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DEKLARACJA ZGODNOŚCI WE
EC DECLARATION OF CONFORMITY

My / We **LAVA GROUP S.C./ Reiter Polska Sp. Z o.o.**
(nazwa producenta/ manufacturer's name)

Ul. Eugeniusza Romera 4B, 02-784 Warszawa
(adres producenta / manufacturer's address)

niniejszym deklarujemy, że następujący wyrób:
declare, under our responsibility, that the electrical product:

Głośnik bezprzewodowy PS50
(nazwa wyrobu / name of the article) (typ wyrobu / type or model)

Spełnia wymagania następujących norm:
to which this declaration relates is in conformity with the following standards:

EN 62479:2010
EN 62368-1:2014/ A11:2017
EN 301 489-1V2.2.3. (2019-11)
EN 301 489-17 V3.2.4. (2020-09)
EN 300 328 V2.2.2.

(numer i data wydania normy / title, number and date of issue of the standards)

oraz jest zgodny z postanowieniami następujących rozporządzeń (dyrektyw):
(following the provisions of):

Radio Equipment Directive 2014/53/EU

EU ROHS Directive 2011/65/EU Annex II amending Annex (EU) 2015/863

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Warszawa dnia 01.10.2023r.

Test Report issued under the responsibility of:

GTS

TEST REPORT **IEC 62368-1** **Audio/video, information and communication technology equipment** **Part 1: Safety requirements**	
Report Number ..... :	GTS202106000252S01
Date of issue ..... :	20.07.2021
Total number of pages ..... :	64
Name of Testing Laboratory preparing the Report ..... :	Global United Technology Services Co., Ltd.
Applicant's name ..... :	
Address ..... :	
Test specification:	
Standard ..... :	EN 62368-1:2014/A11:2017
Test procedure ..... :	Test report
Non-standard test method ..... :	N/A
TRF template used ..... :	IECEE OD-2020-F1:2020, Ed.1.3
Test Report Form No ..... :	IEC62368_1D
Test Report Form(s) Originator .. :	UL(US)
Master TRF ..... :	Dated 2021-02-04
General disclaimer: The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

Test Item description ..... :	Bluetooth Speaker
Trade Mark ..... :	--
Manufacturer ..... :	
Model/Type reference ..... :	T5, T6, HEYSONG VIBE, RBS920, RBS920 Pro, S20, S20 Pro, AIWA SB-X30, AWKF3, SB-X30, PWS-2240, PWS-2241, PWS-2242, PWS-2243, PWS-2244, TT M, Fit 3
Ratings ..... :	5V ⎓, 650mA, Class III

Testing Laboratory.....:	Global United Technology Services Co., Ltd. No. 123-128, Tower A, Jinyuan Business Building, No. 2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China	
Tested by (name, function, signature) .....:	Mike Wu Project Engineer	Mike Wu
Approved by (name, function, signature).....:	Robinson Luo, Technical Director	

List of Attachments (including a total number of pages in each attachment):
Attachment 1: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (12 pages)
Attachment 2: Photo-documentation (6 pages)

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
The submitted samples were tested and found to comply with the requirements of: - EN 62368-1:2014/A11:2017	Unless otherwise indicated, all tests were performed at the location stated in "Testing procedure and testing location".

Summary of compliance with National Differences:

List of countries addressed: See the attachment No. 1 of National and Group Differences for details.

☒ **The product fulfils the requirements** of EN 62368-1:2014/A11:2017

Statement concerning the uncertainty of the measurement systems used for the tests
(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

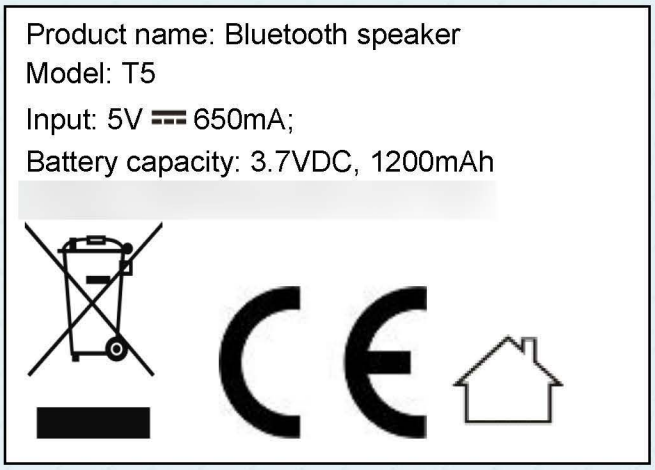
☒ **Statement not required by the standard used for type testing**

(Note: When IEC or ISO standard requires a statement concerning the uncertainty of the measurement systems used for tests, this should be reported above. The informative text in parenthesis should be delete in both cases after selecting the applicable option)

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

(Representative)



Remark:

1. Due to similarity of rating labels, only above representative model's label are listed, other models are technical identical except with model number.
2. The height dimension of CE mark should not be less than 5mm, the height dimension of WEEE symbol should not be less than 7mm.
3. According to the EU directives which have been aligned with EU NLF (new legislative framework), both of manufacturer and importer's name and address shall be affixed on the product or, where that is not possible, on its packaging or in a document accompanying the product before the product is placed on the EU market.

TEST ITEM PARTICULARS:	
Classification of use by ..... :	☒ Ordinary person ☐ Instructed person ☐ Skilled person ☒ Children likely to be present
Supply Connection ..... :	☐ AC Mains ☐ DC Mains ☒ External Circuit - not Mains connected - ☒ ES1 ☐ ES2 ☐ ES3
Supply % Tolerance ..... :	☐ +10%/-10% ☐ +20%/-15% ☐ +____%/ -_____% ☒ None
Supply Connection – Type ..... :	☐ pluggable equipment type A - ☐ non-detachable supply cord ☐ appliance coupler ☐ direct plug-in ☐ mating connector ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☒ other:Not direct connected to the mains
Considered current rating of protective device as part of building or equipment installation ..... :	_____ A; Installation location: ☐ building; ☐ equipment
Equipment mobility ..... :	☐ movable ☐ hand-held ☒ transportable ☐ stationary ☐ for building-in ☐ direct plug-in ☐ rack-mounting ☒ wall-mounted
Over voltage category (OVC) ..... :	☐ OVC I ☐ OVC II ☐ OVC III ☐ OVC IV ☒ other: Not direct connected to the mains
Class of equipment ..... :	☐ Class I ☐ Class II ☒ Class III ☐ Class II with functional earthing ☐ Not classifed
Access location ..... :	☐ restricted access location ☒ N/A
Pollution degree (PD) ..... :	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maximum operating ambient ..... :	40°C
IP protection class ..... :	☒ IPX0 ☐ IP___
Power Systems ..... :	☐ TN ☐ TT ☐ IT - ____ V_{L-L} ☐ dc mains ☐ N/A
Altitude during operation (m) ..... :	☒ 2000 m or less ☐ 5000 m
Altitude of test laboratory (m) ..... :	☒ 2000 m or less ☐ _____ m
Mass of equipment (kg) ..... :	☒ Approx.: 0.2kg

Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item .....:	2021-07-07
Date (s) of performance of tests .....:	2021-07-07 to 2021-07-14

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Name and address of factory (ies) .....:	Same as manufacturer

General product information and other remarks:

Product Description –

- The equipment is a Bluetooth Speaker which intended using for audio/video, information and communication technology equipment (ITAV).
- The equipment is powered by internal battery and charged by external power DC source.
- The Switcher was supplied by an external approved adapter which was classified as ES1/PS1.
- Test samples are pre-production samples without serial numbers.

ModelDifferences

- All models are identical except for model No. After comparison, tests carried out on model T5 were considered representative.

Additional application considerations – (Considerations used to test a component or sub-assembly) –

- The maximum operating temperature is 40°C.
- Altitude: below 2000m

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.	
Electrically-caused injury (Clause 5): (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input ES1	
Source of electrical energy	**Corresponding classification (ES)**
All internal circuit (except battery)	ES1
Battery pack	ES1
Battery cell	ES1
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): PS2	
Source of power or PIS	**Corresponding classification (PS)**
All internal circuit (except battery)	PS1
Battery pack	PS1
Battery cell	PS2
Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component Glycol	
Source of hazardous substances	**Corresponding chemical**
N/A (None)	N/A
Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2	
Source of kinetic/mechanical energy	**Corresponding classification (MS)**
Sharp edges and corners	MS1
Equipment mass (≤7kg)	MS1
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1	
Source of thermal energy	**Corresponding classification (TS)**
All accessible parts	TS1
Remark: --	
Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product RS1	
Type of radiation	**Corresponding classification (RS)**
LED indicating lights	RS1

ENERGY SOURCE DIAGRAM
Indicate which energy sources are included in the energy source diagram. Insert diagram below
☒ ES ☒ PS ☒ MS ☒ TS ☒ RS Remark: Refer to ENERGY SOURCE INDENTIFICATION AND CLASSIFICATION TABLE for DETAIL.

OVERVIEW OF EMPLOYEDSAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced(Enclosure)
Ordinary	ES1: Internal circuits ES1: Battery pack ES1: Battery cell	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source	Safeguards		
		Basic	Supplementary	Reinforced
Internal combustible material/ internal plastic enclosure	PS1: Internal circuits PS1: Battery pack PS2: Battery cell	For “N” and “A” conditions: 1, No ignition occurred. 2, No parts exceeding 90% of its spontaneous ignition temperature.	For “S” condition: 1, PCB is complied with V-0 material. 2, All other components: at least V-2 except for mounted on min. V-1 material or small parts of combustible material. 3. V-0 enclosure	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
Battery pack	Complied with annex M	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1(Sharp edges and corners)	N/A	N/A	N/A
Ordinary	MS1(Equipment mass)	N/A	N/A	N/A
9.1	Thermal Burn –			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	TS1: All accessible parts	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced

Ordinary	RS1(LED indicating lights)	N/A	N/A	N/A

Supplementary Information:
(1) See attached energy source diagram for additional details.
(2) “N” – Normal Condition; “A” – Abnormal Condition; “S” Single Fault.

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies	(See appended Table 4.1.2.)	P
4.1.2	Use of components	Components, which are certified to IEC and/or national standards, are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment	P
4.1.3	Equipment design and construction	Compliance is checked by inspection and by the relevant tests	P
4.1.15	Markings and instructions.....:	(See Annex F)	P
4.4.4	Safeguard robustness	No such safeguard.	N/A
4.4.4.2	Steady force tests.....:	(See Annex T.4)	P
4.4.4.3	Drop tests .....:	(See Annex T.7)	P
4.4.4.4	Impact tests .....:		N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:		N/A
4.4.4.6	Glass Impact tests.....:		N/A
4.4.4.7	Thermoplastic material tests .....:	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard.....:		N/A
4.4.4.9	Accessibility and safeguard effectiveness		N/A
4.5	Explosion	No explosion observed during normal/ abnormal/ single faultconditions.	P
4.6	Fixing of conductors		N/A
4.6.1	Fix conductors not to defeat a safeguard		N/A
4.6.2	10 N force test applied to .....:		N/A
4.7	Equipment for direct insertion into mains socket – outlets	Not such equipment.	N/A
4.7.2	Mains plug part complies with the relevant standard.....:		N/A
4.7.3	Torque (Nm) .....:		N/A
4.8	Products containing coin/button cell batteries	No such coin/button cell batteries.	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery.....:		—
4.8.4	Battery Compartment Mechanical Tests .....:		N/A
4.8.5	Battery Accessibility		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.9	Likelihood of fire or shock due to entry of conductive object.....:	Comply Annex P	P
5	**ELECTRICALLY-CAUSED INJURY**		P
5.2.1	Electrical energy source classifications.....:	See Energy source identification and classification table.	P
5.2.2	ES1, ES2 and ES3 limits	All circuits are classified as ES1,	P
5.2.2.2	Steady-state voltage and current.....:	(See appended table 5.2)	P
5.2.2.3	Capacitance limits .....:		N/A
5.2.2.4	Single pulse limits .....:		N/A
5.2.2.5	Limits for repetitive pulses .....:		N/A
5.2.2.6	Ringing signals .....:		N/A
5.2.2.7	Audio signals .....:		N/A
5.3	Protection against electrical energy sources	Only ES1 circuit, no protectionrequest.	N/A
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards		N/A
5.3.2.2	Contact requirements		N/A
	a) Test with test probe from Annex V.....:		N/A
	b) Electric strength test potential (V) .....:		N/A
	c) Air gap (mm) .....:		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		N/A
5.4.1.2	Properties of insulating material		N/A
5.4.1.3	Humidity conditioning .....:		N/A
5.4.1.4	Maximum operating temperature for insulating materials .....:		N/A
5.4.1.5	Pollution degree .....:		N/A
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is applied.	N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage		N/A
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A
5.4.1.10.2	Vicat softening temperature.....:		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.10.3	Ball pressure .....:		N/A
5.4.2	Clearances		N/A
5.4.2.2	Determining clearance using peak working voltage		N/A
5.4.2.3	Determining clearance using required withstand voltage .....:		N/A
	a) a.c. mains transient voltage .....:		—
	b) d.c. mains transient voltage .....:		—
	c) external circuit transient voltage .....:		—
	d) transient voltage determined by measurement :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages .....:		N/A
5.4.3	Creepage distances .....:		N/A
5.4.3.1	General		N/A
5.4.3.3	Material Group .....:		—
5.4.4	Solid insulation		N/A
5.4.4.2	Minimum distance through insulation .....:		N/A
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs).....:		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material .....:		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz .....:		N/A
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ).....:		—
5.4.6	Insulation of internal wire as part of supplementary safeguard .....:		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.8	Humidity conditioning		N/A
	Relative humidity (%).....:		—
	Temperature (°C) .....:		—
	Duration (h).....:		—
5.4.9	Electric strength test.....:		N/A
5.4.9.1	Test procedure for a solid insulation type test		N/A
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test .....:		N/A
5.4.10.2.3	Steady-state test.....:		N/A
5.4.11	Insulation between external circuits and earthed circuitry .....:		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V).....:		—
	Nominal voltage U_{peak} (V).....:		—
	Max increase due to variation U_{sp} .....:		—
	Max increase due to ageing ΔU_{sa} .....:		—
	$U_{op}= U_{peak} + \Delta U_{sp} + \Delta U_{sa}$.....:		—
5.5	Components as safeguards		
5.5.1	General	No such components.	N/A
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....:		N/A
5.5.3	Transformers		N/A
5.5.4	Optocouplers		N/A
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
5.5.7	SPD's		N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....:		N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors	Class III equipment.	N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm^2) .....:		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm^2). .....:		—
	Protective current rating (A)..... :		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement		N/A
	Conductor size (mm^2), nominal thread diameter (mm). .....:		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω).....:		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		N/A
5.7.2	Measuring devices and networks	Class III equipment.	N/A
5.7.2.1	Measurement of touch current .....:		N/A
5.7.2.2	Measurement of prospective touch voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		N/A
	System of interconnected equipment (separate connections/single connection) .....:		—
	Multiple connections to mains (one connection at a time/simultaneous connections) .....:		—
5.7.4	Earthed conductive accessible parts.....:		N/A
5.7.5	Protective conductor current		N/A
	Supply Voltage (V).....:		—
	Measured current (mA).....:		—
	Instructional Safeguard.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.6	Prospective touch voltage and touch current due to external circuits	Not such device.	N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits	Not such device.	N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA) .....:		N/A
6	**ELECTRICALLY- CAUSED FIRE**		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	See Energy source identification and classification table.	P
6.2.2.1	General	See below.	P
6.2.2.2	Power measurement for worst-case load fault ... :	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault ..... :	(See appended table 6.2.2)	P
6.2.2.4	PS1 ..... :	(See appended table 6.2.2)	P
6.2.2.5	PS2 ..... :	(See appended table 6.2.2)	P
6.2.2.6	PS3 ..... :		N/A
6.2.3	Classification of potential ignition sources	See below	P
6.2.3.1	Arcing PIS ..... :	No voltage exceeds 50V within equipment, no Arcing PIS.	N/A
6.2.3.2	Resistive PIS ..... :	All conductors and devices are considered as Resistive PIS. (See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... :	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure	No combustible materials outside enclosure except for marking label and rubber stand	N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method Control fire spread used, see Sub-Clause 6.4.5	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions..... :		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards .....:	Compliance detailed as follows: - Printed board: rated V-1 or VTM-1 min. class material; Other components other than PCB are: - mounted on PCB rated V-1 or VTM-1 min., or - made of V-2, VTM-2 or HF2 min.	P
6.4.6	Control of fire spread in PS3 circuit	No PS3 circuit.	N/A
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.1	General.....:		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	V-0 enclosure used	P
6.4.8.1	Fire enclosure and fire barrier material properties		N/A
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	V-0 enclosure used	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		N/A
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions(mm) .....:		N/A
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm).....:		N/A
	Flammability tests for the bottom of a fire enclosure .....:		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) .....:		N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....:		N/A
6.5	Internal and external wiring		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.5.1	Requirements		P
6.5.2	Cross-sectional area (mm^2) .....:	(See appended table 4.1.2)	—
6.5.3	Requirements for interconnection to building wiring .....:	No such interconnection to building wiring.	N/A
6.6	Safeguards against fire due to connection to additional equipment		N/A
	External port limited to PS2 or complies with Clause Q.1	See appended table Annex Q.1	N/A
7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		P
7.2	Reduction of exposure to hazardous substances	No hazardous substances exposure.	N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions ..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010) .....:		—
7.6	Batteries .....:	(See appended tables Annex M)	P
8	**MECHANICALLY-CAUSED INJURY**		P
8.1	General	See below	P
8.2	Mechanical energy source classifications	MS1: Equipment mass MS1: Sharp edges and corners	P
8.3	Safeguards against mechanical energy sources	No safeguards required	N/A
8.4	Safeguards against parts with sharp edges and corners	The edges and corners are sufficiently well rounded and smoothed so as not cause pain or injury	N/A
8.4.1	Safeguards	No safeguards required	N/A
8.5	Safeguards against moving parts	No moving parts	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard..... :		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks .....:		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructional Safeguard.....:		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N) .....:		N/A
8.5.5	High Pressure Lamps	No such Lamps provided.	N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test.....:		N/A
8.6	Stability		N/A
8.6.1	Product classification		N/A
	Instructional Safeguard.....:		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force .....:		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt .....:		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....:		N/A
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....:		N/A
8.7.2	Direction and applied force.....:		N/A
8.8	Handles strength	No handles.	N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....:		N/A
8.9	Wheels or casters attachment requirements	No such parts.	N/A
8.9.1	Classification		N/A
8.9.2	Applied force .....:		—
8.10	Carts, stands and similar carriers	No such parts.	N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard.....:		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force .....:		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Applied horizontal force (N) .....:		N/A
8.10.6	Thermoplastic temperature stability (°C).....:		N/A
8.11	Mounting means for rack mounted equipment	Not such equipment.	N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable *N*.....:		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas.....	No telescoping or rod antennas.	N/A
	Button/Ball diameter (mm).....:		—
9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications	All accessible surfaces areclassified as TS1, see appendedtable 5.4.1.4, 6.3.2, 9.0, B.2.6.	P
9.3	Safeguard against thermal energy sources	No safeguard required for TS1	N/A
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard	No safeguard required for TS1	N/A
9.4.2	Instructional safeguard .....:	No safeguard required for TS1	N/A
10	**RADIATION**		P
10.2	Radiation energy source classification	See Energy source identification and classification table	P
10.2.1	General classification	LED used within this equipment is considered as RS1	P
10.3	Protection against laser radiation		N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault ..... :		N/A
	Instructional safeguard ..... :		—
	Tool..... :		—
10.4	Protection against visible, infrared, and UV radiation	Indicating LEDs used	P
10.4.1	General		P
10.4.1.a)	RS3 for Ordinary and instructed persons.....:		N/A
10.4.1.b)	RS3 accessible to a skilled person.....:		N/A
	Personal safeguard (PPE) instructional safeguard.....:		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.4.1.d)	Normal, abnormal, single-fault conditions ..... :		N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque..... :		N/A
10.4.1.f)	UV attenuation..... :		N/A
10.4.1.g)	Materials resistant to degradation UV ..... :		N/A
10.4.1.h)	Enclosure containment of optical radiation..... :		N/A
10.4.1.i)	Exempt Group under normal operating conditions ..... :	Indicating LEDs for low power application are in exempt group.	P
10.4.2	Instructional safeguard ..... :		N/A
10.5	Protection against x-radiation	The EUT does not produce x-radiation	N/A
10.5.1	X- radiation energy source that exists equipment :		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards..... :		N/A
	Instructional safeguard for skilled person..... :		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation ..... :		—
	Abnormal and single-fault condition ..... :		N/A
	Maximum radiation (pA/kg)..... :		N/A
10.6	Protection against acoustic energy sources	No such device.	N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A)..... :		N/A
	Output voltage, unweighted r.m.s..... :		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards ..... :		N/A
	Equipment safeguard prevent ordinary person to RS2..... :		—
	Means to actively inform user of increase sound pressure..... :		—
	Equipment safeguard prevent ordinary person to RS2..... :		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)	No such device within the EUT	N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output..... :		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A)..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A) ..... :		—
B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers ..... :		N/A
B.2.3	Supply voltage and tolerances	Not directly connect to the mains.	N/A
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements..... :	(See appended table B.3)	P
B.3.2	Covering of ventilation openings		N/A
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector ..... :	No voltage selector	N/A
B.3.5	Maximum load at output terminals .....:	No output terminal.	N/A
B.3.6	Reverse battery polarity	No battery.	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	(See appended table B.3)	P
B.3.8	Safeguards functional during and after abnormal operating conditions	All safeguards remained effective.	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited ..... :	No such devices.	N/A
B.4.3	Motor tests	No such devices.	N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature ..... :		N/A
B.4.4	Short circuit of functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended Table B.4.)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended Table B.4.)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		N/A
B.4.6	Short circuit or disconnect of passive components		N/A
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	(See appended Table B.4.)	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.9	Battery charging under single fault conditions ... :	No battery.	N/A
C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation	No such UV generated from the equipment.	N/A
C.1.2	Requirements	See above.	N/A
C.1.3	Test method	See above.	N/A
C.2	UV light conditioning test	See above.	N/A
C.2.1	Test apparatus	See above.	N/A
C.2.2	Mounting of test samples	See above.	N/A
C.2.3	Carbon-arc light-exposure apparatus	See above.	N/A
C.2.4	Xenon-arc light exposure apparatus	See above.	N/A
D	**TEST GENERATORS**		N/A
D.1	Impulse test generators	No such consideration.	N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		P
E.1	Audio amplifier normal operating conditions		P
	Audio signal voltage (V) .....:	3.26V	—
	Rated load impedance (Ω) .....:	4 ohm	—
E.2	Audio amplifier abnormal operating conditions		N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	General requirements		P
	Instructions – Language .....:	English. However, the local language for each country that would be marketed shall be provided	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1	Lettersymbols are used according to IEC 60027-1	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphicsymbols are used according to IEC 60417-1 or ISO 3864-2 or ISO 7000	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Marking is on enclosure which is not removable part	P
F.3.2	Equipment identification markings	See below	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.2.1	Manufacturer identification .....:	See copy of marking plate for detail.	—
F.3.2.2	Model identification .....:	See copy of marking plate for detail.	—
F.3.3	Equipment rating markings	See below	P
F.3.3.1	Equipment with direct connection to mains		N/A
F.3.3.2	Equipment without direct connection to mains		P
F.3.3.3	Nature of supply voltage .....:	DC symbol used.	—
F.3.3.4	Rated voltage .....:	See copy of marking plate for detail.	—
F.3.3.4	Rated frequency .....:	Class III equipment.	—
F.3.3.6	Rated current or rated power .....:	See copy of marking plate for detail.	—
F.3.3.7	Equipment with multiple supply connections	Only one connection.	N/A
F.3.4	Voltage setting device	No voltage setting device.	N/A
F.3.5	Terminals and operating devices	No such device.	N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings..... :		N/A
F.3.5.2	Switch position identification marking ..... :		N/A
F.3.5.3	Replacement fuse identification and rating markings..... :		N/A
F.3.5.4	Replacement battery identification marking ..... :	Provided the user manual	P
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification	Class III equipment	N/A
F.3.6.1	Class I Equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....:	IPX0	—
F.3.8	External power supply output marking	Class III equipment	N/A
F.3.9	Durability, legibility and permanence of marking	The marking on the equipment is durable and legible	P
F.3.10	Test for permanence of markings	After rubbing test by water and petroleum spirit, the marking is still legible; it is not easily removed and show no sign of curling	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use		P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES2 limits		N/A
	h) Symbols used on equipment		N/A
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A
G	**COMPONENTS**		P
G.1	**Switches**		N/A
G.1.1	General requirements	No Switches.	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	**Relays**		N/A
G.2.1	General requirements	No Relays	N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	**Protection Devices**		N/A
G.3.1	Thermal cut-offs	No such devices within the equipment.	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.2.1a)	Thermal links separately tested with IEC 60691	No such devices within the equipment.	N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H) ..... :		—
	Single Fault Condition ..... :		—
	Test Voltage (V) and Insulation Resistance (Ω). :		—
G.3.3	PTC Thermistors		N/A
G.3.4	Overcurrent protection devices		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions.....:		N/A
G.4	**Connectors**		N/A
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration .....:		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	**Wound Components**		N/A
G.5.1	Wire insulation in wound components.....		N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) .....:		—
	Temperature (°C) .....:		—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	**Transformers**		N/A
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) .....:	No Transformers.	N/A
	Position.....:		—
	Method of protection .....:		—
G.5.3.2	Insulation		N/A
	Protection from displacement of windings.....:		—
G.5.3.3	Overload test ..... :		N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding Temperatures testing in the unit		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	**Motors**		N/A
G.5.4.1	General requirements	No such device	N/A
	Position .....:		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) .....:		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V) .....:		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....:		N/A
	Electric strength test (V) .....:		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature .....:		N/A
	Electric strength test (V) .....:		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....:		N/A
	Electric strength test (V) .....:		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage .....:		—
G.6	**Wire Insulation**		N/A
G.6.1	General		N/A
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	**Mains supply cords**		N/A
G.7.1	General requirements	Class III equipment.	N/A
	Type.....:		—
	Rated current (A).....:		—
	Cross-sectional area (mm^2), (AWG) ..... :		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) .....:		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)....:		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry ..... :		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) .....:		—
	Diameter (m) .....:		—
	Temperature (°C) .....:		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	**Varistors**		N/A
G.8.1	General requirements	No Varistors.	N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test .....:		N/A
G.8.3.3	Temporary overvoltage .....:		N/A
G.9	**Integrated Circuit (IC) Current Limiters**		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.	No such IC.	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....:		—
G.9.1 d)	IC limiter output current (max. 5A) .....:		—
G.9.1 e)	Manufacturers' defined drift .....:		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	**Resistors**		N/A
G.10.1	General requirements	No such resistors.	N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	**Capacitor and RC units**		N/A
G.11.1	General requirements	No such Capacitor or RC units	N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
G.12	**Optocouplers**		N/A
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....:	No Optocouplers.	N/A
	Type test voltage Vini .....:		—
	Routine test voltage, Vini,b .....:		—
G.13	**Printed boards**		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction).....:		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation.....:		N/A
	Number of insulation layers (pcs).....:		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements .....:	(See G.13)	N/A
G.15	**Liquid filled components**		N/A
G.15.1	General requirements	No such devices within the equipment.	N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	**IC including capacitor discharge function (ICX)**		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A
b)	Impulse test using circuit 2 with Uc = to transient voltage .....:		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage .....:		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....:		—
D3)	Resistance .....:		—
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	General	No telephone ringing signal generated within the equipment.	N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) .....:		—
H.3.1.2	Voltage (V) .....:		—
H.3.1.3	Cadence; time (s) and voltage (V) .....:		—
H.3.1.4	Single fault current (mA):.....:		—
H.3.2	Tripping device and monitoring voltage .....:		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....:		—
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		N/A
	General requirements		N/A
K	**SAFETY INTERLOCKS**		N/A
K.1	General requirements	No safety interlock provided within the equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance .....:		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method .....:		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....:		N/A
K.7.2	Overload test, Current (A) .....:		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test .....:	(See appended table 5.4.9)	N/A
L	**DISCONNECT DEVICES**		N/A
L.1	General requirements	Class III equipment.	N/A
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources	Not multiple power sources.	N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		P
M.1	General requirements		P
M.2	Safety of batteries and their cells		P
M.2.1	Requirements		P
M.2.2	Compliance and test method (identify method) .. :	Provided by the manufacture	P
M.3	Protection circuits		P
M.3.1	Requirements		P
M.3.2	Tests		P
	- Overcharging of a rechargeable battery		P
	- Unintentional charging of a non- rechargeable battery	Rechargeable battery used	N/A
	- Reverse charging of a rechargeable battery	Cannot be reversed	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Excessive discharging rate for any battery		P
M.3.3	Compliance .....:	After above test have not created a hazard in the meaning of this standard	P
M.4	Additional safeguards for equipment containing secondary lithium battery		P
M.4.1	General		P
M.4.2	Charging safeguards		P
M.4.2.1	Charging operating limits		P
M.4.2.2a)	Charging voltage, current and temperature .....:	(See appended table M.4)	—
M.4.2.2 b)	Single faults in charging circuitry .....:	(See appended table B.4)	—
M.4.3	Fire Enclosure	V-0 enclosure used	P
M.4.4	Endurance of equipment containing a secondary lithium battery		P
M.4.4.2	Preparation		P
M.4.4.3	Drop and charge/discharge function tests		P
	Drop		P
	Charge		P
	Discharge		P
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) .....:		N/A
M.6.2	Leakage current (mA) .....:		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume *Vz* (m^3/s)..... :		—
M.8.2.3	Correction factors..... :		—
M.8.2.4	Calculation of distance *d* (mm) ..... :		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) ..... :		N/A
N	**ELECTROCHEMICAL POTENTIALS**		N/A
	Metal(s) used ..... :		—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		N/A
	Figures O.1 to O.20 of this Annex applied..... :		—
P	**SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS**		N/A
P.1	General requirements		N/A
P.2.2	Safeguards against entry of foreign object		N/A
	Location and Dimensions (mm) ..... :		—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts ..... :		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) ..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C)..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Tr (°C) ..... :		—
	Ta (°C)..... :		—
P.4.2 b)	Abrasion testing ..... :		N/A
P.4.2 c)	Mechanical strength testing ..... :		N/A
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		N/A
Q.1	Limited power sources		N/A
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		—
	Current limiting method ..... :		—
R	**LIMITED SHORT CIRCUIT TEST**		N/A
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)). ..... :		N/A
S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material ..... :		—
	Wall thickness (mm)..... :		—
	Conditioning (°C)..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material ..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosure materials of equipment with a steady-state power exceeding 4000 W		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Conditioning (test condition), (°C).....:		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A

T	MECHANICAL STRENGTH TESTS		P
T.1	General requirements		N/A
T.2	Steady force test, 10 N .....:		N/A
T.3	Steady force test, 30 N .....:		N/A
T.4	Steady force test, 100 N .....:	(See appended table T.4)	P
T.5	Steady force test, 250 N .....:		N/A
T.6	Enclosure impact test		N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test .....:	(See appended table T.7)	P
T.8	Stress relief test .....:	(See appended table T.8)	P
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....:		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Height (m) .....:		—
T.10	Glass fragmentation test .....:		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm).....:		—
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements	No CRT provided within the equipment.	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs	See above.	N/A
U.3	Protective Screen.....:	See above.	N/A
V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		P
V.1	Accessible parts of equipment		P
V.2	Accessible part criterion		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
PCB	CHUAN YI COMPUTER (SHENZHEN) CO., LTD.	CM-4	V-0, 130°C	UL 796	UL E162264
(Alternative)	Interchangeable	Interchangeable	V-0, 130°C	UL 796	UL
Enclosure	CHI MEI CORPORATION	PA-761(+)	V-0, 80 °C	UL94	UL E56070
Internal wire	Interchangeable	Interchangeable	VW-1, Min. 26AWG, 80°C	UL 758	UL
Speaker	Interchangeable	Interchangeable	4ohm, 5W	EN 62368-1	Test with appliance
Rechargeable Li-ion Battery pack	SHENZHEN BOTETO DIGITAL TECHNOLOGY CO., LTD	18650	3.7V 1200mAh, 4.44Wh	IEC 62133-2: 2017	Shenzhen BUAA Report no.: RSZBHST210713491
Rechargeable Li-ion Battery cell	SHENZHEN BOTETO DIGITAL TECHNOLOGY CO., LTD	18650	3.7V 1200mAh, 4.44Wh	IEC 62133-2: 2017	Shenzhen BUAA Report no.: RSZBHST210713491
Supplementary information: [1]) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests			N/A
(The following mechanical tests are conducted in the sequence noted.)				
4.8.4.2	TABLE: Stress Relief test			—
Part	Material	Oven Temperature (°C)		Comments
--	--	--		--
4.8.4.3	TABLE: Battery replacement test			—
Battery part no. ..... :				—
Battery Installation/withdrawal		Battery Installation/Removal Cycle		Comments
		1		
		2		
		3		
		4		
		5		

4.8.4, 4.8.5	**TABLE: Lithium coin/button cell batteries mechanical tests**	N/A

(The following mechanical tests are conducted in the sequence noted.)

	6	
	8	
	9	
	10	

4.8.4.4	Table: Drop test	—

Impact Area	Drop Distance	Drop No.	Observations
		1	
		2	
		3	

4.8.4.5	TABLE: Impact	—

Impacts per surface	Surface tested	Impact energy (Nm)	Comments
--	--	--	--

4.8.4.6	TABLE: Crush test	—

Test position	Surface tested	Crushing Force (N)	Duration force applied (s)
--	--	--	--

Supplementary information:

4.8.5	**TABLE: Lithium coin/button cell batteries mechanical test result**	N/A

Test position	Surface tested	Force (N)	Duration force applied (s)
--	--	--	--

Supplementary information:

5.2	Table: Classification of electrical energy sources	P

5.2.2.2 – Steady State Voltage and Current conditions

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions [1)]	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
1	5Vdc	All internal circuit	Normal	Max. 5.0Vd.c.	--	--	ES1
			Abnormal-	--	--	--	
			Single fault –	--	--	--	
2	5Vdc	Battery pack	Normal	Max.4.25V d.c.	--	--	ES1
			Abnormal-		--	--	
			Single fault –		--	--	
3	5Vdc	Battery cell	Normal	Max.4.25V d.c.	--	--	ES1
			Abnormal-		--	--	
			Single fault –		--	--	

5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
--	--	--	Normal	--	--	--
			Abnormal	--	--	--
			Single fault – SC or OC	--	--	--

5.2.2.4 - Single Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

5.2.2.5 - Repetitive Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

Test Conditions: Normal – Full load and no load.
Abnormal – Overload output
Supplementary information: SC=Short Circuit, OC=Open Circuit

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) :	5.0VDC	3.7VDC (powered by battery)	--	--	—
	Ambient T_{min} (°C) :	See below	See below	--	--	—
	Ambient T_{max} (°C) :	See below	See below	--	--	—
	Tma (°C) :	See below	See below	--	--	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
DC terminal		42.3	--	--	--	Ref.
C50 body		43.6	44.9	--	--	105
PCB near U2		53.8	55.4	--	--	130
PCB near U3		54.2	56.1	--	--	130
Battery body		43.4	--	--	--	45
Battery body		--	56.8	--	--	60
Enclosure inside		45.5	47.4	--	--	Ref.
Ambient		40.0	40.0	--	--	--
Accessible part, Below values for T (ºC) are re-calculated to 25 ºC from actual ambient respectively:						
Enclosure outside		29.6	30.4	--	--	77*
Button		27.3	28.6	--	--	77*
Ambient		25.0	25.0	--	--	--

Supplementary information:
Considering uncertainty of measurement.
*Temperature limit for TS1 of accessible enclosure outside according to Table 38. (External surfaces of enclosure will be touched occasionally for very short periods (>1 s and <10 s).

Note 1: The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (Tma) of 45°C.

Note 2: The temperatures were measured under the worse case normal mode defined in clause B.2.1.

1) Maximum normal load (system):

Bluetooth mode 1/8 of max. output power with standard signal input.

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics		N/A
Penetration (mm).....			—
Object/ Part No./Material	Manufacturer/trademark	T softening (°C)	
--	--	--	

supplementary information:

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics		N/A
Allowed impression diameter (mm) ..... :		≤ 2 mm	—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)
--	--	--	--
Supplementary information:			

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						N/A
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)[1]	Required cl (mm)*	cl (mm)[2]	Required cr (mm)	cr (mm)
--	--	--	--	--	--	--	--
Supplementary information:							

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage		N/A
	Overvoltage Category (OV):		--
	Pollution Degree:		--
Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)
--	--	--	--
Supplementary information:			

5.4.2.4	TABLE: Clearances based on electric strength test			N/A
Test voltage applied between:	Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No	
--	--	--	--	
Supplementary information:				

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements					N/A
Distance through insulation di at/of:	Peak voltage (V)	Frequency (Hz)	Material	Required DTI (mm)	DTI (mm)	
--	--	--	--	--	--	
Supplementary information:						

5.4.9	TABLE: Electric strength tests			N/A
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (Vpeak)	Breakdown Yes / No	
Basic/supplementary:				

5.4.9	TABLE: Electric strength tests		N/A
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (Vpeak)	Breakdown Yes / No
--	--	--	--
Reinforced:			
--	--	--	--
--	--	--	--
Supplementary information:			

5.5.2.2	TABLE: Stored discharge on capacitors				N/A
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification
--	--	--	--	--	--
--	--	--	--	--	--
Supplementary information:					
X-capacitors installed for testing are: [ ] bleeding resistor rating: [ ]ICX: Notes: A. Test Location: Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth B. Operating condition abbreviations: N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition					

5.6.6.2	TABLE: Resistance of protective conductors and terminations			N/A
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
--	--	--	--	--
--	--	--	--	--
Supplementary Information: See clause 5.6.6.2.				

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part	N/A
Supply voltage .....:	264Vac	—
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)
Measured to metal enclosure/output terminals	1 (e open, normal and reverse polarity p)	--
	2* (netural open (switch n),	--

	earth intact and normal polarity, again in reverse polarity (switch p)	
	3 (for IT system, each phase conductor faulted to earth, one at a time (switch g)	--
	4 (for three-phase, each phase conductor open, one at a time switches l)	--
	5 (IT power system or three phase delta system)	--
	6 (three-phase for use on centre-earthed dalta supply system)	--
	8 (incidental electrically connected to other parts)	--

Notes:
[1] Supply voltage is the anticipated maximum Touch Voltage
[2] Earthed neutral conductor [Voltage differences less than 1% or more]
[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3
[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.
[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.
a) Not considered IT power system.
b) Not three phase equipment.
c) Not IT power system or three phase delta system.
d) Not three-phase for use on centre-earthed dalta supply system.
e) Not such parts.

6.2.2	**Table: Electrical power sources (PS) measurements for classification**				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s*)	PS Classification
Power measurement for worst-case fault.	All internal circuit except battery	Power (W) :	--	--	PS1#
		V_A (V) :	--	--	
		I_A (A) :	--	--	
Power measurement for worst-case fault.	Battery pack	Power (W) :	13.11	--	PS1
		V_A (V) :	3.45	--	
		I_A (A) :	3.8	--	
Power measurement for worst-case fault.	Battery cell	Power (W) :	19.152	19.152	PS2
		V_A (V) :	3.42	3.42	
		I_A (A) :	5.6	5.6	

Supplementary Information:
*: Measurement taken only when limits at 3 seconds exceed PS1 limits.
#: External power source was considered as PS1

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)			N/A
Location	Open circuit voltage After 3 s (Vp)	Measured r.m.s current (Irms)	Calculated value (V_p x I_{rms})	Arcing PIS? Yes / No
--	--	--	--	--

Supplementary information:

All primary circuit/components were considered as artcing PIS, The open circuit of all secondary components/circuit were not exceeded 50V.

An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15.

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)				P
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No
All internal circuits/components	--	--	--	-	Yes (declaration)

Supplementary Information:

All power dissipating components in primary and secondary circuit are considered as resistive PIS due to the available power as declared by manufacturer.

A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.

If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.

A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.

8.5.5	TABLE: High Pressure Lamp	N/A
Description	Values	Energy Source Classification
Lamp type .....:		—
Manufacturer .....:		—
Cat no. .....:		—
Pressure (cold) (MPa) .....:		MS_
Pressure (operating) (MPa) .....:		MS_
Operating time (minutes) .....:		—
Explosion method .....:		—
Max particle length escaping enclosure (mm) .:		MS_

Max particle length beyond 1 m (mm).....:		MS_
Overall result .....:		
Supplementary information:		

B.2.5	TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
5.0Vd.c	0.48	0.65	2.4	--	--	--	Normal condition with max. volume. Charging mode.
3.7Vd.c	0.26	--	--	--	--	--	Normal condition with max. volume. Discharging mode.
Supplementary information: The maximum measured current under rated voltage did not exceed 110% of the rated current.							

B.3	TABLE: Abnormal operating condition tests							
Ambient temperature (°C) .....:							See Below	—
Power source for EUT: Manufacturer, model/type, output rating ..:							--	—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Speaker	SC	5	60min	--	--	Type K	--	Speaker stopped working, no damage, no hazards.
Supplementary information: The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; In addition all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions.								

B.4	TABLE: Fault condition tests							P
Ambient temperature (°C) .....:							25°C	—
Power source for EUT: Manufacturer, model/type, output rating ..:							--	—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Charging with empty battery								
Battery P- to B-	Short circuit	5VDC	7hrs	--	--	--	--	Unit normal charging, no damage, no hazard, no explosion, no fire
Discharging with full charged battery								

Battery B+ to B-	Short circuit	3.7	7hrs	--	--	--	--	Unit shutdown immediately, battery no fire, no explosion and no leakage, no hazard.
Battery P- to B-	Short circuit	3.7	7hrs	--	--	--	--	Unit normal charging, no damage, no hazard, no explosion, no fire

Supplementary information:

1) S-C: Short-circuited;
2) All test with the power adapter: FJ-SW1801000N.
3) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; In addition all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions.
4) The test result showed no Class 1 or 2 energy source become Class 3 level during and after single fault condition.

Annex M.3	**TABLE: Batteries**	P
The tests of Annex M are applicable only when appropriate battery data is not available		
Is it possible to install the battery in a reverse polarity position?..... :		

	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition	--	--	--	0.24A	0.4A	0.26A	0.4A	--	--
Max. current during fault condition	--	--	--	0.27A	0.4A	0.32A	1.2A	--	--

Test results:		Verdict
- Chemical leaks	No	P
- Explosion of the battery	No	P
- Emission of flame or expulsion of molten metal	No	P
- Electric strength tests of equipment after completion of tests	--	N/A
Supplementary information:		

Annex M.4	**Table: Additional safeguards for equipment containing secondary lithium batteries**	P

Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	

1	Normal	4.25	0.24	Battery surface: 43.4 Ambient: 40.0	No damaged, no hazard.
2	Single fault: SC P- and B-	4.25	0.27	Battery surface: 44.1 Ambient: 40.0	No damaged, no hazard.
3	Abnormal (after drop test)	4.25	0.24	Battery surface: 43.4 Ambient: 40.0	No damaged, no hazard.

Supplementary Information:

- Highest specified charging temperature: 45°C
- Lowest specified charging temperature: 0°C
- Maximum specified charging current: 0.4A
- Maximum specified charging voltage: 4.25V

Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation
Li-ion battery	0	Charging current: 0.06A max.	>45	Unit stop charging and battery charging current: 0 A

Supplementary Information:

Annex Q.1	**TABLE: Circuits intended for interconnection with building wiring (LPS)**					N/A
Note: Measured UOC (V) with all load circuits disconnected:						
Output Circuit	Components	U_{oc} (V)	I_{sc} (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--
Supplementary Information: --						

T.2, T.3, T.4, T.5	**TABLE: Steady force test**				**P**
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Enclosure	Plasitc	1.5	100	5	Enclosure remained intact, no crack/ opening developed.
Supplementary information: Tested enclosure Material: See table 4.1.2.					

T.6, T.9	TABLE: Impact tests			N/A
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation
--	--	--	--	--
Supplementary information: Tested enclosure Material: See table 4.1.2.				

T.7	TABLE: Drop tests			P
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation
Top	Plastic	1.5	1000	No damage, no hazard.
Side	Plastic	1.5	1000	No damage, no hazard.
Bottom	Plastic	1.5	1000	No damage, no hazard.
Supplementary information: Testedenclosure Material: See table 4.1.2.				

T.8	TABLE: Stress relief test				P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Enclosure	Plastic	1.5	70	7	No damage, no hazard.
Supplementary information: 1) See appended table 4.1.2.					

Supplementary test results for subclause 5.4.1.8:

5.4.1.8	Table: working voltage measurement			N/A
Location	RMS voltage (V)	Peak voltage (V)	Comments	
--	--	--	--	
supplementary information:				
Test voltage: Evaluated in the test report ofpower supply				

Supplementary test results for subclause G.5.3:

G.5.3	TABLE: transformers						N/A
Loc.	Tested insulation	Working voltage peak / V (5.4.1.8)	Working voltage rms / V (5.4.1.8)	Required electric strength (5.4.9)	Required clearance / mm (5.4.2.2)	Required creepage distance / mm (5.4.3)	Required distance thr. insul. (5.4.4.6)
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
Supplementary information:							

ATTACHMENT TO TEST REPORT

IEC 62368-1

EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

(Audio/video, information and communication technology equipment - Part 1: Safety requirements)

Differences according to.....: EN 62368-1:2014+A11:2017

Attachment Form No.....: EU_GD_IEC62368_1D_II

Attachment Originator .....: Nemko AS

Master Attachment.....: Date 2021-02-04

	CENELEC COMMON MODIFICATIONS (EN)	P
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".	--
CONTENTS	**Add** the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords	P
	Delete all the "country" notes in the reference document (IEC 62368-1:2014) according to the following list:	P

0.2.1	Note	1	Note 3	4.1.15	Note
4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c
5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note
5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3
5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4
10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3

	For special national conditions, see Annex ZB.		P
1	**Add** the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.	Sales to EUROPEAN need an additional evaluation.	N/A

Attachment 1			
IEC 62368_1D ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	**Add** the following new subclause after 4.9: To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. **mains**, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for **pluggable equipment type B** or **permanently connected equipment**, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for **pluggable equipment type A** the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		N/A
5.4.2.3.2.4	**Add** the following to the end of this subclause: The requirement for interconnection with **external circuit** is in addition given in EN 50491-3:2009.	No external circuits.	N/A
10.2.1	Add the following to [c] and [d] in table 39: For additional requirements, see 10.5.1.	No such radiation from the equipment.	N/A

Attachment 1			
IEC 62368_1D ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	**Add** the following after the first paragraph: *For RS 1 compliance is checked by measurement under the following conditions:* *In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.* NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. *The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus.* *Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.* *For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.* NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.		N/A
10.6.1	**Add** the following paragraph to the end of the subclause: EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.	No such x-radiation generated from the equipment.	N/A
10.Z1	**Add** the following new subclause after 10.6.5. **10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz** The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566		N/A
G.7.1	**Add** the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		N/A

Attachment 1			
IEC 62368_1D ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Bibliography	**Add** the following standards: **Add** the following notes for the standards indicated: IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		--
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		--
4.1.15	**Denmark, Finland, Norway** and **Sweden** To the end of the subclause the following is added: **Class I pluggable equipment type A** intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and **accessible** parts, have a marking stating that the equipment shall be connected to an earthed **mains** socket-outlet. The marking text in the applicable countries shall be as follows: In **Denmark**: “Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.” In **Finland**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In **Norway**: “Apparatet må tilkoples jordet stikkontakt” In **Sweden**: “Apparaten skall anslutas till jordat uttag”		N/A
4.7.3	**United Kingdom** To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex		N/A

Attachment 1			
IEC 62368_1D ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.2	**Denmark** After the 2nd paragraph add the following: A warning (marking **safeguard**) for high **touch current** is required if the **touch current** exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high touch current.	N/A
5.4.11.1 and Annex G	**Finland and Sweden** To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: • the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; • the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.	No TNV circuits.	N/A

Attachment 1			
IEC 62368_1D ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.2.1	**Norway** After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Considered.	P
5.5.6	**Finland, Norway** and **Sweden** To the end of the subclause the following is added: Resistors used as **basic safeguard** or bridging **basic insulation** in **class I pluggable equipment type A** shall comply with G.10.1 and the test of G.10.2.	Class II equipment	N/A
5.6.1	**Denmark** **Add** to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. *Justification:* In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.	Shall be evaluated when submitted for national approval.	N/A
5.6.4.2.1	**Ireland and United Kingdom** After the indent for **pluggable equipment type A**, the following is added: – the **protective current rating** is taken to be 13 A, this being the largest rating of fuse used in the **mains** plug.	Considered.	P
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm^2 to 1,5 mm^2 in cross-sectional area.	See above.	N/A
5.7.5	**Denmark** To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the **protective conductor current** exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high protective conductor current.	N/A

Attachment 1			
IEC 62368_1D ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	**Norway and Sweden** To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.” Translation to Swedish: ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.	Not such system.	N/A

Attachment 1			
IEC 62368_1D ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	**Denmark** To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .	No external circuits.	N/A
B.3.1 and B.4	**Ireland and United Kingdom** The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of **direct plug-in equipment**, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the **direct plug-in equipment**, until the requirements of Annexes B.3.1 and B.4 are met	Not direct plug-in equipment	N/A
G.4.2	**Denmark** To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a *Justification:* Heavy Current Regulations, Section 6c		P

Attachment 1			
IEC 62368_1D ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	**United Kingdom** To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
G.7.1	**United Kingdom** To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	**Ireland** To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	**Ireland and United Kingdom** To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm^2 is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A

Attachment 1			
IEC 62368_1D ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZC	*ANNEX ZC, NATIONAL DEVIATIONS (EN)*		--
10.5.2	**Germany** The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. *Justification:* German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. **NOTE** Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int +49-531-592-6320, Internet: http://www.ptb.de	No CRT within the equipment.	N/A

Attachment 2– Photo Documentation

Figure 1

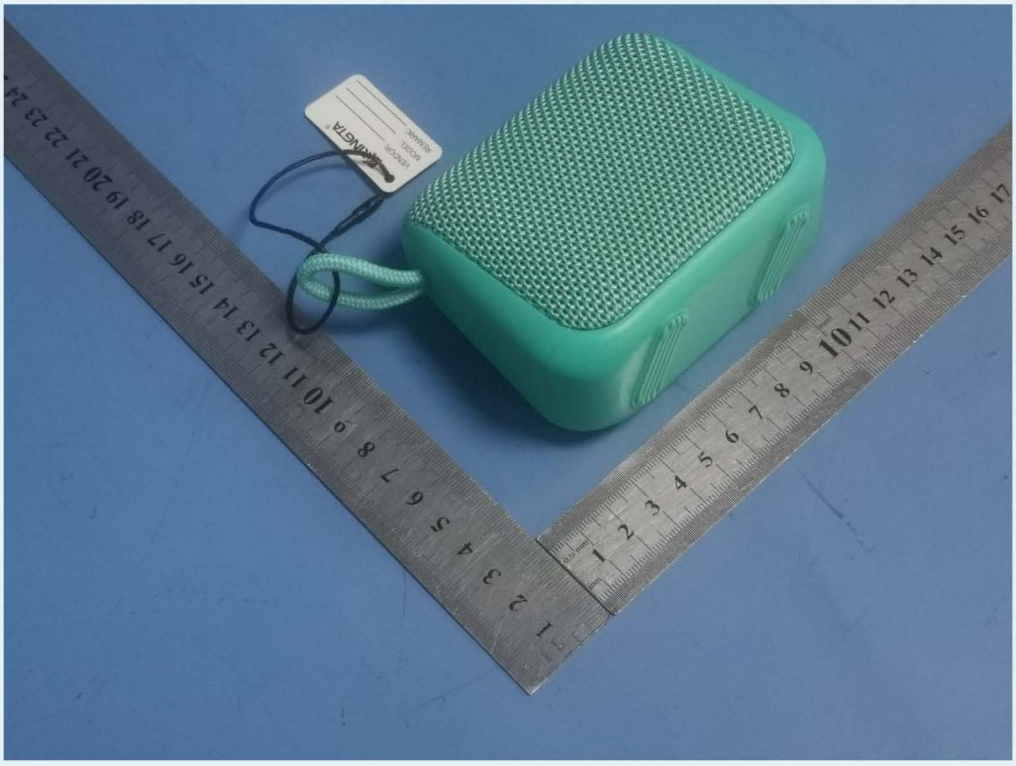


Figure 2

Attachment 2– Photo Documentation

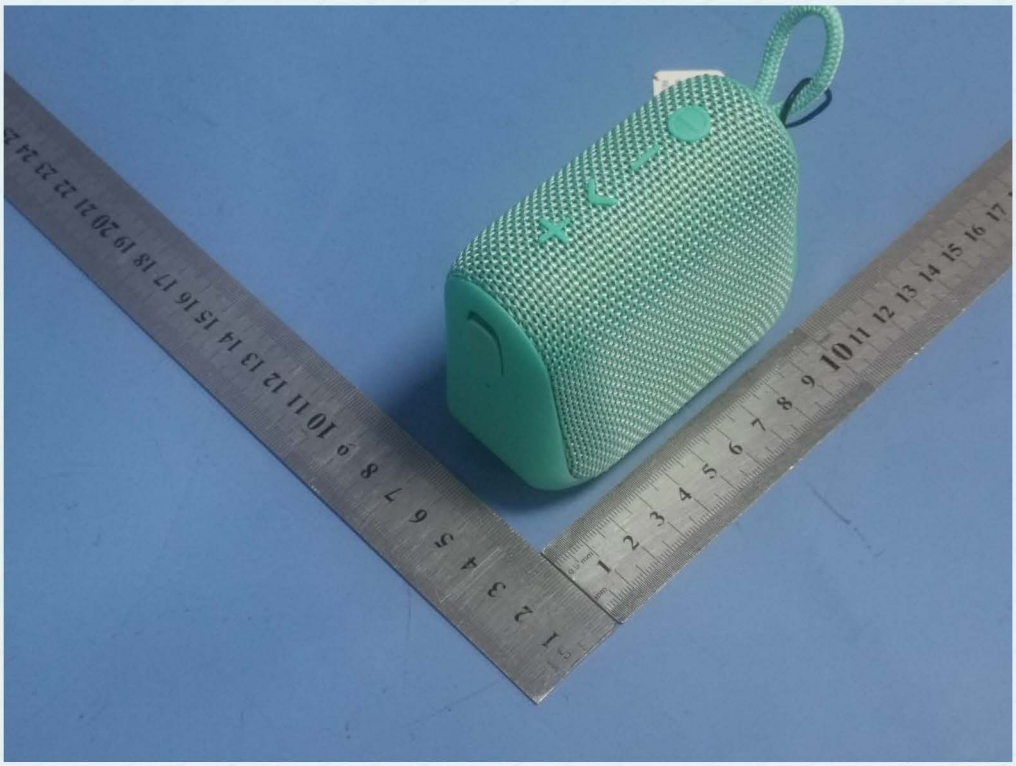


Figure 3

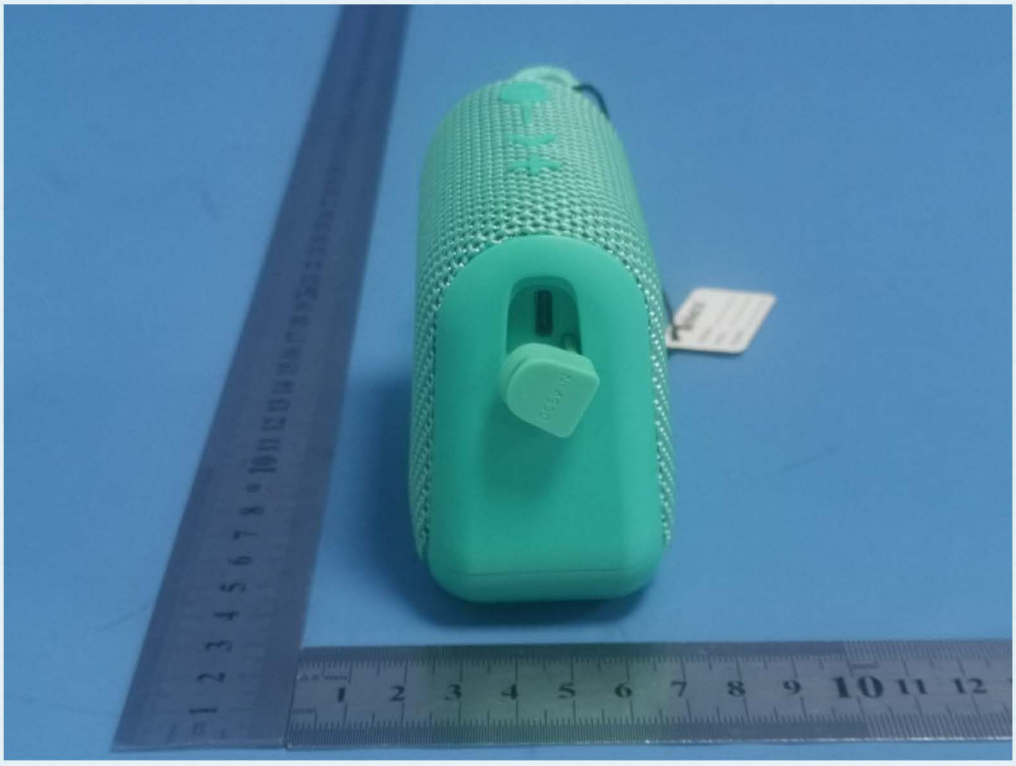


Figure 4

Attachment 2– Photo Documentation

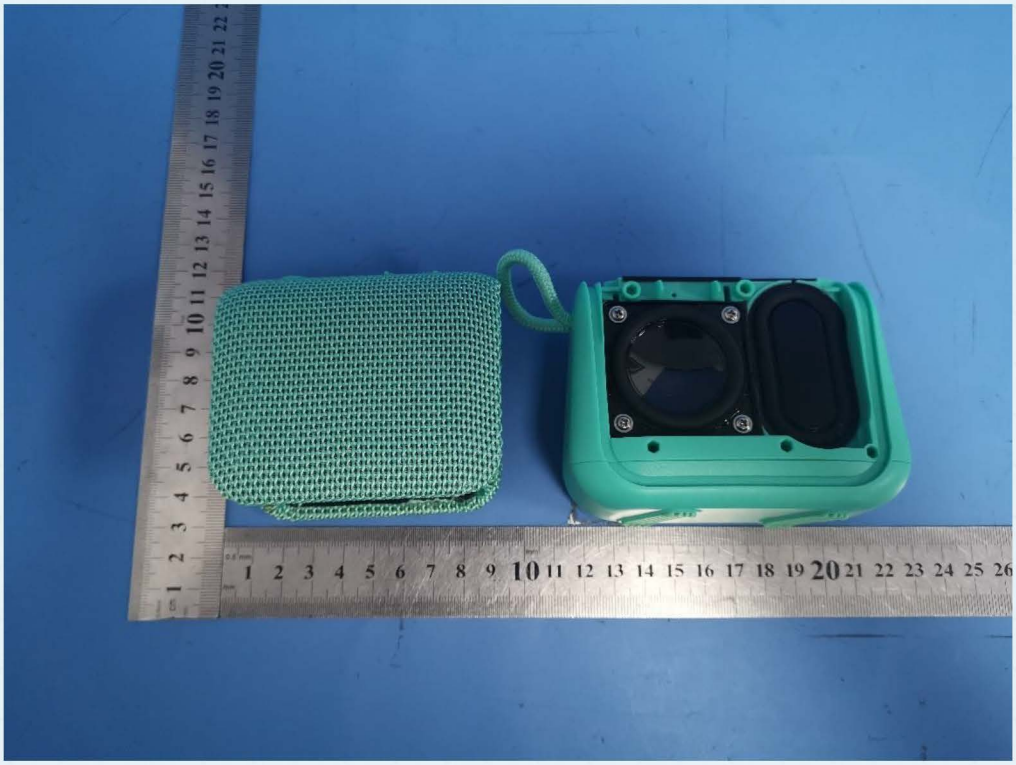


Figure 5

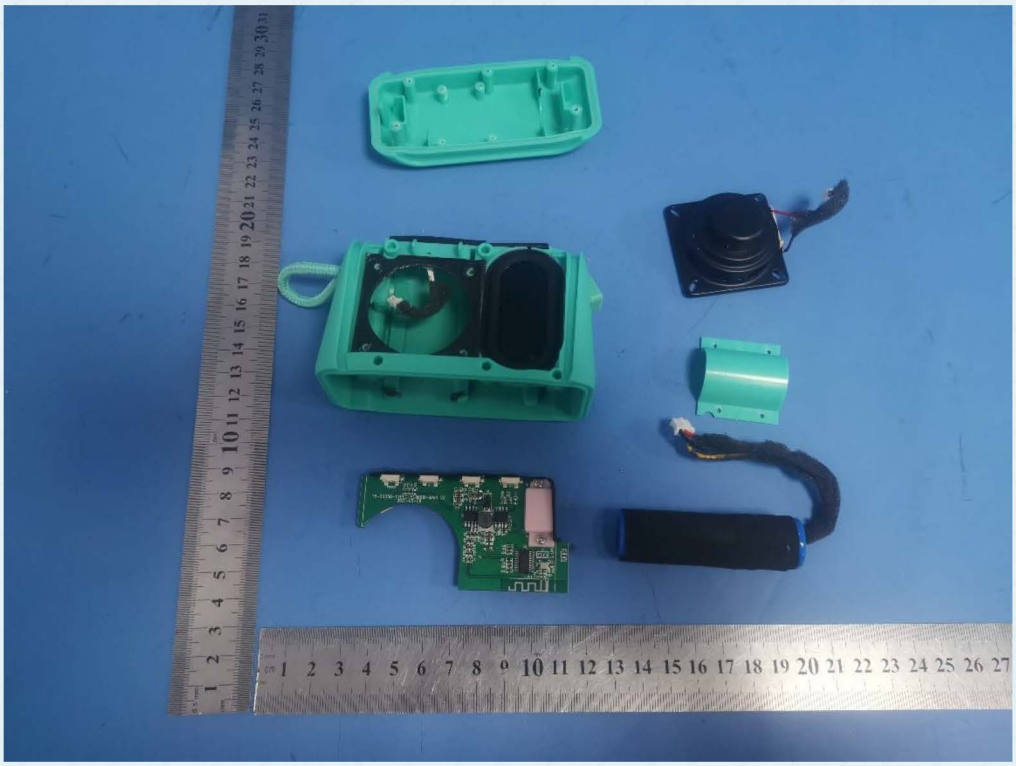


Figure 6

Attachment 2– Photo Documentation

Figure 7

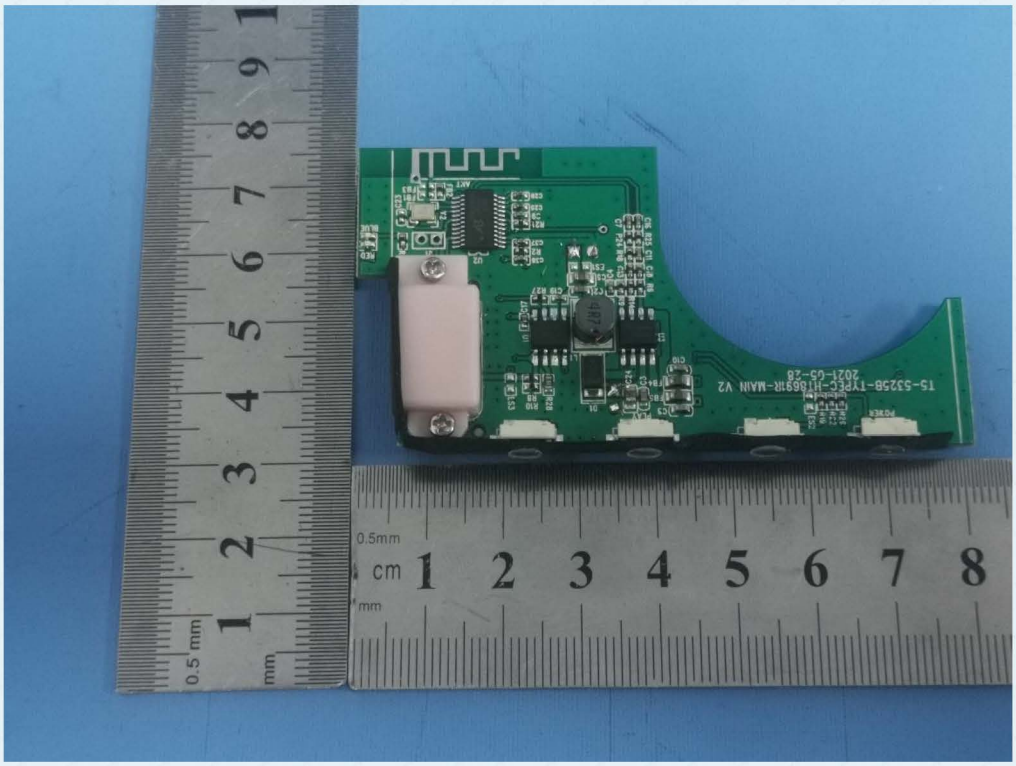


Figure 8

Attachment 2– Photo Documentation

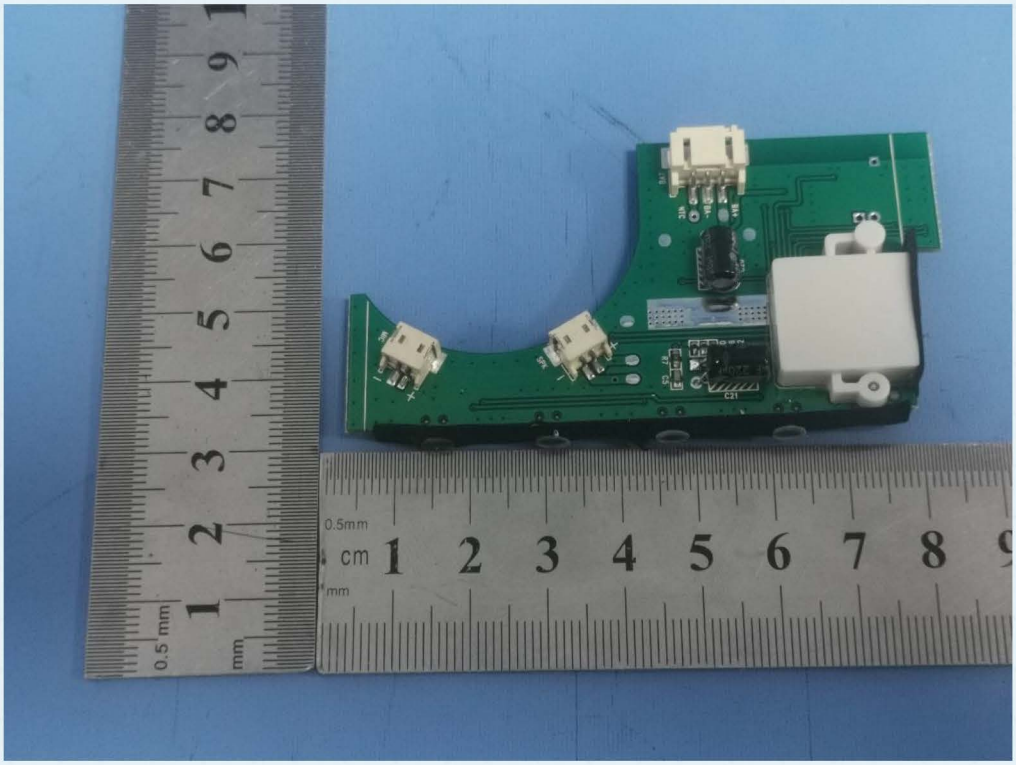


Figure 9

Figure 10

Attachment 2– Photo Documentation

Figure 11

---End of report---

TEST REPORT

Product Name	:	Bluetooth Speaker
Brand Mark	:	N/A
Model No.	:	T5
Series Model	:	RBS920, RBS920 Pro, S20, S20 Pro, AIWA SB-X30, AWKF3, SB-X30, PWS-2240, PWS-22
Report Number	:	BLA-EMC-202106-A6203
Date of Sample Receipt	:	2021/6/23
Date of Test	:	2021/6/23 to 2021/7/12
Date of Issue	:	2021/7/12
Test Standard	:	EN 62479:2010
Test Result	:	Pass

Prepared for:

[redacted]

Prepared by:

BlueAsia of Technical Services(Shenzhen) Co.,Ltd.
Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China
TEL: +86-755-23059481

Compiled by: Jozu.

Review by: Sweely

Approved by: Tomen Li

Date: 2021/7/12

BlueAsia of Technical Services(Shenzhen) Co., Ltd. BLA

[redacted]

REPORT REVISE RECORD

Version No.	Date	Description
00	2021/7/12	Original

TABLE OF CONTENTS

1 TEST SUMMARY

Test item	Test Requirement	Test Method	Class/Severity	Result
RF Exposure	EN 62479:2010	EN 62479:2010	EN 62479:2010	PASS

2 GENERAL INFORMATION

Applicant	
Address	
Manufacturer	
Address	
Factory	
Address	
Product Name	Bluetooth Speaker
Test Model No.	T5

3 GENERAL DESCRIPTION OF E.U.T.

Hardware Version	N/A
Software Version	N/A

4 LABORATORY LOCATION

All tests were performed at:
BlueAsia of Technical Services(Shenzhen) Co., Ltd.
Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China
Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673
No tests were sub-contracted.

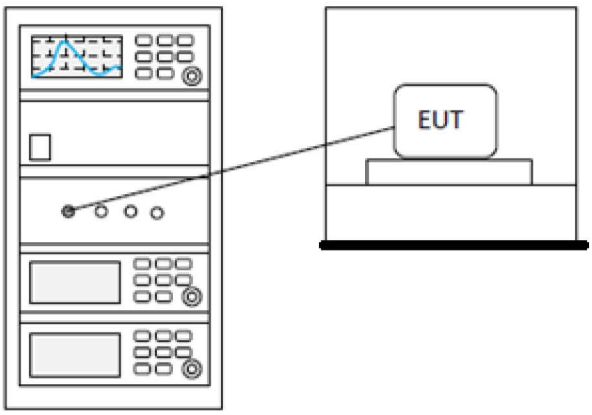
5 RF EXPOSURE

Test Standard	EN 62479:2010
Test Method	EN 62479:2010
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

5.1 LIMITS

According to EN 62479 clause 4.2 Low-power electronic and electrical equipment is deemed to comply with the provisions of this standard if it can be demonstrated using routes B, C or D that the available antenna power and/or the average total radiated power is less than or equal to the applicable low-power exclusion level Pmax.
P max = 20 mW (13 dBm) according to ICNIRP guidelines, since the EUT is General public used.
Remark:
B: The input power level to electrical or electronic components that are capable of radiating electromagnetic energy in the relevant frequency range is so low that the available antenna power and/or the average total radiated power cannot exceed the low-power exclusion level defined in EN 62479 clause 4.2
C: The available antenna power and/or the average total radiated power are limited by product standards for transmitters to levels below the low-power exclusion level defined in EN 62479 clause 4.2
D: Measurements or calculations show that the available antenna power and/or the average total radiated power are below the low-power exclusion level defined in EN 62479 clauses 4.2.

5.2 BLOCK DIAGRAM OF TEST SETUP



5.3 PROCEDURE

The maximum EIRP of the EUT is 0.96dBm(1.25mW), which is less than or equal to the applicable low-power exclusion level Pmax (20mW), so the EUT is deemed to comply with the provisions of this standard.

5.4 TEST DATA

Maximum Emissions Level of Bluetooth				
Modulation	EIRP Level (dBm)	EIRP Level(mW)	Limit (mW)	Result
GFSK Mode	0.84	1.21	20	Pass
π /4 DQPSK Mode	0.85	1.22	20	Pass
8DPSK Mode	0.96	1.25	20	Pass

Note: Refer to project No. BLA-EMC-202106-A6202 for EUT test max conducted peak output power value.

----END OF REPORT----

TEST REPORT

Product Name	:	Bluetooth Speaker
Brand Mark	:	N/A
Model No.	:	T5
Series Model	:	RBS920, RBS920 Pro, S20, S20 Pro, AIWA SB-X30, AWKF3, SB-X30, PWS-2240, PWS-22
Report Number	:	BLA-EMC-202106-A6201
Date of Sample Receipt	:	2021/6/23
Date of Test	:	2021/6/23 to 2021/7/12
Date of Issue	:	2021/7/12
Test Standard	:	ETSI EN 301 489-1 V2.2.3(2019-11); ETSI EN 301 489-17 V3.2.4 (2020-09)
Test Result	:	Pass

Prepared for:

[redacted]

Prepared by:

BlueAsia of Technical Services(Shenzhen) Co.,Ltd.
Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China
TEL: +86-755-23059481

Compiled by: Jozu.

Review by: Sweely

Approved by: Jmen Li

Date: 2021/7/12

BlueAsia of Technical Services(Shenzhen) Co., Ltd. BLA

REPORT REVISE RECORD

Version No.	Date	Description
00	2021/7/12	Original

TABLE OF CONTENTS

1 TEST SUMMARY

Test item	Test Requirement	Test Method	Class/Severity	Result
Voltage Fluctuations and Flicker	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)	IEC 61000-3-3:2013	Class A	Pass
Voltage Dips and Interruptions	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)	IEC 61000-4-11:2004	0 % UT for 0.5per 0 % UT for 1per 70 % UT for 25per 0 % UT for 250per UT is Supply Voltage	Pass
Conducted Immunity at Power Port (150kHz-80MHz)	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)	IEC 61000-4-6:2013	3Vrms (emf),80%,1kHz Amp. Mod.	Pass
Surge at Power Port	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)	IEC 61000-4-5:2014	1.2/50|is Tr/Td 1kV Line to Line 2kV Line to Ground	Pass
Electrical Fast Transients/Burst at Power Port	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)	IEC 61000-4-4:2012	1kV 5/50ns Tr/Td 5kHz Repetition Frequency	Pass
Electrostatic Discharge	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)	IEC 61000-4-2:2008	4kV Contact Discharge 8kV Air Discharge	Pass
Radiated Emissions (above 1GHz)	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)	EN 55032:2015	Class B	Pass
Radiated Emissions (30MHz-1GHz)	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)	EN 55032:2015	Class B	Pass
Conducted Emissions at Mains Terminals (150kHz-30MHz)	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)	EN 55032:2015	Class B	Pass
Radiated Immunity (80MHz-6GHz)	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)	EN 61000-4-3:2006 +A1:2008+A2:2010	3V/m, 80%, 1kHz Amp. Mod.	Pass

2 GENERAL INFORMATION

Applicant	
Address	
Manufacturer	
Address	
Factory	
Address	
Product Name	Bluetooth Speaker
Test Model No.	T5

3 GENERAL DESCRIPTION OF E.U.T.

Hardware Version	T5-5325B-HT8691R-MAIN
Software Version	T5-5325B-HT8691R-MAIN

4 TEST MODE

TEST MODE	TEST MODE DESCRIPTION
Charging	Keep the battery of the EUT in charging mode
BT	Keep the EUT in BT Playing mode
Remark:Only the data of the worst mode would be recorded in this report.	

5 MEASUREMENT UNCERTAINTY

Parameter	Expanded Uncertainty (Confidence of 95%)
Radiated Emission(9kHz-30MHz)	±4.34dB
Radiated Emission(30Mz-1000MHz)	±4.24dB
Radiated Emission(1GHz-18GHz)	±4.68dB
AC Power Line Conducted Emission(150kHz-30MHz)	±3.45dB

6 DESCRIPTION OF SUPPORT UNIT

Device Type	Manufacturer	Model Name	Serial No.	Remark
AC Adapter	UGREEN	CD112	N/A	N/A

7 LABORATORY LOCATION

All tests were performed at:
BlueAsia of Technical Services(Shenzhen) Co., Ltd.
Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China
Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673
No tests were sub-contracted.

8 TEST INSTRUMENTS LIST

Test Equipment Of Voltage Fluctuations and Flicker					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Harmonic and Flicker Analyser	California Instruments	100-CTS-230-TSQ	1846A02390	2021/6/24	2021/6/23

Test Equipment Of Voltage Dips and Interruptions					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
V-dips	Lioncel	VDS-1102	0180502	2020/10/12	2021/10/11
adjustable power	Lioncel	RGL-220	0171104	2020/10/12	2021/10/11
adjustable power	Lioncel	RGL-220	0171103	2020/10/12	2021/10/11

Test Equipment Of Conducted Immunity at Power Port (150kHz-80MHz)					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
CS Testsystem	Lioncel	RIS-6091	0180501	2020/10/12	2021/10/11
decoupling network	Lioncel	CDN-M3-16	0171103	2020/10/12	2021/10/11
decoupling network	Lioncel	CDN-M2-16	0180502	2020/10/12	2021/10/11

Test Equipment Of Surge at Power Port					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Surge，EFTGenerator	Lioncel	LSE-545CB	0180101	2020/10/12	2021/10/11

Test Equipment Of Electrical Fast Transients/Burst at Power Port					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Surge，EFTGenerator	Lioncel	LSE-545CB	0180101	2020/10/12	2021/10/11

Test Equipment Of Electrostatic Discharge					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
ESD Generator	Noiseken	ESS-2002	ESS03X2235	2020/10/16	2021/10/15

Test Equipment Of Radiated Emissions (above 1GHz)					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Chamber	SKET	966	N/A	2020/11/10	2023/11/9
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Horn Antenna	Schwarzbeck	9120D	01892 P:00331	2020/9/26	2022/9/25
Amplifier	SKET	PA-000318G-45	N/A	2020/10/16	2021/10/15
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A

Test Equipment Of Radiated Emissions (30MHz-1GHz)					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Chamber	SKET	966	N/A	2020/11/10	2023/11/9
Receiver	R&S	ESR7	101199	2020/10/12	2021/10/11
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	2020/9/26	2022/9/25

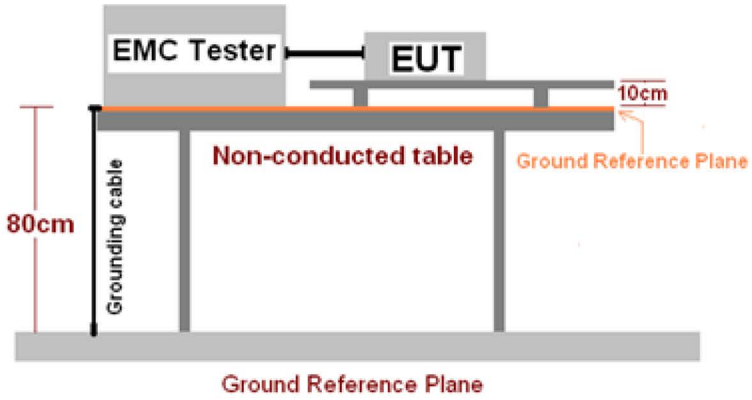
Test Equipment Of Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Shield room	SKET	833	N/A	2020/11/25	2023/11/24
Receiver	R&S	ESPI3	101082	2020/10/12	2021/10/11
LISN	R&S	ENV216	3560.6550.15	2020/10/12	2021/10/11

LISN	AT	AT166-2	AKK1806000003	2020/10/12	2021/10/11
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A

9 VOLTAGE FLUCTUATIONS AND FLICKER

Test Standard	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)
Test Method	IEC 61000-3-3:2013
Test Mode (Pre-Scan)	Charging&BT Playing
Test Mode (Final Test)	Charging&BT Playing
Tester	Jozu
Temperature	25℃
Humidity	60%

9.1 BLOCK DIAGRAM OF TEST SETUP



9.2 TEST DATA

Flicker Test Summary per EN/IEC61000-3-3 Ed. 3.0 (2013) (Run time)

EUT: BLUETOOTH HEADSETS **Tested by: Eason**

Test category: All parameters (European limits) **Test Margin: 100**

Test date: 2021/7/9 **Start time: 13:58:18** **End time: 14:13:48**

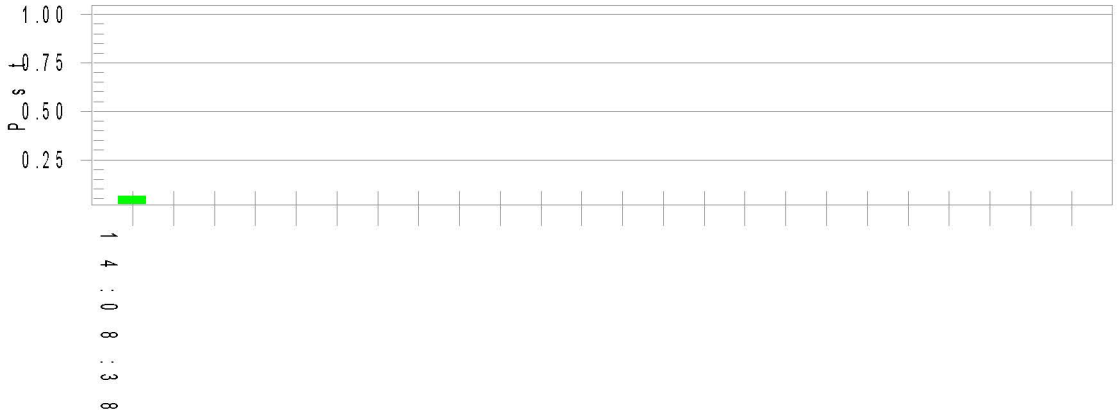
Test duration (min): 15 **Data file name: F-000065.cts_data**

Comment: Comment

Customer: Customer information

Test Result: Pass **Status: Test Completed**

Pst_1 and limit line **European Limits**



Plt and limit line

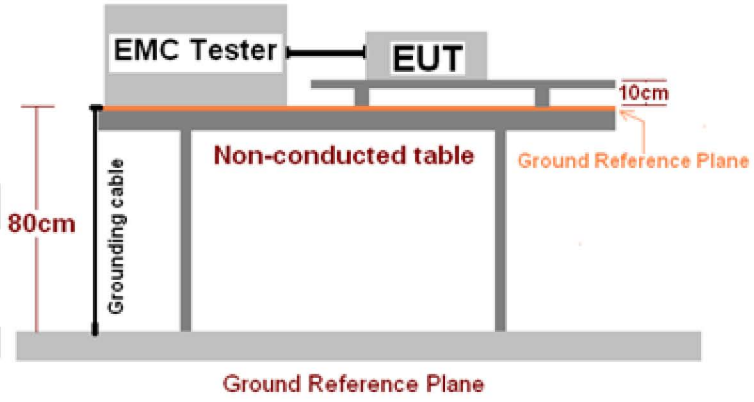
Parameter values recorded during the test:

Vrms at the end of test (Volt):	**219.42**			
T-max (mS):	**0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.064**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.028**	**Test limit:**	**0.650**	Pass

10 VOLTAGE DIPS AND INTERRUPTIONS

Test Standard	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)
Test Method	IEC 61000-4-11:2004
Test Level	0 % UT for 0.5per 0 % UT for 1per 70 % UT for 25per 0 % UT for 250per UT is Supply Voltage
Performance Criterion:	0% of UT (Supply Voltage) for 0.5 Periods:B; 0% of UT for 1 Periods:B; 0% of UT for 250 Periods:C; 70 % of UT for 25 Periods:C
No. of Dips / Interruptions:	3 per Level
Time between dropout	10s
Test Mode	Charging&BT Playing
Tester	Jozu
Temperature	25℃
Humidity	60%

10.1 BLOCK DIAGRAM OF TEST SETUP



10.2 TEST RECORD

Test Level % UT	Duration(Periods)	Phase angle	No of dropout	Time between dropout	Observations (Performance Criterion)	Result
0	0.5	0°;90°;180°;270°?	3	10s	B	Pass
0	1	0°;90°;180°;270°?	3	10s	B	Pass
70	25	0°;90°;180°;270°?	3	10s	C	Pass
0	250	0°;90°;180°;270°?	3	10s	C	Pass

A: Normal performance within limits specified by the manufacturer, requestor or purchaser.
B: Temporary loss of function or degradation of performance which ceases after the disturbance ceases, and from which the equipment under test recovers its normal performance, without operator intervention.
C: Temporary loss of function or degradation of performance, the correction of which requires operator intervention.
D: Loss of function or degradation of performance which is not recoverable, owing to damage to hardware or software, or loss of data.

10.3 PERFORMANCE

Performance criteria for continuous phenomena applied to transmitters and receivers	During and after the test, the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer when the equipment is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. During the test, the EUT shall not unintentionally transmit or change its actual operating state and stored data. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deduced from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.

Performance criteria for transient phenomena applied to transmitters and receivers	For surges applied to symmetrically operated wired network ports intended to be connected directly to outdoor lines the following criteria applies: a. For products with only one symmetrical port intended for connection to outdoor lines, loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A SW reboot is not allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. b. For products with more than one symmetrical port intended for connection to outdoor lines, loss of function on the port under test is allowed, provided the function is self-recoverable. A SW reboot is not allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. For all other ports the following applies: a. After the test, the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer, when the equipment is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. b. During the EMC exposure to an electromagnetic phenomenon, a degradation of performance is, however, allowed. No change of the actual mode of operation (e.g. unintended transmission) or stored data is allowed. c. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deduced from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.
Performance criteria for equipment which does not provide a continuous communication link	For radio equipment which does not provide a continuous communication link, the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation.
Performance criteria for ancillary equipment tested on a stand alone basis	If ancillary equipment is intended to be tested on a stand alone basis, the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation.

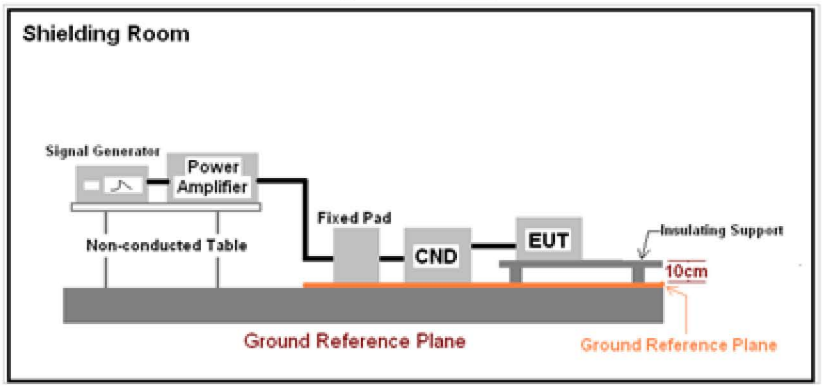
10.4 RESULT

Pass

11 CONDUCTED IMMUNITY AT POWER PORT (150KHZ-80MHZ)

Test Standard	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)
Test Method	IEC 61000-4-6:2013
Test Level	3Vrms (emf),80%,1kHz Amp. Mod.
Performance Criterion:	A
Frequency Range:	0.15MHz to 80MHz
Modulation:	"80%, 1kHz Amplitude Modulation"
Step Size	1%
Test Mode	Charging& BT playing
Tester	Jozu
Temperature	25℃
Humidity	60%

11.1 BLOCK DIAGRAM OF TEST SETUP



11.2 TEST RECORD

Frequency	Injected Position	Test Level	Modulation	Step Size	Dwell Time	Observations (Performance Criterion)	Result
150kHz to 80MHz	AC Mains	3Vrms	"80%, 1kHz Amp. Mod."	1%	2s	A	Pass

A: Normal performance within limits specified by the manufacturer, requestor or purchaser.
B: Temporary loss of function or degradation of performance which ceases after the disturbance ceases, and from which the equipment under test recovers its normal performance, without operator intervention.
C: Temporary loss of function or degradation of performance, the correction of which requires operator intervention.
D: Loss of function or degradation of performance which is not recoverable, owing to damage to hardware or software, or loss of data.

11.3 PERFORMANCE

Performance criteria for continuous phenomena applied to transmitters and receivers	During and after the test, the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer when the equipment is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. During the test, the EUT shall not unintentionally transmit or change its actual operating state and stored data. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deduced from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.
Performance criteria for transient phenomena applied to transmitters and receivers	For surges applied to symmetrically operated wired network ports intended to be connected directly to outdoor lines the following criteria applies: a. For products with only one symmetrical port intended for connection to outdoor lines, loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A SW reboot is not allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. b. For products with more than one symmetrical port intended for connection to outdoor lines, loss of function on the port under test is allowed, provided the function is self-recoverable. A SW reboot is not allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. For all other ports the following applies: a. After the test, the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer, when the equipment is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. b. During the EMC exposure to an electromagnetic phenomenon, a degradation of performance is, however, allowed. No change of the actual mode of operation (e.g. unintended transmission) or stored data is allowed. c. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deduced from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.

Performance criteria for equipment which does not provide a continuous communication link	For radio equipment which does not provide a continuous communication link, the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation.
Performance criteria for ancillary equipment tested on a stand alone basis	If ancillary equipment is intended to be tested on a stand alone basis, the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation.

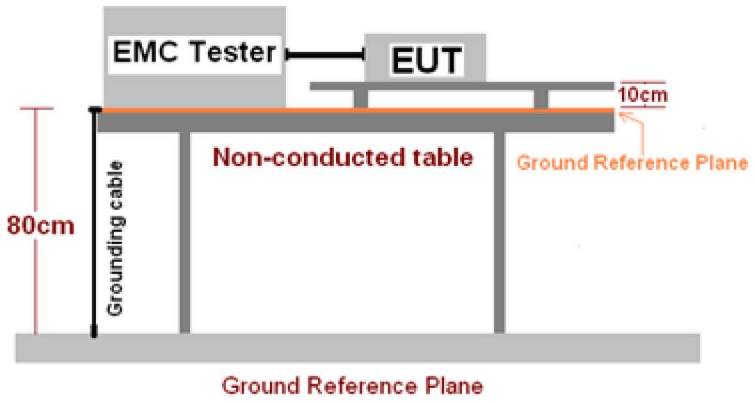
11.4 RESULT

Pass

12 SURGE AT POWER PORT

Test Standard	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)
Test Method	IEC 61000-4-5:2014
Test Level	1.2/50¦ìs Tr/Td 1kV Line to Line 2kV Line to Ground
Performance Criterion:	B
Interval:	60s between each surge
No. of surges:	"5 positive, 5 negative at 0¡ã, 90¡ã, 180¡ã, 270¡ã."
Test Mode	Charging&BT Playing
Tester	Jozu
Temperature	25℃
Humidity	60%

12.1 BLOCK DIAGRAM OF TEST SETUP



12.2 TEST RECORD

Lead under test	Level	Pulse No	Surge Interval	Phase(deg)	Observations (Performance Criterion)	Result
L N	±1KV	5	60s	0°	A	Pass
L N	±1KV	5	60s	90°	A	Pass
L N	±1KV	5	60s	180°	A	Pass
L N	±1KV	5	60s	270°	A	Pass

A: Normal performance within limits specified by the manufacturer, requestor or purchaser.
B: Temporary loss of function or degradation of performance which ceases after the disturbance ceases, and from which the equipment under test recovers its normal performance, without operator intervention.
C: Temporary loss of function or degradation of performance, the correction of which requires operator intervention.
D: Loss of function or degradation of performance which is not recoverable, owing to damage to hardware or software, or loss of data.

12.3 PERFORMANCE

Performance criteria for continuous phenomena applied to transmitters and receivers	During and after the test, the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer when the equipment is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. During the test, the EUT shall not unintentionally transmit or change its actual operating state and stored data. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deduced from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.

Performance criteria for transient phenomena applied to transmitters and receivers	For surges applied to symmetrically operated wired network ports intended to be connected directly to outdoor lines the following criteria applies: a. For products with only one symmetrical port intended for connection to outdoor lines, loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A SW reboot is not allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. b. For products with more than one symmetrical port intended for connection to outdoor lines, loss of function on the port under test is allowed, provided the function is self-recoverable. A SW reboot is not allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. For all other ports the following applies: a. After the test, the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer, when the equipment is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. b. During the EMC exposure to an electromagnetic phenomenon, a degradation of performance is, however, allowed. No change of the actual mode of operation (e.g. unintended transmission) or stored data is allowed. c. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deduced from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.
Performance criteria for equipment which does not provide a continuous communication link	For radio equipment which does not provide a continuous communication link, the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation.
Performance criteria for ancillary equipment tested on a stand alone basis	If ancillary equipment is intended to be tested on a stand alone basis, the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation.

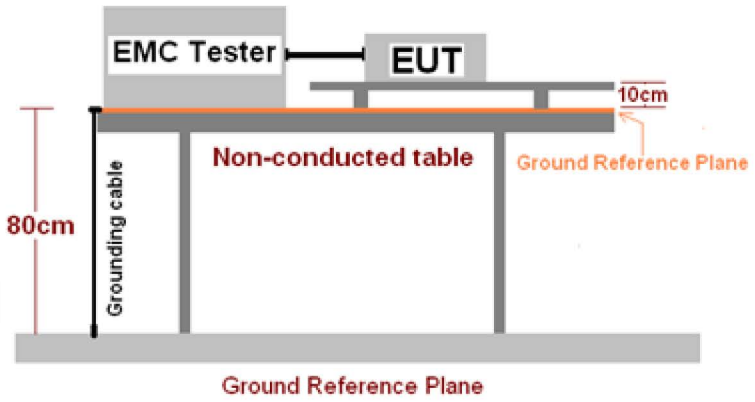
12.4 RESULT

Pass

13 ELECTRICAL FAST TRANSIENTS/BURST AT POWER PORT

Test Standard	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)
Test Method	IEC 61000-4-4:2012
Test Level	1kV 5/50ns Tr/Td 5kHz Repetition Frequency
Performance Criterion:	B
Repetition Frequency:	5kHz
Burst Period:	300ms
Test Mode	Charging&BT Playing
Tester	Jozu
Temperature	25℃
Humidity	60%

13.1 BLOCK DIAGRAM OF TEST SETUP



13.2 TEST RECORD

Lead under test	Level	Coupling Direct/Clamp	Observations (Performance Criterion)	Result
L	±1kV	Direct	A	Pass
N	±1kV	Direct	A	Pass
L-N	±1kV	Direct	A	Pass

A: Normal performance within limits specified by the manufacturer, requestor or purchaser.
B: Temporary loss of function or degradation of performance which ceases after the disturbance ceases, and from which the equipment under test recovers its normal performance, without operator intervention.
C: Temporary loss of function or degradation of performance, the correction of which requires operator intervention.
D: Loss of function or degradation of performance which is not recoverable, owing to damage to hardware or software, or loss of data.

13.3 PERFORMANCE

Performance criteria for continuous phenomena applied to transmitters and receivers	During and after the test, the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer when the equipment is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. During the test, the EUT shall not unintentionally transmit or change its actual operating state and stored data. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deduced from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.

Performance criteria for transient phenomena applied to transmitters and receivers	For surges applied to symmetrically operated wired network ports intended to be connected directly to outdoor lines the following criteria applies: a. For products with only one symmetrical port intended for connection to outdoor lines, loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A SW reboot is not allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. b. For products with more than one symmetrical port intended for connection to outdoor lines, loss of function on the port under test is allowed, provided the function is self-recoverable. A SW reboot is not allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. For all other ports the following applies: a. After the test, the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer, when the equipment is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. b. During the EMC exposure to an electromagnetic phenomenon, a degradation of performance is, however, allowed. No change of the actual mode of operation (e.g. unintended transmission) or stored data is allowed. c. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deduced from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.
Performance criteria for equipment which does not provide a continuous communication link	For radio equipment which does not provide a continuous communication link, the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation.
Performance criteria for ancillary equipment tested on a stand alone basis	If ancillary equipment is intended to be tested on a stand alone basis, the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation.

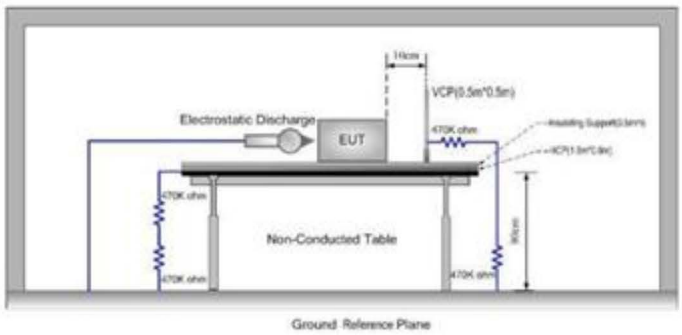
13.4 RESULT

Pass

14 ELECTROSTATIC DISCHARGE

Test Standard	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)
Test Method	IEC 61000-4-2:2008
Test Level	4kV Contact Discharge 8kV Air Discharge
Performance Criterion:	B
Discharge Impedance:	330Ω/150pF
Number of Discharge:	Minimum 10 times at each test point
Discharge Mode:	Single Discharge
Discharge Period:	1 second minimum
Test Mode	Charging&BT Playing
Tester	Jozu
Temperature	25℃
Humidity	60%

14.1 BLOCK DIAGRAM OF TEST SETUP



14.2 TEST RECORD

Test mode	Level	Test points	Observations (Performance Criterion)	Result
Air discharge	±2kV	Gap	A	Pass
Air discharge	±4kV	Gap	A	Pass
Air discharge	±8kV	Gap	A	Pass
Contact discharge	±2kV	Metal	N/A	Pass
Contact discharge	±4kV	Metal	N/A	Pass
indirect discharge	±2kV	HCP	A	Pass
indirect discharge	±4kV	HCP	A	Pass
indirect discharge	±2kV	VCP	A	Pass
indirect discharge	±4kV	VCP	A	Pass

A: Normal performance within limits specified by the manufacturer, requestor or purchaser.
B: Temporary loss of function or degradation of performance which ceases after the disturbance ceases, and from which the equipment under test recovers its normal performance, without operator intervention.
C: Temporary loss of function or degradation of performance, the correction of which requires operator intervention.
D: Loss of function or degradation of performance which is not recoverable, owing to damage to hardware or software, or loss of data.

14.3 PERFORMANCE

Performance criteria for continuous phenomena applied to transmitters and receivers	During and after the test, the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer when the equipment is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. During the test, the EUT shall not unintentionally transmit or change its actual operating state and stored data. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deduced from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.

Performance criteria for transient phenomena applied to transmitters and receivers	For surges applied to symmetrically operated wired network ports intended to be connected directly to outdoor lines the following criteria applies: a. For products with only one symmetrical port intended for connection to outdoor lines, loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A SW reboot is not allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. b. For products with more than one symmetrical port intended for connection to outdoor lines, loss of function on the port under test is allowed, provided the function is self-recoverable. A SW reboot is not allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. For all other ports the following applies: a. After the test, the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer, when the equipment is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. b. During the EMC exposure to an electromagnetic phenomenon, a degradation of performance is, however, allowed. No change of the actual mode of operation (e.g. unintended transmission) or stored data is allowed. c. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deduced from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.
Performance criteria for equipment which does not provide a continuous communication link	For radio equipment which does not provide a continuous communication link, the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation.
Performance criteria for ancillary equipment tested on a stand alone basis	If ancillary equipment is intended to be tested on a stand alone basis, the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation.

14.4 RESULT

Pass

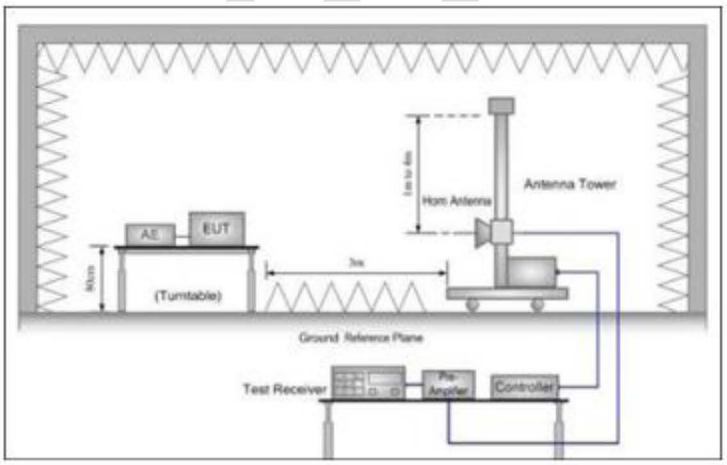
15 RADIATED EMISSIONS (ABOVE 1GHZ)

Test Standard	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)
Test Method	EN 55032:2015
Test Mode (Pre-Scan)	Charging&BT Playing
Test Mode (Final Test)	Charging
Tester	Jozu
Temperature	25℃
Humidity	60%

15.1 LIMITS

Frequency Range	Limit
1GHz-3GHz	70 dB(μV/m) peak, 50 dB(μV/m) average
3GHz-6GHz	74 dB(μV/m) peak, 54dB(μV/m) average

15.2 BLOCK DIAGRAM OF TEST SETUP

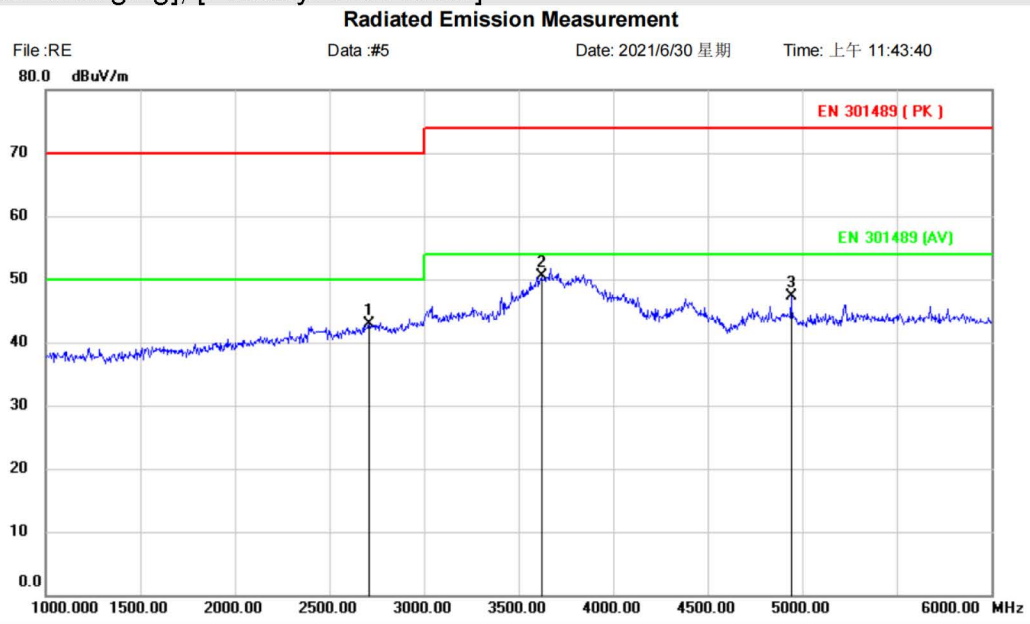


15.3 PROCEDURE

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.

15.4 TEST DATA

[TestMode: Charging]; [Polarity: Horizontal]



Site
Limit: EN 301489 (PK)
EUT: Bluetooth Speaker
M/N: T5
Mode: Charging mode
Note:

Polarization: ***Horizontal***
Power:
Distance:

Temperature:
Humidity: %

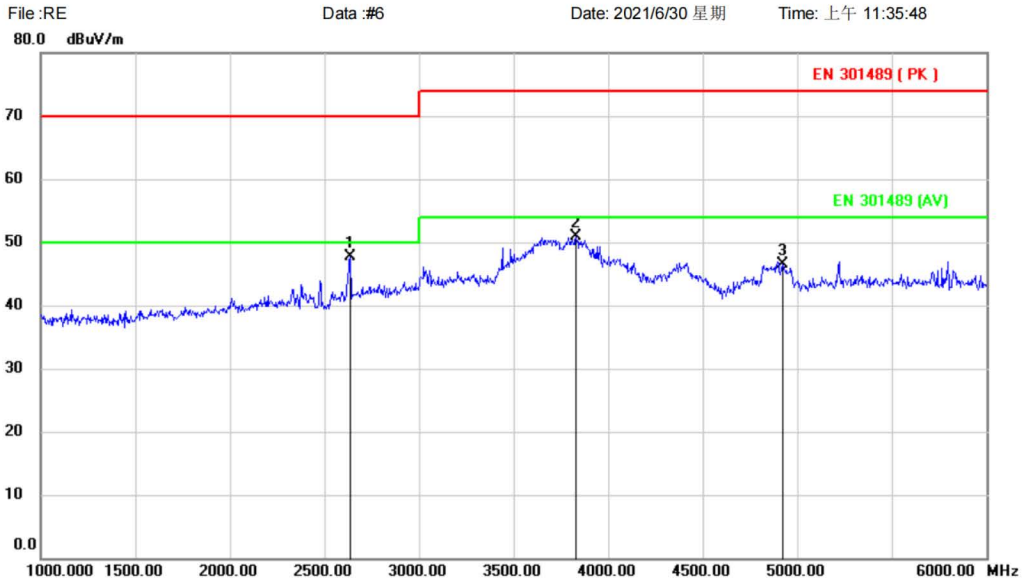
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2710.000	45.50	-2.67	42.83	70.00	-27.17	peak			
2	*	3620.000	45.20	5.21	50.41	74.00	-23.59	peak			
3		4940.000	46.81	0.42	47.23	74.00	-26.77	peak			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: Charging]; [Polarity: Vertical]

Radiated Emission Measurement



Site	Polarization: ***Vertical***	Temperature:
Limit: EN 301489 (PK)	Power:	Humidity: %
EUT: Bluetooth Speaker	Distance:	
M/N: T5		
Mode: Charging mode		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2635.000	50.70	-3.05	47.65	70.00	-22.35	peak			
2		3830.000	46.20	4.78	50.98	74.00	-23.02	peak			
3		4920.000	46.04	0.45	46.49	74.00	-27.51	peak			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

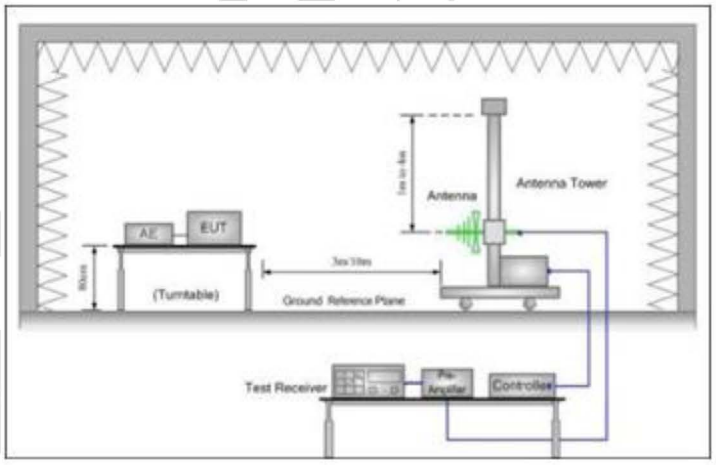
16 RADIATED EMISSIONS (30MHZ-1GHZ)

Test Standard	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)
Test Method	EN 55032:2015
Test Mode (Pre-Scan)	Charging&BT Playing
Test Mode (Final Test)	Charging
Tester	Jozu
Temperature	25℃
Humidity	60%

16.1 LIMITS

Frequency Range	Limit
30MHz-230MHz	40 dB(μV/m) quasi-peak
230MHz-1GHz	47 dB(μV/m) quasi-peak

16.2 BLOCK DIAGRAM OF TEST SETUP



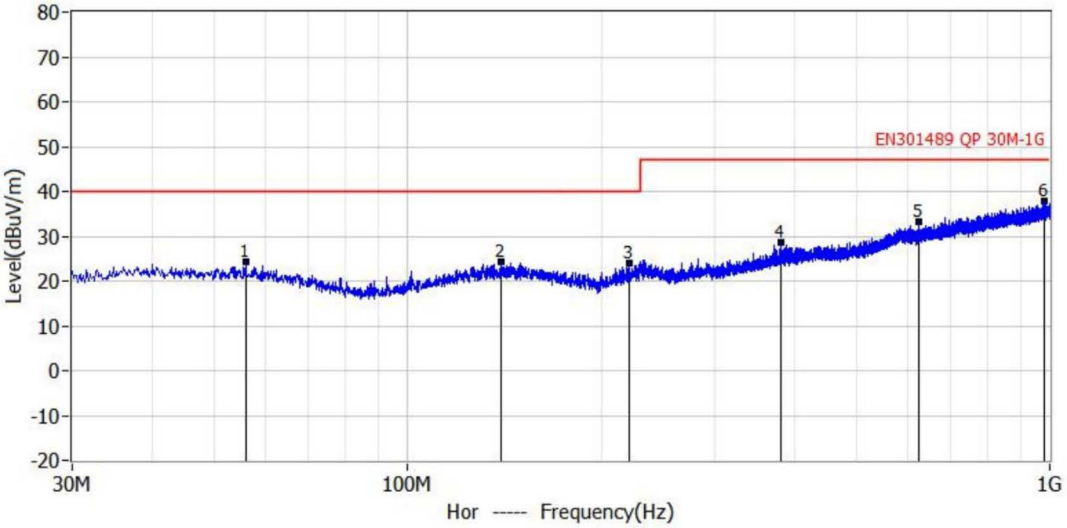
16.3 PROCEDURE

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

16.4 TEST DATA

[TestMode: Charging]; [Polarity: Horizontal]

Test Lab: BlueAsia EMC Lab（RE #1）	Project: BLA-EMC-202106-A62
EUT: Bluetooth-Speaker	Test Engineer: York
M/N: T5	Temperature: 25℃
S/N:	Humidity: 45%RH
Test Mode: Charying mode	Test Voltage: AC 230V/50Hz
Note:	Test Data: 2021-06-28 17:30:11

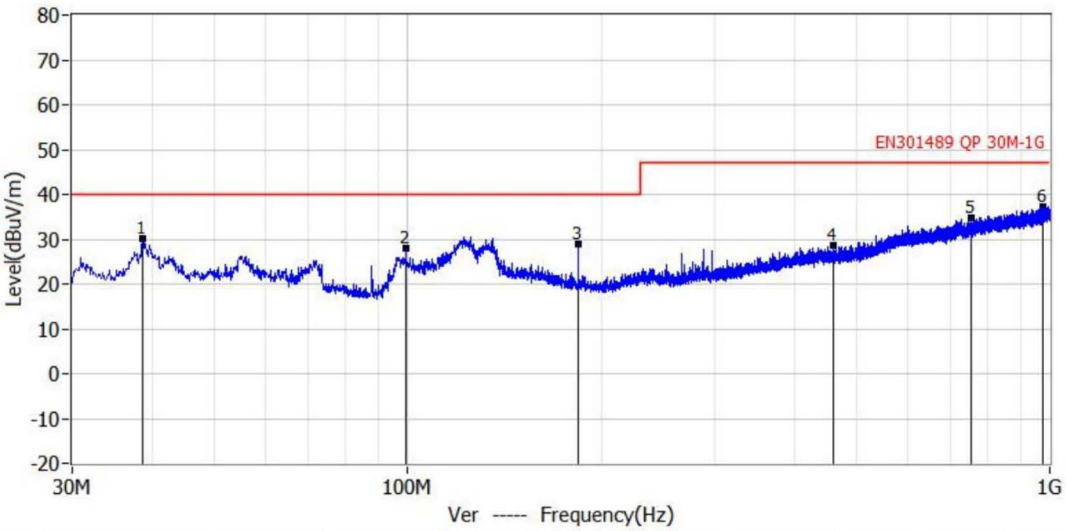


No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar	Height cm	Angle deg
1*	55.948MHz	40.0	24.3	-15.7	0.7	23.6	QP	Hor	100.0	32.0
2*	139.368MHz	40.0	24.4	-15.6	0.7	23.7	QP	Hor	100.0	0.0
3*	220.969MHz	40.0	24.1	-15.9	2.3	21.8	QP	Hor	100.0	10.0
4*	381.261MHz	47.0	28.7	-18.3	2.0	26.7	QP	Hor	100.0	287.0
5*	625.216MHz	47.0	33.2	-13.8	1.8	31.4	QP	Hor	100.0	0.0
6*	981.691MHz	47.0	37.8	-9.2	1.8	36.0	QP	Hor	100.0	71.0

Test Result: Pass

[TestMode: Charging]; [Polarity: Vertical]

Test Lab: BlueAsia EMC Lab（RE #1）	Project: BLA-EMC-202106-A62
EUT: Bluetooth-Speaker	Test Engineer: York
M/N: T5	Temperature: 25℃
S/N:	Humidity: 45%RH
Test Mode: Charying mode	Test Voltage: AC 230V/50Hz
Note:	Test Data: 2021-06-28 17:33:15



No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar	Height cm	Angle deg
1*	38.609MHz	40.0	30.2	-9.8	6.2	24.0	QP	Ver	100.0	224.0
2*	99.355MHz	40.0	28.1	-11.9	7.6	20.5	QP	Ver	100.0	57.0
3*	183.988MHz	40.0	29.0	-11.0	7.7	21.3	QP	Ver	100.0	179.0
4*	459.710MHz	47.0	28.5	-18.5	0.5	28.0	QP	Ver	100.0	321.0
5*	754.833MHz	47.0	34.9	-12.1	1.7	33.2	QP	Ver	100.0	245.0
6*	977.811MHz	47.0	37.2	-9.8	1.3	35.9	QP	Ver	100.0	342.0

Test Result: Pass

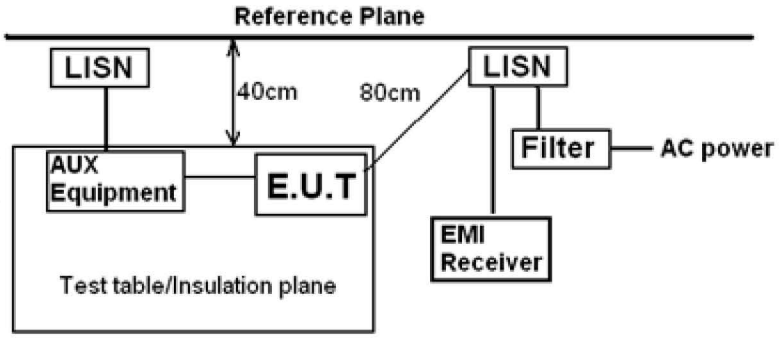
17 CONDUCTED EMISSIONS AT MAINS TERMINALS (150KHZ-30MHZ)

Test Standard	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)
Test Method	EN 55032:2015
Test Mode (Pre-Scan)	Charging&BT Playing
Test Mode (Final Test)	Charging&BT Playing
Tester	Jozu
Temperature	25℃
Humidity	60%

17.1 LIMITS

Frequency Range	Limit
0.15M-0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average
0.5M-5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5M-30MHz	60dB(μV) quasi-peak, 50dB(μV) average

17.2 BLOCK DIAGRAM OF TEST SETUP



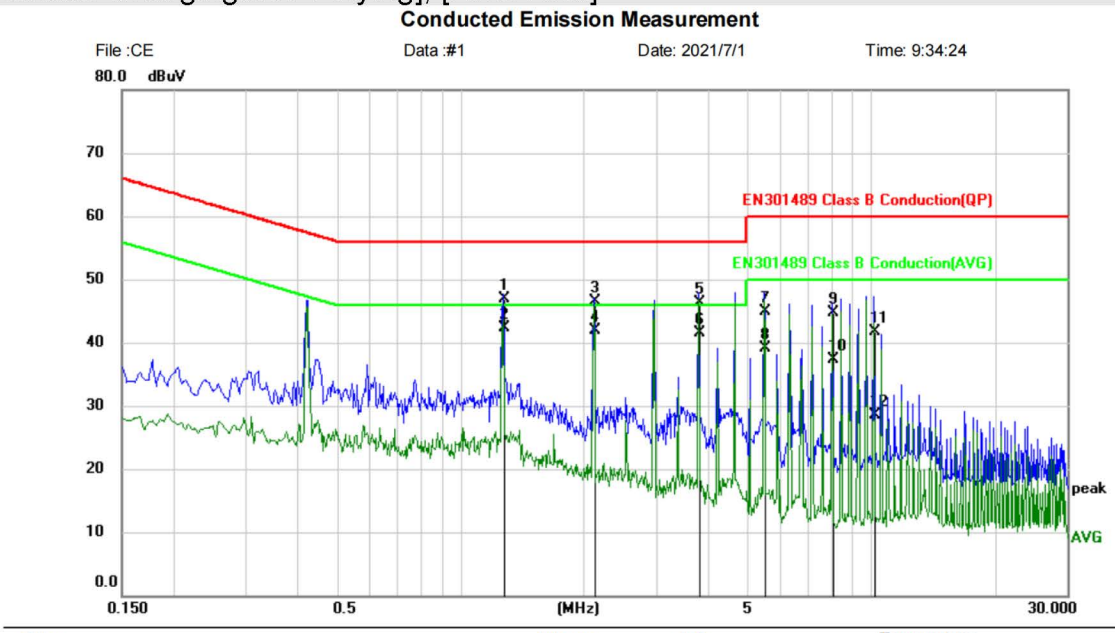
Remark
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m

17.3 PROCEDURE

An initial pre-scan was performed with peak detector.Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

17.4 TEST DATA

[TestMode: Charging&BT Playing]; [Line: Line]



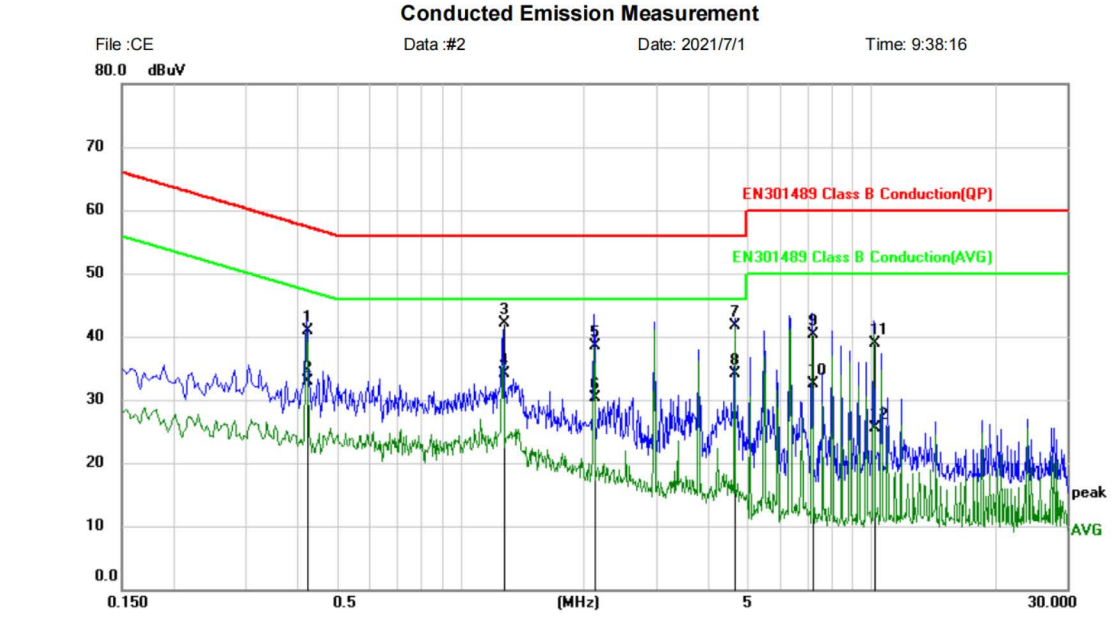
Site | Phase: *L1* | Temperature:
Limit: EN301489 Class B Conduction(QP) | Power: | Humidity: %
EUT: Bluetooth Speaker
M/N: T5

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		1.2700	37.03	9.93	46.96	56.00	-9.04	QP	
2	*	1.2700	32.34	9.93	42.27	46.00	-3.73	AVG	
3		2.1180	36.58	9.94	46.52	56.00	-9.48	QP	
4		2.1180	31.89	9.94	41.83	46.00	-4.17	AVG	
5		3.8100	36.43	9.97	46.40	56.00	-9.60	QP	
6		3.8100	31.60	9.97	41.57	46.00	-4.43	AVG	
7		5.5020	34.79	10.03	44.82	60.00	-15.18	QP	
8		5.5020	29.14	10.03	39.17	50.00	-10.83	AVG	
9		8.0420	34.55	10.12	44.67	60.00	-15.33	QP	
10		8.0420	27.24	10.12	37.36	50.00	-12.64	AVG	
11		10.1580	31.47	10.22	41.69	60.00	-18.31	QP	
12		10.1580	18.21	10.22	28.43	50.00	-21.57	AVG	

*:Maximum data x:Over limit !:over margin (Reference Only

Test Result: Pass

[TestMode: Charging&BT Playing]; [Line: Neutral]



Site
Limit: EN301489 Class B Conduction(QP)
EUT: Bluetooth Speaker
M/N: T5

Phase: *N*
Power:

Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.4220	31.10	9.78	40.88	57.41	-16.53	QP	
2		0.4220	23.22	9.78	33.00	47.41	-14.41	AVG	
3		1.2700	32.34	9.85	42.19	56.00	-13.81	QP	
4	*	1.2700	24.25	9.85	34.10	46.00	-11.90	AVG	
5		2.1140	28.74	9.86	38.60	56.00	-17.40	QP	
6		2.1140	20.44	9.86	30.30	46.00	-15.70	AVG	
7		4.6579	31.73	9.94	41.67	56.00	-14.33	QP	
8		4.6579	24.13	9.94	34.07	46.00	-11.93	AVG	
9		7.1980	30.36	10.03	40.39	60.00	-19.61	QP	
10		7.1980	22.57	10.03	32.60	50.00	-17.40	AVG	
11		10.1620	28.77	10.16	38.93	60.00	-21.07	QP	
12		10.1620	15.28	10.16	25.44	50.00	-24.56	AVG	

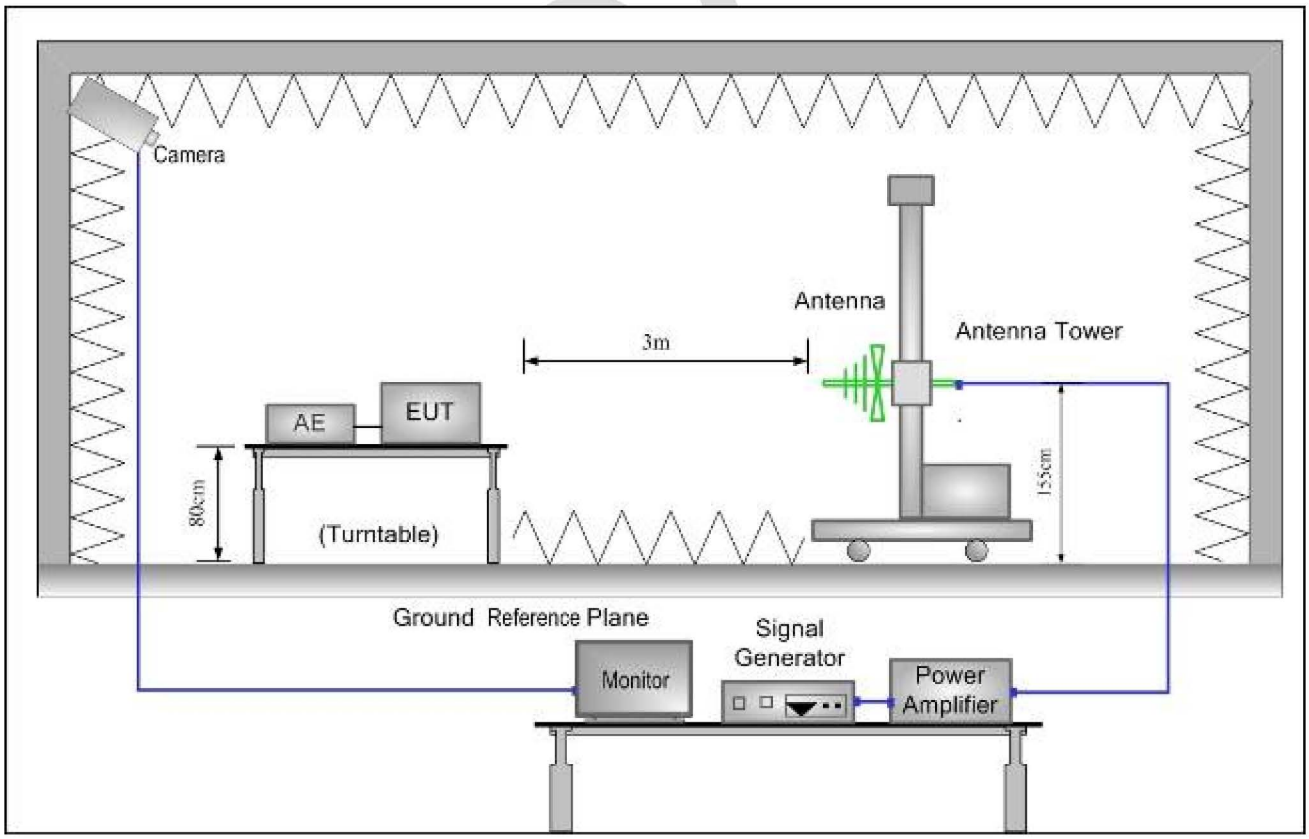
*:Maximum data x:Over limit !:over margin (Reference Only

Test Result: Pass

18 RADIATED IMMUNITY (80MHZ-6GHZ)

Test Standard	ETSI EN 301 489-1 V2.2.3(2019-11);ETSI EN 301 489-17 V3.2.4 (2020-09)
Test Method	EN 61000-4-3:2006 +A1:2008+A2:2010
Test Level	3V/m, 80%, 1kHz Amp. Mod.
Performance Criterion:	A
Frequency Range:	80MHz to 6GHz
Antenna Polarisation:	Vertical and Horizontal
Modulation:	"1kHz,80% Amp. Mod,1% increment"
Test Mode	Charging&BT playing
Tester	Jozu
Temperature	25℃
Humidity	60%

18.1 BLOCK DIAGRAM OF TEST SETUP



18.2 TEST RECORD

Frequency	Level	Modulation	Antenna Polarization	EUT Face	Observations (Performance Criterion)	Result
80MHz-6GHz	3V/m	"1kHz, 80% Amp. Mod, 1% increment, dwell time=3seconds"	V	Front	A	Pass
80MHz-6GHz	3V/m	"1kHz, 80% Amp. Mod, 1% increment, dwell time=3seconds"	H	Front	A	Pass
80MHz-6GHz	3V/m	"1kHz, 80% Amp. Mod, 1% increment, dwell time=3seconds"	V	Rear	A	Pass
80MHz-6GHz	3V/m	"1kHz, 80% Amp. Mod, 1% increment, dwell time=3seconds"	H	Rear	A	Pass
80MHz-6GHz	3V/m	"1kHz, 80% Amp. Mod, 1% increment, dwell time=3seconds"	V	Left	A	Pass
80MHz-6GHz	3V/m	"1kHz, 80% Amp. Mod, 1% increment, dwell time=3seconds"	H	Left	A	Pass
80MHz-6GHz	3V/m	"1kHz, 80% Amp. Mod, 1% increment, dwell time=3seconds"	V	Right	A	Pass
80MHz-6GHz	3V/m	"1kHz, 80% Amp. Mod, 1% increment, dwell time=3seconds"	H	Right	A	Pass
80MHz-6GHz	3V/m	"1kHz, 80% Amp. Mod, 1% increment, dwell time=3seconds"	V	Top	A	Pass
80MHz-6GHz	3V/m	"1kHz, 80% Amp. Mod, 1% increment, dwell time=3seconds"	H	Top	A	Pass
80MHz-6GHz	3V/m	"1kHz, 80% Amp. Mod, 1% increment, dwell time=3seconds"	V	Bottom	A	Pass
80MHz-6GHz	3V/m	"1kHz, 80% Amp. Mod, 1% increment, dwell time=3seconds"	H	Bottom	A	Pass
A: Normal performance within limits specified by the manufacturer, requestor or purchaser.						

B: Temporary loss of function or degradation of performance which ceases after the disturbance ceases, and from which the equipment under test recovers its normal performance, without operator intervention.
C: Temporary loss of function or degradation of performance, the correction of which requires operator intervention.
D: Loss of function or degradation of performance which is not recoverable, owing to damage to hardware or software, or loss of data.

18.3 PERFORMANCE

Performance criteria for continuous phenomena applied to transmitters and receivers	During and after the test, the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer when the equipment is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. During the test, the EUT shall not unintentionally transmit or change its actual operating state and stored data. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deduced from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.
Performance criteria for transient phenomena applied to transmitters and receivers	For surges applied to symmetrically operated wired network ports intended to be connected directly to outdoor lines the following criteria applies: a. For products with only one symmetrical port intended for connection to outdoor lines, loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A SW reboot is not allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. b. For products with more than one symmetrical port intended for connection to outdoor lines, loss of function on the port under test is allowed, provided the function is self-recoverable. A SW reboot is not allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. For all other ports the following applies: a. After the test, the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer, when the equipment is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. b. During the EMC exposure to an electromagnetic phenomenon, a degradation of performance is, however, allowed. No change of the actual mode of operation (e.g. unintended transmission) or stored data is allowed. c. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deduced from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.
Performance criteria for equipment which does not provide a continuous communication link	For radio equipment which does not provide a continuous communication link, the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation.

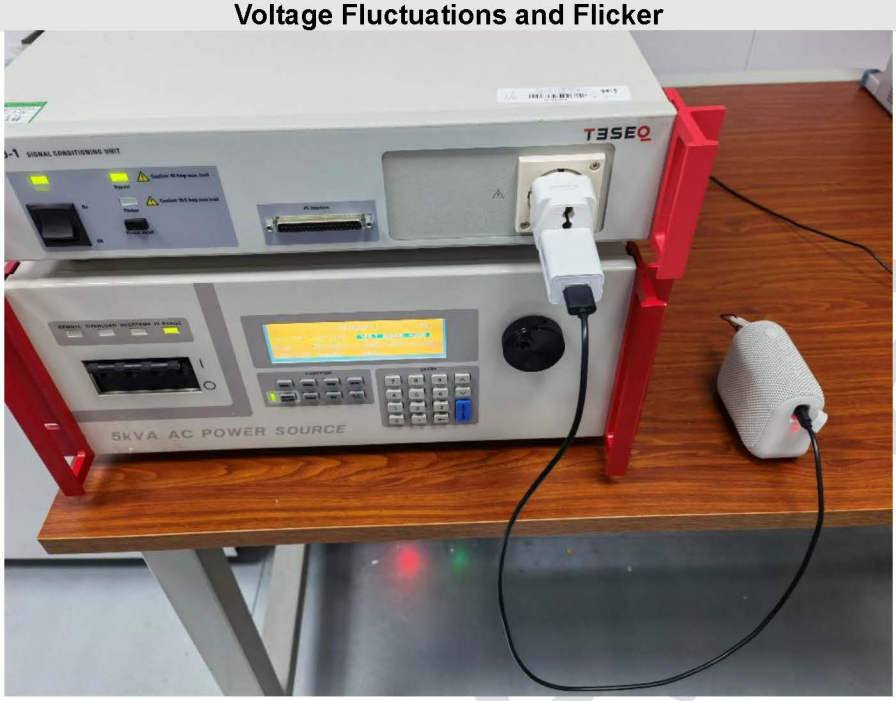
Performance criteria for ancillary equipment tested on a stand alone basis	If ancillary equipment is intended to be tested on a stand alone basis, the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation.

18.4 RESULT

Pass

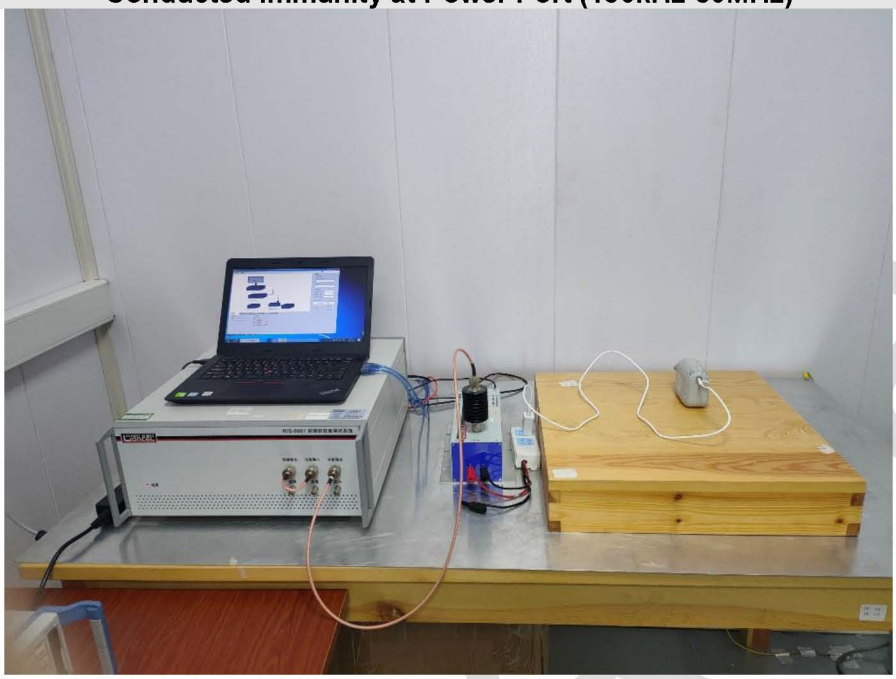
APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Voltage Fluctuations and Flicker



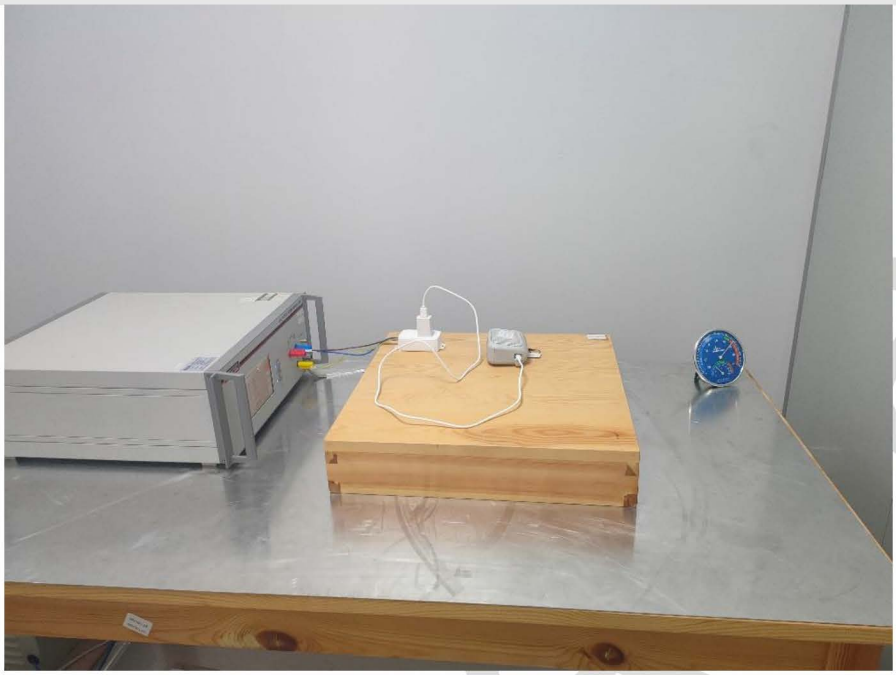
Voltage Dips and Interruptions

Conducted Immunity at Power Port (150kHz-80MHz)

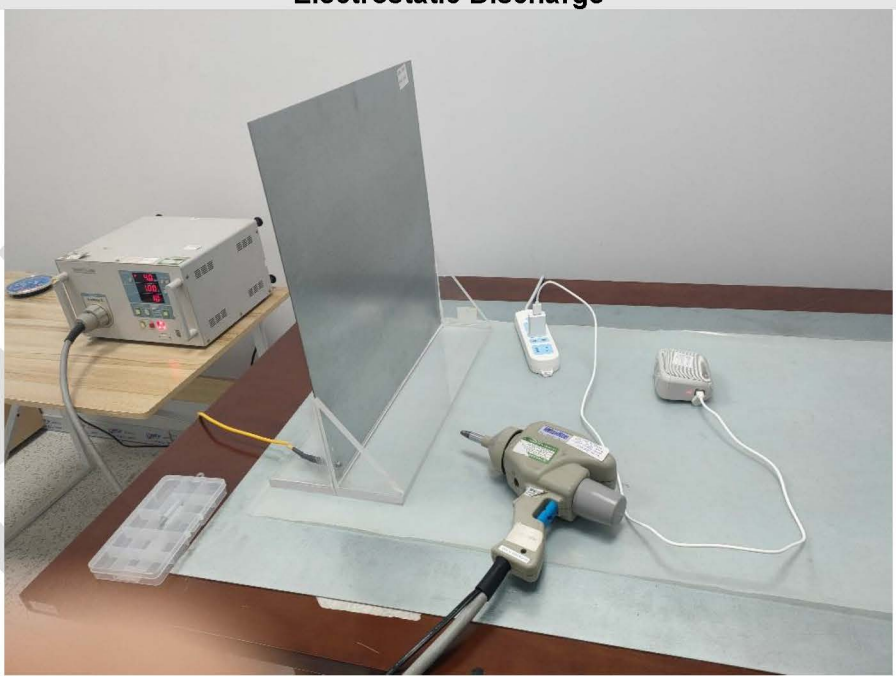


Surge at Power Port

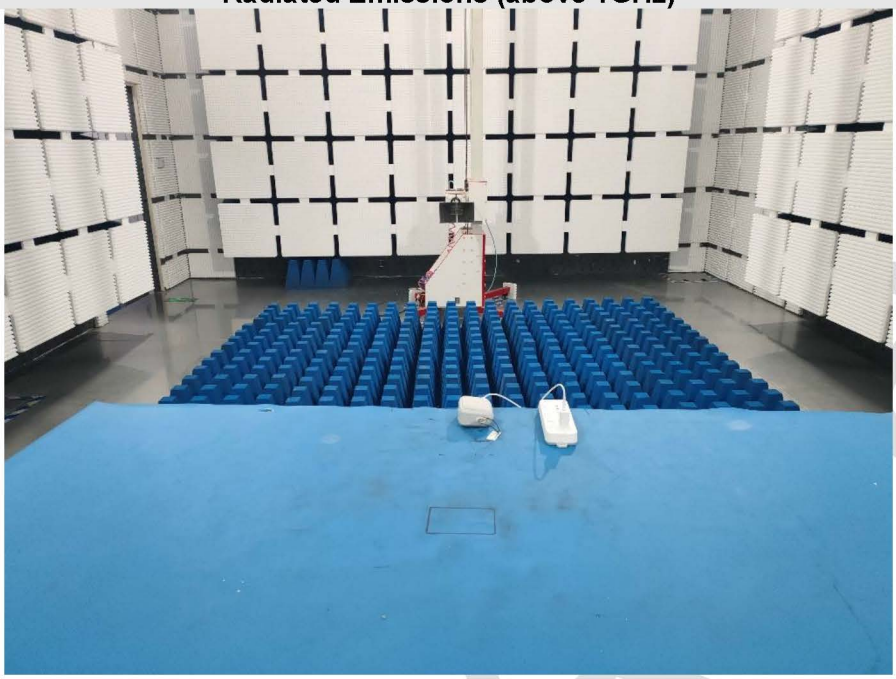
Electrical Fast Transients/Burst at Power Port



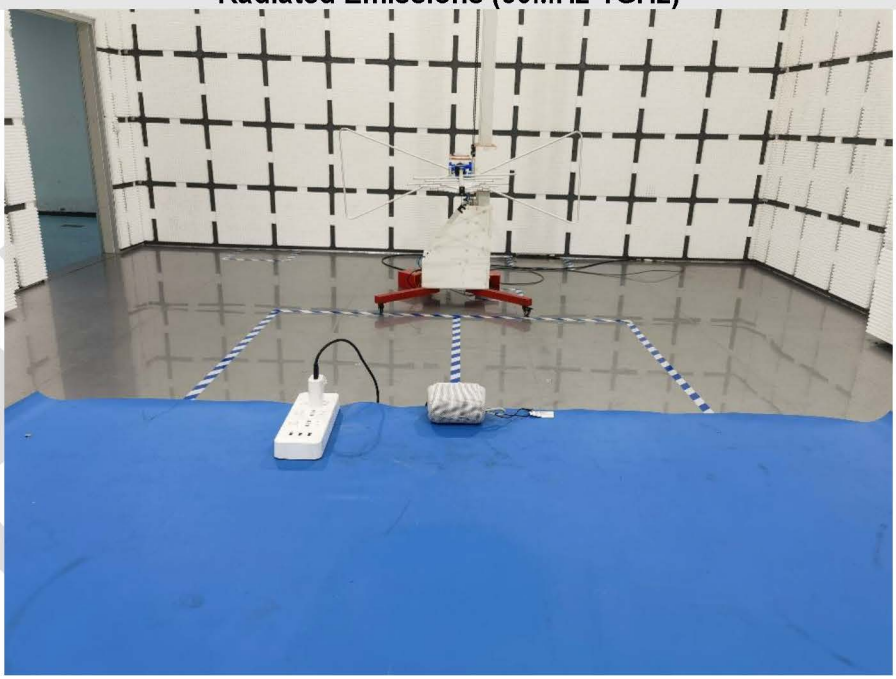
Electrostatic Discharge



Radiated Emissions (above 1GHz)

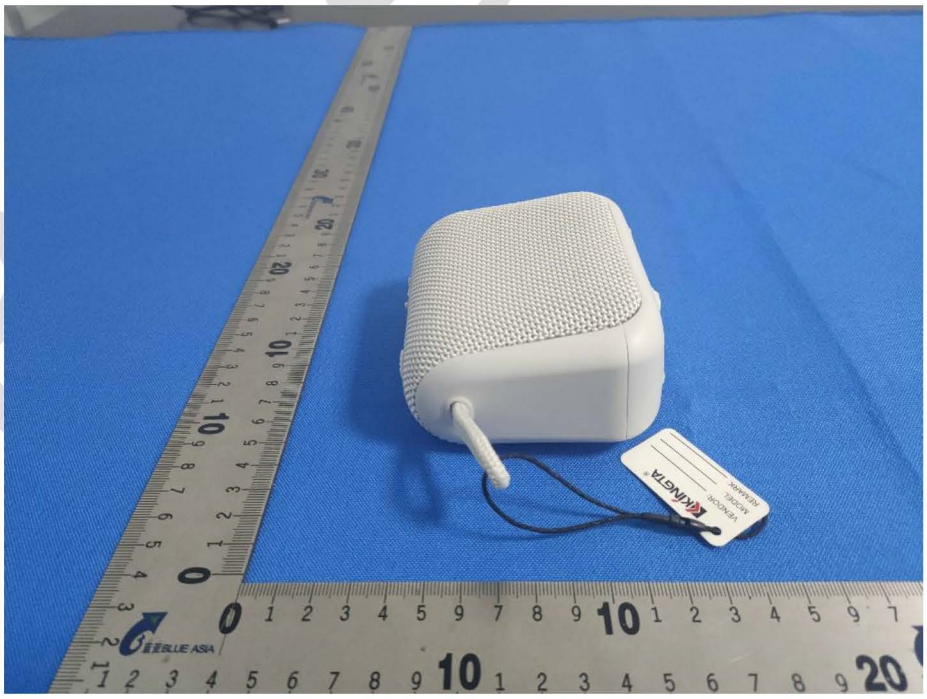


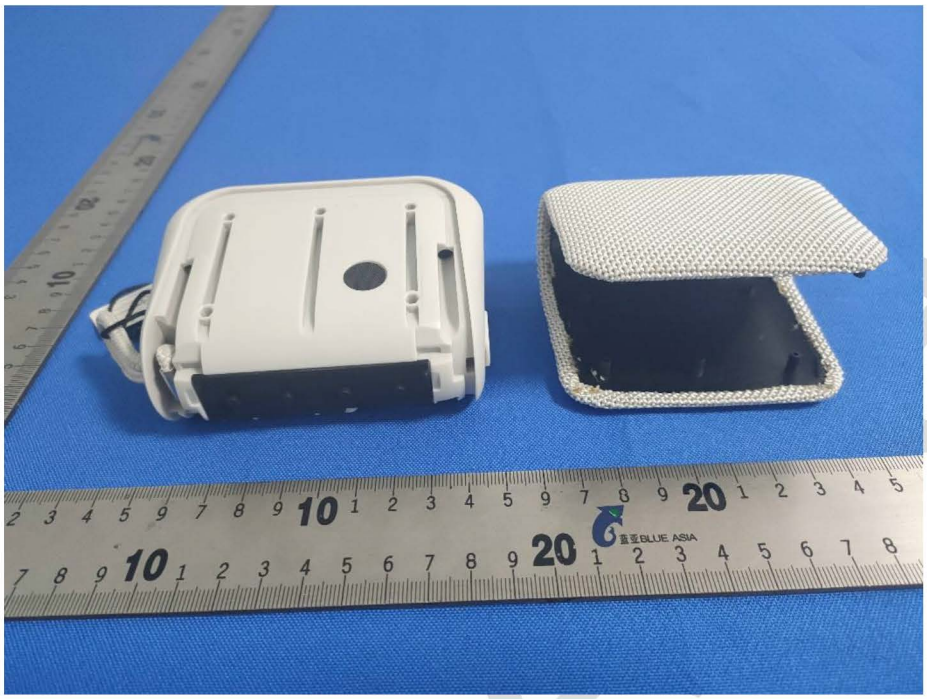
Radiated Emissions (30MHz-1GHz)

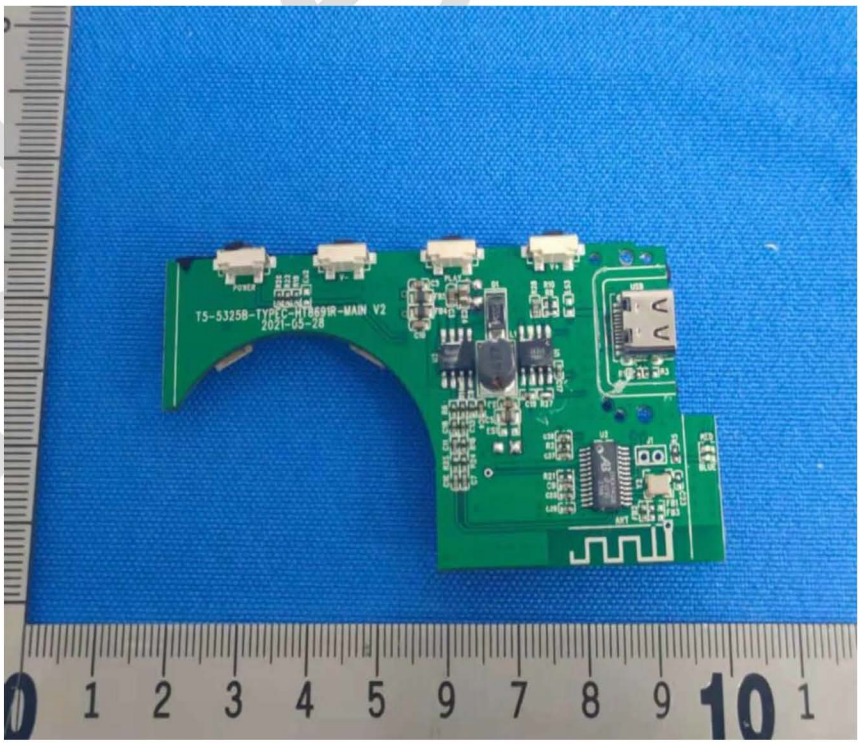


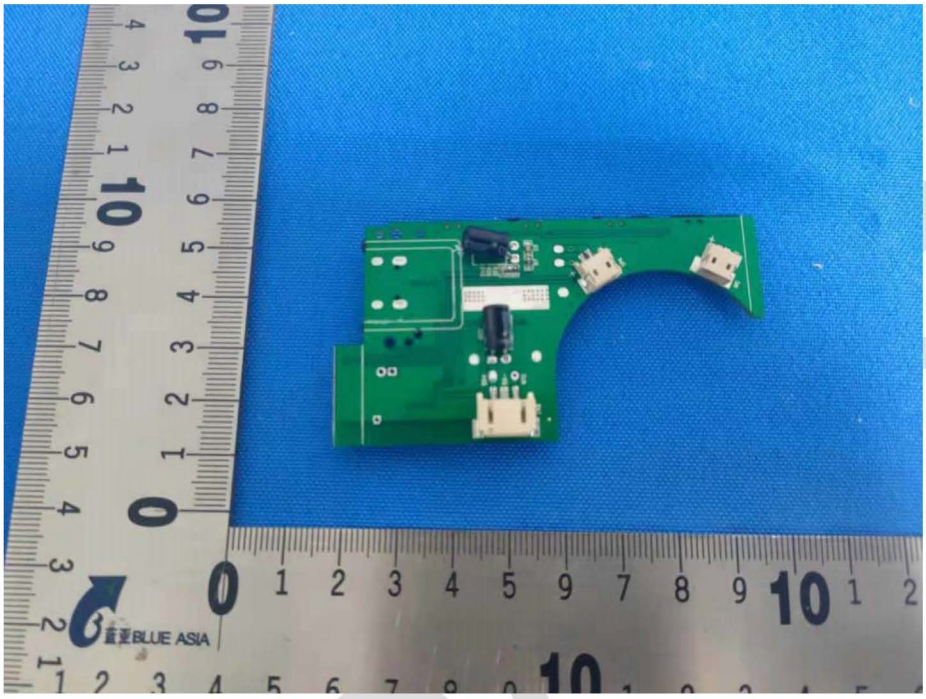
Conducted Emissions at Mains Terminals (150kHz-30MHz)

APPENDIX B: PHOTOGRAPHS OF EUT






T5-5325B-TYPEC-HT8691R-MAIN V2
2021-05-28



----END OF REPORT----

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of BlueAsia, this report can't be reproduced except in full.

CPST

Test Report

No. C210625069001-1 Date: Jul 26 , 2021 Page 1 of 20

Applicant:

Applicant address:

The following samples were submitted and identified on behalf of the clients as

Sample Name:	Bluetooth Speaker
Model:	T5
Series Model:	RBS920、RBS920 Pro、S20、S20 Pro， AIWA SB-X30， AWKF3， SB-X30，PWS-2240, PWS-2241, PWS-2242, PWS-2243, PWS-2244，TT M，Fit 3
Manufacturer:	
Manufacturer Address:	
CPST Internal Reference No.:	C210625069
Sample Received Date:	Jun 25, 2021
Test Period:	Jun 25, 2021 to Jul 26, 2021
Test Method:	Please refer to next page(s).
Test Result:	Please refer to next page(s).

Signed for and on behalf of
Eurones (Dongguan) Consumer Products Testing Service Co., Ltd

WRITTEN BY :	REVIEWED BY:	APPROVED BY:
Fair Lu	Sunshine Liu	Will Pan
Lu Jian Fei, Fair	Liu Xiao Fang, Sunshine	Pan Jian Ding, Will
Report writer	Report Reviewer	Technical Supervisor

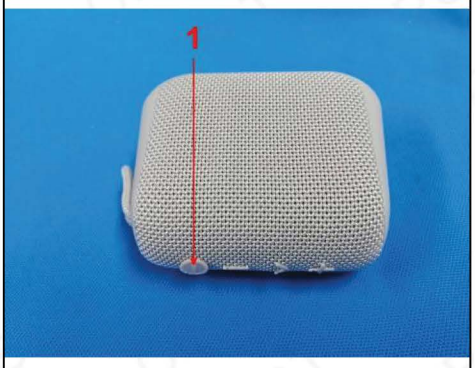
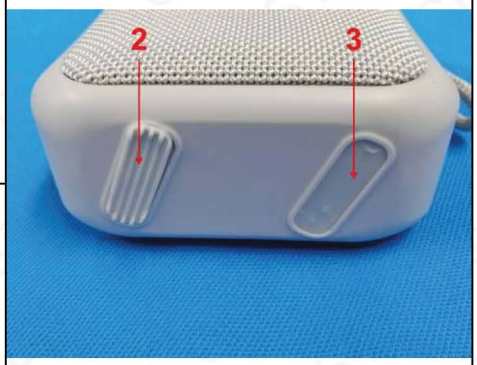
****

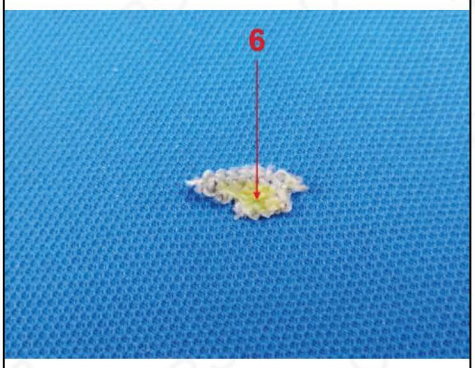
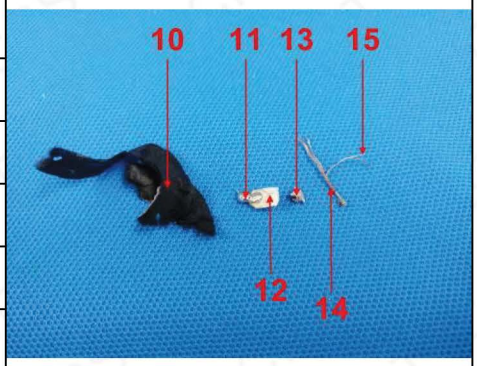
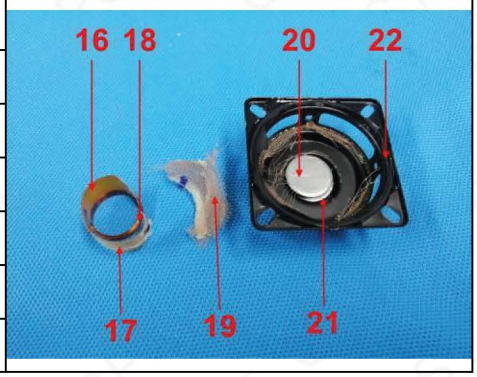
CONCLUSION :

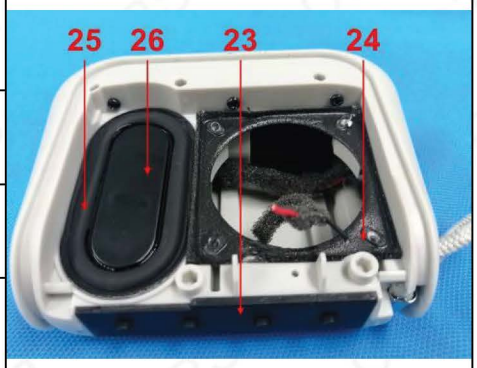
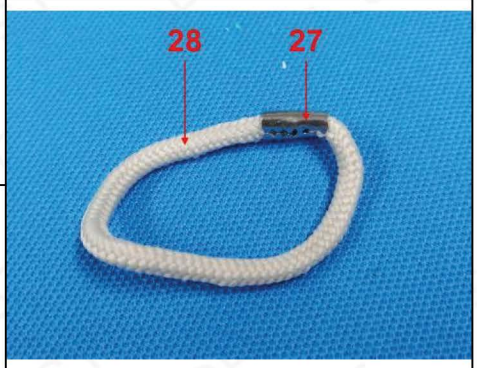
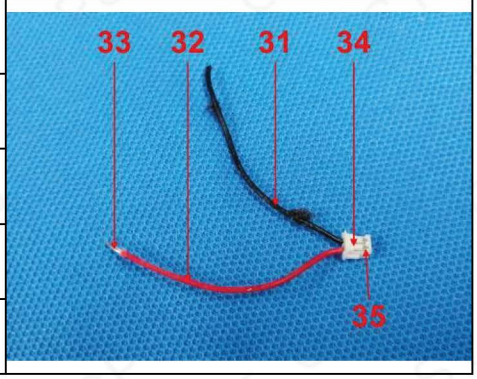
TESTED SAMPLES	TEST ITEM	RESULT
	1.RoHS Directive 2011/65/EU Annex II amending Annex (EU)2015/863	
Bluetooth Speaker	— Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs and PBDEs Content	**PASS**
	—Di-(2-ethylhexyl) phthalate(DEHP), Benzylbutyl phthalate(BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate(DIBP) Content	**PASS**

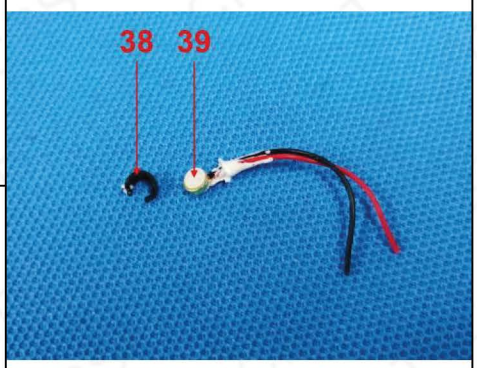
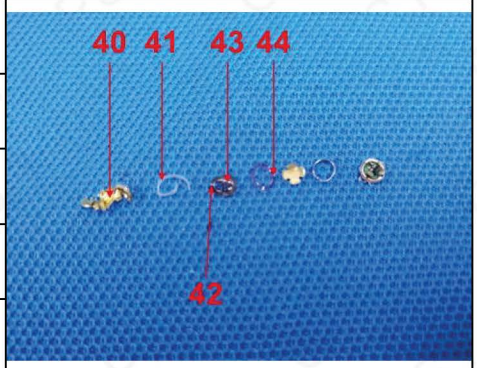
****

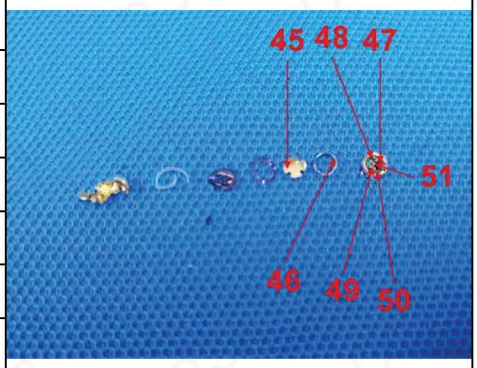
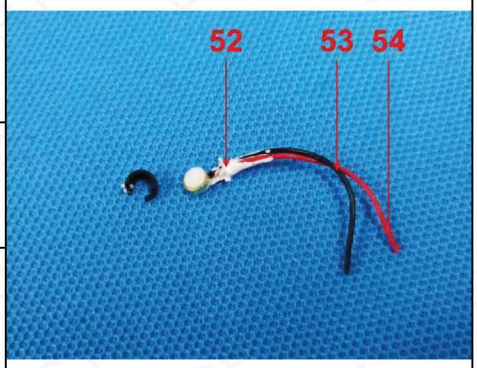
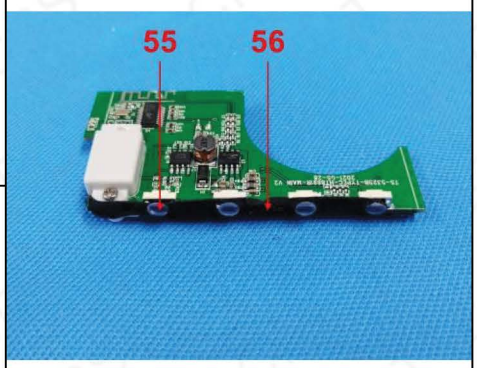
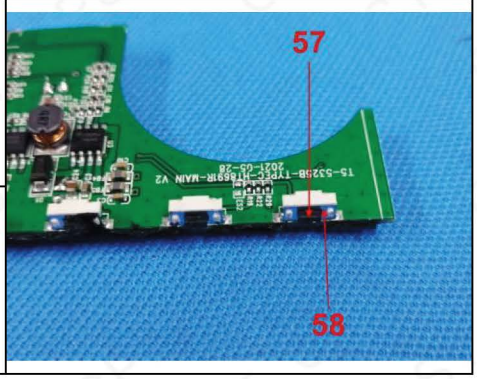
2. Test Item Description And Photo List

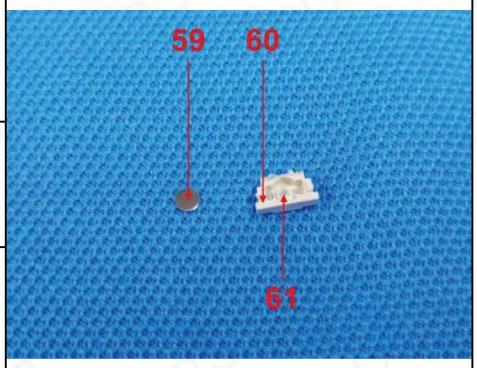
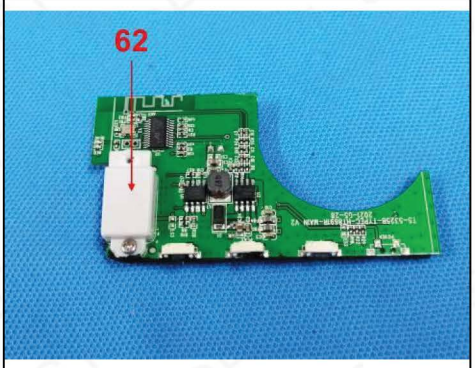
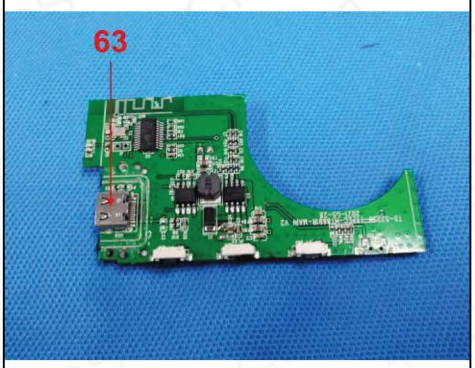
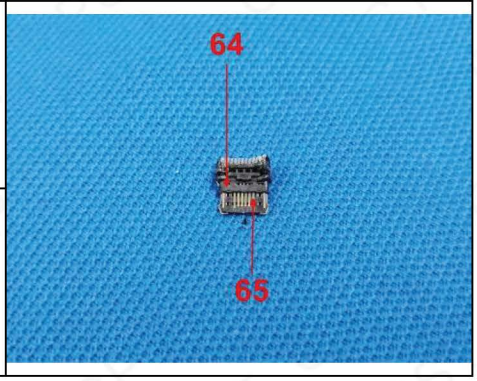
Sample No.	Description	Photograph
001	Silvery grey plastic	
002	Silvery gray soft plastic	
003	Transparent glue	
004	Silvery grey textile	
005	Black plastic	

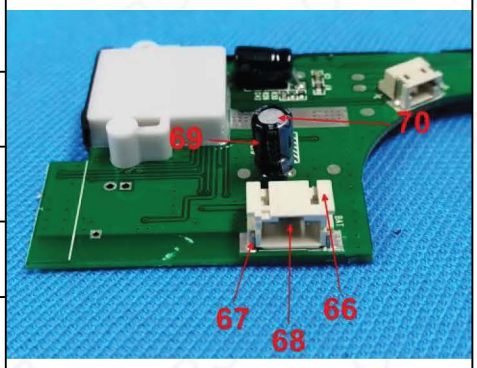
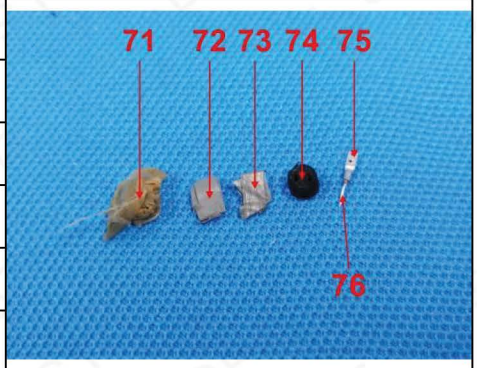
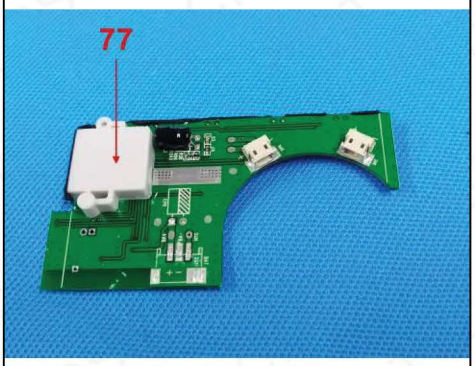
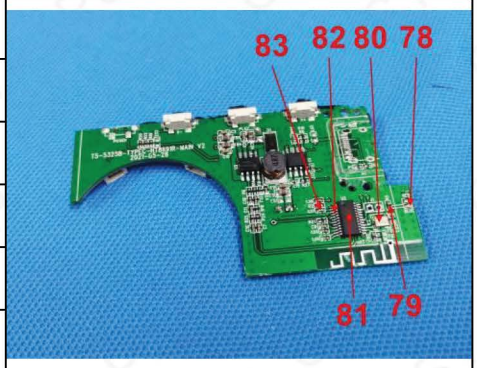
Sample No.	Description	Photograph
006	Yellow glue	
007	Silvery metal (screw)	
008	Black soft plastic	
009	Black plastic	
010	Black paper	
011	Silvery solder	
012	White plastic	
013	Silvery metal	
014	Coppery metal	
015	White fiber	
016	Yellow plastic	
017	Brown paper	
018	Coppery metal (coil)	
019	Brown textile	
020	Silvery metal	
021	Silvery magnet	
022	Silvery metal with black plating	

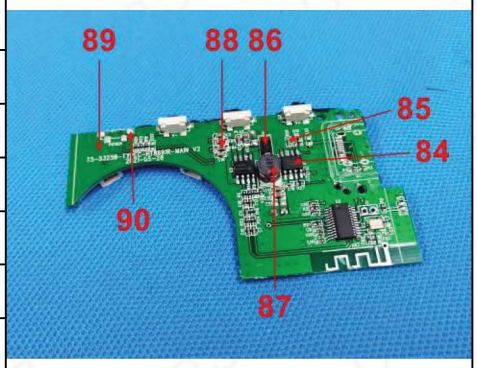
Sample No.	Description	Photograph
023	Black soft plastic	
024	Black foam	
025	Black soft plastic	
026	Silvery metal with black coating	
027	Silvery metal	
028	White textile	
029	Silvery metal (screw)	
030	Grey foam	
031	Black soft plastic (wire jacket)	
032	Red soft plastic (wire jacket)	
033	Silvery metal (wire core)	
034	White plastic	
035	Silvery metal (terminal)	

Sample No.	Description	Photograph
036	Silvery grey plastic	
037	Silvery metal (screw)	
038	Black soft plastic	
039	White plastic	
040	Golden metal	
041	White plastic	
042	Silvery metal	
043	Silvery grey plastic	
044	Red plastic	

Sample No.	Description	Photograph
045	Silvery metal with gold plating	
046	Silvery metal	
047	Black body	
048	Black body	
049	Brown body	
050	Green PCB	
051	Silvery solder	
052	White glue	
053	Black soft plastic (wire jacket)	
054	Red soft plastic (wire jacket)	
055	Transparent plastic	
056	Black foam	
057	Black plastic (switch)	
058	Silvery metal (switch)	

Sample No.	Description	Photograph
059	Silvery metal (switch)	
060	Beige plastic (switch)	
061	Silvery metal (switch pin)	
062	Silvery grey plastic	
063	Silvery metal (T-C socket)	
064	Gray plastic (T-C socket)	
065	Coppery metal (T-C socket pin)	

Sample No.	Description	Photograph
066	Beige Plastic	
067	Silvery metal	
068	Silvery metal (pin)	
069	Black plastic with white printing (capacitor)	
070	Silvery metal (capacitor)	
071	Brown paper with electrolyte (capacitor)	
072	Silvery metal (capacitor foil)	
073	Silvery gray metal (capacitor foil)	
074	Black rubber (capacitor)	
075	Silvery metal (capacitor connecting piece)	
076	Silvery metal (capacitor pin)	
077	Silvery grey plastic	
078	White body (BLUE)	
079	Black body (R5)	
080	Silvery body (crystal)	
081	Black body (U2)	
082	Silvery metal (pin)	
083	Brown body (C37)	

Sample No.	Description	Photograph
084	Black body (U1)	
085	Black body with white printing (R28)	
086	Black body (D1)	
087	Gray body with black printing (inductive)	
088	Gray body (F84)	
089	Green PCB	
090	Silvery solder	
091	Silvery gray soft plastic	
092	Black textile	
093	Silvery grey plastic	
094	Black fiber	
095	Brown fiber	
096	Yellow fiber	

3. Test Results

3.1 Screening test for the specified hazardous substances of RoHS for the selected materials of the submitted sample:

- Heavy Metal (Cadmium, Chromium, Mercury, Lead) Content Test
- Bromine Content Test

According to IEC 62321-3-1:2013, and Quantification analyzed with Energy Dispersive X-ray Fluorescence Spectrometers.

Sample No.	Total Cadmium	Total Lead	Total Mercury	Total Chromium	Total Bromine
Sample 001	BL	BL	BL	BL	BL
Sample 002	BL	BL	BL	BL	BL
Sample 003	BL	BL	BL	BL	BL
Sample 004	BL	BL	BL	BL	BL
Sample 005	BL	BL	BL	BL	BL
Sample 006	BL	BL	BL	BL	BL
Sample 007	BL	BL	BL	BL	N.A.
Sample 008	BL	BL	BL	BL	BL
Sample 009	BL	BL	BL	BL	BL
Sample 010	BL	BL	BL	BL	BL
Sample 011	BL	Inconclusive^	BL	BL	N.A.
Sample 012	BL	BL	BL	BL	BL
Sample 013	BL	BL	BL	BL	N.A.
Sample 014	BL	BL	BL	BL	N.A.
Sample 015	BL	BL	BL	BL	BL
Sample 016	BL	BL	BL	BL	BL
Sample 017	BL	BL	BL	BL	BL
Sample 018	BL	BL	BL	BL	N.A.
Sample 019	BL	BL	BL	BL	BL
Sample 020	BL	BL	BL	BL	N.A.
Sample 021	BL	BL	BL	BL	BL
Sample 022	BL	BL	BL	BL	N.A.
Sample 023	BL	BL	BL	BL	BL
Sample 024	BL	BL	BL	BL	BL
Sample 025	BL	BL	BL	BL	BL
Sample 026	BL	BL	BL	BL	N.A.

Sample No.	Total Cadmium	Total Lead	Total Mercury	Total Chromium	Total Bromine
Sample 027	BL	BL	BL	BL	N.A.
Sample 028	BL	BL	BL	BL	BL
Sample 029	BL	BL	BL	BL	N.A.
Sample 030	BL	BL	BL	BL	BL
Sample 031	BL	BL	BL	BL	BL
Sample 032	BL	BL	BL	BL	BL
Sample 033	BL	BL	BL	BL	N.A.
Sample 034	BL	BL	BL	BL	BL
Sample 035	BL	BL	BL	BL	N.A.
Sample 036	BL	BL	BL	BL	BL
Sample 037	BL	BL	BL	BL	N.A.
Sample 038	BL	BL	BL	BL	BL
Sample 039	BL	BL	BL	BL	BL
Sample 040	BL	BL	BL	BL	N.A.
Sample 041	BL	BL	BL	BL	BL
Sample 042	BL	BL	BL	BL	N.A.
Sample 043	BL	BL	BL	BL	BL
Sample 044	BL	BL	BL	BL	BL
Sample 045	BL	BL	BL	BL	N.A.
Sample 046	BL	BL	BL	BL	N.A.
Sample 047	BL	BL	BL	BL	BL
Sample 048	BL	BL	BL	BL	BL
Sample 049	BL	BL	BL	BL	BL
Sample 050	BL	BL	BL	BL	Inconclusive^
Sample 051	BL	BL	BL	BL	N.A.
Sample 052	BL	BL	BL	BL	BL
Sample 053	BL	BL	BL	BL	BL
Sample 054	Inconclusive^	BL	BL	BL	BL
Sample 055	BL	BL	BL	BL	BL
Sample 056	BL	BL	BL	BL	BL
Sample 057	BL	BL	BL	BL	BL
Sample 058	BL	BL	BL	BL	N.A.
Sample 059	BL	BL	BL	BL	N.A.
Sample 060	BL	BL	BL	BL	BL
Sample 061	BL	BL	BL	BL	N.A.

Sample No.	Total Cadmium	Total Lead	Total Mercury	Total Chromium	Total Bromine
Sample 062	BL	BL	BL	BL	BL
Sample 063	BL	BL	BL	BL	N.A.
Sample 064	BL	BL	BL	BL	BL
Sample 065	BL	BL	BL	BL	N.A.
Sample 066	BL	BL	BL	BL	BL
Sample 067	BL	BL	BL	BL	N.A.
Sample 068	BL	BL	BL	BL	N.A.
Sample 069	BL	BL	BL	BL	BL
Sample 070	BL	BL	BL	BL	N.A.
Sample 071	BL	BL	BL	BL	BL
Sample 072	BL	BL	BL	BL	N.A.
Sample 073	BL	BL	BL	BL	N.A.
Sample 074	BL	BL	BL	BL	BL
Sample 075	BL	BL	BL	BL	N.A.
Sample 076	BL	BL	BL	BL	N.A.
Sample 077	BL	BL	BL	BL	BL
Sample 078	BL	BL	BL	BL	BL
Sample 079	BL	BL	BL	BL	BL
Sample 080	BL	BL	BL	BL	BL
Sample 081	BL	BL	BL	BL	BL
Sample 082	BL	BL	BL	BL	N.A.
Sample 083	BL	BL	BL	BL	BL
Sample 084	BL	BL	BL	BL	BL
Sample 085	BL	BL	BL	BL	BL
Sample 086	BL	BL	BL	BL	BL
Sample 087	BL	BL	BL	BL	BL
Sample 088	BL	BL	BL	BL	BL
Sample 089	BL	BL	BL	BL	Inconclusive^
Sample 090	Inconclusive^	BL	BL	BL	N.A.
Sample 091	BL	BL	BL	BL	BL
Sample 092	BL	BL	BL	BL	BL
Sample 093	BL	BL	BL	BL	BL
Sample 094	BL	BL	BL	BL	BL
Sample 095	BL	BL	BL	BL	BL
Sample 096	BL	BL	BL	BL	BL

Note:

1. All Concentrations express in “mg/kg” (milligram per kilogram), mg/kg ~ ppm
2. “OL” denotes “over limit”
3. “BL” denotes “below limit”
4. “N.A.” denotes “Not Applicable”
5. “Inconclusive” denotes result is intermediate between “OL” and “BL”
6. “^”denotes the screening result was inconclusive(X) or over limit (OL), thus further confirmation test was conducted, results are listed in 3.2 and 3.3.

XRF screening limits for different materials:

Materials	Concentration (mg/kg)				
	Cd	Cr	Pb	Hg	Br
Metal	BL≤(70-3σ)<X<(130+3σ)≤OL	BL≤(700-3σ)<X	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(700-3σ)<X<(1300+3σ)≤OL	N.A.
Polymers	BL≤(70-3σ)<X<(130+3σ)≤OL	BL≤(700-3σ)<X	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(300-3σ)<X
Composite material	BL≤(50-3σ)<X<(150+3σ)≤OL	BL≤(500-3σ)<X	BL≤(500-3σ)<X<(1500+3σ)≤OL	BL≤(500-3σ)<X<(1500+3σ)≤OL	BL≤(250-3σ)<X

3. 2 Test for Heavy Metals

– Lead, Cadmium, Hexavalent Chromium and Mercury Tests according to IEC 62321-4:2013+A1:2017 &IEC 62321-5:2013 & IEC 62321-7-1:2015& IEC 62321-7-2:2017, Analysis was conducted by ICP-OES, UV-VIS.

Element	Total Cadmium [mg/kg]	Total Lead [mg/kg]	Total Mercury [mg/kg]	Hexavalent Chromium [μg/cm²]	Hexavalent Chromium [mg/kg]
Detection Limit	**5**	**5**	**5**	**0.10**	**5**
Limit	**100**	**1000**	**1000**	**0.10**	**1000**
Sample 011	/	221	/	/	/
Sample 054	N.D.	/	/	/	/
Sample 090	N.D.	/	/	/	/

Note:

1. All Concentrations express in “mg/kg”(milligram per kilogram), mg/kg ~ ppm.
2. “N.D.” = “Not Detected”.
3. Boiling-water-extraction:
   Negative = Absence of Cr(VI) coating / surface layer: the detected concentration in boiling-water-extraction solution is less than 0.10μg with 1cm² sample surface area.
   Positive = Presence of Cr(VI) coating / surface layer: the detected concentration in boiling-water-extraction solution is greater than 0.13μg with 1cm² sample surface area.
   Inconclusive =the detected concentration in boiling-water-extraction solution is greater than 0.10μg and less than 0.13μg with 1cm² sample surface area.
4. Positive = result be regarded as not comply with RoHS requirement
   Negative = result be regarded as comply with RoHS requirement
5. “-” =Not regulated

3. 3 Test for Flame retardants

– Test Method: With reference to IEC 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometry (GC-MS). [Reporting Limit: 5mg/kg]

Test Item		Result [mg/kg]		RoHS Requirement [mg/kg]
		Sample 050	Sample 089	
PBBs	Monobromobiphenyl	< 5	< 5	Sum of PBBs < 1000
	Dibromobiphenyl	< 5	< 5	
	Tribromobiphenyl	< 5	< 5	
	Tetrabromobiphenyl	< 5	< 5	
	Pentabromobiphenyl	< 5	< 5	
	Hexabromobiphenyl	< 5	< 5	
	Heptabromobiphenyl	< 5	< 5	
	Octabromobiphenyl	< 5	< 5	
	Nonabromobiphenyl	< 5	< 5	
	Decabromobiphenyl	< 5	< 5	
	Sum of PBBs	< 5	< 5	
PBDEs	Monobromodiphenyl Ether	< 5	< 5	Sum of PBDEs < 1000
	Dibromodiphenyl Ether	< 5	< 5	
	Tribromodiphenyl Ether	< 5	< 5	
	Tetrabromodiphenyl Ether	< 5	< 5	
	Pentabromodiphenyl Ether	< 5	< 5	
	Hexabromodiphenyl Ether	< 5	< 5	
	Heptabromodiphenyl Ether	< 5	< 5	
	Octabromodiphenyl Ether	< 5	< 5	
	Nonabromodiphenyl Ether	< 5	< 5	
	Decabromodiphenyl Ether	< 5	< 5	
	Sum of PBDEs	< 5	< 5	

Note:
1. All Concentrations express in “mg/kg” (milligram per kilogram), mg/kg ~ ppm.
2. “<” denotes less than

3.4 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)2017/2102

Test method: 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**
Limit	**1000**	**1000**	**1000**	**1000**
Sample 001	N.D.	N.D.	N.D.	N.D.
Sample 002	N.D.	N.D.	N.D.	N.D.
Sample 003	N.D.	N.D.	N.D.	N.D.
Sample 004	N.D.	N.D.	N.D.	N.D.
Sample 005	N.D.	N.D.	N.D.	N.D.
Sample 006	N.D.	N.D.	N.D.	N.D.
Sample 008	N.D.	N.D.	N.D.	N.D.
Sample 009	N.D.	N.D.	N.D.	N.D.
Sample 010	N.D.	N.D.	N.D.	N.D.
Sample 012	N.D.	N.D.	N.D.	N.D.
Sample 015	N.D.	N.D.	N.D.	N.D.
Sample 016	N.D.	N.D.	N.D.	N.D.
Sample 017	N.D.	N.D.	N.D.	N.D.
Sample 019	N.D.	N.D.	N.D.	N.D.
Sample 021	N.D.	N.D.	N.D.	N.D.
Sample 023	N.D.	N.D.	N.D.	N.D.
Sample 024	N.D.	N.D.	N.D.	N.D.
Sample 025	N.D.	N.D.	N.D.	N.D.
Sample 028	N.D.	N.D.	N.D.	N.D.
Sample 030	N.D.	N.D.	N.D.	N.D.
Sample 031	N.D.	N.D.	N.D.	N.D.
Sample 032	N.D.	N.D.	N.D.	N.D.
Sample 034	N.D.	N.D.	N.D.	N.D.
Sample 036	N.D.	N.D.	N.D.	N.D.
Sample 038	N.D.	N.D.	N.D.	N.D.
Sample 039	N.D.	N.D.	N.D.	N.D.
Sample 041	N.D.	N.D.	N.D.	N.D.
Sample 043	N.D.	N.D.	N.D.	N.D.
Sample 044	N.D.	N.D.	N.D.	N.D.

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**
Limit	**1000**	**1000**	**1000**	**1000**
Sample 047	N.D.	N.D.	N.D.	N.D.
Sample 048	N.D.	N.D.	N.D.	N.D.
Sample 049	N.D.	N.D.	N.D.	N.D.
Sample 050	N.D.	N.D.	N.D.	N.D.
Sample 052	130	N.D.	N.D.	N.D.
Sample 053	N.D.	N.D.	N.D.	N.D.
Sample 054	N.D.	N.D.	N.D.	N.D.
Sample 055	N.D.	N.D.	N.D.	N.D.
Sample 056	110	N.D.	N.D.	N.D.
Sample 057	N.D.	N.D.	N.D.	N.D.
Sample 060	N.D.	N.D.	N.D.	N.D.
Sample 062	N.D.	N.D.	N.D.	N.D.
Sample 064	N.D.	N.D.	N.D.	N.D.
Sample 066	N.D.	N.D.	N.D.	N.D.
Sample 069	N.D.	N.D.	N.D.	N.D.
Sample 071	N.D.	N.D.	N.D.	N.D.
Sample 074	N.D.	N.D.	N.D.	N.D.
Sample 077	N.D.	N.D.	N.D.	N.D.
Sample 078	N.D.	N.D.	N.D.	N.D.
Sample 079	N.D.	N.D.	N.D.	N.D.
Sample 080	N.D.	N.D.	N.D.	N.D.
Sample 081	N.D.	N.D.	N.D.	N.D.
Sample 083	N.D.	N.D.	N.D.	N.D.
Sample 084	N.D.	N.D.	N.D.	N.D.
Sample 085	N.D.	N.D.	N.D.	N.D.
Sample 086	N.D.	N.D.	N.D.	N.D.
Sample 087	N.D.	N.D.	N.D.	N.D.
Sample 088	N.D.	N.D.	N.D.	N.D.
Sample 089	N.D.	N.D.	N.D.	N.D.
Sample 091	N.D.	N.D.	N.D.	N.D.
Sample 092	N.D.	N.D.	N.D.	N.D.
Sample 093	N.D.	N.D.	N.D.	N.D.
Sample 094	N.D.	N.D.	N.D.	N.D.

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**
Limit	**1000**	**1000**	**1000**	**1000**
Sample 095	N.D.	N.D.	N.D.	N.D.
Sample 096	N.D.	N.D.	N.D.	N.D.

Note:
1. All Concentrations express in “mg/kg”(milligram per kilogram), mg/kg ~ ppm.
2. “N.D.” = “Not Detected”.

Photo of the Submitted Sample

*** End of Report ***

TEST REPORT

Product Name	:	Bluetooth Speaker
Brand Mark	:	N/A
Model No.	:	T5
Series Model	:	RBS920, RBS920 Pro, S20, S20 Pro, AIWA SB-X30, AWKF3, SB-X30, PWS-2240, PWS-22
Report Number	:	BLA-EMC-202106-A6202
Date of Sample Receipt	:	2021/6/23
Date of Test	:	2021/6/23 to 2021/7/12
Date of Issue	:	2021/7/12
Test Standard	:	ETSI EN 300328 V2.2.2 (2019-07)
Test Result	:	Pass

Prepared for:

[redacted]

Prepared by:

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Date: 2021/7/12

BlueAsia of Technical Services(Shenzhen) Co., Ltd. BLA

REPORT REVISE RECORD

Version No.	Date	Description
00	2021/7/12	Original

TABLE OF CONTENTS

1 TEST SUMMARY

Test item	Test Requirement	Test Method	Class/Severity	Result
Receiver Blocking	ETSI EN 300328 V2.2.2 (2019-07)	EN 300 328 V2.2.2 clause 5.4.11.2	EN 300 328 Clause 4.3.1.12	Pass
Transmitter unwanted emissions in the out-of-band domain	ETSI EN 300328 V2.2.2 (2019-07)	EN 300 328 V2.2.2 clause 5.4.8.2.1	EN 300 328 Clause 4.3.1.9	Pass
Occupied Channel Bandwidth	ETSI EN 300328 V2.2.2 (2019-07)	EN 300 328 V2.2.2 clause 5.4.7.2.1	EN 300 328 Clause 4.3.1.8	Pass
Hopping Frequency Separation	ETSI EN 300328 V2.2.2 (2019-07)	EN 300 328 V2.2.2 clause 5.4.5.2.1	EN 300 328 Clause 4.3.1.5	Pass
Accumulated Transmit Time, Frequency Occupation and Hopping Sequence	ETSI EN 300328 V2.2.2 (2019-07)	EN 300 328 V2.2.2 clause 5.4.4.2.1	EN 300 328 Clause 4.3.1.4	Pass
RF Output Power	ETSI EN 300328 V2.2.2 (2019-07)	EN 300 328 V2.2.2 clause 5.4.2.2.1.2	EN 300 328 Clause 4.3.1.2	Pass
Receiver spurious emissions	ETSI EN 300328 V2.2.2 (2019-07)	EN 300 328 V2.2.2 clause 5.4.10.2	EN 300 328 Clause 4.3.1.11	Pass
Transmitter unwanted emissions in the spurious domain	ETSI EN 300328 V2.2.2 (2019-07)	EN 300 328 V2.2.2 clause 5.4.9.2	EN 300 328 Clause 4.3.1.10	Pass

2 GENERAL INFORMATION

Applicant	
Address	
Manufacturer	
Address	
Factory	
Address	
Product Name	Bluetooth Speaker
Test Model No.	T5

3 GENERAL DESCRIPTION OF E.U.T.

Hardware Version	T5-5325B-HT8691R-MAIN
Software Version	T5-5325B-HT8691R-MAIN

Operation Frequency:	2402MHz-2480MHz
Modulation Type:	GFSK, pi/4DQPSK, 8DPSK
Channel Spacing:	1MHz
Number of Channels:	79
Antenna Type:	PCB Antenna
Antenna Gain:	0 dBi(Provided by the applicant)

4 TEST ENVIRONMENT

Environment	Temperature	Voltage
Normal	25°C	3.7Vdc
Extreme	-20°C ~+50°C	3.5Vdc~4.2Vdc

5 TEST MODE

TEST MODE	TEST MODE DESCRIPTION
TX	Keep the EUT in transmitting mode
RX	Keep the EUT in receiving mode
Remark:Only the data of the worst mode would be recorded in this report.	

6 MEASUREMENT UNCERTAINTY

Parameter	Expanded Uncertainty (Confidence of 95%)
Radiated Emission(9kHz-30MHz)	±4.34dB
Radiated Emission(30Mz-1000MHz)	±4.24dB
Radiated Emission(1GHz-18GHz)	±4.68dB
AC Power Line Conducted Emission(150kHz-30MHz)	±3.45dB

Parameter	Expanded Uncertainty (Confidence of 95%)
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±1.5 dB
Power Spectral Density, conducted	±3.0 dB
Unwanted Emissions, conducted	±3.0 dB
Temperature	±3 °C
Supply voltages	±3 %
Time	±5 %
Unwanted Radiated Emission (30MHz ~ 1000MHz)	±4.35 dB
Unwanted Radiated Emission (1GHz ~ 18GHz)	±4.44 dB

7 DESCRIPTION OF SUPPORT UNIT

Device Type	Manufacturer	Model Name	Serial No.	Remark
PC	HASEE	K610D	N/A	N/A

8 LABORATORY LOCATION

All tests were performed at:
BlueAsia of Technical Services(Shenzhen) Co., Ltd.
Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China
Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673
No tests were sub-contracted.

9 TEST INSTRUMENTS LIST

Test Equipment Of Receiver Blocking					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Spectrum	Agilent	N9020A	MY49100060	2020/10/12	2021/10/11
Signal Generator	Agilent	N5182A	MY49060650	2020/10/12	2021/10/11
Signal Generator	Agilent	E8257D	MY44320250	2020/10/12	2021/10/11

Test Equipment Of Transmitter unwanted emissions in the out-of-band domain					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Spectrum	Agilent	N9020A	MY49100060	2020/10/12	2021/10/11
Signal Generator	Agilent	N5182A	MY49060650	2020/10/12	2021/10/11
Signal Generator	Agilent	E8257D	MY44320250	2020/10/12	2021/10/11
Power probe	DARE	RPR3006W	14I00889SN042	2020/10/12	2021/10/11

Test Equipment Of Occupied Channel Bandwidth					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Spectrum	Agilent	N9020A	MY49100060	2020/10/12	2021/10/11
Signal Generator	Agilent	N5182A	MY49060650	2020/10/12	2021/10/11
Signal Generator	Agilent	E8257D	MY44320250	2020/10/12	2021/10/11
Power probe	DARE	RPR3006W	14I00889SN042	2020/10/12	2021/10/11

Test Equipment Of Hopping Frequency Separation

Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Spectrum	Agilent	N9020A	MY49100060	2020/10/12	2021/10/11
Signal Generator	Agilent	N5182A	MY49060650	2020/10/12	2021/10/11
Signal Generator	Agilent	E8257D	MY44320250	2020/10/12	2021/10/11
Power probe	DARE	RPR3006W	14I00889SN042	2020/10/12	2021/10/11

Test Equipment Of Accumulated Transmit Time, Frequency Occupation and Hopping Sequence					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Spectrum	Agilent	N9020A	MY49100060	2020/10/12	2021/10/11
Signal Generator	Agilent	N5182A	MY49060650	2020/10/12	2021/10/11
Signal Generator	Agilent	E8257D	MY44320250	2020/10/12	2021/10/11
Power probe	DARE	RPR3006W	14I00889SN042	2020/10/12	2021/10/11

Test Equipment Of RF Output Power					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Spectrum	Agilent	N9020A	MY49100060	2020/10/12	2021/10/11
Signal Generator	Agilent	N5182A	MY49060650	2020/10/12	2021/10/11
Signal Generator	Agilent	E8257D	MY44320250	2020/10/12	2021/10/11
Power probe	DARE	RPR3006W	14I00889SN042	2020/10/12	2021/10/11

Test Equipment Of Receiver spurious emissions					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**

Chamber	SKET	966	N/A	2020/11/10	2023/11/9
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Receiver	R&S	ESR7	101199	2020/10/12	2021/10/11
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	2020/9/26	2022/9/25
Horn Antenna	Schwarzbeck	9120D	01892 P:00331	2020/9/26	2022/9/25
Amplifier	SKET	PA-000318G-45	N/A	2020/10/16	2021/10/15
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A
Loop antenna	SCHNARZBECK	FMZB1519B	00102	2020/9/26	2022/9/25
Controller	SKET	N/A	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-02	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-03	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-01	N/A	N/A	N/A

Test Equipment Of Transmitter unwanted emissions in the spurious domain					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Chamber	SKET	966	N/A	2020/11/10	2023/11/9
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Receiver	R&S	ESR7	101199	2020/10/12	2021/10/11
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	2020/9/26	2022/9/25
Horn Antenna	Schwarzbeck	9120D	01892 P:00331	2020/9/26	2022/9/25
Amplifier	SKET	PA-000318G-45	N/A	2020/10/16	2021/10/15
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A

Loop antenna	SCHNARZBECK	FMZB1519B	00102	2020/9/26	2022/9/25
Controller	SKET	N/A	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-02	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-03	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-01	N/A	N/A	N/A

10 RECEIVER BLOCKING

Test Standard	ETSI EN 300328 V2.2.2 (2019-07)
Test Method	EN 300 328 V2.2.2 clause 5.4.11.2
Test Mode (Pre-Scan)	RX
Test Mode (Final Test)	RX
Tester	Jozu
Temperature	25℃
Humidity	60%

10.1 LIMITS

While maintaining the minimum performance criteria as defined in clause 4.3.1.12.3, the blocking levels at specifiedfrequency offsets shall be equal to or greater than the limits defined for the applicable receiver category provided intable 6, table 7 or table 8.

Table 6: Receiver Blocking parameters for Receiver Category 1 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 4)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 4)	Type of blocking signal
(-133 dBm + 10 × $\log_{10}$(OCBW)) or -68 dBm whichever is less (see note 2)	2 380 2 504	-34	CW
(-139 dBm + 10 × $\log_{10}$(OCBW)) or -74 dBm whichever is less (see note 3)	2 300 2 330 2 360 2 524 2 584 2 674		
NOTE 1: OCBW is in Hz. NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 26 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal. NOTE 3: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 20 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal. NOTE 4: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.			

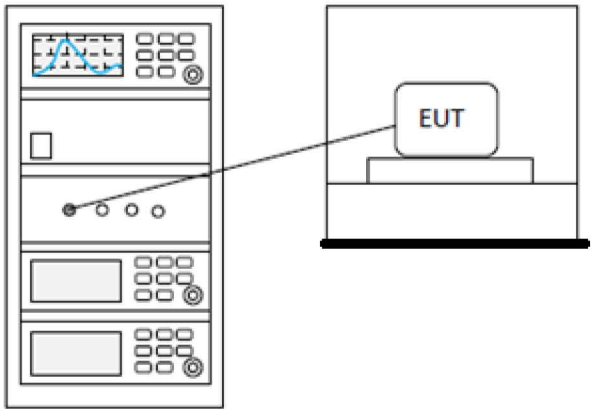
Table 7: Receiver Blocking parameters receiver Category 2 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 3)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 3)	Type of blocking signal
(-139 dBm + 10 × $\log_{10}$(OCBW) + 10 dB) or (-74 dBm + 10 dB) whichever is less (see note 2)	2 380 2 504 2 300 2 584	-34	CW
NOTE 1: OCBW is in Hz. NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 26 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal. NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.			

Table 8: Receiver Blocking parameters receiver Category 3 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 3)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 3)	Type of blocking signal
(-139 dBm + 10 × $\log_{10}$(OCBW) + 20 dB) or (-74 dBm + 20 dB) whichever is less (see note 2)	2 380 2 504 2 300 2 584	-34	CW
NOTE 1: OCBW is in Hz. NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative the test may be performed using a wanted signal up to P_{min} + 30 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal. NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.			

10.2 BLOCK DIAGRAM OF TEST SETUP



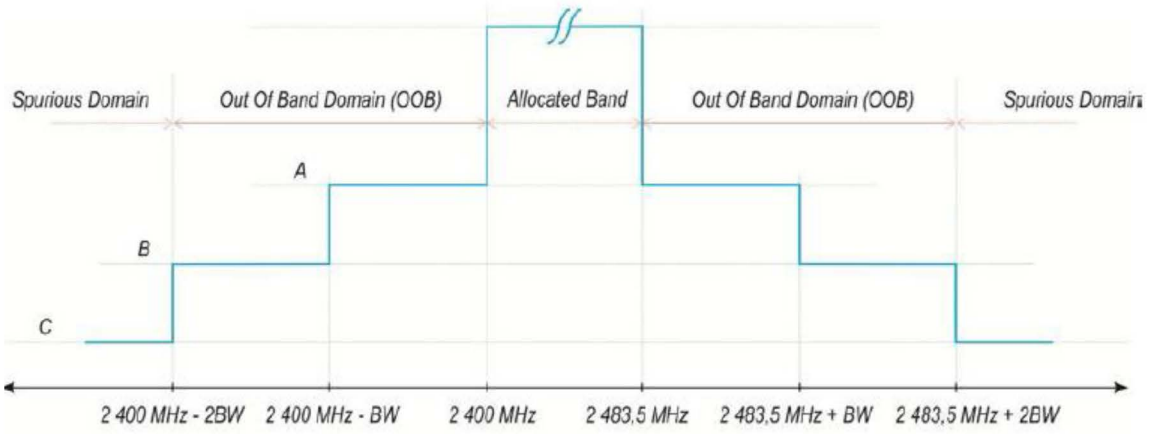
10.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

11 TRANSMITTER UNWANTED EMISSIONS IN THE OUT-OF-BAND DOMAIN

Test Standard	ETSI EN 300328 V2.2.2 (2019-07)
Test Method	EN 300 328 V2.2.2 clause 5.4.8.2.1
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

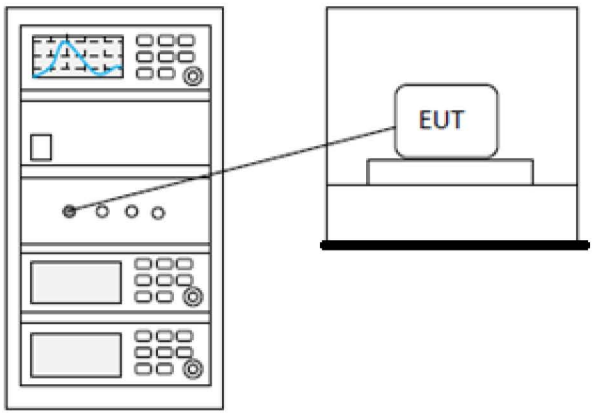
11.1 LIMITS



A: -10 dBm/MHz e.i.r.p.
B: -20 dBm/MHz e.i.r.p.
C: Spurious Domain limits

BW = Occupied Channel Bandwidth in MHz or 1 MHz whichever is greater

11.2 BLOCK DIAGRAM OF TEST SETUP



11.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

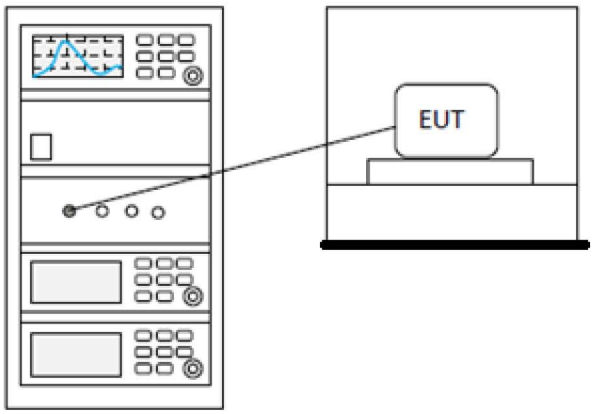
12 OCCUPIED CHANNEL BANDWIDTH

Test Standard	ETSI EN 300328 V2.2.2 (2019-07)
Test Method	EN 300 328 V2.2.2 clause 5.4.7.2.1
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

12.1 LIMITS

Limit:	The Occupied Channel Bandwidth shall fall completely within the band given in clause 1. For non-adaptive Frequency Hopping equipment with e.i.r.p. greater than 10 dBm, the Occupied Channel Bandwidth for every occupied hopping frequency shall be equal to or less than the Nominal Channel Bandwidth declared by the manufacturer. See clause 5.4.1 j). This declared value shall not be greater than 5 MHz. The Occupied Channel Bandwidth shall fall completely within the band given in table 1. In addition, for non-adaptive equipment using wide band modulations other than FHSS and with e.i.r.p. greater than 10 dBm, the occupied channel bandwidth shall be less than 20 MHz.

12.2 BLOCK DIAGRAM OF TEST SETUP



12.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

13 HOPPING FREQUENCY SEPARATION

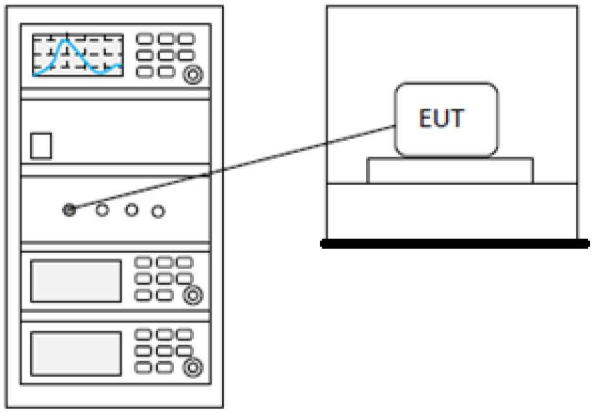
Test Standard	ETSI EN 300328 V2.2.2 (2019-07)
Test Method	EN 300 328 V2.2.2 clause 5.4.5.2.1
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

13.1 LIMITS

Non-adaptive frequency hopping equipment:
For non-adaptive Frequency Hopping equipment, the Hopping Frequency Separation shall be equal to or greater than the Occupied Channel Bandwidth (see clause 4.3.1.8), with a minimum separation of 100 kHz.
For equipment with a maximum declared RF Output power level of less than 10 dBm e.i.r.p. or for non-adaptive
Frequency Hopping equipment operating in a mode where the RF Output power is less than 10 dBm e.i.r.p. only the minimum Hopping Frequency Separation of 100 kHz applies.

Adaptive frequency hopping equipment:
For adaptive Frequency Hopping equipment, the minimum Hopping Frequency Separation shall be 100 kHz.
Adaptive Frequency Hopping equipment that switched to a non-adaptive mode for one or more hopping frequencies because interference was detected on these hopping frequencies with a level above the threshold level defined in clause 4.3.1.7.2.2, point 5 or clause 4.3.1.7.3.2, point 5, is allowed to continue to operate with a minimum Hopping Frequency Separation of 100 kHz as long as the interference remains present on these hopping frequencies. The equipment shall continue to operate in an adaptive mode on other hopping frequencies.
Adaptive Frequency Hopping equipment which decided to operate in a non-adaptive mode on one or more hopping frequencies without the presence of interference, shall comply with the limit for Hopping Frequency Separation for non-adaptive equipment defined in clause 4.3.1.5.3.1 (first paragraph) for these hopping frequencies as well as with all other requirements applicable to non-adaptive frequency hopping equipment.

13.2 BLOCK DIAGRAM OF TEST SETUP



13.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

14 ACCUMULATED TRANSMIT TIME, FREQUENCY OCCUPATION AND HOPPING SEQUENCE

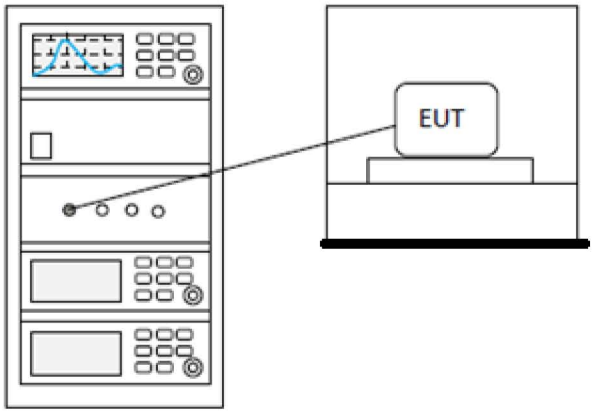
Test Standard	ETSI EN 300328 V2.2.2 (2019-07)
Test Method	EN 300 328 V2.2.2 clause 5.4.4.2.1
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

14.1 LIMITS

Non-adaptive frequency hopping equipment:
The Accumulated Transmit Time on any hopping frequency shall not be greater than 15 ms within any observation period of 15 ms multiplied by the minimum number of hopping frequencies (N) that have to be used.
The hopping sequence(s) shall contain at least N hopping frequencies where N is either 5 or the result of 15 MHz
divided by the minimum Hopping Frequency Separation in MHz, whichever is the greater. According to clause 4.3.1.5.3.1 the minimum Hopping Frequency Separation for non-adaptive equipment is equal to the Occupied Channel Bandwidth with a minimum of 100 kHz.

Adaptive frequency hopping equipment
Adaptive Frequency Hopping equipment shall be capable of operating over a minimum of 70 % of the band specified in table 1.
The Accumulated Transmit Time on any hopping frequency shall not be greater than 400 ms within any observation period of 400 ms multiplied by the minimum number of hopping frequencies (N) that have to be used.
The hopping sequence(s) shall contain at least N hopping frequencies at all times, where N is either 15 or the result of 15 MHz divided by the minimum Hopping Frequency Separation in MHz, whichever is the greater.

14.2 BLOCK DIAGRAM OF TEST SETUP



14.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

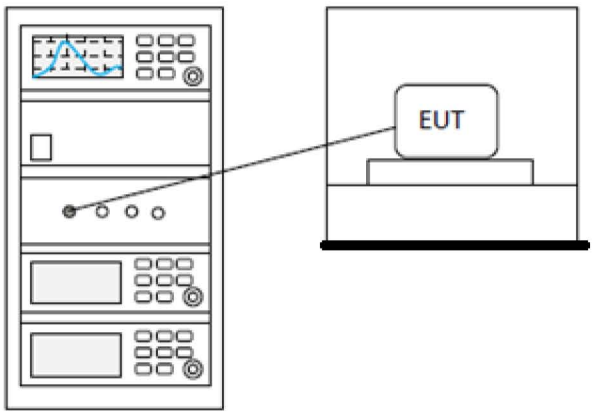
15 RF OUTPUT POWER

Test Standard	ETSI EN 300328 V2.2.2 (2019-07)
Test Method	EN 300 328 V2.2.2 clause 5.4.2.2.1.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

15.1 LIMITS

Limit:	20dBm/(100mw) (e.i.r.p)

15.2 BLOCK DIAGRAM OF TEST SETUP



15.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

16 RECEIVER SPURIOUS EMISSIONS

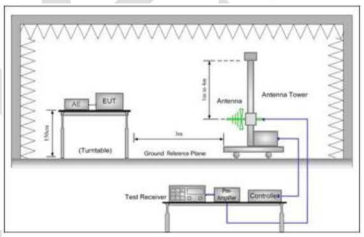
Test Standard	ETSI EN 300328 V2.2.2 (2019-07)
Test Method	EN 300 328 V2.2.2 clause 5.4.10.2
Test Mode (Pre-Scan)	RX
Test Mode (Final Test)	RX
Tester	Jozu
Temperature	25℃
Humidity	60%

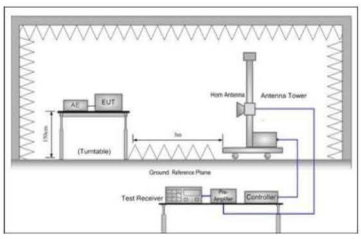
16.1 LIMITS

The spurious emissions of the receiver shall not exceed the values in tables in the indicated bands:

Frequency Range	Limit
30MHz to 1GHz	2nw(-57dBm)
Above 1GHz	20nw(-47dBm)

16.2 BLOCK DIAGRAM OF TEST SETUP





16.3 PROCEDURE

1. Scan from 30MHz to 12.75GHz, find the maximum radiation frequency to measure.
2. The technique used to find the Spurious Emissions of the transmitter was the antenna substitution method. Substitution method was performed to determine the actual ERP/EIRP emission levels of the EUT.

Below 1GHz test procedure as below:

1) The EUT was powered on and placed on a table in the chamber. The antenna of the transmitter was extended to its maximum length. Receiver mode and the measuring receiver shall be tuned to the

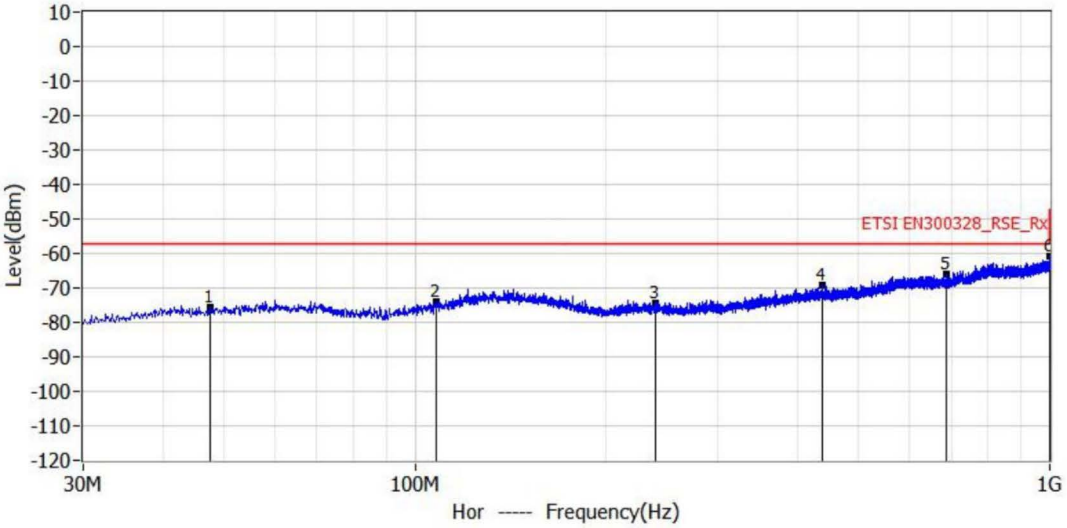
frequency of the transmitter under test.
2) Rotating through 360¡ã the turntable. After the fundamental emission was maximized, a field strength measurement was made.
3) Steps 1) and 2) were performed with the EUT and the receive antenna in both vertical and horizontal polarization.
4) The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter.
5) A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 2) is obtained for this set of conditions.
6) The output power into the substitution antenna was then measured.
7) Steps 5) and 6) were repeated with both antennas vertically polarized.
8) Calculate power in dBm by the following formula:
ERP(dBm) = Pg(dBm) ¨C cable loss (dB) + antenna gain (dBi)
where:
Pg is the generator output power into the substitution antenna.
Above 1GHz test procedure as below:
1) Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber.
2) Calculate power in dBm by the following formula:
EIRP(dBm) = Pg(dBm) +cable loss (dB) + antenna gain (dBi)
EIRP=ERP+2.15dB
where:
Pg is the generator output power into the substitution antenna.

Remark:
The disturbance below1GHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

16.4 TEST DATA

[TestMode: RX below 1G]; [Polarity: Horizontal]

Test Lab: BlueAsia EMC Lab（RE #1）	Project: BLA-EMC-202106-A62
EUT: Bluetooth-Speaker	Test Engineer: York
M/N: T5	Temperature: 25℃
S/N:	Humidity: 45%RH
Test Mode: RX mode	Test Voltage: AC 230V/50Hz
Note:	Test Data: 2021-06-28 17:50:32

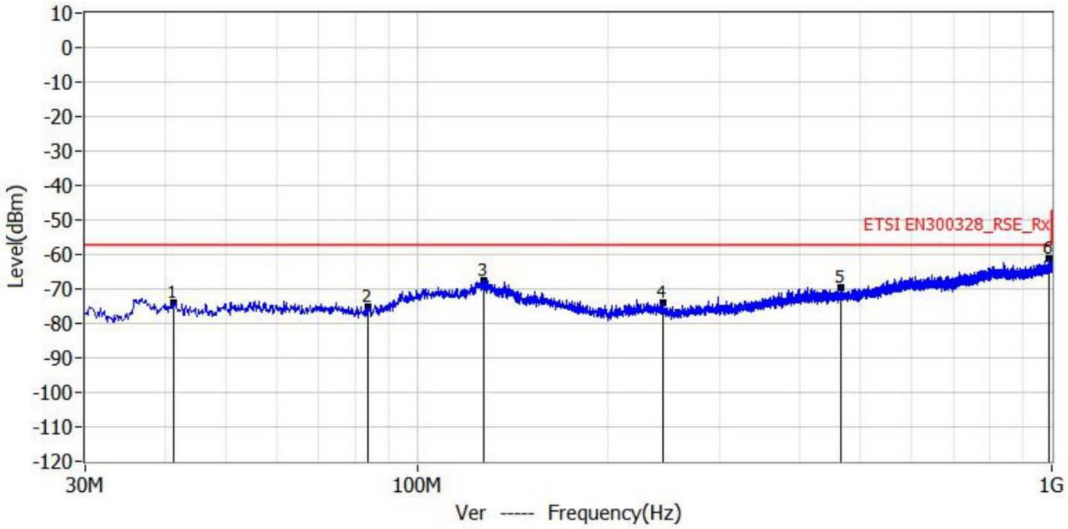


No.	Frequency	Limit dBm	Level dBm	Delta dB	Reading dBuV	Factor dB	Detector	Polar	Height cm	Angle deg
1*	47.460MHz	-57.0	-75.5	-18.5	-1.6	-73.9	PK	Hor	150.0	305.0
2*	107.843MHz	-57.0	-74.1	-17.1	-1.2	-72.9	PK	Hor	150.0	14.0
3*	239.156MHz	-57.0	-74.2	-17.2	-0.4	-73.8	PK	Hor	150.0	36.0
4*	438.128MHz	-57.0	-69.2	-12.2	0.4	-69.6	PK	Hor	150.0	274.0
5*	688.024MHz	-57.0	-66.0	-9.0	0.9	-66.9	PK	Hor	150.0	0.0
6*	999.151MHz	-57.0	-60.8	-3.8	1.4	-62.2	PK	Hor	150.0	36.0

Test Result: Pass

[TestMode: RX below 1G]; [Polarity: Vertical]

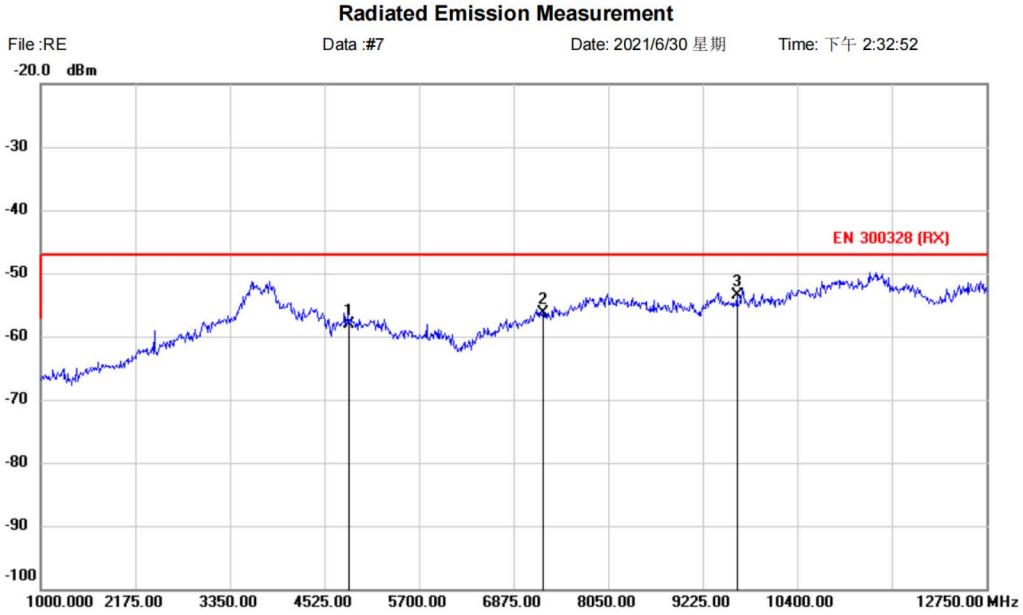
Test Lab: BlueAsia EMC Lab（RE #1）	Project: BLA-EMC-202106-A62
EUT: Bluetooth-Speaker	Test Engineer: York
M/N: T5	Temperature: 25℃
S/N:	Humidity: 45%RH
Test Mode: RX mode	Test Voltage: AC 230V/50Hz
Note:	Test Data: 2021-06-28 17:52:05



No.	Frequency	Limit dBm	Level dBm	Delta dB	Reading dBuV	Factor dB	Detector	Polar	Height cm	Angle deg
1*	41.276MHz	-57.0	-74.0	-17.0	0.2	-74.2	PK	Ver	150.0	231.0
2*	83.471MHz	-57.0	-75.1	-18.1	0.0	-75.1	PK	Ver	150.0	24.0
3*	127.121MHz	-57.0	-67.6	-10.6	3.3	-70.9	PK	Ver	150.0	0.0
4*	244.006MHz	-57.0	-74.1	-17.1	-0.2	-73.9	PK	Ver	150.0	67.0
5*	465.045MHz	-57.0	-69.7	-12.7	-0.4	-69.3	PK	Ver	150.0	340.0
6*	991.634MHz	-57.0	-61.3	-4.3	1.1	-62.4	PK	Ver	150.0	55.0

Test Result: Pass

[TestMode: RX low channel]; [Polarity: Vertical]



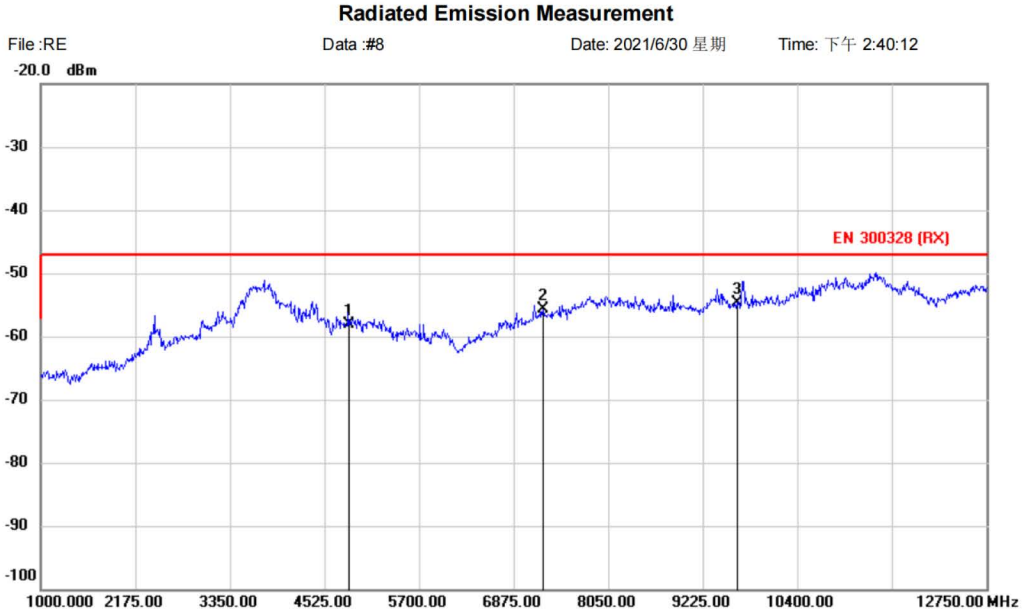
Site	Polarization: ***Vertical***	Temperature:
Limit: EN 300328 (RX)	Power:	Humidity: %
EUT: Bluetooth Speaker	Distance:	
M/N: T5		
Mode: RX -L		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1		4824.000	-70.53	12.49	-58.04	-47.00	-11.04	peak			
2		7236.000	-71.41	15.11	-56.30	-47.00	-9.30	peak			
3	*	9648.000	-71.66	18.08	-53.58	-47.00	-6.58	peak			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: RX low channel]; [Polarity: Horizontal]



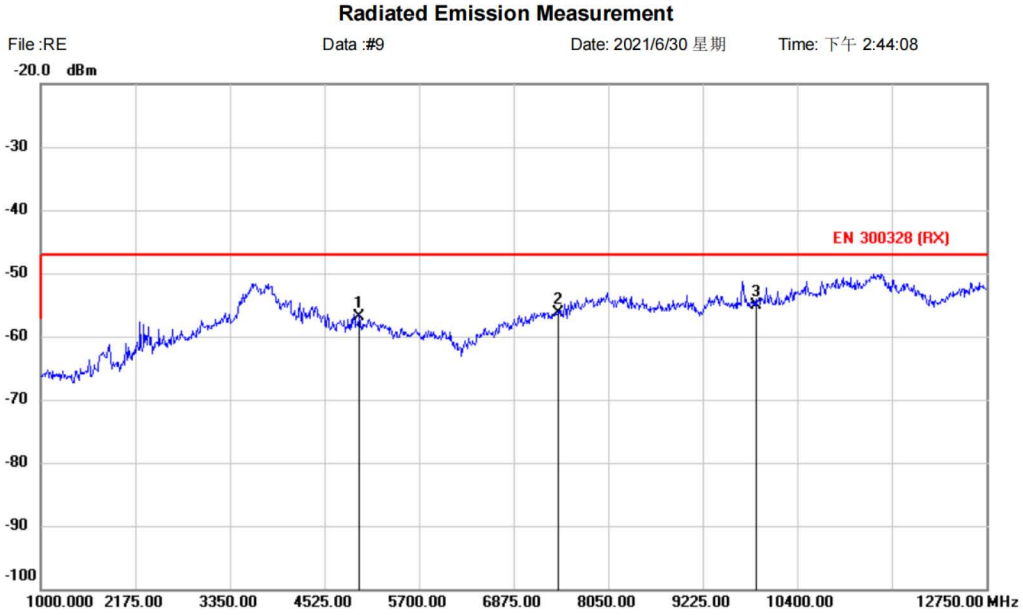
Site	Polarization: ***Horizontal***	Temperature:
Limit: EN 300328 (RX)	Power:	Humidity: %
EUT: Bluetooth Speaker	Distance:	
M/N: T5		
Mode: RX -L		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1		4824.000	-70.62	12.49	-58.13	-47.00	-11.13	peak			
2		7236.000	-70.72	15.11	-55.61	-47.00	-8.61	peak			
3	*	9648.000	-72.86	18.08	-54.78	-47.00	-7.78	peak			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: RX high channel]; [Polarity: Horizontal]



Site
Limit: EN 300328 (RX)
EUT: Bluetooth Speaker
M/N: T5
Mode: RX -H
Note:

Polarization: ***Horizontal***
Power:
Distance:

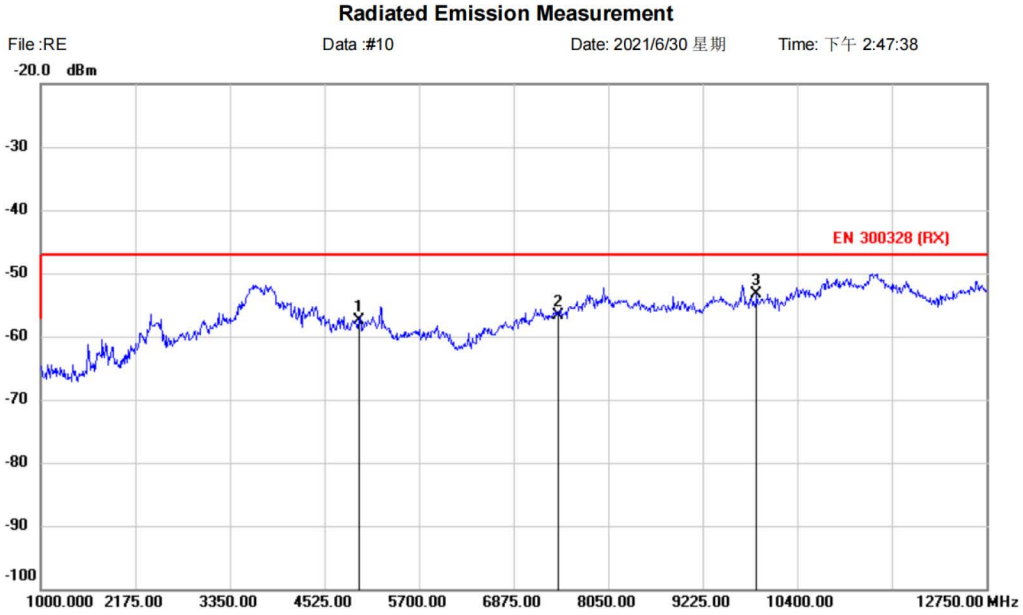
Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1		4944.000	-69.42	12.61	-56.81	-47.00	-9.81	peak			
2		7416.000	-71.73	15.42	-56.31	-47.00	-9.31	peak			
3	*	9888.000	-73.82	18.68	-55.14	-47.00	-8.14	peak			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: RX high channel]; [Polarity: Vertical]



Site
Limit: EN 300328 (RX)
EUT: Bluetooth Speaker
M/N: T5
Mode: RX -H
Note:

Polarization: *Vertical*
Power:
Distance:

Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1		4944.000	-70.16	12.61	-57.55	-47.00	-10.55	peak			
2		7416.000	-72.08	15.42	-56.66	-47.00	-9.66	peak			
3	*	9888.000	-72.03	18.68	-53.35	-47.00	-6.35	peak			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

17 TRANSMITTER UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN

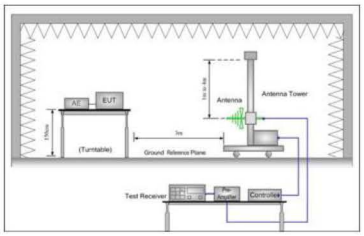
Test Standard	ETSI EN 300328 V2.2.2 (2019-07)
Test Method	EN 300 328 V2.2.2 clause 5.4.9.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

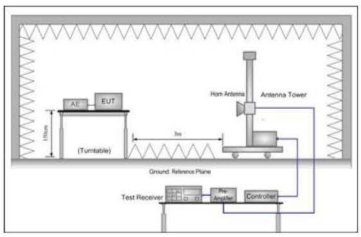
17.1 LIMITS

Table 1: Transmitter limits for spurious emissions

Frequency range	Maximum power, e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz)	Bandwidth
30 MHz to 47 MHz	-36dBm	100 kHz
47 MHz to 74 MHz	-54dBm	100 kHz
74 MHz to 87,5 MHz	-36dBm	100 kHz
87,5 MHz to 118 MHz	-54dBm	100 kHz
118 MHz to 174 MHz	-36dBm	100 kHz
174 MHz to 230 MHz	-54dBm	100 kHz
230 MHz to 470 MHz	-36dBm	100 kHz
470 MHz to 694 MHz	-54dBm	100 kHz
694 MHz to 1 GHz	-36dBm	100 kHz
1 GHz to 12,75 GHz	-30dBm	1MHz

17.2 BLOCK DIAGRAM OF TEST SETUP





17.3 PROCEDURE

1. Scan from 30MHz to 12.75GHz, find the maximum radiation frequency to measure.
2. The technique used to find the Spurious Emissions of the transmitter was the antenna substitution method. Substitution method was performed to determine the actual ERP/EIRP emission levels of the EUT.

Below 1GHz test procedure as below:

1) The EUT was powered on and placed on a table in the chamber. The antenna of the transmitter was extended to its maximum length. modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test.
2) Rotating through 360¡ã the turntable. After the fundamental emission was maximized, a field strength measurement was made.
3) Steps 1) and 2) were performed with the EUT and the receive antenna in both vertical and horizontal polarization.
4) The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter.
5) A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 2) is obtained for this set of conditions.
6) The output power into the substitution antenna was then measured.
7) Steps 5) and 6)were repeated with both antennas vertically polarized.
8) Calculate power in dBm by the following formula:

ERP(dBm) = Pg(dBm) ¨C cable loss (dB) + antenna gain (dBi)

where:

Pg is the generator output power into the substitution antenna.

Above 1GHz test procedure as below:

1) Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber.
2) Calculate power in dBm by the following formula:

EIRP(dBm) = Pg(dBm) + cable loss (dB) + antenna gain (dBi)

EIRP=ERP+2.15dB

where:

Pg is the generator output power into the substitution antenna.

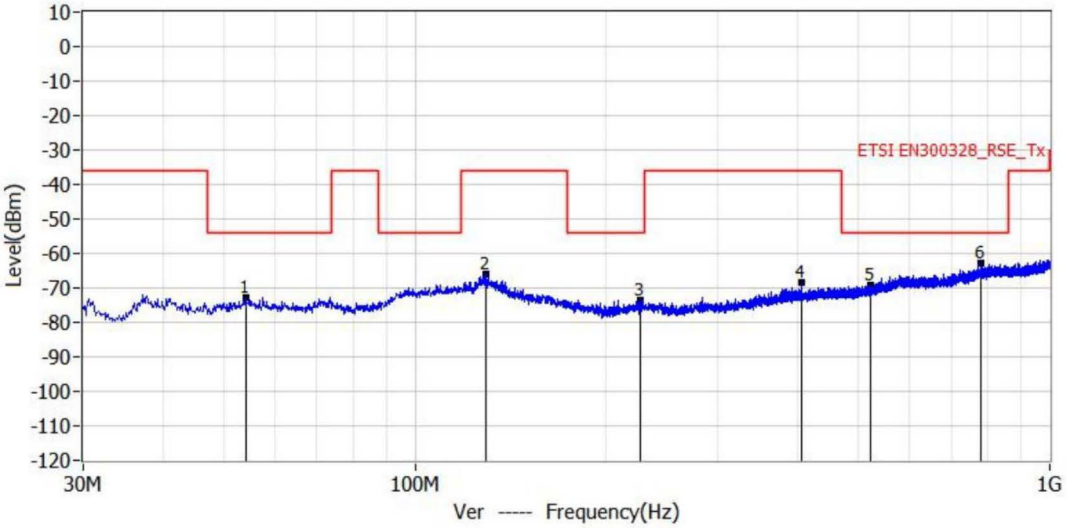
Remark:

The disturbance below1GHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

17.4 TEST DATA

[TestMode: TX below 1G]; [Polarity: Vertical]

Test Lab: BlueAsia EMC Lab（RE #1）	Project: BLA-EMC-202106-A62
EUT: Bluetooth-Speaker	Test Engineer: York
M/N: T5	Temperature: 25℃
S/N:	Humidity: 45%RH
Test Mode: TX mode	Test Voltage: AC 230V/50Hz
Note:	Test Data: 2021-06-28 17:46:54

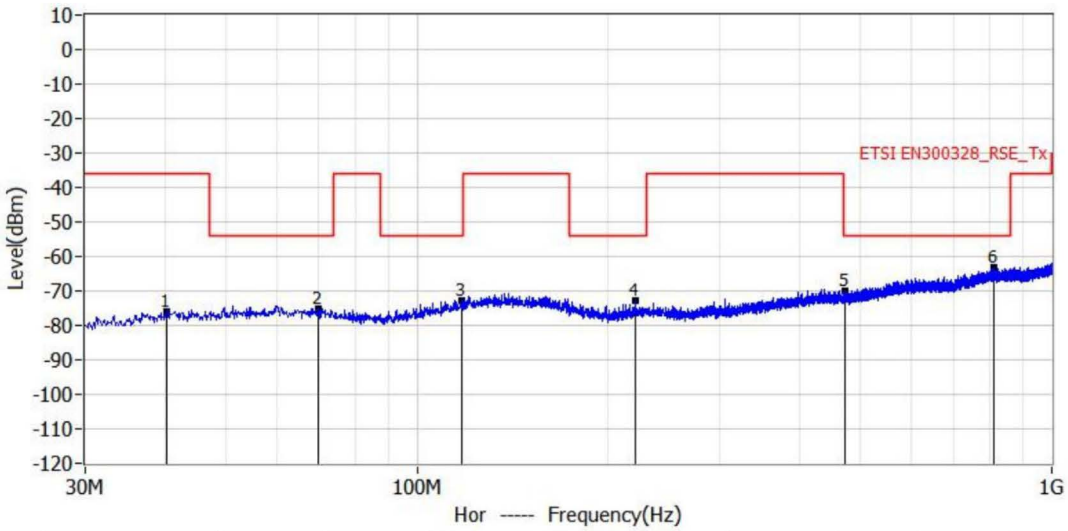


No.	Frequency	Limit dBm	Level dBm	Delta dB	Reading dBuV	Factor dB	Detector	Polar	Height cm	Angle deg
1*	54.129MHz	-54.0	-72.8	-18.8	0.6	-73.4	PK	Ver	150.0	0.0
2*	129.546MHz	-36.0	-66.0	-30.0	4.9	-70.9	PK	Ver	150.0	0.0
3*	226.425MHz	-54.0	-73.4	-19.4	0.5	-73.9	PK	Ver	150.0	0.0
4*	406.360MHz	-36.0	-68.5	-32.5	1.5	-70.0	PK	Ver	150.0	0.0
5*	520.941MHz	-54.0	-69.3	-15.3	-0.8	-68.5	PK	Ver	150.0	0.0
6*	779.568MHz	-54.0	-62.9	-8.9	1.3	-64.2	PK	Ver	150.0	23.0

Test Result: Pass

[TestMode: TX below 1G]; [Polarity: Horizontal]

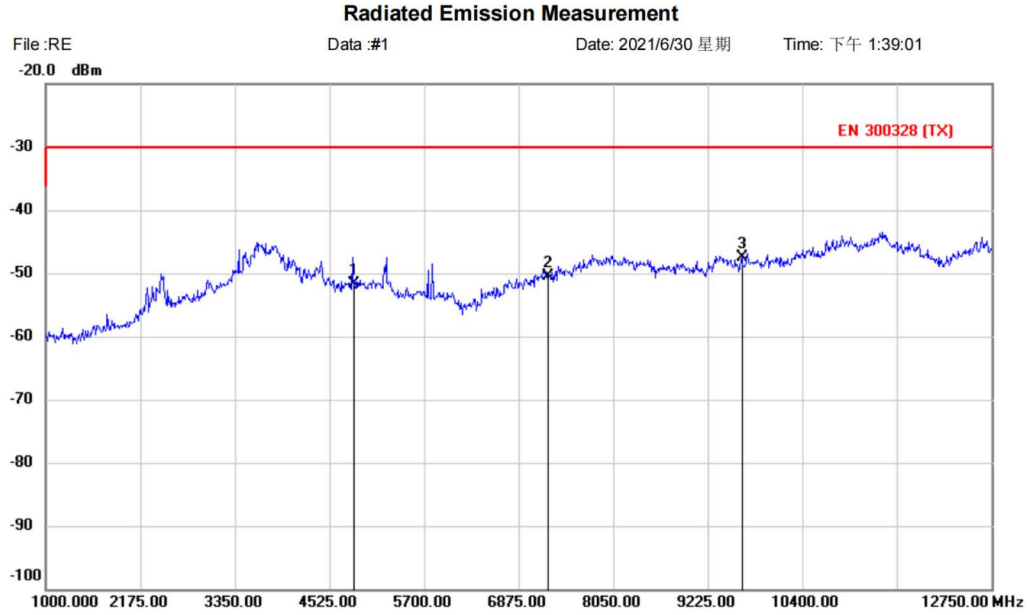
Test Lab: BlueAsia EMC Lab（RE #1）	Project: BLA-EMC-202106-A62
EUT: Bluetooth-Speaker	Test Engineer: York
M/N: T5	Temperature: 25℃
S/N:	Humidity: 45%RH
Test Mode: TX mode	Test Voltage: AC 230V/50Hz
Note:	Test Data: 2021-06-28 17:48:27



No.	Frequency	Limit dBm	Level dBm	Delta dB	Reading dBuV	Factor dB	Detector	Polar	Height cm	Angle deg
1*	40.306MHz	-36.0	-76.0	-40.0	-1.7	-74.3	PK	Hor	150.0	186.0
2*	69.891MHz	-54.0	-75.2	-21.2	-1.7	-73.5	PK	Hor	150.0	10.0
3*	117.785MHz	-54.0	-72.6	-18.6	-1.1	-71.5	PK	Hor	150.0	4.0
4*	220.363MHz	-54.0	-72.8	-18.8	1.1	-73.9	PK	Hor	150.0	324.0
5*	472.441MHz	-54.0	-70.1	-16.1	-0.8	-69.3	PK	Hor	150.0	45.0
6*	812.063MHz	-54.0	-63.1	-9.1	0.5	-63.6	PK	Hor	150.0	298.0

Test Result: Pass

[TestMode: TX low channel]; [Polarity: Horizontal]



Site
Limit: EN 300328 (TX)
EUT: Bluetooth Speaker
M/N: T5
Mode: TX-L
Note:

Polarization: ***Horizontal***
Power:
Distance:

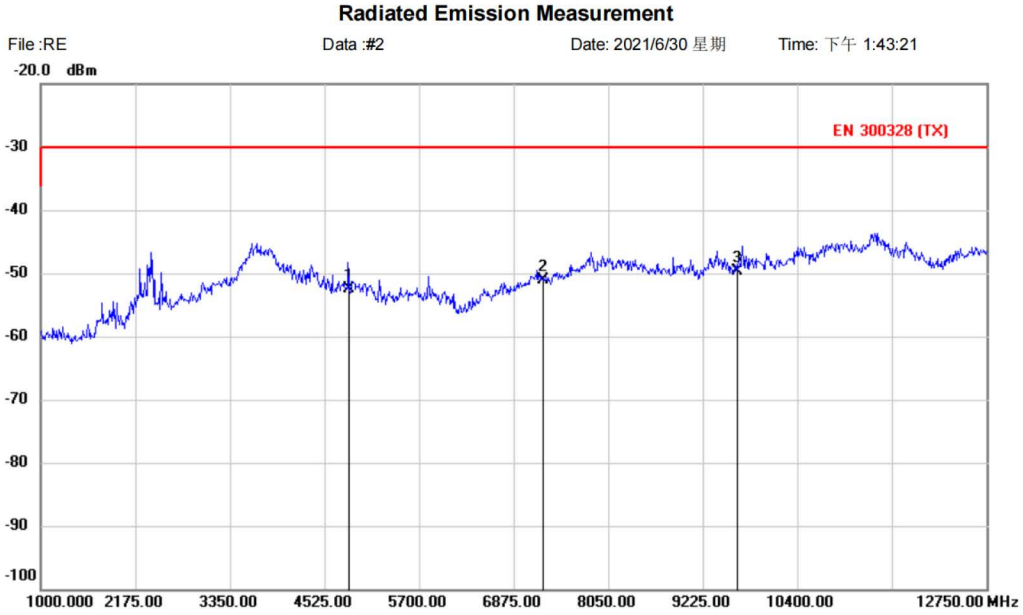
Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1		4824.000	-64.12	12.49	-51.63	-30.00	-21.63	peak			
2		7236.000	-65.62	15.11	-50.51	-30.00	-20.51	peak			
3	*	9648.000	-65.53	18.08	-47.45	-30.00	-17.45	peak			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: TX low channel]; [Polarity: Vertical]



Site
Limit: EN 300328 (TX)
EUT: Bluetooth Speaker
M/N: T5
Mode: TX-L
Note:

Polarization: *Vertical*
Power:
Distance:

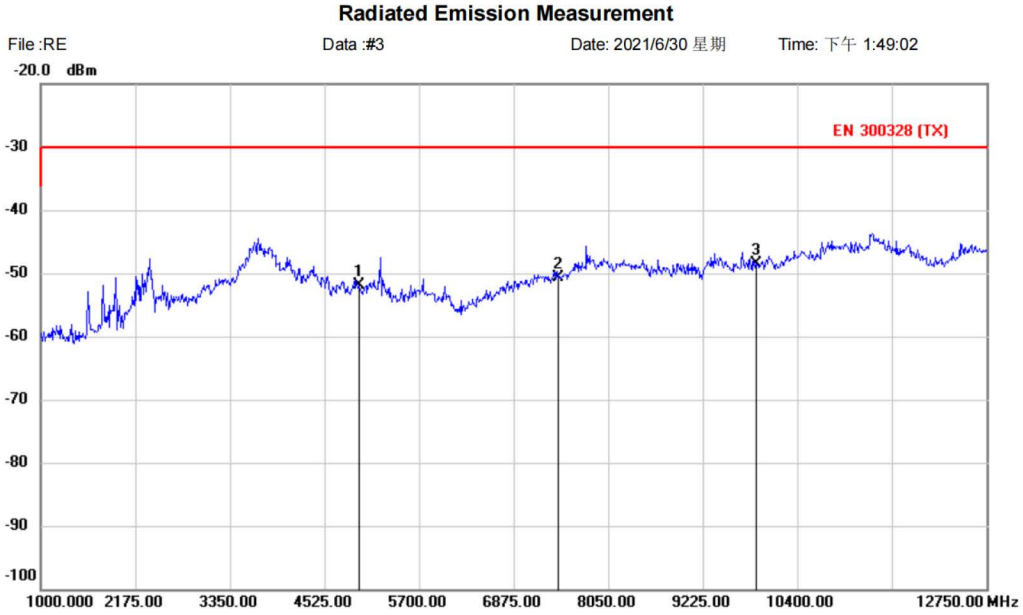
Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1		4824.000	-65.03	12.49	-52.54	-30.00	-22.54	peak			
2		7236.000	-66.26	15.11	-51.15	-30.00	-21.15	peak			
3	*	9648.000	-67.75	18.08	-49.67	-30.00	-19.67	peak			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: TX high channel]; [Polarity: Vertical]



Site
Limit: EN 300328 (TX)
EUT: Bluetooth Speaker
M/N: T5
Mode: TX-H
Note:

Polarization: *Vertical*
Power:
Distance:

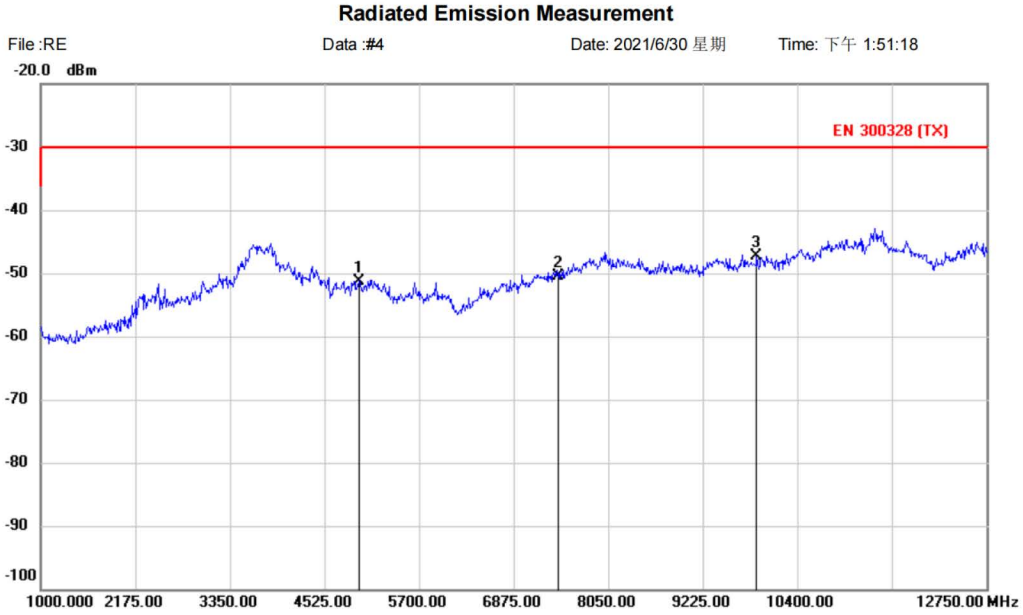
Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1		4944.000	-64.48	12.61	-51.87	-30.00	-21.87	peak			
2		7416.000	-66.13	15.42	-50.71	-30.00	-20.71	peak			
3	*	9888.000	-67.20	18.68	-48.52	-30.00	-18.52	peak			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: TX high channel]; [Polarity: Horizontal]



Site
Limit: EN 300328 (TX)
EUT: Bluetooth Speaker
M/N: T5
Mode: TX-H
Note:

Polarization: ***Horizontal***
Power:
Distance:

Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1		4944.000	-63.81	12.61	-51.20	-30.00	-21.20	peak			
2		7416.000	-65.82	15.42	-50.40	-30.00	-20.40	peak			
3	*	9888.000	-65.99	18.68	-47.31	-30.00	-17.31	peak			

*:Maximum data x:Over limit !:over margin 〈Reference Only

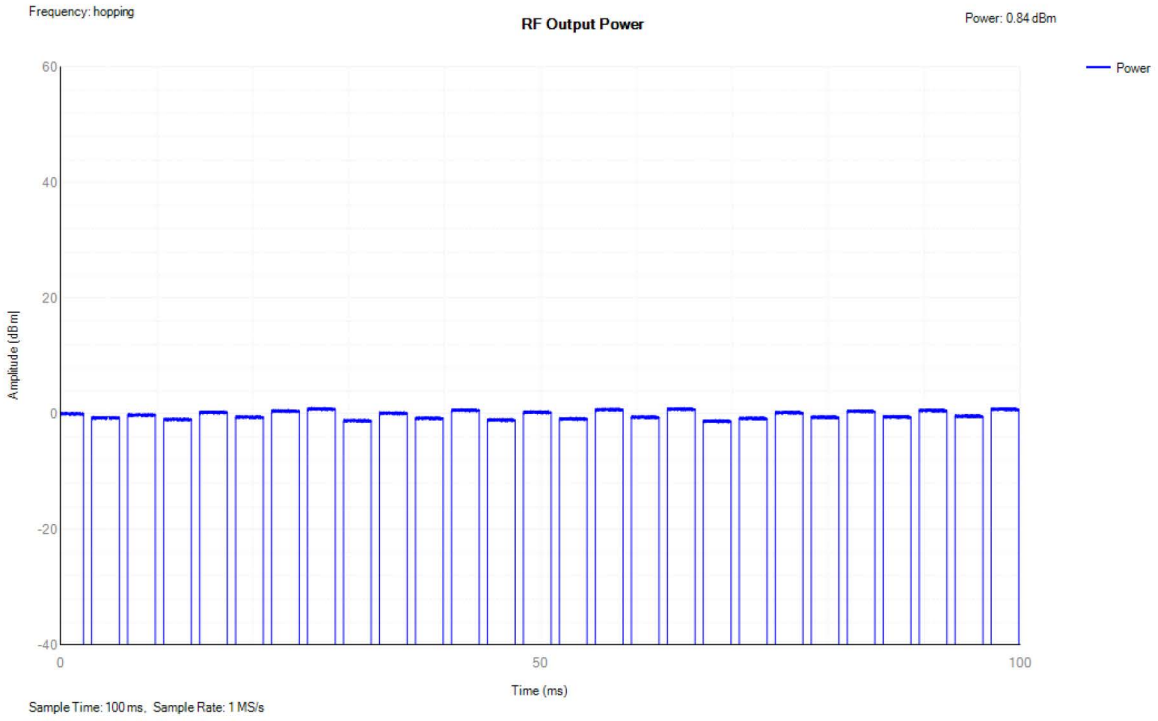
Test Result: Pass

18 APPENDIX

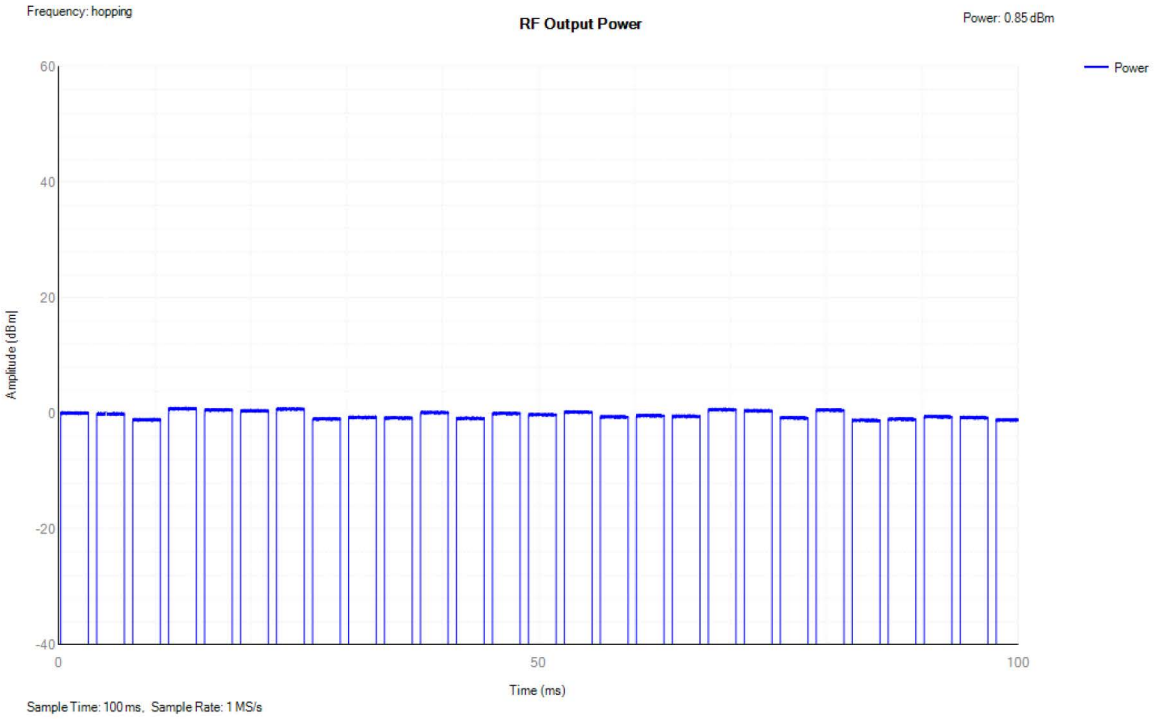
18.1 RF OUTPUT POWER

Condition	Mode	Frequency (MHz)	Antenna	Max EIRP (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	hopping	Ant1	0.84	20	Pass
NVNT	2-DH5	hopping	Ant1	0.85	20	Pass
NVNT	3-DH5	hopping	Ant1	0.96	20	Pass
LVNT	1-DH5	hopping	Ant1	0.71	20	Pass
LVNT	2-DH5	hopping	Ant1	0.81	20	Pass
LVNT	3-DH5	hopping	Ant1	0.73	20	Pass
HVNT	1-DH5	hopping	Ant1	0.7	20	Pass
HVNT	2-DH5	hopping	Ant1	0.81	20	Pass
HVNT	3-DH5	hopping	Ant1	0.8	20	Pass

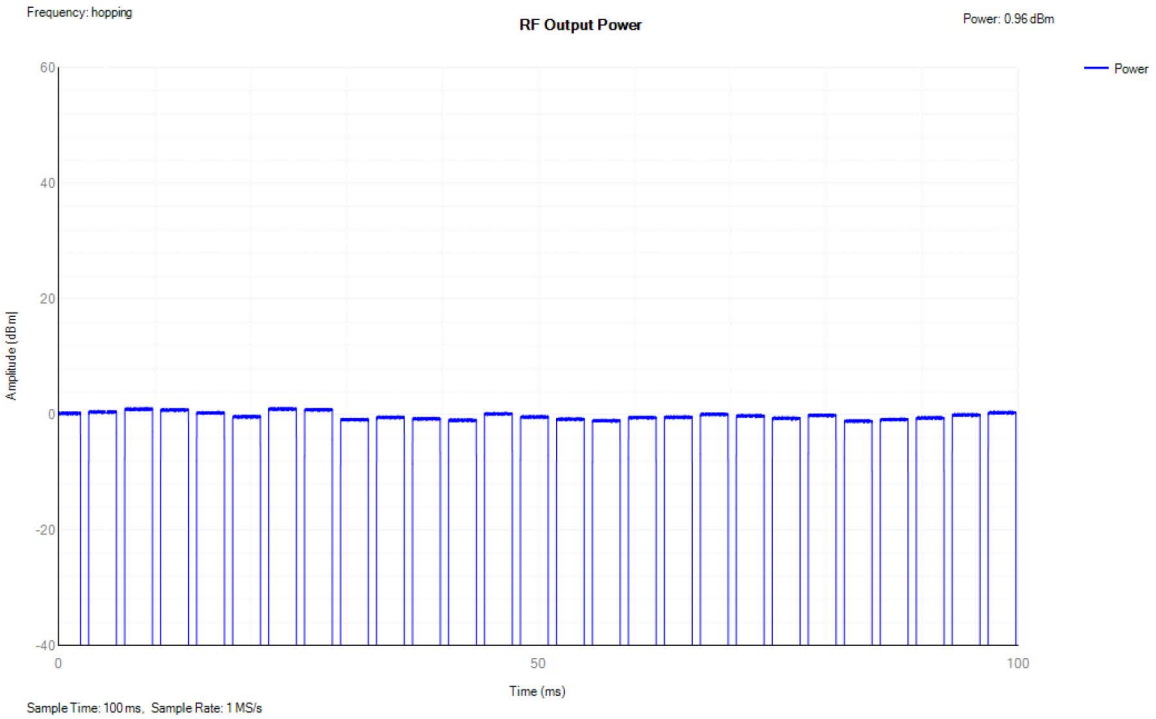
Power NVNT 1-DH5 MHz Ant1



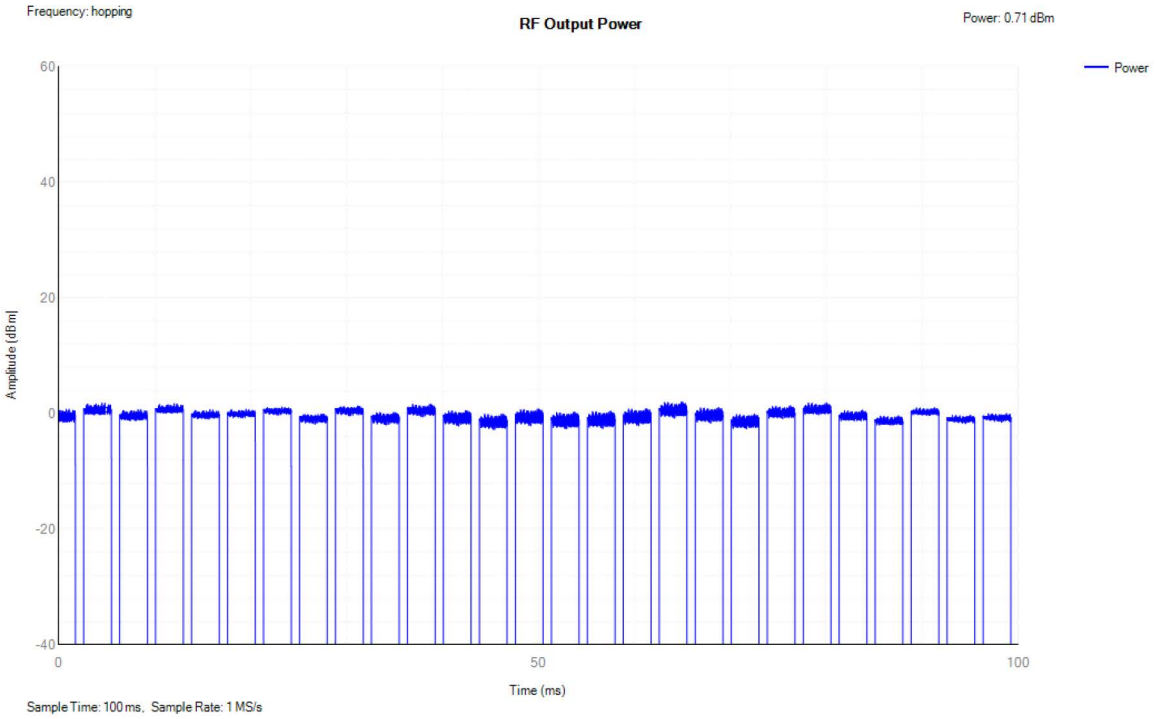
Power NVNT 2-DH5 MHz Ant1



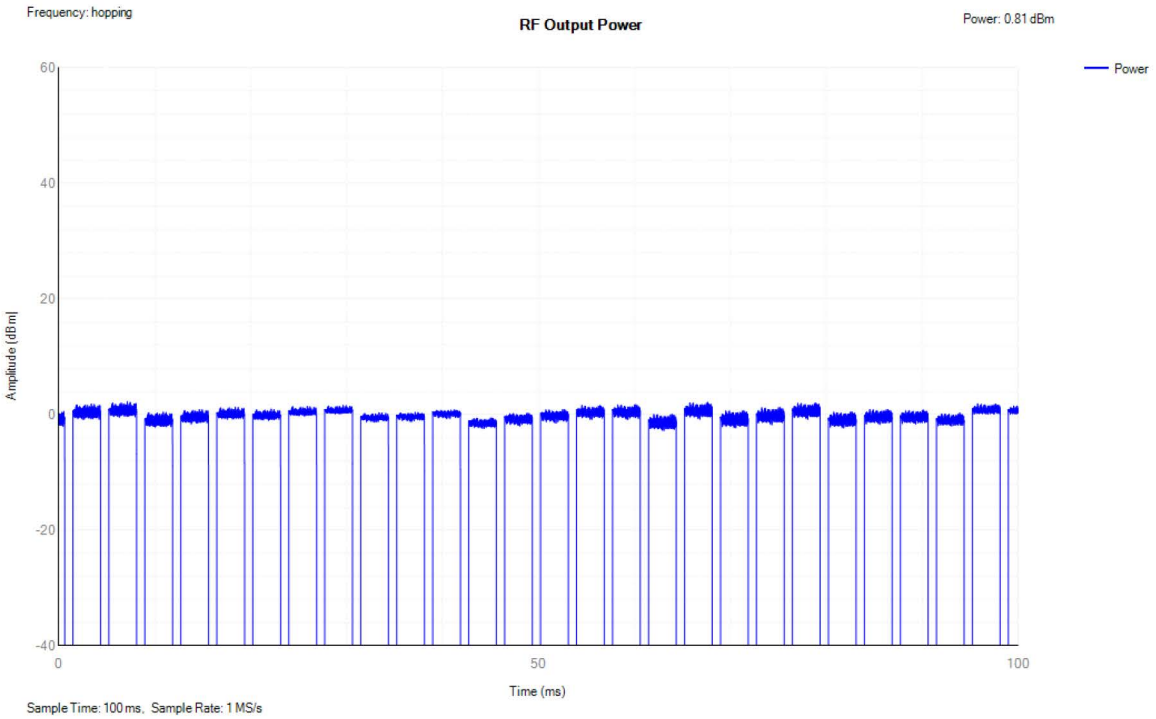
Power NVNT 3-DH5 MHz Ant1



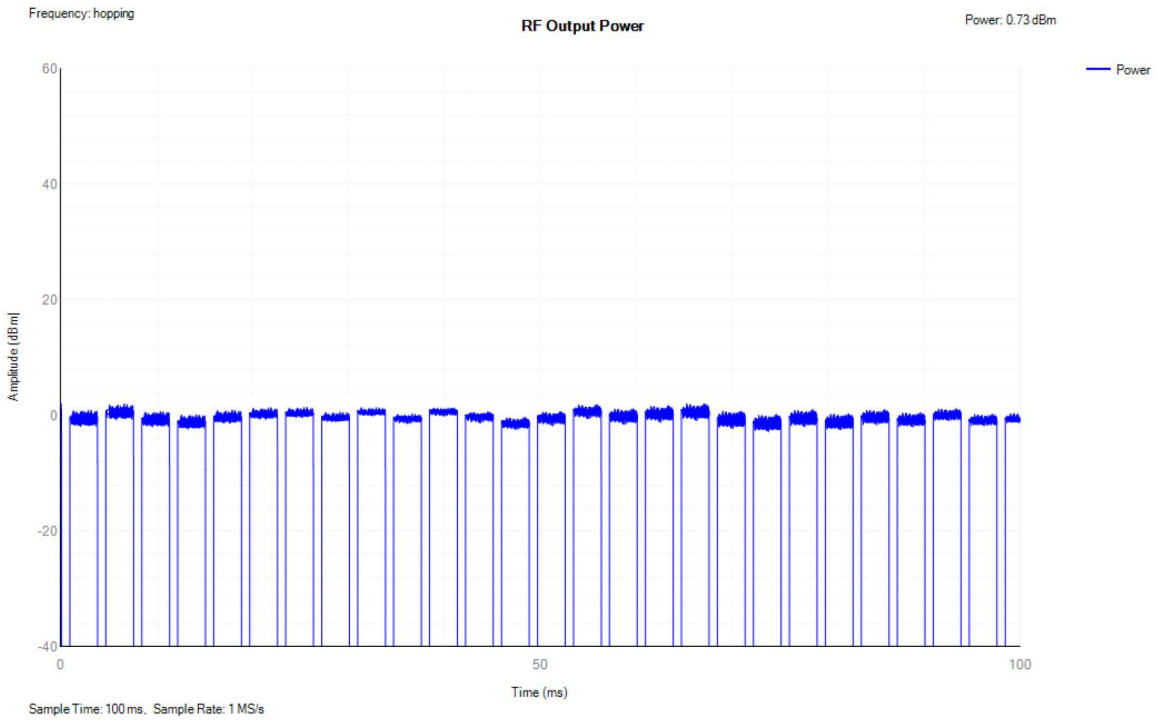
Power LVNT 1-DH5 MHz Ant1



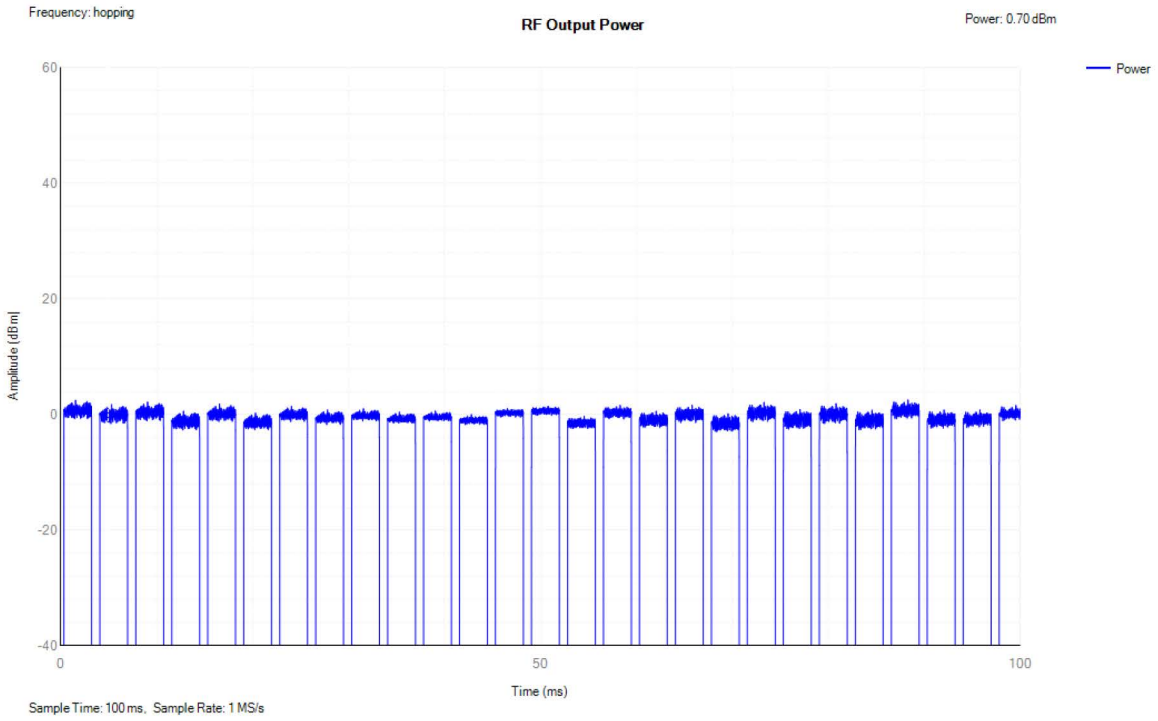
Power LVNT 2-DH5 MHz Ant1



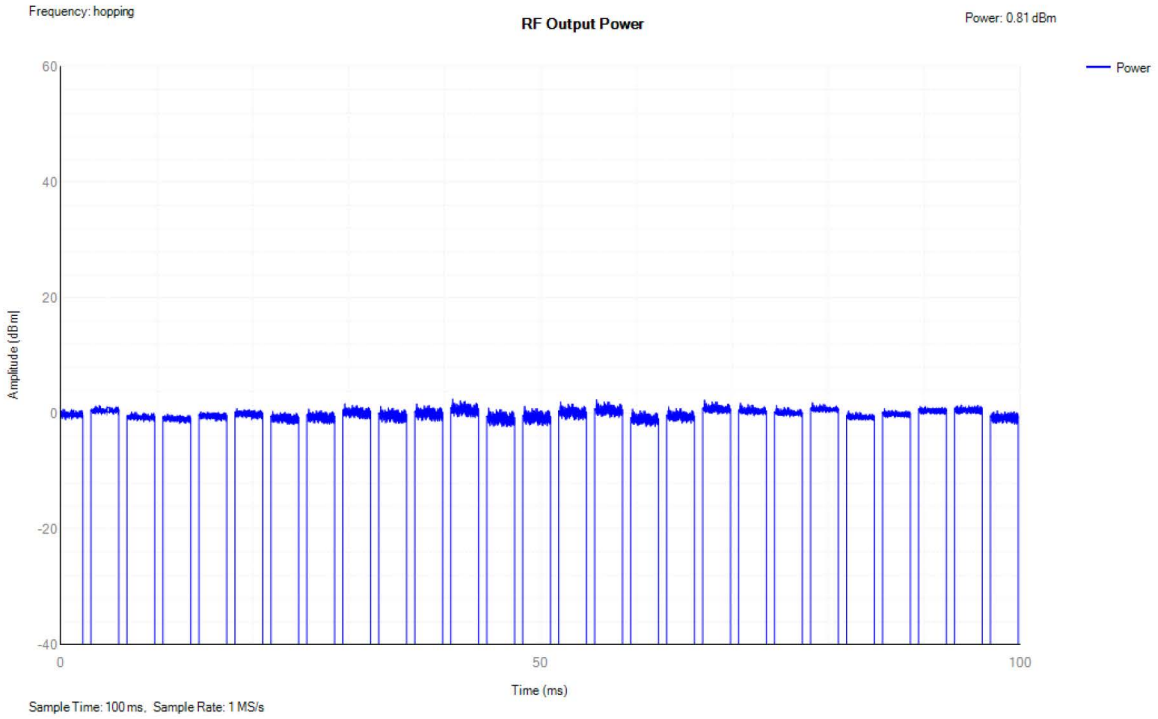
Power LVNT 3-DH5 MHz Ant1



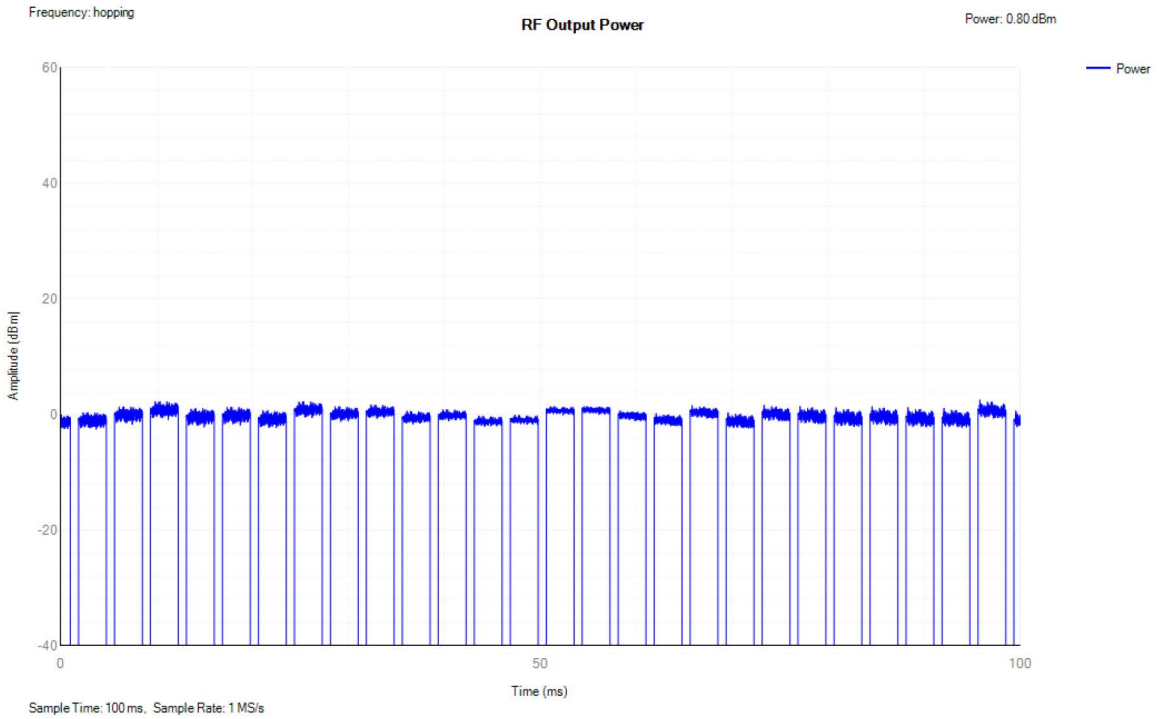
Power HVNT 1-DH5 MHz Ant1



Power HVNT 2-DH5 MHz Ant1



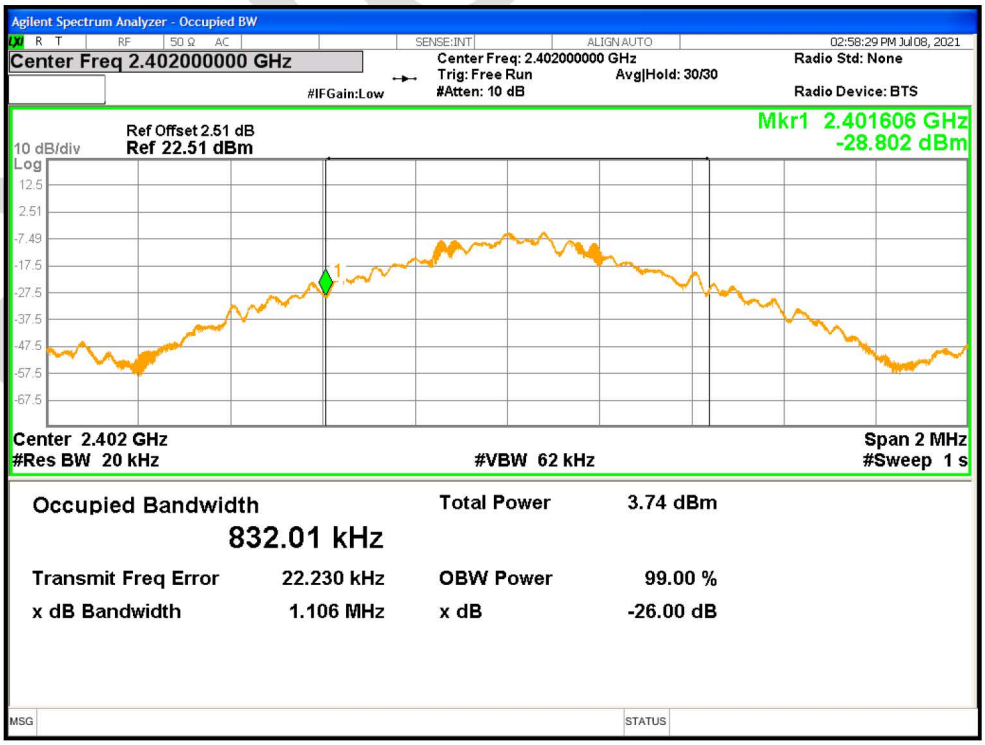
Power HVNT 3-DH5 MHz Ant1



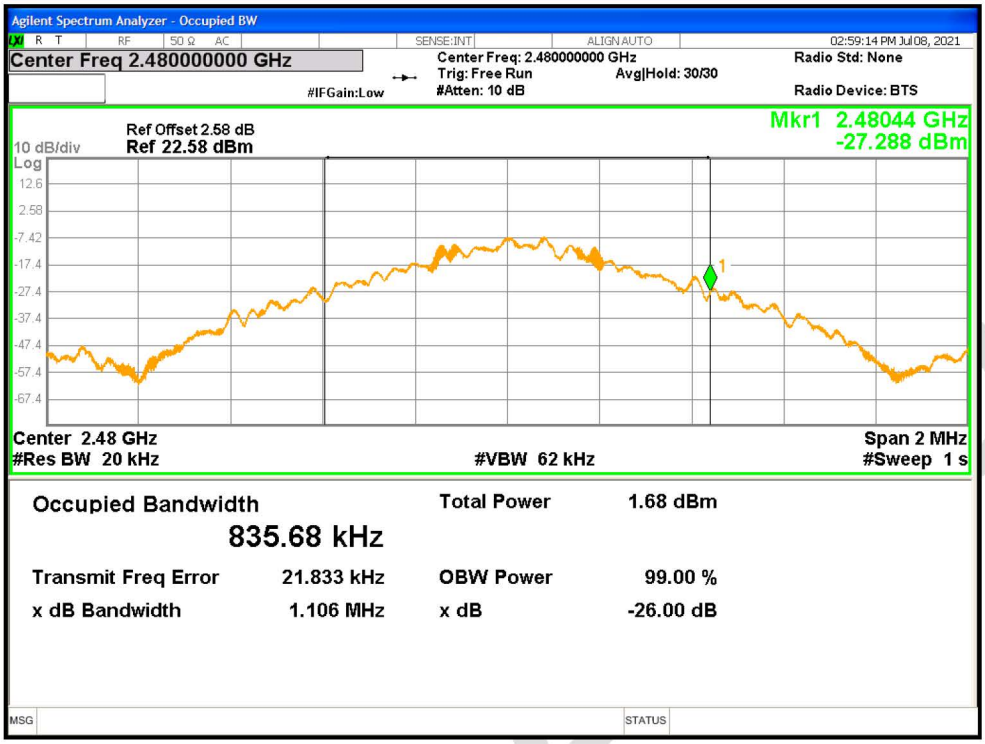
18.2 OCCUPIED CHANNEL BANDWIDTH

Condition	Mode	Frequency (MHz)	Antenna	Center Frequency (MHz)	OBW (MHz)	Lower Edge (MHz)	Upper Edge (MHz)	Limit OBW (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	2402.022	0.832	2401.606	2402.438	2400 - 2483.5MHz	Pass
NVNT	1-DH5	2480	Ant1	2480.022	0.836	2479.604	2480.44	2400 - 2483.5MHz	Pass
NVNT	2-DH5	2402	Ant1	2402.017	1.171	2401.431	2402.602	2400 - 2483.5MHz	Pass
NVNT	2-DH5	2480	Ant1	2480.018	1.171	2479.432	2480.603	2400 - 2483.5MHz	Pass
NVNT	3-DH5	2402	Ant1	2402.017	1.185	2401.425	2402.609	2400 - 2483.5MHz	Pass
NVNT	3-DH5	2480	Ant1	2480.018	1.186	2479.425	2480.611	2400 - 2483.5MHz	Pass

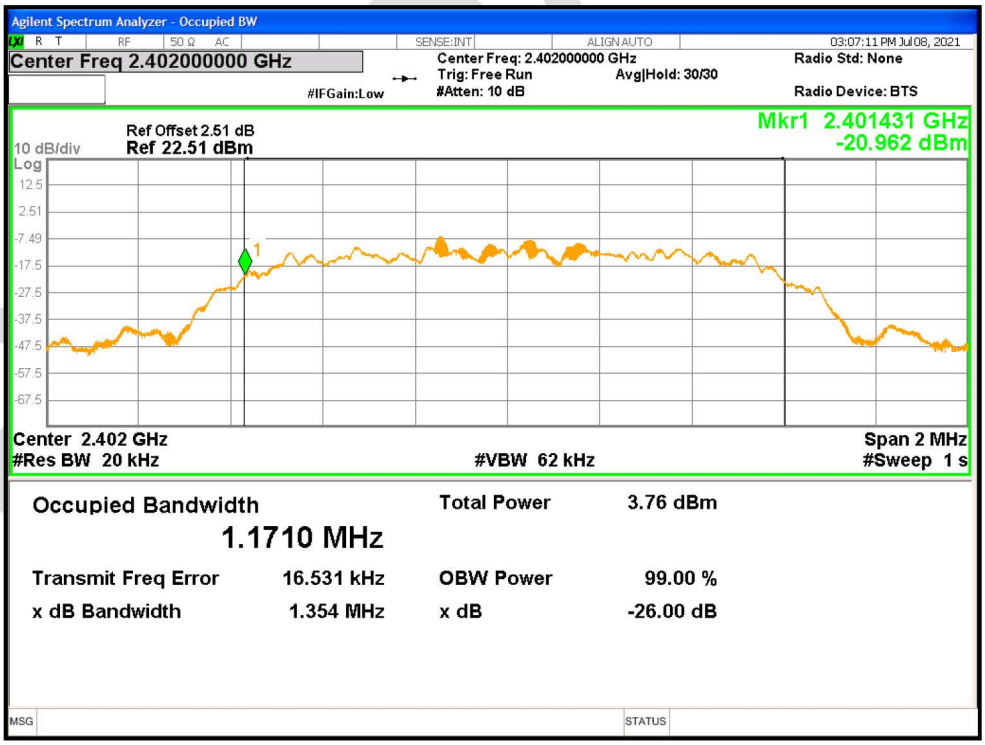
OBW NVNT 1-DH5 2402MHz Ant1



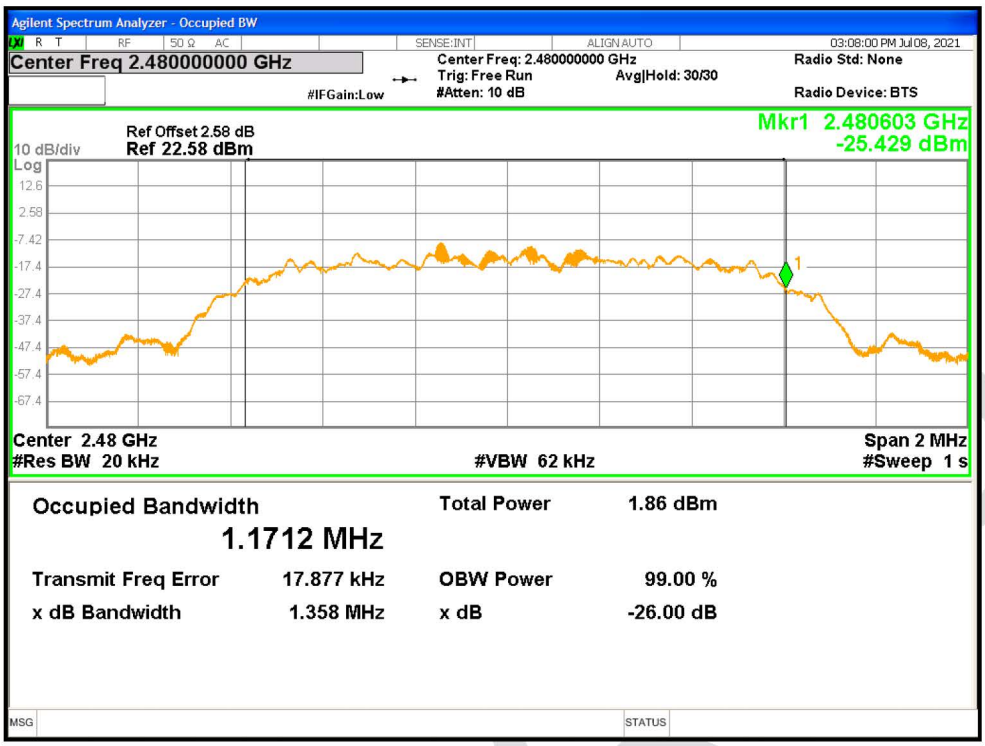
OBW NVNT 1-DH5 2480MHz Ant1



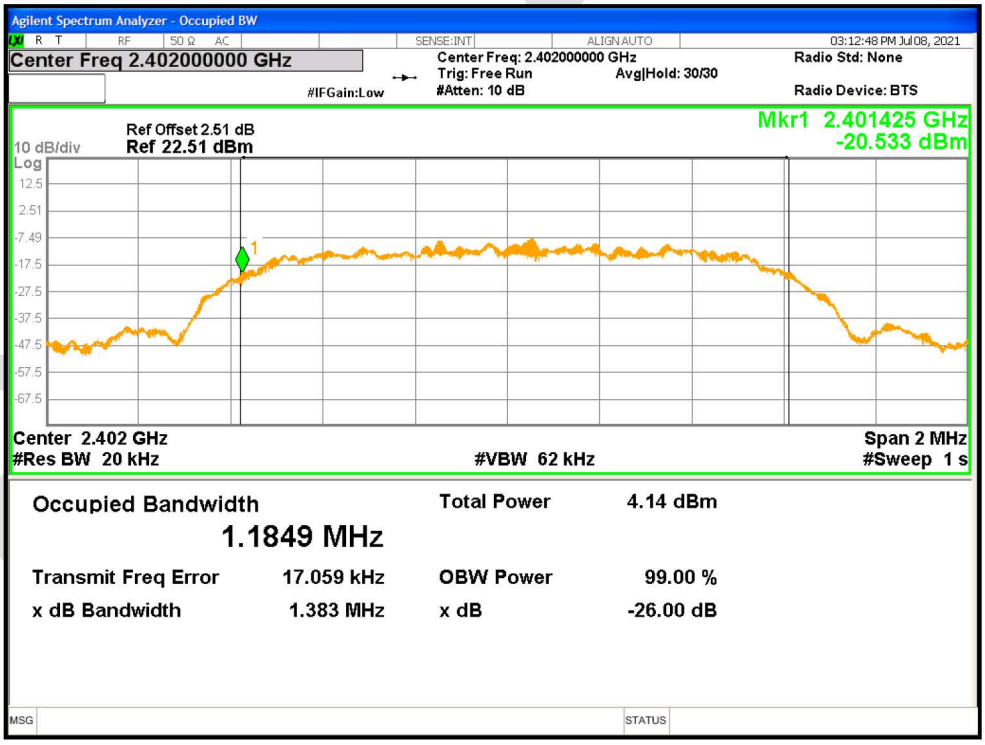
OBW NVNT 2-DH5 2402MHz Ant1



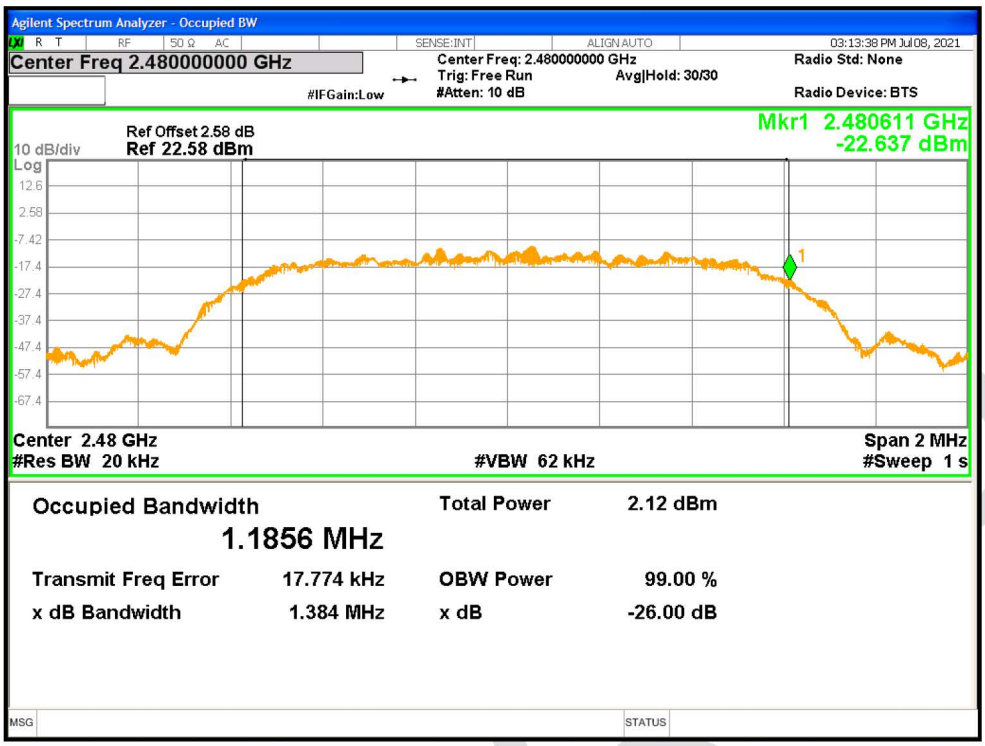
OBW NVNT 2-DH5 2480MHz Ant1



OBW NVNT 3-DH5 2402MHz Ant1



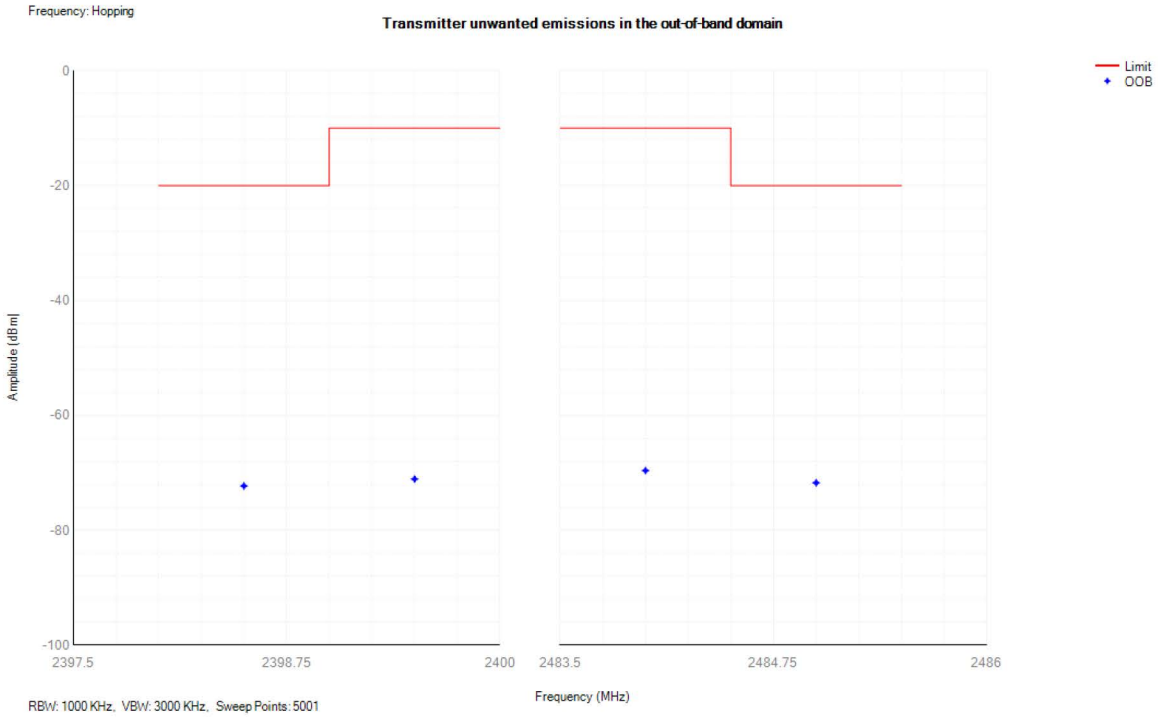
OBW NVNT 3-DH5 2480MHz Ant1


Agilent Spectrum Analyzer - Occupied BW
RT
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
03:13:38 PM Jul 08, 2021
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold: 30/30
#IFGain:Low
#Atten: 10 dB
Radio Std: None
Radio Device: BTS
Mkr1 2.480611 GHz
-22.637 dBm
Ref Offset 2.58 dB
10 dB/div
Ref 22.58 dBm
Log
12.6
2.58
-7.42
-17.4
-27.4
-37.4
-47.4
-57.4
-67.4
Center 2.48 GHz
#Res BW 20 kHz
#VBW 62 kHz
Span 2 MHz
#Sweep 1 s
Occupied Bandwidth
1.1856 MHz
Total Power 2.12 dBm
Transmit Freq Error 17.774 kHz
OBW Power 99.00 %
x dB Bandwidth 1.384 MHz
x dB -26.00 dB
MSG
STATUS

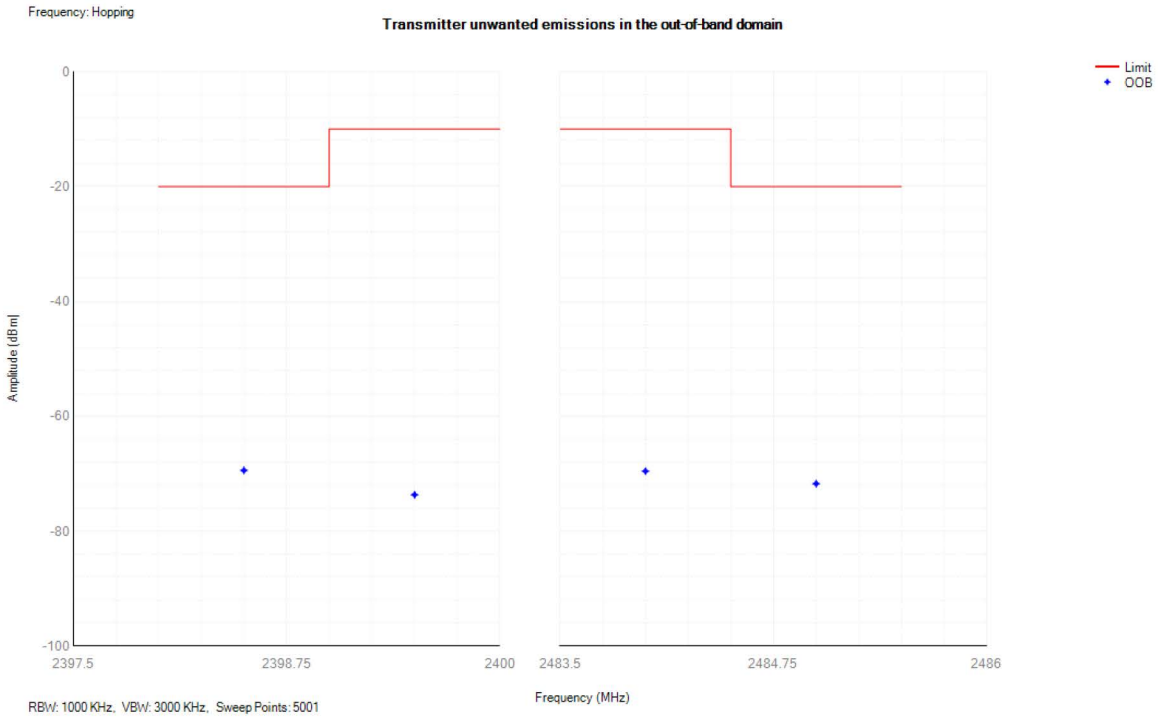
18.3 TRANSMITTER UNWANTED EMISSIONS IN THE OUT-OF-BAND DOMAIN

Condition	Mode	Frequency (MHz)	Antenna	OOB Frequency (MHz)	Level (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	1-DH5	Hopping	Ant1	2399.5	-71.09	-10	Pass
NVNT	1-DH5	Hopping	Ant1	2398.5	-72.29	-20	Pass
NVNT	1-DH5	Hopping	Ant1	2484	-69.61	-10	Pass
NVNT	1-DH5	Hopping	Ant1	2485	-71.74	-20	Pass
NVNT	1-DH5	Hopping	Ant1	2399.5	-73.66	-10	Pass
NVNT	1-DH5	Hopping	Ant1	2398.5	-69.41	-20	Pass
NVNT	1-DH5	Hopping	Ant1	2484	-69.55	-10	Pass
NVNT	1-DH5	Hopping	Ant1	2485	-71.73	-20	Pass
NVNT	2-DH5	Hopping	Ant1	2399.5	-64.12	-10	Pass
NVNT	2-DH5	Hopping	Ant1	2398.5	-72.56	-20	Pass
NVNT	2-DH5	Hopping	Ant1	2484	-67.76	-10	Pass
NVNT	2-DH5	Hopping	Ant1	2485	-73.12	-20	Pass
NVNT	2-DH5	Hopping	Ant1	2399.5	-71.18	-10	Pass
NVNT	2-DH5	Hopping	Ant1	2398.5	-70.37	-20	Pass
NVNT	2-DH5	Hopping	Ant1	2484	-73.03	-10	Pass
NVNT	2-DH5	Hopping	Ant1	2485	-73.1	-20	Pass
NVNT	3-DH5	Hopping	Ant1	2399.5	-71.37	-10	Pass
NVNT	3-DH5	Hopping	Ant1	2398.5	-72.51	-20	Pass
NVNT	3-DH5	Hopping	Ant1	2484	-73.14	-10	Pass
NVNT	3-DH5	Hopping	Ant1	2485	-75.99	-20	Pass
NVNT	3-DH5	Hopping	Ant1	2399.5	-71.44	-10	Pass
NVNT	3-DH5	Hopping	Ant1	2398.5	-63.34	-20	Pass
NVNT	3-DH5	Hopping	Ant1	2484	-73.03	-10	Pass
NVNT	3-DH5	Hopping	Ant1	2485	-73.88	-20	Pass

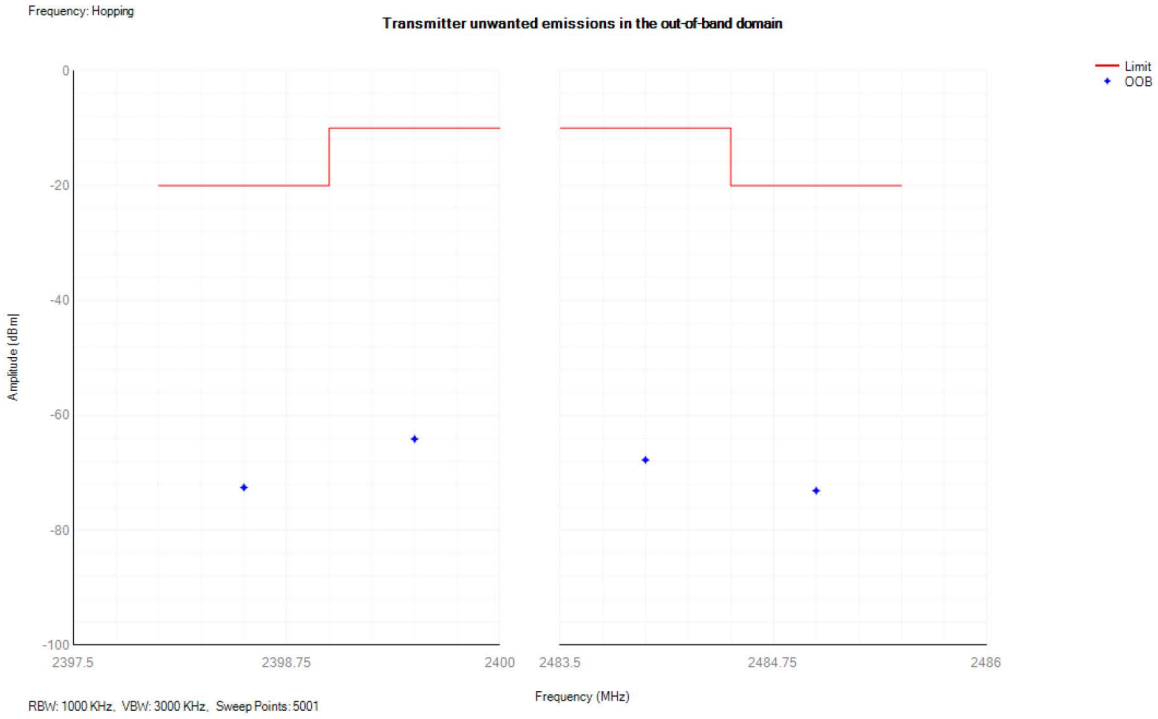
Tx. Emissions OOB NVNT 1-DH5 2402MHz Ant1



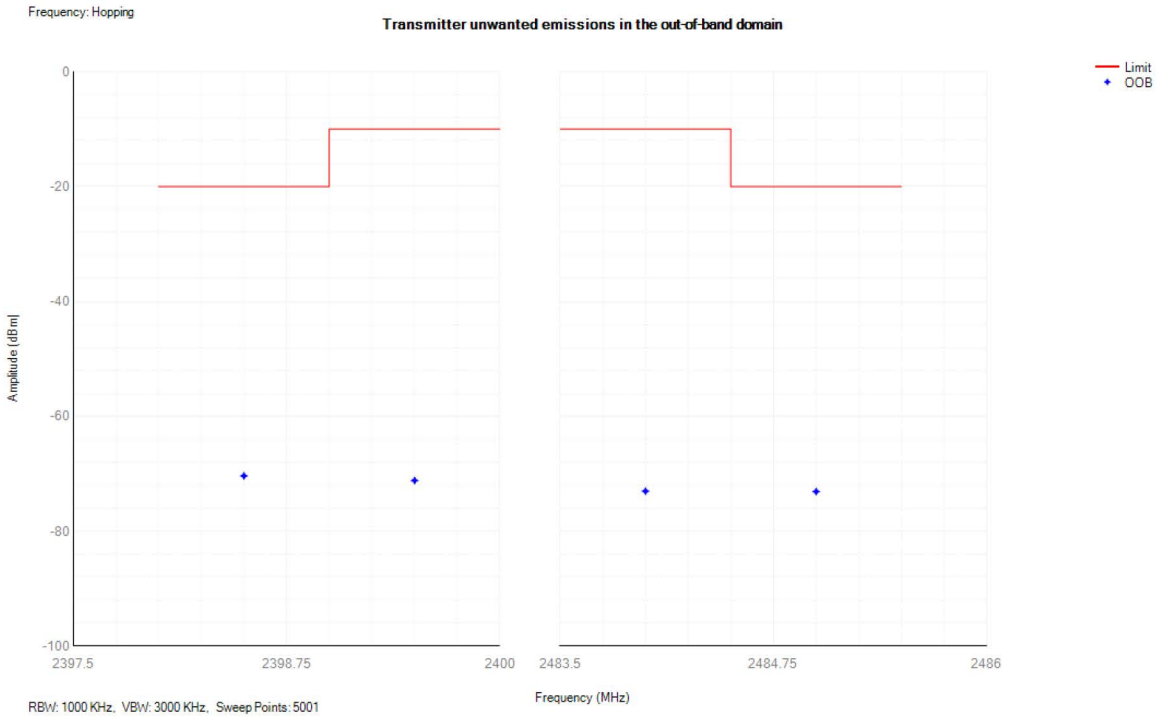
Tx. Emissions OOB NVNT 1-DH5 2480MHz Ant1



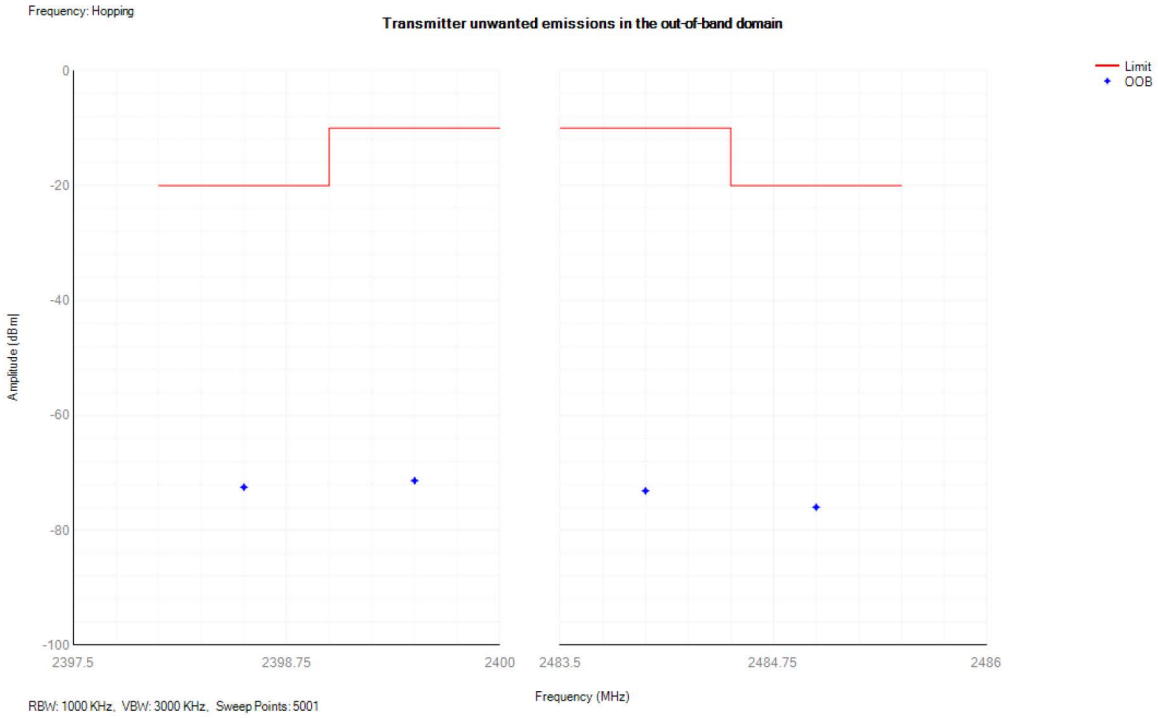
Tx. Emissions OOB NVNT 2-DH5 2402MHz Ant1



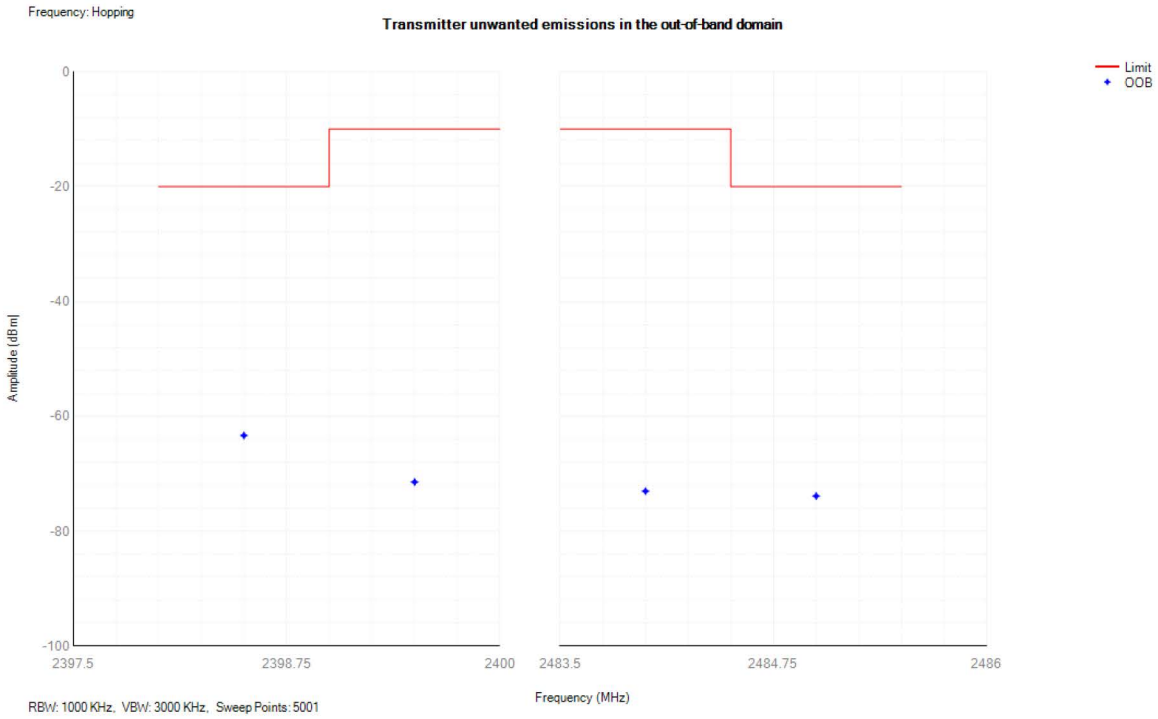
Tx. Emissions OOB NVNT 2-DH5 2480MHz Ant1



Tx. Emissions OOB NVNT 3-DH5 2402MHz Ant1



Tx. Emissions OOB NVNT 3-DH5 2480MHz Ant1



18.4 RECEIVER BLOCKING

Receiver Category	Test Channel	Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	PER (%)	Limit (%)	Result
2	GFSK hopping	-69.78	2380	-34	1.03	10	Pass
			2300	-34	2.12	10	Pass
			2504	-34	2.28	10	Pass
			2584	-34	1.44	10	Pass
2	pi/4 QPSK hopping	-68.21	2380	-34	1.28	10	Pass
			2300	-34	2.06	10	Pass
			2504	-34	3.27	10	Pass
			2584	-34	1.52	10	Pass
2	8DPSK Hopping	-68.26	2380	-34	2.06	10	Pass
			2300	-34	3.16	10	Pass
			2504	-34	2.23	10	Pass
			2584	-34	1.19	10	Pass

Remark:

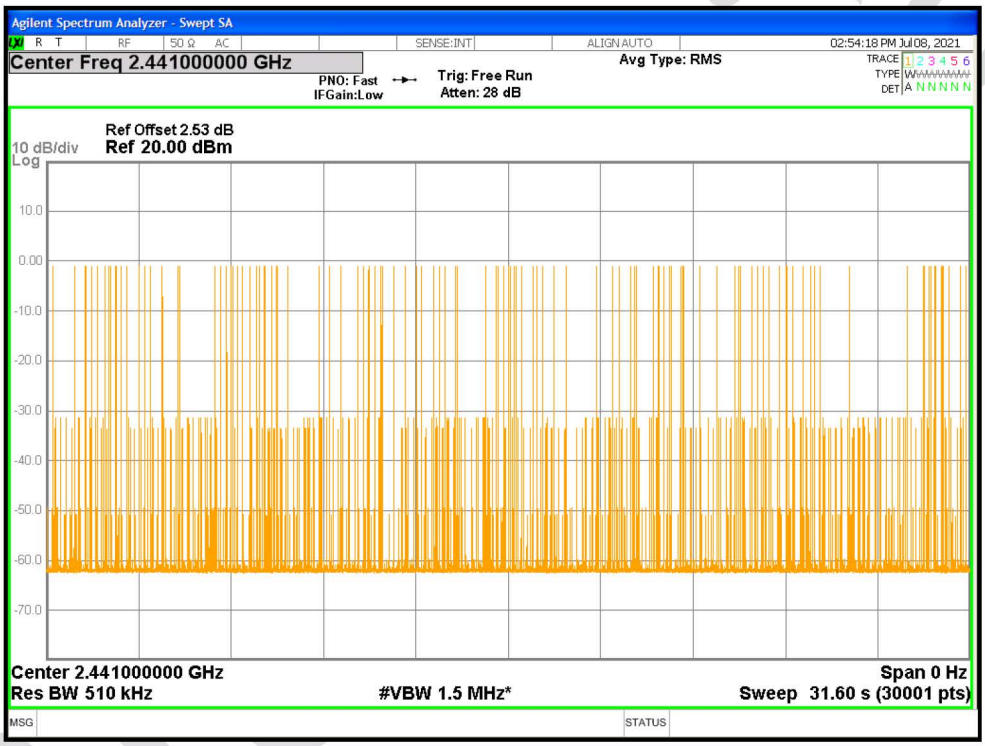
Blocking signal power = -34dBm+ Antenna gain; Antenna gain is 0dBi

Category2=Wanted signal mean power = (-139 dBm + 10 × log 10 (OCBW) + 10 dB)

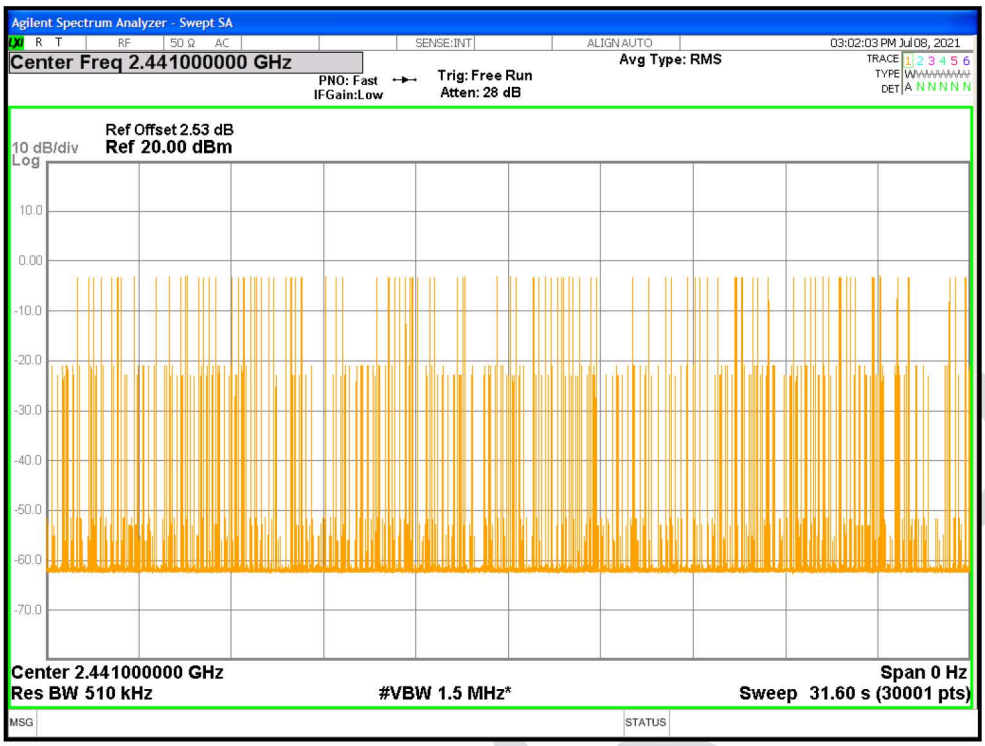
18.5 ACCUMULATED TRANSMIT TIME

Condition	Mode	Frequency (MHz)	Antenna	Accumulated Transmit Time (ms)	Limit (ms)	Sweep Time (ms)	Burst Number	Verdict
NVNT	1-DH5	2441	Ant1	309.337	400	31600	107	Pass
NVNT	2-DH5	2441	Ant1	295.392	400	31600	102	Pass
NVNT	3-DH5	2441	Ant1	332.925	400	31600	115	Pass

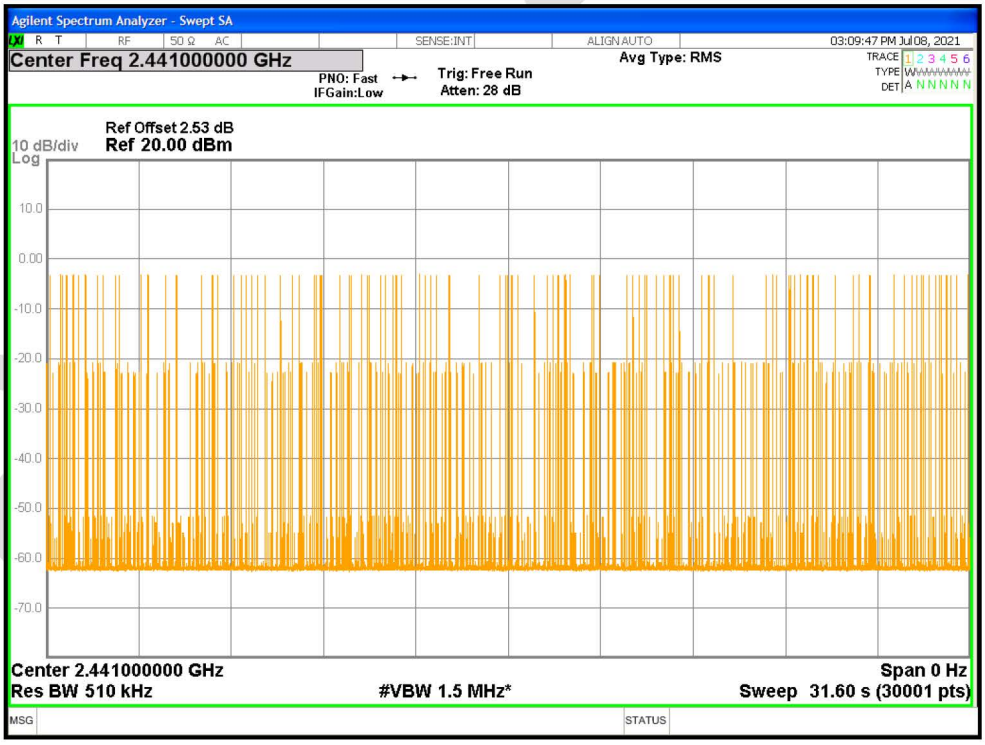
Dwell NVNT 1-DH5 2441MHz Ant1



Dwell NVNT 2-DH5 2441MHz Ant1



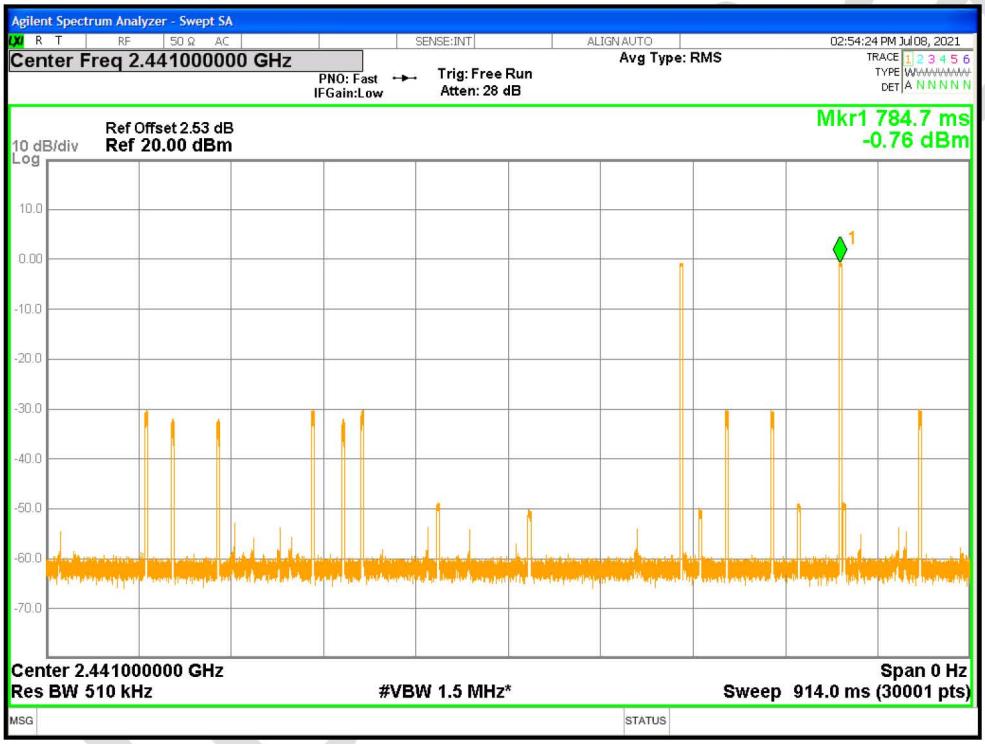
Dwell NVNT 3-DH5 2441MHz Ant1



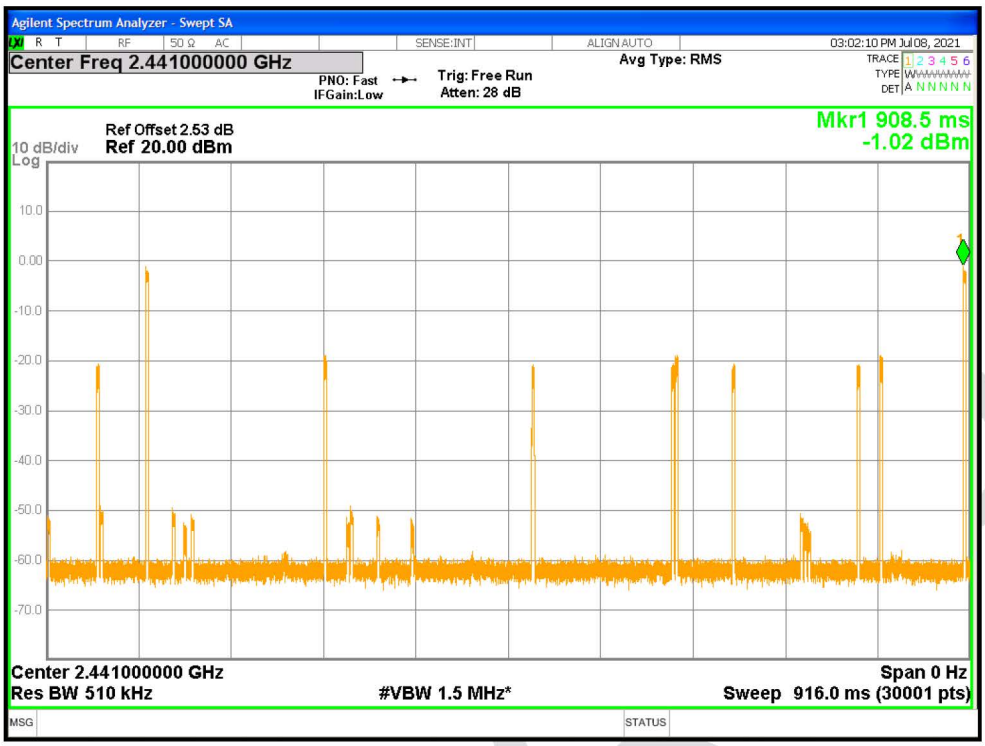
18.6 FREQUENCY OCCUPATION

Condition	Mode	Frequency (MHz)	Antenna	Burst Number	Limit	Sweep Time (ms)	Verdict
NVNT	1-DH5	2441	Ant1	2	1	913.556	Pass
NVNT	2-DH5	2441	Ant1	2	1	915.136	Pass
NVNT	3-DH5	2441	Ant1	2	1	914.82	Pass

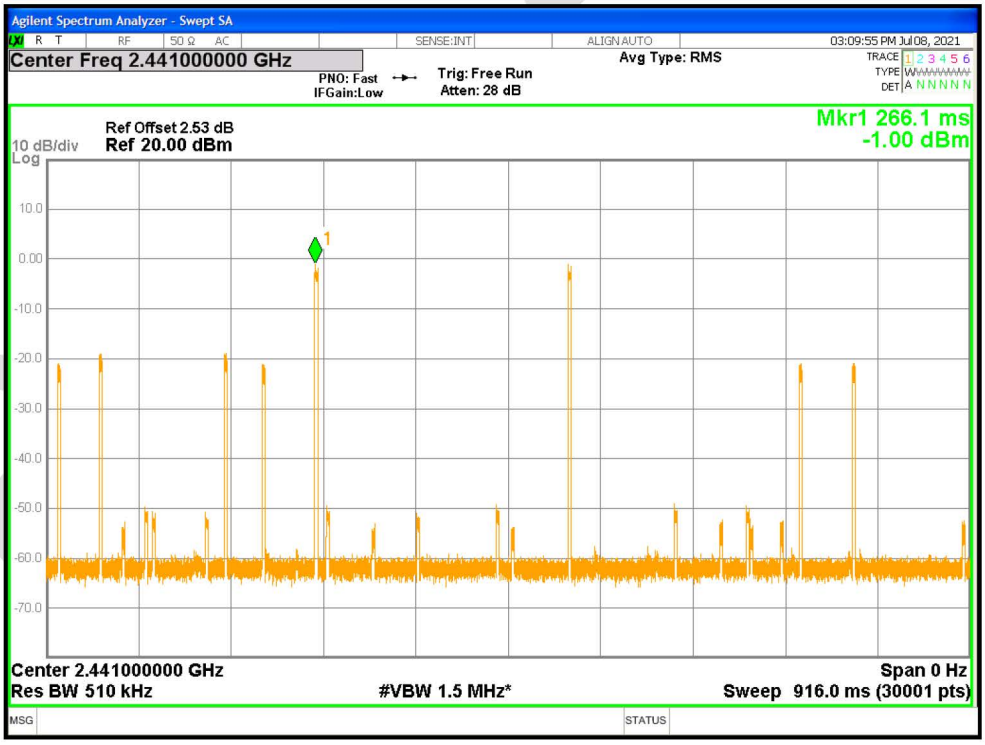
Freq. Occup. NVNT 1-DH5 2441MHz Ant1



Freq. Occup. NVNT 2-DH5 2441MHz Ant1



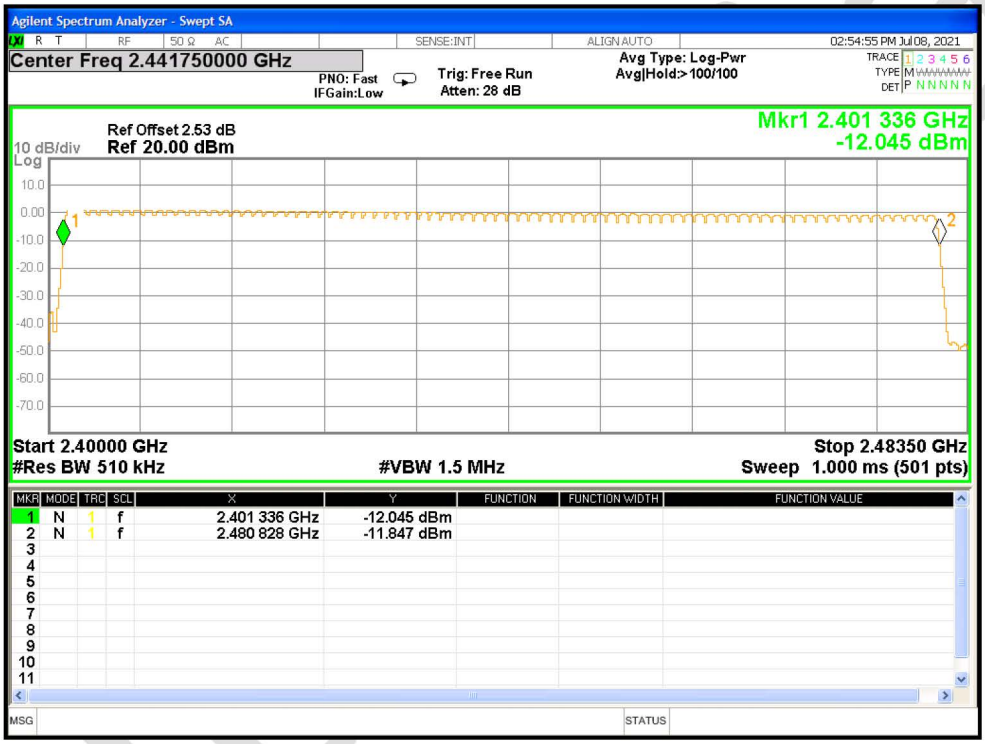
Freq. Occup. NVNT 3-DH5 2441MHz Ant1



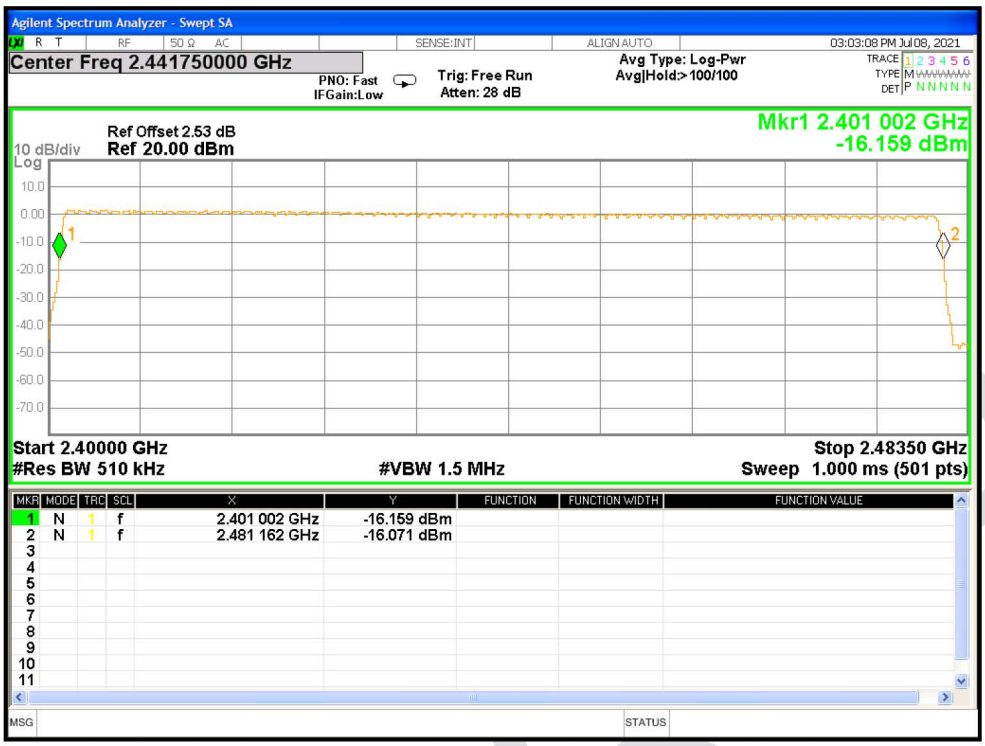
18.7 HOPPING SEQUENCE

Condition	Mode	Antenna	Hopping Number	Limit	Band Allocation (%)	Limit Band Allocation (%)	Verdict
NVNT	1-DH5	Ant1	79	15	95.2	70	Pass
NVNT	2-DH5	Ant1	79	15	96	70	Pass
NVNT	3-DH5	Ant1	79	15	96	70	Pass

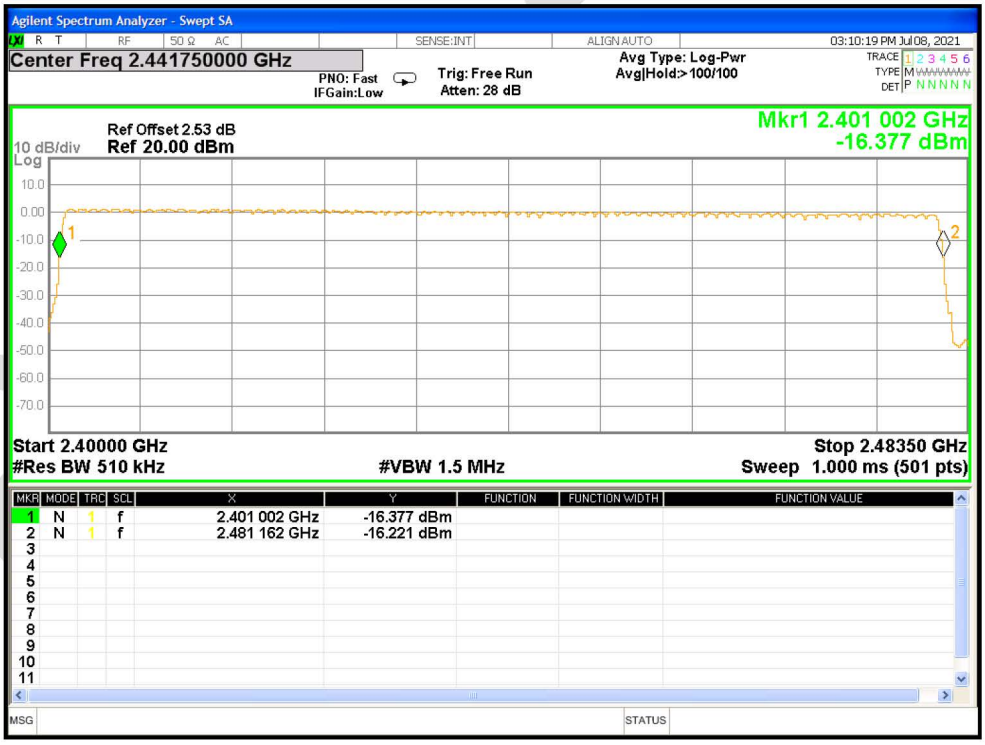
Hopping Seq. NVNT 1-DH5 2441MHz Ant1



Hopping Seq. NVNT 2-DH5 2441MHz Ant1



Hopping Seq. NVNT 3-DH5 2441MHz Ant1



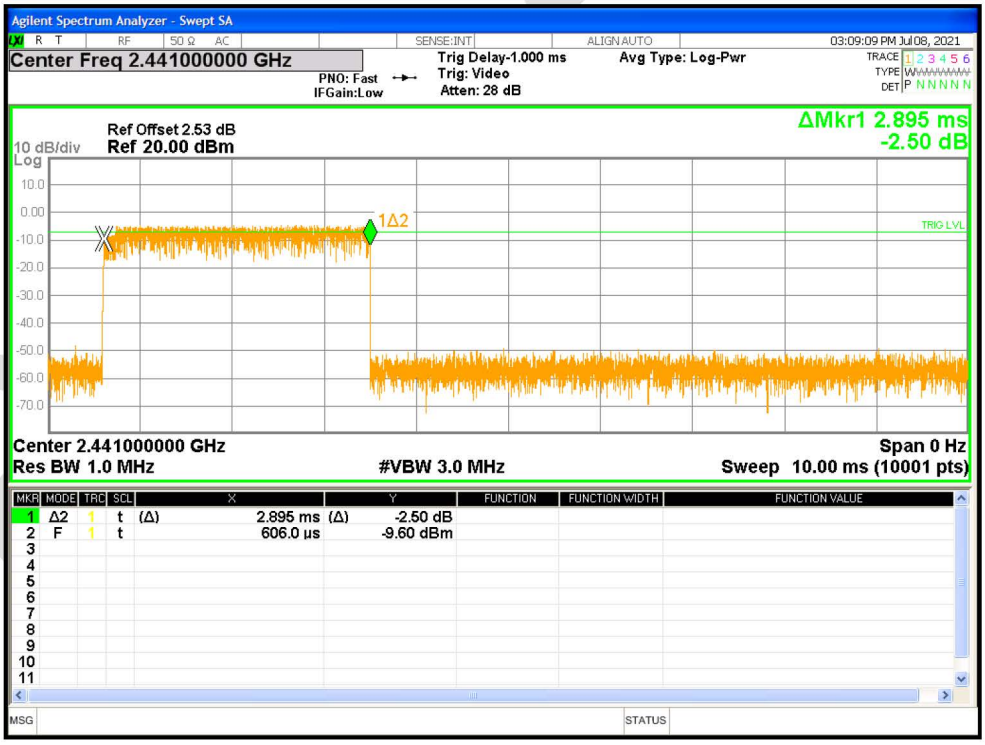
18.8 DWELL TIME ONE BURST

Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)
NVNT	1-DH5	2441	Ant1	2.891
NVNT	2-DH5	2441	Ant1	2.896
NVNT	3-DH5	2441	Ant1	2.895

One Burst NVNT 1-DH5 2441MHz Ant1 One Burst

One Burst NVNT 2-DH5 2441MHz Ant1 One Burst

One Burst NVNT 3-DH5 2441MHz Ant1 One Burst

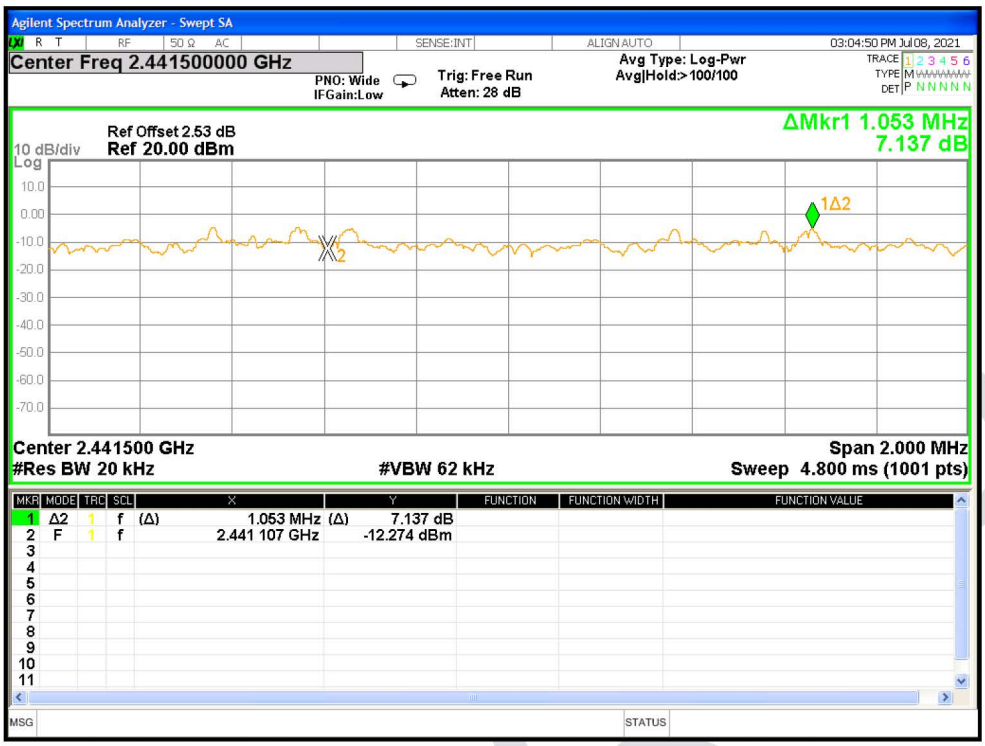


18.9 HOPPING FREQUENCY SEPARATION

Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2441.037	2442.022	0.985	0.1	Pass
NVNT	2-DH5	Ant1	2441.107	2442.16	1.053	0.1	Pass
NVNT	3-DH5	Ant1	2441.04	2442.038	0.998	0.1	Pass

HFS NVNT 1-DH5 2441MHz Ant1

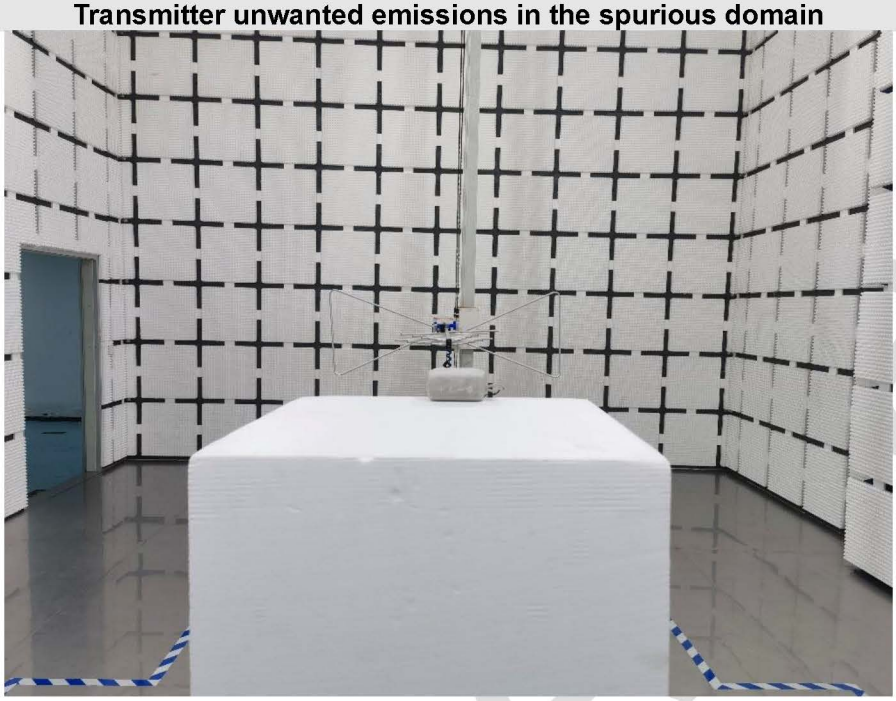
HFS NVNT 2-DH5 2441MHz Ant1

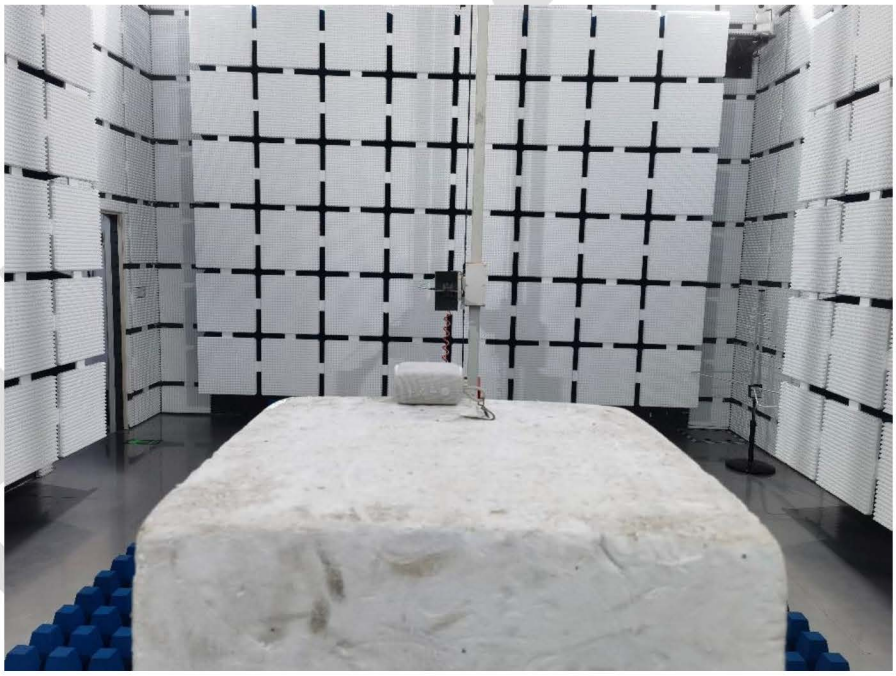


HFS NVNT 3-DH5 2441MHz Ant1

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Transmitter unwanted emissions in the spurious domain





APPENDIX B: PHOTOGRAPHS OF EUT

Reference to the test report No. BLA-EMC-202106-A6201

----END OF REPORT----

Declaration of Conformity

The submitted sample of the following equipment has been tested for CE marking accordingto the following European Directive: the RED Directive 2014/53/EU.

Applicant name &address :

Manufacturer name & Address :

Product : Bluetooth Speaker

Model/Type reference : T5, RBS920, RBS920 Pro, S20, S20 Pro, AIWA SB-X30, AWKF3, SB-X30, PWS-2240, PWS-22

Trade mark : N/A

Order No. : BLA-EMC-202106-A62

Essential Requirements		Applied Specification/Standards	Documentary Evidence
Art 3.1 (a)	Health	EN 62479:2010	TestReport BLA-EMC-202106-A6203
Art 3.1 (a)	Safety	EN 62368-1:2014+A11:2017	Test Report GTS20210600252S01
Art 3.1 (b)	EMC	ETSI EN 301 489-1 V2.2.3 (2019-11); ETSI EN 301 489-17 V3.2.4 (2020-09)	Test Report BLA-EMC-202106-A6201
Art 3.2	Radio	ETSI EN 300328 V2.2.2 (2019-07)	Test Report BLA-EMC-202106-A6202

This verification has been granted to the applicant based on the results of the tests, performed by laboratory of BlueAsia of Technical Services(Shenzhen) Co., Ltd.on the sample of the above-mentioned product in accordance with the provisions of the relevant specific standards and the product is in conformity with the essential requirements of Article 3.1(a) (b) 3.2 of Directive 2014/53/EU. The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives.

CE

Emen_li

Emen_li
Lab manager
Date: 2021/7/20

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