIBP = Di-(iso-butyl) phthalate



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Tests Conducted

Detected = Below the lower screening limit of table (C) and pass

ND = Not detected

NT = Not tested

P = Pass

Negative = A negative test result indicated the concentration of Cr(VI) is less than threshold of 0.10 µg/cm² for boiling-water-extraction procedures by UV-VIS Spectrophotometer analysis. The coating is considered a non-Cr(VI) based coating.

(C) Screening Limits

(C1) XRF Screening limits in mg/kg for Regulated Elements in Various Matrices

Element	Polymer Materials	Metallic Materials	Composite Materials
Cd	P ≤70 < X < 130 ≤ F	P ≤ 70 < X < 130 ≤ F	P ≤ 70 < X < 150 ≤ F
Pb	P ≤ 700 < X < 1300≤ F	P ≤ 700 < X < 1300 ≤ F	P ≤ 500< X < 1500 ≤ F
Hg	P ≤ 700< X < 1300 ≤ F	P ≤ 700 < X < 1300 ≤ F	P ≤ 500 < X < 1500 ≤ F
Cr	P ≤ 700< X	P ≤ 700 < X	P ≤ 500 < X
Br	P ≤ 300< X	Not applicable	P ≤ 250 < X

(C2) Preliminary Screening limits in mg/kg for phthalates test.

Phthalates	Polymer Materials
Dibutyl phthalate (DBP)	P ≤ 600< X
Di-(2-ethyl hexyl) phthalate (DEHP)	P ≤ 600< X
Benzyl butyl phthalate (BBP)	P ≤ 600< X
Di-(iso-butyl) phthalate (DIBP)	P ≤ 600< X

P = Pass

X = Inconclusive result

F = Fail

mg/kg = milligram per kilogram = ppm







Tests Conducted

(D) Estimated Detection Limits in mg/kg for Regulated Elements in Various Matrices

Element	Polymer Materials	Metallic Materials	Composite Materials
Cd	50	70	70
Pb	100	200	200
Hg	100	200	200
Cr	100	200	200
Br	200	Not applicable	200

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 and Chemical Confirmation Test Report is sufficient for its/his/her purposes.

The results 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 is required to obtain quantitative data.

(E) Chemical Test Methods:

Testing Item	Testing Method	Detection Limit
(PBBs)& Polybrominated	With reference to IEC 62321-6 Edition 1.0:2015, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary	5 mg/kg
Chromium (VI) (Cr ⁶⁺) Content	With reference to IEC 62321-7-1 Edition 1.0:2015, by boiling water extraction and determined by UV-VIS Spectrophotometer	0.10 μg/cm ²
Dibutyl phthalate (DBP) & Di-(2-ethyl hexyl) phthalate (DEHP) & Benzyl butyl phthalate (BBP) & Di-(iso-butyl) phthalate (DIBP)	With reference to IEC 62321-8 Edition 1.0:2017, by Gas Chromatographic-Mass Spectrometric (GC-MS) analysis	50 mg/kg







Tests Conducted

(F) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)
Dibutyl phthalate (DBP)	0.1% (1000 mg/kg)
Di-(2-ethyl hexyl) phthalate (DEHP)	0.1% (1000 mg/kg)
Benzyl butyl phthalate (BBP)	0.1% (1000 mg/kg)
Di-(iso-butyl) phthalate (DIBP)	0.1% (1000 mg/kg)

The above limits were quoted from The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (S.I. 2012 No. 3032) as amended, Regulation 3(1) on restricted substances content in homogeneous materials.

Tested Components: See component list in the last section of this report



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Tests Conducted

Component list:

- black plastic with adhesive white printing
- silver color glass
- (2) (3) red treated metal
- (4) (5) black treated metal
- conformal coating with green solder mask & copper color metal pad & fibreboard (PCB)
- (6) dull silver color glass
- (7) (8) black foam with transparent double sides adhesive tape
- black glass and copper color metal
- (9) black body & silver color metal(IC)
- yellow plastic label with coatings (black, white) (10)
- (11)yellow/black FPC
- (12)black body & silver color metal(IC)
- (13) black body & silver color metal(IC)
- (14)black body & silver color metal(IC)
- conformal coating with green solder mask & copper color metal pad & fibreboard (PCB) (15)
- (16) black plastic wih gold color/silver color metal
- (17)black ceramic with silver color metal (SMD capacitor)
- (18)silver color metal
- (19) grey-brown ceramic with silver color metal(SMD capacitor)
- (20) (21) black ceramic with silver color metal (SMD capacitor)
- silver color sheet
- (22) black body with brown printing & silver color metal (SMD diode)
- (23) black plastic with gold color/silver color metal
- (24)brown FPC with white printing
- (25) black plastic
- (26)transparent blue plastic
- plug
 - a)silver color metal sheet
 - b)silver color metal (pin)
 - c)grey plastic
- brown FPC (28)
- (29)light green glass
- (30)black treated metal
- (31) silver color metal
- copper color metal(wire) (32)
- (33) black plastic
- light blue soft plastic (34)
- silver color metal (screw) (35)

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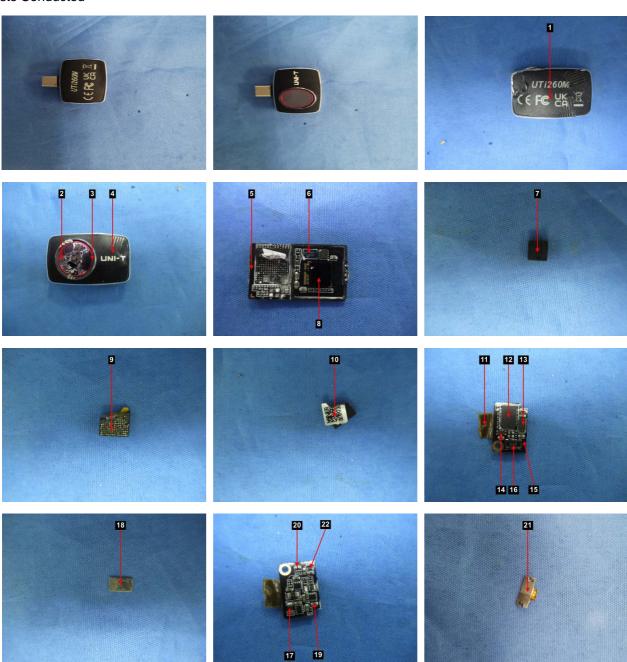




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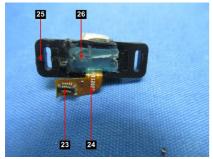
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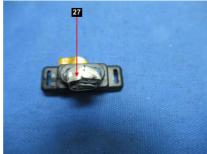


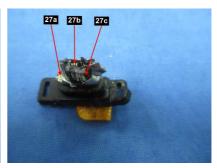
Test Report

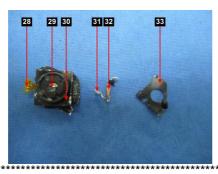
Tests Conducted

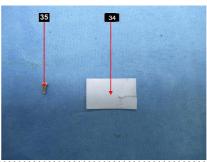
Number: GZHH00460402











End of report

The statements of conformity reported have considered the decision rule agreed, namely that Intertek have taken account of measurement uncertainty as calculated by Intertek, and applied according to ILAC-G8/09:2019 (Non-binary acceptance based on guard band $\mathbf{w} = \mathbf{U}$) except designation from the customer, regulation or test specification. This decision rule only applies to the numeric test results.

The sample(s) and sample information hereto are provided by the client who shall be solely responsible for the authenticity and integrity thereof. The results shown in this report relate only to the sample(s) tested. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct. This report shall not be reproduced unless with prior written approval from Intertek Testing Services Shenzhen Limited, Guangzhou Branch. The testing data and result issued by this report are just for scientific research, teaching, internal quality control, product research and development etc. on reference only in the territory of the People's Republic of China.

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