

EMC TEST REPORT

For

Shantou Chaoyang District Shengtena Electronic Factory

Bluetooth headphone

Test Model: STN-16

Additional Model No.:

S450,S460,STN--019,STN-05,STN-07,STN-08,STN-10,STN-11,STN-12,STN-13,STN-16,STN-17,STN-18,STN-19,B60,B61,B62,B63,B64,B65,B74,B20,HPBT345,HPBT380,HPBT365,FBHP385

Prepared for : Shantou Chaoyang District Shengtena Electronic Factory
Electronic Factory
Address : Gounan Village Industrial Area,Gurao,Chaoyang District,Shantou
City, China

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
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Date of receipt of test sample : July 20,2017
Number of tested samples : 1
Serial number : Prototype
Date of Test : July 20,2017~ August 26,2017
Date of Report : August 26,2017



EMC TEST REPORT

ETSI EN 301 489-17 V3.1.1(2017-02).

ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU

Report Reference No. : LCS170718009AE

Date Of Issue : August 26,2017

Testing Laboratory Name..... : Shenzhen LCS Compliance Testing Laboratory Ltd.

Address..... : 1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China

Testing Location/ Procedure..... : Full application of Harmonised standards Partial application of Harmonised standards Other standard testing method

Applicant's Name..... : Shantou Chaoyang District Shengtena Electronic Factory

Address..... : Gounan Village Industrial Area,Gurao,Chaoyang District,Shantou City, China

Test Specification

**Standard..... : ETSI EN 301 489-1 V2.1.1 (2017-02)
ETSI EN 301 489-17 V3.1.1(2017-02).**

Test Report Form No. : LCSEMC-1.0

TRF Originator : Shenzhen LCS Compliance Testing Laboratory Ltd.

Master TRF..... : Dated 2017-02

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Test Item Description. : Bluetooth headphone

Trade Mark : N/A

Test Model..... : STN-16

**Ratings..... : DC 3.7V by battery (150mAh)
Recharge Voltage: 5V⁺, 0.5A**

Result : Positive

Compiled by:

Demi Lin

Demi Lin / File administrators

Supervised by:

Glin Lu

Glin Lu/ Technique principal

Approved by:



Gavin Liang/ Manager

EMC -- TEST REPORT

Test Report No. : LCS170718009AE	<u>August 26,2017</u> Date of issue
--	--

Test Model.....	: STN-16
EUT.....	: Bluetooth headphone
Applicant.....	: Shantou Chaoyang District Shengtana Electronic Factory
Address.....	: Gounan Village Industrial Area,Gurao,Chaoyang
	District,Shantou City, China
Telephone.....	: /
Fax.....	: /
Manufacturer.....	: Shantou Chaoyang District Shengtana Electronic Factory
Address.....	: Gounan Village Industrial Area,Gurao,Chaoyang
	District,Shantou City, China
Telephone.....	: /
Fax.....	: /
Factory.....	: Shantou Chaoyang District Shengtana Electronic Factory
Address.....	: Gounan Village Industrial Area,Gurao,Chaoyang
	District,Shantou City, China
Telephone.....	: /
Fax.....	: /

Test Result	Positive
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The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Revision	Issue Date	Revisions	Revised By
00	August 26,2017	Initial Issue	Gavin Liang

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1. GENERAL INFORMATION

1.1. Product Description for Equipment Under Test (EUT)

EUT	: Bluetooth headphone
Model Number	: S450,S460,STN--019,STN-05,STN-07,STN-08,STN-10,STN-11,STN-12,STN-13,STN-16,STN-17,STN-18,STN-19,B60,B61,B62,B63,B64,B65,B74,B20,HPBT345,HPBT380,HPBT365,FBHP385
Model Declaration	: PCB board, structure and internal of these model(s) are the same, So no additional models were tested.
Test Model	: STN-16
Power Supply	: DC 3.7V by battery (150mAh) Charging voltage: 5V, 0.5A
Hardware Version	: V4.0
Software Version	: V4.00
Bluetooth	:
Frequency Range	: 2402.00-2480.00MHz
Channel Number	: 79 channels
Channel Spacing	: 1MHz
Modulation Type	: GFSK, $\pi/4$ -DQPSK, 8-DPSK
Bluetooth Version	: Bluetooth 4.2
Antenna Description	: Internal Antenna, 1.2dBi(Max.)

1.2. Objective

Draft ETSI EN 301 489-1	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU
ETSI EN 301 489-17	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU

The objective is to determine compliance with ETSI EN 301 489-1 V2.1.1 (2017-02) and ETSI EN 301 489-17 V3.1.1(2017-02)..

1.3. Related Submittal(s)/Grant(s)

No Related Submittals.

1.4. Test Methodology

All measurements contained in this report were conducted with ETSI EN 301 489-1 V2.1.1 (2017-02) and ETSI EN 301 489-17 V3.1.1(2017-02)..

1.5. Description of Test Facility

CNAS Registration Number. is L4595.
 FCC Registration Number. is 899208.
 Industry Canada Registration Number. is 9642A-1.
 ESMD Registration Number. is ARCB0108.
 UL Registration Number. is 100571-492.
 TUV SUD Registration Number. is SCN1081.
 TUV RH Registration Number. is UA 50296516-001

1.6. Support equipment List

Manufacturer	Description	Model	Serial Number	Certificate
--	--	--	--	--

1.7. External I/O

I/O Port Description	Quantity	Cable
Charge Interface	1	N/A

1.8. Measurement Uncertainty

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.42dB	
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.54dB	Polarize: V
	4.1dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	2.08dB	Polarize: H
	2.56dB	Polarize: V
Uncertainty for radio frequency	0.01ppm	
Uncertainty for conducted RF Power	0.65dB	
Uncertainty for temperature	0.2°C	
Uncertainty for humidity	1%	
Uncertainty for DC and low frequency voltages	0.06%	

1.9. Description Of Test Modes

TM1: Bluetooth Operating.

TM2: Idle

***Note:

All test modes were tested, but we only recorded the worst case in this report.

2. SUMMARY OF TEST RESULTS

Rule	Description of Test Items	Result
§7.1	Reference to clauses EN 301 489-1 §8.4 AC mains power input/output ports	Compliant
§7.1	Reference to clauses EN 301 489-1 §8.3 DC power input/output ports	N/A
§7.1	Reference to clauses EN 301 489-1 §8.2 Enclosure of ancillary equipment measured on a stand alone basis	Compliant
§7.1	Reference to clauses EN 301 489-1 §8.5 Harmonic current emissions (AC mains input port)	N/A
§7.1	Reference to clauses EN 301 489-1 §8.6 Voltage fluctuations and flicker (AC mains input port)	N/A
§7.1	Reference to clauses EN 301 489-1 §8.7 Telecommunication ports	N/A
§7.2	Reference to clauses EN 301 489-1 §9.3 Electrostatic discharge (EN 61000-4-2)	Compliant
§7.2	Reference to clauses EN 301 489-1 §9.2 Radio frequency electromagnetic field (80 MHz to 6 000 MHz)(EN 61000-4-3)	Compliant
§7.2	Reference to clauses EN 301 489-1 §9.4 Fast transients, common mode (EN 61000-4-4)	N/A
§7.2	Reference to clauses EN 301 489-1 §9.8 Surges (EN 61000-4-5)	N/A
§7.2	Reference to clauses EN 301 489-1 §9.5 Radio frequency, common mode (EN 61000-4-6)	N/A
§7.2	Reference to clauses EN 301 489-1 §9.6 Transients and surges in the vehicular environment (ISO 7637-2)	N/A
§7.2	Reference to clauses EN 301 489-1 §9.7 Voltage dips and interruptions (EN 61000-4-11)	N/A

3. LINE CONDUCTED EMISSION

3.1. Conducted Emission Limit

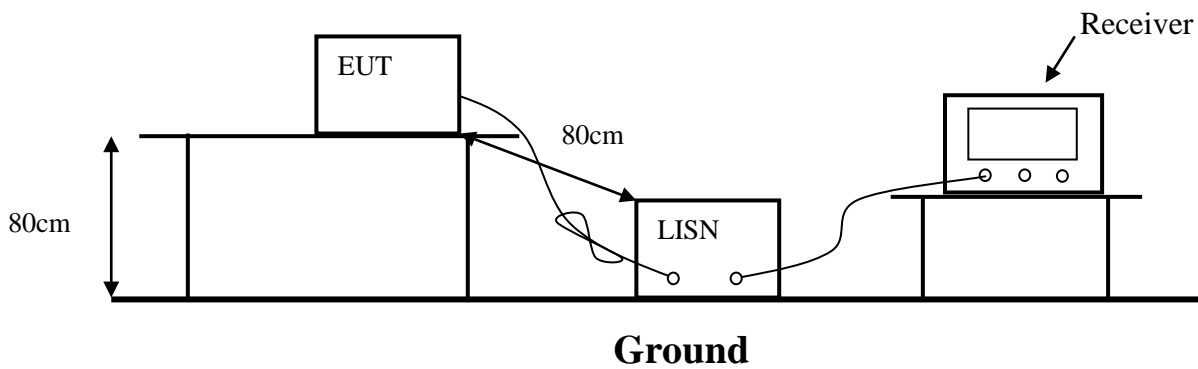
ETSI EN 301 489-1 V2.1.1 (2017-02)/EN 55032

Limits for Line Conducted Emission

Frequency (MHz)	Limit (dBµV)	
	Quasi-peak Level	Average Level
0.15~0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50~5.00	56.0	46.0
5.00~30.00	60.0	50.0

NOTE1-The lower limit shall apply at the transition frequencies.
 NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

3.2. Test Configuration



The setup of EUT is according with per Draft ETSI EN 301 489-1 measurement procedure. The specification used was with the Draft ETSI EN 301 489-1 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.

The EUT received DC 5V charging power from the Adapter which received power through a LISN supplying power of AC 230V/50Hz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	30MHz~1000MHz
(IF)RB	9kHz

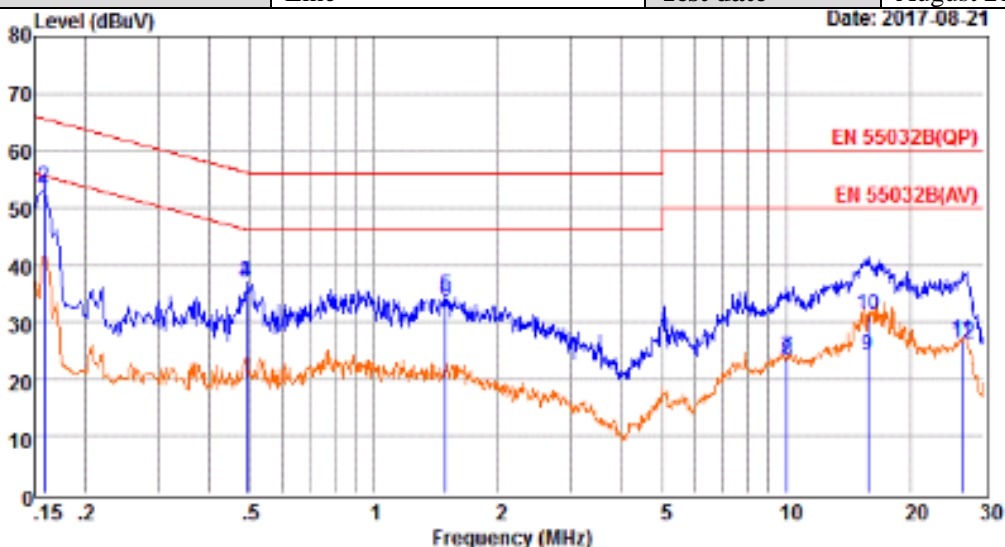
All data was recorded in the Quasi-peak and average detection mode.

Marked on both the 6 highest Quasi-Peak & 6 highest Average emissions points of the EUT.

3.3. Test Data

For pre-scan, the worst test case is TM1, and the test data was show as follow:

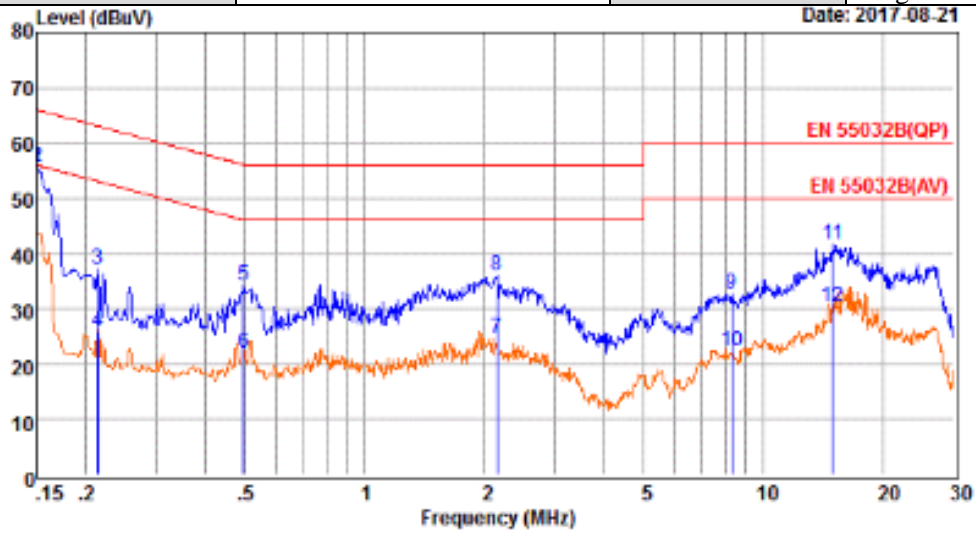
Model No.	STN-16	Test Mode	TM1
Environmental Conditions	25.4°C,46.2% RH	Test Engineer	Demi Lin
Pol	Line	Test date	August 21,2017



Freq	Reading	LisnFac	CabLos	Measured	Limit	Over	Remark	
MHz	dBpW	dB	dB	dBpW	dBpW	dB		
1	0.16	32.47	9.58	0.02	52.07	65.56	-13.49	QP
2	0.16	34.00	9.58	0.02	53.60	55.55	-1.95	Average
3	0.49	17.11	9.62	0.04	36.77	56.19	-19.42	QP
4	0.49	17.07	9.62	0.04	36.73	46.18	-9.45	Average
5	1.49	14.71	9.64	0.05	34.40	56.00	-21.60	QP
6	1.49	13.94	9.64	0.05	33.63	46.00	-12.37	Average
7	10.02	4.07	9.69	0.08	23.84	60.00	-36.16	QP
8	10.02	3.37	9.69	0.08	23.14	50.00	-26.86	Average
9	15.72	4.39	9.72	0.10	24.21	60.00	-35.79	QP
10	15.72	11.29	9.72	0.10	31.11	50.00	-18.89	Average
11	26.70	6.89	9.71	0.13	26.73	60.00	-33.27	QP
12	26.70	6.47	9.71	0.13	26.31	50.00	-23.69	Average

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss.
 2. The emission levels that are 20dB below the official limit are not reported.

Model No.	STN-16	Test Mode	TM1
Environmental Conditions	25.4°C,46.2% RH	Test Engineer	Demi Lin
Pol	Neutral	Test date	August 21,2017



	Freq	Reading	LisnFac	CabLos	Measured	Limit	Over	Remark
	MHz	dBpW	dB	dB	dBpW	dBpW	dB	
1	0.15	35.85	9.70	0.02	55.57	56.00	-0.43	Average
2	0.15	35.95	9.70	0.02	55.67	66.00	-10.33	QP
3	0.21	17.60	9.59	0.03	37.22	63.05	-25.83	QP
4	0.21	6.27	9.59	0.03	25.89	53.05	-27.16	Average
5	0.50	14.63	9.62	0.04	34.29	56.05	-21.76	QP
6	0.50	2.24	9.62	0.04	21.90	46.05	-24.15	Average
7	2.14	4.92	9.63	0.05	24.60	46.00	-21.40	Average
8	2.14	16.27	9.63	0.05	35.95	56.00	-20.05	QP
9	8.32	12.82	9.70	0.07	32.59	60.00	-27.41	QP
10	8.32	2.51	9.70	0.07	22.28	50.00	-27.72	Average
11	14.91	21.82	9.74	0.10	41.66	60.00	-18.34	QP
12	14.91	10.56	9.74	0.10	30.40	50.00	-19.60	Average

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss.
 2. The emission levels that are 20dB below the official limit are not reported.

Note: For conducted emission and radiated emission test, a power supply of 230VAC and 120VAC was used for testing respectively, and only recorded the worst case of 230VAC.

4. RADIATED DISTURBANCE

4.1. Radiated Emission Limit

ETSI EN 301 489-1 V2.1.1 (2017-02)/EN 55032 Class B

Limits for radiated disturbance Blow 1GHz

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMIT (dB μ V/m)
30 ~ 230	3	40
230 ~ 1000	3	47

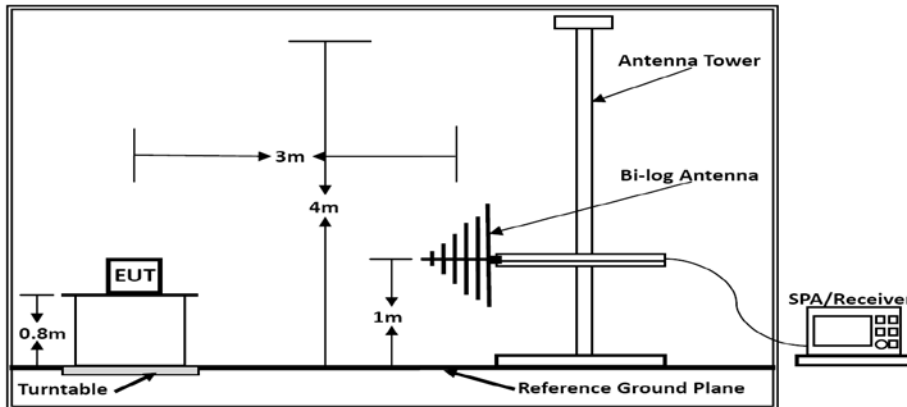
Note: (1) The smaller limit shall apply at the combination point between two frequency bands. (2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT.

Limits for radiated disturbance Above 1GHz

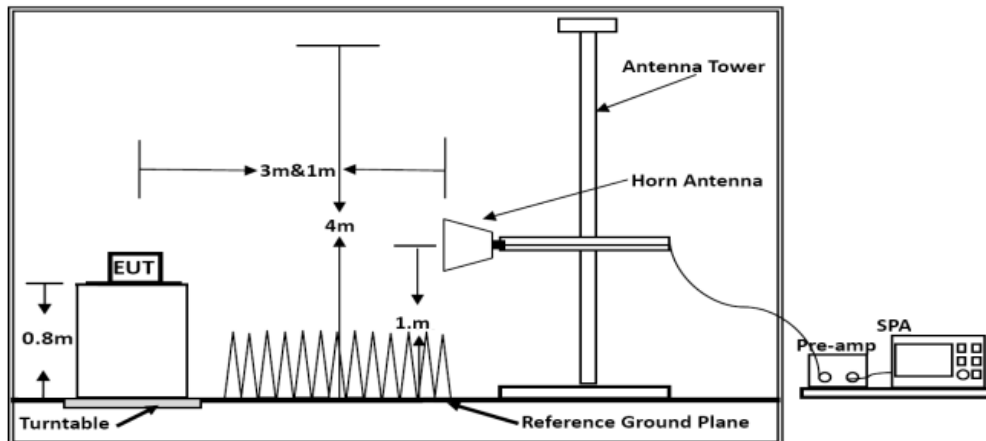
FREQUENCY (MHz)	DISTANCE (Meters)	Average Limit (dB μ V/m)	Peak Limit (dB μ V/m)
1000-3000	3	50	70
3000-6000	3	54	74

Note: The lower limit applies at the transition frequency.

4.2. Test Configuration



Below 1GHz



Above 1GHz
Above 1000MHz

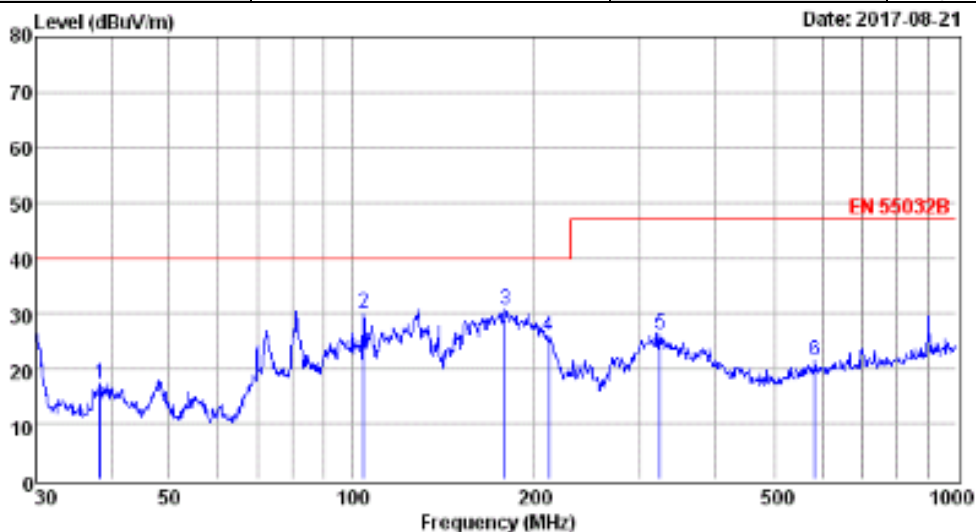
4.3. Test Procedure

Please refer to Draft ETSI EN 301 489-1 Clause 8.2.3 and EN 55032 Annex A.2 for the measurement methods.

4.4. Test Data

The worst test mode of the EUT was TM1, and its test data was showed as the follow:

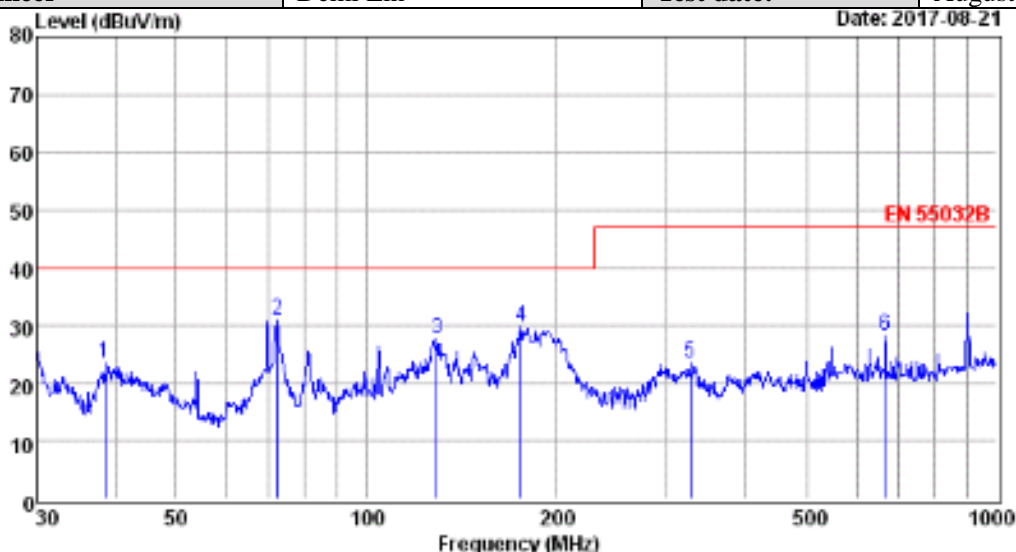
Model No.	STN-16	Test Mode	TM1
Environmental Conditions	25°C, 46% RH	Detector Function	Quasi-peak
Pol	Vertical	Distance	3m
Test Engineer	Demi Lin	Test date:	August 21,2017



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	38.35	3.84	0.38	13.16	17.38	40.00	-22.62	QP
2	104.54	16.55	0.61	12.75	29.91	40.00	-10.09	QP
3	179.39	20.18	0.89	9.64	30.71	40.00	-9.29	QP
4	212.27	13.98	0.93	10.96	25.87	40.00	-14.13	QP
5	323.32	11.62	1.10	13.46	26.18	47.00	-20.82	QP
6	584.79	1.87	1.50	18.17	21.54	47.00	-25.46	QP

Note: 1. All readings are Quasi-peak values.
 2. Measured= Reading + Antenna Factor + Cable Loss
 3. The emission that are 20db below the official limit are not reported

Model No.	STN-16	Test Mode	TM1
Environmental Conditions	25°C, 46% RH	Detector Function	Quasi-peak
Pol	Horizontal	Distance	3m
Test Engineer	Demi Lin	Test date:	August 21,2017



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	38.48	9.85	0.38	13.19	23.42	40.00	-16.58	QP
2	72.34	22.00	0.55	8.25	30.80	40.00	-9.20	QP
3	129.47	17.93	0.67	9.01	27.61	40.00	-12.39	QP
4	176.27	19.58	0.73	9.42	29.73	40.00	-10.27	QP
5	326.74	8.95	1.04	13.60	23.59	47.00	-23.41	QP
6	665.80	8.08	1.55	18.69	28.32	47.00	-18.68	QP

Note: 1. All readings are Quasi-peak values.
 2. Measured= Reading + Antenne Factor + Cable Loss
 3. The emission that ate 20db blow the official limit are not reported

Test Mode: TM1(above 1GHz)	Tested by: Demi Lin
Test voltage: DC 3.7V	Test Distance: 3m
Detector Function: Peak+AV	Test Results: Passed

Frequency MHz	Emission Level dB μ V/m		Limits dB μ V/m		Margin dB μ V/m		Polarization
	Peak	AV	Peak	AV	Peak	AV	
1423.57	57.74	37.45	70.00	50.00	-12.26	-12.55	H
1867.26	49.06	36.84	70.00	50.00	-20.94	-13.16	H
2272.51	50.58	37.74	70.00	50.00	-19.42	-12.26	H
3354.63	50.94	33.40	74.00	54.00	-23.06	-20.60	H
4308.32	50.19	30.85	74.00	54.00	-23.81	-23.15	H
5854.03	48.18	37.92	74.00	54.00	-25.82	-16.08	H
1423.55	58.48	36.87	70.00	50.00	-11.52	-13.13	V
1867.40	49.71	37.67	70.00	50.00	-20.29	-12.33	V
2272.88	49.96	37.47	70.00	50.00	-20.04	-12.53	V
3354.34	50.02	33.79	74.00	54.00	-23.98	-20.21	V
4308.24	50.98	30.46	74.00	54.00	-23.02	-23.54	V
5853.08	48.12	38.01	74.00	54.00	-25.88	-15.99	V

4. GENERAL PERFORMANCE CRITERIA FOR IMMUNITY TEST

4.1. Performance criteria for Continuous phenomena applied to Transmitter (CT)

For equipment of type II or type III that requires a communication link that is maintained during the test, it shall be verified by appropriate means supplied by the manufacturer that the communication link is maintained during each individual exposure in the test sequence.

Where the EUT is a transmitter, tests shall be repeated with the EUT in standby mode to ensure that any unintentional transmission does not occur.

4.2. Performance criteria for Transient phenomena applied to Transmitter (TT)

For equipment of type II or type III that requires a communication link that is maintained during the test, this shall be verified by appropriate means supplied by the manufacturer during each individual exposure in the test sequence. Where the EUT is a transmitter, tests shall be repeated with the EUT in standby mode to ensure that any unintentional transmission does not occur.

4.3. Performance criteria for Continuous phenomena applied to Receiver (CR)

For equipment of type II or III that requires a communication link that is maintained during the test, it shall be verified by appropriate means supplied by the manufacturer that the communication link is maintained during each individual exposure in the test sequence. Where the EUT is a transceiver, under no circumstances shall the transmitter operate unintentionally during the test.

4.4. Performance criteria for Transient phenomena applied to Receiver (TR)

For equipment of type II or type III that requires a communication link that is maintained during the test, this shall be verified by appropriate means supplied by the manufacturer during each individual exposure in the test sequence. Where the EUT is a transceiver, under no circumstances shall the transmitter operate unintentionally during the test.

Performance criteria for ETSI EN 301 489-17 V3.1.1(2017-02).

Criteria	During test	After test
A	Shall operate as intended. May show degradation of performance(see note 1). Shall be no loss of function. Shall be no unintentional transmissions.	Shall operate as intended. Shall be no degradation of performance (see note 2). Shall be no loss of function. Shall be no loss of stored data or user programmable functions.
B	May show loss of function (one or more). May show degradation of performance(see note 1). No unintentional transmissions.	Functions shall be self-recoverable. Shall operate as intended after recovering. Shall be no degradation of performance (see note 2). Shall be no loss of stored data or user programmable functions.
C	May be loss of function (one or more).	Functions shall be recoverable by the operator. Shall operate as intended after recovering. Shall be no degradation of performance (see note 2).

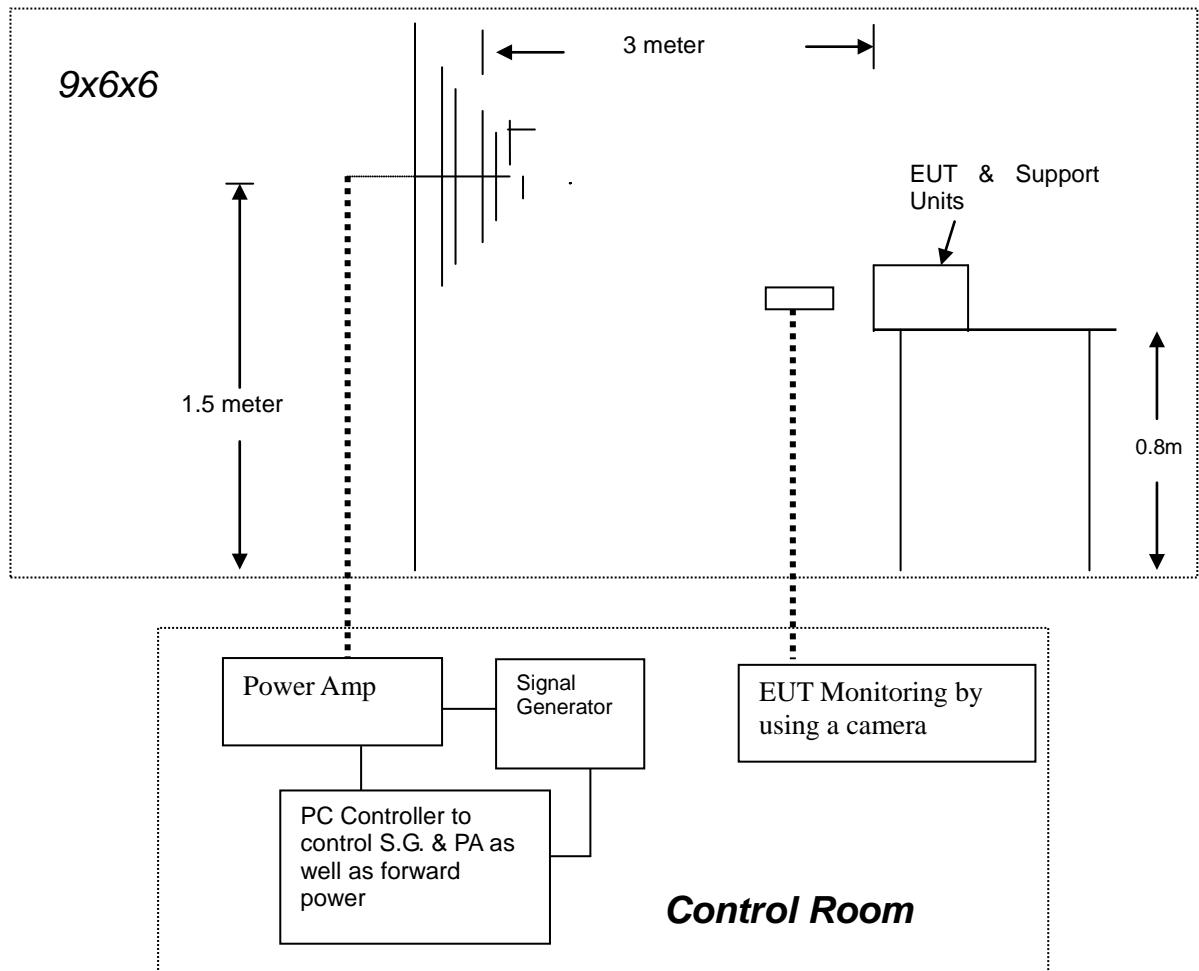
NOTE 1: Degradation of performance during the test is understood as a degradation to a level not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.

NOTE 2: No degradation of performance after the test is understood as no degradation below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. After the test no change of actual operating data or user retrievable data is allowed.

If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.

5. RF ELECTROMAGNETIC FIELD (80 MHZ -6000 MHZ)

5.1. Test Configuration



5.2. Test Standard

Draft ETSI 301 489-1, EN 301 489-17(EN 61000-4-3: 2006+A1: 2008+A2: 2010)

Test level 2 at 3V / m.

5.3. Severity Level

Level	Field Strength V/m
1.	1
2.	3
3.	10
X	Special

Performance criterion: A

5.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. EUT is set 3 meter away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna are set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually. In order to judge the EUT performance, a CCD camera is used to monitor EUT screen. All the scanning conditions are as follows:

Condition of Test	Remarks
1. Fielded Strength	3 V/m (Severity Level 2)
2. Radiated Signal	Unmodulated
3. Scanning Frequency	80 - 6000 MHz
4. Dwell time of radiated	0.0015 decade/s
5. Waiting Time	3 Sec.

5.5. Test Result

RF ELECTROMAGNETIC FIELD			
Standard	<input type="checkbox"/> IEC 61000-4-3 <input checked="" type="checkbox"/> EN 61000-4-3		
Applicant	Shantou Chaoyang District Shengtena Electronic Factory		
EUT	Bluetooth headphone	Temperature	25°C
M/N	STN-16	Humidity	46%
Test Mode	TM1-TM2	Criterion	B
Test Engineer	Demi Lin	Test Date	August 15,2017

Bluetooth Test Result:

EUT Working Mode	Antenna Polarity	Frequency (MHz)	Field Strength (V/m)	Observation	Position	Conclusion
Operating Mode	Vertical	80-6000	3	CT,CR	Front, Right, Left, Back	Pass
	Horizontal	80-6000	3	CT,CR	Front, Right, Left, Back	Pass
Idle	Vertical	80-6000	3	See Note	Front, Right, Left, Back	Pass
	Horizontal	80-6000	3	See Note	Front, Right, Left, Back	Pass

TM2- TM4 Test Result:

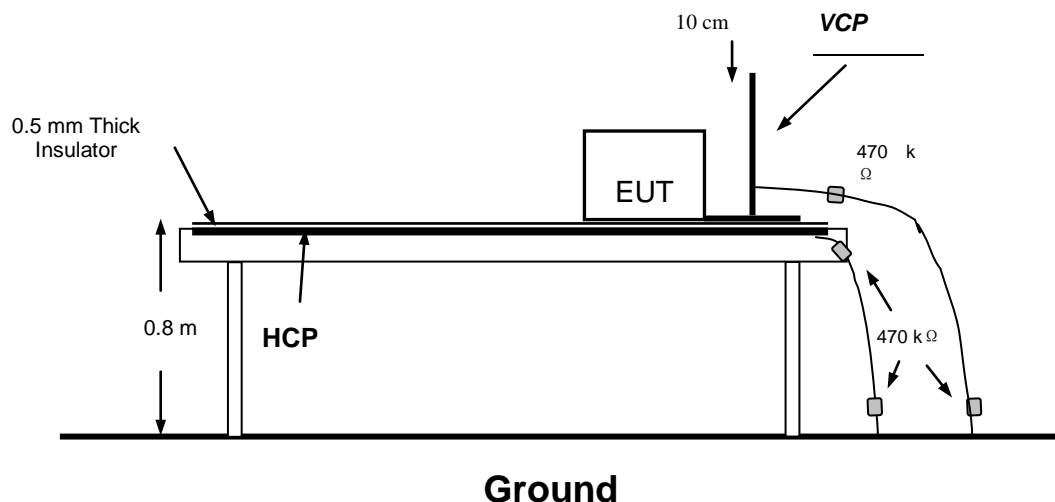
EUT Working Mode	Antenna Polarity	Frequency (MHz)	Field Strength (V/m)	Observation	Position	Conclusion
Operating Mode	Vertical	80-6000	3	See Note	Front, Right, Left, Back	Pass
	Horizontal	80-6000	3	See Note	Front, Right, Left, Back	Pass
Idle	Vertical	80-6000	3	See Note	Front, Right, Left, Back	Pass
	Horizontal	80-6000	3	See Note	Front, Right, Left, Back	Pass

***Note: Unintentional transmission is not founded from the EUT.

6. ELECTROSTATIC DISCHARGE

Please refer to Draft ETSI EN 301 489-1 and EN 61000-4-2.

6.1. Test Configuration



EN 61000-4-2 specifies that a tabletop EUT shall be placed on a non-conducting table which is 80 centimeters above a ground reference plane and that floor mounted equipment shall be placed on a insulating support approximately 10 centimeters above a ground plane. During the tests, the EUT is positioned over a ground reference plane in conformance with this requirement.

For tabletop equipment, a 1.5 by 1.0-meter metal sheet (HCP) is placed on the table and connected to the ground plane via a metal strap with two 470 k Ohms resistors in series. The EUT and attached cables are isolated from this metal sheet by 0.5-millimeter thick insulating material. A Vertical Coupling Plane (VCP) grounded on the ground plane through the same configuration as in the HCP is used.

6.2. Test Procedure

ETSI EN 301 489-1 V2.1.1 (2017-02)/ EN 61000-4-2: 2009

Test level 3 for Air Discharge at ± 8 kV

Test level 2 for Contact Discharge at ± 4 kV

6.2.1. Air Discharge

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

6.2.2. Contact Discharge

All the procedure shall be same as Section 6.2.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

6.2.3. Indirect Discharge For Horizontal Coupling Plane

At least 10 single discharges (in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the center point of each unit (if applicable) of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.

6.2.4. Indirect Discharge For Vertical Coupling Plane

At least 10 single discharges (in the most sensitive polarity) shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

6.3. Test Data

PASS.

Electrostatic Discharge Test Results

Standard	<input type="checkbox"/> IEC 61000-4-2 <input checked="" type="checkbox"/> EN 61000-4-2		
Applicant	Shantou Chaoyang District Shengtena Electronic Factory		
EUT	Bluetooth headphone	Temperature	23.8°C
M/N	STN-16	Humidity	45.7%
Criterion	B	Pressure	1021mbar
Test Mode	TM1-TM2	Test Date	August 15,2017
Test Engineer	Demi Lin		

TEST RESULT OF BLUETOOTH

Test Voltage	Coupling	Observation	Result (Pass/Fail)
±2KV, ±4kV	Contact Discharge	TT, TR	Pass
±2KV, ±4kV, ±8kV	Air Discharge	TT, TR	Pass
±2KV, ±4kV	Indirect Discharge HCP	TT, TR	Pass
±2KV, ±4kV	Indirect Discharge VCP	TT, TR	Pass

TEST RESULT OF TM2

Test Voltage	Coupling	Result (Pass/Fail)
±2KV, ±4kV	Contact Discharge	Pass
±2KV, ±4kV, ±8kV	Air Discharge	Pass
±2KV, ±4kV	Indirect Discharge HCP	Pass
±2KV, ±4kV	Indirect Discharge VCP	Pass

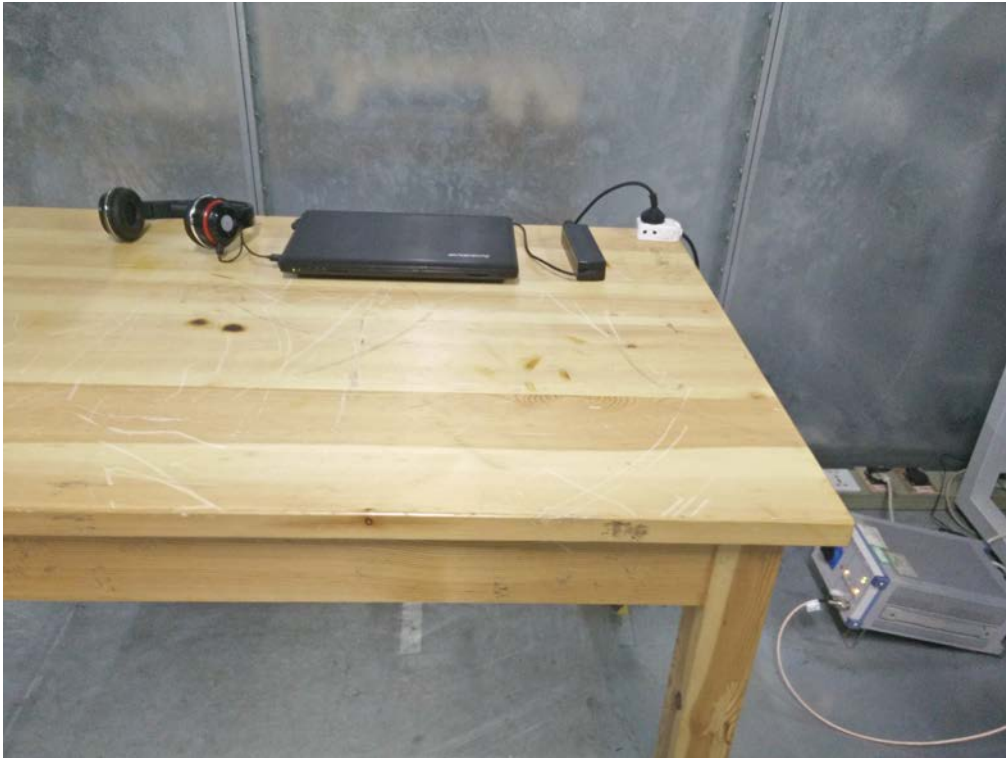
Note: The EUT performance complied with performance criteria for CT&CR to MS Function and there is no any degradation of performance and function.

7. LIST OF MEASURING EQUIPMENT

Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101142	2017-06-18	2018-06-17
10dB Attenuator	SCHWARZBECK	OSPAM236	9729	2017-06-18	2018-06-17
Artificial Mains	ROHDE & SCHWARZ	ENV216	101288	2017-06-18	2018-06-17
EMI Test Software	AUDIX	E3	N/A	2017-06-18	2018-06-17
EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101142	2017-06-18	2018-06-17
Absorbing clamp	ROHDE & SCHWARZ	MDS 21	4033	2017-06-18	2018-06-17
EMI Test Software	AUDIX	E3	N/A	2017-06-18	2018-06-17
EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101142	2017-06-18	2018-06-17
Triple-loop Antenna	EVERFINE	LLA-2	11050003	2017-06-18	2018-06-17
EMI Test Receiver	ROHDE & SCHWARZ	ESPI	101840	2017-06-18	2018-06-17
EMI Test Software	AUDIX	E3	N/A	2017-06-18	2018-06-17
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2017-06-18	2018-06-17
EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101142	2017-06-18	2018-06-17
Log per Antenna	SCHWARZBECK	VULB9163	9163-470	2017-04-18	2018-06-17
EMI Test Software	AUDIX	E3	N/A	2017-06-18	2018-06-17
Positioning Controller	MF	MF-7082	/	2017-06-18	2018-06-17
Power Analyzer Test System	Voltech	PM6000	20000670053	2017-06-18	2018-06-17
ESD Simulator	KIKUSUI	KC001311	KES4021	2016-09-03	2017-09-02
SIGNAL GENERATOR	R&S	SMB100A	105942	2016-09-14	2017-09-13
RF Power Amplifier	BONN Elektronik	BLWA0830-160/ 100/40D	128740	2016-09-14	2017-09-13
Log-periodic Antenna	SCHWARZBECK	STLP9128D	043	2016-09-14	2017-09-13
Power Meter	R&S	102031	16829	2016-09-14	2017-09-13
Electrical fast transient(EFT)generator	3CTEST	EFT-4021	EC0461044	2017-06-18	2018-06-17
Coupling Clamp	3CTEST	EFTC	EC0441098	2017-04-18	2018-06-17
Surge test system	3CTEST	SG5006G	EC5581070	2017-06-18	2018-06-17
Coupling/decoupling network	3CTEST	SGN-5010G	CS5591033	2017-06-18	2018-06-17
Simulator	FRANKONIA	CIT-10	A126A1195	2017-06-18	2018-06-17
CDN	FRANKONIA	CDN-M2	5100100100	2017-04-18	2018-06-17
CDN	FRANKONIA	CDN-M3	0900-11	2017-06-18	2018-06-17
Attenuator	FRANKONIA	ATT6	0010222A	2017-06-18	2018-06-17
Voltage dips and up generator	3CTEST	VDG-1105G	EC0171014	2017-06-18	2018-06-17

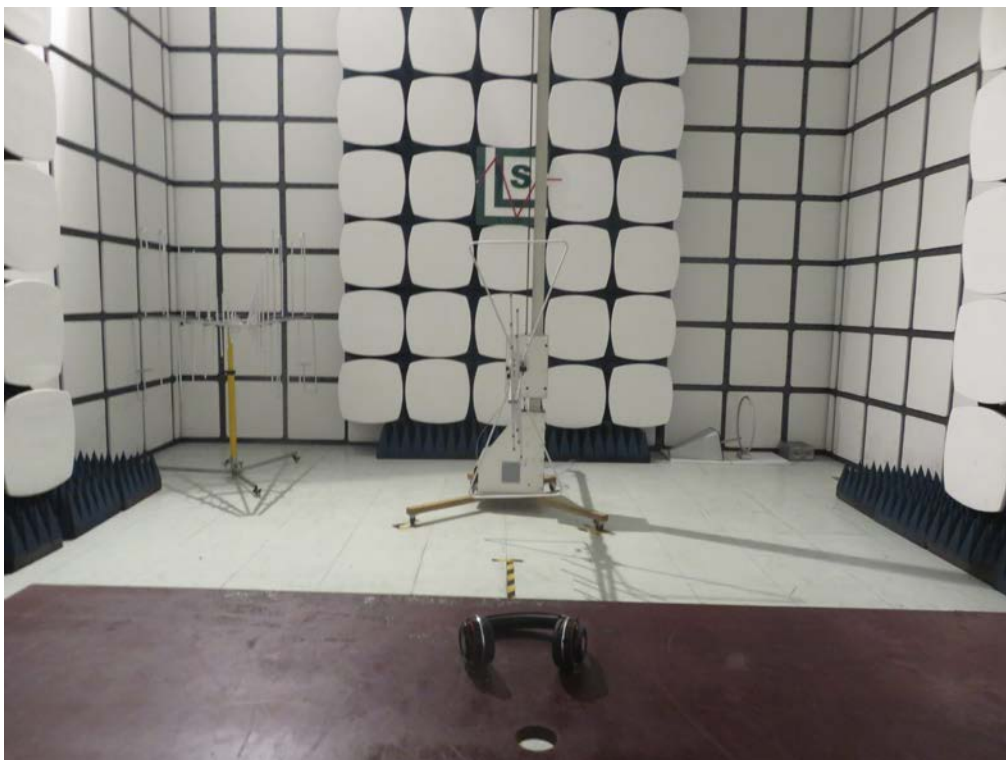
8. TEST SETUP PHOTOGRAPHS

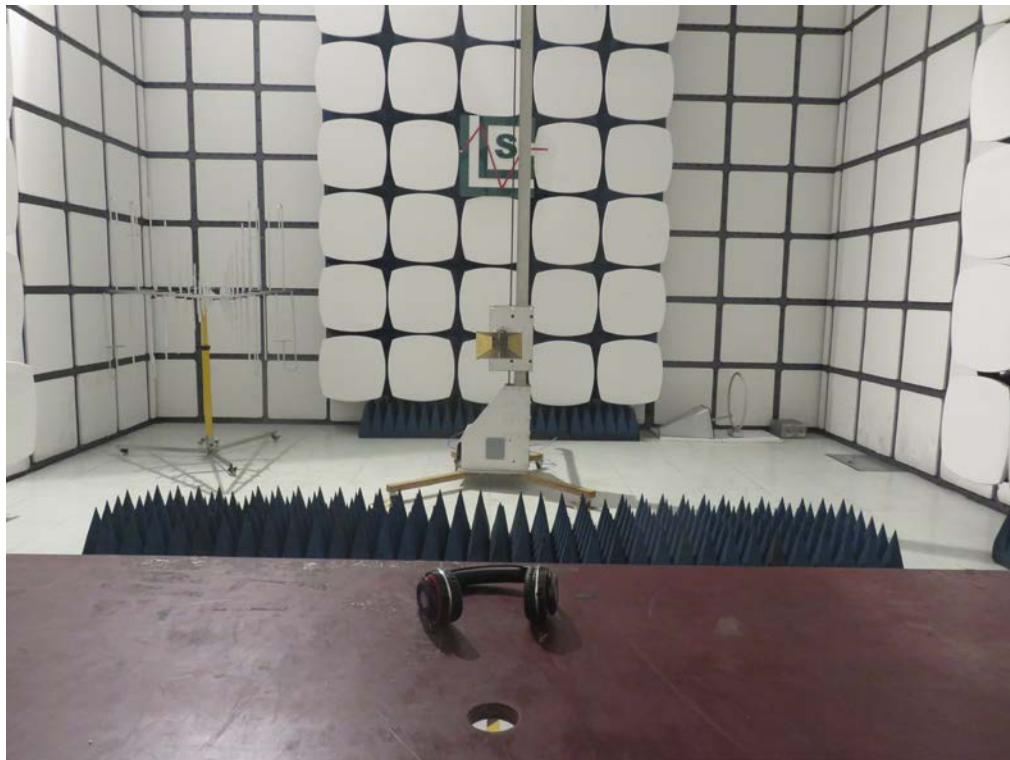
8.1. Photo of Power Line Conducted Measurement



8.2. Photo of Radiated Emissions Measurement

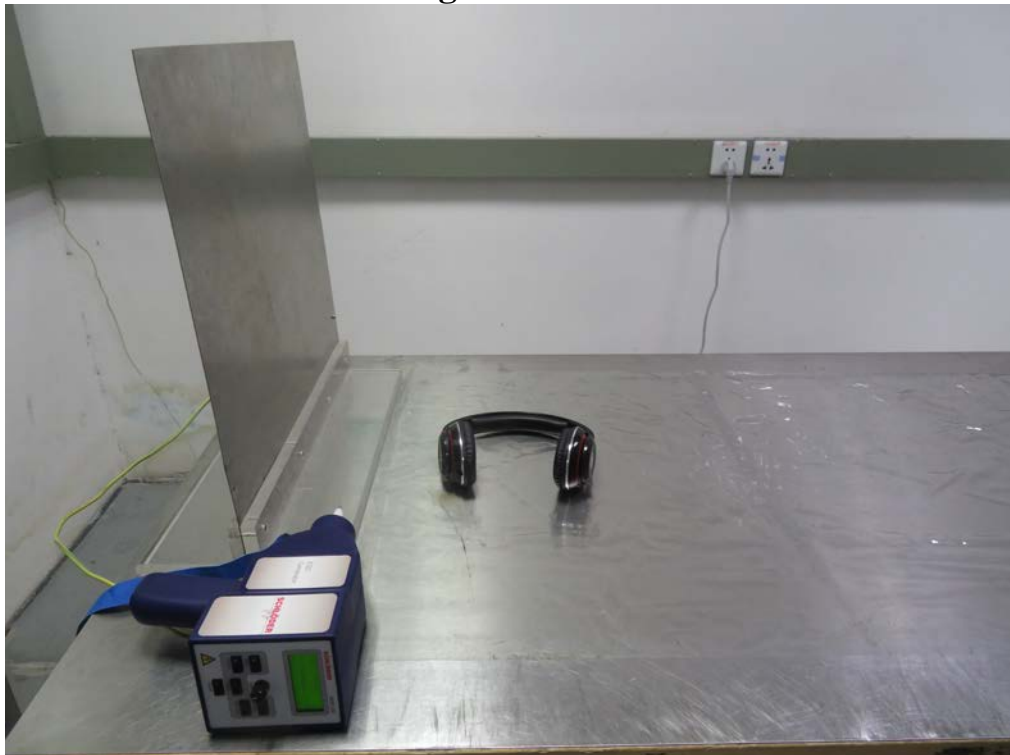
Below 1G



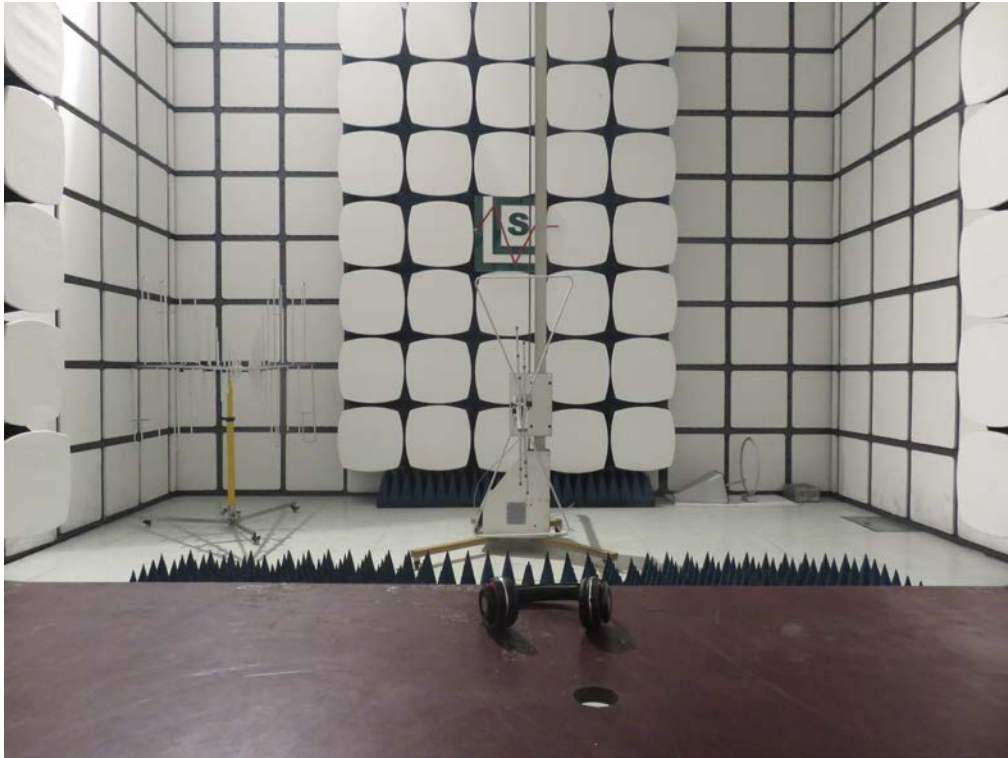


Above 1G

8.3. Photo of Electrostatic Discharge Test



8.4.Photo of Radio-frequency, Continuous radiated disturbance



9. EXTERNAL AND INTERNAL PHOTOS OF THE EUT



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6



Fig. 7

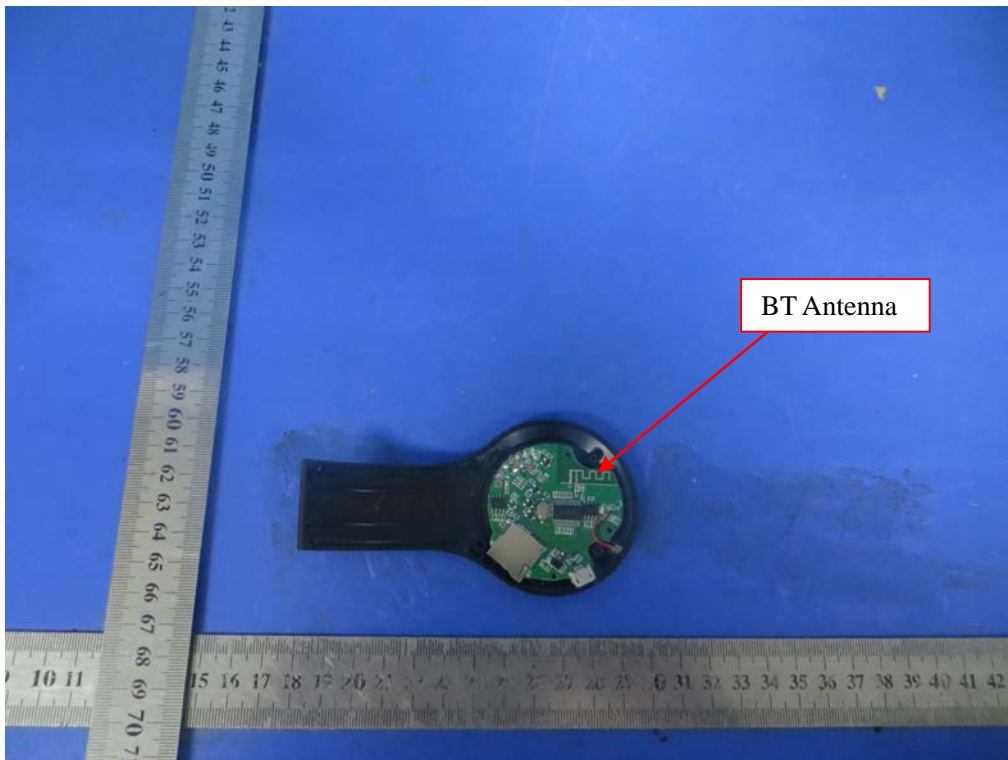


Fig. 8

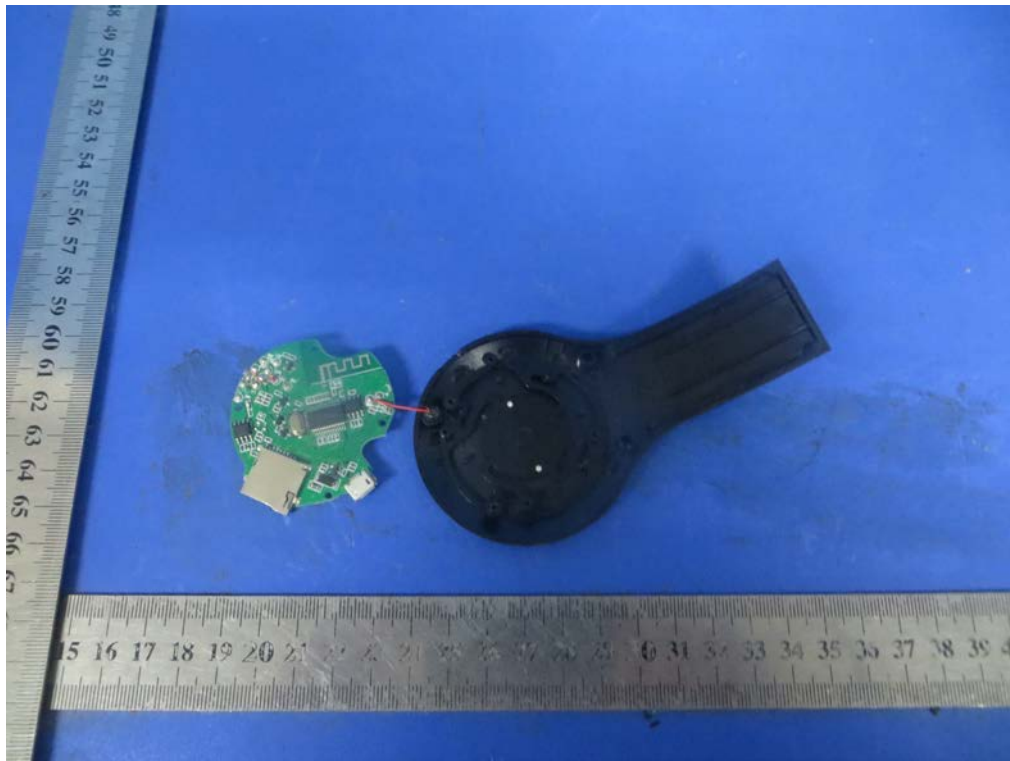


Fig.9

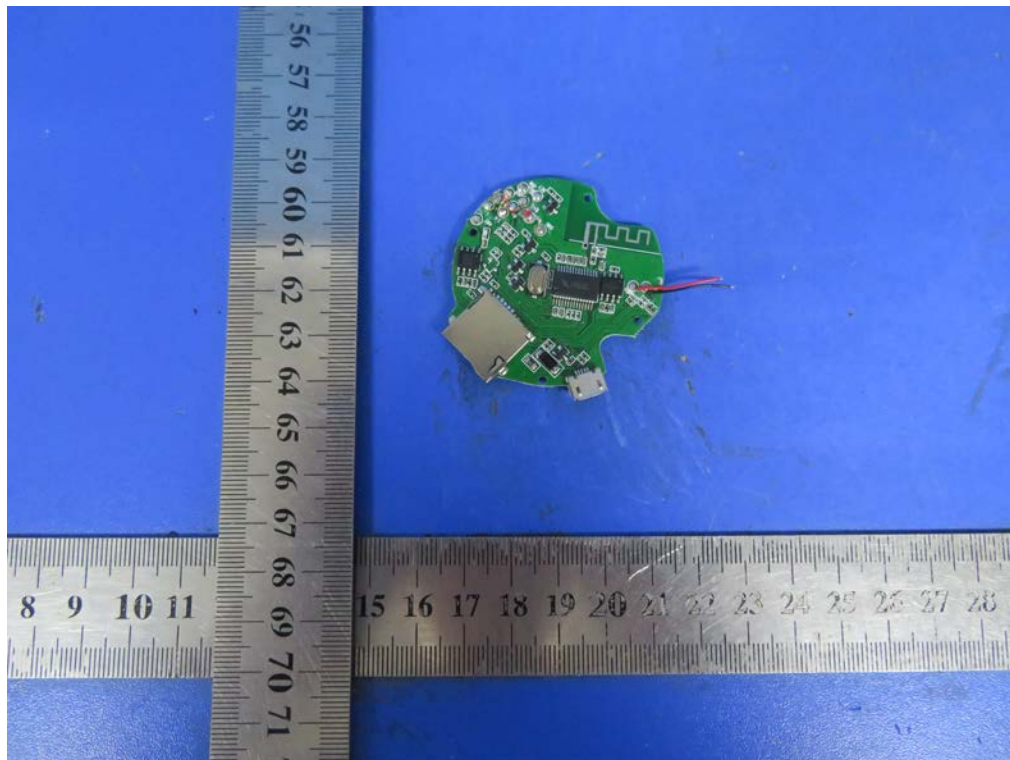


Fig.10

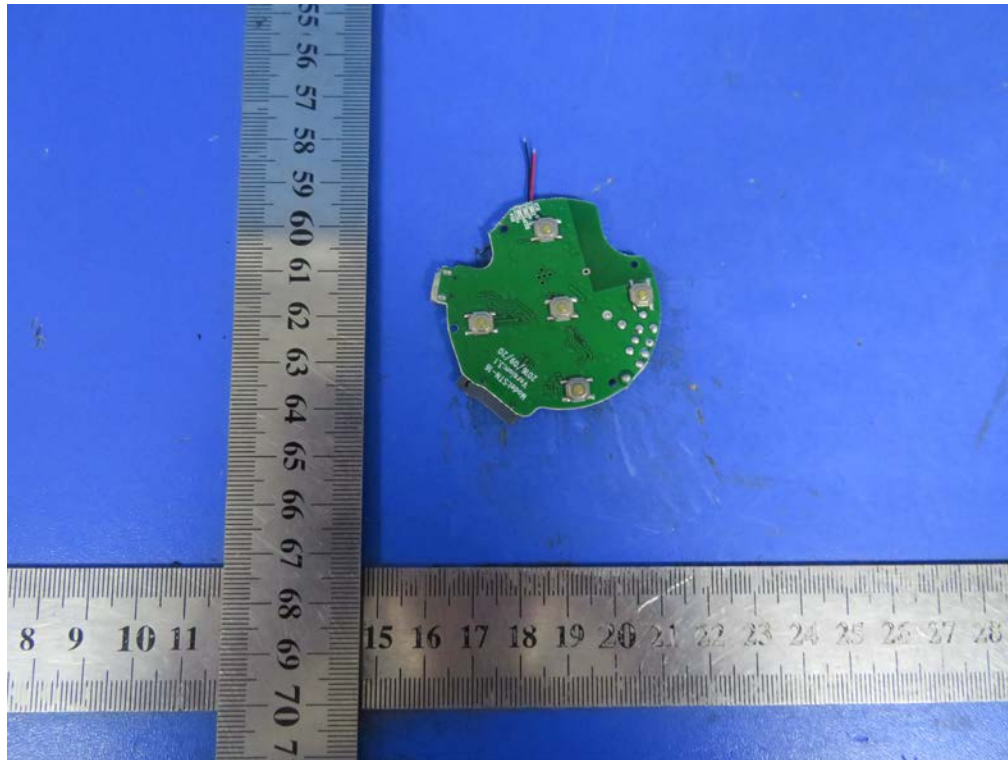


Fig.11

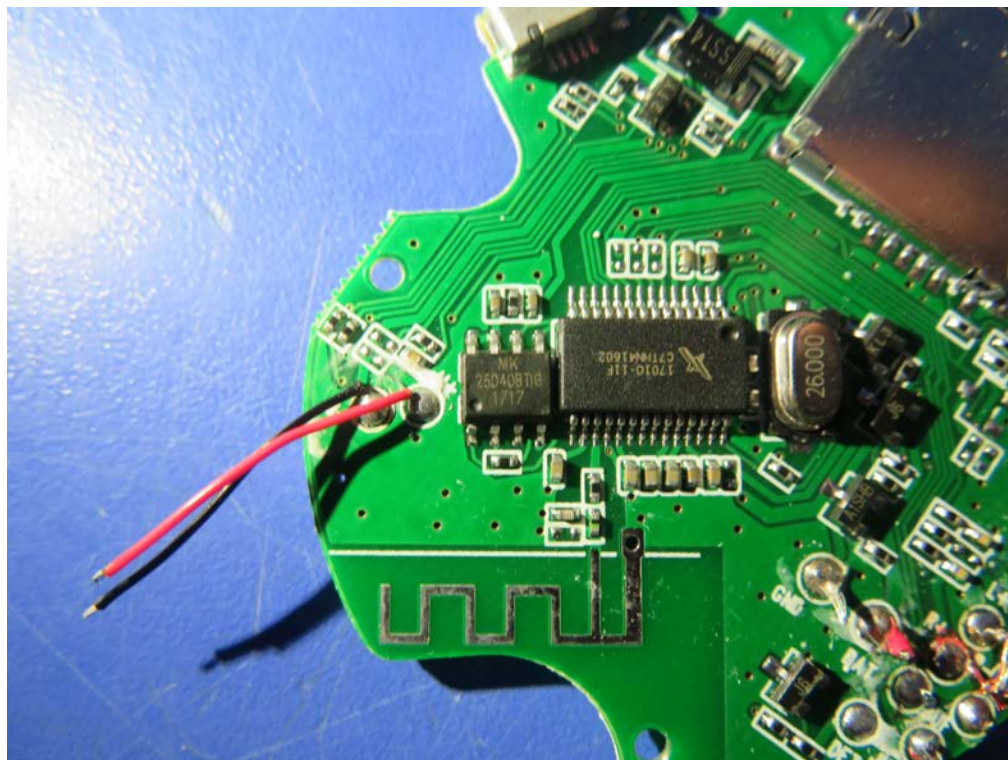


Fig.12

-----THE END OF TEST REPORT-----