TEST REPORT

Applicant	:	Dongguan Yanlong Elect.Co.,Ltd
Address	:	BlockA,Guanren Industry park,xiegang town,donguan city,guangdong province,china
Manufacturer	:	Dongguan Yanlong Elect.Co.,Ltd
Address	:	BlockA,Guanren Industry park,xiegang town,donguan city,guangdong province,china
Factory		Dongguan Yanlong Elect.Co.,Ltd
Address		BlockA,Guanren Industry park,xiegang town,donguan city,guangdong province,china
Product Name	:	multimedia component certification
Trade Mark	:	N/A
Model No.	:	SPK-170, SPK-480
Test Requested	:	As specified by client, to determine that the tested sample is in conformity with Council Directive 2011/65/EU&Annex II amending Annex (EU)2015/863-Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS).
Test method	:	With reference to IEC 62321-2017 Procedures for the Determination of Levels of Regulated Substances in Electrotechnical Products, XRF scanning first test, then using chemical test method to confirm.
Date of Receiver	:	April 02, 2019
Date of Test	:	April 02, 2019 to April 09, 2019
Date of Issue	:	April 09, 2019
Test Report Form No	:	NTC-ROHS-E2.0
Test Result	:	Pass *

This Test Report is Issued Under the Authority of :

Compiled by	Approved by
Pepper Wang / Engineer	Han Song / Manager

*Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of Shenzhen NTC Co., Ltd. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

List of test items:

Testing Item	Measuring method	Instrument	Report limit
Cadmium (Cd)	IEC62321-3-1:2013/IEC62321-5:2013	ICP-AES	2ppm
Lead (Pb)	IEC62321-3-1:2013/IEC62321-5:2013	ICP-AES	2ppm
Mercury (Hg)	IEC 62321-4:2013	ICP-AES	2ppm
Chromium Cr6+	IEC62321-7-2:2017	UV-VIS	2ppm 5ppm
PBBs/PBDEs	IEC 62321-6:2015	GC/MS	5ppm
Di(2-ethylhexyl) phthalate(DEHP)	IEC 62321-8: Ed 1.0	GC/MS	5ppm
Benzylbutyl Phthalate(BBP)	IEC 62321-8: Ed 1.0	GC/MS	5ppm
Dibutyl Phthalate(DBP)	IEC 62321-8: Ed 1.0	GC/MS	5ppm
Diisobutyl phthalate(DIBP)	IEC 62321-8: Ed 1.0	GC/MS	5ppm

General remarks:

The submitted samples were found to comply with the above test requested.

Test result: (Unit: mg/kg)

Serial No	Test Part Name	Restricted Substances	Results of EDXRF	Result of Chemical Testing	Conclusion on RoHS
1	Black plastic case	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
2	White paint	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
3	Green plastic	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
4	Glue	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
5	The magnet	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	---	---	---
		PBDEs	---	---.	---
6	Loudspeaker membranes	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
7	The black line	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
8	The red line	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply

9	Copper wire	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	---.	---.	---.
		PBDEs	---.	---.	---.
10	PCB	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
11	Spring	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	---.	---.	---
		PBDEs	---.	---.	---
12	Casing	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
13	Electrolytic capacitor	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
14	SMD resistor	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
15	The patch capacitance	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
16	IC	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
17	The white line	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply

18	Indicator light	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
19	Green plastic	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
20	The headset plug	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	---.	---.	---.
		PBDEs	---.	---.	---.
21	USB plastic	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
22	White plastic	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply
23	Black sponge	Cr6+	N.D.	N.D.	Comply
		Cd	N.D.	N.D.	Comply
		Pb	N.D.	N.D.	Comply
		Hg	N.D.	N.D.	Comply
		PBBs	N.D.	N.D.	Comply
		PBDEs	N.D.	N.D.	Comply

Note:

(1) (a) It is the result on total Br while test PBBs/PBDEs by XRF, It is the result on total Cr while test Cr6+ by XRF;

(b) Results are obtained by XRF for primary screening and further chemical testing by ICP-OES (for Pb, Cd and Hg), UV-Vis (for Cr6+) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-2017 (unit: mg/kg);

	Polymer	Metal	Composite Materials
Cd	BL≤(70-3σ)<X<(130+3σ)≤OL	BL≤(70-3σ)<X<(70+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
Cr	BL≤(700-3σ)<X	BL≤(700-3σ)<X	BL≤(500-3σ)<X
Br	BL≤(300-3σ)<X	---	BL≤(250-3σ)<X

(c) OL=Over Limit, BL=Below Limit, IN=Inconclusive, LOD= Limit of Detection;

(d) The XRF screening test for RoHS elements –The reading may be different to the actual content in the sample be of non-uniformity composition.

(2) (a) mg/kg=ppm=0.0001%, N.D.=Not detected(<MDL), MDL=Method Detection Limit, "---"=Not conducted, "/"=Not available.

(b) According to IEC 62321-2017, result on Cr6+ for metal coating sample is shown as Positive/Negative.

Negative= Absence of Cr^{6+} coating, Positive= Presence of Cr^{6+} coating

(3) RoHS Requirementz

	limits
Lead (Pb)	0.1% (1000ppm)
Cadmium (Cd)	0.01% (100ppm)
Mercury (Hg)	0.1% (1000ppm)
Chromium Cr6+	0.1% (1000ppm)
Polybrominated biphenyls PBBs	0.1% (1000ppm)
Polybrominated diphenyl ethers PBDEs	0.1% (1000ppm)

The above limits are reference with 2011/65/EU.

(4) Specimens, which requested to determine Cadmium, Mercury and Lead Content, have been dissolved completely.

(5) In accordance with RoHS Directive (2011/65/EU), the lead content in copper alloy is exempted up to 4 % by weight.

(6) In accordance with RoHS Directive (2011/65/EU), the lead content in glass of electronic components is exempted.

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

Test menthod :With reference to IEC 62321-8 :2017; Analysis was conducted by GC-MS

Element	Di(2-ethylhexyl) phthalate(DEHP) (mg/kg)	Benzylbutyl Phthalate(BBP) (mg/kg)	Dibutyl Phthalate(DBP) (mg/kg)	Diisobutyl phthalate(DIBP) (mg/kg)
Detection Limit	50	50	50	50
ROHS Requirements	1000	1000	1000	1000
Sample 1	N.D.	N.D.	N.D.	N.D.
Sample 2	N.D.	N.D.	N.D.	N.D.
Sample 3	N.D.	N.D.	N.D.	N.D.
Sample 4	N.D.	N.D.	N.D.	N.D.
Sample 6	N.D.	N.D.	N.D.	N.D.
Sample 7	N.D.	N.D.	N.D.	N.D.
Sample 8	N.D.	N.D.	N.D.	N.D.
Sample 10	N.D.	N.D.	N.D.	N.D.
Sample 12	N.D.	N.D.	N.D.	N.D.
Sample 13	N.D.	N.D.	N.D.	N.D.
Sample 14	N.D.	N.D.	N.D.	N.D.
Sample 15	N.D.	N.D.	N.D.	N.D.
Sample 16	N.D.	N.D.	N.D.	N.D.
Sample 17	N.D.	N.D.	N.D.	N.D.
Sample 18	N.D.	N.D.	N.D.	N.D.
Sample 19	N.D.	N.D.	N.D.	N.D.
Sample 21	N.D.	N.D.	N.D.	N.D.
Sample 22	N.D.	N.D.	N.D.	N.D.
Sample 23	N.D.	N.D.	N.D.	N.D.
Result	**Pass**	**Pass**	**Pass**	**Pass**

Equipment Used during Test :

Equipment	Model /Type	Cal. Date	Valid. Date
GC-MS	SHIMADZU QP-2010 Plus	2018-7-10	2019-7-09
	ThermoFisher TRACE DSQ	2018-8-20	2019-8-19
XRF	TOPRISE EDX-1800	2018-7-10	2019-7-09
	UniqueMetrical Technology Co.,Ltd UX300	2018-8-20	2019-8-19

Photo documentation
Photo 1

Photo 2

Photo 3

Photo 4

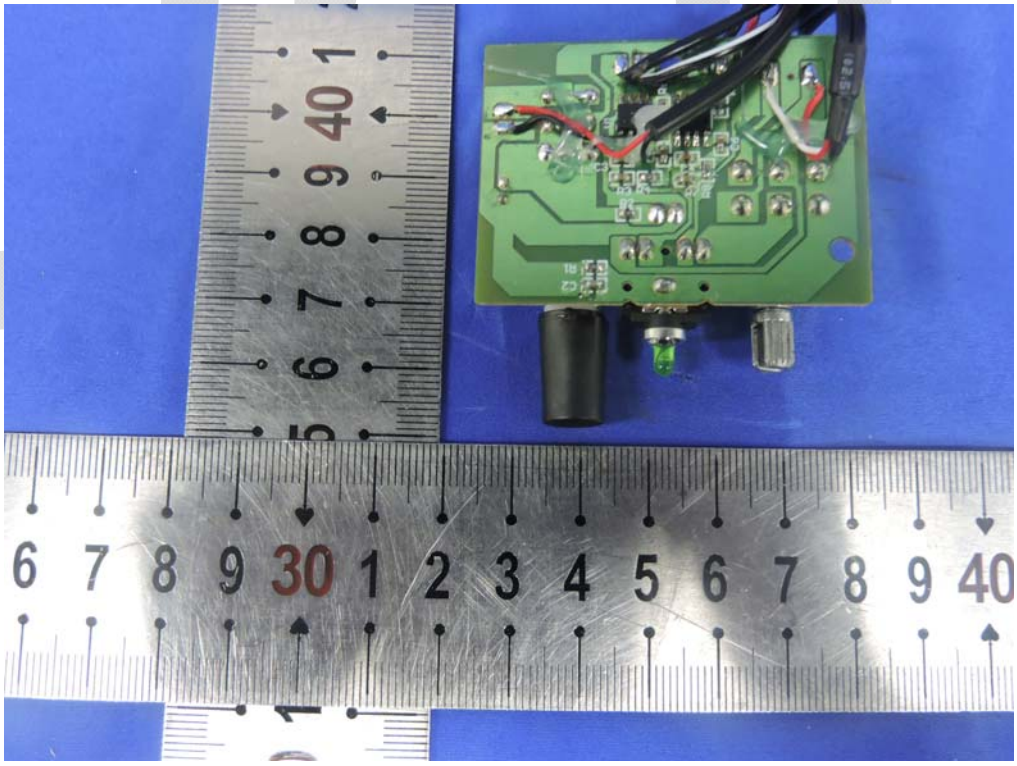
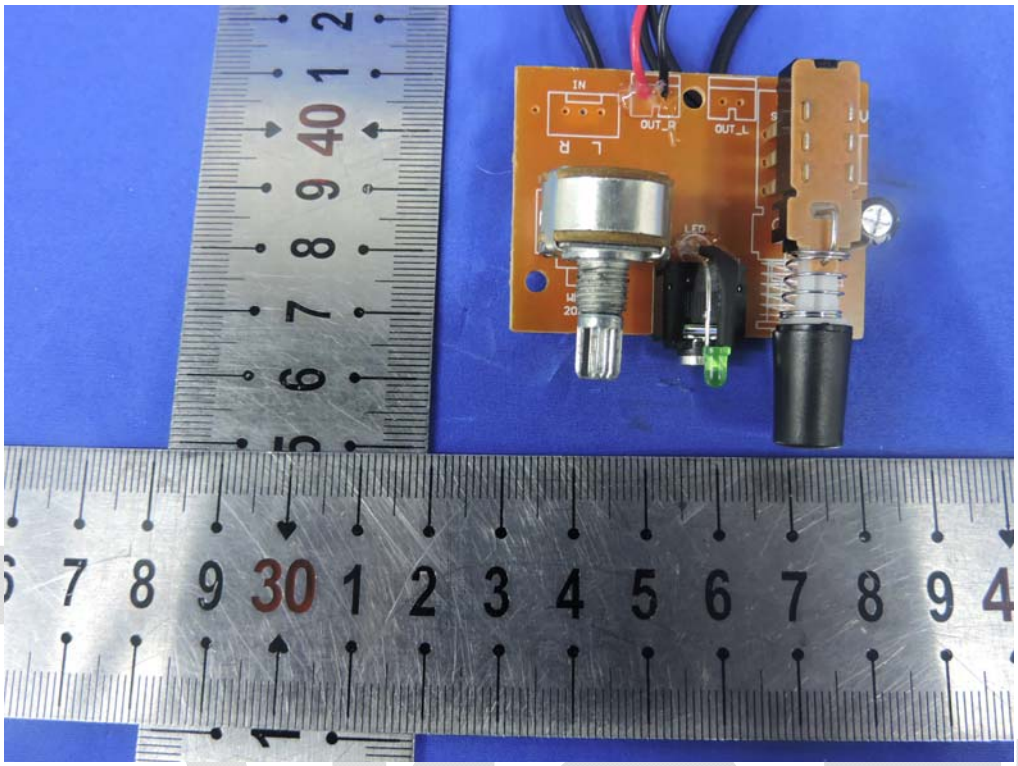


Photo 5



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