SU-CE18064-R6

EU Declaration of Conformity

Company:	Sound United, LLC
Address :	5541 Fermi Court, Carlsbad, CA 92008, USA
Brand:	Polk
Product Type:	Home Theater System
Model Name:	Signa S2

Hereby we, Sound United,LLC declare that this DoC is issued under our sole responsibility and that the noted model(s) with following EU/EC regulations;

RED:	***2014/53/EU***
RoHS:	***2011/65/EU, and amendment directive (EU) 2015/863***
ErP:	***EC regulation 2023/826 and its frame work directive 2009/125/EC***

The following standards are applicable;

Safety:	***EN62368-1:2014+A11:2017***
EMC:	***EN55032:2015***
	EN55035:2017
	EN61000-3-2:2014
	EN61000-3-3:2013
	Draft EN301489-1 V2.2.0
	Final Draft EN301489-3 V2.1.1
	Draft EN301489-17 V3.2.0
Radio:	***EN300328 V2.2.2***
	EN300440 V2.1.1
Health:	***EN62479:2010***
ErP:	***EN50564:2011***
RoHS:	***EN50581:2012***

CE Mark first affixed in 2018

Manufacturer: Sound United, LLC
Address : 5541 Fermi Court, Carlsbad,
CA 92008,
USA

Kawasaki, Japan 01-April-2025	Takamitsu Hashimoto GM, NPD, Quality Assurance.	橋本貴光
Place and date of issue	Name, Function, Signature	

Sound United, LLC
5541 Fermi Court, Carlsbad, CA 92008, USA

Provision of information on the compliance of combinations of radio equipment and software

General Information:

Report Date:	1-Apr-25	Report No.:	SU-Radio18064-R6
Manufacturer:	Sound United, LLC		
Address:	5541 Fermi Court, Carlsbad, CA 92008, USA		
Factory	TCL Technoly Electronics (Huizhou) Co.,Ltd. Zhongkai The Third Factory		
Address(1):	NO. 88, North Of Luen Fat Road, Tongqiao, Industrial Base, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, P.R.China		
Appliance Type	Home Theater System		
Brand Name:	Polk		
Country of Origin:	China		

Radio Specification:

Type	Frequency Range	Max.RF Power(Limit)	Test result of RF Power
Bluetooth	2400~2483.5 MHz	10dBm	3.88dBm
Wireless Module(BAR)	2400~2483.5 MHz	10dBm	-0.38dBm
Wireless Module(SUB)	2400~2483.5 MHz	10dBm	-1.90dBm

Technical document: Test Report No. RE2104WDG0442, RE180531N039-2, RE180531N039-3

Software version information:

MCU V1013 or later

※There is no change in the performance of Safety, EMC and Radio by version update.

Checked by: Akihiro Yoshida

Approved by: 橋本貴光

Takamitsu Hashimoto
General Manager
NPD, Quality Assurance.
Sound United, LLC

Sound United, LLC
5541 Fermi Court Carlsbad, CA 92008, USA

Factory information

General Information:

Date:	1-Apr-25	Document No.:	SU-Factory18064-R6
Manufacturer:	Sound United LLC.		
Address:	5541 Fermi Court Carlsbad, CA 92008, USA		
Model Tested:	Signa S2		
Appliance Type	Home Theater System		
Brand Name:	Polk		
Country of Origin:	China		

This product is produced in the following factory.

Factory 1.	TCL Technoly Electronics (Huizhou) Co., Ltd.
Address:	Section 19, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, 516006 China
Factory 2.	TCL Technoly Electronics (Huizhou) Co., Ltd. The Second Factory
Address:	Section 41, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, 516006 China
Factory 3.	Hui Zhou Tonly Electronics Co., Ltd.
Address:	Section 19, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province P.R. China
Factory 4.	Hui Zhou Tonly Electronics Co., Ltd.
Address:	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province P.R. China
Factory 5.	Hui Zhou Tonly Electronics Co., Ltd. The Second Factory
Address:	Section 41, Zhongkai High-tech Development Zone,Huizhou City, Guang Dong Province P.R. China
Factory 6.	Guangxi Tonly Electronics Technology Co., Ltd.
Address:	D01, CEC Beihai Industrial Park, No. 368 East Extension of Beihai Road, Beihai Industrial Zone, Beihai City, Guang Xi Province China
Factory 7.	Huizhou Pully Acoustic Technology Co., Ltd
Address:	NO. 88, North Of Luen Fat Road, Tongqiao Industrial Base, Zhongkai Hi Tech Zone, Huizhou, Guangdong 516006 P.R.China
Factory 8.	TCL Technoly Electronics (Huizhou) Co., Ltd. The Third Factory
Address:	NO. 88, North Of Luen Fat Road, Tongqiao Industrial Base, Zhongkai Hi Tech Zone, Huizhou, Guangdong 516006 P.R.China

Ref. Certif. No.

DK-100998-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product	HOME THEATER SYSTEM
Name and address of the applicant	TCL Technoly Electronics (Huizhou) Co., Ltd Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, China, 516006
Name and address of the manufacturer	Sound United, LLC 1 Viper Way Vista, CA 92081 USA
Name and address of the factory Note: *When more than one factory, please report on page 2*	TCL Technoly Electronics (Huizhou) Co., Ltd. Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, 516006 China ☒ Additional Information on page 2
Ratings and principal characteristics	For soundbar: Input: 100-240V～, 50-60Hz, 40W For subwoofer: Input: 100-240V～, 50-60Hz, 40W
Trademark / Brand (if any)	polk
Type of Customer's Testing Facility (CTF) Stage used	
Model / Type Ref.	For whole audio system: Signa S2 For soundbar: SIGNA S2 SOUND BAR For subwoofer: SIGNA S2 SUBWOOFER
Additional information (if necessary may also be reported on page 2)	Additionally evaluated to EN 62368-1:2014/A11:2017; National Differences specified in the CB Test Report. ☐ Additional Information on page 2
A sample of the product was tested and found to be in conformity with	IEC 62368-1:2014
As shown in the Test Report Ref. No. which forms part of this Certificate	ESTS-P20060506 issued on 2020-08-03

This CB Test Certificate is issued by the National Certification Body

☐ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☒ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2020-08-06

Signature:

Jan-Erik Storgaard

Ref. Certif. No.

DK-100998-UL

Factories:
TCL Technoly Electronics (Huizhou) Co., Ltd.
Section 19, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, 516006
China

TCL Technoly Electronics (Huizhou) Co., Ltd. (The Second Factory)
Section 41, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, 516006
China

Hui Zhou Tonly Electronics Co., Ltd.
Section 19, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province,
P.R. China

Hui Zhou Tonly Electronics Co., Ltd.
Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province,
P.R. China

Hui Zhou Tonly Electronics Co., Ltd. (The Second Factory)
Section 41, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province,
P.R. China

Guangxi Tonly Electronics Technology Co., Ltd.
D01, CEC Beihai Industrial Park, No. 368 East Extension of Beihai Road, Beihai Industrial Zone, Beihai City, Guang Xi Province,
China

Huizhou Pully Acoustic Technology Co., Ltd
NO. 88, North Of Luen Fat Road, Tongqiao Industrial Base, Zhongkai Hi Tech Zone, Huizhou, Guangdong 516006,
P.R.China

TCL Technoly Electronics (Huizhou) Co., Ltd. (The Third Factory)
NO. 88, North Of Luen Fat Road, Tongqiao Industrial Base, Zhongkai Hi Tech Zone, Huizhou, Guangdong 516006,
P.R.China

Additional information (if necessary)

☐ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☒ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2020-08-06

Signature:

Jan-Erik Storgaard

Test Report issued under the responsibility of:

TEST REPORT
IEC 62368-1
Audio/video, information and communication technology equipment
Part 1: Safety requirements

Report Number .....:	ESTS-P20060506
Date of issue.....:	2020-08-03
Total number of pages .....:	92 Pages
Applicant's name.....:	TCL Technoly Electronics (Huizhou) Co., Ltd
Address .....:	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, China, 516006
Test specification:	
Standard .....:	IEC 62368-1:2014 (Second Edition)
Test procedure .....:	CB Scheme
Non-standard test method.....:	N/A
Test Report Form No..... :	IEC62368_1B
Test Report Form(s) Originator .....:	UL (US)
Master TRF.....:	2014-03

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

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.....:	HOME THEATER SYSTEM
Trade Mark.....:	polk
Manufacturer.....:	**Sound United, LLC** 1 Viper Way Vista, CA 92081 USA
Model/Type reference.....:	**For whole audio system: Signa S2** **For soundbar:** SIGNA S2 SOUND BAR **For subwoofer:** SIGNA S2 SUBWOOFER
Ratings.....:	**For soundbar:** Input: 100-240V～, 50-60Hz, 40W **For subwoofer:** Input: 100-240V～, 50-60Hz, 40W

Testing procedure and testing location:			
☒	**CB Testing Laboratory:**	**EST Technology Co., Ltd.**	
Testing location/ address .....:		Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China	
☐	**Associated CB Testing Laboratory:**	N/A	
Testing location/ address .....:		N/A	
Tested by (name + signature).....:		Monster Feng (Project Handler)	Monster Feng
Approved by (name + signature).....:		John Lan (Reviewer)	John
☐	**Testing procedure: TMP/CTF Stage 1:**	N/A	
Testing location/ address .....:		N/A	
Tested by (name + signature).....:			
Approved by (name + signature).....:			
☐	**Testing procedure: WMT/CTF Stage 2:**	N/A	
Testing location/ address .....:		N/A	
Tested by (name + signature).....:			
Witnessed by (name + signature).....:			
Approved by (name + signature).....:			
☐	**Testing procedure: SMT/CTF Stage 3 or 4:**	N/A	
Testing location/ address .....:		N/A	
Tested by (name + signature).....:			

Approved by (name + signature).....:		
Supervised by (name + signature).....:		

List of Attachments (including a total number of pages in each attachment):

- Attachment 1: Photo documentation (9 pages)
- Attachment 2: National Differences (32 pages)
- Attachment 3: Product documentation (1 page)

Summary of testing:

Tests performed (name of test and test clause):

All applicable tests as described in Test Case and Measurement Sections were performed.

5.2	Electrical energy source classifications
5.4.1.4, 6.3.2, 9.0, B.2.6	Maximum operating temperatures for materials, components and systems
5.4.1.8	Determination of working voltage
5.4.1.10.3	Ball pressure test of thermoplastics
5.4.5.1	Surge test
5.4.8	Humidity conditioning
5.4.9	Electric strength test
5.5.2.2	Safeguards against capacitance discharge test
6.2.2	Electrical power sources (PS) measurements for classification
9.2	Thermal energy source Classifications
B.2.5	Input tests
B.3	Simulated Abnormal operating condition tests
B.4	Simulated single fault conditions
F.3.9	Durability, legibility and permanence of markings
G.5.3.3	Transformer overload
Q.1.2	Limited power sources
T.2	Steady force test, 10 N
T.5	Steady force test. 250N
T.6	Impact test
T.8	Stress relief test

Remark:

1. The EUT passed the above all tests.

Testing location:

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

EU group differences, Australia, Canada, New Zealand and United States, Japan

CENELEC member countries (EU group differences): Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom

☒ **The product fulfils the requirements of AS/NZS 62368.1:2018.**

☒ **The product fulfils the requirements of CAN/CSA C22.2 No. 62368-1-14.**

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

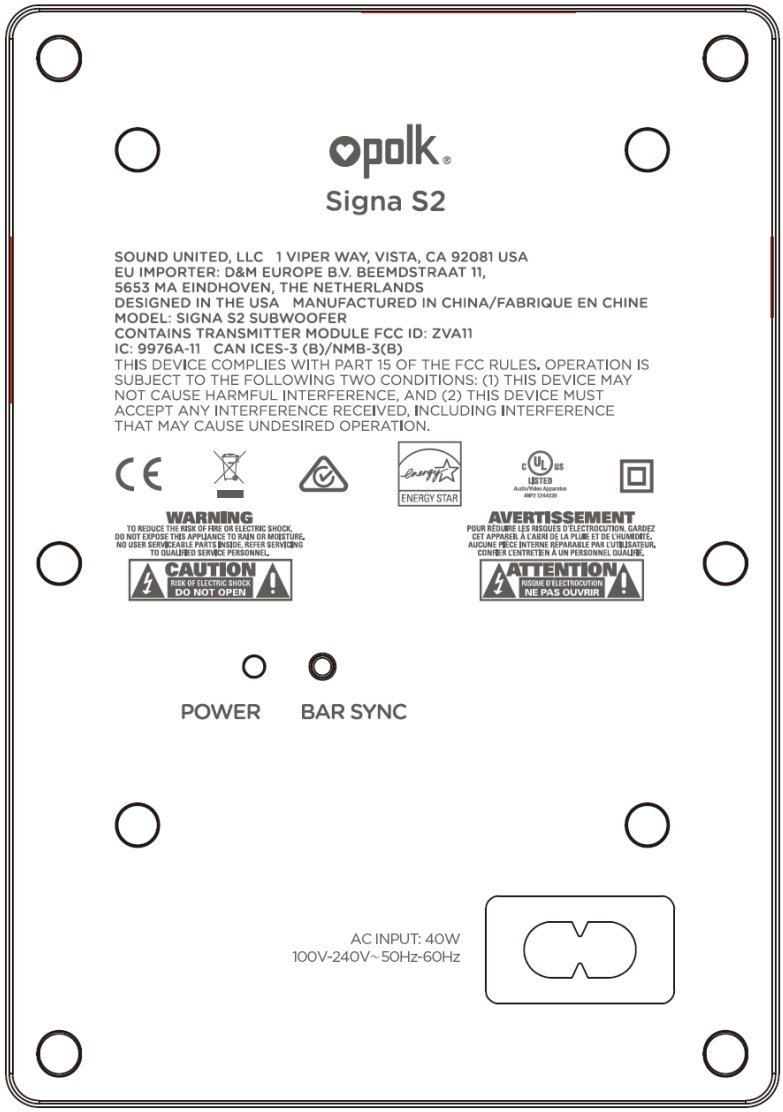
☒ **The product fulfils the requirements of UL 62368-1, Second Edition**

☒ **The product fulfils the requirements of J 62368-1 (H30).**

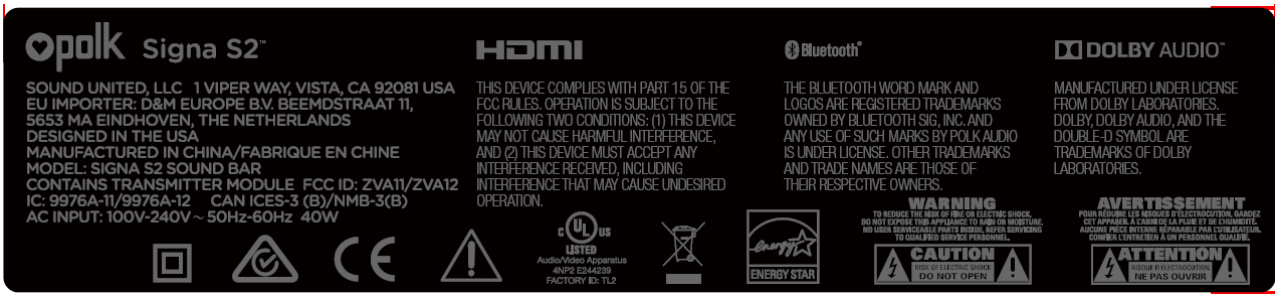
Copy of marking plate(s):

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.

For subwoofer:



For soundbar:



Remark:

1. Since similar label used, only label for models above listed to represent other similar ones.
2. The CE marking and WEEE symbol (if any) should be at least 5.0mm and 7.0mm respectively in height.
3. The mfr. and importer's name and address should be printed on label, if not possible can be printed on package or a document accompanying the equipment before the product is placed on the EU market.
4. The above markings are the minimum requirements required by the safety lab. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.

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: _____
Considered current rating of protective device as part of building or equipment installation	US, CA: 20 A; UK: 13 A; Others: 16 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: _____
Class of equipment	☐ Class I ☒ Class II ☐ Class III
Access location	☐ restricted access location ☒ N/A
Pollution degree (PD)	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maximum operating ambient	45°C
IP protection class	☒ IPX0 ☐ IP___
Power Systems	☒ TN ☐ TT ☐ IT - __ V_{L-L}
Altitude during operation (m)	☐ 2000 m or less ☒ 5000 m
Altitude of test laboratory (m)	☒ 2000 m or less ☐ _____ m
Mass of equipment (kg)	☒ For sound bar: Approx. 1.74kg; For subwoofer: Approx. 5.26kg

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 .....:	2020-06-05
Date (s) of performance of tests .....:	2020-06-05 to 2020-07-16
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.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☒ **Yes** ☐ **Not applicable**
When differences exist; they shall be identified in the General product information section.	

Name and address of factory (ies).....:	**1.TCL Technoly Electronics (Huizhou) Co., Ltd.** Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, China, 516006 **2. TCL Technoly Electronics (Huizhou) Co., Ltd.** Section 19, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, China, 516006 **3. TCL Technoly Electronics (Huizhou) Co., Ltd. (The Second Factory)** Section 41, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, China, 516006 **4.Hui Zhou Tonly Electronics Co., Ltd.** Section 19, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, P.R. China **5.Hui Zhou Tonly Electronics Co., Ltd.** Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, P.R. China **6.Hui Zhou Tonly Electronics Co., Ltd.** (The Second Factory) Section 41, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, P.R. China **7.Guangxi Tonly Electronics Technology Co., Ltd.** D01, CEC Beihai Industrial Park, No. 368 East Extension of Beihai Road, Beihai Industrial Zone, Beihai City, Guang Xi Province, China **8.Huizhou Pully Acoustic Technology Co., Ltd** NO. 88, North Of Luen Fat Road, Tongqiao Industrial Base, Zhongkai Hi Tech Zone, Huizhou, Guangdong 516006, P.R.China **9.TCL Technoly Electronics (Huizhou) Co., Ltd. (The Third Factory)** NO. 88, North Of Luen Fat Road, Tongqiao Industrial Base, Zhongkai Hi Tech Zone, Huizhou, Guangdong 516006, P.R.China

GENERAL PRODUCT INFORMATION:

1. The apparatus covered by this report is HOME THEATER SYSTEM, which is consisted of soundbar and subwoofer and used as audio/video Equipment.
2. Specified maximum ambient temperature is 45°C for tropical climate.
3. The equipment was evaluated for a maximum operating altitude of 5000m. Clearance values have been evaluated for an operating altitude of max. 5000 meters, based on Table 17 altitude adjustment factor 1.48.
4. The test items are pre-production samples without serial numbers.
5. Subwoofer and soundbar are powered by AC mains via detachable power cord set and classified as class II apparatus.
6. Rear enclosure is secured to front enclosure by screws.

Model Differences:

N/A

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

N/A

The official TRF used for this evaluation has not been updated to include CTF information. As a temporary solution the NCB included missing CTF page and informed IECEE Secretariat about the required TRF update.

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 for output circuit (For Soundbar and Subwoofer)	ES3
Power board output “V+” to “V-” (For Soundbar)	ES1
Speaker output connector (For Soundbar and Subwoofer)	ES1
USB port (For Soundbar)	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 for secondary circuit after transformer rectified circuit (For Soundbar and Subwoofer)	PS3, Arcing PIS, Resistive PIS
Power board output “V+” to “V-” (For Soundbar)	PS2, Resistive PIS
Speaker output connector (For Soundbar and Subwoofer)	PS2, Resistive PIS
USB port (For Soundbar)	PS1
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
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)**
Edges and corners of enclosure	MS1
Mass of the unit	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)**
External enclosure surfaces	TS1 for accessible part
Internal Parts/circuit of the unit in enclosure	TS3

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
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 indicator	RS1

ENERGY SOURCE DIAGRAM
Indicate which energy sources are included in the energy source diagram. Insert diagram below
☐ **ES** ☐ **PS** ☐ **MS** ☐ **TS** ☐ **RS**

OVERVIEW OF EMPLOYED SAFEGUARDS				
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	ES3: All internal circuit except for output circuit (For Soundbar and Subwoofer)	N/A	N/A	Enclosure, See 5.4.2, 5.4.3, 5.5.3, 5.5.4
Ordinary	ES3: Store discharge on capacitor (For Soundbar and Subwoofer)	N/A	N/A	See 5.5.2.2
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source	Safeguards		
		Basic	Supplementary	Reinforced
Plastic enclosure	PS3 and PS2 circuit	See 6.3	See 6.4.5, 6.4.6	N/A
PCB	PS3 and PS2 circuit	See 6.3	V-1 or better	N/A
Internal/External wiring	PS3 and PS2 circuit	N/A	N/A	See 6.5
The other components/materials	PS3 and PS2 circuit	See 6.3	See 6.4.5, 6.4.6	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	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)
N/A	N/A	N/A	N/A	N/A
9.1	Thermal Burn			

Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS3: Internal Parts of the unit	N/A	N/A	Enclosure
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	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. See also Annex G.	P
4.1.3	Equipment design and construction	Evaluation of safeguards regarding preventing access to ES3 parts, limiting the source supplying outputs to fulfill ES1, and protection in regard to risk of ignition, mechanical-caused injury and thermal burn considered.	P
4.1.15	Markings and instructions ..... :	(See Annex F)	P
4.4.4	Safeguard robustness	See below.	P
4.4.4.2	Steady force tests ..... :	(See Annex T.2, T.5)	P
4.4.4.3	Drop tests..... :	(See Annex T.7)	P
4.4.4.4	Impact tests..... :	(See Annex T.6)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests ..... :		N/A
4.4.4.6	Glass Impact tests..... :	No such glass used.	N/A
4.4.4.7	Thermoplastic material tests ..... :	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard ..... :	(See Annex T)	P
4.4.4.9	Accessibility and safeguard effectiveness		P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions	P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard	The wires are secured by double method so that a loosening of the terminal connection is unlikely.	P
4.6.2	10 N force test applied to ..... :	See appended table 5.4.2.2, 5.4.2.4 and 5.4.3	P
4.7	Equipment for direct insertion into mains socket - outlets	Not direct plug-in 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 coin/button cell batteries used.	N/A
4.8.2	Instructional safeguard		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery ..... :		¾
4.8.4	Battery Compartment Mechanical Tests..... :		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object ..... :	(See annex P)	P
5	**ELECTRICALLY-CAUSED INJURY**		P
5.2.1	Electrical energy source classifications .....:	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current .....:	(See appended table 5.2)	P
5.2.2.3	Capacitance limits.....:	(See appended table 5.2)	P
5.2.2.4	Single pulse limits .....:	No such single pulses generated in the EUT or applied to it.	N/A
5.2.2.5	Limits for repetitive pulses.....:	No such repetitive pulses within the EUT	N/A
5.2.2.6	Ringing signals .....:	No such ringing signals within the EUT	N/A
5.2.2.7	Audio signals .....:	(See annex E.1)	P
5.3	Protection against electrical energy sources	See below	P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only ES1 circuit can be accessed for this product.	P
5.3.2.2	Contact requirements	No openings allowing entry of a probe. No access with test probe to any ES3 circuit or parts.	P
	a) Test with test probe from Annex V .....:	No access with test probe to any ES3 circuit or parts.	P
	b) Electric strength test potential (V).....:		N/A
	c) Air gap (mm) .....:	More than 1.0mm	P
5.3.2.4	Terminals for connecting stripped wire	No stripped wire used.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	The choice and application have taken into account as specified in this Clause 5 and Annex T and natural rubber, hygroscopic materials or asbestos are not used as insulation.	P
5.4.1.3	Humidity conditioning.....:	Humidity conditioning test was conducted, refer to 5.4.8	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.4	Maximum operating temperature for insulating materials .....:	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree.....:	2	¾
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is applied. No insulating compound applied (however see 5.5.4).	N/A
5.4.1.5.3	Thermal cycling	See above	N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such transformer.	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such starting pulses.	N/A
5.4.1.8	Determination of working voltage	(See appended table in attachment 3)	P
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		P
5.4.1.10.2	Vicat softening temperature .....:		N/A
5.4.1.10.3	Ball pressure .....:	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances	The highest value of 5.4.2.2 and 5.4.2.3 be used.	P
5.4.2.2	Determining clearance using peak working voltage	Temporary overvoltage 2000Vpeak assumed.	P
5.4.2.3	Determining clearance using required withstand voltage .....:	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
	a) a.c. mains transient voltage.....:	2500 Vpk considered for Overvoltage Cat. II	¾
	b) d.c. mains transient voltage .....:	Not d.c. mains.	¾
	c) external circuit transient voltage .....:	No such transient	¾
	d) transient voltage determined by measurement :	Not applicable	¾
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	Using procedure 2 to determine the clearance according to 5.4.2.3.	N/A
5.4.2.5	Multiplication factors for clearances and test voltages.....:	1.48	P
5.4.3	Creepage distances.....:	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group .....:	IIIb	¾
5.4.4	Solid insulation	See below	P
5.4.4.2	Minimum distance through insulation .....:	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices	See table 4.1.2 for detail for optical isolator details.	P
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material	See below	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material	Where two layers are provided as reinforced insulation any one layer passed the electric strength test for reinforced insulation.	P
	Number of layers (pcs) .....:	2 layers	P
5.4.4.6.3	Non-separable thin sheet material	No such insulation used within the EUT	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	See G.5.3 and G.6.1 only.	P
5.4.4.9	Solid insulation at frequencies >30 kHz.....:	See appended table 5.4.9.	P
5.4.5	Antenna terminal insulation	No antenna terminal used.	N/A
5.4.5.1	General		P
5.4.5.2	Voltage surge test	Surge test with 50 discharges at a maximum rate of 12/min from a 1 nF capacitor charged to 10 kV performed.	P
	Insulation resistance (MΩ).....:	Measured 500MΩ between mains supply to output terminals.	¾
5.4.6	Insulation of internal wire as part of supplementary safeguard .....:	No such insulation of internal wire as part of supplementary safeguard.	N/A
5.4.7	Tests for semiconductor components and for cemented joints	No tests necessary –see only 5.4.4.4.	N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%).....:	93%	¾
	Temperature (°C) .....:	40°C	¾
	Duration (h) .....:	120h (as client's requirement)	¾
5.4.9	Electric strength test .....:	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test	(See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine tests	Should be considered and conducted during production at factory.	P
5.4.10	Protection against transient voltages between external circuit	No such external circuits	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

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.11	Insulation between external circuits and earthed circuitry.....:	No such external circuit.	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).....:		¾
	Nominal voltage U_{peak} (V).....:		¾
	Max increase due to variation U_{sp} .....:		¾
	Max increase due to ageing DU_{sa} .....:		¾
	$U_{op}= U_{peak} + DU_{sp} + DU_{sa}$ .....:		¾
5.5	Components as safeguards		
5.5.1	General	See below.	P
5.5.2	Capacitors and RC units	(See Annex G.11)	P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....:	(See appended table 5.5.2.2)	P
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See Annex G.12)	P
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
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....:	No such external circuits.	N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors	Class II 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) ..... :		¾
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). ..... :		¾
	Protective current rating (A) ..... :		¾
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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..... :		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current..... :	(See appended table 5.2)	P
5.7.2.2	Measurement of prospective touch voltage		P
5.7.3	Equipment set-up, supply connections and earth connections		P
	System of interconnected equipment (separate connections/single connection)..... :	Single equipment.	¾
	Multiple connections to mains (one connection at a time/simultaneous connections) ..... :	Single connection.	¾
5.7.4	Earthed conductive accessible parts..... :	Class II equipment	N/A
5.7.5	Protective conductor current		N/A
	Supply Voltage (V)..... :		¾
	Measured current (mA)..... :		¾
	Instructional Safeguard..... :		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits	No external circuits.	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	No external circuits.	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	PS (power source) classification determined by measuring the maximum power in Figures 34 and 35 for load and power source circuits.	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.1	General	See the following details.	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 ..... :	See page of energy source identification and classification table for details.	P
6.2.3	Classification of potential ignition sources	See the following details.	P
6.2.3.1	Arcing PIS ..... :	(See appended table 6.2.3.1)	P
6.2.3.2	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..... :	No ignition and no such temperature attained within the equipment. (See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method by Control of fire spread applied, Fire enclosure provided.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		P
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	See sub-clauses 6.4.4, 6.4.5 and 6.4.6.	P
6.4.3.1	General		P
6.4.3.2	Supplementary Safeguards	Provided separation from arcing PIS and resistive PIS, if the distance from PIS less than specified in the Figure 37, Figure 38, Figure 39, min. V-0 materials for woofer box and V-0 plastic enclosure used.	P
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions..... :	(see Annex B)	P
	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

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.5.2	Supplementary safeguards ..... :	Compliance detailed as follows: – Printed board: rated V-1 or better. – Wire insulation (tubing): complying with Clause 6 (See Table 4.1.2 for wiring used). – All other components: at least V-2 except for mounted on min. V-1 material or small parts of combustible material that have mass less than 4g. – Isolating transformer: complying with G.5.3. – Not ignite during single fault conditions as specified in 6.4.3.3 (for speakers, see appended table B.4)	P
6.4.6	Control of fire spread in PS3 circuit	Compliance detailed as follows: – Printed board: rated V-1 or better. – Wire insulation (tubing): complying with Clause 6 (See Table 4.1.2 for wiring used). – All other components: at least V-2 except for mounted on min. V-1 material or small parts of combustible material that have mass less than 4g. – Isolating transformer: complying with G.5.3. – Not ignite during single fault conditions as specified in 6.4.3.3 (for speakers, see appended table B.4)	P
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	See below.	P
6.4.8.1	Fire enclosure and fire barrier material properties	Fire enclosure provided.	P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	Fire enclosure provided.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) ..... :	Soundbar openings is far from PIS, not located in area of Figure 41. No openings for subwoofer.	P
	Needle Flame test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....:	Soundbar openings is far from PIS, not located in area of Figure 41. No openings for subwoofer.	P
	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 .....:	Fire enclosure provided.	P
6.5	Internal and external wiring		P
6.5.1	Requirements	VW-1 wires used, Which considered to equivalent to IEC/TS 60695-11-21	P
6.5.2	Cross-sectional area (mm^2) .....:	See table 4.1.2	¾
6.5.3	Requirements for interconnection to building wiring.....:		N/A
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1		P
7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions.....:		¾
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....:		¾
7.6	Batteries ..... :	No battery charging circuit in the remote controller and the battery is Consumer grade, non-rechargeable carbon-zinc or alkaline batteries.	N/A
8	**MECHANICALLY-CAUSED INJURY**		P
8.1	General	See below	P
8.2	Mechanical energy source classifications	MS1: Mass of the unit MS1: Edges and corners	P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners	Edges and corners of the enclosure are rounded.	P
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard..... :		¾
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
	Instructional Safeguard.....:		¾
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		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	MS1	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard.....:		¾
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force.....:		¾
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10 tilt.....:		¾
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....:		N/A
	Position of feet or movable parts.....:		¾
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		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....:		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force .....:		¾

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Clause	Requirement + Test	Result - Remark	Verdict
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard.....:		¾
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force .....:		¾
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N).....:		¾
8.10.6	Thermoplastic temperature stability (°C) .....:		N/A
8.11	Mounting means for rack mounted 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.....		N/A
	Button/Ball diameter (mm).....:		¾
9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications	No part considered to be accessible other than enclosure. The equipment evaluated by temperature test (see table 5.4.1.4).	P
9.3	Safeguard against thermal energy sources	Temperature of enclosure classed as TS1.	P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard		P
9.4.2	Instructional safeguard .....:		N/A
10	**RADIATION**		P
10.2	Radiation energy source classification	RS1	P
10.2.1	General classification		P
10.3	Protection against laser radiation		N/A
	Laser radiation that exists equipment:		¾
	Normal, abnormal, single-fault .....:		N/A
	Instructional safeguard.....:		¾
	Tool .....:		¾
10.4	Protection against visible, infrared, and UV	The LED only used for	P

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Clause	Requirement + Test	Result - Remark	Verdict
	radiation	indicating, which is considered as low power & inherently exempt group according to IEC 62471	
10.4.1	General		N/A
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 ..... :		¾
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1..:		N/A
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 ..... :	The LED only used for indicating, which is considered as low power & inherently exempt group according to IEC 62471	N/A
10.4.2	Instructional safeguard..... :		N/A
10.5	Protection against x-radiation	No such x-radiation generated from the equipment	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..... :		¾
	Abnormal and single-fault condition.....:		N/A
	Maximum radiation (pA/kg) .....:		N/A
10.6	Protection against acoustic energy sources	Not such an equipment.	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 .....:		¾

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Clause	Requirement + Test	Result - Remark	Verdict
	Means to actively inform user of increase sound pressure .....:		¾
	Equipment safeguard prevent ordinary person to RS2 .....:		¾
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		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 .....:		¾
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A) .....:		¾
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A) .....:		¾
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 summary of testing for tested models, each loaded according to its output ratings. See also appended table B.2.5.)	P
	Audio Amplifiers and equipment with audio amplifiers.....:	Consider	P
B.2.3	Supply voltage and tolerances	+10 % and −10 % for AC mains considered.	P
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		P
B.3.3	D.C. mains polarity test	The EUT is not connected to a D.C. mains	N/A
B.3.4	Setting of voltage selector .....:	No voltage selector was used.	N/A
B.3.5	Maximum load at output terminals.....:	(See appended table B.3)	P
B.3.6	Reverse battery polarity	No such battery within the EUT	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	Max non-clipped output power, one speaker short circuit test considered. 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

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.2	Temperature controlling device open or short-circuited.....:		N/A
B.4.3	Motor tests		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	See below.	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	No coated printed boards used.	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.4 for faults on semiconductor components)	P
B.4.6	Short circuit or disconnect of passive components	(See appended table B.4)	P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation	N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions....:	No battery charging circuit in the remote controller and the battery is Consumer grade, non-rechargeable carbon-zinc or alkaline batteries.	N/A

C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A

D	**TEST GENERATORS**		P
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		P
D.3	Electronic pulse generator		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		P
E.1	Audio amplifier normal operating conditions		P
	Audio signal voltage (V) ..... :	For subwoofer: 9.08Vrms; For soundbar: 7.73Vrms	¾
	Rated load impedance (Ω) ..... :	(See appended table 4.1.2)	¾
E.2	Audio amplifier abnormal operating conditions	(See appended table B.3)	P
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	General requirements	See below.	P
	Instructions – Language ..... :	English	¾
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are complied with IEC 60027-1.	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010.	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	The required marking is located on the enclosure of the equipment and is easily visible.	P
F.3.2	Equipment identification markings	See copy of marking plate.	P
F.3.2.1	Manufacturer identification ..... :	See copy of marking plate.	¾
F.3.2.2	Model identification ..... :	See page 2	¾
F.3.3	Equipment rating markings	See the following details.	P
F.3.3.1	Equipment with direct connection to mains	The equipment is direct connected to AC mains, see F.3.3.3 to F.3.3.6.	P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage ..... :	AC	¾
F.3.3.4	Rated voltage ..... :	See copy of marking plate.	¾
F.3.3.4	Rated frequency ..... :	See copy of marking plate.	¾
F.3.3.6	Rated current or rated power ..... :	See copy of marking plate.	¾
F.3.3.7	Equipment with multiple supply connections	Only one mains supply connection provided.	N/A
F.3.4	Voltage setting device	No voltage setting device.	N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings ..... :	No outlet used.	N/A
F.3.5.2	Switch position identification marking ..... :	No such switch used.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.3	Replacement fuse identification and rating markings .....:	The current fuse is located within the equipment and not replaceable by an ordinary person or an instructed person. marking provided on PCB: For subwoofer F1 T3.15AL 250V; For soundbar F1 T3.15AL 250V	P
F.3.5.4	Replacement battery identification marking.....:	No such battery on the equipment.	N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		N/A
F.3.6.1	Class I Equipment	Class II 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)		P
F.3.6.2.1	Class II equipment with or without functional earth	Class II equipment without functional earth	P
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking ..... :	IPX0.	¾
F.3.8	External power supply output marking	See copy of marking plate.	P
F.3.9	Durability, legibility and permanence of marking	Marking is considered to be legible and easily discernible. See also the following details.	P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. And then again for 15 sec. With the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling and lifting of the label edge. After each test, the marking remained legible.	P
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	See user manual	P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1	No such terminals provided.	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		P
	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	No instructional safeguard is considered as necessary.	N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction	No instructional safeguard required in the equipment.	N/A
G	**COMPONENTS**		P
G.1	**Switches**		N/A
G.1.1	General requirements		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	**Relays**		N/A
G.2.1	General requirements		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**		P
G.3.1	Thermal cut-offs	No thermal cut-off used.	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
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal link used.	N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H)..... :		¾
	Single Fault Condition..... :		¾
	Test Voltage (V) and Insulation Resistance (W) . :		¾
G.3.3	PTC Thermistors		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.4	Overcurrent protection devices	Current fuse complying with IEC 60127 as overcurrent protection device.	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		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**		P
G.4.1	Spacings	See below	P
G.4.2	Mains connector configuration ..... :	Approved according to IEC/EN 60320-1 appliance inlet used.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	No such plug	P
G.5	**Wound Components**		P
G.5.1	Wire insulation in wound components	See below	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Physical separation provided by tube.	P
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) ..... :		¾
	Temperature (°C) ..... :		¾
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	**Transformers**		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) ..... :	The transformer meets the requirements given in G.5.3.2 and G.5.3.3.	P
	Position ..... :	(See appended table 4.1.2)	¾
	Method of protection ..... :	Over current protection by circuit design.	¾
G.5.3.2	Insulation	Primary windings and secondary windings are separated by Reinforced insulation.	P
	Protection from displacement of windings ..... :	By bobbin and insulating tape	¾
G.5.3.3	Overload test..... :	(See appended table B.3)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment.	P
G.5.3.3.2	Winding Temperatures testing in the unit	(See appended table B.3)	P
G.5.3.3.3	Winding Temperatures - Alternative test method	Alternative test method was not considered.	N/A
G.5.4	**Motors**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.1	General requirements		N/A
	Position ..... :		¾
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) ..... :		¾
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) ..... :		¾
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) ..... :		N/A
	Electric strength test (V) ..... :		¾
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 ..... :		¾
G.6	**Wire Insulation**		N/A
G.6.1	General	No insulation wire	N/A
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	**Mains supply cords**		P
G.7.1	General requirements		P
	Type ..... :	See table 4.1.2	¾
	Rated current (A) ..... :	See label	¾
	Cross-sectional area (mm^2), (AWG) ..... :	See table 4.1.2	¾
G.7.2	Compliance and test method	(See appended table 4.1.2)	P
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) ..... :		¾

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm) ... :		¾
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry.....:	No electric hazard	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) .....:		¾
	Diameter (m) ..... :		¾
	Temperature (°C) ..... :		¾
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire	No such wire.	N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	**Varistors**		P
G.8.1	General requirements	VDE approved varistors used.	P
G.8.2	Safeguard against shock	(See appended table 4.1.2)	P
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 IC current limiter provided within the equipment.	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 ..... :		¾
G.9.1 d)	IC limiter output current (max. 5A)..... :		¾
G.9.1 e)	Manufacturers' defined drift ..... :		¾
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		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
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	**Capacitor and RC units**		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.11.1	General requirements	Capacitors used in accordance with their rating and complied with subclasses of IEC 60384-14. (see appended table 4.1.2)	P
G.11.2	Conditioning of capacitors and RC units	(see appended table 4.1.2)	P
G.11.3	Rules for selecting capacitors	The selection followed with tables G.9, G.10, G.11 and G.12.	P
G.12	**Optocouplers**		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results) ..... :	The optocoupler complied with standard IEC/EN 60747-5-5. (see appended table 4.1.2)	P
	Type test voltage Vini ..... :	Considered	¾
	Routine test voltage, Vini,b ..... :	Considered	¾
G.13	**Printed boards**		P
G.13.1	General requirements	See the following details.	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board complied with the minimum clearance and creepage requirements	P
G.13.3	Coated printed boards	No coated printed board or multilayer board applied for within the equipment.	N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction) ..... :		¾
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation ..... :		N/A
	Number of insulation layers (pcs) ..... :		¾
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 ..... :	No coating on component terminals considered to affect creepage or clearances.	N/A
G.15	**Liquid filled components**		N/A
G.15.1	General requirements	No such device provided within the equipment.	N/A
G.15.2	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
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 ..... :		¾
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance ..... :		¾
D3)	Resistance ..... :		¾
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) ..... :		¾
H.3.1.2	Voltage (V) ..... :		¾
H.3.1.3	Cadence; time (s) and voltage (V) ..... :		¾
H.3.1.4	Single fault current (mA): ..... :		¾
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)..... :		¾

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Clause	Requirement + Test	Result - Remark	Verdict
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		P
	General requirements	Certified triple insulation wire used. (See appended table 4.1.2)	P
K	**SAFETY INTERLOCKS**		N/A
K.1	General requirements	No safety interlock provided.	N/A
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 ..... :		N/A
L	**DISCONNECT DEVICES**		P
L.1	General requirements	Appliance inlet used as disconnect device.	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized	When AC inlet is disconnected no hazardous voltage in the equipment.	P
L.4	Single phase equipment	The appliance coupler disconnects both poles simultaneously.	P
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	Only one a.c. mains connection.	N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		P
M.1	General requirements	Dry battery used in remote control.	P
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.2.2	Compliance and test method (identify method)...:		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance ..... :		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature..... :		¾
M.4.2.2 b)	Single faults in charging circuitry..... :		¾
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
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
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume *V*z (m^3/s) .....:		¾
M.8.2.3	Correction factors .....:		¾
M.8.2.4	Calculation of distance *d* (mm) .....:		¾
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) .....:	See user manual	P
N	**ELECTROCHEMICAL POTENTIALS**		N/A
	Metal(s) used.....:		¾
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		P
	Figures O.1 to O.20 of this Annex applied .....:	Considered.	¾
P	**SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS**		P
P.1	General requirements	No openings	P
P.2.2	Safeguards against entry of foreign object		N/A
	Location and Dimensions (mm) ..... :		¾
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	Not 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	No such liquids.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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) .....:		¾
	Tr (°C) .....:		¾
	Ta (°C) .....:		¾
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**		P
Q.1	Limited power sources	(see appended Annex Q.1)	P
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		P
	- Regulating network limited output under normal operating and simulated single fault condition	A regulating network limits the output in compliance with table Q.1 both under normal operating conditions and after any single fault.	P
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	(see appended Annex Q.1)	P
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		¾
	Current limiting method ..... :		¾
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..... :		¾
	Wall thickness (mm) ..... :		¾

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	Conditioning (°C) ..... :		¾
	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 ..... :		¾
	Wall thickness (mm) ..... :		¾
	Conditioning (°C) ..... :		¾
	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 ..... :		¾
	Wall thickness (mm) ..... :		¾
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	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 ..... :		¾
	Wall thickness (mm) ..... :		¾
	Conditioning (test condition), (°C)..... :		¾
	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		P
T.2	Steady force test, 10 N ..... :	(See appended table T.2)	P
T.3	Steady force test, 30 N ..... :	No internal enclosure.	N/A
T.4	Steady force test, 100 N ..... :		N/A
T.5	Steady force test, 250 N ..... :	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Fall test		P
	Swing test		N/A
T.7	Drop test ..... :		N/A
T.8	Stress relief test..... :	(See appended table T.8)	P
T.9	Impact Test (glass)	No glass used.	N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J)..... :		¾
	Height (m) ..... :		¾
T.10	Glass fragmentation test ..... :		N/A
T.11	Test for telescoping or rod antennas	No such antennas provided within the equipment.	N/A
	Torque value (Nm) ..... :		¾
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements	No CRT provided.	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen ..... :		N/A
V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		P
V.1	Accessible parts of equipment	No access with test probes to any hazardous parts	P
V.2	Accessible part criterion		P

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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])
The following parts for Soundbar:					
Plastic material of front enclosure	KINGFA SCI & TECH CO LTD	FRHIPS-960	V-0, 50°C, min. thickness: 1.5mm	UL 94	UL E171666
(Alternative)	KINGFA SCI & TECH CO LTD	FRHIPS-980(o)	V-0, 50°C, min. thickness: 1.6mm	UL 94	UL E171666
Plastic material of rear enclosure	CHI MEI CORPORATION	PA-765A(+)	V-0, 85°C, min. thickness: 2.1mm	UL 94	UL E56070
(Alternative)	LG CHEMICAL LTD	AF312C	V-0, 80°C, min. thickness: 2.5mm	UL 94	UL E67171
(Alternative)	KINGFA SCI & TECH CO LTD	HF-606	V-0, 60°C, min. thickness: 1.6mm	UL 94	UL E171666
Grille covering material	RC TEXTILE CO., LTD	RC-820K-02UL	Pass the Glow-Wire test at 550°C according to IEC 60695-2-11.	IEC 62368-1	Test with appliance
Power plug (EU type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-01	250 Vac, 2.5 A	DIN VDE0620	VDE 40026576
(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-01	250 Vac, 2.5 A	DIN VDE0620	VDE 40009009
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5 A	DIN VDE0620	VDE
Power plug (CN type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-05	250 Vac, 6A	GB15934-2008	20100101 01425445
(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-07	250 Vac, 6A	GB15934-2008	200701010125 1883
(alternative)	Interchangeable	Interchangeable	250 Vac, 6A	GB15934-2008	CCC
Power plug (US type)	UNIRISE ELECTRIC WIRE & CABLE CO., LTD.	UE-221	125 Vac, 10A	UL817	E206144

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(alternative)	TAIWAN LINE TEK ELECTRONICS CO LTD	LP-5	125 Vac, 10A	UL817	E70782
(alternative)	Interchangeable	Interchangeable	125 Vac, min.7A	UL817	UL
Power plug (UK type)	TAIWAN LINE TEK ELECTRONICS CO LTD	LP-61L	250 Vac, 3A	BS1363-1:2016+A1:2018	BSI KM 55112
(alternative)	Interchangeable	Interchangeable	250 Vac, 3A	BS1363-1:2016+A1:2018	BSI
Power plug (AU type)	Shenzhen Deren Electronic Co.,Ltd.	DR-209	7.5A,250Vac 10A,250Vac	AS/NZS3112: 2011	Q03980\ES01 30303
(alternative)	Taiwan Line Tek in China Everfull Electronic Co.,Ltd	LP-15A	7.5A,250Vac 10A,250Vac	AS/NZS3112: 2011	TE4943-A6
(alternative)	longwell company	LP-15A	7.5A,250Vac 10A,250Vac	AS/NZS3112: 2011	18246/12555
(alternative)	Shenzhen Xie Kang Electric Co.,Ltd.	XK-15	10A,250Vac	AS/NZS3112: 2011	NSW21010
(alternative)	Huizhou Yongda Telecommunication Industry Co., Ltd	YD-02	10A,250Vac	AS/NZS3112: 2011	TCA090902\NSW25507
(alternative)	Interchangeable	Interchangeable	Min.7A,250Vac	AS/NZS3112: 2011	AU cert.marks
Power cord (EU type)	BAOHING Wire and cable manufacturing co.LTD.	H03VVH2-F, H05VVH2-F	2 x 0.75 mm^2	DIN EN 50525-2-11	VDE 103727
Alternative	SHENZHEN XIEKANG ELECTRIC CO.,LTD	H03VVH2-F	2 x 0.75 mm^2	DIN EN 50525-2-11	VDE 40029225
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2	EN 50525-2-11	VDE
Power cord (CN type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	60227 IEC 52(RVV)	2 x 0.5~0.75 mm^2 (2 x 0.5 mm^2 maximum length 2m)	GB/T 5023.5-2008	2002 0101 0502 5222.

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(alternative)	SHENZHEN XIE JIN ELECTRONIC CO.,LTD	IEC52 300/300V	2 x 0.75 mm^2	GB/T5023.5-2008/IEC60227-5:2003	200701010524 2025
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2	GB/T 5023.5-2008	CCC
Power Cord (US type）	UNIRISE ELECTRIC WIRE & CABLE CO., LTD.	NISPT-2	2×18AWG	UL62	E176096
(alternative)	TAIWAN LINE TEK ELECTRONICS CO LTD	NISPT-2	2×18AWG	UL62	E138949
(alternative)	Interchangeable	Interchangeable	2×18AWG	UL62	UL
Power Cord (UK type）	TAIWAN LINE TEK ELECTRONICS CO LTD	H03VVH2-F, H05VVH2-F	2 x 0.75 mm^2	EN 50525-2-11	VDE 96233
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2	EN 50525-2-11	VDE
Power Cord (AU type）	Shenzhen Bao Hing Electric Wire&Cable MFR Co Ltd	LTSA-2F	2 x 0.75 mm^2	AS/NZS 60227.5+A1	NSW14586
(alternative)	Shenzhen Tongyuan Industrial.Co.,Ltd.	H03VV-F	2 x 0.75 mm^2	AS/NZS 60227.5+A1	NSW24638
(alternative)	Taiwan Line Tek in China Everfull Electronic Co.,Ltd	H03VVH2-F, H05VVH2-F	2 x 0.5-0.75 mm^2, 2 x 0.75 mm^2 (2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	TE4274-A10
(alternative)	longwell company	LFC-2F	2 x 0.75 mm^2	AS/NZS 60227.5+A1	23773
(alternative)	longwell company	H03VVH2-F	2 x 0.5 mm^2 maximum length 2m	AS/NZS 60227.5+A1	18246

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Clause	Requirement + Test	Result - Remark	Verdict

(alternative)	MAINLAND Electric Wire and Cable Co. Ltd.	H03VVH2-F	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	NSW20609
(alternative)	Shenzhen Xie Kang Electric Co.,Ltd.	H03VVH2-F	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	A/12555EA
(alternative)	Huizhou Yongda Telecommunication Industry Co., Ltd	H03VVH2-F2, H03VV-F2	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	NSW25012
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	AU cert.marks
Appliance connector (EU type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-06	AC 250V, 2.5A	EN 60320-1	2163318.01
(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-05	AC 250V, 2.5A	DIN EN 60320-1	VDE 40018650
(alternative)	Interchangeable	Interchangeable	AC 250V, 2.5A	IEC/EN 60320-1	VDE
Appliance connector (CN type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-06	250 Vac, 2.5A	GB15934-2008	20100101 01425445
(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-05	250 Vac, 2.5A	GB15934-2008	200701010125 1883
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5A	GB15934-2008	CCC
Appliance connector (US type)	UNIRISE ELECTRIC WIRE & CABLE CO., LTD.	UE-224	AC 125V, 7A	UL 60320-1	E206144
(alternative)	TAIWAN LINE TEK ELECTRONICS CO LTD	LS-7H	125 Vac, 7A	UL 60320-1	E70782

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(alternative)	Interchangeable	Interchangeable	125 Vac, Min. 7A	UL 60320-1	UL
Appliance connector (UK type)	TAIWAN LINE TEK ELECTRONICS CO LTD	LS-7H, LS-7	250 Vac, 2.5A	EN 60320	BSI KM 55652
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5A	IEC/EN 60320-1	BSI
Appliance connector (AU type)	Shenzhen Deren Electronic Co.,Ltd.	DR-294	250 Vac, 2.5A	AS/NZS60320	Q03979\ES01 30314
(alternative)	Taiwan Line Tek in China Everfull Electronic Co.,Ltd	LS-7H	250 Vac, 2.5A	AS/NZS60320	TPE 20090-A3
(alternative)	LONGWELL COMPANY	LS-17	250 Vac, 2.5A	AS/NZS60320	NSW 24139
(alternative)	LONGWELL COMPANY	LS-7	250 Vac, 2.5A	AS/NZS60320	N10397
(alternative)	Shenzhen Xie Kang Electric Co.,Ltd.	XK-05	250 Vac, 2.5A	AS/NZS60320	NSW22062
(alternative)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-06	250 Vac, 2.5A	AS/NZS60320	NSW25013
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5A	AS/NZS60320	AU cert.marks
AC inlet	ZHEJIANG LECI ELECTRONICS CO LTD	DB-8	250VAC, 2.5A.	IEC/EN 60320-1	VDE 40032028
(Alternative)	ZheJiang Bei Er Jia ELECTRONIC CO. LTD.	ST-A03-005	250VAC, 2.5A	IEC/EN 60320-1	VDE 40014833
AC connector CN1	TORAY INDUSTRIES INC	CM3014V0(rf)	V-0, minimum 65 degree C.	UL 94	UL E41797
(Alternative)	ZHONGSHAN ROILON ENGINEERING PLASTICS CO LTD	FR3A	V-0, minimum 65 degree C.	UL 94	UL E357946
Primary input wire	Interchangeable	Interchangeable	600V 105 degree C, 22AWG, VW-1	UL758	UL

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HEAT SHRINKABLE TUBE	Interchangeable	Interchangeable	600V,125 degree C	UL 224	UL
PCB	Interchangeable	Interchangeable	V-0, 130°C	UL 94, UL 796	UL E342828
Secondary wire	Interchangeable	Interchangeable	Min. VW-1 or FT1, min. 80 degree C, min. 300V, min. 20AWG	UL 758	UL
Current fuse (F1)	SHENZHEN LANSON ELECTRONICS CO., LTD	SMT	T3.15A, 250Vac	IEC/EN 60127-1	VDE 40012592
(Alternative)	HOLLYLAND CO LTD	5ET	T3.15A, 250Vac	IEC/EN 60127-1	VDE 40015669
Varistor (RV1) (Optional)	THINKING ELECTRONIC INDUSTRIAL CO LTD	TVR14561 TVR14561K	minimum 350 V, 85 degree C, V-0	IEC/EN 61051-1, IEC/EN 61051-2	VDE 005944
(Alternative)	CENTRA SCIENCE CORP	CNR-14D561K	minimum 350 V, 105 degree C, V-0	IEC/EN 61051-1, IEC/EN 61051-2	VDE 40008220
(Alternative)	BRIGHTKING (SHENZHEN) CO LTD	561KD14	minimum 350 V, 105 degree C, V-0	IEC/EN 61051-1, IEC/EN 61051-2	VDE 40027827
X-Capacitor (CX1)	Shenzhen Jinghao Capacitor Co., Ltd	CBB62B	Rated maximum 0.33 uF±10%, minimum 250 V, 110degree C. Marked with an X2.	IEC/EN 60384-14	VDE 40018690
(Alternative)	XIAMEN FARATRONIC CO LTD	MKP62	Rated maximum 0.33 uF±10%, minimum 250 V, 100degree C. Marked with an X2.	IEC/EN 60384-14	VDE 40000358
(Alternative)	Europtronic (SuZhou) Co. Ltd.	MPX	Rated maximum 0.33 uF±10%, minimum 250 V, 110degree C. Marked with an X2.	IEC/EN 60384-14	VDE 40018238
Y -Capacitor (CY1)	SHANTOU HIGH-NEW ZONE SONGTIAN ENTERPRISE CO., LTD	CD	Rated maximum 1000pF, minimum 250 V, minimum 125 degree C. Marked with an Y1.	IEC/EN 60384-14	VDE 40025754

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(Alternative)	TDK CORPORATION	CD	Rated maximum 1000pF, minimum 250 V, minimum 125 degree C. Marked with an Y1.	IEC/EN 60384-14	VDE 40029780
(Alternative)	Yinan Don's Electronic Component Co., Ltd.	CT81	Rated maximum 1000pF, minimum 250 V, minimum 125 degree C. Marked with an Y1.	IEC/EN 60384-14	VDE 135256
Optical isolator (U2)	LITE-ON TECHNOLOGY CORP	LTV-817	dti = 0.5 mm, int. dcr.>6.0 mm, ext. dcr.>7.8 mm, 110°C	IEC/EN 60747-5-5	VDE 40015248
(Alternative)	BRIGHT LED ELECTRONICS CORP	BPC-817S	External Cr: 7.8mm, Internal Cr: >6.0mm, Dti.=0.5mm, 100°C	IEC/EN 60747-5-5	VDE 40007240
(Alternative)	Everlight Electronics Co., Ltd.	EL817	External Cr: 7.7mm, Internal Cr: 6.0mm, Dti.=0.5mm, 100°C	IEC/EN 60747-5-5	VDE 132249
Line Choke (LF1)	HUIZHOU SUNSHINE Electronics Co.,LTD	TC1407-20mH/N916	130°C	IEC 62368-1	Test with appliance
(Alternative)	Shenzhen haixinxing Electronics Co,Ltd	T14	130°C	IEC 62368-1	Test with appliance
- Magnet wire	Interchangeable	Interchangeable	130°C	UL 1446	UL
Ripple Capacitor CE1	Interchangeable	Interchangeable	Max 68uF, min. 400V, 105°C	--	--
Bridge Diode BD1	Interchangeable	Interchangeable	Min. 2A, min. 600V	--	--
Mosfet (Q1)	Interchangeable	Interchangeable	Min. 2A, min. 400V	--	--
Bleeder resistor (R1, R2, R3, R4)	Interchangeable	Interchangeable	2.74Mohm, 1/4W Minimum	--	--
Transformer (T1)	HUIZHOU SUNSHINE Electronics Co., LTD	36-TRF367-SX0-E, 36-TRF418-SX0-E	Class A Reinforced insulation.	IEC 62368-1	Test with appliance

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- Bobbin	Chang Chun Plastics Co., Ltd.	T375HF	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E59481
(Alternative)	Sumitomo Bakelite	PM-9820	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E41429
(Alternative)	Chang Chun Plastics Co., Ltd.	T200HF	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E59481
- Magnet wire	Interchangeable	Interchangeable	130°C	UL 1446	UL
-Triple insulation wire	TA YA ELECTRIC WIRE & CABLE CO LTD	TILW-B	130°C	IEC/EN 62368-1	VDE 40019957
- Insulation tape	Jingjiang Yahua Pressure Sensitive Glue Co Ltd	CT* (c)(g)	130°C	UL 510	UL E165111
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFT	Min. 300V, 200°C	UL 224	UL E156256
(Alternative)	SHENZHEN CHANGYUAN ELECTRONIC MATERIAL CO.,LTD	CB-TT	Min. 300V, 200°C	UL 224	UL E180908
- Varnish	HITACHI CHEMICAL CO LTD	WP-2952F-2G	130°C	UL1 446	UL E72979
The following parts for Subwoofer:					
Wood Enclosure	Interchangeable	Interchangeable	Min. thickness: 6.0mm	--	--
Metal enclosure	Interchangeable	Interchangeable	Metallic. Minimum 1.0 mm thick	--	--
Power plug (EU type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-01	250 Vac, 2.5 A	DIN VDE0620	VDE 40026576
(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-01	250 Vac, 2.5 A	DIN VDE0620	VDE 40009009
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5 A	DIN VDE0620	VDE

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Power plug (CN type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-05	250 Vac, 6A	GB15934-2008	20100101 01425445
(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-07	250 Vac, 6A	GB15934-2008	200701010125 1883
(alternative)	Interchangeable	Interchangeable	250 Vac, 6A	GB15934-2008	CCC
Power plug (US type)	UNIRISE ELECTRIC WIRE & CABLE CO., LTD.	UE-221	125 Vac, 10A	UL817	E206144
(alternative)	TAIWAN LINE TEK ELECTRONICS CO LTD	LP-5	125 Vac, 10A	UL817	E70782
(alternative)	Interchangeable	Interchangeable	125 Vac, min.7A	UL817	UL
Power plug (UK type)	TAIWAN LINE TEK ELECTRONICS CO LTD	LP-61L	250 Vac, 3A	BS1363-1:2016+A1:2018	BSI KM 55112
(alternative)	Interchangeable	Interchangeable	250 Vac, 3A	BS1363-1:2016+A1:2018	BSI
Power plug (AU type)	Shenzhen Deren Electronic Co.,Ltd.	DR-209	7.5A,250Vac 10A,250Vac	AS/NZS3112: 2011	Q03980\ES01 30303
(alternative)	Taiwan Line Tek in China Everfull Electronic Co.,Ltd	LP-15A	7.5A,250Vac 10A,250Vac	AS/NZS3112: 2011	TE4943-A6
(alternative)	longwell company	LP-15A	7.5A,250Vac 10A,250Vac	AS/NZS3112: 2011	18246/12555
(alternative)	Shenzhen Xie Kang Electric Co.,Ltd.	XK-15	10A,250Vac	AS/NZS3112: 2011	NSW21010
(alternative)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-02	10A,250Vac	AS/NZS3112: 2011	TCA090902\NSW25507
(alternative)	Interchangeable	Interchangeable	Min.7A,250Vac	AS/NZS3112: 2011	AU cert.marks

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Power cord (EU type)	BAOHING Wire and cable manufacturing co.LTD.	H03VVH2-F	2 x 0.75 mm^2	DIN EN 50525-2-11	VDE 103727
Alternative	SHENZHEN XIEKANG ELECTRIC CO.,LTD	H03VVH2-F	2 x 0.75 mm^2	DIN EN 50525-2-11	VDE 40029225
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2	EN 50525-2-11	VDE
Power cord (CN type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	60227 IEC 52(RVV)	2 x 0.5~0.75 mm^2 (2 x 0.5 mm^2 maximum length 2m)	GB/T 5023.5-2008	2002 0101 0502 5222.
(alternative)	SHENZHEN XIE JIN ELECTRONIC CO.,LTD	IEC52 300/300V	2 x 0.75 mm^2	GB/T5023.5-2008/IEC60227-5:2003	200701010524 2025
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2	GB/T 5023.5-2008	CCC
Power Cord (US type）	UNIRISE ELECTRIC WIRE & CABLE CO., LTD.	NISPT-2	2×18AWG	UL62	E176096
(alternative)	TAIWAN LINE TEK ELECTRONICS CO LTD	NISPT-2	2×18AWG	UL62	E138949
(alternative)	Interchangeable	Interchangeable	2×18AWG	UL62	UL
Power Cord (UK type)	TAIWAN LINE TEK ELECTRONICS CO LTD	H03VVH2-F, H05VVH2-F	2 x 0.75 mm^2	EN 50525-2-11	VDE 96233
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2	EN 50525-2-11	VDE
Power Cord (AU type)	Shenzhen Bao Hing Electric Wire&Cable MFR Co Ltd	LTSA-2F	2 x 0.75 mm^2	AS/NZS 60227.5+A1	NSW14586
(alternative)	Shenzhen Tongyuan Industrial.Co.,Ltd.	H03VV-F	2 x 0.75 mm^2	AS/NZS 60227.5+A1	NSW24638

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(alternative)	Taiwan Line Tek in China Everfull Electronic Co.,Ltd	H03VVH2-F, H05VVH2-F	2 x 0.5-0.75 mm^2, 2 x 0.75 mm^2 (2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	TE4274-A10
(alternative)	longwell company	LFC-2F	2 x 0.75 mm^2	AS/NZS 60227.5+A1	23773
(alternative)	longwell company	H03VVH2-F	2 x 0.5 mm^2 maximum length 2m	AS/NZS 60227.5+A1	18246
(alternative)	MAINLAND Electric Wire and Cable Co. Ltd.	H03VVH2-F	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	NSW20609
(alternative)	Shenzhen Xie Kang Electric Co.,Ltd.	H03VVH2-F	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	A/12555EA
(alternative)	Huizhou Yongda Telecommunication Industry Co., Ltd.	H03VVH2-F2, H03VV-F2	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	NSW25012
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	AU cert.marks
Appliance connector (EU type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-06	AC 250V, 2.5A	EN 60320-1	2163318.01
(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-05	AC 250V, 2.5A	DIN EN 60320-1	VDE 40018650
(alternative)	Interchangeable	Interchangeable	AC 250V, 2.5A	IEC/EN 60320-1	VDE
Appliance connector (CN type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-06	250 Vac, 2.5A	GB15934-2008	20100101 01425445

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Clause	Requirement + Test	Result - Remark	Verdict

(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-05	250 Vac, 2.5A	GB15934-2008	200701010125 1883
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5A	GB15934-2008	CCC
Appliance connector (US type)	UNIRISE ELECTRIC WIRE & CABLE CO., LTD.	UE-224	AC 125V, 7A	UL 60320-1	E206144
(alternative)	TAIWAN LINE TEK ELECTRONICS CO LTD	LS-7H	125 Vac, 7A	UL 60320-1	E70782
(alternative)	Interchangeable	Interchangeable	125 Vac, Min. 7A	UL 60320-1	UL
Appliance connector (UK type)	TAIWAN LINE TEK ELECTRONICS CO LTD	LS-7H	250 Vac, 2.5A	EN 60320	BSI KM 55652
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5A	IEC/EN 60320-1	BSI
Appliance connector (AU type)	Shenzhen Deren Electronic Co.,Ltd.	DR-294	250 Vac, 2.5A	AS/NZS60320	Q03979\ES01 30314
(alternative)	Taiwan Line Tek in China Everfull Electronic Co.,Ltd	LS-7H	250 Vac, 2.5A	AS/NZS60320	TPE 20090-A3
(alternative)	LONGWELL COMPANY	LS-17	250 Vac, 2.5A	AS/NZS60320	NSW 24139
(alternative)	LONGWELL COMPANY	LS-7	250 Vac, 2.5A	AS/NZS60320	N10397
(alternative)	Shenzhen Xie Kang Electric Co.,Ltd.	XK-05	250 Vac, 2.5A	AS/NZS60320	NSW22062
(alternative)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-06	250 Vac, 2.5A	AS/NZS60320	NSW25013
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5A	AS/NZS60320	AU cert.marks
AC inlet	ZHEJIANG LECI ELECTRONICS CO LTD	DB-8	250VAC, 2.5A.	IEC/EN 60320-1	VDE 40032028

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Clause	Requirement + Test	Result - Remark	Verdict

(Alternative)	ZheJiang Bei Er Jia ELECTRONIC CO. LTD.	ST-A03-005	250VAC, 2.5A	IEC/EN 60320-1	VDE 40014833
AC connector CN1	TORAY INDUSTRIES INC	CM3014V0(rf)	V-0, minimum 65 degree C.	UL 94	UL E41797
(Alternative)	ZHONGSHAN ROILON ENGINEERING PLASTICS CO LTD	FR3A	V-0, minimum 65 degree C.	UL 94	UL E357946
Primary input wire	Interchangeable	Interchangeable	600V 105 degree C, 20AWG, VW-1	UL 758	UL
HEAT SHRINKABLE TUBE	Interchangeable	Interchangeable	600V,125 degree C	--	UL
PCB	Interchangeable	Interchangeable	V-0, 130°C	UL 94, UL 796	UL
Secondary wire	Interchangeable	Interchangeable	Min. VW-1 or FT1, min. 80 degree C, min. 300V, min. 20AWG	UL 758	UL
Current fuse (F1)	SHENZHEN LANSON ELECTRONICS CO., LTD	SMT	T3.15A, 250Vac	IEC/EN 60127-1	VDE 40012592
(Alternative)	HOLLYLAND CO LTD	5ET	T3.15A, 250Vac	IEC/EN 60127-1	VDE 40015669
Varistor (RV1) (Optional)	THINKING ELECTRONIC INDUSTRIAL CO LTD	TVR14561 TVR14561K	minimum 350 V, 85 degree C, V-0	IEC/EN 61051-1, IEC/EN 61051-2	VDE 005944
(Alternative)	CENTRA SCIENCE CORP	CNR-14D561K	minimum 350 V, 105 degree C, V-0	IEC/EN 61051-1, IEC/EN 61051-2	VDE 40008220
(Alternative)	BRIGHTKING (SHENZHEN) CO LTD	561KD14	minimum 350 V, 105 degree C, V-0	IEC/EN 61051-1, IEC/EN 61051-2	VDE 40027827
X-Capacitor (CX1)	Shenzhen Jinghao Capacitor Co., Ltd	CBB62B	Rated maximum 0.33 uF±10%, minimum 250 V, 110degree C. Marked with an X2.	IEC/EN 60384-14	VDE 40018690
(Alternative)	XIAMEN FARATRONIC CO LTD	MKP62	Rated maximum 0.33 uF±10%, minimum 250 V, 100degree C. Marked with an X2.	IEC/EN 60384-14	VDE 40000358

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Clause	Requirement + Test	Result - Remark	Verdict

(Alternative)	Europtronic (SuZhou) Co. Ltd.	MPX	Rated maximum 0.33 uF±10%, minimum 250 V, 110degree C. Marked with an X2.	IEC/EN 60384-14	VDE 40018238
Y -Capacitor (CY1)	SHANTOU HIGH-NEW ZONE SONGTIAN ENTERPRISE CO., LTD	CD	Rated maximum 1000pF, minimum 250 V, minimum 125 degree C. Marked with an Y1.	IEC/EN 60384-14	VDE 40025754
(Alternative)	TDK CORPORATION	CD	Rated maximum 1000pF, minimum 250 V, minimum 125 degree C. Marked with an Y1.	IEC/EN 60384-14	VDE 40029780
(Alternative)	Yinan Don's Electronic Component Co., Ltd.	CT81	Rated maximum 1000pF, minimum 250 V, minimum 125 degree C. Marked with an Y1.	IEC/EN 60384-14	VDE 135256
Optical isolator (U2)	LITE-ON TECHNOLOGY CORP	LTV-817	dti = 0.5 mm, int. dcr.>6.0 mm, ext. dcr.>7.8 mm, 110°C	IEC/EN 60747-5-5	VDE 40015248
(Alternative)	BRIGHT LED ELECTRONICS CORP	BPC-817S	External Cr: 7.8mm, Internal Cr: >6.0mm, Dti.=0.5mm, 100°C	IEC/EN 60747-5-5	VDE 40007240
(Alternative)	Everlight Electronics Co., Ltd.	EL817	External Cr: 7.7mm, Internal Cr: 6.0mm, Dti.=0.5mm, 100°C	IEC/EN 60747-5-5	VDE 132249
Line Choke (LF3, LF1)	HUIZHOU SUNSHINE Electronics Co.,LTD	TC1407-20mH/N916	130°C	IEC 62368-1	Test with appliance
(Alternative)	SHENZHEN HAIXINXING TECHNOLOGY CO.,LTD	T14	130°C	IEC 62368-1	Test with appliance
Ripple Capacitor CE1	Interchangeable	Interchangeable	Max 68uF, min. 400V, 105°C	--	--
Bridge Diode BD1	Interchangeable	Interchangeable	Min. 2A, min. 600V	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

Mosfet (Q1)	Interchangeable	Interchangeable	Min. 2A, min. 400V	--	--
Bleeder resistor (R1, R2, R3, R4)	Interchangeable	Interchangeable	2.74Mohm, 1/4W Minimum	--	--
Transformer (T1)	HUIZHOU SUNSHINE Electronics Co., LTD	36-TRF383-SX0-E	Class A Reinforced insulation.	IEC 62368-1	Test with appliance
- Bobbin	Chang Chun Plastics Co., Ltd.	T375HF	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E59481
(Alternative)	Sumitomo Bakelite	PM-9820	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E41429
(Alternative)	Chang Chun Plastics Co., Ltd.	T200HF	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E59481
- Magnet wire	Interchangeable	Interchangeable	130°C	UL 1446	UL
-Triple insulation wire	TA YA ELECTRIC WIRE & CABLE CO LTD	TILW-B	130°C	IEC/EN 62368-1	VDE 40019957
(Alternative)	E&B TECHNOLOGY CO.,LTD	E&B-XXXB	130°C	IEC/EN 62368-1	VDE 40023473
- Insulation tape	Jingjiang Yahua Pressure Sensitive Glue Co Ltd	CT* (c)(g)	130°C	UL 510	UL E165111
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFT	Min. 300V, 200°C	UL 224	UL E156256
(Alternative)	SHENZHEN CHANGYUAN ELECTRONIC MATERIAL CO.,LTD	CB-TT-T	Min. 300V, 200°C	UL 224	UL E180908
(Alternative)	SHENZHEN WORE HEAT-SHRINKABLE MATERIAL CO.,LTD	WF	Min. 600V, 200°C	UL 224	UL E203950
- Varnish	HITACHI CHEMICAL CO LTD	WP-2952F-2G	130°C	UL1 446	UL E72979

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

Transformer (T1) (Alternative)	SHENZHEN HAIXINXING TECHNOLOGY	36-TRF383-XX0-A	Class A Reinforced insulation.	IEC 62368-1	Test with appliance
- Bobbin	Chang Chun Plastics Co., Ltd.	T375HF	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E59481
(Alternative)	Sumitomo Bakelite	PM-9820	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E41429
(Alternative)	Chang Chun Plastics Co., Ltd.	T200HF	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E59481
- Magnet wire	Interchangeable	Interchangeable	130°C	UL 1446	UL
-Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO.,LTD	TIW-B	130°C	IEC/EN 62368-1	VDE 40033527
(Alternative)	SHANGHAI XIANGXIANG ELECTRON CO LTD	TKW-B	130°C	IEC/EN 62368-1	VDE 40026588
(Alternative)	SHENZHEN KAIZHONG HEDONG NEW MATERIAL CO LTD	TIW-B	130°C	IEC/EN 62368-1	VDE 40038861
- Insulation tape	Jingjiang Yahua Pressure Sensitive Glue Co Ltd	CT* (c)(g)	130°C	UL 510	UL E165111
- Tube	DONGGUAN LING FREE HARDWARE PLASTICS PRODUCT CO LTD	LING FREE PTFE TUBE	Min. 300V, 200°C	UL 224	UL E352366
- Varnish	YUEYANG GREEN TECHNOLOGY CO LTD	JX-1150	130°C	UL1 446	UL E303754

Supplementary information:

1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.

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

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**		¾
Part	**Material**	**Oven Temperature (°C)**	**Comments**

4.8.4.3	**TABLE: Battery replacement test**	¾
Battery part no. ..... :		—
Battery Installation/withdrawal	Battery Installation/Removal Cycle	Comments
	1	
	2	
	3	
	4	
	5	
	6	
	8	
	9	
	10	

4.8.4.4	**TABLE: Drop test**		¾
Impact Area	Drop Distance	Drop No.	Observations
		1	
		2	
		3	

4.8.4.5	**TABLE: Impact**		¾
Impacts per surface	**Surface tested**	**Impact energy (Nm)**	**Comments**

4.8.4.6	**TABLE: Crush test**		¾
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)**

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

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	
Test condition: AUX mode (For subwoofer)							
1	264Va.c. 60Hz	Speaker output to "-"	Normal	3.21Vrms	--	--	ES1
			Abnormal (Max. non-clipped output)	9.08Vrms max. (Unit normal operation)	--	--	ES1
			Abnormal (Speaker SC)	0V (Unit shutdown)	--	--	ES1
			Abnormal (Transformer overload)	3.21Vrms max. (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1-2 SC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 3 -4 SC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1 OC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 4 OC)	0 (Unit shutdown)	--	--	ES1
			Single fault (D5 SC)	0 (Unit shutdown)	--	--	ES1
			Single fault (R22 SC)	0 (Unit shutdown)	--	--	ES1
2	264Va.c. 60Hz	Speaker output "+" / "-" to earth	Normal	--	0.179mApk	60	ES1
			Abnormal (Max. non-clipped output)	--	0.179mApk (Unit normal operation)	60	ES1
			Abnormal (Speaker SC)	--	0.179mApk (Unit shutdown)	60	ES1
			Abnormal (Transformer overload)	--	0.179mApk (Unit shutdown)	60	ES1

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

			Single fault (U2 pin 1-2 SC)	--	0.179mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 3 -4 SC)	--	0.179mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 1 OC)	--	0.179mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 4 OC)	--	0.179mApk (Unit shutdown)	60	ES1
			Single fault (D5 SC)	--	0.179mApk (Unit shutdown)	60	ES1
			Single fault (R22 SC)	--	0.179mApk (Unit shutdown)	60	ES1
Test condition: AUX mode (For sound bar)							
1	264Va.c. 60Hz	Power board output “+” to “-”	Normal	15.20Vdc max.	--	--	ES1
			Abnormal (Max. non-clipped output)	15.20Vdc max. (Unit normal operation)	--	--	ES1
			Abnormal (Ventilation blocked)	15.20Vdc max. (Unit normal operation)	--	--	ES1
			Abnormal (Speaker SC)	15.20Vdc max. (Unit normal operation)	--	--	ES1
			Abnormal (Transformer overload)	0V (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1-2 SC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 3 -4 SC)	0V (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1 OC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 4 OC)	0V (Unit shutdown)	--	--	ES1
			Single fault (R22 SC)	0V (Unit shutdown)	--	--	ES1
2	264Va.c. 60Hz	Power board output “+” / “-” to earth	Normal	--	0.223mApk	60	ES1
			Abnormal (Max. non-clipped output)	--	0.223mApk (Unit normal operation)	60	ES1

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

			Abnormal (Ventilation blocked)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Speaker SC)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Transformer overload)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 1-2 SC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 3 -4 SC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 1 OC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 4 OC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (R22 SC)	--	0.223mApk (Unit shutdown)	60	ES1
3	264Va.c. 60Hz	Speak output “+” to “-”	Normal	2.73Vrms	--	--	ES1
			Abnormal (Max. non-clipped output)	7.72Vrms max. (Unit normal operation)	--	--	ES1
			Abnormal (Ventilation blocked)	2.73Vrms max. (Unit shutdown)	--	--	ES1
			Abnormal (Speaker SC)	0V (Unit shutdown)	--	--	ES1
			Abnormal (Transformer overload)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1-2 SC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 3 -4 SC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1 OC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 4 OC)	0 (Unit shutdown)	--	--	ES1

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

			Single fault (R22 SC)	0 (Unit shutdown)	--	--	ES1
4	264Va.c. 60Hz	Speak output “+” / “-” to earth	Normal	--	0.223mApk	60	ES1
			Abnormal (Max. non-clipped output)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Ventilation blocked)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Speaker SC)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Transformer overload)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 1-2 SC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 3 -4 SC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 1 OC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 4 OC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (R22 SC)	--	0.223mApk (Unit shutdown)	60	ES1
5	264Va.c. 60Hz	USB output “+” to “-”	Normal	5.05Vdc max.	--	--	ES1
			Abnormal (Max. non-clipped output)	5.05Vdc max. (Unit normal operation)	--	--	ES1
			Abnormal (Ventilation blocked)	5.05Vdc max. (Unit normal operation)	--	--	ES1
			Abnormal (Speaker SC)	5.05Vdc max. (Unit normal operation)	--	--	ES1
			Abnormal (Transformer overload)	0V (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1-2 SC)	0 (Unit shutdown)	--	--	ES1

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

			Single fault (U2 pin 3 -4 SC)	0V (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1 OC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 4 OC)	0V (Unit shutdown)	--	--	ES1
			Single fault (R22 SC)	0V (Unit shutdown)	--	--	ES1
6	264Va.c. 60Hz	USB output "+" / "-" to earth	Normal	--	0.223mApk	60	ES1
			Abnormal (Max. non-clipped output)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Ventilation blocked)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Speaker SC)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Transformer overload)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 1-2 SC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 3 -4 SC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 1 OC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 4 OC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (R22 SC)	--	0.223mApk (Unit shutdown)	60	ES1
Note: Input voltage: 264Vac, 60Hz.							

5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
For subwoofer:						
1	264Va.c, 60Hz	L&N pin	normal	363	374	ES3
			Abnormal	--	--	--
			Single fault: OC	--	--	--

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

Overall capacity: CX1=0.33μF±10%.

Limit: ES1=60V; ES2=120V.

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:				

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) .....:	90V/ 50Hz	264V/ 50Hz	--	--	¾
	Ambient T_{min} (°C) .....:	--	--	--	--	¾
	Ambient T_{max} (°C) .....:	--	--	--	--	¾
	Tma (°C) .....:	--	--	--	--	¾
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
Test condition: AUX mode, the following thermocouple locations for subwoofer						
AC inlet		47.4	47.7	--	--	70
Input wire		50.5	50.9	--	--	80
AC connector CN1		51.5	52.2	--	--	85
Varistor RV1		53.2	53.6	--	--	85
X- capacitor CX1		55.8	54.2	--	--	100
Line chock of LF3 winding		54.8	55.8	--	--	130
PCB under BD1		57.5	58.4	--	--	130
E-capacitor CE1		56.7	57.1	--	--	105
PCB under Q1		58.5	59.4	--	--	130
T1 winding		61.0	62.6	--	--	110

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Clause	Requirement + Test	Result - Remark	Verdict

T1 core	59.0	60.4	--	--	110
Opto-coupler U2	57.7	59.1	--	--	100
Y-capacitor CY1	59.5	60.4	--	--	125
PCB under D5	56.7	57.9	--	--	130
E-capacitor CE4	56.5	57.9	--	--	105
Line chock of LF2 winding	61.8	63.7	--	--	130
PCB under M1	59.4	59.4	--	--	130
PCB under U6	74.9	75.2	--	--	130
Internal wire	52.3	51.8	--	--	80
Ambient	45.0	45.0	--	--	--
Accessible parts:	--	--	--	--	--
Metal outside enclosure	30.0	30.2	--	--	60*
Wooden enclosure	28.3	28.4	--	--	107*
Ambient	25.0	25.0	--	--	--
Test condition: AUX mode, the following thermocouple locations for soundbar					
AC inlet	49.6	49.5	--	--	70
Input wire	50.5	50.4	--	--	80
AC connector CN1	53.1	53.0	--	--	85
Varistor RV1	56.0	56.3	--	--	85
X- capacitor CX1	58.8	59.0	--	--	100
Line chock of LF1 winding	64.1	63.3	--	--	130
PCB under BD1	70.4	67.6	--	--	130
E-capacitor CE1	65.2	64.4	--	--	105
PCB under Q1	69.4	70.7	--	--	130
Y-capacitor CY1	67.9	69.4	--	--	125
T1 winding	71.6	73.4	--	--	110
T1 core	70.6	72.4	--	--	110
Opto-coupler U2	64.4	65.0	--	--	100
PCB under D5	81.7	82.9	--	--	130
E-capacitor CE4	67.4	67.9	--	--	105
Line chock of LF2 winding	65.8	66.3	--	--	130
E-capacitor CE13	56.9	56.8	--	--	105
Internal wire	64.4	64.6	--	--	80
PCB under U14	84.2	84.3	--	--	130
PCB under M1	69.9	70.2	--	--	130
Heat sink on the main board	68.1	68.0	--	--	130

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Plastic enclosure inside near T1	52.2	51.9	--	--	68 (see table 5.4.1.10.2)
Ambient	45.0	45.0	--	--	--
Accessible parts:	--	--	--	--	--
Plastic enclosure outside near T1	34.8	34.9	--	--	77*
Ambient	25.0	25.0	--	--	--

Supplementary information: * Temperature limit for TS1 of accessible enclosure according to Table 38.

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.

Note 3. Temperature limits are calculated as follows:

Winding components providing safety isolation:

Class B **à** Tmax = 120 – 10 = 110°C.

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

5.4.1.10.2	**TABLE: Vicat softening temperature of thermoplastics**		**N/A**
Penetration (mm)			¾
Object/ Part No./Material	Manufacturer/trademark	T softening (°C)	
--	--	--	
supplementary information: --			

5.4.1.10.3	**TABLE: Ball pressure test of thermoplastics**		**P**
Allowed impression diameter (mm) ..... :		£ 2 mm	¾
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)
Plastic enclosure	KINGFA SCI & TECH CO LTD/ FRHIPS-960	68	1.0
Plastic enclosure	KINGFA SCI & TECH CO LTD/ FRHIPS-980(o)	68	1.1
Plastic enclosure	CHI MEI CORPORATION/ PA-765A(+)	68	1.2
Plastic enclosure	LG CHEMICAL LTD/ AF312C	68	1.0
Plastic enclosure	KINGFA SCI & TECH CO LTD/ HF-606	68	0.9
AC connector CN1	TORAY INDUSTRIES INC/ CM3014V0(rf)	125	1.2
AC connector CN1	ZHONGSHAN ROILON ENGINEERING PLASTICS CO LTD/ FR3A	125	1.3
AC connector CN1	NILIT (SUZHOU) ENGINEERING PLASTIC TECHNOLOGIES CO LTD/ A63RV0(a)(b)	125	1.2

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Supplementary information:

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)	Required cl (mm)	cl (mm) [2]	Required [3] cr (mm)	cr (mm)
For soundbar:							
L-N on PCB before F1 (F)*	420	250	0.06	1.9	3.2	2.5	3.2
Different polarity of F1 (F)*	420	250	0.06	1.9	3.5	2.5	3.5
Live part to metal enclosure (R)*	420	250	0.06	3.8	7.0	5.0	7.0
Primary trace to secondary trace under PCB (CY1) (R)*	420	250	0.06	3.8	7.5	5.0	10.0
Primary trace to secondary trace of PCB under (U2) (R)*	420	250	0.06	3.8	6.6	5.0	6.6
Primary trace to secondary trace of PCB under (T1) (R)*	484	270	61.6	3.8	10.0	5.4	10.0
T1 primary winding to secondary pins (R)*	484	270	61.6	3.8	10.0	5.4	10.0
T1 core to secondary pins (R)*	484	270	61.6	3.8	10.0	5.4	10.0
For subwoofer:							
L-N on PCB before F1 (F)*	420	250	0.06	1.9	3.2	2.5	3.2
Different polarity of F1 (F)*	420	250	0.06	1.9	3.5	2.5	3.5
Live part to metal enclosure (R)*	420	250	0.06	3.8	10.0	5.0	10.0
Primary trace to secondary trace under PCB (CY1) (R)*	420	250	0.06	3.8	7.5	5.0	10.0
Primary trace to secondary trace of PCB under (U2) (R)*	420	250	0.06	3.8	6.6	5.0	6.6
Primary trace to secondary trace of PCB under (T1) (R)*	446	268	58.7	3.8	10.0	5.4	10.0
T1 primary winding to secondary pins (R)*	446	268	58.7	3.8	10.0	5.4	10.0
T1 core to secondary pins (R)*	446	268	58.7	3.8	10.0	5.4	10.0

Supplementary information:

1. * F= Functional insulation; B=Basic insulation; S = Supplementary insulation; R=Reinforce insulation.
2. Core of transformer is considered as primary part (For subwoofer and sound bar).
3. The maximum operating altitude of 5000m. Clearance values have been evaluated for an operating altitude of max. 5000 meters, based on Table 17 altitude adjustment factor 1.48.
4. Unless otherwise specified, the worst case conditions of Cl. & Cr. in above mentioned locations have been considered and listed.
5. Material group: IIIb.

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage	P
	Overvoltage Category (OV):	II

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	Pollution Degree:		2
Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)
See table 5.4.2.2, 5.4.2.4 and 5.4.3 above.	2500V	2.3 for FI 4.5 for RI	See table 5.4.2.2, 5.4.2.4 and 5.4.3 above.
Supplementary information: The equipment is operated up to 5000 m above sea level as declared by manufacturer. Clearance values have been evaluated for an operating altitude of max. 5000 meters, based on Table 17 altitude adjustment factor 1.48. FI= Functional insulation; RI=Reinforce insulation.			

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: Using procedure 2 clause 5.4.2.3 to determine the clearance.			

5.4.4.2, 5.4.4.5 c) 5.4.4.9	**TABLE: Distance through insulation measurements**				**P**
Distance through insulation di at/of:	Peak voltage (V)	Frequency (Hz)	Material	Required DTI (mm)	DTI (mm)
Opto-coupler (U2)	420 (max. V)	0.06k (max. V)	1)	0.4	1)
Plastic enclosure	484 (max. V)	61.6k (max. V)	1)	0.4	1)
Supplementary information: 1). See appended table 4.1.2 for details.					

5.4.9	**TABLE: Electric strength tests**		**P**
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (Vpeak)	Breakdown Yes / No
For subwoofer:			
Basic/supplementary:			
Between mains poles (primary fuse disconnected)	DC	2500	No
Reinforced:			
Unit primary to accessible parts	DC	4000	No
Unit primary to plastic enclosure wrapped with metal foil	DC	4000	No
Primary to secondary of transformer	DC	4000	No
Core to secondary winding of transformer	DC	4000	No
Insulation tape used in and around transformer (one layer)	DC	4000	No

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Routine Tests:			
--	--	--	--
For soundbar:			
Basic/supplementary:			
Between mains poles (primary fuse disconnected)	DC	2500	No
Reinforced:			
Unit primary to accessible parts	DC	4000	No
Unit primary to wooden enclosure wrapped with metal foil	DC	4000	No
Unit primary to metal enclosure	DC	4000	No
Primary to secondary of transformer	DC	4000	No
Core to secondary winding of transformer	DC	4000	No
Insulation tape used in and around transformer (one layer)	DC	4000	No
Routine Tests:			
--	--	--	--

Supplementary information:
1) Core of transformer was considered as primary conductor.
2) Tests after humidity treatment, heating test, and for unit primary to secondary, primary to enclosure electric strength after each fault condition test.
3) Tests were performed on product with each source listed in table 4.1.2.
4) The DC voltage source was performed on all testing once in forward and once in reverse.

5.5.2.2	TABLE: Stored discharge on capacitors				P
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification
For subwoofer:					
264Vac, 60Hz	Phase to Neutral	N	--	12Vdc	ES1
264Vac, 60Hz	Phase to Neutral	S (R1 opened)	--	20Vdc	ES1
For subwoofer:					
264Vac, 60Hz	Phase to Neutral	N	--	12Vdc	ES1
264Vac, 60Hz	Phase to Neutral	S (R1 opened)	--	20Vdc	ES1

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Supplementary information:
The end system may be pluggable equipment type A. Limit of ES1 applied for mains terminal as accessible part.
X-capacitors installed for testing are: CX1 = 0.33μF (tolerance ±10%) (For subwoofer and soundbar);
☒ bleeding resistor rating: R1=R2=R3=R4=2.74MΩ (For subwoofer and soundbar).
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 (Bleeder Resistor open circuit)

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: --				

5.7.2.2, 5.7.4	**TABLE: Earthed accessible conductive part**	**N/A**
Supply voltage..... :	--	—
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)
	1 (e closed, 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)

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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
For sound bar:					
Power board output "+" to "-"	Normal operation	Power (W) :	--	91.0	PS2
		V_A (V) :	--	14.67	
		I_A (A) :	--	6.2	
Power board output "+" to "-"	Single fault (U2 pin 1-2 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Power board output "+" to "-"	Single fault (U2 pin 3-4 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Power board output "+" to "-"	Single fault (U2 pin 1 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Power board output "+" to "-"	Single fault (U2 pin 3 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Power board output "+" to "-"	Single fault (R22 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak output "+" to "-"	Normal operation	Power (W) :	--	24.0	PS2
		V_A (V) :	--	7.14	
		I_A (A) :	--	3.36	
Speak output "+" to "-"	Single fault (U2 pin 1-2 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak	Single fault	Power (W) :	0*	--	PS1

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output "+" to "-"	(U2 pin 3-4 SC)	V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak output "+" to "-"	Single fault (U2 pin 1 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak output "+" to "-"	Single fault (U2 pin 3 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak output "+" to "-"	Single fault (R22 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
USB output "+" to "-"	Normal operation	Power (W) :	12.5	--	PS1
		V_A (V) :	4.46	--	
		I_A (A) :	2.8	--	
USB output "+" to "-"	Single fault (U2 pin 1-2 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
USB output "+" to "-"	Single fault (U2 pin 3-4 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
USB output "+" to "-"	Single fault (U2 pin 1 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
USB output "+" to "-"	Single fault (U2 pin 3 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
USB output "+" to "-"	Single fault (R22 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
For subwoofer:					
Speak output "+" to "-"	Normal operation	Power (W) :	--	35.12	PS2
		V_A (V) :	--	8.96	
		I_A (A) :	--	3.92	
Speak output "+"	Single fault (U2 pin 1-2 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	

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Clause	Requirement + Test	Result - Remark	Verdict

to "-"		I_A (A) :	0*	--	
Speak output "+" to "-"	Single fault (U2 pin 3-4 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak output "+" to "-"	Single fault (U2 pin 1 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak output "+" to "-"	Single fault (U2 pin 3 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak output "+" to "-"	Single fault (R22 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Supplementary information: * Unit shutdown immediately, recoverable, no hazard.					

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)			P
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
All internal circuit except for secondary circuit after transformer rectified circuit (for subwoofer)	--	--	--	Yes (Declaration)
Supplementary information: 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. All conductors and devices are considered as PIS.				

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)

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Supplementary Information:
All primary and secondary circuit are considered as resistive PIS
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.
All conductors and devices are considered as PIS.

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
Test condition: AUX mode							
For soundbar:							
90V/50Hz	0.289	--	14.27	--	F1	0.289	Pink noise input 1/8 of max. non-clipped output power to speakers: 2.73V
90V/60Hz	0.283	--	14.22	--	F1	0.283	
100V/50Hz	0.256	--	14.23	40	F1	0.256	
100V/60Hz	0.253	--	14.17	40	F1	0.253	
240V/50Hz	0.147	--	14.36	40	F1	0.147	
240V/60Hz	0.127	--	14.16	40	F1	0.127	
264V/50Hz	0.140	--	14.36	--	F1	0.140	
264V/60Hz	0.119	--	14.22	--	F1	0.119	
For subwoofer:							
90V/50Hz	0.143	--	5.92	--	F1	0.143	Pink noise input 1/8 of max. non-clipped output power to speaker: 3.21V
90V/60Hz	0.132	--	5.85	--	F1	0.132	
100V/50Hz	0.135	--	5.74	40	F1	0.135	
100V/60Hz	0.121	--	5.63	40	F1	0.121	

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240V/50Hz	0.071	--	6.12	40	F1	0.071	
240V/60Hz	0.068	--	6.11	40	F1	0.068	
264V/50Hz	0.065	--	6.31	--	F1	0.065	
264V/60Hz	0.063	--	6.28	--	F1	0.063	
Test condition: BT mode							
For soundbar:							
90V/50Hz	0.282	--	13.34	--	F1	0.282	Pink noise input 1/8 of max. non-clipped output power to speakers: 2.73V
90V/60Hz	0.278	--	13.25	--	F1	0.278	
100V/50Hz	0.251	--	13.27	40	F1	0.251	
100V/60Hz	0.249	--	13.21	40	F1	0.249	
240V/50Hz	0.138	--	13.41	40	F1	0.138	
240V/60Hz	0.124	--	13.34	40	F1	0.124	
264V/50Hz	0.130	--	13.46	--	F1	0.130	
264V/60Hz	0.118	--	13.39	--	F1	0.118	
For subwoofer:							
90V/50Hz	0.115	--	5.78	--	F1	0.115	Pink noise input 1/8 of max. non-clipped output power to speakers: 3.21V
90V/60Hz	0.110	--	5.75	--	F1	0.110	
100V/50Hz	0.109	--	5.80	40	F1	0.109	
100V/60Hz	0.103	--	5.81	40	F1	0.103	
240V/50Hz	0.066	--	5.87	40	F1	0.066	
240V/60Hz	0.064	--	5.92	40	F1	0.064	
264V/50Hz	0.061	--	6.10	--	F1	0.061	
264V/60Hz	0.058	--	6.08	--	F1	0.058	

Supplementary information:

1) Equipment may be have rated current or rated power or both. Both should be measured.
2) The maximum measured current under rated voltage did not exceed 110% of the rated current.

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) ..... :							25°C, if not specified	¾
Power source for EUT: Manufacturer, model/type, output rating :							--	¾
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Test condition: AUX mode								
For subwoofer:								

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Clause	Requirement + Test					Result - Remark		Verdict
Speaker	S-C	264	30min	F1	0.012	--	--	Subwoofer shutdown immediately, recoverable, no hazards observed, all safeguards remained effective during and after abnormal condition. For speaker output, Touch voltage (+ to -): 0V ; Touch current (+/- to earth): 0.179mApeak.
Ventilation	Blocked	264	2h52 min	F1	0.065	See right	T1 winding: 63.7°C; Ambient: 45.0°C. Metal outside enclosure: 31.0°C; Wooden enclosure: 29.3°C; Ambient: 25.0°C.	Unit normal operation, no hazards observed, all safeguards remained effective during and after abnormal condition. For speaker output, Touch voltage (+ to -): 3.21Vrms max.; Touch current (+/- to earth): 0.179mApk.
Speaker	Max. non-clipped output	264	2h43 min	F1	0.266	See right	T1 winding: 76.9°C; Ambient: 45.0°C. Metal outside enclosure: 35.0°C; Wooden enclosure: 31.7°C; Ambient: 25.0°C.	Unit normal operation, no hazards observed, all safeguards remained effective during and after abnormal condition. For speaker output, Touch voltage (+ to -): 9.08Vrms max.; Touch current (+/- to earth): 0.179mApk.

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Clause	Requirement + Test				Result - Remark			Verdict
Transformer pin A-B (CE4)	O-L	264	10h46 min	F1	0.065 → 0.313 → 0.518 → 0.026	See right	T1 winding: 106.7°C; Ambient: 45.0°C. Metal outside enclosure: 37.6°C; Wooden enclosure: 35.4°C; Ambient: 25.0°C.	Transformer overload to 3.0A and shutdown at 3.1A, Recoverable when fault removed and no hazards observed, all safeguards remained effective during and after abnormal condition. For speaker output, Touch voltage (+ to -): 3.21Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
For sound bar:								
Speaker	S-C	264	2h44 min	F1	0.091	See right	T1 winding: 65.4°C; Ambient: 45.0°C. Plastic enclosure outside near T1: 30.7°C; Ambient: 25.0°C.	Unit normal operation, except no output of one speaker, no hazards observed, all safeguards remained effective during and after abnormal condition. For power board output, Touch voltage (+ to -): 15.20Vdc max.; Touch current (+/- to earth): 0.223mApk.

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

Ventilation	Blocked	264	1h46 min	F1	0.140	See right	T1 winding: 74.6°C; Ambient: 45.0°C. Plastic enclosure outside near T1: 32.8°C; Ambient: 25.0°C.	Unit normal operation, no hazards observed, all safeguards remained effective during and after abnormal condition. For power board output, Touch voltage (+ to -): 15.20Vdc max.; Touch current (+/- to earth): 0.223mApk.
Speaker	Max. non-clipped output	264	2h11 min	F1	0.263	See right	T1 winding: 99.6°C; Ambient: 45.0°C. Plastic enclosure outside near T1: 34.7°C; Ambient: 25.0°C.	Unit normal operation, no hazards observed, all safeguards remained effective during and after abnormal condition. For power board output, Touch voltage (+ to -): 15.20Vdc max.; Touch current (+/- to earth): 0.223mApk.
USB Output	S-C	264	30min	F1	0.029	--	--	Unit input power fall down immediately, recoverable, no hazards observed, all safeguards remained effective during and after abnormal condition. For power board output, Touch voltage (+ to -): 15.20Vdc max.; Touch current (+/- to earth): 0.223mApk.

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

USB output	O-L	264	8h56 min	F1	0.140 → 0.201 → 0.276 → 0.027	See right	T1 winding: 86.3°C; Ambient: 45.0°C. Plastic enclosure outside near T1: 35.3°C; Ambient: 25.0°C.	USB output overload to 0.9A and shutdown at 1.0A, Recoverable when fault removed and no hazards observed, all safeguards remained effective during and after abnormal condition. For power board output, Touch voltage (+ to -): 15.20Vdc max.; Touch current (+/- to earth): 0.223mApk.
Transformer pin A-B (CE4)	O-L	264	10h46 min	F1	0.140 → 0.271 → 0.398 → 0.456 → 0.027	See right	T1 winding: 119.5°C; Ambient: 45.0°C. Plastic enclosure outside near T1: 44.6°C; Ambient: 25.0°C.	Transformer overload to 2.5A and shutdown at 2.6A, Recoverable when fault removed and no hazards observed, all safeguards remained effective during and after abnormal condition. For power board output, Touch voltage (+ to -): 15.20Vdc max.; Touch current (+/- to earth): 0.223mApk.

Supplementary information:
Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4.

1) O-L: Overloaded. S-C: Short-circuit.
2) 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.
3) The test result showed no Class 1 or 2 energy source become Class 3 level during and after single fault condition.
4) The overloaded condition is applied according to annex G.5.3.3.

Winding Limit for Transformer: 175-10-(45-25)=145°C.

5) During and after abnormal operating condition test, the output voltage did not increase by more than 3V or 10% which one is higher of its rated output voltage under normal operating condition.

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Clause	Requirement + Test	Result - Remark	Verdict

B.4	TABLE: Fault condition tests		P
Ambient temperature (°C) ..... :		25°C, if not specified	¾
Power source for EUT: Manufacturer, model/type, output rating . :		--	¾

Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
For subwoofer:								
BD1	s-c	264	1s	F1	0	--	--	Fuse opened immediately, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.193mApeak.
CE1	s-c	264	1s	F1	0	--	--	Fuse opened immediately, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.193mApeak.
Q1 pin G-S	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.

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Clause	Requirement + Test	Result - Remark	Verdict

Q1 pin G-D	s-c	264	1s	F1	0	--	--	Fuse opened immediately, Q1 damaged, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.193mApeak.
Q1 pin D-S	s-c	264	1s	F1	0	--	--	Fuse opened immediately, Q1 damaged, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.193mApeak.
R22	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
T1 pin 1-2	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.

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Clause	Requirement + Test	Result - Remark	Verdict

T1 pin 4-5	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
T1 pin A-B	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
U1 pin 5-1	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
U1 pin 5-2	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.

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

U2 pin 1-2	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
U2 pin 3-4	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
U2 pin 1	o-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
U2 pin 3	o-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.

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

D5	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
CE4	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
For sound bar:								
BD1	s-c	264	1s	F1	0	--	--	Fuse opened immediately, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.259mApeak.
CE1	s-c	264	1s	F1	0	--	--	Fuse opened immediately, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.259mApeak.

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Clause	Requirement + Test	Result - Remark	Verdict

Q1 pin G-S	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
Q1 pin G-D	s-c	264	1s	F1	0	--	--	Fuse opened immediately, Q1 damaged, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.259mApeak.
Q1 pin D-S	s-c	264	1s	F1	0	--	--	Fuse opened immediately, Q1 damaged, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.259mApeak.
R22	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.

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

T1 pin 1-2	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
T1 pin 4-5	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
T1 pin A-B	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
U1 pin 5-1	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.

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

U1 pin 5-2	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
U2 pin 1-2	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
U2 pin 3-4	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
U2 pin 1	o-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.

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

U2 pin 3	o-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
D5	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
CE4	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.

Supplementary information:
Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4.

1) s-c: Short-circuited; o-c: Open-circuited.
2) 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.
3) The test result showed no Class 1 or 2 energy source become Class 3 level during and after single fault condition.
4) During the test an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A was provided in the primary circuit (to cover the UK deviation for direct plug-in equipment). The device did not trip during any test.
5) The same as result test conducted on all fuse sources, all fuse sources see table 4.1.2 for details.
7) During and after abnormal operating condition test, the output voltage did not increase by more than 3V or 10% which one is higher of its rated output voltage under normal operating condition.

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Clause	Requirement + Test	Result - Remark	Verdict

Annex M	**TABLE: Batteries**									**N/A**
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										
Max. current during fault condition										

Test results:		Verdict
- Chemical leaks		
- Explosion of the battery		
- Emission of flame or expulsion of molten metal		
- Electric strength tests of equipment after completion of tests		
Supplementary information:		

Annex M.4	**Table: Additional safeguards for equipment containing secondary lithium batteries**				**N/A**
Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	
	Normal				
	Abnormal				
	Single fault –SC/OC				
	Normal				
	Abnormal				
	Single fault – SC/OC				
Supplementary Information:					

Battery identification	Charging at Tlowest (°C)	Observation	Charging at Thighest (°C)	Observation
Supplementary Information:				

Annex Q.1	**TABLE: Circuits intended for interconnection with building wiring (LPS)**						P
Note: Measured UOC (V) with all load circuits disconnected:							
Output Circuit	Components	U_{oc} (V)	I_{sc} (A)		S (VA)		
			Meas.	Limit	Meas.	Limit	
For soundbar:							
USB output "+" to "-"	Normal operation	5.05	2.8	8	12.5	100	

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Clause	Requirement + Test	Result - Remark	Verdict

USB output “+” to “-”	Single fault (U2 pin 1-2 SC)	0	0&	8	0&	100
USB output “+” to “-”	Single fault (U2 pin 3-4 SC)	0	0&	8	0&	100
USB output “+” to “-”	Single fault (U2 pin 1 OC)	0	0&	8	0&	100
USB output “+” to “-”	Single fault (U2 pin 3 OC)	0	0&	8	0&	100
USB output “+” to “-”	Single fault (R22 SC)	0	0&	8	0&	100
Supplementary Information: SC=Short circuit. & Unit shutdown immediately, recoverable, no hazard exist.						

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Clause	Requirement + Test	Result - Remark	Verdict

T.2, T.3, T.4, T.5	TABLE: Steady force test	P

Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
For subwoofer:					
Enclosure Top (T.5)	Plastics*	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Enclosure Front (T.5)	Metal	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Enclosure Side (T.5)	Plastics*	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Enclosure Rear (T.5)	Plastics*	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Internal components / parts(T.2)	--	--	10	5	No reduction the clearances and creepage distances
For soundbar:					
Enclosure Top (T.5)	Plastics*	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test. No insulation breakdown.
Enclosure Front (T.5)	Plastics*	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test. No insulation breakdown.

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Clause	Requirement + Test	Result - Remark	Verdict

Enclosure Side (T.5)	Plastics*	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test. No insulation breakdown.
Enclosure Rear (T.5)	Plastics*	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test. No insulation breakdown.
Supplementary information: *Tests were performed on product with each source listed in table 4.1.2.					

T.6, T.9	**TABLE: Impact tests**			**P**
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation
For subwoofer:				
Enclosure Top (T.6)	Plastics*	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Enclosure Front (T.6)	Metal	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Enclosure Side (T.6)	Plastics*	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Enclosure Rear (T.6)	Plastics*	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
For soundbar:				
Enclosure Top (T.6)	Plastics*	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test.
Enclosure Front (T.6)	Plastics*	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test.
Enclosure Side (T.6)	Plastics*	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test.
Enclosure Rear (T.6)	Plastics*	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test.
Supplementary information: *Tests were performed on product with each source listed in table 4.1.2.				

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Clause	Requirement + Test	Result - Remark	Verdict

T.7	TABLE: Drop tests				N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Supplementary information:					

T.8	TABLE: Stress relief test				P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
For sound bar:					
Complete equipment	Plastics*	See table 4.1.2	70	7	Enclosure remained intact, no cracking/opening developed in the enclosure joint. Internal TS3 were not accessible after test
Supplementary information: *Test were performed on product with each source listed in table 4.1.2 s					

ATTACHMENT 2 Photo Documentation

Photo 1 Overall view

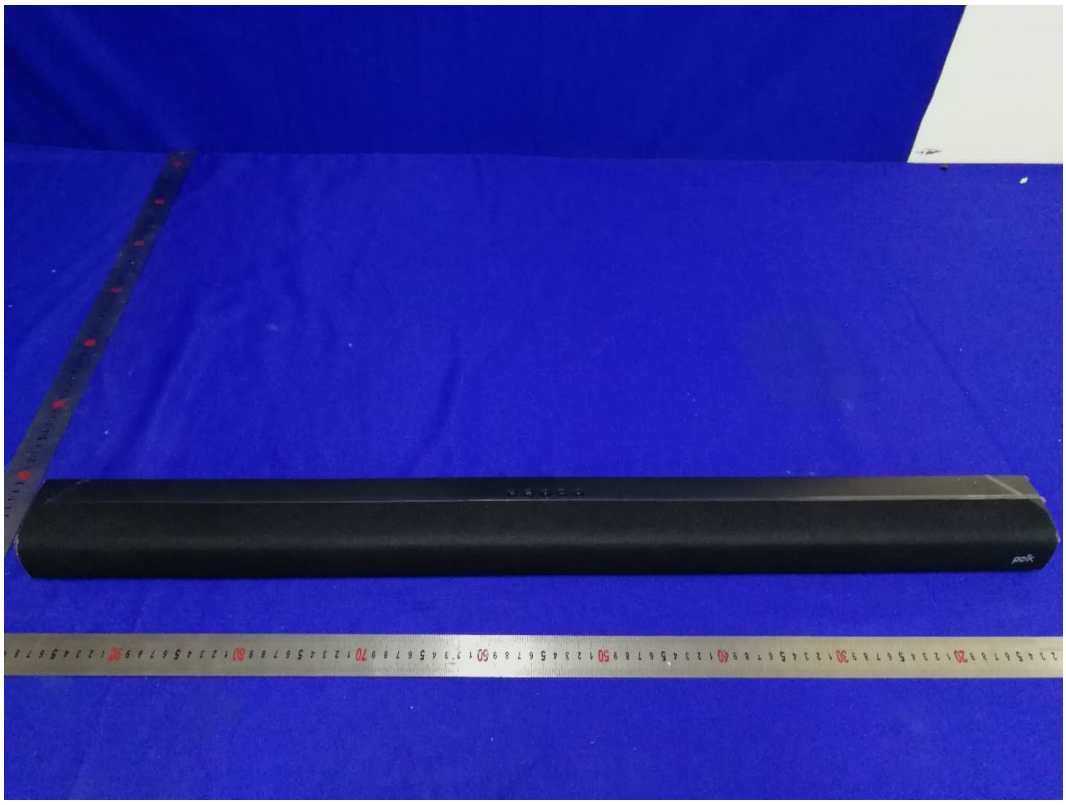

Photo 2 Sound bar Overall view

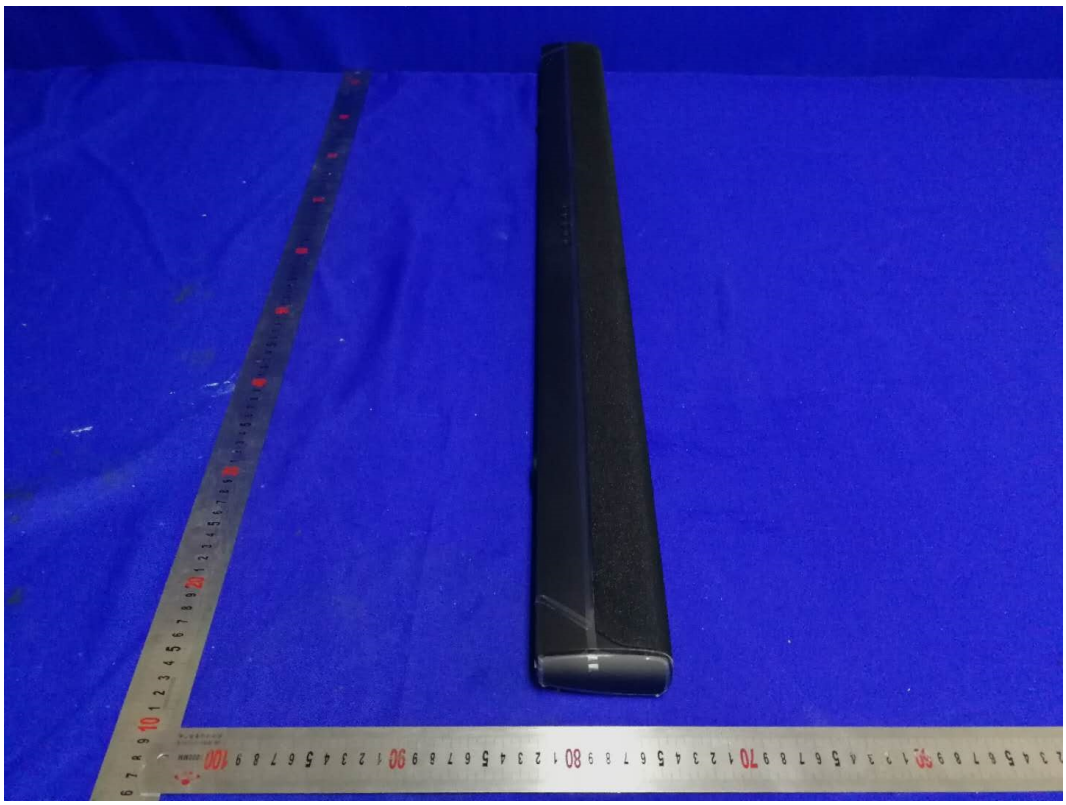

Photo 3 Sound bar Overall view

Photo 4 Sound bar Overall view

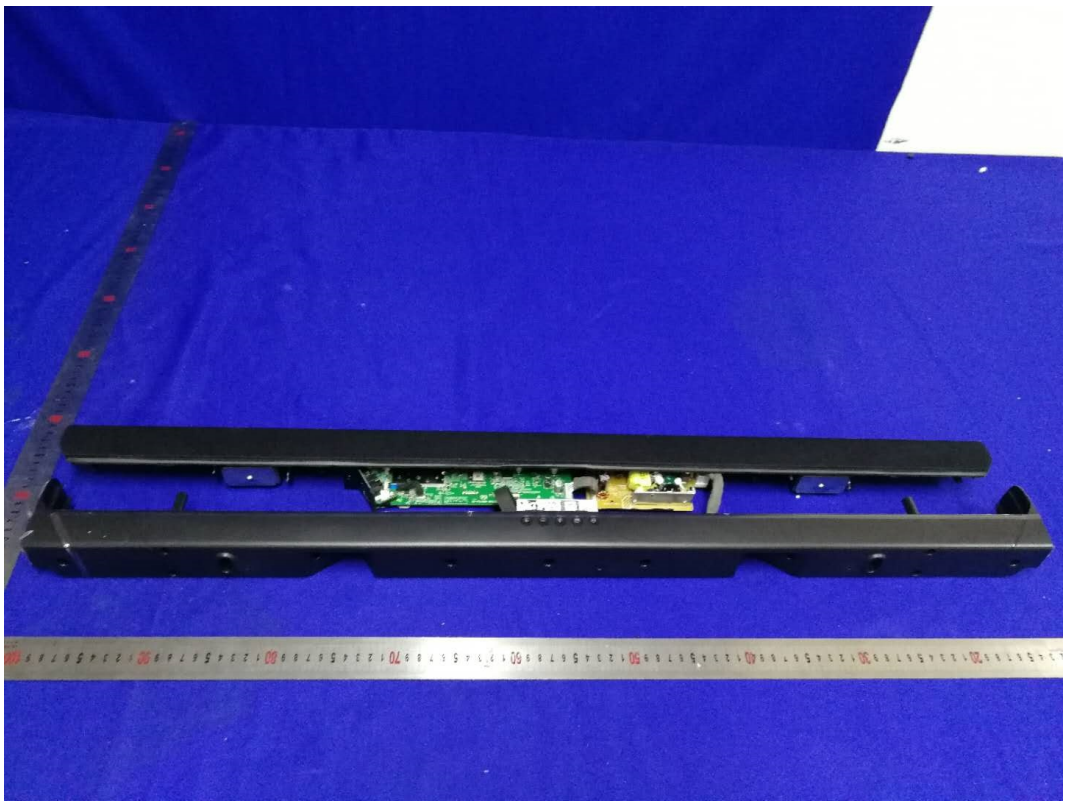

Photo 5 Sound bar Internal view

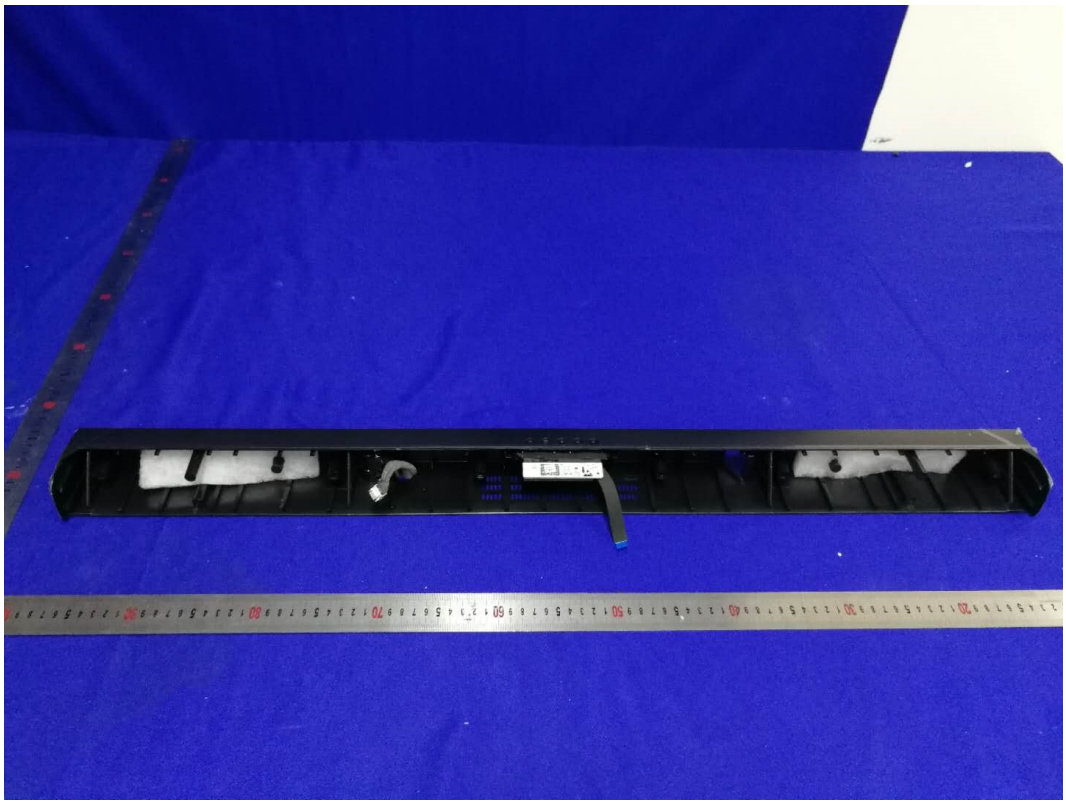

Photo 6 Sound bar Internal view

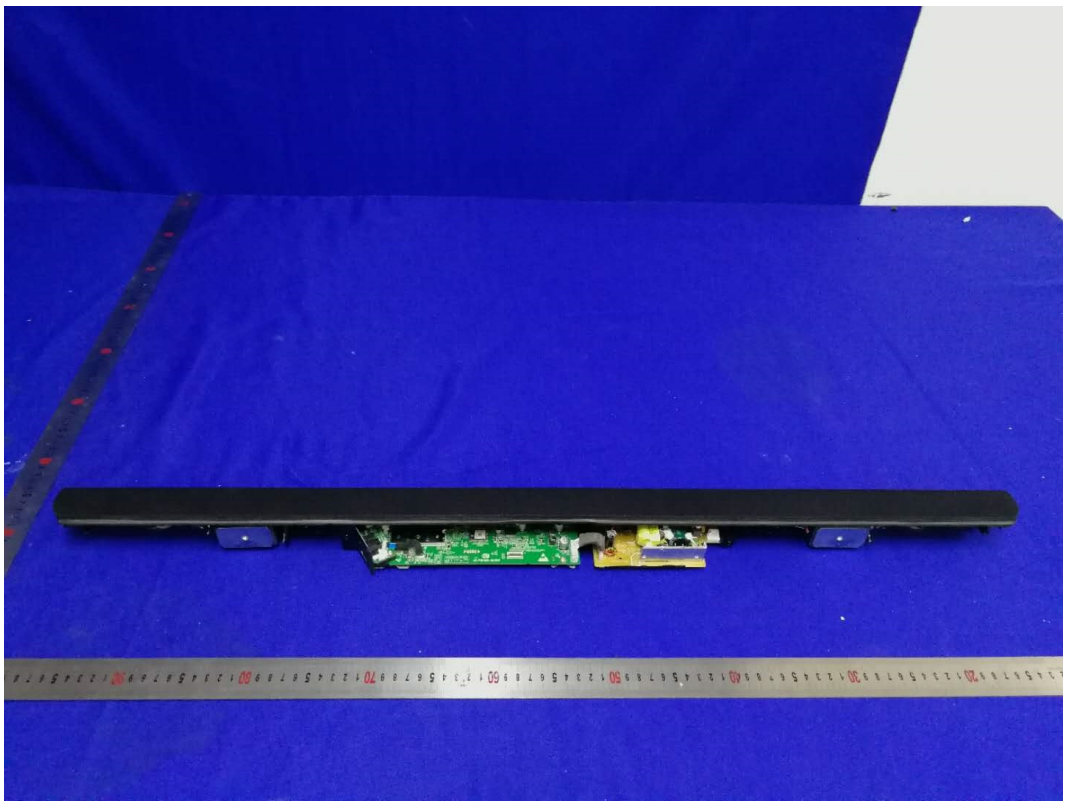

Photo 7 Sound bar Internal view

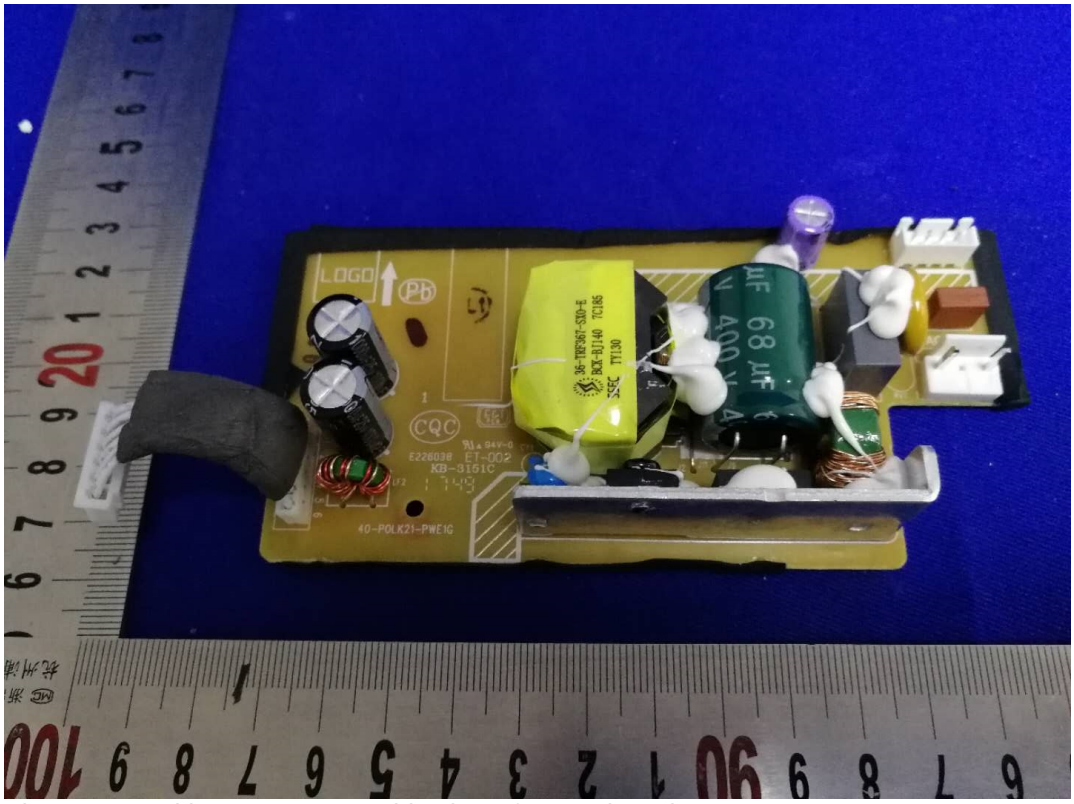

Photo 8 Sound bar Component side view of power board

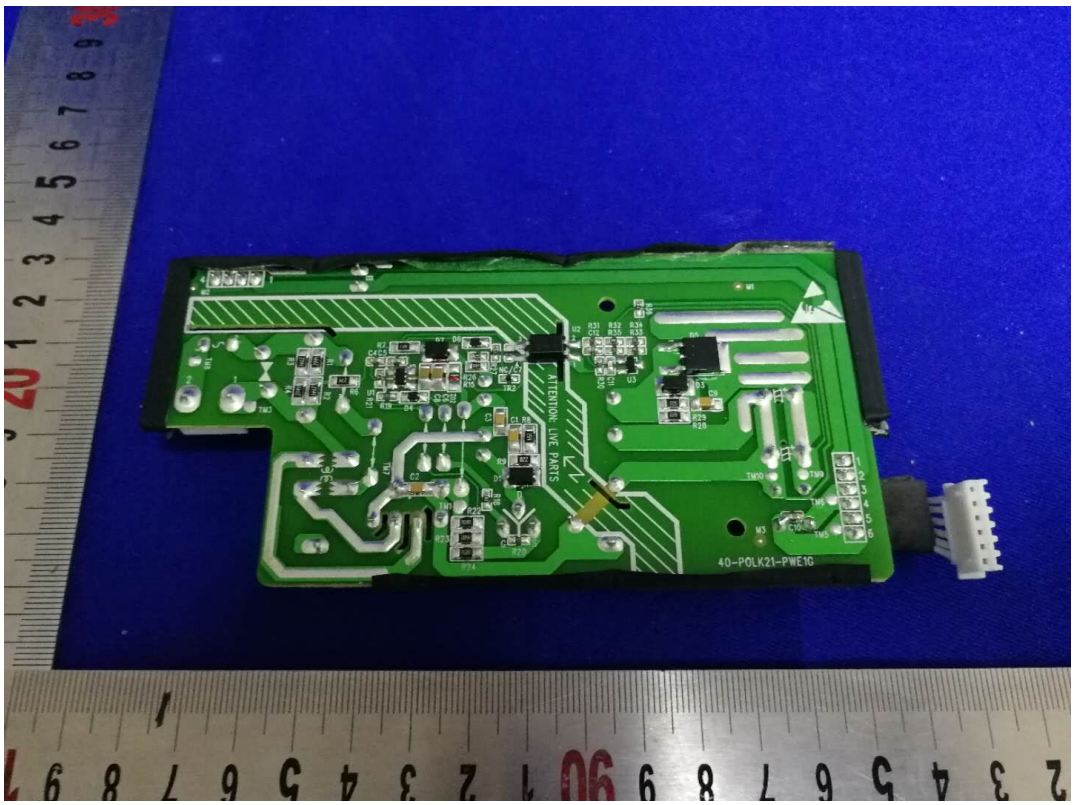

Photo 9 Sound bar Trace side view of power board

Photo 10 Sound bar Component side view of main board

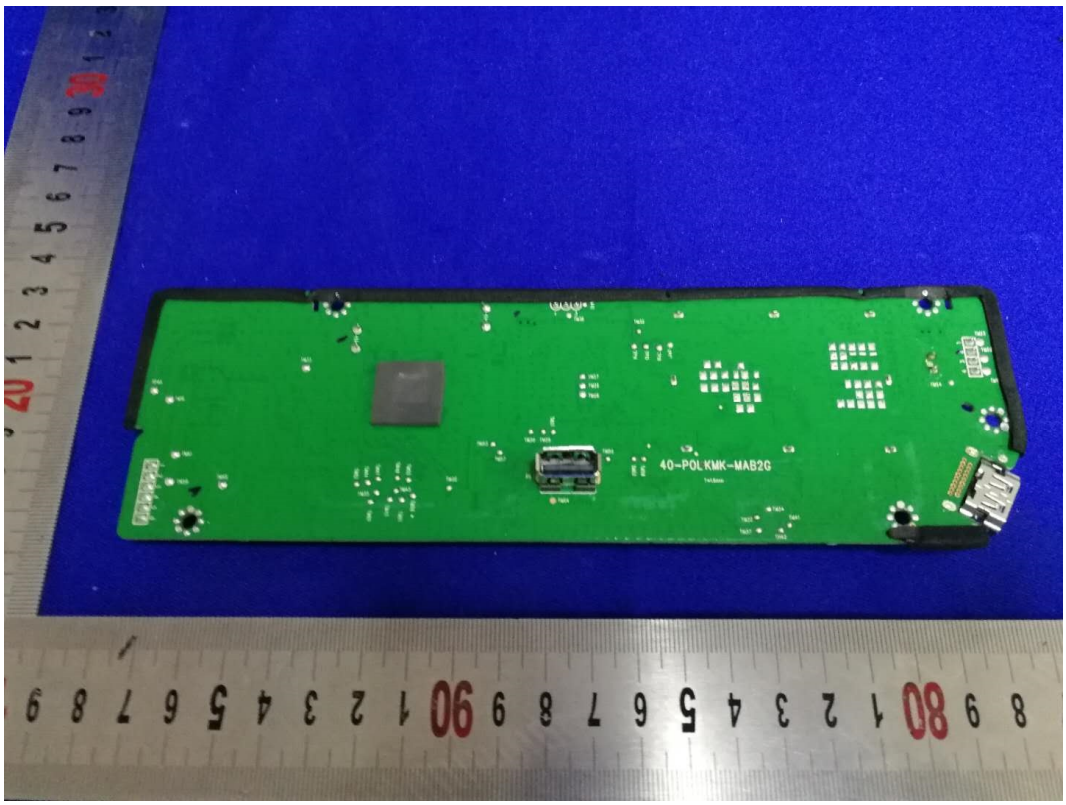

Photo 11 Sound bar Trace side view of main board

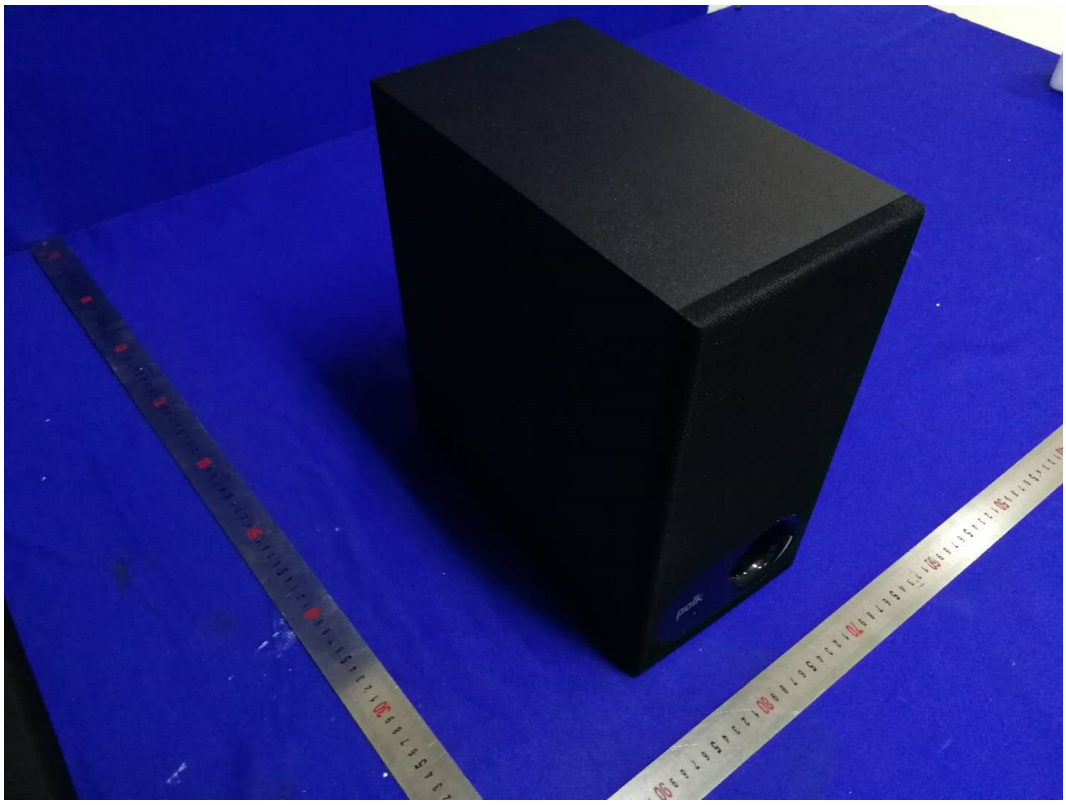

Photo 12 Subwoofer Overall view

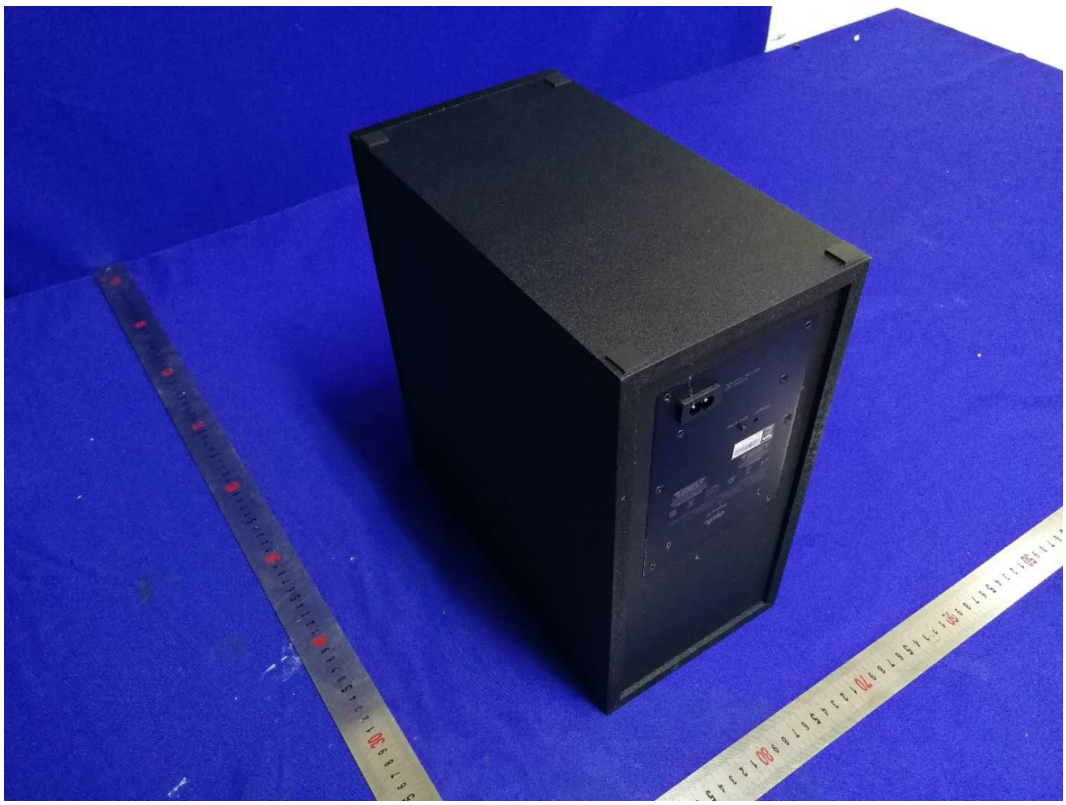

Photo 13 Subwoofer Overall view

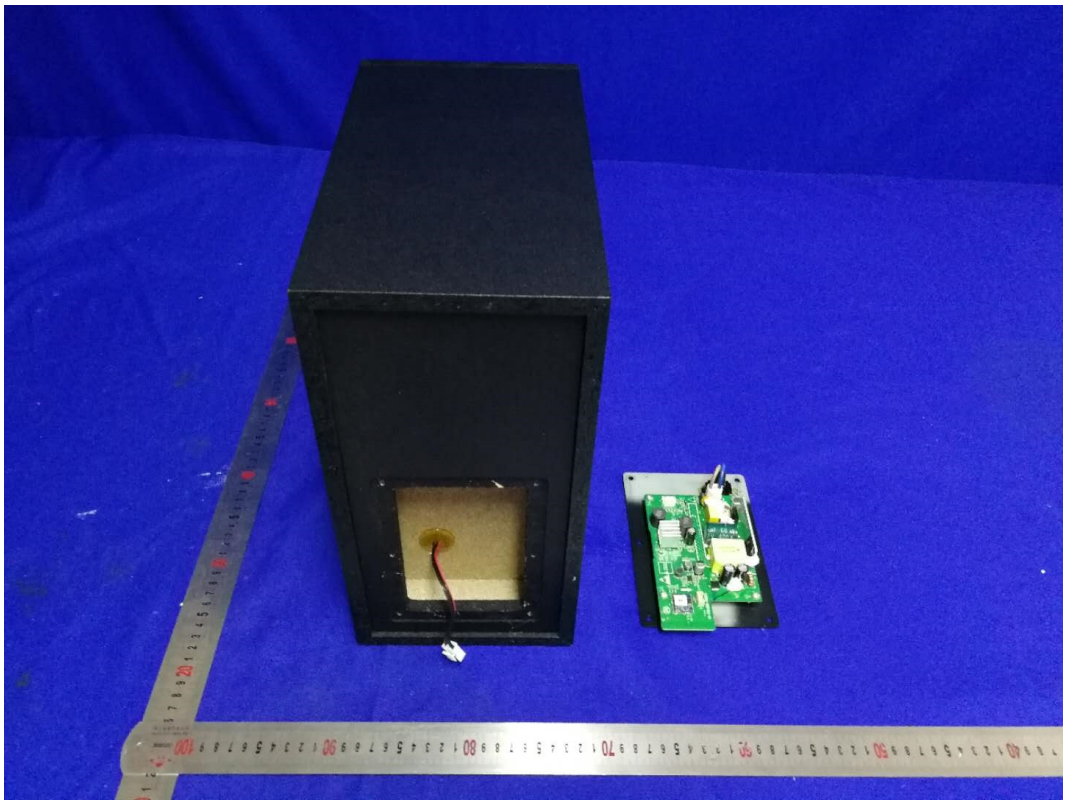

Photo 14 Subwoofer Internal view

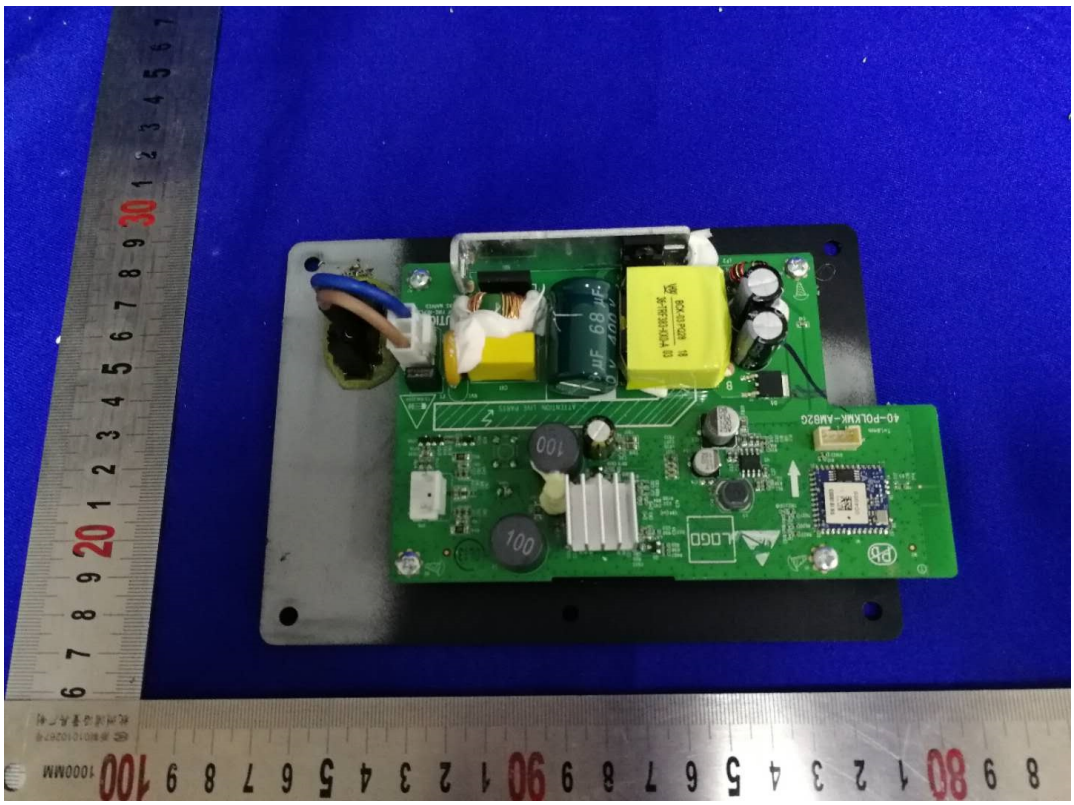

Photo 15 Subwoofer Internal view

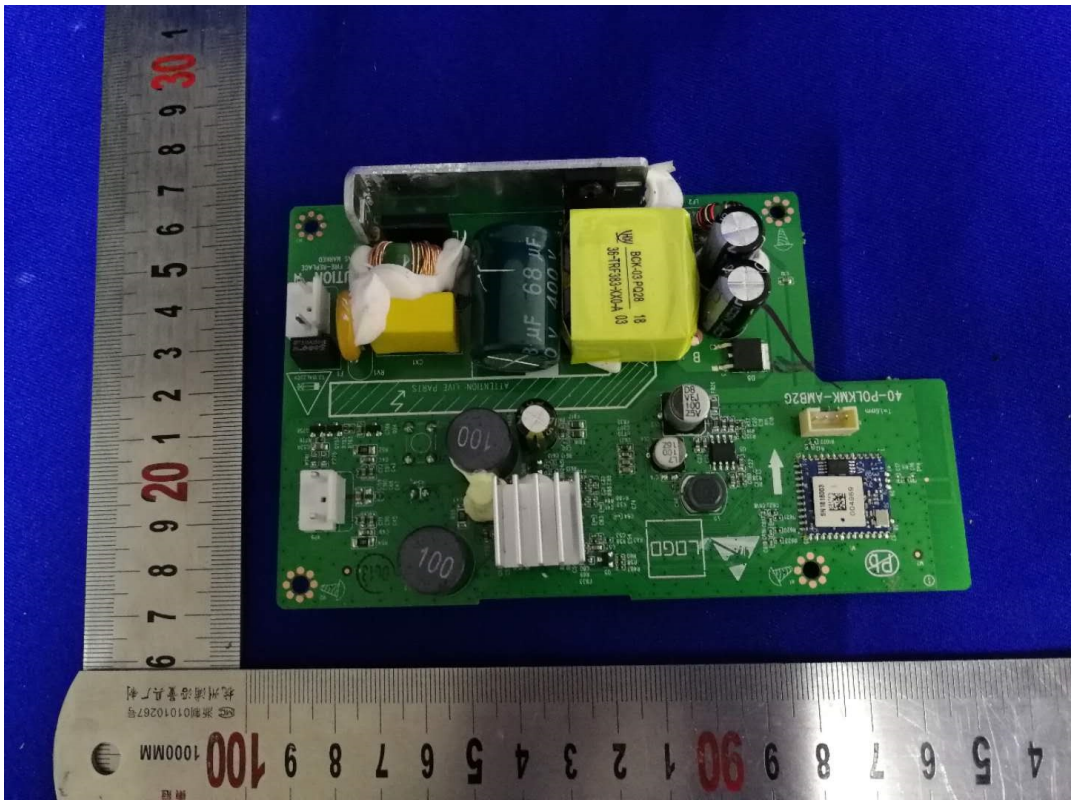

Photo 16 Subwoofer Component side view of power board

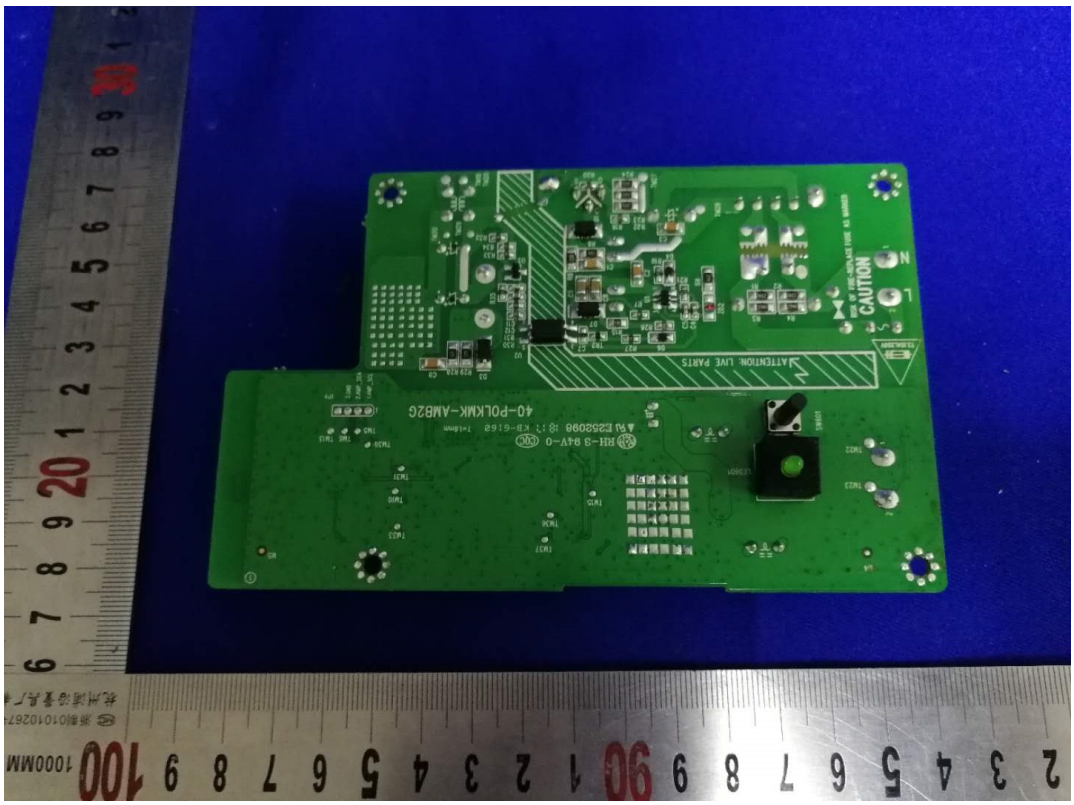

Photo 17 Subwoofer Trace side view of power board

Photo 18 Remote controller

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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_1B_II

Attachment Originator..... : Nemko AS

Master Attachment ..... : Date 2017-09-22

	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".	P
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
	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.	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

IEC62368_1B 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.		P
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 connection to external circuit.	N/A
10.2.1	Add the following to [c] and [d] in table 39: For additional requirements, see 10.5.1.	No radiation.	N/A

IEC62368_1B 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.		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

IEC62368_1B 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.		N/A
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		P
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”	Class II equipment	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	Not direct plug - in equipment.	N/A

IEC62368_1B 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 measured.	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 connection to such a network.	N/A

IEC62368_1B 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).		N/A
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.	No such resistor used.	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.		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.		N/A
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.		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.		N/A

IEC62368_1B 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.”.		N/A

IEC62368_1B 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 .	See for 5.2.2.2 above.	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		N/A

IEC62368_1B 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

IEC62368_1B 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	Not such equipment.	N/A

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 2th Ed.
U.S.A. NATIONAL DIFFERENCES

Audio/video, information and communication technology equipment – Part 1: Safety requirements

Differences according to ..... :	CSA/UL 62368-1:2014
Attachment Form No. ..... :	US&CA_ND_IEC623681B
Attachment Originator..... :	UL(US)
Master Attachment..... :	Date 2015-06

IEC 62368-1 - US and Canadian National Differences Special National Conditions based on Regulations and Other National Differences			
1.1	All equipment is to be designed to allow installation according to the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.		P
1.4	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		P
4.1.17	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.		N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.8	Lithium coin / button cell batteries have modified special construction and performance requirements.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.5, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment	See only 5.6.3 in main report.	N/A
5.7.7	Equipment intended to receive telecommunication ringing signals complies with a special touch current measurement tests.	Not such equipment	N/A

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.5.1	PS3 wiring outside a fire enclosure complies with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A
Annex F (F.3.3.8)	Output terminals provided for supply of other equipment, except mains, supply are marked with a maximum rating or references to which equipment it is permitted to be connected.		P
Annex G (G.7.1)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
Annex G (G.7.3)	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
Annex G (G.7.5)	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V_{peak} or 60 V d.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
Annex M	Battery packs for stationary applications comply with special component requirements.	No battery.	N/A
Annex DVA (1)	Equipment intended for use in spaces used for environmental air are subjected to special flammability requirements for heat and visible smoke release.	Not such equipment or application.	N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m^3 (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. & Canadian Regulations.		N/A
	Baby monitors additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
Annex DVA (5.6.3)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with metal material measuring greater than 0.9 m^2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a min. flammability classification of V-1.		N/A
Annex DVA (10.3.1)	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (10.5.1)	Equipment that produces ionizing radiation complies with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (F.3.3.3)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or are lower than the “Normal Operating Condition” in Table 2 of CAN/CSA C22.2 No. 235.”		N/A
Annex DVA (F.3.3.5)	Equipment identified for ITE (computer) room installation is marked with the rated current		N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position		N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles complies with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.4.3)	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.	No such fuse provided.	N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
Annex DVA (Annex M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
Annex DVA (Q)	Wiring terminals intended to supply Class 2 outputs according to the NEC or CEC Part 1are marked with the voltage rating and “Class 2” or equivalent; marking is located adjacent to the terminals and visible during wiring.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. Components required to comply include: appliance couplers, attachment plugs, battery back-up systems, battery packs, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultra-capacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, data storage equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	See Table 4.1.2.	P

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.		N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are in accordance with the NEC/CEC.	AC plug	P
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and are specially marked when specified.		N/A
Annex DVH (DVH.3.2)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm^2).		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, complies with special earthing, wiring, marking and installation instruction requirements.		N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1
DENMARK NATIONAL DIFFERENCES

Audio/video, information and communication technology equipment –

Part 1: Safety requirements

Differences according to ..... :	DS/EN 62368-1:2014
Attachment Form No. ..... :	DK_ND_IEC62368_1B
Attachment Originator..... :	UL (Demko)
Master Attachment..... :	2014-10

	National Differences		P
4.1.15	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: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord."		N/A
5.2.2.2	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.		N/A
5.6.1	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.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.5	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.		N/A
5.7.6.2	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.		N/A
G.4.2	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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT

IEC 62368-1
(AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES
(**Audio/video, information and communication technology equipment**)

Differences according to ..... : AS/NZS 62368.1:2018

Attachment Form No. ..... : AU_NZ_ND_IEC62368_1B

Attachment Originator..... : JAS-ANZ

Master Attachment ..... : 2019-02-04

	National Differences		
Appendix ZZ	Variations to IEC 62368-1:2014 (ED. 2.0) for Australia and New Zealand		P
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2014 (ED. 2.0)		P
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		P
2	*Add* the following to the list of normative references: The following normative documents are referenced in Appendix ZZ: -AS/NZS 3112, *Approval and test specification—Plugs and socket-outlets* -AS/NZS 3123, *Approval and test specification—Plugs, socket-outlets and couplers for general industrial application* -AS/NZS 3191, *Electric flexible cords* -AS/NZS 60065, *Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)* -AS/NZS 60320.1, *Appliance couplers for household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)* -AS/NZS 60320.2.2, *Appliance couplers for household and similar general purposes Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)* -AS/NZS 60695.2.11, *Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products* -AS/NZS 60695.11.5, *Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance* -AS/NZS 60695.11.10, *Fire hazard testing, Part 11.10: Test flames—50 W*		P

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	horizontal and vertical flame test methods -AS/NZS 60884.1, *Plugs and socket-outlets for household and similar purposes, Part 1: General requirements* -AS/NZS 60950.1:2015, *Information technology equipment—Safety*, Part 1: *General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)* IEC 61032:1997, *Protection of persons and equipment by enclosures—Probes for verification* -AS/NZS 61558.1:2008 (including Amendment 2:2015), *Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 2.1, MOD)* -AS/NZS 61558.2.16, *Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.*		
4.1.1	**Application of requirements and acceptance of materials, components and subassemblies** 1 *Replace* the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'. 2 *Replace* the text 'IEC 60065' with 'AS/NZS 60065'.		P
4.7	**Equipment for direct insertion into mains socket-outlets**		N/A
4.7.2	**Requirements** *Delete* the text of the second paragraph and *replace* with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.		N/A
4.7.3	**Compliance Criteria** *Delete* the first paragraph and Note 1 and Note 2 and *replace* with the following: *Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.*		N/A
4.8	*Delete* existing clause title and *replace* with the following: **4.8 Products containing coin/button cell batteries**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.8.1	**General** 1 Second dashed point, *delete* the text and *replace* with the following: – include coin/button cell batteries with a diameter of 32 mm or less. 2 After the second dashed point, *insert* the following Note: NOTE 1: Batteries are specified in IEC 60086-2. 3 After the third dashed point, *renumber* the existing Note as 'NOTE 2'. 4 Fifth dashed point, *delete* the word 'lithium'.		N/A
4.8.2	**Instructional Safeguard** First line, *delete* the word 'lithium'.		N/A
4.8.3	**Construction** First line, after the word 'Equipment' *insert* the words 'containing one or more coin/button batteries and'		N/A
4.8.5	**Compliance criteria** *Delete* the first paragraph and *replace* with the following: *Compliance is checked by applying a force of 30 N +/-1 N for 10 s to the battery compartment door/cover by a rigid test finger according to test probe 11 of IEC 61032:1997 at the most unfavourable place and in the most unfavourable direction. The force shall be applied in one direction at a time.*		N/A
5.4.10.2	**Test methods**		N/A
5.4.10.2.1	**General** *Delete* the first paragraph and *replace* with the following: In Australia only, the separation is checked by the test of both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test of either Clause 5.4.10.2.2 or Clause 5.4.10.2.3.		N/A
Table 29	*Replace* the table with the following:		N/A

Parts	Impulse test		Steady state test	
	New Zealand	Australia	New Zealand	Australia
Parts indicated in Clause 5.4.10.1 a) [a]	2.5 kV 10/700 µs	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment. 10/700 µs	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) [b]	1.5 kV 10/700 µs [c]		1.0 kV	1.5 kV

[a] Surge suppressors shall not be removed.
[b] Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment.
[c] During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.2.2	After the first paragraph, *insert* new Notes 201 and 202 as follows: NOTE 201 For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A
5.4.10.2.3	After the first paragraph, *insert* new Notes 201 and 202 as follows: NOTE 201 For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
6	**Electrically-caused fire**		P
6.1	**General** After the first paragraph, *insert* the following new paragraph: Alternatively, the requirements of Clauses 6.2 to 6.5.2 are considered to be fulfilled if the equipment complies with the requirements of Clause 6.202		P
6.6	After Clause 6.6, *add* the new Clauses 6.201 and 6.202 as follows: **6.201 External power supplies, docking stations and other similar devices** and **6.202 Resistance to fire—Alternative tests** (see special national conditions)		P
8.5.4	**Special categories of equipment comprising moving parts**		N/A
8.5.4.1	**Large data storage equipment** In the first dashed row and the second dashed rows *replace* 'IEC 60950-1:2005' with 'AS/NZS 60950.1:2015'.		N/A
8.6	**Stability of equipment**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.1 and Table 36	**Requirements** 1. Table 36, *insert* Footnote c at the end of the 'Glass slide' heading, and *add* a new Footnote c after the text of Footnote b in the last row of Table 36 as follows: [c] The glass slide test is not applicable to floor standing equipment, even though the equipment may have controls or a display. 2. Table 36, fifth row, *insert* '[201]' at the end of 'No stability requirements' 3. Table 36, ninth row, *insert* '[201]' at the end of 'No stability requirements' 4. Table 36, *add* the following new footnote: [201] MS2 and MS3 television sets and display devices, designed only for fixing to a wall, ceiling or equipment rack, are not subjected to stability requirements only if the instructional safeguard of Clause 8.6.1.201 is provided. Otherwise, the glass slide requirements of Clause 8.6.4 and horizontal force requirements of Clause 8.6.5 apply. 5. Second paragraph beneath Table 36, *delete* the words 'MS2 and MS3 television sets' and *replace* with 'MS2 and MS3 television sets and display devices'		N/A
8.6.1	After Clause 8.6.1 *add* the following new clauses: **8.6.1.201 Instructional safeguard for fixed-mount television sets** (see special national conditions)		N/A
Annex F **Paragraph F.3.5.1**	**Mains appliance outlet and socket-outlet markings** *Replace* 'IEC 60320-2-2' with 'AS/NZS 60320.2.2'.		N/A
Annex G **Paragraph G.4.2**	**Mains connectors** 1 In the second line *insert* 'or AS/NZS 3123' after 'IEC 60906-1'. 2 In the second line *insert* 'or AS/NZS 60320 series' after 'IEC 60320 series' 3 *Add* the following new paragraph: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.	Should be evaluated in national approval	N/A
Paragraph G.5.3.1	**Transformers, General** 1 In the third dashed point *replace* 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 In the fourth dashed point *replace* 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.		P
Paragraph G.7.1	**Mains supply cords, General** In the fourth dashed paragraph, *replace* 'IEC 60320-1' with 'AS/NZS 60320.1'	Should be evaluated in national approval	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Table G.5	**Sizes of conductors** 1 In the second row, first column, *delete* '6' and *replace* with '7.5' 2 In the second row, second column, *delete* '0,75' and *replace* with '0.75[b] 3 *Delete* Note 1. 4 *Replace* 'NOTE 2' with 'NOTE:'. 5 *Delete* the text of 'Footnote b' and *replace* with the following: [b] This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm2 three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 In Footnote c *replace* 'IEC 60320-1' with 'AS/NZS 60320.1' 7 In Footnote d *replace* 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A
Annex M **Paragraph M.3.2**	**Protection circuits for batteries provided within the equipment, Test method** After the first dashed point *add* the following Note: NOTE 201: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of SELV may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.		N/A
	Special national conditions (if any)		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.201	**External power supplies, docking stations and other similar devices** For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage— – at all ES1 outlets or connectors shall not increase by more than 10% of its rated output voltage under normal operating condition; and – of a USB outlet or connector shall not increase by more than 3 V or 10% of its rated output voltage under normal operating conditions, whichever is higher. For equipment with multiple rated output voltages, the requirements apply with the equipment configured for each rated output voltage in turn. NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. *Compliance shall be checked by measurement, taking into account the abnormal* *operating conditions of Annex B.3 and the simulated single-fault conditions of Annex B.4*		P
6.202	**Resistance to fire—Alternative tests**		N/A
6.202.1	**General** Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the equipment, or the following: a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length. b) The following parts which would contribute negligible fuel to a fire: – small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; – small electrical components, such as capacitors with a volume not exceeding 1 750 mm3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10. NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	another.		
	Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4. For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5. The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.		N/A
6.202.2	**Testing of non-metallic materials** Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.		N/A
6.202.3	**Testing of insulating materials** Parts of insulating material supporting Potential Ignition Sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE: Contacts in components such as switch contacts are considered to be connections		N/A
	For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test need not be tested		N/A
	The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:		N/A

Clause of AS/NZS 60695.11.5	Change
9 Test procedure	
9.2 Application of needle-flame	*Delete* the first and second paragraphs and *replace* with the following:

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Clause	Requirement + Test	Result - Remark	Verdict

		The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner. The duration of application of the test flame shall be 30 s 1 s.		
		9.3 Number of test specimens	*Replace* with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.	
		11 Evaluation of test results	*Replace* with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.	
	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the relevant part is not thinner than the sample tested.			
6.202.4	**Testing in the event of non-extinguishing material** If parts, other than enclosures, do not withstand the glow wire tests of Clause 6.202.3, by failure to extinguish within 30 s after the removal of the glowwire tip, the needle-flame test detailed in Clause 6.202.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of Clause 6.202.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested. NOTE 1: If the enclosure does not withstand the glow-wire test			N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing. NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing. NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.		
6.202.5	**Testing of printed boards** The base material of printed boards shall be subjected to the needle-flame test of Clause 6.202.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a potential ignition source. The test is not carried out if— – the printed board does not carry any potential ignition source; – the base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or – the base material of printed boards, on which the available equipment power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. *Conformance shall be determined using the smallest thickness of the material.* NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the apparent power for more than 2 min when the circuit supplied is disconnected.		N/A
6.202.6	**For open circuit voltages greater than 4 kV** Potential ignition sources with open circuit voltages exceeding 4 kV (peak) a.c. or d.c. under normal		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	operating conditions shall be contained in a FIRE ENCLOSURE which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.		
8.6.1.201	**8.6.1.201 Instructional safeguard for fixed-mount television sets** MS2 and MS3 television sets and display devices designed only for fixed mounting to a wall of ceiling or equipment rack shall, where required in Table 36, footnote 201, have an instructional safeguard in accordance with Clause F.5 which may be on the equipment or included in the installation instructions or equivalent document accompanying the equipment. The elements of the instructional safeguard shall be as follows: – element 1a: not available; – element 2: 'Stability Hazard' or equivalent wording; – element 3: 'The television set may fall, causing serious personal injury or death' or equivalent text; – element 4: the following or equivalent text: To prevent injury, this television set must be securely attached to the floor/wall in accordance with the installation instructions		N/A
8.6.1.202	**Restraining device** MS2 and MS3 television sets and display devices that are not solely fixed-mounted should be provided with a restraining device such as a fixing point to facilitate restraining the equipment from toppling forward. The restraining device shall be capable of withstanding a pull of 100 N in all directions without damage. Where a restraining device is provided, instructions shall be provided in the instructions for installation or instructions for use to ensure correct and safe installation.		N/A

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ATTACHMENT TO TEST REPORT

IEC 62368-1

(JAPAN) NATIONAL DIFFERENCES

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

Differences according to……...:	J62368-1 (H30)
Attachment Form No……..……...:	JP_ND_IEC62368_1B
Attachment Originator……..……...:	UL (JP)
Master Attachment…..……...:	Date 2018-11-22

	National Differences		¾
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this standard or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.		P
5.6.1	Mains socket-outlet and appliance outlet shall comply with Clause G.4.2A if they are incorporated as part of the equipment.		N/A
5.6.2.1	Mains connection of class 0I equipment: Instructional safeguard in accordance with Clause F.3.6.1A; Mains plug having a lead wire for protective earthing connection of class 0I equipment; Independent main protective earthing terminal installed by ordinary person.		N/A
5.6.2.2	This requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cab tire cable with 1.25 mm2 or more cross-sectional area		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series or JIS C 8303, or otherwise being considered to comply with relevant regulations, or that is provided with mains appliance outlet as specified in JIS C 8283-2-2 for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.		N/A
5.7.4	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990.		N/A
6.4.3.3	A fuse complying with JIC C 6575 series or a fuse having equivalent characteristics shall open within 1 s. For Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”. A fuse not complying with JIS C 6575 series shall be tested with the breaking capacity taken into account.		N/A
8.5.4.2.1	Only three-phase stationary equipment rated more than 200 V ac can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.		N/A
8.5.4.2.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.		N/A
8.5.4.2.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.		N/A
8.5.4.2.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.		N/A
9.2.6, Table 38	Handles, Knobs, grips, etc. and external surfaces either held, touched or worn against the body in normal use (> 1 min) b,c		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.1	Instructional safeguard of class 0I equipment in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8303 or relevant regulation to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.		N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.		P
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.3 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions and instructional safeguard shall be provided regarding the earthing connection.		N/A
F.3.6.2.1	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		N/A
F.4	Instruction for audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A. Installation instruction for the protective earthing connection for class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment.		N/A
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.		N/A
G.3.4	Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the relevant part of JIS C 6575 (corresponding to IEC60127) or shall have equivalent characteristics. If there are no applicable IEC standards, overcurrent protective devices used as a safeguard shall comply with their applicable IEC standards.	No such devices used	N/A
G.4.1	This requirement is not applicable to Clauses G.4.2 and G.4.2A.		N/A

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Mains connector shall comply with JIS C 8282 series, JIS C 8283 series, JIS C 8285, JIS C 8303 or IEC 60309 series. Mains plugs and socket-outlets shall comply with JIS C 8282 series, JIS C 8303, IEC 60309 series, or have equivalent or better performance. A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286. Construction preventing mechanical stress not to transmit to the soldering part of inlet terminal. Consideration for an equipment rated not more than 125 V provided with Type C14 and C18 appliance coupler complying with JIS C 8283 series.		N/A
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively.	Should be evaluated in national approval	N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.		N/A
G.8.3.3	Withstand 1,71 × 1.1 × U0 for 5 s.		N/A

Notes:

1. Product scope of JIS C 8283-1(2008) is harmonized with IEC60320-1 (2001).
2. General requirement is applied to all Specified and Non-Specified PSE products when J-Standard is used.

5.4.1.8	Table: working voltage measurement			P
Location	RMS voltage (V)	Peak voltage (V)	Frequency(Hz)	Comments
For soundbar:				
T1 pin A to 1	**270**	**484**	61.6k	The max. working voltage
T1 pin A to 2	246	404	61.6k	--
T1 pin A to 4	181	376	61.6k	--
T1 pin A to 5	180	366	61.6k	--
T1 pin B to 1	268	462	61.6k	--
T1 pin B to 2	246	348	61.6k	--
T1 pin B to 4	180	352	61.6k	--
T1 pin B to 5	180	416	61.6k	--
U2 pin 1 to 3	186	364	0.06	--
U2 pin 1 to 4	188	364	0.06	--
U2 pin 2 to 3	188	364	0.06	--
U2 pin 2 to 4	188	364	0.06	--
CY1 primary to secondary	178	360	0.06	--
For subwoofer:				
T1 pin A to 1	262	424	61.6k	--
T1 pin A to 2	252	426	61.6k	--
T1 pin A to 4	180	384	61.6k	--
T1 pin A to 5	178	368	61.6k	--
T1 pin B to 1	**268**	**446**	61.6k	The max. working voltage
T1 pin B to 2	254	364	61.6k	--
T1 pin B to 4	178	356	61.6k	--
T1 pin B to 5	178	412	61.6k	--
U2 pin 1 to 3	186	376	0.06	--
U2 pin 1 to 4	188	376	0.06	--
U2 pin 2 to 3	186	376	0.06	--
U2 pin 2 to 4	188	376	0.06	--
CY1 primary to secondary	178	364	0.06	--
supplementary information:				
Test voltage: 240Vac, 60Hz.				

Ref. Certif. No.

DK-100998-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product	HOME THEATER SYSTEM
Name and address of the applicant	TCL Technoly Electronics (Huizhou) Co., Ltd Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, China, 516006
Name and address of the manufacturer	Sound United, LLC 1 Viper Way Vista, CA 92081 USA
Name and address of the factory Note: *When more than one factory, please report on page 2*	TCL Technoly Electronics (Huizhou) Co., Ltd. Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, 516006 China ☒ Additional Information on page 2
Ratings and principal characteristics	For soundbar: Input: 100-240V～, 50-60Hz, 40W For subwoofer: Input: 100-240V～, 50-60Hz, 40W
Trademark / Brand (if any)	polk
Type of Customer's Testing Facility (CTF) Stage used	
Model / Type Ref.	For whole audio system: Signa S2 For soundbar: SIGNA S2 SOUND BAR For subwoofer: SIGNA S2 SUBWOOFER
Additional information (if necessary may also be reported on page 2)	Additionally evaluated to EN 62368-1:2014/A11:2017; National Differences specified in the CB Test Report. ☐ Additional Information on page 2
A sample of the product was tested and found to be in conformity with	IEC 62368-1:2014
As shown in the Test Report Ref. No. which forms part of this Certificate	ESTS-P20060506 issued on 2020-08-03

This CB Test Certificate is issued by the National Certification Body

☐ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☒ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2020-08-06

Signature:

Jan-Erik Storgaard

Ref. Certif. No.

DK-100998-UL

Factories:
TCL Technoly Electronics (Huizhou) Co., Ltd.
Section 19, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, 516006
China

TCL Technoly Electronics (Huizhou) Co., Ltd. (The Second Factory)
Section 41, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, 516006
China

Hui Zhou Tonly Electronics Co., Ltd.
Section 19, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province,
P.R. China

Hui Zhou Tonly Electronics Co., Ltd.
Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province,
P.R. China

Hui Zhou Tonly Electronics Co., Ltd. (The Second Factory)
Section 41, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province,
P.R. China

Guangxi Tonly Electronics Technology Co., Ltd.
D01, CEC Beihai Industrial Park, No. 368 East Extension of Beihai Road, Beihai Industrial Zone, Beihai City, Guang Xi Province,
China

Huizhou Pully Acoustic Technology Co., Ltd
NO. 88, North Of Luen Fat Road, Tongqiao Industrial Base, Zhongkai Hi Tech Zone, Huizhou, Guangdong 516006,
P.R.China

TCL Technoly Electronics (Huizhou) Co., Ltd. (The Third Factory)
NO. 88, North Of Luen Fat Road, Tongqiao Industrial Base, Zhongkai Hi Tech Zone, Huizhou, Guangdong 516006,
P.R.China

Additional information (if necessary)

☐ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☒ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2020-08-06

Signature:

Jan-Erik Storgaard

Test Report issued under the responsibility of:

TEST REPORT
IEC 62368-1
Audio/video, information and communication technology equipment
Part 1: Safety requirements

Report Number .....:	ESTS-P20060506
Date of issue.....:	2020-08-03
Total number of pages .....:	92 Pages
Applicant's name.....:	TCL Technoly Electronics (Huizhou) Co., Ltd
Address .....:	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, China, 516006
Test specification:	
Standard .....:	IEC 62368-1:2014 (Second Edition)
Test procedure .....:	CB Scheme
Non-standard test method.....:	N/A
Test Report Form No..... :	IEC62368_1B
Test Report Form(s) Originator .....:	UL (US)
Master TRF.....:	2014-03

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

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.....:	HOME THEATER SYSTEM
Trade Mark.....:	polk
Manufacturer.....:	**Sound United, LLC** 1 Viper Way Vista, CA 92081 USA
Model/Type reference.....:	**For whole audio system: Signa S2** **For soundbar:** SIGNA S2 SOUND BAR **For subwoofer:** SIGNA S2 SUBWOOFER
Ratings.....:	**For soundbar:** Input: 100-240V～, 50-60Hz, 40W **For subwoofer:** Input: 100-240V～, 50-60Hz, 40W

Testing procedure and testing location:			
☒	**CB Testing Laboratory:**	**EST Technology Co., Ltd.**	
Testing location/ address .....:		Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China	
☐	**Associated CB Testing Laboratory:**	N/A	
Testing location/ address .....:		N/A	
Tested by (name + signature).....:		Monster Feng (Project Handler)	Monster Feng
Approved by (name + signature).....:		John Lan (Reviewer)	John
☐	**Testing procedure: TMP/CTF Stage 1:**	N/A	
Testing location/ address .....:		N/A	
Tested by (name + signature).....:			
Approved by (name + signature).....:			
☐	**Testing procedure: WMT/CTF Stage 2:**	N/A	
Testing location/ address .....:		N/A	
Tested by (name + signature).....:			
Witnessed by (name + signature).....:			
Approved by (name + signature).....:			
☐	**Testing procedure: SMT/CTF Stage 3 or 4:**	N/A	
Testing location/ address .....:		N/A	
Tested by (name + signature).....:			

Approved by (name + signature).....:		
Supervised by (name + signature).....:		

List of Attachments (including a total number of pages in each attachment):

- Attachment 1: Photo documentation (9 pages)
- Attachment 2: National Differences (32 pages)
- Attachment 3: Product documentation (1 page)

Summary of testing:

Tests performed (name of test and test clause):

All applicable tests as described in Test Case and Measurement Sections were performed.

5.2	Electrical energy source classifications
5.4.1.4, 6.3.2, 9.0, B.2.6	Maximum operating temperatures for materials, components and systems
5.4.1.8	Determination of working voltage
5.4.1.10.3	Ball pressure test of thermoplastics
5.4.5.1	Surge test
5.4.8	Humidity conditioning
5.4.9	Electric strength test
5.5.2.2	Safeguards against capacitance discharge test
6.2.2	Electrical power sources (PS) measurements for classification
9.2	Thermal energy source Classifications
B.2.5	Input tests
B.3	Simulated Abnormal operating condition tests
B.4	Simulated single fault conditions
F.3.9	Durability, legibility and permanence of markings
G.5.3.3	Transformer overload
Q.1.2	Limited power sources
T.2	Steady force test, 10 N
T.5	Steady force test. 250N
T.6	Impact test
T.8	Stress relief test

Remark:

1. The EUT passed the above all tests.

Testing location:

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

EU group differences, Australia, Canada, New Zealand and United States, Japan

CENELEC member countries (EU group differences): Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom

☒ **The product fulfils the requirements of AS/NZS 62368.1:2018.**

☒ **The product fulfils the requirements of CAN/CSA C22.2 No. 62368-1-14.**

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

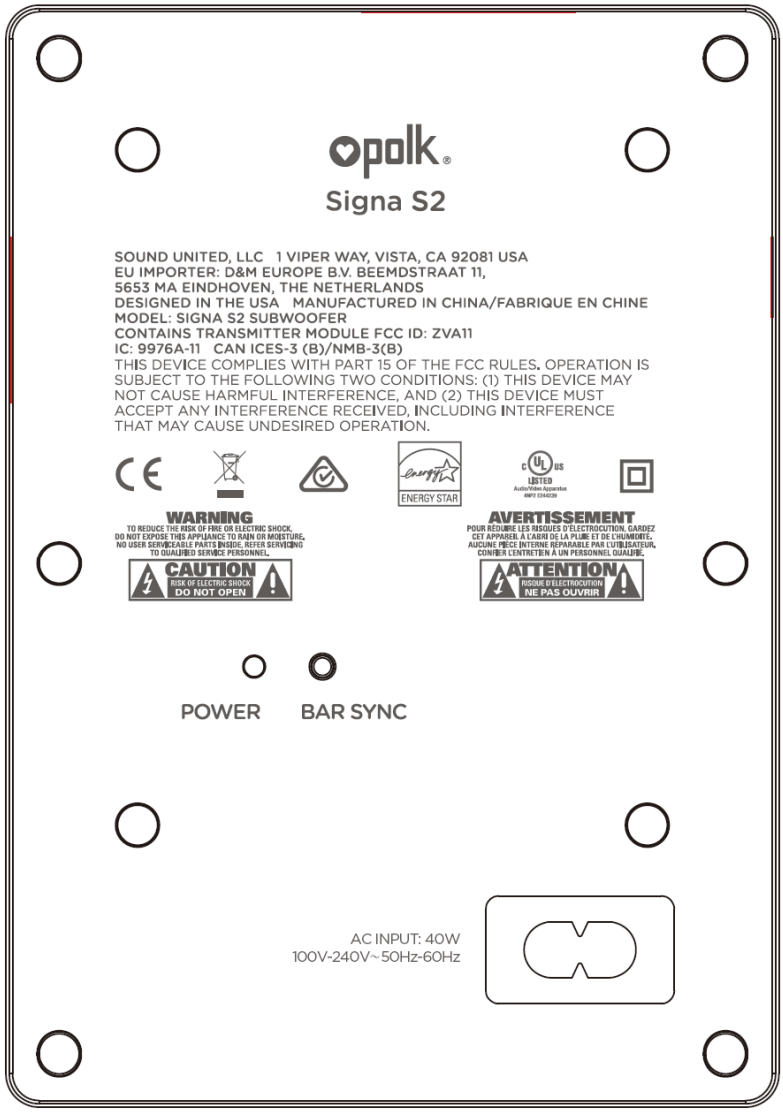
☒ **The product fulfils the requirements of UL 62368-1, Second Edition**

☒ **The product fulfils the requirements of J 62368-1 (H30).**

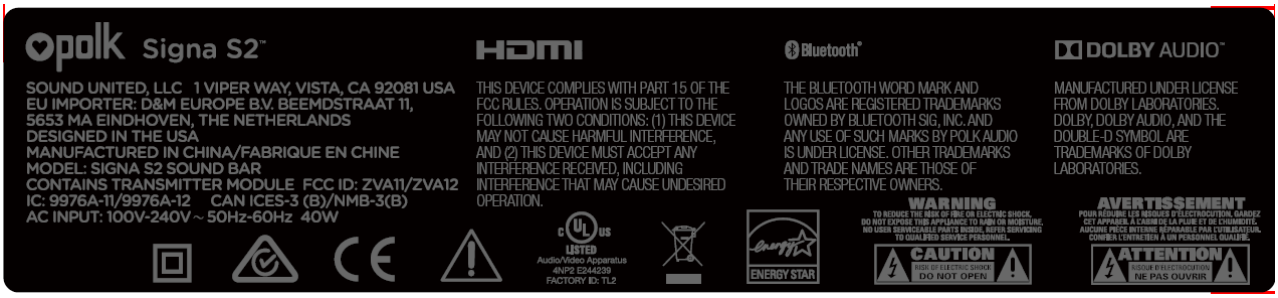
Copy of marking plate(s):

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.

For subwoofer:



For soundbar:



Remark:

1. Since similar label used, only label for models above listed to represent other similar ones.
2. The CE marking and WEEE symbol (if any) should be at least 5.0mm and 7.0mm respectively in height.
3. The mfr. and importer's name and address should be printed on label, if not possible can be printed on package or a document accompanying the equipment before the product is placed on the EU market.
4. The above markings are the minimum requirements required by the safety lab. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.

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: _____
Considered current rating of protective device as part of building or equipment installation	US, CA: 20 A; UK: 13 A; Others: 16 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: _____
Class of equipment	☐ Class I ☒ Class II ☐ Class III
Access location	☐ restricted access location ☒ N/A
Pollution degree (PD)	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maximum operating ambient	45°C
IP protection class	☒ IPX0 ☐ IP___
Power Systems	☒ TN ☐ TT ☐ IT - __ V_{L-L}
Altitude during operation (m)	☐ 2000 m or less ☒ 5000 m
Altitude of test laboratory (m)	☒ 2000 m or less ☐ _____ m
Mass of equipment (kg)	☒ For sound bar: Approx. 1.74kg; For subwoofer: Approx. 5.26kg

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 .....:	2020-06-05
Date (s) of performance of tests .....:	2020-06-05 to 2020-07-16
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.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☒ **Yes** ☐ **Not applicable**
When differences exist; they shall be identified in the General product information section.	

Name and address of factory (ies).....:	**1.TCL Technoly Electronics (Huizhou) Co., Ltd.** Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, China, 516006 **2. TCL Technoly Electronics (Huizhou) Co., Ltd.** Section 19, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, China, 516006 **3. TCL Technoly Electronics (Huizhou) Co., Ltd. (The Second Factory)** Section 41, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, China, 516006 **4.Hui Zhou Tonly Electronics Co., Ltd.** Section 19, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, P.R. China **5.Hui Zhou Tonly Electronics Co., Ltd.** Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, P.R. China **6.Hui Zhou Tonly Electronics Co., Ltd.** (The Second Factory) Section 41, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, P.R. China **7.Guangxi Tonly Electronics Technology Co., Ltd.** D01, CEC Beihai Industrial Park, No. 368 East Extension of Beihai Road, Beihai Industrial Zone, Beihai City, Guang Xi Province, China **8.Huizhou Pully Acoustic Technology Co., Ltd** NO. 88, North Of Luen Fat Road, Tongqiao Industrial Base, Zhongkai Hi Tech Zone, Huizhou, Guangdong 516006, P.R.China **9.TCL Technoly Electronics (Huizhou) Co., Ltd. (The Third Factory)** NO. 88, North Of Luen Fat Road, Tongqiao Industrial Base, Zhongkai Hi Tech Zone, Huizhou, Guangdong 516006, P.R.China

GENERAL PRODUCT INFORMATION:

1. The apparatus covered by this report is HOME THEATER SYSTEM, which is consisted of soundbar and subwoofer and used as audio/video Equipment.
2. Specified maximum ambient temperature is 45°C for tropical climate.
3. The equipment was evaluated for a maximum operating altitude of 5000m. Clearance values have been evaluated for an operating altitude of max. 5000 meters, based on Table 17 altitude adjustment factor 1.48.
4. The test items are pre-production samples without serial numbers.
5. Subwoofer and soundbar are powered by AC mains via detachable power cord set and classified as class II apparatus.
6. Rear enclosure is secured to front enclosure by screws.

Model Differences:

N/A

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

N/A

The official TRF used for this evaluation has not been updated to include CTF information. As a temporary solution the NCB included missing CTF page and informed IECEE Secretariat about the required TRF update.

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 for output circuit (For Soundbar and Subwoofer)	ES3
Power board output “V+” to “V-” (For Soundbar)	ES1
Speaker output connector (For Soundbar and Subwoofer)	ES1
USB port (For Soundbar)	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 for secondary circuit after transformer rectified circuit (For Soundbar and Subwoofer)	PS3, Arcing PIS, Resistive PIS
Power board output “V+” to “V-” (For Soundbar)	PS2, Resistive PIS
Speaker output connector (For Soundbar and Subwoofer)	PS2, Resistive PIS
USB port (For Soundbar)	PS1
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
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)**
Edges and corners of enclosure	MS1
Mass of the unit	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)**
External enclosure surfaces	TS1 for accessible part
Internal Parts/circuit of the unit in enclosure	TS3

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
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 indicator	RS1

ENERGY SOURCE DIAGRAM
Indicate which energy sources are included in the energy source diagram. Insert diagram below
☐ **ES** ☐ **PS** ☐ **MS** ☐ **TS** ☐ **RS**

OVERVIEW OF EMPLOYED SAFEGUARDS				
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	ES3: All internal circuit except for output circuit (For Soundbar and Subwoofer)	N/A	N/A	Enclosure, See 5.4.2, 5.4.3, 5.5.3, 5.5.4
Ordinary	ES3: Store discharge on capacitor (For Soundbar and Subwoofer)	N/A	N/A	See 5.5.2.2
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source	Safeguards		
		Basic	Supplementary	Reinforced
Plastic enclosure	PS3 and PS2 circuit	See 6.3	See 6.4.5, 6.4.6	N/A
PCB	PS3 and PS2 circuit	See 6.3	V-1 or better	N/A
Internal/External wiring	PS3 and PS2 circuit	N/A	N/A	See 6.5
The other components/materials	PS3 and PS2 circuit	See 6.3	See 6.4.5, 6.4.6	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	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)
N/A	N/A	N/A	N/A	N/A
9.1	Thermal Burn			

Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS3: Internal Parts of the unit	N/A	N/A	Enclosure
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	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. See also Annex G.	P
4.1.3	Equipment design and construction	Evaluation of safeguards regarding preventing access to ES3 parts, limiting the source supplying outputs to fulfill ES1, and protection in regard to risk of ignition, mechanical-caused injury and thermal burn considered.	P
4.1.15	Markings and instructions ..... :	(See Annex F)	P
4.4.4	Safeguard robustness	See below.	P
4.4.4.2	Steady force tests ..... :	(See Annex T.2, T.5)	P
4.4.4.3	Drop tests..... :	(See Annex T.7)	P
4.4.4.4	Impact tests..... :	(See Annex T.6)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests ..... :		N/A
4.4.4.6	Glass Impact tests..... :	No such glass used.	N/A
4.4.4.7	Thermoplastic material tests ..... :	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard ..... :	(See Annex T)	P
4.4.4.9	Accessibility and safeguard effectiveness		P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions	P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard	The wires are secured by double method so that a loosening of the terminal connection is unlikely.	P
4.6.2	10 N force test applied to ..... :	See appended table 5.4.2.2, 5.4.2.4 and 5.4.3	P
4.7	Equipment for direct insertion into mains socket - outlets	Not direct plug-in 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 coin/button cell batteries used.	N/A
4.8.2	Instructional safeguard		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery ..... :		¾
4.8.4	Battery Compartment Mechanical Tests..... :		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object ..... :	(See annex P)	P
5	**ELECTRICALLY-CAUSED INJURY**		P
5.2.1	Electrical energy source classifications .....:	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current .....:	(See appended table 5.2)	P
5.2.2.3	Capacitance limits.....:	(See appended table 5.2)	P
5.2.2.4	Single pulse limits .....:	No such single pulses generated in the EUT or applied to it.	N/A
5.2.2.5	Limits for repetitive pulses.....:	No such repetitive pulses within the EUT	N/A
5.2.2.6	Ringing signals .....:	No such ringing signals within the EUT	N/A
5.2.2.7	Audio signals .....:	(See annex E.1)	P
5.3	Protection against electrical energy sources	See below	P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only ES1 circuit can be accessed for this product.	P
5.3.2.2	Contact requirements	No openings allowing entry of a probe. No access with test probe to any ES3 circuit or parts.	P
	a) Test with test probe from Annex V .....:	No access with test probe to any ES3 circuit or parts.	P
	b) Electric strength test potential (V).....:		N/A
	c) Air gap (mm) .....:	More than 1.0mm	P
5.3.2.4	Terminals for connecting stripped wire	No stripped wire used.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	The choice and application have taken into account as specified in this Clause 5 and Annex T and natural rubber, hygroscopic materials or asbestos are not used as insulation.	P
5.4.1.3	Humidity conditioning.....:	Humidity conditioning test was conducted, refer to 5.4.8	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.4	Maximum operating temperature for insulating materials .....:	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree.....:	2	¾
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is applied. No insulating compound applied (however see 5.5.4).	N/A
5.4.1.5.3	Thermal cycling	See above	N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such transformer.	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such starting pulses.	N/A
5.4.1.8	Determination of working voltage	(See appended table in attachment 3)	P
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		P
5.4.1.10.2	Vicat softening temperature .....:		N/A
5.4.1.10.3	Ball pressure .....:	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances	The highest value of 5.4.2.2 and 5.4.2.3 be used.	P
5.4.2.2	Determining clearance using peak working voltage	Temporary overvoltage 2000Vpeak assumed.	P
5.4.2.3	Determining clearance using required withstand voltage .....:	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
	a) a.c. mains transient voltage.....:	2500 Vpk considered for Overvoltage Cat. II	¾
	b) d.c. mains transient voltage .....:	Not d.c. mains.	¾
	c) external circuit transient voltage .....:	No such transient	¾
	d) transient voltage determined by measurement :	Not applicable	¾
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	Using procedure 2 to determine the clearance according to 5.4.2.3.	N/A
5.4.2.5	Multiplication factors for clearances and test voltages.....:	1.48	P
5.4.3	Creepage distances.....:	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group .....:	IIIb	¾
5.4.4	Solid insulation	See below	P
5.4.4.2	Minimum distance through insulation .....:	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices	See table 4.1.2 for detail for optical isolator details.	P
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material	See below	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material	Where two layers are provided as reinforced insulation any one layer passed the electric strength test for reinforced insulation.	P
	Number of layers (pcs) .....:	2 layers	P
5.4.4.6.3	Non-separable thin sheet material	No such insulation used within the EUT	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	See G.5.3 and G.6.1 only.	P
5.4.4.9	Solid insulation at frequencies >30 kHz.....:	See appended table 5.4.9.	P
5.4.5	Antenna terminal insulation	No antenna terminal used.	N/A
5.4.5.1	General		P
5.4.5.2	Voltage surge test	Surge test with 50 discharges at a maximum rate of 12/min from a 1 nF capacitor charged to 10 kV performed.	P
	Insulation resistance (MΩ).....:	Measured 500MΩ between mains supply to output terminals.	¾
5.4.6	Insulation of internal wire as part of supplementary safeguard .....:	No such insulation of internal wire as part of supplementary safeguard.	N/A
5.4.7	Tests for semiconductor components and for cemented joints	No tests necessary –see only 5.4.4.4.	N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%).....:	93%	¾
	Temperature (°C) .....:	40°C	¾
	Duration (h) .....:	120h (as client's requirement)	¾
5.4.9	Electric strength test .....:	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test	(See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine tests	Should be considered and conducted during production at factory.	P
5.4.10	Protection against transient voltages between external circuit	No such external circuits	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

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.11	Insulation between external circuits and earthed circuitry.....:	No such external circuit.	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).....:		¾
	Nominal voltage U_{peak} (V).....:		¾
	Max increase due to variation U_{sp} .....:		¾
	Max increase due to ageing DU_{sa} .....:		¾
	$U_{op}= U_{peak} + DU_{sp} + DU_{sa}$ .....:		¾
5.5	Components as safeguards		
5.5.1	General	See below.	P
5.5.2	Capacitors and RC units	(See Annex G.11)	P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....:	(See appended table 5.5.2.2)	P
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See Annex G.12)	P
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
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....:	No such external circuits.	N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors	Class II 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) ..... :		¾
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). ..... :		¾
	Protective current rating (A) ..... :		¾
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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..... :		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current..... :	(See appended table 5.2)	P
5.7.2.2	Measurement of prospective touch voltage		P
5.7.3	Equipment set-up, supply connections and earth connections		P
	System of interconnected equipment (separate connections/single connection)..... :	Single equipment.	¾
	Multiple connections to mains (one connection at a time/simultaneous connections) ..... :	Single connection.	¾
5.7.4	Earthed conductive accessible parts..... :	Class II equipment	N/A
5.7.5	Protective conductor current		N/A
	Supply Voltage (V)..... :		¾
	Measured current (mA)..... :		¾
	Instructional Safeguard..... :		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits	No external circuits.	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	No external circuits.	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	PS (power source) classification determined by measuring the maximum power in Figures 34 and 35 for load and power source circuits.	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.1	General	See the following details.	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 ..... :	See page of energy source identification and classification table for details.	P
6.2.3	Classification of potential ignition sources	See the following details.	P
6.2.3.1	Arcing PIS ..... :	(See appended table 6.2.3.1)	P
6.2.3.2	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..... :	No ignition and no such temperature attained within the equipment. (See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method by Control of fire spread applied, Fire enclosure provided.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		P
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	See sub-clauses 6.4.4, 6.4.5 and 6.4.6.	P
6.4.3.1	General		P
6.4.3.2	Supplementary Safeguards	Provided separation from arcing PIS and resistive PIS, if the distance from PIS less than specified in the Figure 37, Figure 38, Figure 39, min. V-0 materials for woofer box and V-0 plastic enclosure used.	P
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions..... :	(see Annex B)	P
	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

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.5.2	Supplementary safeguards ..... :	Compliance detailed as follows: – Printed board: rated V-1 or better. – Wire insulation (tubing): complying with Clause 6 (See Table 4.1.2 for wiring used). – All other components: at least V-2 except for mounted on min. V-1 material or small parts of combustible material that have mass less than 4g. – Isolating transformer: complying with G.5.3. – Not ignite during single fault conditions as specified in 6.4.3.3 (for speakers, see appended table B.4)	P
6.4.6	Control of fire spread in PS3 circuit	Compliance detailed as follows: – Printed board: rated V-1 or better. – Wire insulation (tubing): complying with Clause 6 (See Table 4.1.2 for wiring used). – All other components: at least V-2 except for mounted on min. V-1 material or small parts of combustible material that have mass less than 4g. – Isolating transformer: complying with G.5.3. – Not ignite during single fault conditions as specified in 6.4.3.3 (for speakers, see appended table B.4)	P
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	See below.	P
6.4.8.1	Fire enclosure and fire barrier material properties	Fire enclosure provided.	P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	Fire enclosure provided.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) ..... :	Soundbar openings is far from PIS, not located in area of Figure 41. No openings for subwoofer.	P
	Needle Flame test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....:	Soundbar openings is far from PIS, not located in area of Figure 41. No openings for subwoofer.	P
	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 .....:	Fire enclosure provided.	P
6.5	Internal and external wiring		P
6.5.1	Requirements	VW-1 wires used, Which considered to equivalent to IEC/TS 60695-11-21	P
6.5.2	Cross-sectional area (mm^2) .....:	See table 4.1.2	¾
6.5.3	Requirements for interconnection to building wiring.....:		N/A
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1		P
7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions.....:		¾
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....:		¾
7.6	Batteries ..... :	No battery charging circuit in the remote controller and the battery is Consumer grade, non-rechargeable carbon-zinc or alkaline batteries.	N/A
8	**MECHANICALLY-CAUSED INJURY**		P
8.1	General	See below	P
8.2	Mechanical energy source classifications	MS1: Mass of the unit MS1: Edges and corners	P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners	Edges and corners of the enclosure are rounded.	P
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard..... :		¾
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
	Instructional Safeguard.....:		¾
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		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	MS1	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard.....:		¾
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force.....:		¾
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10 tilt.....:		¾
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....:		N/A
	Position of feet or movable parts.....:		¾
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		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....:		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force .....:		¾

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Clause	Requirement + Test	Result - Remark	Verdict
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard.....:		¾
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force .....:		¾
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N).....:		¾
8.10.6	Thermoplastic temperature stability (°C) .....:		N/A
8.11	Mounting means for rack mounted 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.....		N/A
	Button/Ball diameter (mm).....:		¾
9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications	No part considered to be accessible other than enclosure. The equipment evaluated by temperature test (see table 5.4.1.4).	P
9.3	Safeguard against thermal energy sources	Temperature of enclosure classed as TS1.	P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard		P
9.4.2	Instructional safeguard .....:		N/A
10	**RADIATION**		P
10.2	Radiation energy source classification	RS1	P
10.2.1	General classification		P
10.3	Protection against laser radiation		N/A
	Laser radiation that exists equipment:		¾
	Normal, abnormal, single-fault .....:		N/A
	Instructional safeguard.....:		¾
	Tool .....:		¾
10.4	Protection against visible, infrared, and UV	The LED only used for	P

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Clause	Requirement + Test	Result - Remark	Verdict
	radiation	indicating, which is considered as low power & inherently exempt group according to IEC 62471	
10.4.1	General		N/A
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 ..... :		¾
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1..:		N/A
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 ..... :	The LED only used for indicating, which is considered as low power & inherently exempt group according to IEC 62471	N/A
10.4.2	Instructional safeguard..... :		N/A
10.5	Protection against x-radiation	No such x-radiation generated from the equipment	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..... :		¾
	Abnormal and single-fault condition.....:		N/A
	Maximum radiation (pA/kg) .....:		N/A
10.6	Protection against acoustic energy sources	Not such an equipment.	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 .....:		¾

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Clause	Requirement + Test	Result - Remark	Verdict
	Means to actively inform user of increase sound pressure .....:		¾
	Equipment safeguard prevent ordinary person to RS2 .....:		¾
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		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 .....:		¾
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A) .....:		¾
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A) .....:		¾
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 summary of testing for tested models, each loaded according to its output ratings. See also appended table B.2.5.)	P
	Audio Amplifiers and equipment with audio amplifiers.....:	Consider	P
B.2.3	Supply voltage and tolerances	+10 % and −10 % for AC mains considered.	P
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		P
B.3.3	D.C. mains polarity test	The EUT is not connected to a D.C. mains	N/A
B.3.4	Setting of voltage selector .....:	No voltage selector was used.	N/A
B.3.5	Maximum load at output terminals.....:	(See appended table B.3)	P
B.3.6	Reverse battery polarity	No such battery within the EUT	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	Max non-clipped output power, one speaker short circuit test considered. 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

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.2	Temperature controlling device open or short-circuited.....:		N/A
B.4.3	Motor tests		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	See below.	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	No coated printed boards used.	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.4 for faults on semiconductor components)	P
B.4.6	Short circuit or disconnect of passive components	(See appended table B.4)	P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation	N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions....:	No battery charging circuit in the remote controller and the battery is Consumer grade, non-rechargeable carbon-zinc or alkaline batteries.	N/A

C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A

D	**TEST GENERATORS**		P
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		P
D.3	Electronic pulse generator		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		P
E.1	Audio amplifier normal operating conditions		P
	Audio signal voltage (V) ..... :	For subwoofer: 9.08Vrms; For soundbar: 7.73Vrms	¾
	Rated load impedance (Ω) ..... :	(See appended table 4.1.2)	¾
E.2	Audio amplifier abnormal operating conditions	(See appended table B.3)	P
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	General requirements	See below.	P
	Instructions – Language ..... :	English	¾
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are complied with IEC 60027-1.	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010.	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	The required marking is located on the enclosure of the equipment and is easily visible.	P
F.3.2	Equipment identification markings	See copy of marking plate.	P
F.3.2.1	Manufacturer identification ..... :	See copy of marking plate.	¾
F.3.2.2	Model identification ..... :	See page 2	¾
F.3.3	Equipment rating markings	See the following details.	P
F.3.3.1	Equipment with direct connection to mains	The equipment is direct connected to AC mains, see F.3.3.3 to F.3.3.6.	P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage ..... :	AC	¾
F.3.3.4	Rated voltage ..... :	See copy of marking plate.	¾
F.3.3.4	Rated frequency ..... :	See copy of marking plate.	¾
F.3.3.6	Rated current or rated power ..... :	See copy of marking plate.	¾
F.3.3.7	Equipment with multiple supply connections	Only one mains supply connection provided.	N/A
F.3.4	Voltage setting device	No voltage setting device.	N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings ..... :	No outlet used.	N/A
F.3.5.2	Switch position identification marking ..... :	No such switch used.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.3	Replacement fuse identification and rating markings .....:	The current fuse is located within the equipment and not replaceable by an ordinary person or an instructed person. marking provided on PCB: For subwoofer F1 T3.15AL 250V; For soundbar F1 T3.15AL 250V	P
F.3.5.4	Replacement battery identification marking.....:	No such battery on the equipment.	N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		N/A
F.3.6.1	Class I Equipment	Class II 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)		P
F.3.6.2.1	Class II equipment with or without functional earth	Class II equipment without functional earth	P
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking ..... :	IPX0.	¾
F.3.8	External power supply output marking	See copy of marking plate.	P
F.3.9	Durability, legibility and permanence of marking	Marking is considered to be legible and easily discernible. See also the following details.	P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. And then again for 15 sec. With the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling and lifting of the label edge. After each test, the marking remained legible.	P
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	See user manual	P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1	No such terminals provided.	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		P
	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	No instructional safeguard is considered as necessary.	N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction	No instructional safeguard required in the equipment.	N/A
G	**COMPONENTS**		P
G.1	**Switches**		N/A
G.1.1	General requirements		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	**Relays**		N/A
G.2.1	General requirements		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**		P
G.3.1	Thermal cut-offs	No thermal cut-off used.	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
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal link used.	N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H)..... :		¾
	Single Fault Condition..... :		¾
	Test Voltage (V) and Insulation Resistance (W) . :		¾
G.3.3	PTC Thermistors		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.4	Overcurrent protection devices	Current fuse complying with IEC 60127 as overcurrent protection device.	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		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**		P
G.4.1	Spacings	See below	P
G.4.2	Mains connector configuration ..... :	Approved according to IEC/EN 60320-1 appliance inlet used.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	No such plug	P
G.5	**Wound Components**		P
G.5.1	Wire insulation in wound components	See below	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Physical separation provided by tube.	P
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) ..... :		¾
	Temperature (°C) ..... :		¾
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	**Transformers**		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) ..... :	The transformer meets the requirements given in G.5.3.2 and G.5.3.3.	P
	Position ..... :	(See appended table 4.1.2)	¾
	Method of protection ..... :	Over current protection by circuit design.	¾
G.5.3.2	Insulation	Primary windings and secondary windings are separated by Reinforced insulation.	P
	Protection from displacement of windings ..... :	By bobbin and insulating tape	¾
G.5.3.3	Overload test..... :	(See appended table B.3)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment.	P
G.5.3.3.2	Winding Temperatures testing in the unit	(See appended table B.3)	P
G.5.3.3.3	Winding Temperatures - Alternative test method	Alternative test method was not considered.	N/A
G.5.4	**Motors**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.1	General requirements		N/A
	Position ..... :		¾
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) ..... :		¾
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) ..... :		¾
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) ..... :		N/A
	Electric strength test (V) ..... :		¾
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 ..... :		¾
G.6	**Wire Insulation**		N/A
G.6.1	General	No insulation wire	N/A
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	**Mains supply cords**		P
G.7.1	General requirements		P
	Type ..... :	See table 4.1.2	¾
	Rated current (A) ..... :	See label	¾
	Cross-sectional area (mm^2), (AWG) ..... :	See table 4.1.2	¾
G.7.2	Compliance and test method	(See appended table 4.1.2)	P
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) ..... :		¾

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm) ... :		¾
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry.....:	No electric hazard	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) .....:		¾
	Diameter (m) ..... :		¾
	Temperature (°C) ..... :		¾
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire	No such wire.	N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	**Varistors**		P
G.8.1	General requirements	VDE approved varistors used.	P
G.8.2	Safeguard against shock	(See appended table 4.1.2)	P
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 IC current limiter provided within the equipment.	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 ..... :		¾
G.9.1 d)	IC limiter output current (max. 5A)..... :		¾
G.9.1 e)	Manufacturers' defined drift ..... :		¾
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		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
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	**Capacitor and RC units**		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.11.1	General requirements	Capacitors used in accordance with their rating and complied with subclasses of IEC 60384-14. (see appended table 4.1.2)	P
G.11.2	Conditioning of capacitors and RC units	(see appended table 4.1.2)	P
G.11.3	Rules for selecting capacitors	The selection followed with tables G.9, G.10, G.11 and G.12.	P
G.12	**Optocouplers**		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results) ..... :	The optocoupler complied with standard IEC/EN 60747-5-5. (see appended table 4.1.2)	P
	Type test voltage Vini ..... :	Considered	¾
	Routine test voltage, Vini,b ..... :	Considered	¾
G.13	**Printed boards**		P
G.13.1	General requirements	See the following details.	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board complied with the minimum clearance and creepage requirements	P
G.13.3	Coated printed boards	No coated printed board or multilayer board applied for within the equipment.	N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction) ..... :		¾
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation ..... :		N/A
	Number of insulation layers (pcs) ..... :		¾
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 ..... :	No coating on component terminals considered to affect creepage or clearances.	N/A
G.15	**Liquid filled components**		N/A
G.15.1	General requirements	No such device provided within the equipment.	N/A
G.15.2	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
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 ..... :		¾
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance ..... :		¾
D3)	Resistance ..... :		¾
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) ..... :		¾
H.3.1.2	Voltage (V) ..... :		¾
H.3.1.3	Cadence; time (s) and voltage (V) ..... :		¾
H.3.1.4	Single fault current (mA): ..... :		¾
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)..... :		¾

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Clause	Requirement + Test	Result - Remark	Verdict
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		P
	General requirements	Certified triple insulation wire used. (See appended table 4.1.2)	P
K	**SAFETY INTERLOCKS**		N/A
K.1	General requirements	No safety interlock provided.	N/A
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 ..... :		N/A
L	**DISCONNECT DEVICES**		P
L.1	General requirements	Appliance inlet used as disconnect device.	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized	When AC inlet is disconnected no hazardous voltage in the equipment.	P
L.4	Single phase equipment	The appliance coupler disconnects both poles simultaneously.	P
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	Only one a.c. mains connection.	N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		P
M.1	General requirements	Dry battery used in remote control.	P
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.2.2	Compliance and test method (identify method)...:		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance ..... :		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature..... :		¾
M.4.2.2 b)	Single faults in charging circuitry..... :		¾
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
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
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume *V*z (m^3/s) .....:		¾
M.8.2.3	Correction factors .....:		¾
M.8.2.4	Calculation of distance *d* (mm) .....:		¾
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) .....:	See user manual	P
N	**ELECTROCHEMICAL POTENTIALS**		N/A
	Metal(s) used.....:		¾
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		P
	Figures O.1 to O.20 of this Annex applied .....:	Considered.	¾
P	**SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS**		P
P.1	General requirements	No openings	P
P.2.2	Safeguards against entry of foreign object		N/A
	Location and Dimensions (mm) ..... :		¾
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	Not 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	No such liquids.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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) .....:		¾
	Tr (°C) .....:		¾
	Ta (°C) .....:		¾
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**		P
Q.1	Limited power sources	(see appended Annex Q.1)	P
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		P
	- Regulating network limited output under normal operating and simulated single fault condition	A regulating network limits the output in compliance with table Q.1 both under normal operating conditions and after any single fault.	P
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	(see appended Annex Q.1)	P
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		¾
	Current limiting method ..... :		¾
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..... :		¾
	Wall thickness (mm) ..... :		¾

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	Conditioning (°C) ..... :		¾
	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 ..... :		¾
	Wall thickness (mm) ..... :		¾
	Conditioning (°C) ..... :		¾
	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 ..... :		¾
	Wall thickness (mm) ..... :		¾
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	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 ..... :		¾
	Wall thickness (mm) ..... :		¾
	Conditioning (test condition), (°C)..... :		¾
	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		P
T.2	Steady force test, 10 N ..... :	(See appended table T.2)	P
T.3	Steady force test, 30 N ..... :	No internal enclosure.	N/A
T.4	Steady force test, 100 N ..... :		N/A
T.5	Steady force test, 250 N ..... :	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Fall test		P
	Swing test		N/A
T.7	Drop test ..... :		N/A
T.8	Stress relief test..... :	(See appended table T.8)	P
T.9	Impact Test (glass)	No glass used.	N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J)..... :		¾
	Height (m) ..... :		¾
T.10	Glass fragmentation test ..... :		N/A
T.11	Test for telescoping or rod antennas	No such antennas provided within the equipment.	N/A
	Torque value (Nm) ..... :		¾
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements	No CRT provided.	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen ..... :		N/A
V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		P
V.1	Accessible parts of equipment	No access with test probes to any hazardous parts	P
V.2	Accessible part criterion		P

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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])
The following parts for Soundbar:					
Plastic material of front enclosure	KINGFA SCI & TECH CO LTD	FRHIPS-960	V-0, 50°C, min. thickness: 1.5mm	UL 94	UL E171666
(Alternative)	KINGFA SCI & TECH CO LTD	FRHIPS-980(o)	V-0, 50°C, min. thickness: 1.6mm	UL 94	UL E171666
Plastic material of rear enclosure	CHI MEI CORPORATION	PA-765A(+)	V-0, 85°C, min. thickness: 2.1mm	UL 94	UL E56070
(Alternative)	LG CHEMICAL LTD	AF312C	V-0, 80°C, min. thickness: 2.5mm	UL 94	UL E67171
(Alternative)	KINGFA SCI & TECH CO LTD	HF-606	V-0, 60°C, min. thickness: 1.6mm	UL 94	UL E171666
Grille covering material	RC TEXTILE CO., LTD	RC-820K-02UL	Pass the Glow-Wire test at 550°C according to IEC 60695-2-11.	IEC 62368-1	Test with appliance
Power plug (EU type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-01	250 Vac, 2.5 A	DIN VDE0620	VDE 40026576
(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-01	250 Vac, 2.5 A	DIN VDE0620	VDE 40009009
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5 A	DIN VDE0620	VDE
Power plug (CN type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-05	250 Vac, 6A	GB15934-2008	20100101 01425445
(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-07	250 Vac, 6A	GB15934-2008	200701010125 1883
(alternative)	Interchangeable	Interchangeable	250 Vac, 6A	GB15934-2008	CCC
Power plug (US type)	UNIRISE ELECTRIC WIRE & CABLE CO., LTD.	UE-221	125 Vac, 10A	UL817	E206144

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(alternative)	TAIWAN LINE TEK ELECTRONICS CO LTD	LP-5	125 Vac, 10A	UL817	E70782
(alternative)	Interchangeable	Interchangeable	125 Vac, min.7A	UL817	UL
Power plug (UK type)	TAIWAN LINE TEK ELECTRONICS CO LTD	LP-61L	250 Vac, 3A	BS1363-1:2016+A1:2018	BSI KM 55112
(alternative)	Interchangeable	Interchangeable	250 Vac, 3A	BS1363-1:2016+A1:2018	BSI
Power plug (AU type)	Shenzhen Deren Electronic Co.,Ltd.	DR-209	7.5A,250Vac 10A,250Vac	AS/NZS3112: 2011	Q03980\ES01 30303
(alternative)	Taiwan Line Tek in China Everfull Electronic Co.,Ltd	LP-15A	7.5A,250Vac 10A,250Vac	AS/NZS3112: 2011	TE4943-A6
(alternative)	longwell company	LP-15A	7.5A,250Vac 10A,250Vac	AS/NZS3112: 2011	18246/12555
(alternative)	Shenzhen Xie Kang Electric Co.,Ltd.	XK-15	10A,250Vac	AS/NZS3112: 2011	NSW21010
(alternative)	Huizhou Yongda Telecommunication Industry Co., Ltd	YD-02	10A,250Vac	AS/NZS3112: 2011	TCA090902\NSW25507
(alternative)	Interchangeable	Interchangeable	Min.7A,250Vac	AS/NZS3112: 2011	AU cert.marks
Power cord (EU type)	BAOHING Wire and cable manufacturing co.LTD.	H03VVH2-F, H05VVH2-F	2 x 0.75 mm^2	DIN EN 50525-2-11	VDE 103727
Alternative	SHENZHEN XIEKANG ELECTRIC CO.,LTD	H03VVH2-F	2 x 0.75 mm^2	DIN EN 50525-2-11	VDE 40029225
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2	EN 50525-2-11	VDE
Power cord (CN type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	60227 IEC 52(RVV)	2 x 0.5~0.75 mm^2 (2 x 0.5 mm^2 maximum length 2m)	GB/T 5023.5-2008	2002 0101 0502 5222.

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(alternative)	SHENZHEN XIE JIN ELECTRONIC CO.,LTD	IEC52 300/300V	2 x 0.75 mm^2	GB/T5023.5-2008/IEC60227-5:2003	200701010524 2025
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2	GB/T 5023.5-2008	CCC
Power Cord (US type）	UNIRISE ELECTRIC WIRE & CABLE CO., LTD.	NISPT-2	2×18AWG	UL62	E176096
(alternative)	TAIWAN LINE TEK ELECTRONICS CO LTD	NISPT-2	2×18AWG	UL62	E138949
(alternative)	Interchangeable	Interchangeable	2×18AWG	UL62	UL
Power Cord (UK type）	TAIWAN LINE TEK ELECTRONICS CO LTD	H03VVH2-F, H05VVH2-F	2 x 0.75 mm^2	EN 50525-2-11	VDE 96233
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2	EN 50525-2-11	VDE
Power Cord (AU type）	Shenzhen Bao Hing Electric Wire&Cable MFR Co Ltd	LTSA-2F	2 x 0.75 mm^2	AS/NZS 60227.5+A1	NSW14586
(alternative)	Shenzhen Tongyuan Industrial.Co.,Ltd.	H03VV-F	2 x 0.75 mm^2	AS/NZS 60227.5+A1	NSW24638
(alternative)	Taiwan Line Tek in China Everfull Electronic Co.,Ltd	H03VVH2-F, H05VVH2-F	2 x 0.5-0.75 mm^2, 2 x 0.75 mm^2 (2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	TE4274-A10
(alternative)	longwell company	LFC-2F	2 x 0.75 mm^2	AS/NZS 60227.5+A1	23773
(alternative)	longwell company	H03VVH2-F	2 x 0.5 mm^2 maximum length 2m	AS/NZS 60227.5+A1	18246

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(alternative)	MAINLAND Electric Wire and Cable Co. Ltd.	H03VVH2-F	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	NSW20609
(alternative)	Shenzhen Xie Kang Electric Co.,Ltd.	H03VVH2-F	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	A/12555EA
(alternative)	Huizhou Yongda Telecommunication Industry Co., Ltd	H03VVH2-F2, H03VV-F2	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	NSW25012
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	AU cert.marks
Appliance connector (EU type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-06	AC 250V, 2.5A	EN 60320-1	2163318.01
(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-05	AC 250V, 2.5A	DIN EN 60320-1	VDE 40018650
(alternative)	Interchangeable	Interchangeable	AC 250V, 2.5A	IEC/EN 60320-1	VDE
Appliance connector (CN type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-06	250 Vac, 2.5A	GB15934-2008	20100101 01425445
(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-05	250 Vac, 2.5A	GB15934-2008	200701010125 1883
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5A	GB15934-2008	CCC
Appliance connector (US type)	UNIRISE ELECTRIC WIRE & CABLE CO., LTD.	UE-224	AC 125V, 7A	UL 60320-1	E206144
(alternative)	TAIWAN LINE TEK ELECTRONICS CO LTD	LS-7H	125 Vac, 7A	UL 60320-1	E70782

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(alternative)	Interchangeable	Interchangeable	125 Vac, Min. 7A	UL 60320-1	UL
Appliance connector (UK type)	TAIWAN LINE TEK ELECTRONICS CO LTD	LS-7H, LS-7	250 Vac, 2.5A	EN 60320	BSI KM 55652
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5A	IEC/EN 60320-1	BSI
Appliance connector (AU type)	Shenzhen Deren Electronic Co.,Ltd.	DR-294	250 Vac, 2.5A	AS/NZS60320	Q03979\ES01 30314
(alternative)	Taiwan Line Tek in China Everfull Electronic Co.,Ltd	LS-7H	250 Vac, 2.5A	AS/NZS60320	TPE 20090-A3
(alternative)	LONGWELL COMPANY	LS-17	250 Vac, 2.5A	AS/NZS60320	NSW 24139
(alternative)	LONGWELL COMPANY	LS-7	250 Vac, 2.5A	AS/NZS60320	N10397
(alternative)	Shenzhen Xie Kang Electric Co.,Ltd.	XK-05	250 Vac, 2.5A	AS/NZS60320	NSW22062
(alternative)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-06	250 Vac, 2.5A	AS/NZS60320	NSW25013
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5A	AS/NZS60320	AU cert.marks
AC inlet	ZHEJIANG LECI ELECTRONICS CO LTD	DB-8	250VAC, 2.5A.	IEC/EN 60320-1	VDE 40032028
(Alternative)	ZheJiang Bei Er Jia ELECTRONIC CO. LTD.	ST-A03-005	250VAC, 2.5A	IEC/EN 60320-1	VDE 40014833
AC connector CN1	TORAY INDUSTRIES INC	CM3014V0(rf)	V-0, minimum 65 degree C.	UL 94	UL E41797
(Alternative)	ZHONGSHAN ROILON ENGINEERING PLASTICS CO LTD	FR3A	V-0, minimum 65 degree C.	UL 94	UL E357946
Primary input wire	Interchangeable	Interchangeable	600V 105 degree C, 22AWG, VW-1	UL758	UL

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HEAT SHRINKABLE TUBE	Interchangeable	Interchangeable	600V,125 degree C	UL 224	UL
PCB	Interchangeable	Interchangeable	V-0, 130°C	UL 94, UL 796	UL E342828
Secondary wire	Interchangeable	Interchangeable	Min. VW-1 or FT1, min. 80 degree C, min. 300V, min. 20AWG	UL 758	UL
Current fuse (F1)	SHENZHEN LANSON ELECTRONICS CO., LTD	SMT	T3.15A, 250Vac	IEC/EN 60127-1	VDE 40012592
(Alternative)	HOLLYLAND CO LTD	5ET	T3.15A, 250Vac	IEC/EN 60127-1	VDE 40015669
Varistor (RV1) (Optional)	THINKING ELECTRONIC INDUSTRIAL CO LTD	TVR14561 TVR14561K	minimum 350 V, 85 degree C, V-0	IEC/EN 61051-1, IEC/EN 61051-2	VDE 005944
(Alternative)	CENTRA SCIENCE CORP	CNR-14D561K	minimum 350 V, 105 degree C, V-0	IEC/EN 61051-1, IEC/EN 61051-2	VDE 40008220
(Alternative)	BRIGHTKING (SHENZHEN) CO LTD	561KD14	minimum 350 V, 105 degree C, V-0	IEC/EN 61051-1, IEC/EN 61051-2	VDE 40027827
X-Capacitor (CX1)	Shenzhen Jinghao Capacitor Co., Ltd	CBB62B	Rated maximum 0.33 uF±10%, minimum 250 V, 110degree C. Marked with an X2.	IEC/EN 60384-14	VDE 40018690
(Alternative)	XIAMEN FARATRONIC CO LTD	MKP62	Rated maximum 0.33 uF±10%, minimum 250 V, 100degree C. Marked with an X2.	IEC/EN 60384-14	VDE 40000358
(Alternative)	Europtronic (SuZhou) Co. Ltd.	MPX	Rated maximum 0.33 uF±10%, minimum 250 V, 110degree C. Marked with an X2.	IEC/EN 60384-14	VDE 40018238
Y -Capacitor (CY1)	SHANTOU HIGH-NEW ZONE SONGTIAN ENTERPRISE CO., LTD	CD	Rated maximum 1000pF, minimum 250 V, minimum 125 degree C. Marked with an Y1.	IEC/EN 60384-14	VDE 40025754

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(Alternative)	TDK CORPORATION	CD	Rated maximum 1000pF, minimum 250 V, minimum 125 degree C. Marked with an Y1.	IEC/EN 60384-14	VDE 40029780
(Alternative)	Yinan Don's Electronic Component Co., Ltd.	CT81	Rated maximum 1000pF, minimum 250 V, minimum 125 degree C. Marked with an Y1.	IEC/EN 60384-14	VDE 135256
Optical isolator (U2)	LITE-ON TECHNOLOGY CORP	LTV-817	dti = 0.5 mm, int. dcr.>6.0 mm, ext. dcr.>7.8 mm, 110°C	IEC/EN 60747-5-5	VDE 40015248
(Alternative)	BRIGHT LED ELECTRONICS CORP	BPC-817S	External Cr: 7.8mm, Internal Cr: >6.0mm, Dti.=0.5mm, 100°C	IEC/EN 60747-5-5	VDE 40007240
(Alternative)	Everlight Electronics Co., Ltd.	EL817	External Cr: 7.7mm, Internal Cr: 6.0mm, Dti.=0.5mm, 100°C	IEC/EN 60747-5-5	VDE 132249
Line Choke (LF1)	HUIZHOU SUNSHINE Electronics Co.,LTD	TC1407-20mH/N916	130°C	IEC 62368-1	Test with appliance
(Alternative)	Shenzhen haixinxing Electronics Co,Ltd	T14	130°C	IEC 62368-1	Test with appliance
- Magnet wire	Interchangeable	Interchangeable	130°C	UL 1446	UL
Ripple Capacitor CE1	Interchangeable	Interchangeable	Max 68uF, min. 400V, 105°C	--	--
Bridge Diode BD1	Interchangeable	Interchangeable	Min. 2A, min. 600V	--	--
Mosfet (Q1)	Interchangeable	Interchangeable	Min. 2A, min. 400V	--	--
Bleeder resistor (R1, R2, R3, R4)	Interchangeable	Interchangeable	2.74Mohm, 1/4W Minimum	--	--
Transformer (T1)	HUIZHOU SUNSHINE Electronics Co., LTD	36-TRF367-SX0-E, 36-TRF418-SX0-E	Class A Reinforced insulation.	IEC 62368-1	Test with appliance

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- Bobbin	Chang Chun Plastics Co., Ltd.	T375HF	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E59481
(Alternative)	Sumitomo Bakelite	PM-9820	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E41429
(Alternative)	Chang Chun Plastics Co., Ltd.	T200HF	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E59481
- Magnet wire	Interchangeable	Interchangeable	130°C	UL 1446	UL
-Triple insulation wire	TA YA ELECTRIC WIRE & CABLE CO LTD	TILW-B	130°C	IEC/EN 62368-1	VDE 40019957
- Insulation tape	Jingjiang Yahua Pressure Sensitive Glue Co Ltd	CT* (c)(g)	130°C	UL 510	UL E165111
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFT	Min. 300V, 200°C	UL 224	UL E156256
(Alternative)	SHENZHEN CHANGYUAN ELECTRONIC MATERIAL CO.,LTD	CB-TT	Min. 300V, 200°C	UL 224	UL E180908
- Varnish	HITACHI CHEMICAL CO LTD	WP-2952F-2G	130°C	UL1 446	UL E72979
The following parts for Subwoofer:					
Wood Enclosure	Interchangeable	Interchangeable	Min. thickness: 6.0mm	--	--
Metal enclosure	Interchangeable	Interchangeable	Metallic. Minimum 1.0 mm thick	--	--
Power plug (EU type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-01	250 Vac, 2.5 A	DIN VDE0620	VDE 40026576
(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-01	250 Vac, 2.5 A	DIN VDE0620	VDE 40009009
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5 A	DIN VDE0620	VDE

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Power plug (CN type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-05	250 Vac, 6A	GB15934-2008	20100101 01425445
(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-07	250 Vac, 6A	GB15934-2008	200701010125 1883
(alternative)	Interchangeable	Interchangeable	250 Vac, 6A	GB15934-2008	CCC
Power plug (US type)	UNIRISE ELECTRIC WIRE & CABLE CO., LTD.	UE-221	125 Vac, 10A	UL817	E206144
(alternative)	TAIWAN LINE TEK ELECTRONICS CO LTD	LP-5	125 Vac, 10A	UL817	E70782
(alternative)	Interchangeable	Interchangeable	125 Vac, min.7A	UL817	UL
Power plug (UK type)	TAIWAN LINE TEK ELECTRONICS CO LTD	LP-61L	250 Vac, 3A	BS1363-1:2016+A1:2018	BSI KM 55112
(alternative)	Interchangeable	Interchangeable	250 Vac, 3A	BS1363-1:2016+A1:2018	BSI
Power plug (AU type)	Shenzhen Deren Electronic Co.,Ltd.	DR-209	7.5A,250Vac 10A,250Vac	AS/NZS3112: 2011	Q03980\ES01 30303
(alternative)	Taiwan Line Tek in China Everfull Electronic Co.,Ltd	LP-15A	7.5A,250Vac 10A,250Vac	AS/NZS3112: 2011	TE4943-A6
(alternative)	longwell company	LP-15A	7.5A,250Vac 10A,250Vac	AS/NZS3112: 2011	18246/12555
(alternative)	Shenzhen Xie Kang Electric Co.,Ltd.	XK-15	10A,250Vac	AS/NZS3112: 2011	NSW21010
(alternative)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-02	10A,250Vac	AS/NZS3112: 2011	TCA090902\NSW25507
(alternative)	Interchangeable	Interchangeable	Min.7A,250Vac	AS/NZS3112: 2011	AU cert.marks

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Power cord (EU type)	BAOHING Wire and cable manufacturing co.LTD.	H03VVH2-F	2 x 0.75 mm^2	DIN EN 50525-2-11	VDE 103727
Alternative	SHENZHEN XIEKANG ELECTRIC CO.,LTD	H03VVH2-F	2 x 0.75 mm^2	DIN EN 50525-2-11	VDE 40029225
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2	EN 50525-2-11	VDE
Power cord (CN type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	60227 IEC 52(RVV)	2 x 0.5~0.75 mm^2 (2 x 0.5 mm^2 maximum length 2m)	GB/T 5023.5-2008	2002 0101 0502 5222.
(alternative)	SHENZHEN XIE JIN ELECTRONIC CO.,LTD	IEC52 300/300V	2 x 0.75 mm^2	GB/T5023.5-2008/IEC60227-5:2003	200701010524 2025
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2	GB/T 5023.5-2008	CCC
Power Cord (US type）	UNIRISE ELECTRIC WIRE & CABLE CO., LTD.	NISPT-2	2×18AWG	UL62	E176096
(alternative)	TAIWAN LINE TEK ELECTRONICS CO LTD	NISPT-2	2×18AWG	UL62	E138949
(alternative)	Interchangeable	Interchangeable	2×18AWG	UL62	UL
Power Cord (UK type)	TAIWAN LINE TEK ELECTRONICS CO LTD	H03VVH2-F, H05VVH2-F	2 x 0.75 mm^2	EN 50525-2-11	VDE 96233
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2	EN 50525-2-11	VDE
Power Cord (AU type)	Shenzhen Bao Hing Electric Wire&Cable MFR Co Ltd	LTSA-2F	2 x 0.75 mm^2	AS/NZS 60227.5+A1	NSW14586
(alternative)	Shenzhen Tongyuan Industrial.Co.,Ltd.	H03VV-F	2 x 0.75 mm^2	AS/NZS 60227.5+A1	NSW24638

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Clause	Requirement + Test	Result - Remark	Verdict

(alternative)	Taiwan Line Tek in China Everfull Electronic Co.,Ltd	H03VVH2-F, H05VVH2-F	2 x 0.5-0.75 mm^2, 2 x 0.75 mm^2 (2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	TE4274-A10
(alternative)	longwell company	LFC-2F	2 x 0.75 mm^2	AS/NZS 60227.5+A1	23773
(alternative)	longwell company	H03VVH2-F	2 x 0.5 mm^2 maximum length 2m	AS/NZS 60227.5+A1	18246
(alternative)	MAINLAND Electric Wire and Cable Co. Ltd.	H03VVH2-F	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	NSW20609
(alternative)	Shenzhen Xie Kang Electric Co.,Ltd.	H03VVH2-F	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	A/12555EA
(alternative)	Huizhou Yongda Telecommunication Industry Co., Ltd.	H03VVH2-F2, H03VV-F2	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	NSW25012
(alternative)	Interchangeable	Interchangeable	2 x 0.75 mm^2 2 x 0.5 mm^2 maximum length 2m)	AS/NZS 60227.5+A1	AU cert.marks
Appliance connector (EU type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-06	AC 250V, 2.5A	EN 60320-1	2163318.01
(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-05	AC 250V, 2.5A	DIN EN 60320-1	VDE 40018650
(alternative)	Interchangeable	Interchangeable	AC 250V, 2.5A	IEC/EN 60320-1	VDE
Appliance connector (CN type)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-06	250 Vac, 2.5A	GB15934-2008	20100101 01425445

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Clause	Requirement + Test	Result - Remark	Verdict

(alternative)	SHENZHEN XIEKANG ELECTRIC CO.,LTD	XK-05	250 Vac, 2.5A	GB15934-2008	200701010125 1883
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5A	GB15934-2008	CCC
Appliance connector (US type)	UNIRISE ELECTRIC WIRE & CABLE CO., LTD.	UE-224	AC 125V, 7A	UL 60320-1	E206144
(alternative)	TAIWAN LINE TEK ELECTRONICS CO LTD	LS-7H	125 Vac, 7A	UL 60320-1	E70782
(alternative)	Interchangeable	Interchangeable	125 Vac, Min. 7A	UL 60320-1	UL
Appliance connector (UK type)	TAIWAN LINE TEK ELECTRONICS CO LTD	LS-7H	250 Vac, 2.5A	EN 60320	BSI KM 55652
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5A	IEC/EN 60320-1	BSI
Appliance connector (AU type)	Shenzhen Deren Electronic Co.,Ltd.	DR-294	250 Vac, 2.5A	AS/NZS60320	Q03979\ES01 30314
(alternative)	Taiwan Line Tek in China Everfull Electronic Co.,Ltd	LS-7H	250 Vac, 2.5A	AS/NZS60320	TPE 20090-A3
(alternative)	LONGWELL COMPANY	LS-17	250 Vac, 2.5A	AS/NZS60320	NSW 24139
(alternative)	LONGWELL COMPANY	LS-7	250 Vac, 2.5A	AS/NZS60320	N10397
(alternative)	Shenzhen Xie Kang Electric Co.,Ltd.	XK-05	250 Vac, 2.5A	AS/NZS60320	NSW22062
(alternative)	Huizhou Yongda Telecommunication Industry Co., Ltd.	YD-06	250 Vac, 2.5A	AS/NZS60320	NSW25013
(alternative)	Interchangeable	Interchangeable	250 Vac, 2.5A	AS/NZS60320	AU cert.marks
AC inlet	ZHEJIANG LECI ELECTRONICS CO LTD	DB-8	250VAC, 2.5A.	IEC/EN 60320-1	VDE 40032028

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Clause	Requirement + Test	Result - Remark	Verdict

(Alternative)	ZheJiang Bei Er Jia ELECTRONIC CO. LTD.	ST-A03-005	250VAC, 2.5A	IEC/EN 60320-1	VDE 40014833
AC connector CN1	TORAY INDUSTRIES INC	CM3014V0(rf)	V-0, minimum 65 degree C.	UL 94	UL E41797
(Alternative)	ZHONGSHAN ROILON ENGINEERING PLASTICS CO LTD	FR3A	V-0, minimum 65 degree C.	UL 94	UL E357946
Primary input wire	Interchangeable	Interchangeable	600V 105 degree C, 20AWG, VW-1	UL 758	UL
HEAT SHRINKABLE TUBE	Interchangeable	Interchangeable	600V,125 degree C	--	UL
PCB	Interchangeable	Interchangeable	V-0, 130°C	UL 94, UL 796	UL
Secondary wire	Interchangeable	Interchangeable	Min. VW-1 or FT1, min. 80 degree C, min. 300V, min. 20AWG	UL 758	UL
Current fuse (F1)	SHENZHEN LANSON ELECTRONICS CO., LTD	SMT	T3.15A, 250Vac	IEC/EN 60127-1	VDE 40012592
(Alternative)	HOLLYLAND CO LTD	5ET	T3.15A, 250Vac	IEC/EN 60127-1	VDE 40015669
Varistor (RV1) (Optional)	THINKING ELECTRONIC INDUSTRIAL CO LTD	TVR14561 TVR14561K	minimum 350 V, 85 degree C, V-0	IEC/EN 61051-1, IEC/EN 61051-2	VDE 005944
(Alternative)	CENTRA SCIENCE CORP	CNR-14D561K	minimum 350 V, 105 degree C, V-0	IEC/EN 61051-1, IEC/EN 61051-2	VDE 40008220
(Alternative)	BRIGHTKING (SHENZHEN) CO LTD	561KD14	minimum 350 V, 105 degree C, V-0	IEC/EN 61051-1, IEC/EN 61051-2	VDE 40027827
X-Capacitor (CX1)	Shenzhen Jinghao Capacitor Co., Ltd	CBB62B	Rated maximum 0.33 uF±10%, minimum 250 V, 110degree C. Marked with an X2.	IEC/EN 60384-14	VDE 40018690
(Alternative)	XIAMEN FARATRONIC CO LTD	MKP62	Rated maximum 0.33 uF±10%, minimum 250 V, 100degree C. Marked with an X2.	IEC/EN 60384-14	VDE 40000358

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Clause	Requirement + Test	Result - Remark	Verdict

(Alternative)	Europtronic (SuZhou) Co. Ltd.	MPX	Rated maximum 0.33 uF±10%, minimum 250 V, 110degree C. Marked with an X2.	IEC/EN 60384-14	VDE 40018238
Y -Capacitor (CY1)	SHANTOU HIGH-NEW ZONE SONGTIAN ENTERPRISE CO., LTD	CD	Rated maximum 1000pF, minimum 250 V, minimum 125 degree C. Marked with an Y1.	IEC/EN 60384-14	VDE 40025754
(Alternative)	TDK CORPORATION	CD	Rated maximum 1000pF, minimum 250 V, minimum 125 degree C. Marked with an Y1.	IEC/EN 60384-14	VDE 40029780
(Alternative)	Yinan Don's Electronic Component Co., Ltd.	CT81	Rated maximum 1000pF, minimum 250 V, minimum 125 degree C. Marked with an Y1.	IEC/EN 60384-14	VDE 135256
Optical isolator (U2)	LITE-ON TECHNOLOGY CORP	LTV-817	dti = 0.5 mm, int. dcr.>6.0 mm, ext. dcr.>7.8 mm, 110°C	IEC/EN 60747-5-5	VDE 40015248
(Alternative)	BRIGHT LED ELECTRONICS CORP	BPC-817S	External Cr: 7.8mm, Internal Cr: >6.0mm, Dti.=0.5mm, 100°C	IEC/EN 60747-5-5	VDE 40007240
(Alternative)	Everlight Electronics Co., Ltd.	EL817	External Cr: 7.7mm, Internal Cr: 6.0mm, Dti.=0.5mm, 100°C	IEC/EN 60747-5-5	VDE 132249
Line Choke (LF3, LF1)	HUIZHOU SUNSHINE Electronics Co.,LTD	TC1407-20mH/N916	130°C	IEC 62368-1	Test with appliance
(Alternative)	SHENZHEN HAIXINXING TECHNOLOGY CO.,LTD	T14	130°C	IEC 62368-1	Test with appliance
Ripple Capacitor CE1	Interchangeable	Interchangeable	Max 68uF, min. 400V, 105°C	--	--
Bridge Diode BD1	Interchangeable	Interchangeable	Min. 2A, min. 600V	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

Mosfet (Q1)	Interchangeable	Interchangeable	Min. 2A, min. 400V	--	--
Bleeder resistor (R1, R2, R3, R4)	Interchangeable	Interchangeable	2.74Mohm, 1/4W Minimum	--	--
Transformer (T1)	HUIZHOU SUNSHINE Electronics Co., LTD	36-TRF383-SX0-E	Class A Reinforced insulation.	IEC 62368-1	Test with appliance
- Bobbin	Chang Chun Plastics Co., Ltd.	T375HF	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E59481
(Alternative)	Sumitomo Bakelite	PM-9820	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E41429
(Alternative)	Chang Chun Plastics Co., Ltd.	T200HF	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E59481
- Magnet wire	Interchangeable	Interchangeable	130°C	UL 1446	UL
-Triple insulation wire	TA YA ELECTRIC WIRE & CABLE CO LTD	TILW-B	130°C	IEC/EN 62368-1	VDE 40019957
(Alternative)	E&B TECHNOLOGY CO.,LTD	E&B-XXXB	130°C	IEC/EN 62368-1	VDE 40023473
- Insulation tape	Jingjiang Yahua Pressure Sensitive Glue Co Ltd	CT* (c)(g)	130°C	UL 510	UL E165111
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFT	Min. 300V, 200°C	UL 224	UL E156256
(Alternative)	SHENZHEN CHANGYUAN ELECTRONIC MATERIAL CO.,LTD	CB-TT-T	Min. 300V, 200°C	UL 224	UL E180908
(Alternative)	SHENZHEN WORE HEAT-SHRINKABLE MATERIAL CO.,LTD	WF	Min. 600V, 200°C	UL 224	UL E203950
- Varnish	HITACHI CHEMICAL CO LTD	WP-2952F-2G	130°C	UL1 446	UL E72979

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Clause	Requirement + Test	Result - Remark	Verdict

Transformer (T1) (Alternative)	SHENZHEN HAIXINXING TECHNOLOGY	36-TRF383-XX0-A	Class A Reinforced insulation.	IEC 62368-1	Test with appliance
- Bobbin	Chang Chun Plastics Co., Ltd.	T375HF	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E59481
(Alternative)	Sumitomo Bakelite	PM-9820	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E41429
(Alternative)	Chang Chun Plastics Co., Ltd.	T200HF	PC, V-0, 150°C, min. 0.75mm	UL 746, UL 94	UL E59481
- Magnet wire	Interchangeable	Interchangeable	130°C	UL 1446	UL
-Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO.,LTD	TIW-B	130°C	IEC/EN 62368-1	VDE 40033527
(Alternative)	SHANGHAI XIANGXIANG ELECTRON CO LTD	TKW-B	130°C	IEC/EN 62368-1	VDE 40026588
(Alternative)	SHENZHEN KAIZHONG HEDONG NEW MATERIAL CO LTD	TIW-B	130°C	IEC/EN 62368-1	VDE 40038861
- Insulation tape	Jingjiang Yahua Pressure Sensitive Glue Co Ltd	CT* (c)(g)	130°C	UL 510	UL E165111
- Tube	DONGGUAN LING FREE HARDWARE PLASTICS PRODUCT CO LTD	LING FREE PTFE TUBE	Min. 300V, 200°C	UL 224	UL E352366
- Varnish	YUEYANG GREEN TECHNOLOGY CO LTD	JX-1150	130°C	UL1 446	UL E303754

Supplementary information:

1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.

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

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**		¾
Part	**Material**	**Oven Temperature (°C)**	**Comments**

4.8.4.3	**TABLE: Battery replacement test**	¾
Battery part no. ..... :		—
Battery Installation/withdrawal	Battery Installation/Removal Cycle	Comments
	1	
	2	
	3	
	4	
	5	
	6	
	8	
	9	
	10	

4.8.4.4	**TABLE: Drop test**		¾
Impact Area	Drop Distance	Drop No.	Observations
		1	
		2	
		3	

4.8.4.5	**TABLE: Impact**		¾
Impacts per surface	**Surface tested**	**Impact energy (Nm)**	**Comments**

4.8.4.6	**TABLE: Crush test**		¾
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)**

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

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	
Test condition: AUX mode (For subwoofer)							
1	264Va.c. 60Hz	Speaker output to "-"	Normal	3.21Vrms	--	--	ES1
			Abnormal (Max. non-clipped output)	9.08Vrms max. (Unit normal operation)	--	--	ES1
			Abnormal (Speaker SC)	0V (Unit shutdown)	--	--	ES1
			Abnormal (Transformer overload)	3.21Vrms max. (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1-2 SC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 3 -4 SC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1 OC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 4 OC)	0 (Unit shutdown)	--	--	ES1
			Single fault (D5 SC)	0 (Unit shutdown)	--	--	ES1
			Single fault (R22 SC)	0 (Unit shutdown)	--	--	ES1
2	264Va.c. 60Hz	Speaker output "+" / "-" to earth	Normal	--	0.179mApk	60	ES1
			Abnormal (Max. non-clipped output)	--	0.179mApk (Unit normal operation)	60	ES1
			Abnormal (Speaker SC)	--	0.179mApk (Unit shutdown)	60	ES1
			Abnormal (Transformer overload)	--	0.179mApk (Unit shutdown)	60	ES1

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

			Single fault (U2 pin 1-2 SC)	--	0.179mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 3 -4 SC)	--	0.179mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 1 OC)	--	0.179mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 4 OC)	--	0.179mApk (Unit shutdown)	60	ES1
			Single fault (D5 SC)	--	0.179mApk (Unit shutdown)	60	ES1
			Single fault (R22 SC)	--	0.179mApk (Unit shutdown)	60	ES1
Test condition: AUX mode (For sound bar)							
1	264Va.c. 60Hz	Power board output “+” to “-”	Normal	15.20Vdc max.	--	--	ES1
			Abnormal (Max. non-clipped output)	15.20Vdc max. (Unit normal operation)	--	--	ES1
			Abnormal (Ventilation blocked)	15.20Vdc max. (Unit normal operation)	--	--	ES1
			Abnormal (Speaker SC)	15.20Vdc max. (Unit normal operation)	--	--	ES1
			Abnormal (Transformer overload)	0V (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1-2 SC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 3 -4 SC)	0V (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1 OC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 4 OC)	0V (Unit shutdown)	--	--	ES1
			Single fault (R22 SC)	0V (Unit shutdown)	--	--	ES1
2	264Va.c. 60Hz	Power board output “+” / “-” to earth	Normal	--	0.223mApk	60	ES1
			Abnormal (Max. non-clipped output)	--	0.223mApk (Unit normal operation)	60	ES1

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

			Abnormal (Ventilation blocked)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Speaker SC)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Transformer overload)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 1-2 SC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 3 -4 SC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 1 OC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 4 OC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (R22 SC)	--	0.223mApk (Unit shutdown)	60	ES1
3	264Va.c. 60Hz	Speak output “+” to “-”	Normal	2.73Vrms	--	--	ES1
			Abnormal (Max. non-clipped output)	7.72Vrms max. (Unit normal operation)	--	--	ES1
			Abnormal (Ventilation blocked)	2.73Vrms max. (Unit shutdown)	--	--	ES1
			Abnormal (Speaker SC)	0V (Unit shutdown)	--	--	ES1
			Abnormal (Transformer overload)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1-2 SC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 3 -4 SC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1 OC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 4 OC)	0 (Unit shutdown)	--	--	ES1

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

			Single fault (R22 SC)	0 (Unit shutdown)	--	--	ES1
4	264Va.c. 60Hz	Speak output “+” / “-” to earth	Normal	--	0.223mApk	60	ES1
			Abnormal (Max. non-clipped output)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Ventilation blocked)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Speaker SC)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Transformer overload)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 1-2 SC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 3 -4 SC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 1 OC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 4 OC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (R22 SC)	--	0.223mApk (Unit shutdown)	60	ES1
5	264Va.c. 60Hz	USB output “+” to “-”	Normal	5.05Vdc max.	--	--	ES1
			Abnormal (Max. non-clipped output)	5.05Vdc max. (Unit normal operation)	--	--	ES1
			Abnormal (Ventilation blocked)	5.05Vdc max. (Unit normal operation)	--	--	ES1
			Abnormal (Speaker SC)	5.05Vdc max. (Unit normal operation)	--	--	ES1
			Abnormal (Transformer overload)	0V (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1-2 SC)	0 (Unit shutdown)	--	--	ES1

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

			Single fault (U2 pin 3 -4 SC)	0V (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 1 OC)	0 (Unit shutdown)	--	--	ES1
			Single fault (U2 pin 4 OC)	0V (Unit shutdown)	--	--	ES1
			Single fault (R22 SC)	0V (Unit shutdown)	--	--	ES1
6	264Va.c. 60Hz	USB output "+" / "-" to earth	Normal	--	0.223mApk	60	ES1
			Abnormal (Max. non-clipped output)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Ventilation blocked)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Speaker SC)	--	0.223mApk (Unit normal operation)	60	ES1
			Abnormal (Transformer overload)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 1-2 SC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 3 -4 SC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 1 OC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (U2 pin 4 OC)	--	0.223mApk (Unit shutdown)	60	ES1
			Single fault (R22 SC)	--	0.223mApk (Unit shutdown)	60	ES1
Note: Input voltage: 264Vac, 60Hz.							

5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
For subwoofer:						
1	264Va.c, 60Hz	L&N pin	normal	363	374	ES3
			Abnormal	--	--	--
			Single fault: OC	--	--	--

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

Overall capacity: CX1=0.33μF±10%.

Limit: ES1=60V; ES2=120V.

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:				

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) .....:	90V/ 50Hz	264V/ 50Hz	--	--	¾
	Ambient T_{min} (°C) .....:	--	--	--	--	¾
	Ambient T_{max} (°C) .....:	--	--	--	--	¾
	Tma (°C) .....:	--	--	--	--	¾
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
Test condition: AUX mode, the following thermocouple locations for subwoofer						
AC inlet		47.4	47.7	--	--	70
Input wire		50.5	50.9	--	--	80
AC connector CN1		51.5	52.2	--	--	85
Varistor RV1		53.2	53.6	--	--	85
X- capacitor CX1		55.8	54.2	--	--	100
Line chock of LF3 winding		54.8	55.8	--	--	130
PCB under BD1		57.5	58.4	--	--	130
E-capacitor CE1		56.7	57.1	--	--	105
PCB under Q1		58.5	59.4	--	--	130
T1 winding		61.0	62.6	--	--	110

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Clause	Requirement + Test	Result - Remark	Verdict

T1 core	59.0	60.4	--	--	110
Opto-coupler U2	57.7	59.1	--	--	100
Y-capacitor CY1	59.5	60.4	--	--	125
PCB under D5	56.7	57.9	--	--	130
E-capacitor CE4	56.5	57.9	--	--	105
Line chock of LF2 winding	61.8	63.7	--	--	130
PCB under M1	59.4	59.4	--	--	130
PCB under U6	74.9	75.2	--	--	130
Internal wire	52.3	51.8	--	--	80
Ambient	45.0	45.0	--	--	--
Accessible parts:	--	--	--	--	--
Metal outside enclosure	30.0	30.2	--	--	60*
Wooden enclosure	28.3	28.4	--	--	107*
Ambient	25.0	25.0	--	--	--
Test condition: AUX mode, the following thermocouple locations for soundbar					
AC inlet	49.6	49.5	--	--	70
Input wire	50.5	50.4	--	--	80
AC connector CN1	53.1	53.0	--	--	85
Varistor RV1	56.0	56.3	--	--	85
X- capacitor CX1	58.8	59.0	--	--	100
Line chock of LF1 winding	64.1	63.3	--	--	130
PCB under BD1	70.4	67.6	--	--	130
E-capacitor CE1	65.2	64.4	--	--	105
PCB under Q1	69.4	70.7	--	--	130
Y-capacitor CY1	67.9	69.4	--	--	125
T1 winding	71.6	73.4	--	--	110
T1 core	70.6	72.4	--	--	110
Opto-coupler U2	64.4	65.0	--	--	100
PCB under D5	81.7	82.9	--	--	130
E-capacitor CE4	67.4	67.9	--	--	105
Line chock of LF2 winding	65.8	66.3	--	--	130
E-capacitor CE13	56.9	56.8	--	--	105
Internal wire	64.4	64.6	--	--	80
PCB under U14	84.2	84.3	--	--	130
PCB under M1	69.9	70.2	--	--	130
Heat sink on the main board	68.1	68.0	--	--	130

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Plastic enclosure inside near T1	52.2	51.9	--	--	68 (see table 5.4.1.10.2)
Ambient	45.0	45.0	--	--	--
Accessible parts:	--	--	--	--	--
Plastic enclosure outside near T1	34.8	34.9	--	--	77*
Ambient	25.0	25.0	--	--	--

Supplementary information: * Temperature limit for TS1 of accessible enclosure according to Table 38.

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.

Note 3. Temperature limits are calculated as follows:

Winding components providing safety isolation:

Class B **à** Tmax = 120 – 10 = 110°C.

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

5.4.1.10.2	**TABLE: Vicat softening temperature of thermoplastics**		**N/A**
Penetration (mm)			¾
Object/ Part No./Material	Manufacturer/trademark	T softening (°C)	
--	--	--	
supplementary information: --			

5.4.1.10.3	**TABLE: Ball pressure test of thermoplastics**		**P**
Allowed impression diameter (mm) ..... :		£ 2 mm	¾
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)
Plastic enclosure	KINGFA SCI & TECH CO LTD/ FRHIPS-960	68	1.0
Plastic enclosure	KINGFA SCI & TECH CO LTD/ FRHIPS-980(o)	68	1.1
Plastic enclosure	CHI MEI CORPORATION/ PA-765A(+)	68	1.2
Plastic enclosure	LG CHEMICAL LTD/ AF312C	68	1.0
Plastic enclosure	KINGFA SCI & TECH CO LTD/ HF-606	68	0.9
AC connector CN1	TORAY INDUSTRIES INC/ CM3014V0(rf)	125	1.2
AC connector CN1	ZHONGSHAN ROILON ENGINEERING PLASTICS CO LTD/ FR3A	125	1.3
AC connector CN1	NILIT (SUZHOU) ENGINEERING PLASTIC TECHNOLOGIES CO LTD/ A63RV0(a)(b)	125	1.2

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Supplementary information:

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)	Required cl (mm)	cl (mm) [2]	Required [3] cr (mm)	cr (mm)
For soundbar:							
L-N on PCB before F1 (F)*	420	250	0.06	1.9	3.2	2.5	3.2
Different polarity of F1 (F)*	420	250	0.06	1.9	3.5	2.5	3.5
Live part to metal enclosure (R)*	420	250	0.06	3.8	7.0	5.0	7.0
Primary trace to secondary trace under PCB (CY1) (R)*	420	250	0.06	3.8	7.5	5.0	10.0
Primary trace to secondary trace of PCB under (U2) (R)*	420	250	0.06	3.8	6.6	5.0	6.6
Primary trace to secondary trace of PCB under (T1) (R)*	484	270	61.6	3.8	10.0	5.4	10.0
T1 primary winding to secondary pins (R)*	484	270	61.6	3.8	10.0	5.4	10.0
T1 core to secondary pins (R)*	484	270	61.6	3.8	10.0	5.4	10.0
For subwoofer:							
L-N on PCB before F1 (F)*	420	250	0.06	1.9	3.2	2.5	3.2
Different polarity of F1 (F)*	420	250	0.06	1.9	3.5	2.5	3.5
Live part to metal enclosure (R)*	420	250	0.06	3.8	10.0	5.0	10.0
Primary trace to secondary trace under PCB (CY1) (R)*	420	250	0.06	3.8	7.5	5.0	10.0
Primary trace to secondary trace of PCB under (U2) (R)*	420	250	0.06	3.8	6.6	5.0	6.6
Primary trace to secondary trace of PCB under (T1) (R)*	446	268	58.7	3.8	10.0	5.4	10.0
T1 primary winding to secondary pins (R)*	446	268	58.7	3.8	10.0	5.4	10.0
T1 core to secondary pins (R)*	446	268	58.7	3.8	10.0	5.4	10.0

Supplementary information:

1. * F= Functional insulation; B=Basic insulation; S = Supplementary insulation; R=Reinforce insulation.
2. Core of transformer is considered as primary part (For subwoofer and sound bar).
3. The maximum operating altitude of 5000m. Clearance values have been evaluated for an operating altitude of max. 5000 meters, based on Table 17 altitude adjustment factor 1.48.
4. Unless otherwise specified, the worst case conditions of Cl. & Cr. in above mentioned locations have been considered and listed.
5. Material group: IIIb.

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage	P
	Overvoltage Category (OV):	II

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	Pollution Degree:		2
Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)
See table 5.4.2.2, 5.4.2.4 and 5.4.3 above.	2500V	2.3 for FI 4.5 for RI	See table 5.4.2.2, 5.4.2.4 and 5.4.3 above.
Supplementary information: The equipment is operated up to 5000 m above sea level as declared by manufacturer. Clearance values have been evaluated for an operating altitude of max. 5000 meters, based on Table 17 altitude adjustment factor 1.48. FI= Functional insulation; RI=Reinforce insulation.			

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: Using procedure 2 clause 5.4.2.3 to determine the clearance.			

5.4.4.2, 5.4.4.5 c) 5.4.4.9	**TABLE: Distance through insulation measurements**				**P**
Distance through insulation di at/of:	Peak voltage (V)	Frequency (Hz)	Material	Required DTI (mm)	DTI (mm)
Opto-coupler (U2)	420 (max. V)	0.06k (max. V)	1)	0.4	1)
Plastic enclosure	484 (max. V)	61.6k (max. V)	1)	0.4	1)
Supplementary information: 1). See appended table 4.1.2 for details.					

5.4.9	**TABLE: Electric strength tests**		**P**
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (Vpeak)	Breakdown Yes / No
For subwoofer:			
Basic/supplementary:			
Between mains poles (primary fuse disconnected)	DC	2500	No
Reinforced:			
Unit primary to accessible parts	DC	4000	No
Unit primary to plastic enclosure wrapped with metal foil	DC	4000	No
Primary to secondary of transformer	DC	4000	No
Core to secondary winding of transformer	DC	4000	No
Insulation tape used in and around transformer (one layer)	DC	4000	No

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Routine Tests:			
--	--	--	--
For soundbar:			
Basic/supplementary:			
Between mains poles (primary fuse disconnected)	DC	2500	No
Reinforced:			
Unit primary to accessible parts	DC	4000	No
Unit primary to wooden enclosure wrapped with metal foil	DC	4000	No
Unit primary to metal enclosure	DC	4000	No
Primary to secondary of transformer	DC	4000	No
Core to secondary winding of transformer	DC	4000	No
Insulation tape used in and around transformer (one layer)	DC	4000	No
Routine Tests:			
--	--	--	--

Supplementary information:
1) Core of transformer was considered as primary conductor.
2) Tests after humidity treatment, heating test, and for unit primary to secondary, primary to enclosure electric strength after each fault condition test.
3) Tests were performed on product with each source listed in table 4.1.2.
4) The DC voltage source was performed on all testing once in forward and once in reverse.

5.5.2.2	TABLE: Stored discharge on capacitors				P
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification
For subwoofer:					
264Vac, 60Hz	Phase to Neutral	N	--	12Vdc	ES1
264Vac, 60Hz	Phase to Neutral	S (R1 opened)	--	20Vdc	ES1
For subwoofer:					
264Vac, 60Hz	Phase to Neutral	N	--	12Vdc	ES1
264Vac, 60Hz	Phase to Neutral	S (R1 opened)	--	20Vdc	ES1

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Supplementary information:
The end system may be pluggable equipment type A. Limit of ES1 applied for mains terminal as accessible part.
X-capacitors installed for testing are: CX1 = 0.33μF (tolerance ±10%) (For subwoofer and soundbar);
☒ bleeding resistor rating: R1=R2=R3=R4=2.74MΩ (For subwoofer and soundbar).
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 (Bleeder Resistor open circuit)

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: --				

5.7.2.2, 5.7.4	**TABLE: Earthed accessible conductive part**	**N/A**
Supply voltage..... :	--	—
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)
	1 (e closed, 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)

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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
For sound bar:					
Power board output "+" to "-"	Normal operation	Power (W) :	--	91.0	PS2
		V_A (V) :	--	14.67	
		I_A (A) :	--	6.2	
Power board output "+" to "-"	Single fault (U2 pin 1-2 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Power board output "+" to "-"	Single fault (U2 pin 3-4 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Power board output "+" to "-"	Single fault (U2 pin 1 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Power board output "+" to "-"	Single fault (U2 pin 3 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Power board output "+" to "-"	Single fault (R22 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak output "+" to "-"	Normal operation	Power (W) :	--	24.0	PS2
		V_A (V) :	--	7.14	
		I_A (A) :	--	3.36	
Speak output "+" to "-"	Single fault (U2 pin 1-2 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak	Single fault	Power (W) :	0*	--	PS1

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output "+" to "-"	(U2 pin 3-4 SC)	V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak output "+" to "-"	Single fault (U2 pin 1 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak output "+" to "-"	Single fault (U2 pin 3 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak output "+" to "-"	Single fault (R22 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
USB output "+" to "-"	Normal operation	Power (W) :	12.5	--	PS1
		V_A (V) :	4.46	--	
		I_A (A) :	2.8	--	
USB output "+" to "-"	Single fault (U2 pin 1-2 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
USB output "+" to "-"	Single fault (U2 pin 3-4 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
USB output "+" to "-"	Single fault (U2 pin 1 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
USB output "+" to "-"	Single fault (U2 pin 3 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
USB output "+" to "-"	Single fault (R22 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
For subwoofer:					
Speak output "+" to "-"	Normal operation	Power (W) :	--	35.12	PS2
		V_A (V) :	--	8.96	
		I_A (A) :	--	3.92	
Speak output "+"	Single fault (U2 pin 1-2 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	

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Clause	Requirement + Test	Result - Remark	Verdict

to "-"		I_A (A) :	0*	--	
Speak output "+" to "-"	Single fault (U2 pin 3-4 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak output "+" to "-"	Single fault (U2 pin 1 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak output "+" to "-"	Single fault (U2 pin 3 OC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Speak output "+" to "-"	Single fault (R22 SC)	Power (W) :	0*	--	PS1
		V_A (V) :	0*	--	
		I_A (A) :	0*	--	
Supplementary information: * Unit shutdown immediately, recoverable, no hazard.					

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)			P
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
All internal circuit except for secondary circuit after transformer rectified circuit (for subwoofer)	--	--	--	Yes (Declaration)
Supplementary information: 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. All conductors and devices are considered as PIS.				

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)

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Supplementary Information:
All primary and secondary circuit are considered as resistive PIS
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.
All conductors and devices are considered as PIS.

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
Test condition: AUX mode							
For soundbar:							
90V/50Hz	0.289	--	14.27	--	F1	0.289	Pink noise input 1/8 of max. non-clipped output power to speakers: 2.73V
90V/60Hz	0.283	--	14.22	--	F1	0.283	
100V/50Hz	0.256	--	14.23	40	F1	0.256	
100V/60Hz	0.253	--	14.17	40	F1	0.253	
240V/50Hz	0.147	--	14.36	40	F1	0.147	
240V/60Hz	0.127	--	14.16	40	F1	0.127	
264V/50Hz	0.140	--	14.36	--	F1	0.140	
264V/60Hz	0.119	--	14.22	--	F1	0.119	
For subwoofer:							
90V/50Hz	0.143	--	5.92	--	F1	0.143	Pink noise input 1/8 of max. non-clipped output power to speaker: 3.21V
90V/60Hz	0.132	--	5.85	--	F1	0.132	
100V/50Hz	0.135	--	5.74	40	F1	0.135	
100V/60Hz	0.121	--	5.63	40	F1	0.121	

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240V/50Hz	0.071	--	6.12	40	F1	0.071	
240V/60Hz	0.068	--	6.11	40	F1	0.068	
264V/50Hz	0.065	--	6.31	--	F1	0.065	
264V/60Hz	0.063	--	6.28	--	F1	0.063	
Test condition: BT mode							
For soundbar:							
90V/50Hz	0.282	--	13.34	--	F1	0.282	Pink noise input 1/8 of max. non-clipped output power to speakers: 2.73V
90V/60Hz	0.278	--	13.25	--	F1	0.278	
100V/50Hz	0.251	--	13.27	40	F1	0.251	
100V/60Hz	0.249	--	13.21	40	F1	0.249	
240V/50Hz	0.138	--	13.41	40	F1	0.138	
240V/60Hz	0.124	--	13.34	40	F1	0.124	
264V/50Hz	0.130	--	13.46	--	F1	0.130	
264V/60Hz	0.118	--	13.39	--	F1	0.118	
For subwoofer:							
90V/50Hz	0.115	--	5.78	--	F1	0.115	Pink noise input 1/8 of max. non-clipped output power to speakers: 3.21V
90V/60Hz	0.110	--	5.75	--	F1	0.110	
100V/50Hz	0.109	--	5.80	40	F1	0.109	
100V/60Hz	0.103	--	5.81	40	F1	0.103	
240V/50Hz	0.066	--	5.87	40	F1	0.066	
240V/60Hz	0.064	--	5.92	40	F1	0.064	
264V/50Hz	0.061	--	6.10	--	F1	0.061	
264V/60Hz	0.058	--	6.08	--	F1	0.058	

Supplementary information:

1) Equipment may be have rated current or rated power or both. Both should be measured.
2) The maximum measured current under rated voltage did not exceed 110% of the rated current.

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) ..... :							25°C, if not specified	¾
Power source for EUT: Manufacturer, model/type, output rating :							--	¾
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Test condition: AUX mode								
For subwoofer:								

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Clause	Requirement + Test					Result - Remark		Verdict
Speaker	S-C	264	30min	F1	0.012	--	--	Subwoofer shutdown immediately, recoverable, no hazards observed, all safeguards remained effective during and after abnormal condition. For speaker output, Touch voltage (+ to -): 0V ; Touch current (+/- to earth): 0.179mApeak.
Ventilation	Blocked	264	2h52 min	F1	0.065	See right	T1 winding: 63.7°C; Ambient: 45.0°C. Metal outside enclosure: 31.0°C; Wooden enclosure: 29.3°C; Ambient: 25.0°C.	Unit normal operation, no hazards observed, all safeguards remained effective during and after abnormal condition. For speaker output, Touch voltage (+ to -): 3.21Vrms max.; Touch current (+/- to earth): 0.179mApk.
Speaker	Max. non-clipped output	264	2h43 min	F1	0.266	See right	T1 winding: 76.9°C; Ambient: 45.0°C. Metal outside enclosure: 35.0°C; Wooden enclosure: 31.7°C; Ambient: 25.0°C.	Unit normal operation, no hazards observed, all safeguards remained effective during and after abnormal condition. For speaker output, Touch voltage (+ to -): 9.08Vrms max.; Touch current (+/- to earth): 0.179mApk.

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Clause	Requirement + Test				Result - Remark			Verdict
Transformer pin A-B (CE4)	O-L	264	10h46 min	F1	0.065 → 0.313 → 0.518 → 0.026	See right	T1 winding: 106.7°C; Ambient: 45.0°C. Metal outside enclosure: 37.6°C; Wooden enclosure: 35.4°C; Ambient: 25.0°C.	Transformer overload to 3.0A and shutdown at 3.1A, Recoverable when fault removed and no hazards observed, all safeguards remained effective during and after abnormal condition. For speaker output, Touch voltage (+ to -): 3.21Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
For sound bar:								
Speaker	S-C	264	2h44 min	F1	0.091	See right	T1 winding: 65.4°C; Ambient: 45.0°C. Plastic enclosure outside near T1: 30.7°C; Ambient: 25.0°C.	Unit normal operation, except no output of one speaker, no hazards observed, all safeguards remained effective during and after abnormal condition. For power board output, Touch voltage (+ to -): 15.20Vdc max.; Touch current (+/- to earth): 0.223mApk.

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

Ventilation	Blocked	264	1h46 min	F1	0.140	See right	T1 winding: 74.6°C; Ambient: 45.0°C. Plastic enclosure outside near T1: 32.8°C; Ambient: 25.0°C.	Unit normal operation, no hazards observed, all safeguards remained effective during and after abnormal condition. For power board output, Touch voltage (+ to -): 15.20Vdc max.; Touch current (+/- to earth): 0.223mApk.
Speaker	Max. non-clipped output	264	2h11 min	F1	0.263	See right	T1 winding: 99.6°C; Ambient: 45.0°C. Plastic enclosure outside near T1: 34.7°C; Ambient: 25.0°C.	Unit normal operation, no hazards observed, all safeguards remained effective during and after abnormal condition. For power board output, Touch voltage (+ to -): 15.20Vdc max.; Touch current (+/- to earth): 0.223mApk.
USB Output	S-C	264	30min	F1	0.029	--	--	Unit input power fall down immediately, recoverable, no hazards observed, all safeguards remained effective during and after abnormal condition. For power board output, Touch voltage (+ to -): 15.20Vdc max.; Touch current (+/- to earth): 0.223mApk.

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

USB output	O-L	264	8h56 min	F1	0.140 → 0.201 → 0.276 → 0.027	See right	T1 winding: 86.3°C; Ambient: 45.0°C. Plastic enclosure outside near T1: 35.3°C; Ambient: 25.0°C.	USB output overload to 0.9A and shutdown at 1.0A, Recoverable when fault removed and no hazards observed, all safeguards remained effective during and after abnormal condition. For power board output, Touch voltage (+ to -): 15.20Vdc max.; Touch current (+/- to earth): 0.223mApk.
Transformer pin A-B (CE4)	O-L	264	10h46 min	F1	0.140 → 0.271 → 0.398 → 0.456 → 0.027	See right	T1 winding: 119.5°C; Ambient: 45.0°C. Plastic enclosure outside near T1: 44.6°C; Ambient: 25.0°C.	Transformer overload to 2.5A and shutdown at 2.6A, Recoverable when fault removed and no hazards observed, all safeguards remained effective during and after abnormal condition. For power board output, Touch voltage (+ to -): 15.20Vdc max.; Touch current (+/- to earth): 0.223mApk.

Supplementary information:
Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4.

1) O-L: Overloaded. S-C: Short-circuit.
2) 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.
3) The test result showed no Class 1 or 2 energy source become Class 3 level during and after single fault condition.
4) The overloaded condition is applied according to annex G.5.3.3.

Winding Limit for Transformer: 175-10-(45-25)=145°C.

5) During and after abnormal operating condition test, the output voltage did not increase by more than 3V or 10% which one is higher of its rated output voltage under normal operating condition.

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Clause	Requirement + Test	Result - Remark	Verdict

B.4	TABLE: Fault condition tests		P
Ambient temperature (°C) ..... :		25°C, if not specified	¾
Power source for EUT: Manufacturer, model/type, output rating . :		--	¾

Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
For subwoofer:								
BD1	s-c	264	1s	F1	0	--	--	Fuse opened immediately, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.193mApeak.
CE1	s-c	264	1s	F1	0	--	--	Fuse opened immediately, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.193mApeak.
Q1 pin G-S	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.

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Clause	Requirement + Test	Result - Remark	Verdict

Q1 pin G-D	s-c	264	1s	F1	0	--	--	Fuse opened immediately, Q1 damaged, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.193mApeak.
Q1 pin D-S	s-c	264	1s	F1	0	--	--	Fuse opened immediately, Q1 damaged, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.193mApeak.
R22	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
T1 pin 1-2	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.

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Clause	Requirement + Test	Result - Remark	Verdict

T1 pin 4-5	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
T1 pin A-B	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
U1 pin 5-1	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
U1 pin 5-2	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.

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Clause	Requirement + Test	Result - Remark	Verdict

U2 pin 1-2	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
U2 pin 3-4	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
U2 pin 1	o-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
U2 pin 3	o-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.

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

D5	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
CE4	s-c	264	30min	F1	0.029	--	--	Unit shutdown immediately, recoverable, no hazard. For speaker output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.179mApeak.
For sound bar:								
BD1	s-c	264	1s	F1	0	--	--	Fuse opened immediately, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.259mApeak.
CE1	s-c	264	1s	F1	0	--	--	Fuse opened immediately, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.259mApeak.

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Clause	Requirement + Test	Result - Remark	Verdict

Q1 pin G-S	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
Q1 pin G-D	s-c	264	1s	F1	0	--	--	Fuse opened immediately, Q1 damaged, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.259mApeak.
Q1 pin D-S	s-c	264	1s	F1	0	--	--	Fuse opened immediately, Q1 damaged, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.259mApeak.
R22	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.

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

T1 pin 1-2	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
T1 pin 4-5	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
T1 pin A-B	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
U1 pin 5-1	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.

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

U1 pin 5-2	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
U2 pin 1-2	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
U2 pin 3-4	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
U2 pin 1	o-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.

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

U2 pin 3	o-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
D5	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.
CE4	s-c	264	30min	F1	0.036	--	--	Unit shutdown immediately, recoverable, no hazard. For power board output, Touch voltage (+ to -): 0Vrms max. ; Touch current (+/- to earth): 0.223mApeak.

Supplementary information:
Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4.

1) s-c: Short-circuited; o-c: Open-circuited.
2) 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.
3) The test result showed no Class 1 or 2 energy source become Class 3 level during and after single fault condition.
4) During the test an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A was provided in the primary circuit (to cover the UK deviation for direct plug-in equipment). The device did not trip during any test.
5) The same as result test conducted on all fuse sources, all fuse sources see table 4.1.2 for details.
7) During and after abnormal operating condition test, the output voltage did not increase by more than 3V or 10% which one is higher of its rated output voltage under normal operating condition.

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Clause	Requirement + Test	Result - Remark	Verdict

Annex M	**TABLE: Batteries**									**N/A**
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										
Max. current during fault condition										

Test results:		Verdict
- Chemical leaks		
- Explosion of the battery		
- Emission of flame or expulsion of molten metal		
- Electric strength tests of equipment after completion of tests		
Supplementary information:		

Annex M.4	**Table: Additional safeguards for equipment containing secondary lithium batteries**				**N/A**
Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	
	Normal				
	Abnormal				
	Single fault –SC/OC				
	Normal				
	Abnormal				
	Single fault – SC/OC				
Supplementary Information:					

Battery identification	Charging at Tlowest (°C)	Observation	Charging at Thighest (°C)	Observation
Supplementary Information:				

Annex Q.1	**TABLE: Circuits intended for interconnection with building wiring (LPS)**						P
Note: Measured UOC (V) with all load circuits disconnected:							
Output Circuit	Components	U_{oc} (V)	I_{sc} (A)		S (VA)		
			Meas.	Limit	Meas.	Limit	
For soundbar:							
USB output "+" to "-"	Normal operation	5.05	2.8	8	12.5	100	

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Clause	Requirement + Test	Result - Remark	Verdict

USB output “+” to “-”	Single fault (U2 pin 1-2 SC)	0	0&	8	0&	100
USB output “+” to “-”	Single fault (U2 pin 3-4 SC)	0	0&	8	0&	100
USB output “+” to “-”	Single fault (U2 pin 1 OC)	0	0&	8	0&	100
USB output “+” to “-”	Single fault (U2 pin 3 OC)	0	0&	8	0&	100
USB output “+” to “-”	Single fault (R22 SC)	0	0&	8	0&	100
Supplementary Information: SC=Short circuit. & Unit shutdown immediately, recoverable, no hazard exist.						

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Clause	Requirement + Test	Result - Remark	Verdict

T.2, T.3, T.4, T.5	TABLE: Steady force test	P

Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
For subwoofer:					
Enclosure Top (T.5)	Plastics*	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Enclosure Front (T.5)	Metal	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Enclosure Side (T.5)	Plastics*	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Enclosure Rear (T.5)	Plastics*	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Internal components / parts(T.2)	--	--	10	5	No reduction the clearances and creepage distances
For soundbar:					
Enclosure Top (T.5)	Plastics*	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test. No insulation breakdown.
Enclosure Front (T.5)	Plastics*	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test. No insulation breakdown.

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Clause	Requirement + Test	Result - Remark	Verdict

Enclosure Side (T.5)	Plastics*	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test. No insulation breakdown.
Enclosure Rear (T.5)	Plastics*	See table 4.1.2	250	5	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test. No insulation breakdown.
Supplementary information: *Tests were performed on product with each source listed in table 4.1.2.					

T.6, T.9	**TABLE: Impact tests**			**P**
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation
For subwoofer:				
Enclosure Top (T.6)	Plastics*	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Enclosure Front (T.6)	Metal	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Enclosure Side (T.6)	Plastics*	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Enclosure Rear (T.6)	Plastics*	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
For soundbar:				
Enclosure Top (T.6)	Plastics*	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test.
Enclosure Front (T.6)	Plastics*	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test.
Enclosure Side (T.6)	Plastics*	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test.
Enclosure Rear (T.6)	Plastics*	See table 4.1.2	1300	Enclosure remained intact, no crack/ opening developed. Internal TS3 were not accessible after test.
Supplementary information: *Tests were performed on product with each source listed in table 4.1.2.				

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Clause	Requirement + Test	Result - Remark	Verdict

T.7	TABLE: Drop tests				N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Supplementary information:					

T.8	TABLE: Stress relief test				P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
For sound bar:					
Complete equipment	Plastics*	See table 4.1.2	70	7	Enclosure remained intact, no cracking/opening developed in the enclosure joint. Internal TS3 were not accessible after test
Supplementary information: *Test were performed on product with each source listed in table 4.1.2 s					

ATTACHMENT 2 Photo Documentation

Photo 1 Overall view

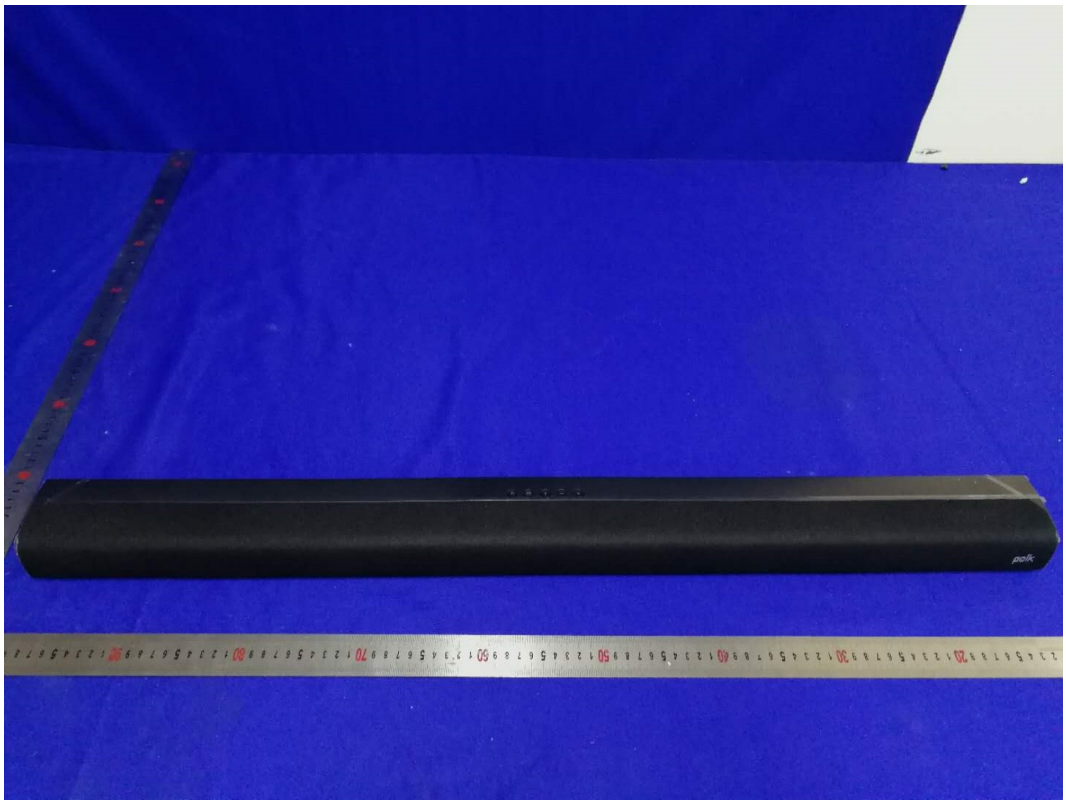

Photo 2 Sound bar Overall view

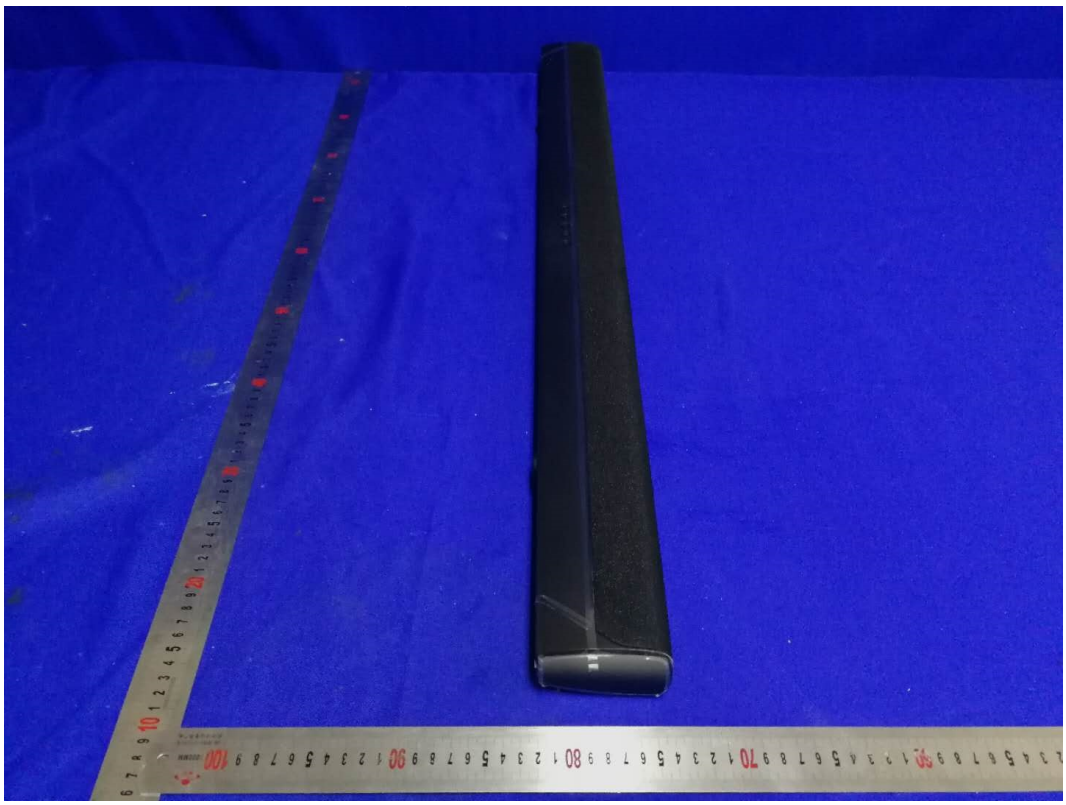

Photo 3 Sound bar Overall view

Photo 4 Sound bar Overall view

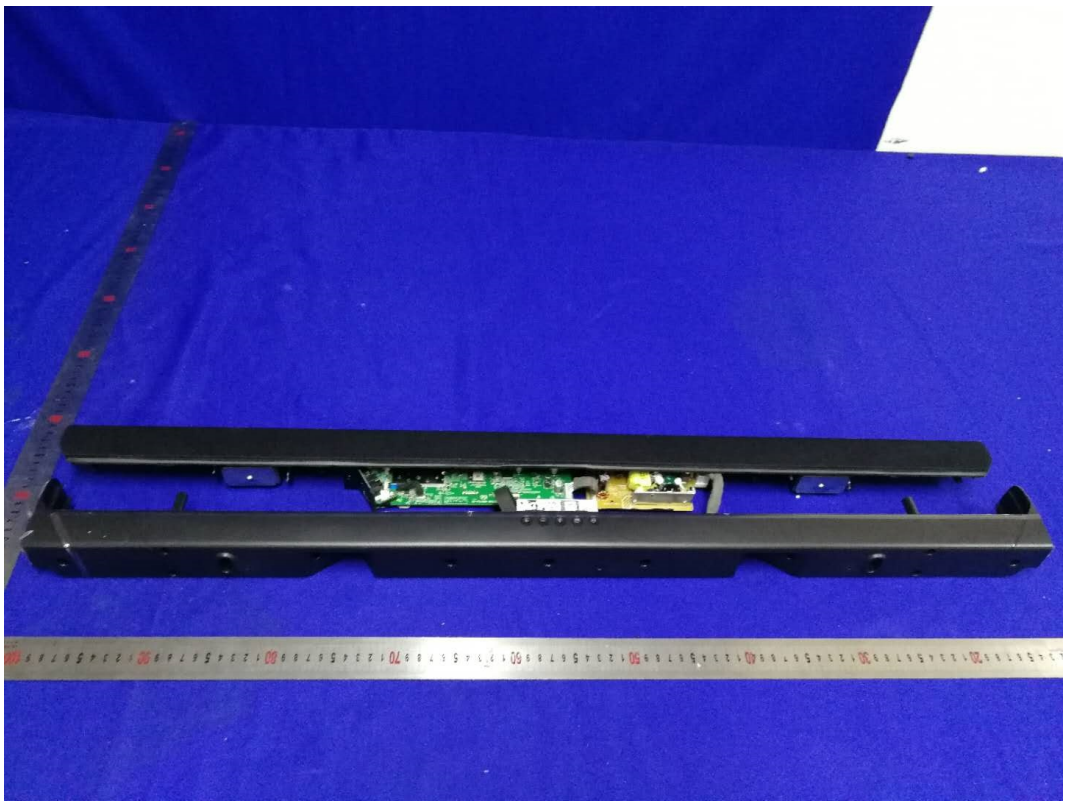

Photo 5 Sound bar Internal view

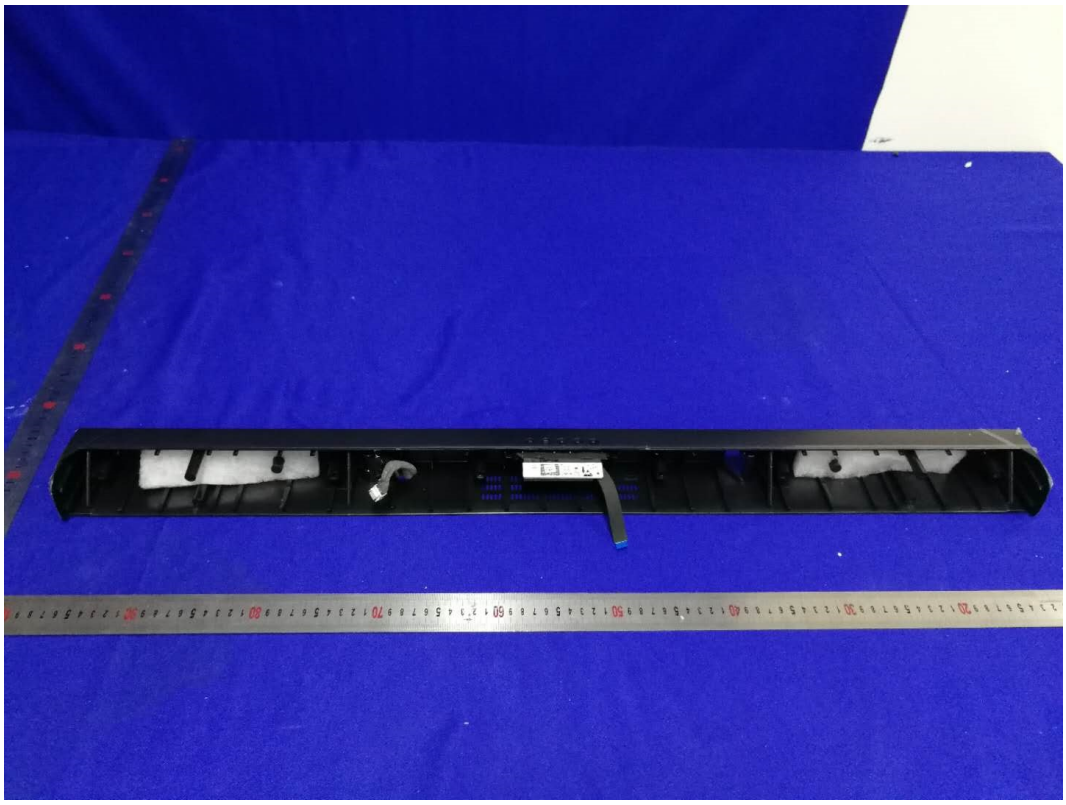

Photo 6 Sound bar Internal view

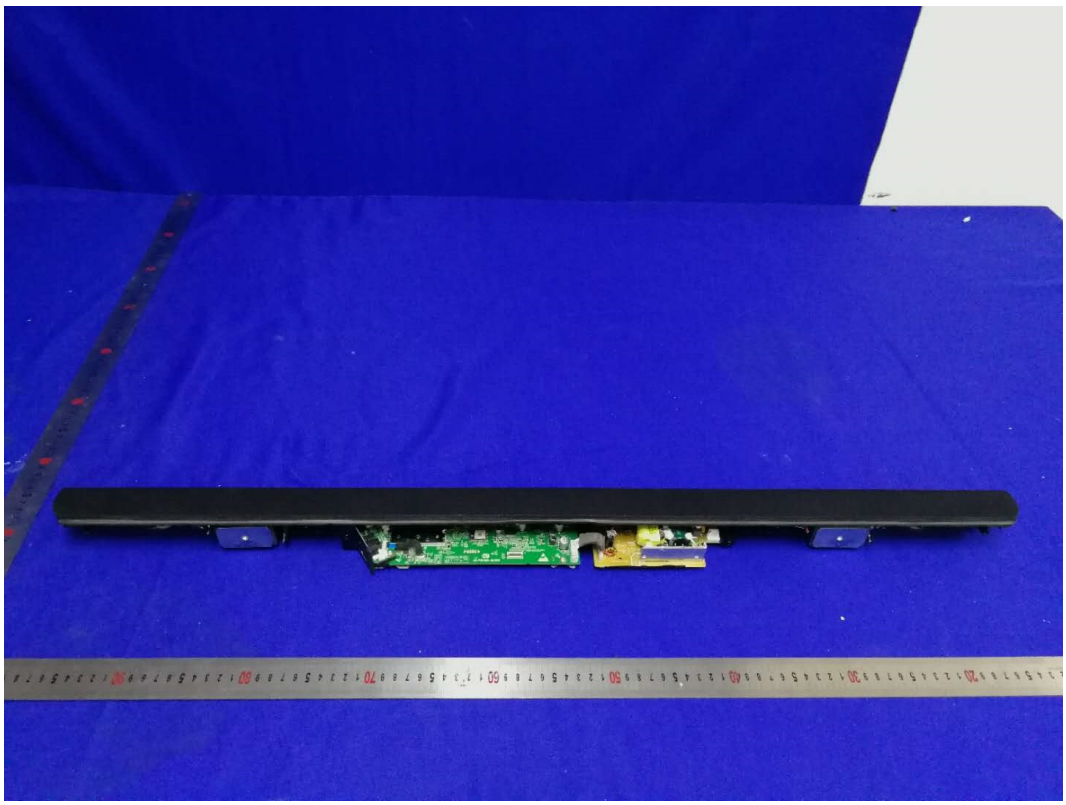

Photo 7 Sound bar Internal view

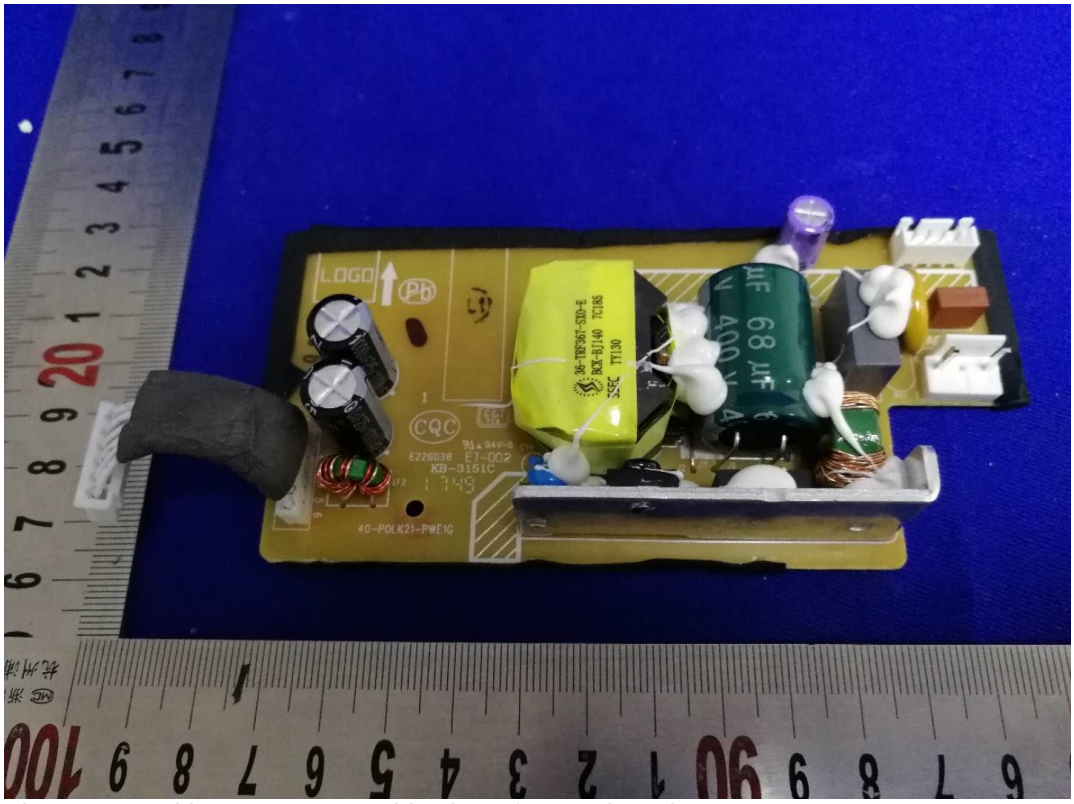

Photo 8 Sound bar Component side view of power board

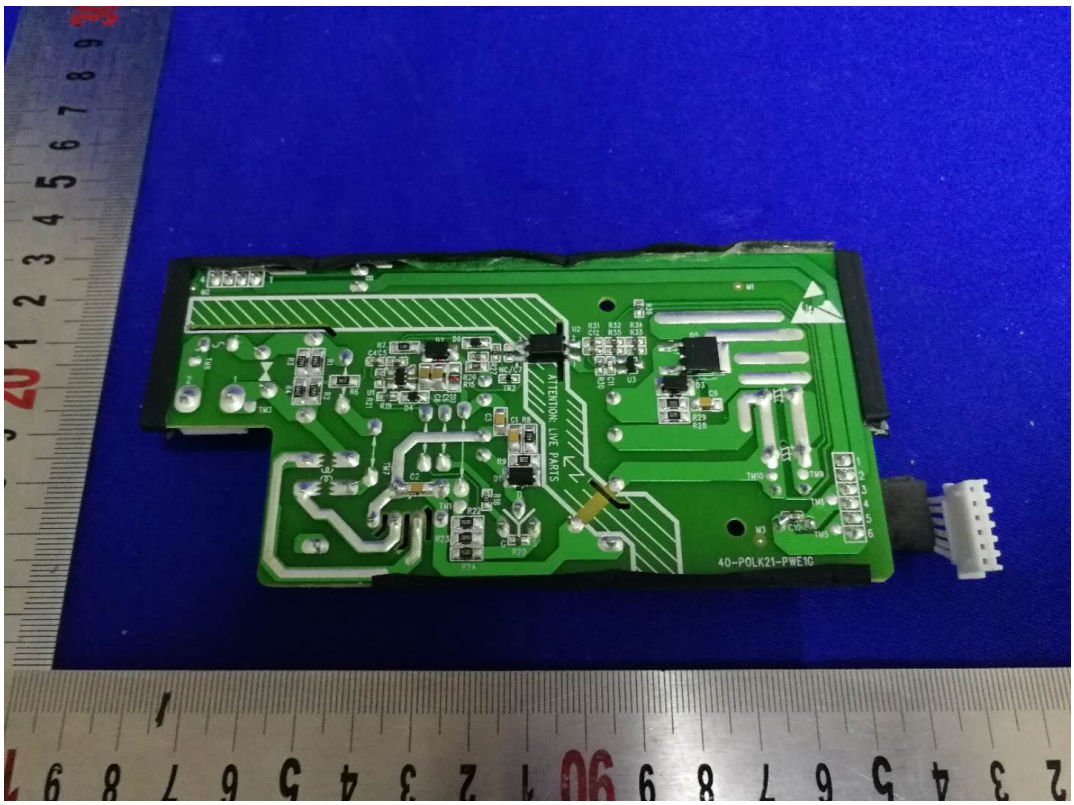

Photo 9 Sound bar Trace side view of power board

Photo 10 Sound bar Component side view of main board

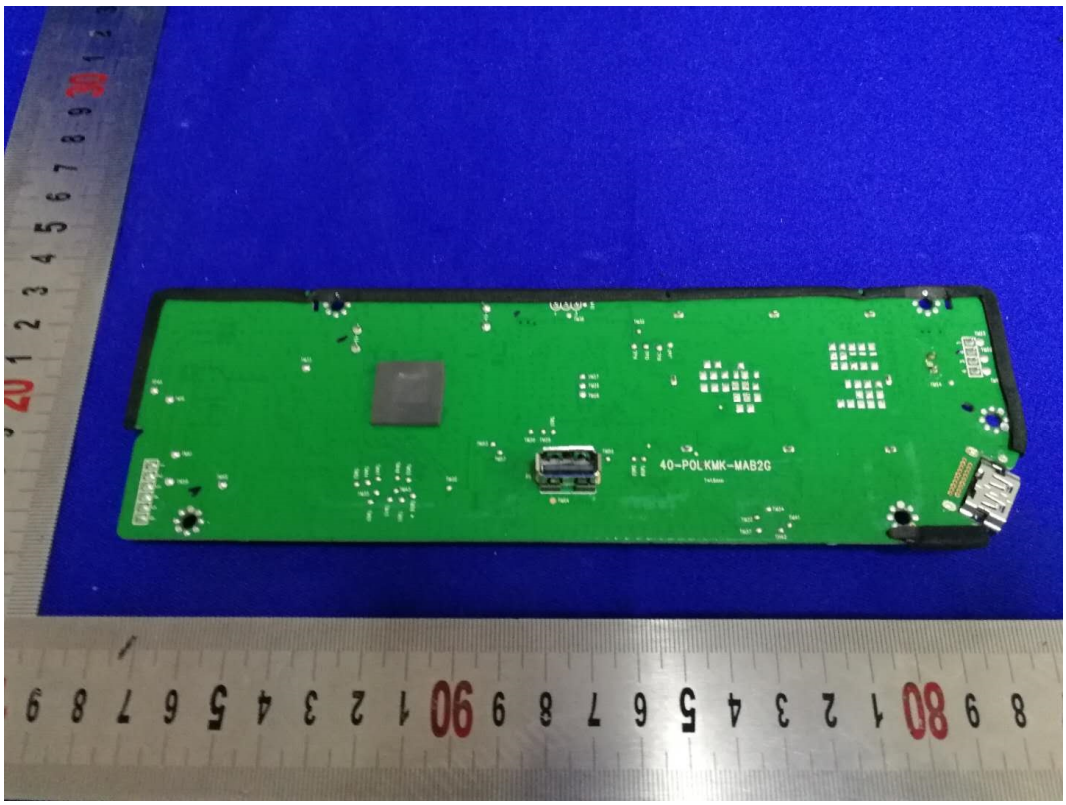

Photo 11 Sound bar Trace side view of main board

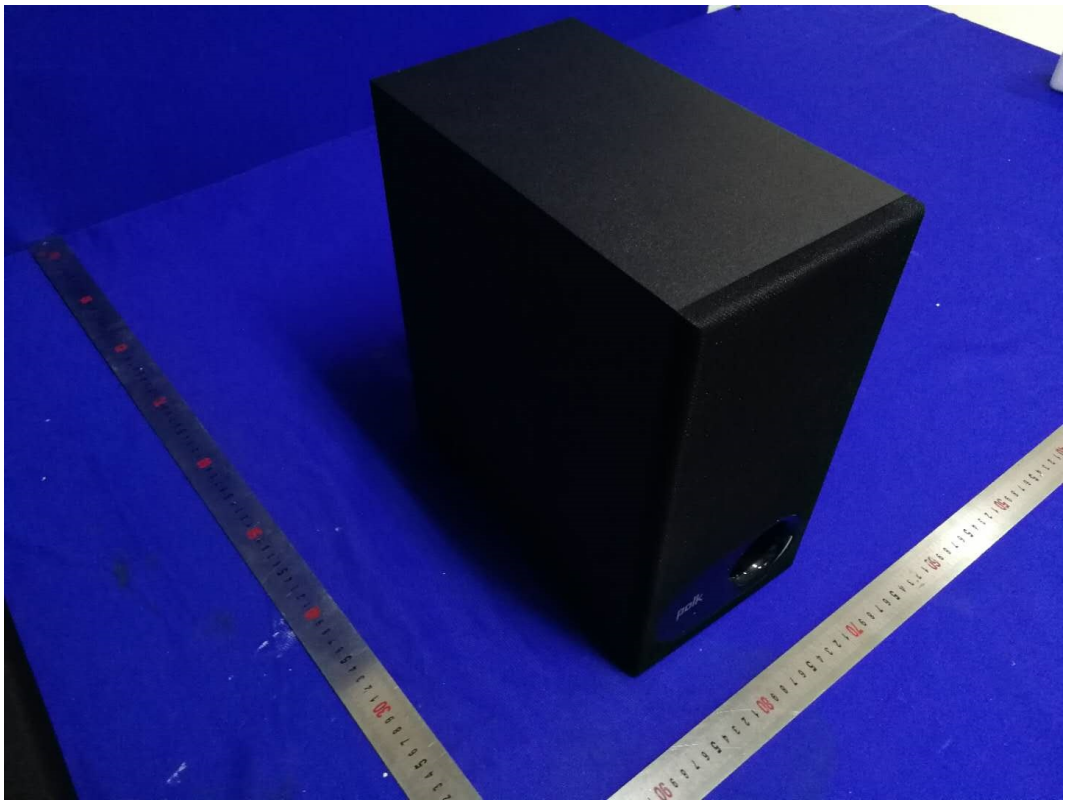

Photo 12 Subwoofer Overall view

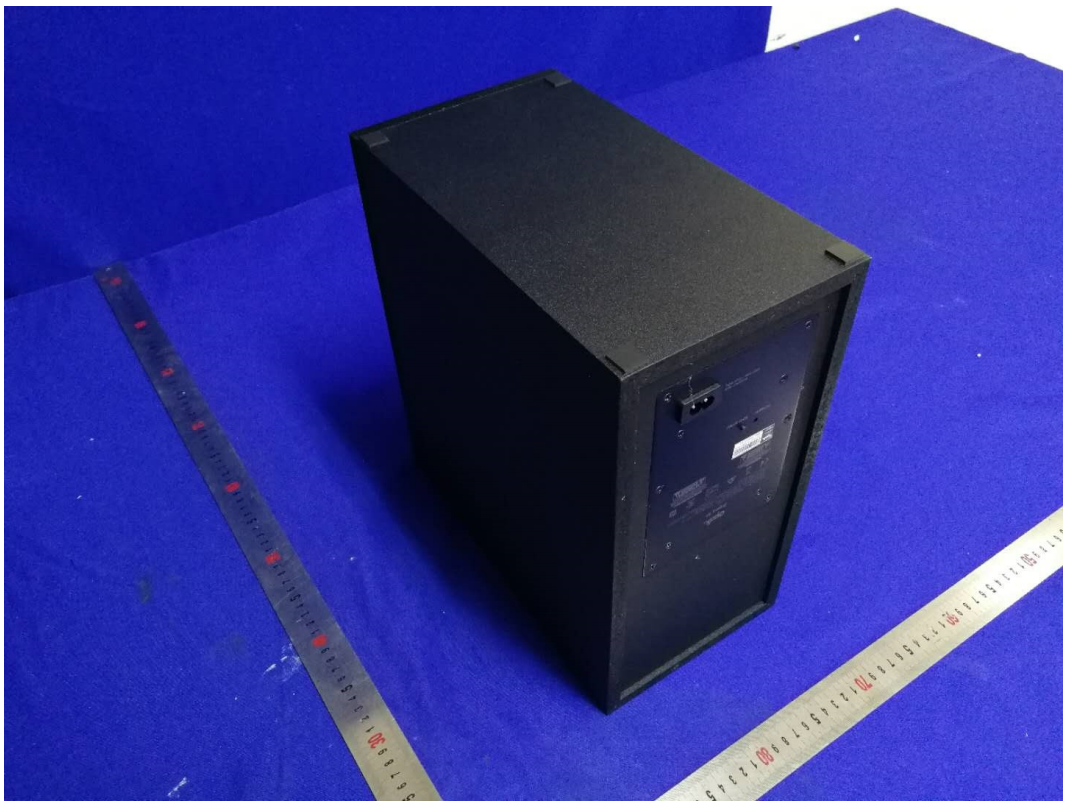

Photo 13 Subwoofer Overall view

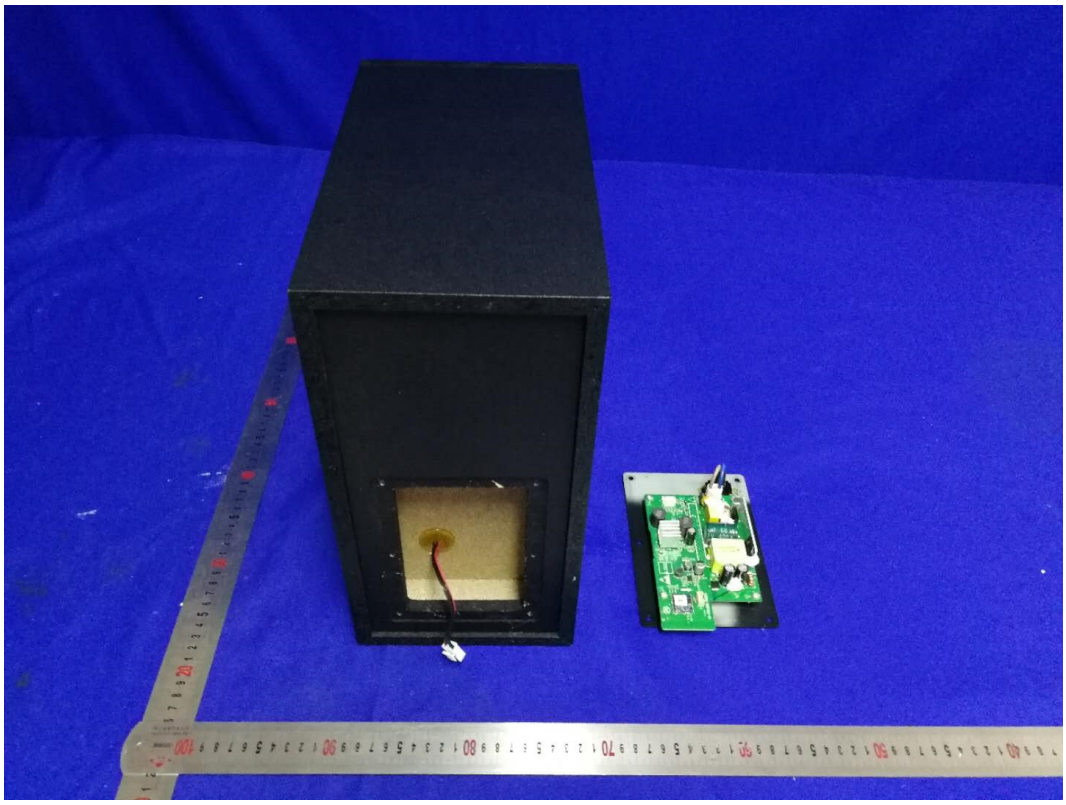

Photo 14 Subwoofer Internal view

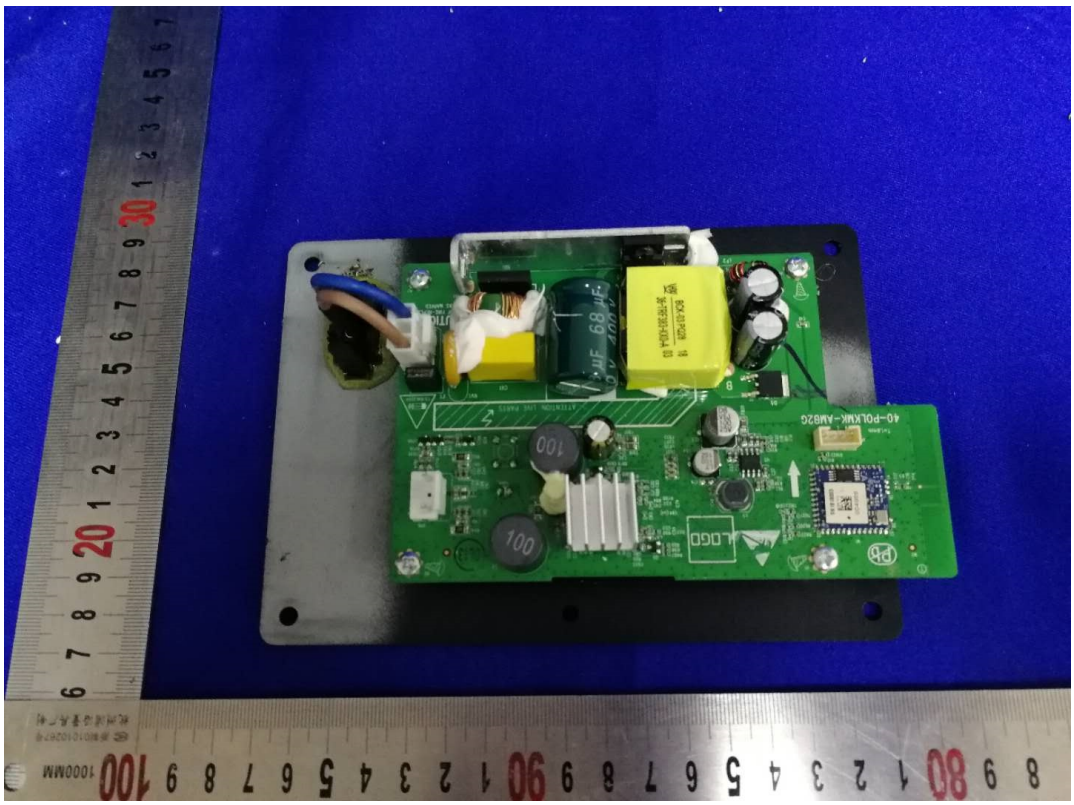

Photo 15 Subwoofer Internal view

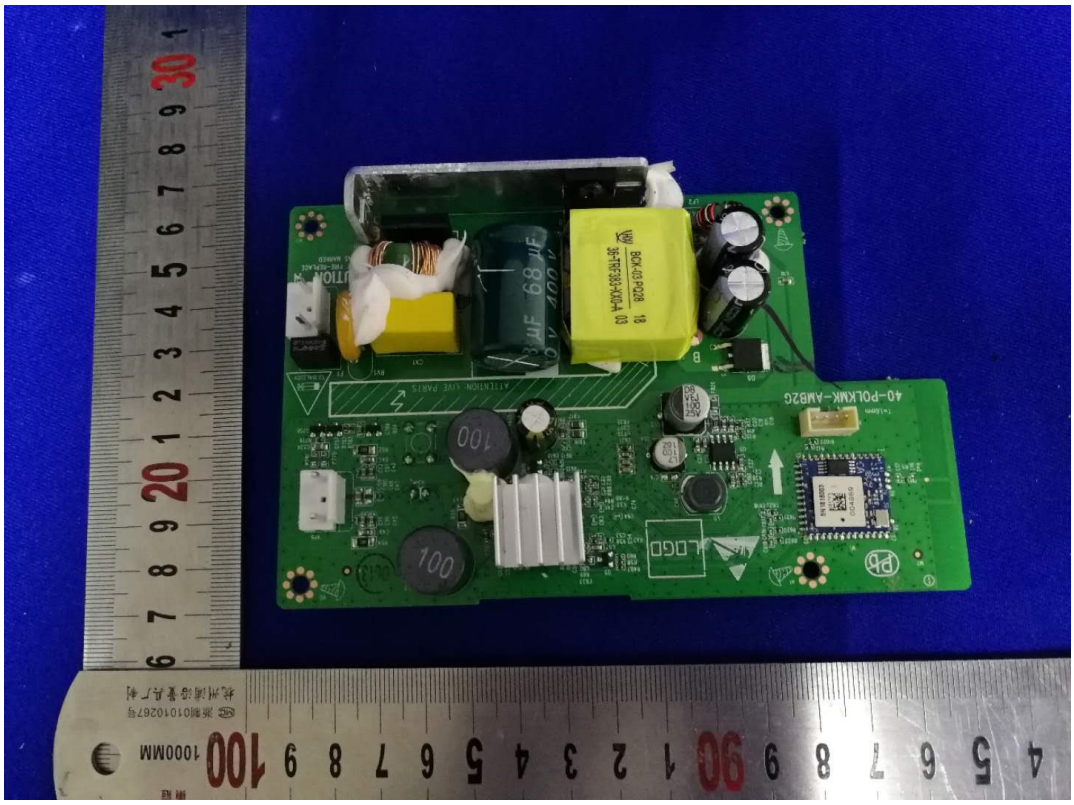

Photo 16 Subwoofer Component side view of power board

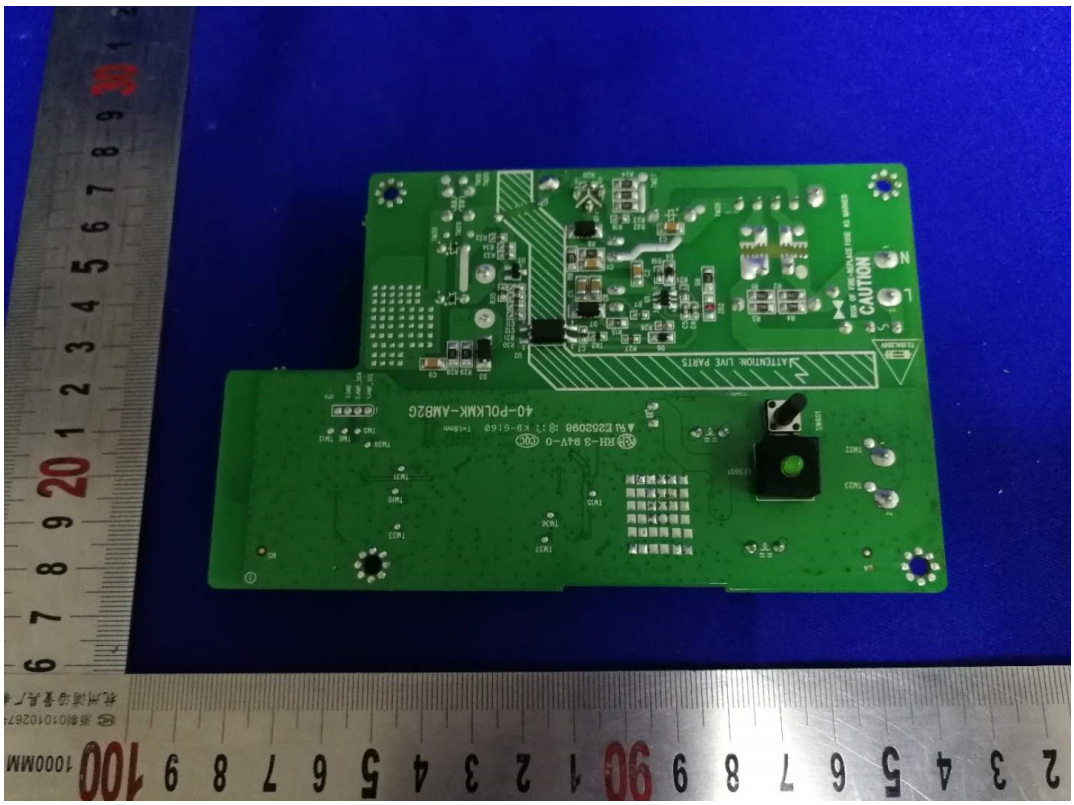

Photo 17 Subwoofer Trace side view of power board

Photo 18 Remote controller

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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_1B_II

Attachment Originator..... : Nemko AS

Master Attachment ..... : Date 2017-09-22

	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".	P
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
	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.	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

IEC62368_1B 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.		P
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 connection to external circuit.	N/A
10.2.1	Add the following to [c] and [d] in table 39: For additional requirements, see 10.5.1.	No radiation.	N/A

IEC62368_1B 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.		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

IEC62368_1B 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.		N/A
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		P
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”	Class II equipment	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	Not direct plug - in equipment.	N/A

IEC62368_1B 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 measured.	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 connection to such a network.	N/A

IEC62368_1B 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).		N/A
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.	No such resistor used.	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.		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.		N/A
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.		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.		N/A

IEC62368_1B 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.”.		N/A

IEC62368_1B 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 .	See for 5.2.2.2 above.	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		N/A

IEC62368_1B 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

IEC62368_1B 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	Not such equipment.	N/A

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 2th Ed.
U.S.A. NATIONAL DIFFERENCES

Audio/video, information and communication technology equipment – Part 1: Safety requirements

Differences according to ..... :	CSA/UL 62368-1:2014
Attachment Form No. ..... :	US&CA_ND_IEC623681B
Attachment Originator..... :	UL(US)
Master Attachment..... :	Date 2015-06

IEC 62368-1 - US and Canadian National Differences Special National Conditions based on Regulations and Other National Differences			
1.1	All equipment is to be designed to allow installation according to the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.		P
1.4	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		P
4.1.17	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.		N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.8	Lithium coin / button cell batteries have modified special construction and performance requirements.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.5, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment	See only 5.6.3 in main report.	N/A
5.7.7	Equipment intended to receive telecommunication ringing signals complies with a special touch current measurement tests.	Not such equipment	N/A

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.5.1	PS3 wiring outside a fire enclosure complies with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A
Annex F (F.3.3.8)	Output terminals provided for supply of other equipment, except mains, supply are marked with a maximum rating or references to which equipment it is permitted to be connected.		P
Annex G (G.7.1)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
Annex G (G.7.3)	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
Annex G (G.7.5)	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V_{peak} or 60 V d.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
Annex M	Battery packs for stationary applications comply with special component requirements.	No battery.	N/A
Annex DVA (1)	Equipment intended for use in spaces used for environmental air are subjected to special flammability requirements for heat and visible smoke release.	Not such equipment or application.	N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m^3 (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. & Canadian Regulations.		N/A
	Baby monitors additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
Annex DVA (5.6.3)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with metal material measuring greater than 0.9 m^2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a min. flammability classification of V-1.		N/A
Annex DVA (10.3.1)	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (10.5.1)	Equipment that produces ionizing radiation complies with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (F.3.3.3)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or are lower than the “Normal Operating Condition” in Table 2 of CAN/CSA C22.2 No. 235.”		N/A
Annex DVA (F.3.3.5)	Equipment identified for ITE (computer) room installation is marked with the rated current		N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position		N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles complies with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.4.3)	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.	No such fuse provided.	N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
Annex DVA (Annex M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
Annex DVA (Q)	Wiring terminals intended to supply Class 2 outputs according to the NEC or CEC Part 1are marked with the voltage rating and “Class 2” or equivalent; marking is located adjacent to the terminals and visible during wiring.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. Components required to comply include: appliance couplers, attachment plugs, battery back-up systems, battery packs, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultra-capacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, data storage equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	See Table 4.1.2.	P

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.		N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are in accordance with the NEC/CEC.	AC plug	P
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and are specially marked when specified.		N/A
Annex DVH (DVH.3.2)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm^2).		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, complies with special earthing, wiring, marking and installation instruction requirements.		N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1
DENMARK NATIONAL DIFFERENCES

Audio/video, information and communication technology equipment –

Part 1: Safety requirements

Differences according to ..... :	DS/EN 62368-1:2014
Attachment Form No. ..... :	DK_ND_IEC62368_1B
Attachment Originator..... :	UL (Demko)
Master Attachment..... :	2014-10

	National Differences		P
4.1.15	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: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord."		N/A
5.2.2.2	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.		N/A
5.6.1	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.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.5	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.		N/A
5.7.6.2	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.		N/A
G.4.2	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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT

IEC 62368-1
(AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES
(**Audio/video, information and communication technology equipment**)

Differences according to ..... : AS/NZS 62368.1:2018

Attachment Form No. ..... : AU_NZ_ND_IEC62368_1B

Attachment Originator..... : JAS-ANZ

Master Attachment ..... : 2019-02-04

	National Differences		
Appendix ZZ	Variations to IEC 62368-1:2014 (ED. 2.0) for Australia and New Zealand		P
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2014 (ED. 2.0)		P
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		P
2	*Add* the following to the list of normative references: The following normative documents are referenced in Appendix ZZ: -AS/NZS 3112, *Approval and test specification—Plugs and socket-outlets* -AS/NZS 3123, *Approval and test specification—Plugs, socket-outlets and couplers for general industrial application* -AS/NZS 3191, *Electric flexible cords* -AS/NZS 60065, *Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)* -AS/NZS 60320.1, *Appliance couplers for household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)* -AS/NZS 60320.2.2, *Appliance couplers for household and similar general purposes Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)* -AS/NZS 60695.2.11, *Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products* -AS/NZS 60695.11.5, *Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance* -AS/NZS 60695.11.10, *Fire hazard testing, Part 11.10: Test flames—50 W*		P

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	horizontal and vertical flame test methods -AS/NZS 60884.1, *Plugs and socket-outlets for household and similar purposes, Part 1: General requirements* -AS/NZS 60950.1:2015, *Information technology equipment—Safety*, Part 1: *General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)* IEC 61032:1997, *Protection of persons and equipment by enclosures—Probes for verification* -AS/NZS 61558.1:2008 (including Amendment 2:2015), *Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 2.1, MOD)* -AS/NZS 61558.2.16, *Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.*		
4.1.1	**Application of requirements and acceptance of materials, components and subassemblies** 1 *Replace* the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'. 2 *Replace* the text 'IEC 60065' with 'AS/NZS 60065'.		P
4.7	**Equipment for direct insertion into mains socket-outlets**		N/A
4.7.2	**Requirements** *Delete* the text of the second paragraph and *replace* with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.		N/A
4.7.3	**Compliance Criteria** *Delete* the first paragraph and Note 1 and Note 2 and *replace* with the following: *Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.*		N/A
4.8	*Delete* existing clause title and *replace* with the following: **4.8 Products containing coin/button cell batteries**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.8.1	**General** 1 Second dashed point, *delete* the text and *replace* with the following: – include coin/button cell batteries with a diameter of 32 mm or less. 2 After the second dashed point, *insert* the following Note: NOTE 1: Batteries are specified in IEC 60086-2. 3 After the third dashed point, *renumber* the existing Note as 'NOTE 2'. 4 Fifth dashed point, *delete* the word 'lithium'.		N/A
4.8.2	**Instructional Safeguard** First line, *delete* the word 'lithium'.		N/A
4.8.3	**Construction** First line, after the word 'Equipment' *insert* the words 'containing one or more coin/button batteries and'		N/A
4.8.5	**Compliance criteria** *Delete* the first paragraph and *replace* with the following: *Compliance is checked by applying a force of 30 N +/-1 N for 10 s to the battery compartment door/cover by a rigid test finger according to test probe 11 of IEC 61032:1997 at the most unfavourable place and in the most unfavourable direction. The force shall be applied in one direction at a time.*		N/A
5.4.10.2	**Test methods**		N/A
5.4.10.2.1	**General** *Delete* the first paragraph and *replace* with the following: In Australia only, the separation is checked by the test of both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test of either Clause 5.4.10.2.2 or Clause 5.4.10.2.3.		N/A
Table 29	*Replace* the table with the following:		N/A

Parts	Impulse test		Steady state test	
	New Zealand	Australia	New Zealand	Australia
Parts indicated in Clause 5.4.10.1 a) [a]	2.5 kV 10/700 µs	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment. 10/700 µs	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) [b]	1.5 kV 10/700 µs [c]		1.0 kV	1.5 kV

[a] Surge suppressors shall not be removed.
[b] Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment.
[c] During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.2.2	After the first paragraph, *insert* new Notes 201 and 202 as follows: NOTE 201 For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A
5.4.10.2.3	After the first paragraph, *insert* new Notes 201 and 202 as follows: NOTE 201 For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
6	**Electrically-caused fire**		P
6.1	**General** After the first paragraph, *insert* the following new paragraph: Alternatively, the requirements of Clauses 6.2 to 6.5.2 are considered to be fulfilled if the equipment complies with the requirements of Clause 6.202		P
6.6	After Clause 6.6, *add* the new Clauses 6.201 and 6.202 as follows: **6.201 External power supplies, docking stations and other similar devices** and **6.202 Resistance to fire—Alternative tests** (see special national conditions)		P
8.5.4	**Special categories of equipment comprising moving parts**		N/A
8.5.4.1	**Large data storage equipment** In the first dashed row and the second dashed rows *replace* 'IEC 60950-1:2005' with 'AS/NZS 60950.1:2015'.		N/A
8.6	**Stability of equipment**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.1 and Table 36	**Requirements** 1. Table 36, *insert* Footnote c at the end of the 'Glass slide' heading, and *add* a new Footnote c after the text of Footnote b in the last row of Table 36 as follows: [c] The glass slide test is not applicable to floor standing equipment, even though the equipment may have controls or a display. 2. Table 36, fifth row, *insert* '[201]' at the end of 'No stability requirements' 3. Table 36, ninth row, *insert* '[201]' at the end of 'No stability requirements' 4. Table 36, *add* the following new footnote: [201] MS2 and MS3 television sets and display devices, designed only for fixing to a wall, ceiling or equipment rack, are not subjected to stability requirements only if the instructional safeguard of Clause 8.6.1.201 is provided. Otherwise, the glass slide requirements of Clause 8.6.4 and horizontal force requirements of Clause 8.6.5 apply. 5. Second paragraph beneath Table 36, *delete* the words 'MS2 and MS3 television sets' and *replace* with 'MS2 and MS3 television sets and display devices'		N/A
8.6.1	After Clause 8.6.1 *add* the following new clauses: **8.6.1.201 Instructional safeguard for fixed-mount television sets** (see special national conditions)		N/A
Annex F **Paragraph F.3.5.1**	**Mains appliance outlet and socket-outlet markings** *Replace* 'IEC 60320-2-2' with 'AS/NZS 60320.2.2'.		N/A
Annex G **Paragraph G.4.2**	**Mains connectors** 1 In the second line *insert* 'or AS/NZS 3123' after 'IEC 60906-1'. 2 In the second line *insert* 'or AS/NZS 60320 series' after 'IEC 60320 series' 3 *Add* the following new paragraph: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.	Should be evaluated in national approval	N/A
Paragraph G.5.3.1	**Transformers, General** 1 In the third dashed point *replace* 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 In the fourth dashed point *replace* 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.		P
Paragraph G.7.1	**Mains supply cords, General** In the fourth dashed paragraph, *replace* 'IEC 60320-1' with 'AS/NZS 60320.1'	Should be evaluated in national approval	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Table G.5	**Sizes of conductors** 1 In the second row, first column, *delete* '6' and *replace* with '7.5' 2 In the second row, second column, *delete* '0,75' and *replace* with '0.75[b] 3 *Delete* Note 1. 4 *Replace* 'NOTE 2' with 'NOTE:'. 5 *Delete* the text of 'Footnote b' and *replace* with the following: [b] This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm2 three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 In Footnote c *replace* 'IEC 60320-1' with 'AS/NZS 60320.1' 7 In Footnote d *replace* 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A
Annex M **Paragraph M.3.2**	**Protection circuits for batteries provided within the equipment, Test method** After the first dashed point *add* the following Note: NOTE 201: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of SELV may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.		N/A
	Special national conditions (if any)		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.201	**External power supplies, docking stations and other similar devices** For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage— – at all ES1 outlets or connectors shall not increase by more than 10% of its rated output voltage under normal operating condition; and – of a USB outlet or connector shall not increase by more than 3 V or 10% of its rated output voltage under normal operating conditions, whichever is higher. For equipment with multiple rated output voltages, the requirements apply with the equipment configured for each rated output voltage in turn. NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. *Compliance shall be checked by measurement, taking into account the abnormal* *operating conditions of Annex B.3 and the simulated single-fault conditions of Annex B.4*		P
6.202	**Resistance to fire—Alternative tests**		N/A
6.202.1	**General** Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the equipment, or the following: a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length. b) The following parts which would contribute negligible fuel to a fire: – small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; – small electrical components, such as capacitors with a volume not exceeding 1 750 mm3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10. NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	another.		
	Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4. For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5. The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.		N/A
6.202.2	**Testing of non-metallic materials** Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.		N/A
6.202.3	**Testing of insulating materials** Parts of insulating material supporting Potential Ignition Sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE: Contacts in components such as switch contacts are considered to be connections		N/A
	For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test need not be tested		N/A
	The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:		N/A

Clause of AS/NZS 60695.11.5	Change
9 Test procedure	
9.2 Application of needle-flame	*Delete* the first and second paragraphs and *replace* with the following:

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Clause	Requirement + Test	Result - Remark	Verdict

		The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner. The duration of application of the test flame shall be 30 s 1 s.		
		9.3 Number of test specimens	*Replace* with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.	
		11 Evaluation of test results	*Replace* with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.	
	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the relevant part is not thinner than the sample tested.			
6.202.4	**Testing in the event of non-extinguishing material** If parts, other than enclosures, do not withstand the glow wire tests of Clause 6.202.3, by failure to extinguish within 30 s after the removal of the glowwire tip, the needle-flame test detailed in Clause 6.202.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of Clause 6.202.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested. NOTE 1: If the enclosure does not withstand the glow-wire test			N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing. NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing. NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.		
6.202.5	**Testing of printed boards** The base material of printed boards shall be subjected to the needle-flame test of Clause 6.202.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a potential ignition source. The test is not carried out if— – the printed board does not carry any potential ignition source; – the base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or – the base material of printed boards, on which the available equipment power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. *Conformance shall be determined using the smallest thickness of the material.* NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the apparent power for more than 2 min when the circuit supplied is disconnected.		N/A
6.202.6	**For open circuit voltages greater than 4 kV** Potential ignition sources with open circuit voltages exceeding 4 kV (peak) a.c. or d.c. under normal		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	operating conditions shall be contained in a FIRE ENCLOSURE which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.		
8.6.1.201	**8.6.1.201 Instructional safeguard for fixed-mount television sets** MS2 and MS3 television sets and display devices designed only for fixed mounting to a wall of ceiling or equipment rack shall, where required in Table 36, footnote 201, have an instructional safeguard in accordance with Clause F.5 which may be on the equipment or included in the installation instructions or equivalent document accompanying the equipment. The elements of the instructional safeguard shall be as follows: – element 1a: not available; – element 2: 'Stability Hazard' or equivalent wording; – element 3: 'The television set may fall, causing serious personal injury or death' or equivalent text; – element 4: the following or equivalent text: To prevent injury, this television set must be securely attached to the floor/wall in accordance with the installation instructions		N/A
8.6.1.202	**Restraining device** MS2 and MS3 television sets and display devices that are not solely fixed-mounted should be provided with a restraining device such as a fixing point to facilitate restraining the equipment from toppling forward. The restraining device shall be capable of withstanding a pull of 100 N in all directions without damage. Where a restraining device is provided, instructions shall be provided in the instructions for installation or instructions for use to ensure correct and safe installation.		N/A

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ATTACHMENT TO TEST REPORT

IEC 62368-1

(JAPAN) NATIONAL DIFFERENCES

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

Differences according to……...:	J62368-1 (H30)
Attachment Form No……..……...:	JP_ND_IEC62368_1B
Attachment Originator……..……...:	UL (JP)
Master Attachment…..……...:	Date 2018-11-22

	National Differences		¾
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this standard or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.		P
5.6.1	Mains socket-outlet and appliance outlet shall comply with Clause G.4.2A if they are incorporated as part of the equipment.		N/A
5.6.2.1	Mains connection of class 0I equipment: Instructional safeguard in accordance with Clause F.3.6.1A; Mains plug having a lead wire for protective earthing connection of class 0I equipment; Independent main protective earthing terminal installed by ordinary person.		N/A
5.6.2.2	This requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cab tire cable with 1.25 mm2 or more cross-sectional area		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series or JIS C 8303, or otherwise being considered to comply with relevant regulations, or that is provided with mains appliance outlet as specified in JIS C 8283-2-2 for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.		N/A
5.7.4	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990.		N/A
6.4.3.3	A fuse complying with JIC C 6575 series or a fuse having equivalent characteristics shall open within 1 s. For Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”. A fuse not complying with JIS C 6575 series shall be tested with the breaking capacity taken into account.		N/A
8.5.4.2.1	Only three-phase stationary equipment rated more than 200 V ac can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.		N/A
8.5.4.2.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.		N/A
8.5.4.2.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.		N/A
8.5.4.2.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.		N/A
9.2.6, Table 38	Handles, Knobs, grips, etc. and external surfaces either held, touched or worn against the body in normal use (> 1 min) b,c		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.1	Instructional safeguard of class 0I equipment in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8303 or relevant regulation to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.		N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.		P
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.3 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions and instructional safeguard shall be provided regarding the earthing connection.		N/A
F.3.6.2.1	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		N/A
F.4	Instruction for audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A. Installation instruction for the protective earthing connection for class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment.		N/A
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.		N/A
G.3.4	Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the relevant part of JIS C 6575 (corresponding to IEC60127) or shall have equivalent characteristics. If there are no applicable IEC standards, overcurrent protective devices used as a safeguard shall comply with their applicable IEC standards.	No such devices used	N/A
G.4.1	This requirement is not applicable to Clauses G.4.2 and G.4.2A.		N/A

IEC62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Mains connector shall comply with JIS C 8282 series, JIS C 8283 series, JIS C 8285, JIS C 8303 or IEC 60309 series. Mains plugs and socket-outlets shall comply with JIS C 8282 series, JIS C 8303, IEC 60309 series, or have equivalent or better performance. A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286. Construction preventing mechanical stress not to transmit to the soldering part of inlet terminal. Consideration for an equipment rated not more than 125 V provided with Type C14 and C18 appliance coupler complying with JIS C 8283 series.		N/A
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively.	Should be evaluated in national approval	N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.		N/A
G.8.3.3	Withstand 1,71 × 1.1 × U0 for 5 s.		N/A

Notes:

1. Product scope of JIS C 8283-1(2008) is harmonized with IEC60320-1 (2001).
2. General requirement is applied to all Specified and Non-Specified PSE products when J-Standard is used.

5.4.1.8	Table: working voltage measurement			P
Location	RMS voltage (V)	Peak voltage (V)	Frequency(Hz)	Comments
For soundbar:				
T1 pin A to 1	**270**	**484**	61.6k	The max. working voltage
T1 pin A to 2	246	404	61.6k	--
T1 pin A to 4	181	376	61.6k	--
T1 pin A to 5	180	366	61.6k	--
T1 pin B to 1	268	462	61.6k	--
T1 pin B to 2	246	348	61.6k	--
T1 pin B to 4	180	352	61.6k	--
T1 pin B to 5	180	416	61.6k	--
U2 pin 1 to 3	186	364	0.06	--
U2 pin 1 to 4	188	364	0.06	--
U2 pin 2 to 3	188	364	0.06	--
U2 pin 2 to 4	188	364	0.06	--
CY1 primary to secondary	178	360	0.06	--
For subwoofer:				
T1 pin A to 1	262	424	61.6k	--
T1 pin A to 2	252	426	61.6k	--
T1 pin A to 4	180	384	61.6k	--
T1 pin A to 5	178	368	61.6k	--
T1 pin B to 1	**268**	**446**	61.6k	The max. working voltage
T1 pin B to 2	254	364	61.6k	--
T1 pin B to 4	178	356	61.6k	--
T1 pin B to 5	178	412	61.6k	--
U2 pin 1 to 3	186	376	0.06	--
U2 pin 1 to 4	188	376	0.06	--
U2 pin 2 to 3	186	376	0.06	--
U2 pin 2 to 4	188	376	0.06	--
CY1 primary to secondary	178	364	0.06	--
supplementary information:				
Test voltage: 240Vac, 60Hz.				

TEST REPORT

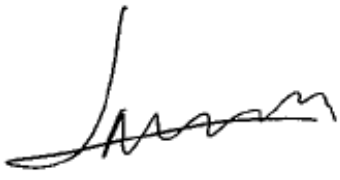
Applicant	TCL Technoly Electronics(Huizhou) Co., Ltd.
Address	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, China, 516006.

Manufacturer or Supplier	Sound United, LLC
Address	1 Viper Way Vista, CA 92081 USA
Product	HOME THEATER SYSTEM
Brand Name	Polk
Model	SIGNA S2 SOUND BAR, SIGNA S2 SUBWOOFER
Additional Model & Model Difference	N/A
Date of tests	May 31, 2018 ~ Jul. 18, 2018

The submitted sample of the above equipment has been tested according to the requirements of the following standards:

☒ **EN 55032:2015, Class B**
☒ **EN 61000-3-2:2014**
☒ **EN 61000-3-3:2013**
☒ **EN 55035:2017**
☒ **Draft EN 301 489-1 V2.2.0 (2017-03)**
☒ **Final draft EN 301 489-3 V2.1.1 (2017-03)**
☒ **Draft EN 301 489-17 V3.2.0 (2017-03)**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Andy Zhu Project Engineer / EMC Department	Approved by Madison Luo Supervisor / EMC Department
	 Date: Aug. 01, 2018

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RELEASE CONTROL RECORD

Issue No.	Description	Date Issued
CE180531N039	Original release	Aug. 01, 2018

Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch

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Tel: +86 769 8593 5656
Fax: +86 769 8593 1080
Email: customerservice.dg@cn.bureauveritas.com

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

EMISSION			
Standard	Test Item	Result	Remarks
EN 55032:2015, Class B	Conducted emission from the AC mains power port	PASS	Minimum passing Class B margin is -8.79dB at 0.70596MHz
	Radiated emission 30MHz-1000MHz	PASS	Minimum passing Class B margin is -3.34dB at 98.40MHz
	Radiated emission 1GHz -6GHz	PASS	Minimum passing Class B margin is -13.85dB at 4862.18MHz.
EN 61000-3-2:2014	Harmonic current emissions	PASS	Meets the requirements.
EN 61000-3-3:2013	Voltage fluctuations & flicker	PASS	Meets the requirements.

Note: 1. EN55032:2015 version is required by client and it will also remark in report that it comply with previous standard EN 55032:2012 + AC:2013.

IMMUNITY (EN 55035:2017)			
Standard	**Test Type**	**Result**	**Remarks**
IEC 61000-4-2:2008 ED. 2.0	Electrostatic discharge immunity test	PASS	Electrostatic Discharge – ESD: 8kV Air discharge, 4kV Contact discharge, Performance Criterion A
IEC 61000-4-3:2010 ED. 3.2	Radiated, radio-frequency, electromagnetic field immunity test	PASS	Meets the requirements
IEC 61000-4-4:2012 ED. 3.0	Electrical fast transient / burst immunity test.	PASS	Electrical Fast Transient/Burst - EFT AC Power line: 1kV, Performance Criterion A
IEC 61000-4-5:2014 ED. 2.0	Surge immunity test	PASS	Surge Immunity Test: 1.2/50 us Open Circuit Voltage, 8 /20 us Short Circuit Current, Power line: line to line 1 kV, Performance Criterion A
IEC 61000-4-6:2013 ED. 4.0	Immunity to conducted disturbances, induced by radio-frequency fields	PASS	Meets the requirements
IEC 61000-4-8:2009 ED. 2.0	Power frequency magnetic field immunity test.	PASS	Power Frequency Magnetic Field Test, 50 Hz, 1A/m, Performance Criterion A
IEC 61000-4-11:2004 ED. 2.0	Voltage dips, short interruptions and voltage variations immunity tests	PASS	Meets the requirements of Voltage Dips: i) >95% residual - Performance Criterion A ii) 30% residual – Performance Criterion A iii) >95% residual – Performance Criterion C

IMMUNITY (Draft EN 301 489-1 V2.2.0, Final draft EN 301 489-3 V2.1.1, Draft EN 301489-17 V3.2.0)			
Standard	**Test Type**	**Result**	**Remarks**
EN 61000-4-2:2009	Electrostatic discharge immunity test	PASS	Electrostatic Discharge – ESD: 8kV Air discharge, 4kV Contact discharge, Performance Criterion A
EN 61000-4-3:2006 A1:2008 + A2:2010	Radiated, radio-frequency, electromagnetic field immunity test	PASS	Radio-Frequency Electromagnetic Field Susceptibility Test – RS: 80-6000 MHz, 3V/m, 80% AM (1kHz), Performance Criterion A
EN 61000-4-4:2012	Electrical fast transient / burst immunity test.	PASS	Electrical Fast Transient/Burst - EFT, AC power line: 1 kV Performance Criterion A
EN 61000-4-5:2006	Surge immunity test	PASS	Surge Immunity Test: 1.2/50 us Open Circuit Voltage, 8 /20 us Short Circuit Current, Power line: line to line 1 kV, Performance Criterion A
EN 61000-4-6:2009	Immunity to conducted disturbances, induced by radio-frequency fields	PASS	Conducted Radio Frequency Disturbances Test – CS: 0.15 ~ 80 MHz, 3 Vrms, 80% AM, 1 kHz, Performance Criterion A
EN 61000-4-11:2004	Voltage dips, short interruptions and voltage variations immunity tests	PASS	Voltage Dips: i) 0% residual for 0.5 cycle, Performance Criterion A ii) 0% residual for 1 cycle, Performance Criterion A iii) 70% residual for 25 cycle, Performance Criterion A Voltage Interruptions: iv) 0% residual for 250 cycle, Performance Criterion C

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

The listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

MEASUREMENT	FREQUENCY	UNCERTAINTY
Mains Terminal Disturbance Voltage Test	0.15MHz ~ 30MHz	+/-2.70 dB
Radiated Disturbance Test	30MHz ~ 1000MHz	+/-3.83 dB
	1GHz ~ 6GHz	+/-4.66 dB

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	HOME THEATER SYSTEM	
BRAND	Polk	
TEST MODEL	SIGNA S2 SOUND BAR, SIGNA S2 SUBWOOFER	
ADDITIONAL MODEL	N/A	
POWER SUPPLY	SIGNA S2 SOUND BAR	AC 100-240V 50/60Hz 40W
	SIGNA S2 SUBWOOFER	AC 100-240V 50/60Hz 40W
CABLE SUPPLIED	Optical Line: Unshielded detachable 1.80m AC Line*2: Unshielded detachable 1.45m HDMI Line: Shielded detachable 1.50m	
CLOCK/ OSCILLATOR FREQUENCY	Below 108MHz	

Note:

1. For the test results, the EUT had been tested with all conditions. But only the worst case was showed in test report.
2. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
3. Please refer to the EUT photo document (Reference No.: 180531N039) for detailed product photo.

2.2 DESCRIPTION OF TEST MODES

The EUT was tested under the following modes. And the worst case was marked in bold and recorded in the report.

◆ FOR CONDUCTED EMISSIONS TEST:

Test Mode		Test Voltage
1	Aux in + 2.4G wireless Link	**SIGNA S2 SOUND BAR :** AC 230V 50Hz, **AC 110V 60Hz** **SIGNA S2 SUBWOOFER :** AC 230V 50Hz, **AC 110V 60Hz**
2	TV OPTICAL + 2.4G wireless Link	
3	TV(ARC) + 2.4G wireless Link	
4	**BT Link + 2.4G wireless Link**	
5	Standby	

◆ FOR RADIATED EMISSIONS TEST(Below 1G):

Test Mode		Test Voltage
1	Aux in + 2.4G wireless Link	**SIGNA S2 SOUND BAR : AC 230V 50Hz**, AC 110V 60Hz **SIGNA S2 SUBWOOFER : AC 230V 50Hz**, AC 110V 60Hz
2	TV OPTICAL + 2.4G wireless Link	
3	**TV(ARC) + 2.4G wireless Link**	
4	BT Link + 2.4G wireless Link	
5	Standby	

◆ FOR RADIATED EMISSIONS TEST(Above 1G):

Test Mode		Test Voltage
1	Aux in + 2.4G wireless Link	**SIGNA S2 SOUND BAR : AC 230V 50Hz**, AC 110V 60Hz **SIGNA S2 SUBWOOFER : AC 230V 50Hz**, AC 110V 60Hz
2	TV OPTICAL + 2.4G wireless Link	
3	TV(ARC) + 2.4G wireless Link	
4	**BT Link + 2.4G wireless Link**	

◆ FOR HARMONIC, FLICKERED TESTS

Test Mode		Test Voltage
1	Aux in + 2.4G wireless Link	**SIGNA S2 SOUND BAR : AC 230V 50Hz** **SIGNA S2 SUBWOOFER : AC 230V 50Hz**
2	TV OPTICAL + 2.4G wireless Link	
3	TV(ARC) + 2.4G wireless Link	
4	**BT Link + 2.4G wireless Link**	

◆ FOR IMMUNITY TESTS

Test Mode		Test Voltage
1	**Aux in + 2.4G wireless Link**	**SIGNA S2 SOUND BAR : AC 230V 50Hz**, AC 110V 60Hz **SIGNA S2 SUBWOOFER : AC 230V 50Hz**, AC 110V 60Hz
2	**TV OPTICAL + 2.4G wireless Link**	
3	**TV(ARC) + 2.4G wireless Link**	
4	**BT Link + 2.4G wireless Link**	
5	**Standby**	

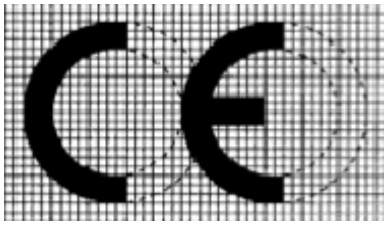
2.3 TEST PROGRAM USED AND OPERATION DESCRIPTIONS

a. Turned on the power of all equipment.
b. EUT was operated according to the type described in manufacturer's specifications or the user's manual.

2.4 MISCELLANEOUS

➢ Affix CE marking

The marking must be placed visibly and legibly on the product or, if not possible due to the nature of the product, be affixed to the packaging and the accompanying document. The CE marking shall consist of the initials 'CE' taking the following form:



The various components of the CE marking must have the same vertical dimension, and may not be smaller than 5 mm. If the CE marking is reduced or enlarged, the proportions given in the graduated drawing above must be respected.

When the product is subject to other Directives covering other aspects and which also provide for the 'CE' marking, the accompanying documents must indicate that the product also conforms to those other Directives.

However, when one or more of those Directives allow the manufacturer, during a transitional period, to choose which arrangements to apply, the 'CE' marking has to indicate conformity only with the Directives applied by the manufacturer. In this case, the particularities of the Directives applied, as published in the Official Journal of the European Union, must be given in the documents, notices or instructions required by the Directives and accompanying such products.

2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to the specifications of the manufacturers, the EUT must comply with the requirements of the following standards:

EN 55032:2015, CLASS B

EN 61000-3-2:2014

EN 61000-3-3:2013

EN 55035:2017

IEC 61000-4-2:2008 ED. 2.0
IEC 61000-4-3:2010 ED. 3.2
IEC 61000-4-4:2012 ED. 3.0
IEC 61000-4-5:2014 ED. 3.0
IEC 61000-4-6:2013 ED. 4.0
IEC 61000-4-8:2009 ED. 2.0
IEC 61000-4-11:2004 ED. 2.0

DRAFT EN 301 489-1 V2.2.0 (2017-03)
FINAL DRAFT EN 301 489-3 V2.1.1 (2017-03)
DRAFT EN 301489-17 V3.2.0(2017-03)

EN 61000-4-2:2009
EN 61000-4-3:2006 + A1:2008 + A2:2010
EN 61000-4-4:2012
EN 61000-4-5:2014
EN 61000-4-6:2014
EN 61000-4-11:2004

All applicable tests have been performed and recorded as per the above standards.

2.6 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an dependent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DVD	Pioneer	DV-420V-G	JAKD014992CN	N/A
2	TV 40’	Sony	KDL-40RM10B	2032401	N/A
3	Mobile Phone	SAMSUNG	GT-S7572	R21D85CCB7N	N/A
4	iPhone 6s	Apple	ML7F2CH/A	C6KQKXLAGRY8	N/A
5	iPhone 4	APPLE	A1332	CP7P0NTT79X9TN1	N/A
6	Mobile Phone	InFocus	M512	MC2GLMF490102152	N/A

NO.	DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	AC Line: Unshielded, Detachable 0.6m
2	AC Line: Unshielded, Detachable 1.5m
3~6	AUX Line: Unshielded, Detachable 1.0m

3 CONDUCTED EMISSION FROM THE AC MAINS POWER PORT

3.1 LIMITS

Frequency (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

Notes: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases linearly with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

3.2 TEST INSTRUMENT

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101494	Mar. 21,18	Mar. 20,19
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	Mar. 03,18	Mar. 02,19
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	Apr. 11,18	Apr. 10,19
Voltage probe	SCHWARZBECK	TK 9421	TK 9421-176	Jan. 17,18	Jan. 16,19
Test software	ADT	ADT_Cond _V7.3.7	N/A	N/A	N/A

NOTE: 1. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed at Shielded Room 553.

3.3 TEST ARRANGEMENT

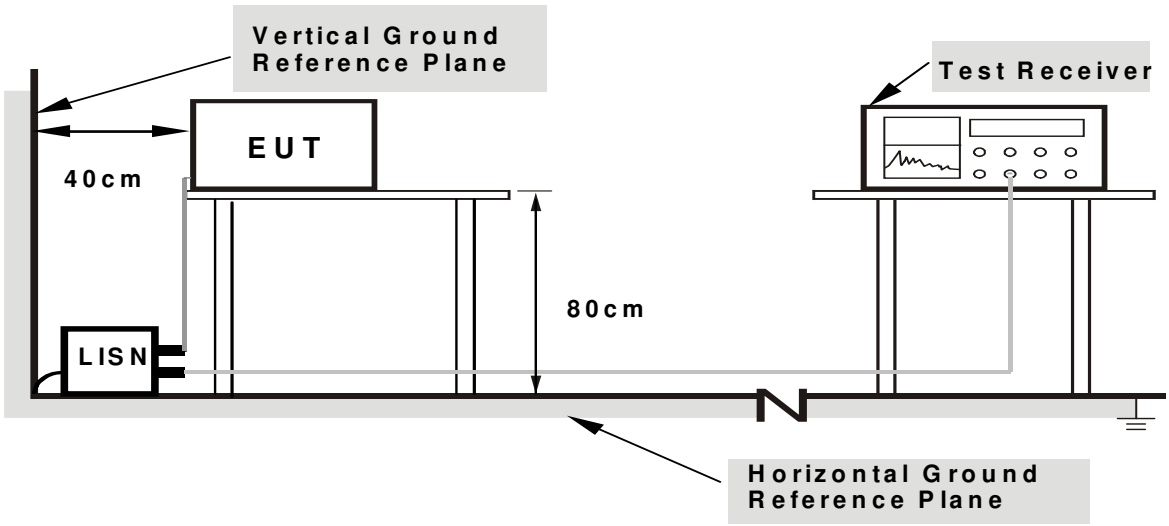
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The test results of conducted emissions at mains ports are recorded of six worst margins for quasi-peak (mandatory) [and average (if necessary)] values against the limits at frequencies of interest unless the margin is 20 dB or greater.

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

3.4 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.

3.5 SUPPLEMENTARY INFORMATION

N/A

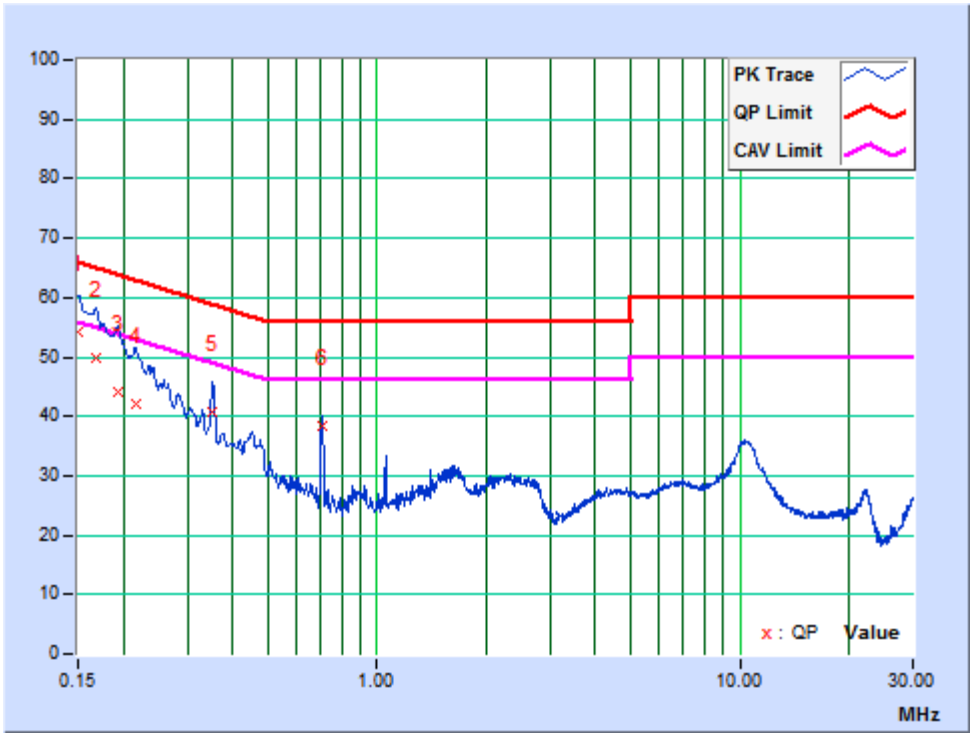
3.6 TEST RESULTS

For: SIGNA S2 SOUND BAR

TEST MODE	BT Link+2.4G Wireless Link	**6DB BANDWIDTH**	9 kHz
TEST VOLTAGE	AC 230V 50Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 55% RH	**TESTED BY**	Dragon

No.	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.01	44.31	21.50	54.32	31.51	66.00	56.00	-11.68	-24.49
2	0.16743	9.71	40.22	19.22	49.93	28.93	65.09	55.09	-15.15	-26.15
3	0.19258	10.18	34.08	17.72	44.26	27.90	63.92	53.92	-19.66	-26.02
4	0.21573	10.35	31.90	15.65	42.25	26.00	62.98	52.98	-20.73	-26.98
5	0.35253	9.81	30.84	26.56	40.65	36.37	58.90	48.90	-18.25	-12.53
6	**0.70596**	**9.89**	**28.48**	**27.32**	**38.37**	**37.21**	**56.00**	**46.00**	**-17.63**	**-8.79**

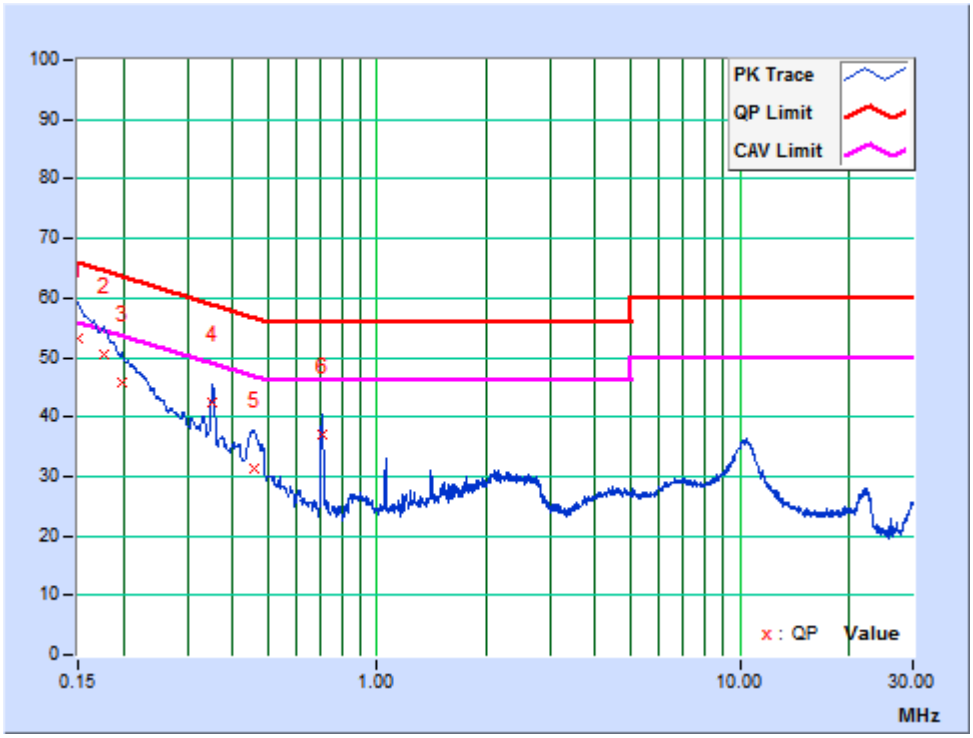
REMARKS: The emission levels of other frequencies were very low against the limit.



TEST MODE	BT Link+2.4G Wireless Link	6DB BANDWIDTH	9 kHz
TEST VOLTAGE	AC 230V 50Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 55% RH	TESTED BY	Dragon

No.	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.71	43.40	21.96	53.11	31.67	66.00	56.00	-12.89	-24.33
2	0.17651	10.28	40.29	19.75	50.57	30.03	64.65	54.65	-14.08	-24.62
3	0.19721	9.87	35.82	18.00	45.69	27.87	63.73	53.73	-18.04	-25.86
4	0.35253	10.36	31.93	25.23	42.29	35.59	58.90	48.90	-16.61	-13.31
5	0.45600	10.03	21.13	11.20	31.16	21.23	56.77	46.77	-25.60	-25.53
6	0.70575	10.02	26.96	25.68	36.98	35.70	56.00	46.00	-19.02	-10.30

REMARKS: The emission levels of other frequencies were very low against the limit.

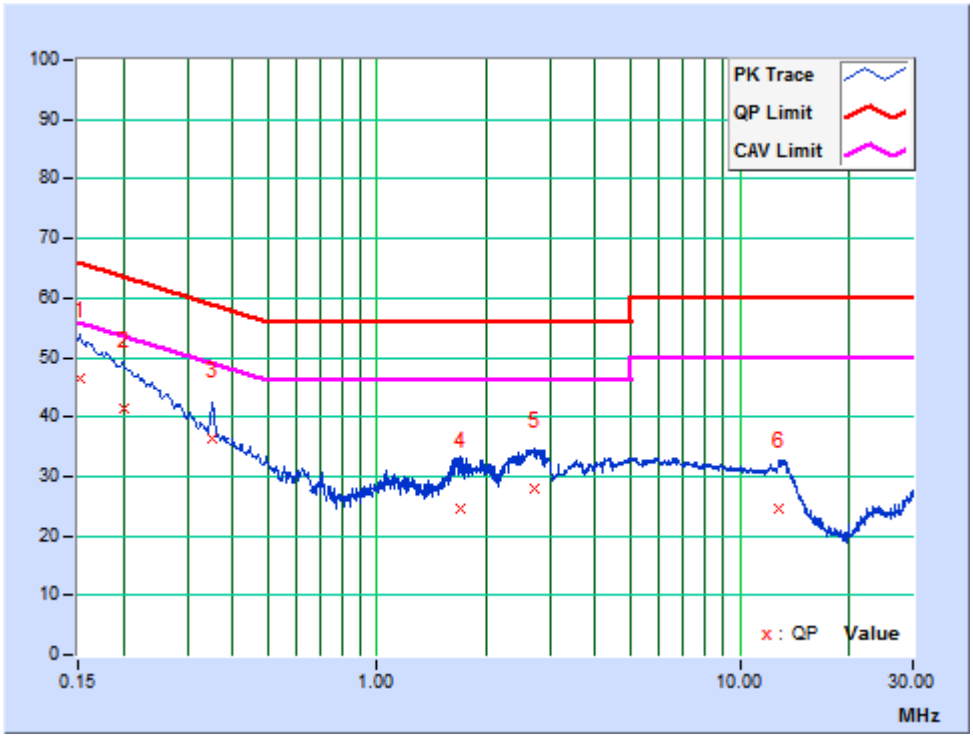


For: SIGNA S2 SUBWOOFER

TEST MODE	BT Link+2.4G Wireless Link	**6DB BANDWIDTH**	9 kHz
TEST VOLTAGE	AC 230V 50Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 55% RH	**TESTED BY**	Dragon

No.	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15225	9.97	36.33	11.60	46.30	21.57	65.88	55.88	-19.57	-34.30
2	0.19983	10.35	31.15	8.59	41.50	18.94	63.62	53.62	-22.12	-34.68
3	0.35253	9.81	26.62	23.27	36.43	33.08	58.90	48.90	-22.47	-15.82
4	1.70025	10.27	14.26	2.75	24.53	13.02	56.00	46.00	-31.47	-32.98
5	2.71500	9.88	18.17	3.84	28.05	13.72	56.00	46.00	-27.95	-32.28
6	12.82425	9.77	14.73	4.06	24.50	13.83	60.00	50.00	-35.50	-36.17

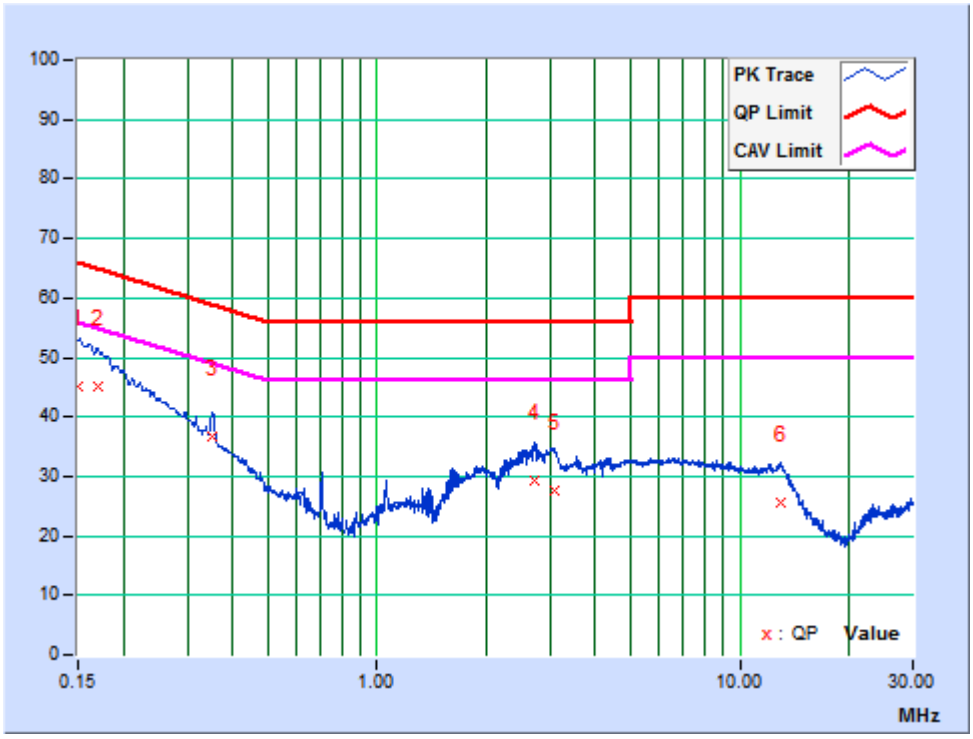
REMARKS: The emission levels of other frequencies were very low against the limit.



TEST MODE	BT Link+2.4G Wireless Link	6DB BANDWIDTH	9 kHz
TEST VOLTAGE	AC 230V 50Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 55% RH	TESTED BY	Dragon

No.	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.71	35.57	11.12	45.28	20.83	66.00	56.00	-20.72	-35.17
2	0.16966	10.40	34.64	10.69	45.04	21.09	64.98	54.98	-19.94	-33.89
3	0.35068	10.36	26.18	22.07	36.54	32.43	58.95	48.95	-22.41	-16.52
4	2.71050	10.00	19.23	5.50	29.23	15.50	56.00	46.00	-26.77	-30.50
5	3.07050	10.21	17.40	3.83	27.61	14.04	56.00	46.00	-28.39	-31.96
6	12.90300	9.85	15.89	4.85	25.74	14.70	60.00	50.00	-34.26	-35.30

REMARKS: The emission levels of other frequencies were very low against the limit.



4 RADIATED EMISSION MEASUREMENT

4.1 LIMITS OF RADIATED EMISSION MEASUREMENT

FOR FREQUENCY BELOW 1000 MHz

FREQUENCY (MHz)	Class A (at 10m) Quasi-Peak dBuV/m	Class B (at 10m) Quasi-Peak dBuV/m
30 – 230	40	30
230 – 1000	47	37

FREQUENCY (MHz)	Class A (at 3m) Quasi-Peak dBuV/m	Class B (at 3m) Quasi-Peak dBuV/m
30 – 230	50	40
230 – 1000	57	47

For FM receivers

Distance (m)	Source	Frequency Range (MHz)	Limits dB (uV/m) Quasi-peak	
10	Local oscillator	≤1000	Fundamental	50
		30 to 300	Harmonics	42
		300 to 1000	Harmonics	46
	Other	30 to 230		30
		230 to 1000		37
3	Local oscillator	≤1000	Fundamental	60
		30 to 300	Harmonics	52
		300 to 1000	Harmonics	56
	Other	30 to 230		40
		230 to 1000		47

FREQUENCY RANGE OF RADIATED MEASUREMENT
(For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	Up to 5 times of the highest frequency or 6 GHz, whichever is less

FOR FREQUENCY ABOVE 1000 MHz

FREQUENCY (GHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
1 to 3	76	56	70	50
3 to 6	80	60	74	54

NOTE: 1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2 TEST INSTRUMENTS

FREQUENCY RANGE BELOW 1GHz

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 21,18	Mar. 20,19
Bilog Antenna	Teseq	CBL 6111D	30643	Jul. 28, 17	Jul. 27, 18
Amplifier	Burgeon	BPA-530	100220	Apr. 18,18	Apr. 18,19
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Feb. 10,18	Feb. 09,19
Test software	ADT	ADT_Radiated _V7.6.15.9.2	N/A	N/A	N/A

NOTES: 1. The test was performed in 966 Chamber (a 3m Semi-anechoic chamber).

2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

FREQUENCY RANGE ABOVE 1GHz

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Horn Antenna	ETS-Lindgren	3117	00062558	Jul. 02,18	Jul. 01,19
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170242	May 05,18	Mar. 04,19
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 21,18	Mar. 20,19
Broadband Preamplifier	SCHWARZBECK	BBV9718	305	Apr. 18,18	Apr. 18,19
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 08,17	Nov. 07,18
Test Software	ADT	ADT_Radiated _V7.6.15.9.2	N/A	N/A	N/A

NOTES: 1. The test was performed in 966 Chamber (a 3m Semi-anechoic chamber).

2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

4.3 TEST PROCEDURE

<Frequency Range below 1GHz>

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from 1 meter to 4 meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1GHz.

NOTE:

1. The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
3. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) (if the raw value not contains the amplifier);
4. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB) (if the raw value contains the amplifier).
5. Margin value = Emission level – Limit value.

<Frequency Range above 1GHz>

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna can be varied from one meter-to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

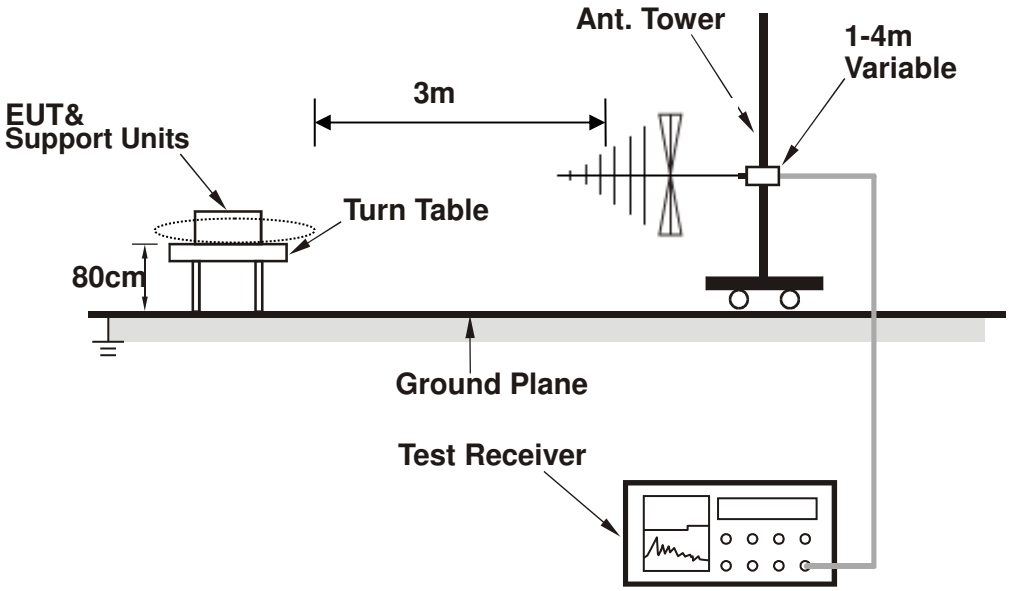
e. The test receiver/spectrum was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.

NOTE:

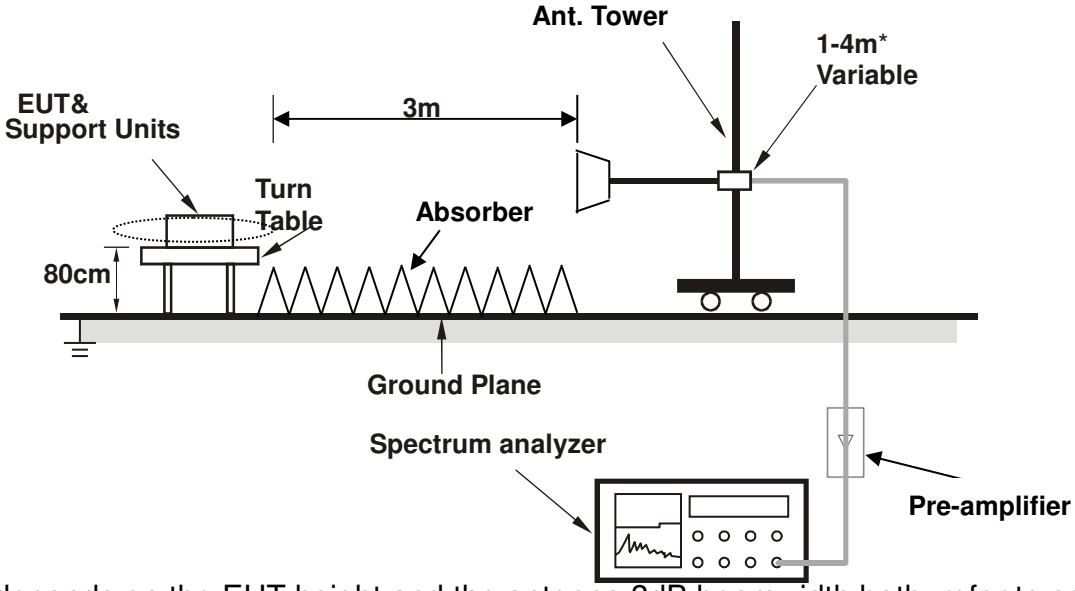
1. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) at frequency above 1GHz.
2. For measurement of frequency above 1000 MHz, the EUT was set 3 meters away from the receiver antenna.
3. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
4. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) (if the raw value not contains the amplifier);
5. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB) (if the raw value contains the amplifier).
6. Margin value = Emission level – Limit value.

4.4 TEST SETUP

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



* : depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3

4.5 SUPPLEMENTARY INFORMATION

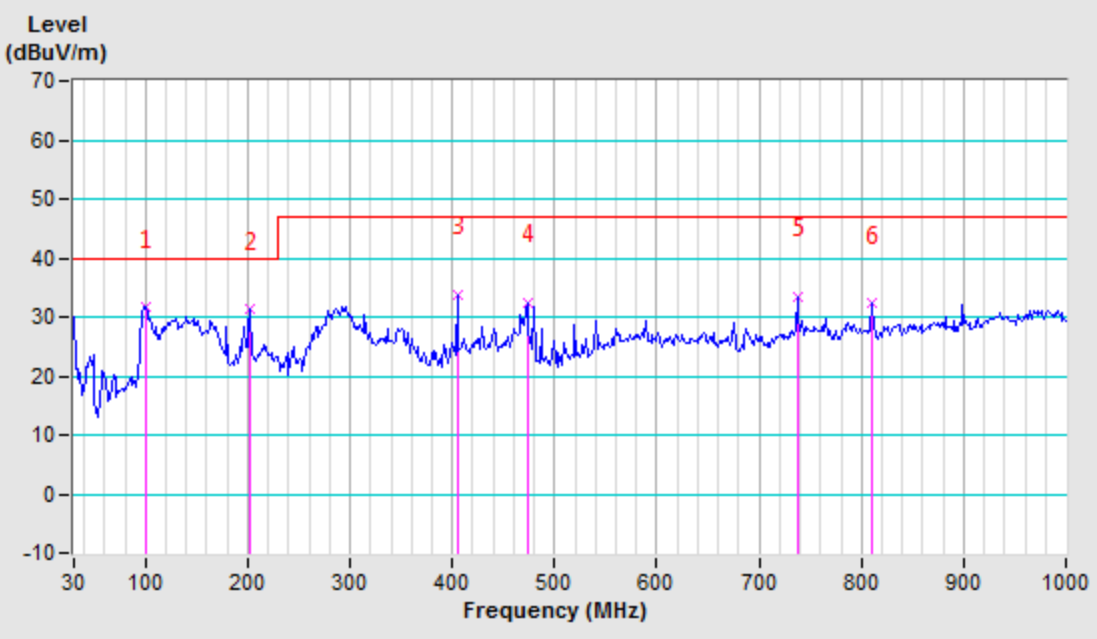
The more stringent measurement method of paragraph 8.3.2 in ANSI C63.4:2014 was applied for the test.

4.6 TEST RESULTS (BELOW 1GHz)

TEST MODE	TV(ARC) + 2.4G wireless Link	**FREQUENCY RANGE**	30-1000MHz
TEST VOLTAGE	AC 230V/50Hz	**DETECTOR FUNCTION & RESOLUTION BANDWIDTH**	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	25.0deg. C, 50.0% RH	**TESTED BY**: Tank	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	99.95	-18.71	50.25	31.54	40.00	-8.46	100	1
2	202.55	-18.73	49.98	31.25	40.00	-8.75	100	1
3	404.63	-8.37	42.21	33.84	47.00	-13.16	100	0
4	473.03	-7.48	39.90	32.42	47.00	-14.58	100	0
5	737.29	-1.23	34.68	33.45	47.00	-13.55	100	0
6	810.35	-0.94	33.16	32.22	47.00	-14.78	100	0

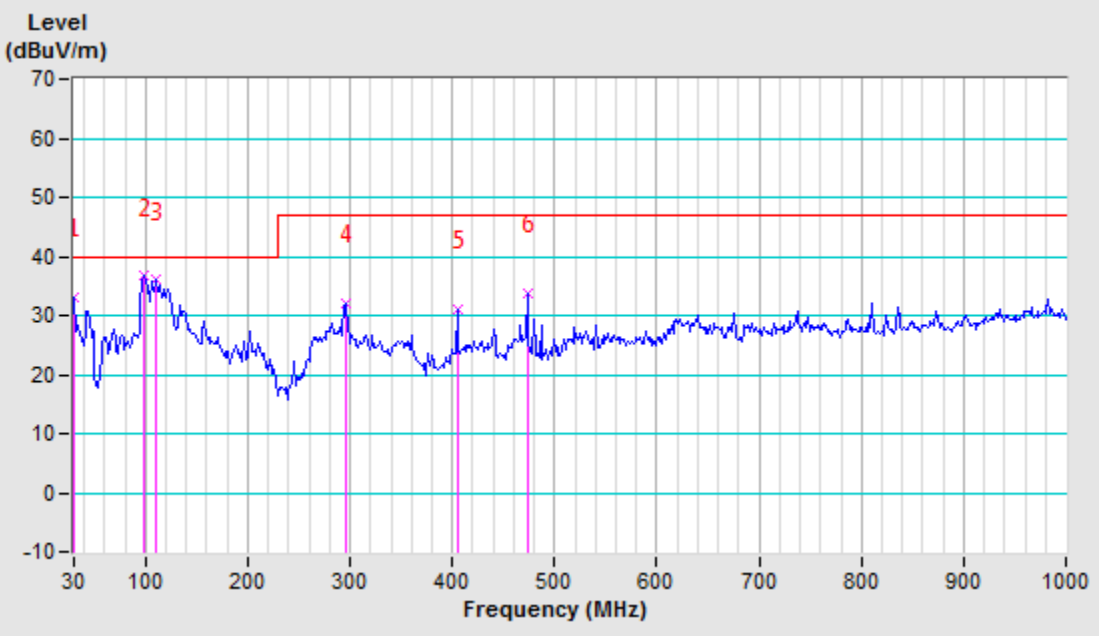
REMARKS: The emission levels of other frequencies were very low against the limit.



TEST MODE	TV(ARC) + 2.4G wireless Link	FREQUENCY RANGE	30-1000MHz
TEST VOLTAGE	AC 230V/50Hz	DETECTOR FUNCTION & RESOLUTION BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	25.0deg. C, 50.0% RH	TESTED BY: Tank	

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	30.00	-11.13	44.32	33.19	40.00	-6.81	200	0
2	**98.40**	**-18.77**	**55.43**	**36.66**	**40.00**	**-3.34**	**200**	**1**
3	110.83	-17.74	53.68	35.94	40.00	-4.06	200	0
4	295.82	-13.47	45.48	32.01	47.00	-14.99	200	0
5	404.63	-8.37	39.38	31.01	47.00	-15.99	200	0
6	473.03	-7.48	41.26	33.78	47.00	-13.22	200	0

REMARKS: The emission levels of other frequencies were very low against the limit.



4.7 TEST RESULTS (ABOVE 1GHz)

TEST MODE	BT Link+2.4G Wireless Link		
TEST VOLTAGE	AC 230V 50Hz	FREQUENCY RANGE	1-6 GHz
ENVIRONMENTAL CONDITIONS	25.0deg. C, 55.0% RH	TESTED BY: Tank	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value （dBuV）	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	2858.97PK	3.44	43.35	46.79	70.00	-23.21	100	174
2	2858.97AV	3.44	29.82	33.26	50.00	-16.74	100	174
3	3171.47PK	3.97	45.30	49.27	74.00	-24.73	187	226
4	3171.47AV	3.97	32.18	36.15	54.00	-17.85	187	226
5	4862.18PK	6.37	50.23	56.60	74.00	-17.40	100	284
6	**4862.18AV**	**6.37**	**33.78**	**40.15**	**54.00**	**-13.85**	**100**	**284**
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value （dBuV）	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	2891.03PK	3.46	43.69	47.26	70.00	-22.85	100	154
2	2891.03AV	3.46	29.80	33.26	50.00	-16.74	100	154
3	3219.55PK	4.10	43.69	47.26	74.00	-24.60	154	226
4	3219.55AV	4.10	30.16	34.26	54.00	-19.74	154	226
5	4910.26PK	6.40	47.26	47.26	74.00	-20.34	126	301
6	4910.26AV	6.40	32.29	38.69	54.00	-15.31	126	301

REMARKS:
1. Peak detector quick scan is showed on the graph and final quasi-peak detector data is measured corresponding to relevant limit and recorded in the data table.
2. Negative sign (-) in the margin column signify levels below the limit.
3. Frequency range scanned: 1GHz to 6GHz.
4. Only emissions significantly above equipment noise floor are reported.

5 HARMONICS CURRENT MEASUREMENT

5.1 LIMITS

Limits for Class A equipment	
Harmonic Order n	Max. permissible harmonics current A
Odd harmonics	
3	2.30
5	1.14
7	0.77
9	0.40
11	0.33
13	0.21
15≦n≦39	0.15 x 15/n
Even harmonics	
2	1.08
4	0.43
6	0.30
8≦n≦40	0.23 x 8/n

Limits for Class D equipment		
Harmonic Order n	Max. permissible harmonics current per watt mA/W	Max. permissible harmonics current A
Odd Harmonics only		
3	3.4	2.30
5	1.9	1.14
7	1.0	0.77
9	0.5	0.40
11	0.35	0.33
13	0.30	0.21
15≦n≦39	3.85/n	0.15 x 15/n

Notes: 1. Class A and Class D are classified according to section 5 of EN 61000-3-2.
2. According to section 7 of EN 61000-3-2, the above limits for all equipment except for lighting equipment having an active input power > 75 W and no limits apply for equipment with an active input power up to and including 75 W.

Classification of Equipment

The EUT is Class A in accordance with EN 61000-3-2 as follows:

Class A	Class B	Class C	Class D
Balanced three-phase equipment; Household appliances excluding equipment as Class D; Tools excluding portable tools; Dimmers for incandescent lamps; Audio equipment; Equipment not specified in one of the three other classes.	Portable tools; Arc welding equipment which is not professional equipment.	Lighting equipment.	Equipment having a specified power less than or equal to 600 W of the following types: Personal computers and personal computer monitors; Television receivers; Refrigerators and freezers having one or more variable-speed drives to control compressor motor(s).

5.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
5kVA AC Power Source	California Instruments	5001ix-400	55194	Apr. 23,18	Apr. 22,19
Harmonic/Flicker Test System	California Instruments	PACS-1	72134	Apr. 23,18	Apr. 22,19
Test Software	California Instruments	CTS 4 – V4.9.0	N/A	N/A	N/A

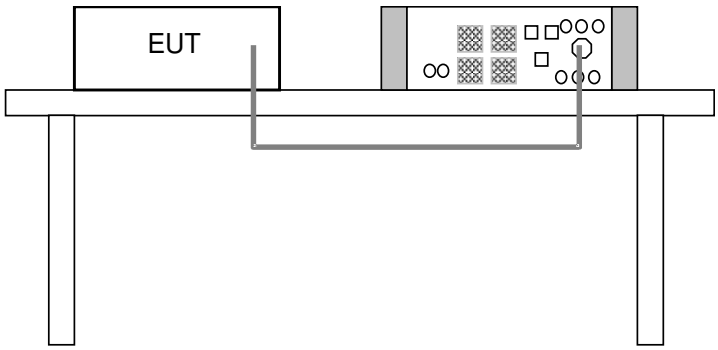
Notes: 1. The test was performed in EMS Room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

5.3 TEST ARRANGEMENT

a. The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the maximum harmonic components under normal operating conditions for each successive harmonic component in turn.

b. The correspondent test program of test instrument to measure the current harmonics emanated from EUT is chosen. The measure time shall be not less than the time necessary for the EUT to be exercised.

5.4 TEST SETUP



5.5 TEST RESULTS

The limits are not specified for equipment with a rated power of 75W or less (other than lighting equipment).The EUT is not required to meet this test item as its power consumption is lower than 75W.

For further details, please refer to Clause 7 of EN 61000-3-2:2014.

6 VOLTAGE FLUCTUATIONS AND FLICKER MEASUREMENT

6.1 LIMITS

Test item	Limit	Note
P_{st}	1.0	P_{st}: short-term flicker severity.
P_{lt}	0.65	P_{lt}: long-term flicker severity.
T_{max} (ms)	500	T_{max}: maximum time duration during the observation period that the voltage deviation d(t) exceeds the limit for d_c .
d_{max} (%)	4	d_{max}: maximum absolute voltage change during an observation period.
d_c (%)	3.3	d_c: maximum steady state voltage change during an observation period.

6.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
5kVA AC Power Source	California Instruments	5001ix-400	55194	Apr. 23,18	Apr. 22,19
Harmonic/Flicker Test System	California Instruments	PACS-1	72134	Apr. 23,18	Apr. 22,19
Test Software	California Instruments	CTS 4 – V4.9.0	N/A	N/A	N/A

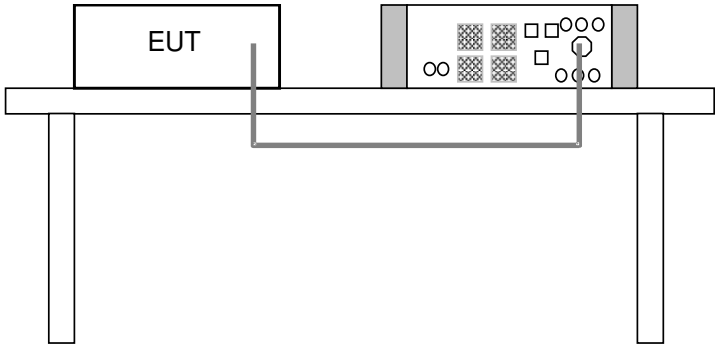
Notes: 1. The test was performed in EMS Room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

6.3 TEST ARRANGEMENT

a. The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the most unfavorable sequence of voltage changes under normal operating conditions.

b. During the flick measurement, the measure time shall include that part of whole operation cycle in which the EUT produce the most unfavorable sequence of voltage changes. The observation period for short-term flicker indicator is 10 minutes and the observation period for long-term flicker indicator is 2 hours.

6.4 TEST SETUP



6.5 TEST RESULTS

Observation (T_p)	10 min.	Test Date	2018/06/15
Fundamental Voltage/Ampere	229.91Vrms	Power Frequency	50.00Hz
Environmental Conditions	26.0deg. C, 57.0% RH	Tested by	Walker
Test Mode	See section 2.2		

Test Parameter	Measurement Value	Limit	Remarks
P_{st}	0.064	1.00	Pass
P_{lt}	0.028	0.65	Pass
T_{max} (ms)	0.0	500	Pass
d_{max} (%)	0.00	4	Pass
d_c (%)	0.00	3.3	Pass

Note: (1) P_{st} means short-term flicker indicator.
(2) P_{lt} means long-term flicker indicator.
(3) T_{max} means accumulated time value of d(t) with a deviation exceeding 3.3 %.
(4) d_{max} means maximum relative voltage change.
(5) d_c means maximum relative steady-state voltage change.

7IMMUNITY TEST

7.1 GENERAL DESCRIPTION

7.1.1 GENERAL DESCRIPTION OF EN 55035

Product Standard	EN 55035:2017	
Basic Standard, specification requirement, and Performance Criteria:	IEC 61000-4-2	Electrostatic Discharge – ESD: 8kV air discharge, 4kV Contact discharge, Performance Criterion B
	IEC 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test – RS: 80-1000 MHz, 3V/m, 80% AM (1kHz), 1800 MHz,3V/m, 80% AM (1kHz), 2600 MHz,3V/m, 80% AM (1kHz), 3500 MHz,3V/m, 80% AM (1kHz), 5000 MHz,3V/m, 80% AM (1kHz)
	IEC 61000-4-4	Electrical Fast Transient/Burst - EFT AC Power line: 1kV, DC Power line: 0.5kV Signal line: 0.5kV Performance Criterion B
	IEC 61000-4-5	Surge Immunity Test: 1.2/50 us Open Circuit Voltage, 8 /20 us Short Circuit Current, 10/700 us Open Circuit Voltage, 5 /320 us Short Circuit Current, AC Power Line: line to line 1 kV, line to earth 2kV Signal line: 1kV, 4kV Shielded line and DC line:0.5kV Performance Criterion B
	IEC 61000-4-6	Conducted Radio Frequency Disturbances Test – CS: 0.15-10 MHz, 3Vrms, 10MHz-30MHz, 3Vrms-1Vrms, 30MHz-80MHz, 1Vrms 80% AM, 1kHz
	IEC 61000-4-8	Power Frequency Magnetic Field Test, 50 Hz, 1A/m, Performance Criterion A

	IEC 61000-4-11	Meets the requirements of Voltage Dips: i) reduction for >95% Performance Criterion B ii) reduction for 30% Performance Criterion C iii) reduction for >95% Performance Criterion C

Product Standard	**Draft EN 301 489-1 V2.2.0 (2017-03)** **Final draft EN 301 489-3 V2.1.1 (2017-03)** **Draft EN 301 489-17 V3.2.0 (2017-03)**	
Basic Standard, Specification, and Performance Criterion required	EN 61000-4-2	Electrostatic Discharge – ESD: 8 kV air discharge, 4 kV contact discharge, Performance Criterion B
	EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test – RS: 80 ~ 6000 MHz, 3 V/m, 80% AM (1 kHz), Performance Criterion A
	EN 61000-4-4	Electrical Fast Transient/Burst - EFT, AC power line: 1 kV Performance Criterion B
	EN 61000-4-5	Surge Immunity Test: 1.2/50 us Open Circuit Voltage, 8 /20 us Short Circuit Current, Power line: line to line 1 kV, line to ground 2 kV Performance Criterion B
	EN 61000-4-6	Conducted Radio Frequency Disturbances Test – CS: 0.15 ~ 80 MHz, 3 Vrms, 80% AM, 1 kHz, Performance Criterion A
	EN 61000-4-11	Voltage Dips: i) 0% residual for 0.5 cycle, Performance Criterion B ii) 0% residual for 1 cycle, Performance Criterion B iii) 70% residual for 25 cycle, Performance Criterion C Voltage Interruptions: iv) 0% residual for 250 cycle, Performance Criterion C

7.1.2 PERFORMANCE CRITERIA

According to Clause 8.2, 8.3, 8.4 of EN 55035:2017 standard, the following describes the general performance criteria.

CRITERION A	The equipment shall continue to operate as intended without operator intervention. No degradation of performance, loss of function or change of operating state is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
	For audio output device: The measured acoustic interference ratio and/or the measured electrical interference during the test shall be -20dB or better(see note1)
CRITERION B	During the application of the disturbance, degradation of performance is allowed. However, no unintended change of actual operating state or stored data is allowed to persist after the test. After the test, the equipment shall continue to operate as intended without operator intervention; no degradation of performance or loss of function is allowed, below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level (or the permissible performance loss), or recovery time, is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
CRITERION C	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 reboot or re-start operation is allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

Note 1: This performance criterion only using for Continuous inducted RF disturbances and Continuous RF electromagnetic field disturbances item.

For EN 301 489-3

The phenomena allowed during and after test in each criterion are clearly stated in the following table.

Performance criteria		
Criteria	**During test**	**After test**
A	Operate as intended No loss of function No unintentional responses	Operate as intended No loss of function No degradation of performance No loss of stored data or user programmable functions
B	May show loss of function No unintentional responses	Operate as intended Loss of function(s) shall be self-recoverable No degradation of performance No loss of stored data or user programmable functions

FOR EN301489-17

The Requirement of Performance Criteria		
1	Performance criteria for continuous phenomena applied to transmitters (CT)	Criterion A of the applicable class shall apply
2	Performance criteria for transient phenomena applied to transmitters (TT)	Criterion B of the applicable class shall apply
3	Performance criteria for continuous phenomena applied to receivers (CR)	Criterion A of the applicable class shall apply
4	Performance criteria for transient phenomena applied to receivers (TR)	Criterion B of the applicable class shall apply

For EN 301 489-17

The phenomena allowed during and after test in each criterion are clearly stated in the following table.

Performance criteria		
Criteria	**During test**	**After test**
A	Shall operate as intended. (see note1). Shall be no loss of function. Shall be no unintentional transmissions.	Shall operate as intended. Shall be no degradation of performance (see note 3). Shall be no loss of function. Shall be no loss of stored data or user programmable functions.
B	May show loss of function (one or more). May show degradation of performance (see note 2). Shall be no unintentional transmissions.	Functions shall be self-recoverable. Shall operate as intended after recovering. Shall be no degradation of performance (see note 3).

		Shall be no loss of stored data or user programmable functions.
C	May be loss of function (one or more).	Functions shall be recoverable by the operator. Shall operate as intended after recovering. Shall be no degradation of performance (see note 3).

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

NOTE 2: Degradation of performance during the test is understood as a degradation to a level not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance.
If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.

NOTE 3: No degradation of performance after the test is understood as no degradation below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. After the test no change of actual operating data or user retrievable data is allowed.
If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.

7.1.3 EUT OPERATING CONDITION

Same as item 2.3

7.2 ELECTROSTATIC DISCHARGE IMMUNITY TEST (ESD) (EN55035) (EN301 489)

7.2.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-2
Discharge Impedance:	330 ohm / 150 pF
Discharge Voltage:	Contact Discharge : 4 kV (Direct &Indirect) Air Discharge: 8kV (Direct)
Polarity:	Positive / Negative
Number of Discharge:	20 times at each test point
Discharge Mode:	Single Discharge
Discharge Period:	1-second

7.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
ESD Generator	TESEQ	NSG 437	279	Mar. 07,18	Mar. 06,19
Test Software	TESEQ	V03.03	N/A	N/A	N/A
ESD Generator	EM TEST	Dito	V1211112265	Jan. 16,18	Jan. 15,19
Test Software	EM TEST	V 2.31	N/A	N/A	N/A

NOTE: 1. The test was performed in ESD Room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

7.2.3 TEST PROCEDURE

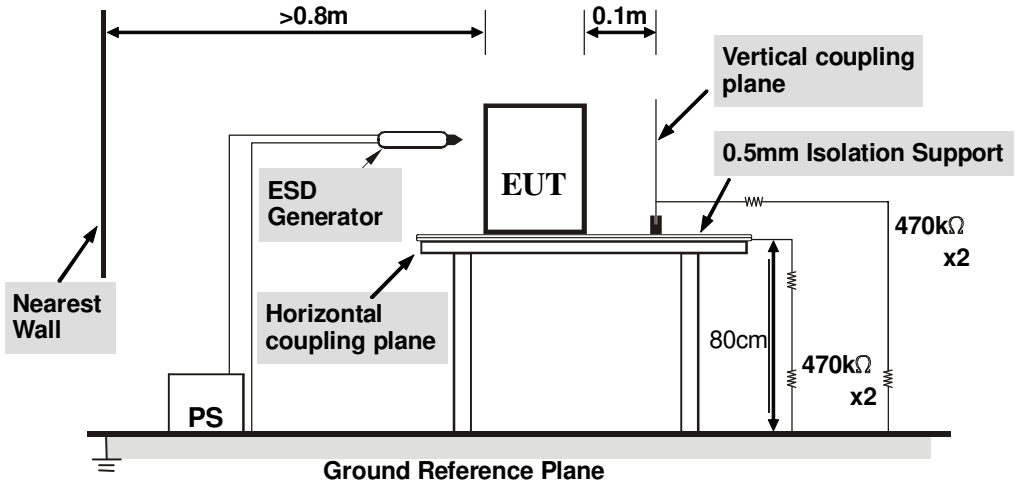
The basic test procedure was in accordance with IEC 61000-4-2:

a. Electrostatic discharges were applied only to those points and surfaces of the EUT that are accessible to users during normal operation.
b. The test was performed with at least ten single discharges on the pre-selected points in the most sensitive polarity.
c. The time interval between two successive single discharges was at least 1 second.
d. The discharge return cable of the generator shall be kept at a distance of at least 0.2 m from the EUT whilst the discharge is being applied and should not be held by the operator.
e. Contact discharges were applied to the non-insulating coating, with the pointed tip of the generator penetrating the coating and contacting the conducting substrate.
f. Air discharges were applied with the round discharge tip of the discharge electrode approaching the EUT as fast as possible (without causing mechanical damage) to touch the EUT. After each discharge, the ESD generator was removed from the EUT and re-triggered for a new single discharge. The test was repeated until all discharges were complete.
g. At least ten single discharges (in the most sensitive polarity) were applied to the Horizontal Coupling Plane at points on each side of the EUT. The ESD generator was positioned horizontally at a distance of 0.1 meters from the EUT with the discharge electrode touching the HCP.
h. At least ten single discharges (in the most sensitive polarity) were applied to the center of one vertical edge of the Vertical Coupling Plane in sufficiently different positions that the four faces of the EUT were completely illuminated. The VCP (dimensions 0.5m x 0.5m) was placed vertically to and 0.1 meters from the EUT.

7.2.4 DEVIATION FROM TEST STANDARD

No deviation.

7.2.5 TEST SETUP



NOTE:

TABLE-TOP EQUIPMENT

The configuration consisted of a wooden table 0.8 meters high standing on the **G**round **R**eference **P**lane. The **GRP** consisted of a sheet of aluminum at least 0.25mm thick, and 2.5 meters square connected to the protective grounding system. A **H**orizontal **C**oupling **P**lane (1.6m x 0.8m) was placed on the table and attached to the **GRP** by means of a cable with 940kΩ total impedance. The equipment under test, was installed in a representative system as described in section 7 of IEC 61000-4-2, and its cables were placed on the **HCP** and isolated by an insulating support of 0.5mm thickness. A distance of 0.8-meter minimum was provided between the EUT and the walls of the laboratory and any other metallic structure.

FLOOR-STANDING EQUIPMENT

The equipment under test was installed in a representative system as described in section 7 of IEC 61000-4-2, and its cables were isolated from the Ground Reference Plane by an insulating support of 0.1-meter thickness. The GRP consisted of a sheet of aluminum that is at least 0.25mm thick, and 2.5 meters square connected to the protective grounding system and extended at least 0.5 meters from the EUT on all sides.

7.2.6 TEST RESULTS

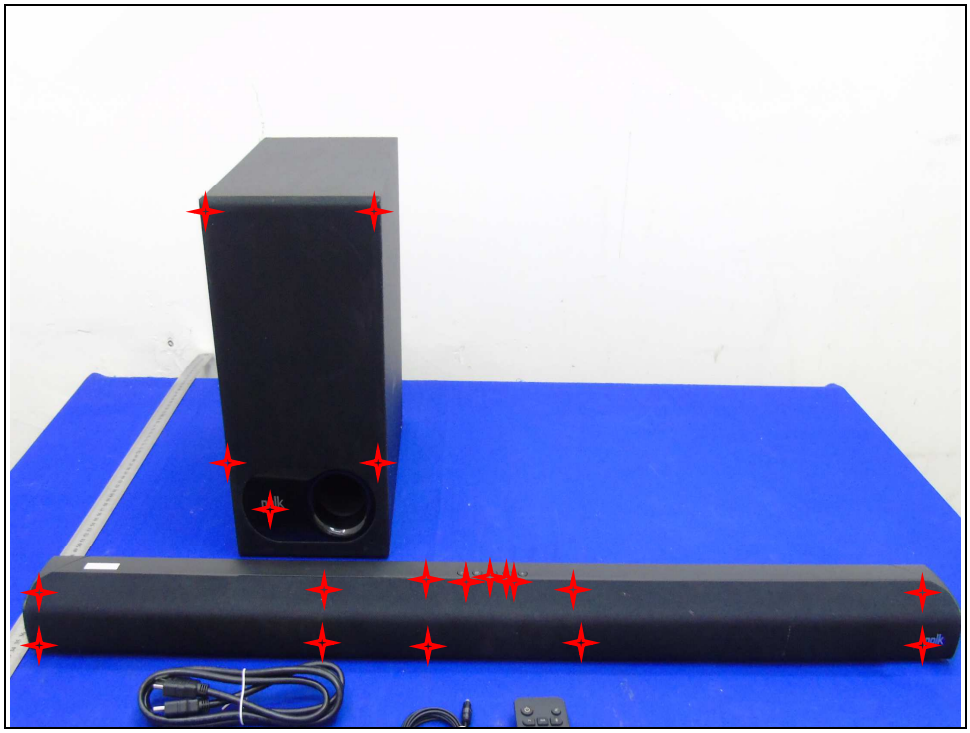
TEST VOLTAGE	See section 2.2	**ENVIRONMENTAL CONDITIONS**	21.7deg. C, 45.6% RH, 101.0kPa
TESTED BY	Xue Wang		

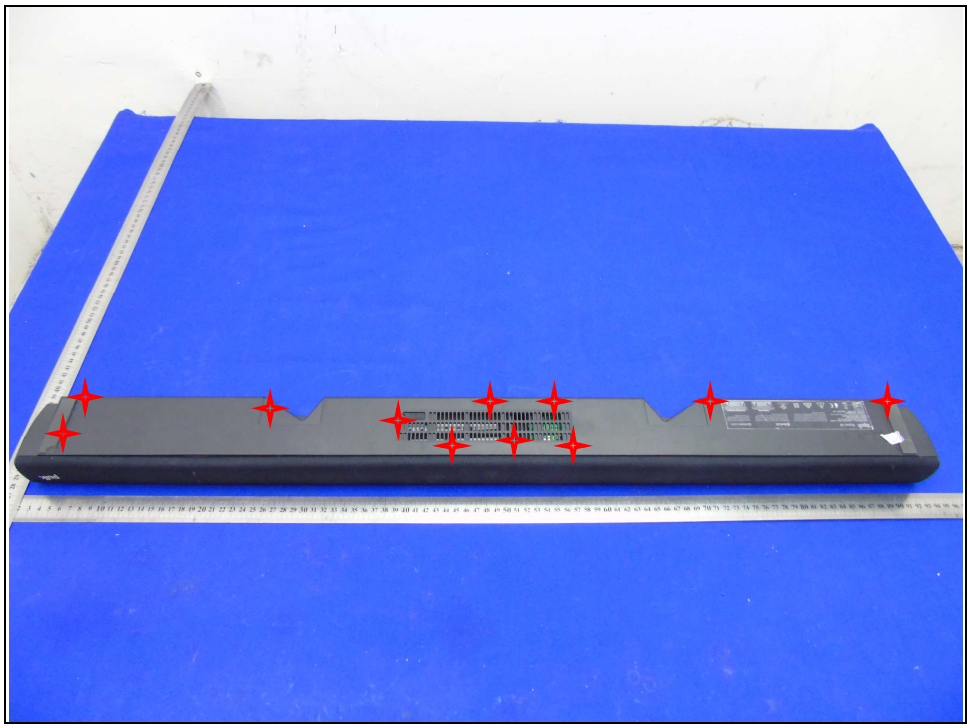
Direct Discharge Application				
Test Level (kV)	**Polarity**	**Test Point**	**Test Result of Contact Discharge**	**Test Result of Air Discharge**
4	+ /-	All metal part	A	N/A
8	+ /-	All non-metal Part	N/A	A

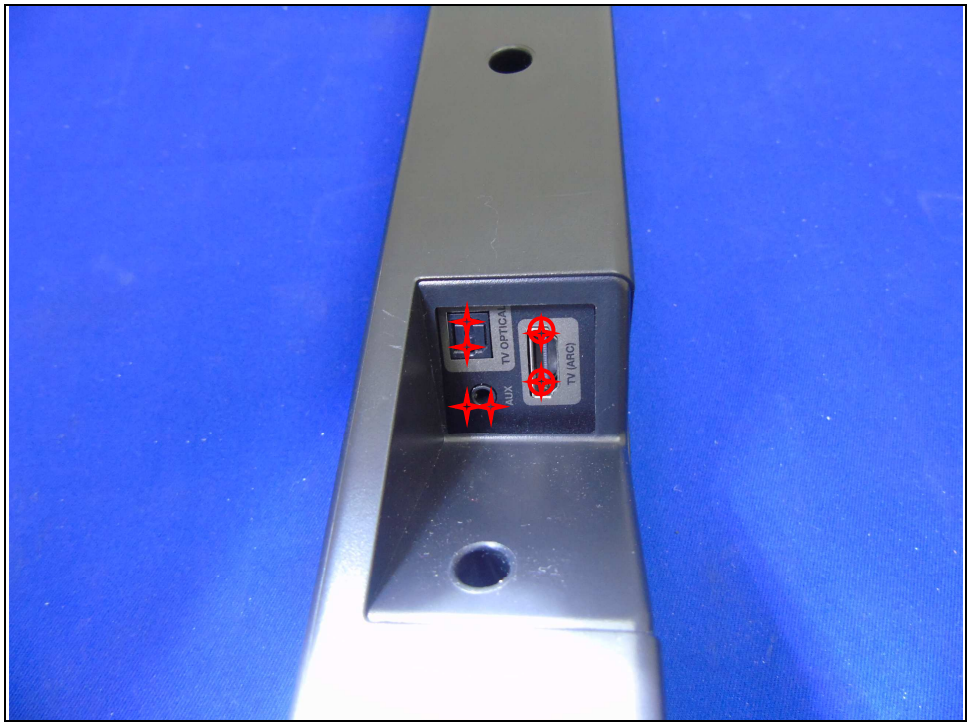
Indirect Discharge Application				
Discharge Level (kV)	**Polarity**	**Test Point**	**Test Result of HCP**	**Test Result of VCP**
4	+ /-	HCP	A	N/A
4	+ /-	VCP	N/A	A

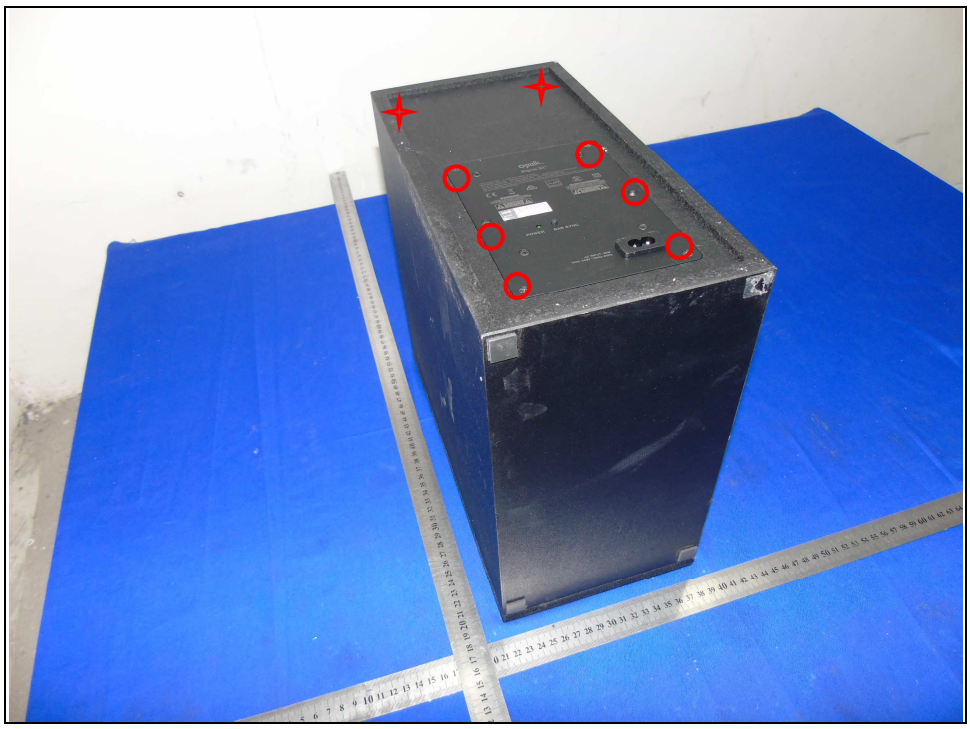
NOTE: A: There was no change compared with initial operation during the test.

ESD TEST POINT
(O - Direct Contact Discharge; ✦ -Air Discharge)






TV OPTICAL
AUX
TV (ARC)



7.3 RADIATED, RADIO-FREQUENCY, ELECTROMAGNETIC FIELD IMMUNITY TEST (RS) (EN55035)

7.3.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-3
Frequency Range:	80-1000MHz,1800MHz, 2600MHz, 3500MHz, 5000MHz
Field Strength:	3 V/m
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Polarity of Antenna:	Horizontal and Vertical
Antenna Height:	1.5m
Dwell Time:	at least 3 seconds

7.3.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Signal Generator	Agilent	N5181A	MY50142530	Oct. 13,17	Oct. 12,18
Bilog Antenna	Teseq	CBL 6111D	27089	July 19,17	Jul. 18,18
Antenna Log-Periodic	AR	ATR80M6G	0337307	N/A	N/A
Antenna Log-Periodic	AR	ATS700M11G	0336821	N/A	N/A
Switch Controller	AR	SC1000	0337343	N/A	N/A
RF Power Meter	ESE	4242	13984	Nov. 04,17	Nov. 03,18
Power Sensor	ESE	51011EMC	35716	Nov. 04,17	Nov. 03,18
Power Sensor	ESE	51011EMC	35715	Nov. 04,17	Nov. 03,18
E-Field probe	Narda	NBM-520	2403/01B	Mar. 08,18	Mar. 07,19
Power Amplifier	TESEQ	CBA 1G-150	T44029	N/A	N/A
Power Amplifier	TESEQ	CBA 3G-100	T44030	N/A	N/A
Power Amplifier	TESEQ	CBA 6G-050	1041204	N/A	N/A
Dual Directional Coupler	TESEQ	C5982	95208	Nov. 04,17	Nov. 03,18
Dual Directional Coupler	TESEQ	C6187	95175	Nov. 04,17	Nov. 03,18
Dual Directional Coupler	TESEQ	CPH-274F	M251304-01	Nov. 04,17	Nov. 03,18
Test Software	ADT	BVADT_RS_V 7.6.4-DG	N/A	N/A	N/A
Audio analyzer	Rohde&Schwarz	UPV	101397	Oct. 13,17	Oct. 12,18
EAR SIMULATOR	B&K	4192	2764719	Oct. 13,17	Oct. 12,18
Sound Calibrator	B&K	Type 4231	2463874	Oct. 13,17	Oct. 12,18
Conditioning Amplifier	Rohde&Schwarz	2690A0S2	2437856	Oct. 13,17	Oct. 12,18

NOTE: 1. The test was performed in RS chamber.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

7.3.3 TEST PROCEDURE

The test procedure was in accordance with IEC 61000-4-3

a. The testing was performed in a fully-anechoic chamber.

b. The frequency range is swept from 80 MHz to 1000 MHz, 1800MHz, 2600MHz, 3500MHz, 5000MHz, with the signal 80% amplitude modulated with a 1kHz sine wave.

c. The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised and to respond, but shall in no case be less than 0,5s.

d. The field strength levels were 3V/m.

e. The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

For Broadcast reception function:

f. **Group1:** Equipment in which the desired RF broadcast signal enters the equipment through a coaxial broadcast receiver tuner port. These coaxial ports are intended to be connected via a coaxial cable to an antenna or a cable distribution system.

g. **Group 2:** Broadcast reception equipment which is not included in Group 1.

h. AM/FM/DAB equipment with a coaxial broadcast receiver tuner port is classified as Group 2 equipment if the manufacturer declares that the equipment is not intended to be connected to a CATV or other cable distribution network.

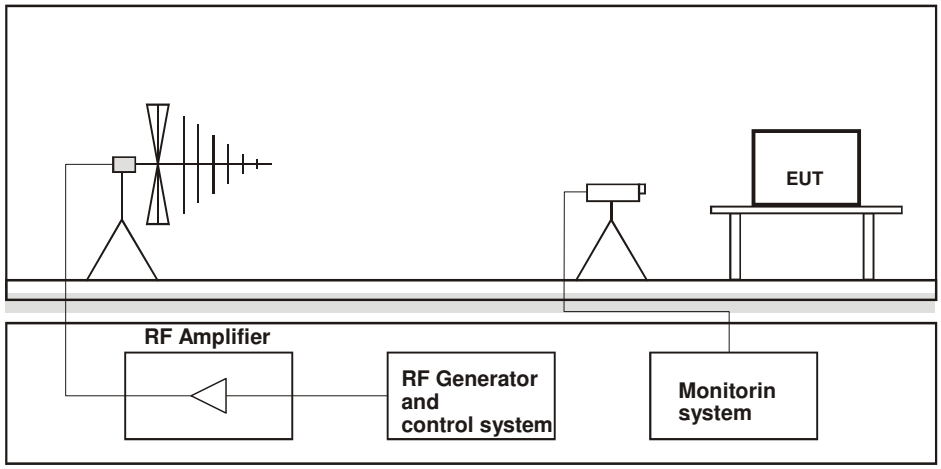
i. The broadcast reception function shall be tested in each reception mode for which the receiver is designed, for example analogue reception, DVB-T, DVB-T2, DVB-C, DVB-C2, DVB-S, DVB-S2. The receiver shall be tuned to one channel and provided with an appropriate wanted signal on that channel or other input typical of normal use.

7.3.4 DEVIATION FROM TEST STANDARD

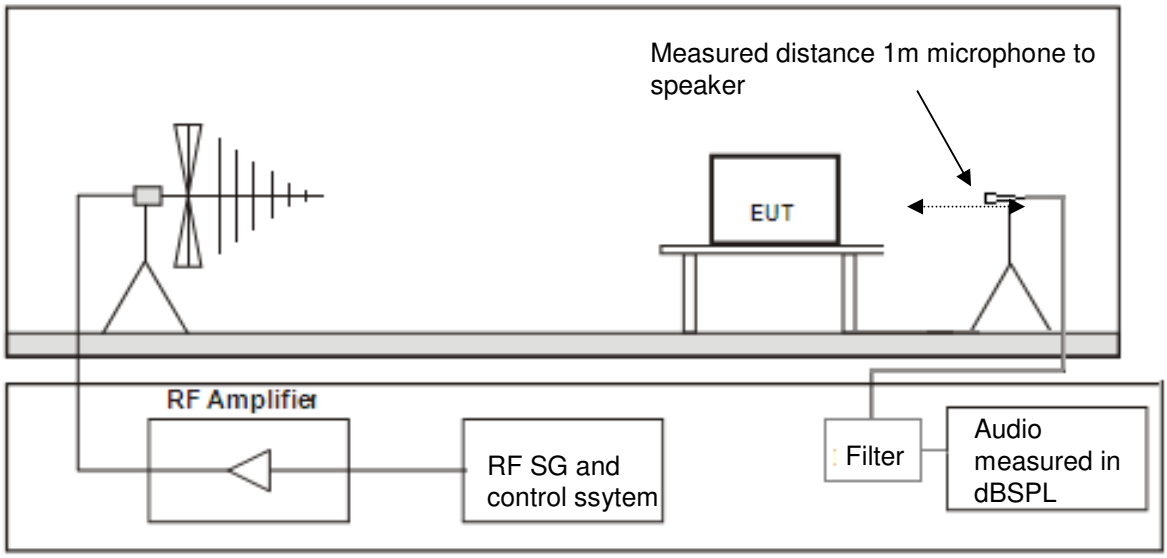
No deviation.

7.3.5 TEST SETUP

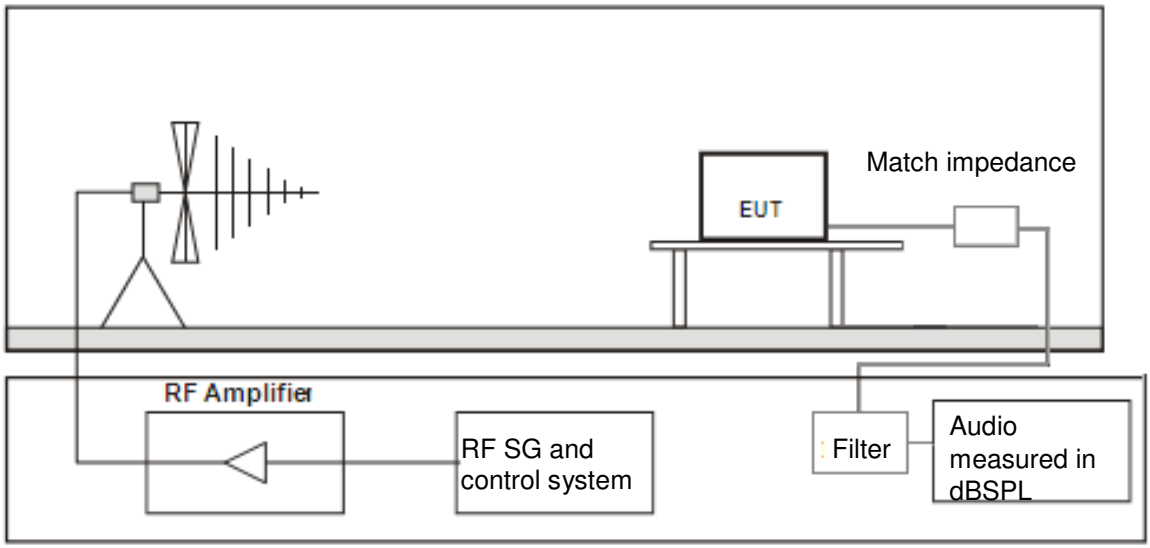
For Picture monitoring:



For Acoustic mode:



For Electrical mode:



NOTE:

1. The EUT installed in a representative system as described in section 7 of IEC 61000-4-3 was placed on a non-conductive table 0.8 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.
2. Filter: 1kHz 3dB band pass filter.
3. The measurement distance: EUT to interference antenna was 3m.

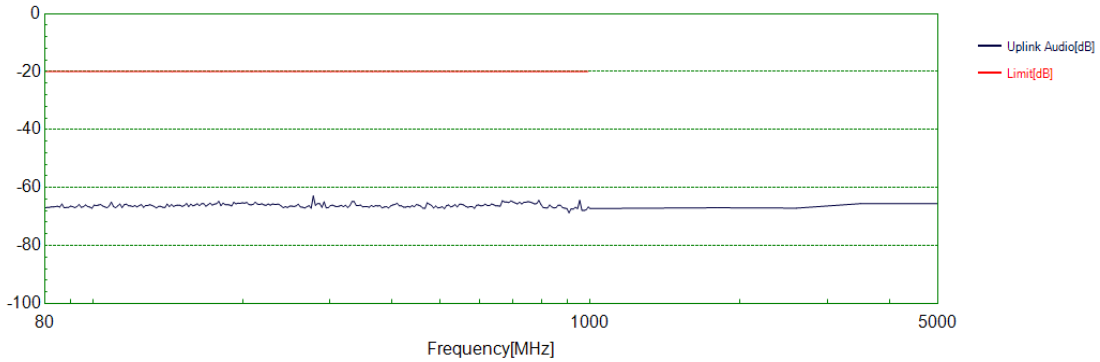
7.3.6 TEST RESULTS

TEST MODE	See section 2.2	TEST VOLTAGE	See section 2.2
ENVIRONMENTAL CONDITIONS	23.4deg.C, 55.0% RH	TESTED BY: Xue Wang	

Field Strength (V/m)	Test Frequency (MHz)	Test mode	Test method	Reference Level	Audio output	Interference Ratio
3	80-1000MHz, 1800MHz, 2600MHz, 3500MHz, 5000MHz	AUX IN	Acoustic	1.75dBV	Integral speaker	-62.90
		TV OPTICAL	Acoustic	1.43dBV	Integral speaker	-62.74
		TV(ARC)	Acoustic	1.82dBV	Integral speaker	-61.45
Limit		⩽ -20				
Test Result		Pass				
performance criteria		A				

Worst case mode: AUX IN

Note: The value of the reference level was reduce 20dB as the limit.



7.4 RADIATED, RADIO-FREQUENCY, ELECTROMAGNETIC FIELD IMMUNITY TEST (RS) (EN301 489)

7.4.1 TEST SPECIFICATION

Basic Standard:	EN 61000-4-3
Frequency Range:	80 MHz ~ 6000 MHz
Field Strength:	3 V/m
Modulation:	1 kHz Sine Wave, 80%, AM Modulation
Frequency Step:	10% of preceding frequency value
Polarity of Antenna:	Horizontal and Vertical
Antenna Height:	1.5 m
Dwell Time:	3 seconds

7.4.2 TEST INSTRUMENT

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Signal Generator	Agilent	N5181A	MY50142530	Oct. 20,17	Oct. 19,18
Antenna Log-Periodic	AR	ATR80M6G	0337307	N/A	N/A
Antenna Log-Periodic	AR	ATS700M11G	0336821	N/A	N/A
Switch Controller	AR	SC1000	0337343	N/A	N/A
RF Power Meter	ESE	4242	13984	Jan. 02,18	Jan. 01,19
Power Sensor	ESE	51011EMC	35716	Jan. 02,18	Jan. 01,19
Power Sensor	ESE	51011EMC	35715	Jan. 02,18	Jan. 01,19
E-Field probe	Narda	NBM-520	2403/01B	Sep. 28,17	Sep. 27,18
Power Amplifier	TESEQ	CBA 1G-150	T44029	N/A	N/A
Power Amplifier	TESEQ	CBA 3G-100	T44030	N/A	N/A
Power Amplifier	TESEQ	CBA 6G-050	1041204	N/A	N/A
Dual Directional Coupler	TESEQ	C5982	95208	Nov. 08,17	Nov. 07,18
Dual Directional Coupler	TESEQ	C6187	95175	Nov. 08,17	Nov. 07,18
Dual Directional Coupler	TESEQ	CPH-274F	M251304-01	Nov. 08,17	Nov. 07,18
Test Software	ADT	BVADT_RS_V7.6 .4-DG	N/A	N/A	N/A

NOTE: 1. The test was performed in RS chamber.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

7.4.3 TEST PROCEDURE

The test procedure was in accordance with EN 61000-4-3.

a. The testing was performed in a fully-anechoic chamber.

b. The frequency range is swept from 80 MHz to 6000 MHz with the signal 80% amplitude modulated with a 1 kHz sine wave.

c. The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised and to respond, but shall in no case be less than 0.5s.

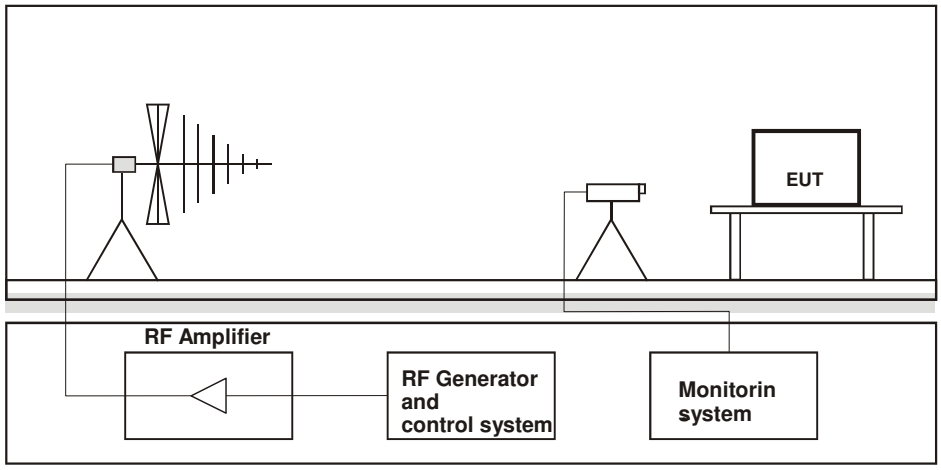
d. The field strength level was 3 V/m.

e. The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

7.4.4 DEVIATION FROM TEST STANDARD

No deviation.

7.4.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

NOTE:
TABLETOP EQUIPMENT
The EUT installed in a representative system as described in section 7 of EN 61000-4-3 was placed on a non-conductive table 0.8 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

7.4.6 TEST RESULTS

TEST MODE	See section 2.2	TEST VOLTAGE	See section 2.2
ENVIRONMENTAL CONDITIONS	24.6deg., 51.8% RH	TESTED BY: Andy	

Field Strength (V/m)	Test Frequency Note#1 (MHz)	Polarization of antenna (Horizontal / Vertical)	Test Distance (m)	Test Result	Remark
3	80 - 6000	H / V	3	A	Note 1

Note#1: Tested Israel SII Frequencies 89,100,107,144,163,196,244,315,434,460,600,825,845,880 MHz

Note 1: A: There was no change compared with initial operation during the test.

7.5 ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST (EFT) (EN55035, EN301489)

7.5.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-4
Test Voltage:	Power Line: 1kV Signal/Control Line: 0.5kV
Polarity:	Positive & Negative
Impulse Frequency:	CPE or xDSL: 100kHz Other: 5 kHz
Impulse Waveshape :	5/50 ns
Burst Duration:	CPE or xDSL: 0.75ms Other: 15 ms
Burst Period:	300 ms
Test Duration:	1 min.

7.5.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Combination wave Module	TESEQ	CDN 3061	1361	May 02,18	May 01,19
Telecom Surge Module	TESEQ	NSG 3060 Mainframe	1404	May 02,18	May 01,19
Automated 3-Phase Coupling/ Decoupling Network	TESEQ	CDN 3063	2131	May 02,18	May 01,19
CDN	TESEQ	CDN HSS-2	34275	May 02,18	May 01,19
CDN	TESEQ	CDN 118	30741	May 02,18	May 01,19
Test Software	TESEQ	CDM 3061_0002.30	1361	N/A	N/A
Test Software	TESEQ	HVM 3060_0002.30	293	N/A	N/A
EFT Tester	HAEFELY	PEFT4010	150546	May 02,18	May 01,19
EFT Coupling Clamp	HAEFELY	IP4A	150407	May 02,18	May 01,19

NOTE: 1. The test was performed in EMS Room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

7.5.3 TEST PROCEDURE

a Both positive and negative polarity discharges were applied.

b The distance between any coupling devices and the EUT should be (0.5 – 0/+0.1) m for table-top equipment testing, and (1.0 ± 0.1) m for floor standing equipment.

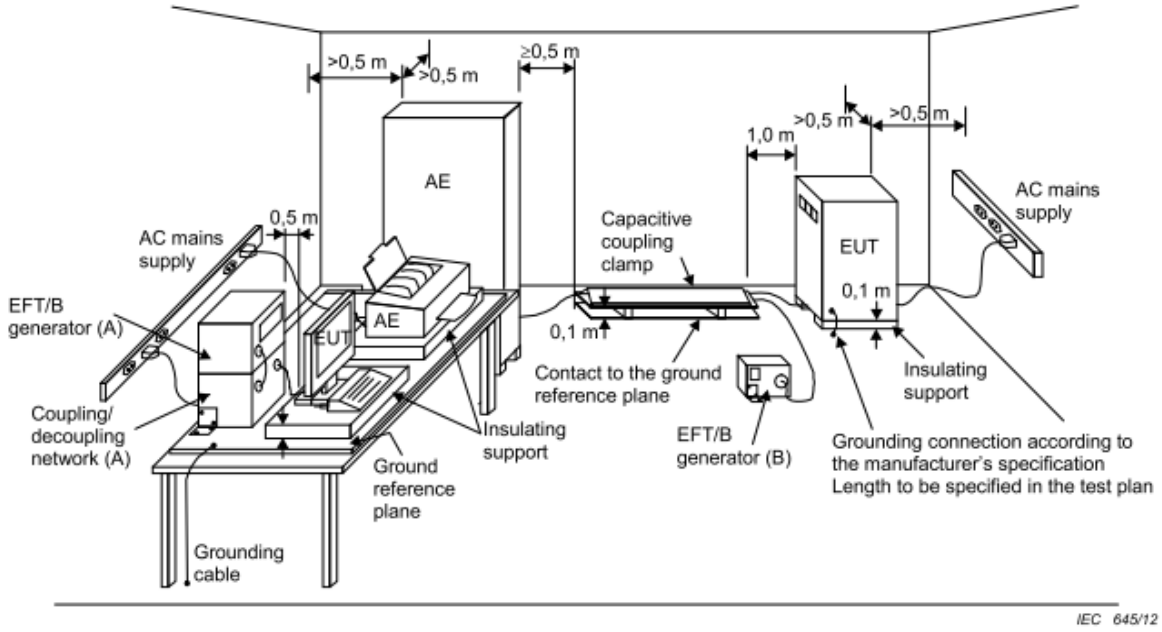
c The duration time of each test sequential was 1 minute.

d The transient/burst waveform was in accordance with IEC 61000-4-4, 5/50ns.

7.5.4 DEVIATION FROM TEST STANDARD

No Deviation.

7.5.5 TEST SETUP



(A) location for supply line coupling
(B) location for signal lines coupling

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

7.5.6 TEST RESULTS

TEST MODE	See section 2.2	TEST VOLTAGE	See section 2.2
ENVIRONMENTAL CONDITIONS	22.1deg. C, 54.7% RH	**TESTED BY:** Walker	

Pulse Voltage	1 kV		___ kV		___ kV		___ kV	
Pulse Polarity	+	-	+	-	+	-	+	-
L	A	A	/	/	/	/	/	/
N	A	A	/	/	/	/	/	/
L+N	A	A	/	/	/	/	/	/

NOTE: A: There was no change compared with initial operation during the test.

7.6 SURGE IMMUNITY TEST (EN55035, EN301489)

7.6.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-5
Wave-Shape:	Combination Wave 1.2/50 us Open Circuit Voltage 8/20 us Short Circuit Current
Test Voltage:	Power Line :1kV
Surge Input/Output:	L-N
Generator Source Impedance:	2 ohm between networks
Polarity:	Positive/Negative
Phase Angle:	90°/270° for EN55035, 0°/90°/180°/270° for EN301489
Pulse Repetition Rate:	1 time / 60 sec.
Number of Tests:	5 positive and 5 negative at selected points

7.6.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Combination wave Module	TESEQ	CDN 3061	1361	May 02,18	May 01,19
Telecom Surge Module	TESEQ	NSG 3060 Mainframe	1404	May 02,18	May 01,19
Automated 3- Phase Coupling/ Decoupling Network	TESEQ	CDN 3063	2131	May 02,18	May 01,19
CDN	TESEQ	CDN HSS-2	34275	May 02,18	May 01,19
CDN	TESEQ	CDN 118	30741	May 02,18	May 01,19
Test Software	TESEQ	CDM 3061_0002.30	1361	N/A	N/A
Test Software	TESEQ	HVM 3060_0002.30	293	N/A	N/A

NOTE: 1. The test was performed in EMS Room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

7.6.3 TEST PROCEDURE

a. For EUT power supply:

The surge is to be applied to the EUT power supply terminals via the capacitive coupling network. Decoupling networks are required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines, and to provide sufficient decoupling impedance to the surge wave. The power cord between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).

b. For test applied to unshielded unsymmetrically operated interconnection lines of EUT:

The surge is applied to the lines via the capacitive coupling. The coupling / decoupling networks shall not influence the specified functional conditions of the EUT. The interconnection line between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).

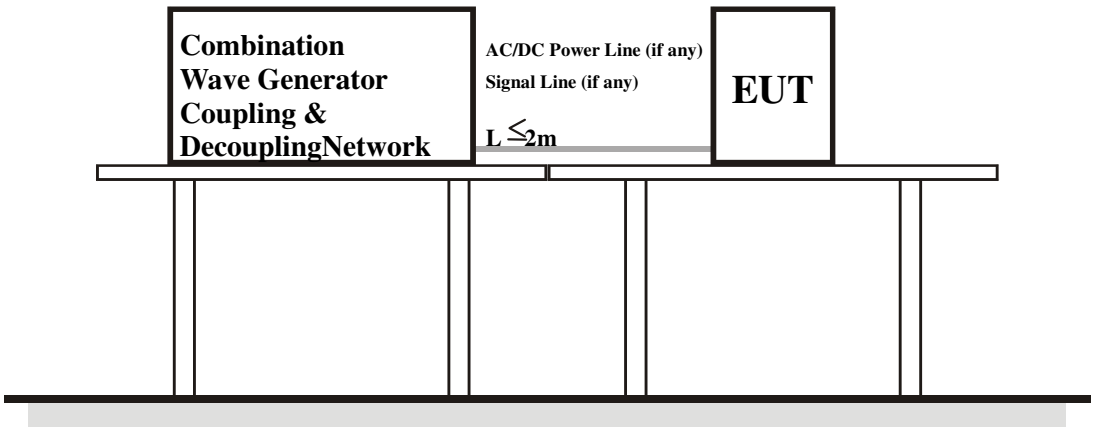
c. For test applied to unshielded symmetrically operated interconnection / telecommunication lines of EUT:

The surge is applied to the lines via gas arrestors coupling. Test levels below the ignition point of the coupling arrestor cannot be specified. The interconnection line between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).

7.6.4 DEVIATION FROM TEST STANDARD

No deviation.

7.6.5 TEST SETUP



7.6.6 TEST RESULTS

TEST MODE	See section 2.2	TEST VOLTAGE	See section 2.2
ENVIRONMENTAL CONDITIONS	22.3deg. C, 54.7% RH	TESTED BY: Walker	

AC/DC Power port for EN 55035:

\Phase angle \ Test result \Voltage (kV) \ Test point\ Polarity			0°	90°	180°	270°	/	DC Power Port
1.0	L-N	+	/	A	/	A	/	N/A
		-	/	A	/	A	/	N/A

AC/DC Power port for EN301489:

\Phase angle \ Test result \Voltage (kV) \ Test point\ Polarity			0°	90°	180°	270°	/	DC Power Port
1.0	L-N	+	A	A	A	A	/	N/A
		-	A	A	A	A	/	N/A

NOTE: A: There was no change compared with initial operation during the test.

7.7 IMMUNITY TO CONDUCTED DISTURBANCES INDUCED BY RF FIELDS (CS) (EN55035)

7.7.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-6
Frequency Range:	0.15 MHz - 10 MHz, 10 MHz – 30 MHz, 30 MHz – 80MHz
Field Strength:	3 $V_{r.m.s,}$ 3 $V_{r.m.s}$ - 1$V_{r.m.s,}$ 1$V_{r.m.s,}$
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Coupled Cable:	Power Mains, Unshielded
Coupling Device:	CDN-M2(2 wires)

7.7.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Signal Generator	Rohde&Schwarz	SME06	829498/006	Oct. 20,17	Oct. 19,18
CDN	Luthi	L-801M2/M3	2015	Sep.27,17	Sep. 26,18
CDN(AUX)	TESEQ	CDN M016	27452	Nov. 15,17	Nov. 14,18
CDN	TESEQ	T200A	26944	Apr. 05,18	Apr. 04,19
CDN	TESEQ	T400A	26536	Apr. 05,18	Apr. 04,19
CDN	TESEQ	ST08A	32256	Apr. 04,18	Apr. 03,19
6dB 50Watt Attenuator	HUBER+SUHNER	5906.17.0005	303688	Oct. 20,17	Oct. 19,18
Power Amplifier	PRANA	DR 220	1512-1788	NA	NA
Electromagnetic Injection Clamp	Luthi	EM101	35640	Sep.14,17	Sep. 13,18
C/S Test System	HAEFELY	WinPAMP	NSEMC002	N/A	N/A
Test Software	ADT	BVADT_CS_V 7.6.2	N/A	N/A	N/A
Audio analyzer	Rohde&Schwarz	UPV	101397	Oct. 13,17	Oct. 12,18
EAR SIMULATOR	B&K	4192	2764719	Oct. 13,17	Oct. 12,18
Sound Calibrator	B&K	Type 4231	2463874	Oct. 13,17	Oct. 12,18
Conditioning Amplifier	Rohde&Schwarz	2690A0S2	2437856	Oct. 13,17	Oct. 12,18

NOTE: 1. The test was performed in CS test room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

7.7.3 TEST PROCEDURE

a. The EUT shall be tested within its intended operating and climatic conditions.

b. An artificial hand was placed on the hand-held accessory and connected to the ground reference plane.

c. The test shall be performed with the test generator connected to each of the coupling and decoupling devices in turn, while the other non-excited RF input ports of the coupling devices are terminated by a 50-ohm load resistor.

d. The frequency range is swept from 0.15 MHz - 10 MHz, 10 MHz – 30 MHz and 30 MHz – 80MHz, using the signal level established during the setting process and with a disturbance signal of 80 % amplitude. The signal is modulated with a 1 kHz sine wave, pausing to adjust the RF signal level or the switch coupling devices as necessary. Where the frequency is swept incrementally, the step size shall not exceed 1 % of the preceding frequency value.

e. The dwell time of the amplitude modulated carrier at each frequency shall not be less than the time necessary for the EUT to be exercised and to respond, but shall in no case be less than 0,5 s. The sensitive frequencies (e.g. clock frequencies) shall be analyzed separately.

f. Attempts should be made to fully exercise the EUT during testing, and to fully interrogate all exercise modes selected for susceptibility.

For Broadcast reception function:

j. **Group1:** Equipment in which the desired RF broadcast signal enters the equipment through a coaxial broadcast receiver tuner port. These coaxial ports are intended to be connected via a coaxial cable to an antenna or a cable distribution system.

k. **Group 2:** Broadcast reception equipment which is not included in Group 1.

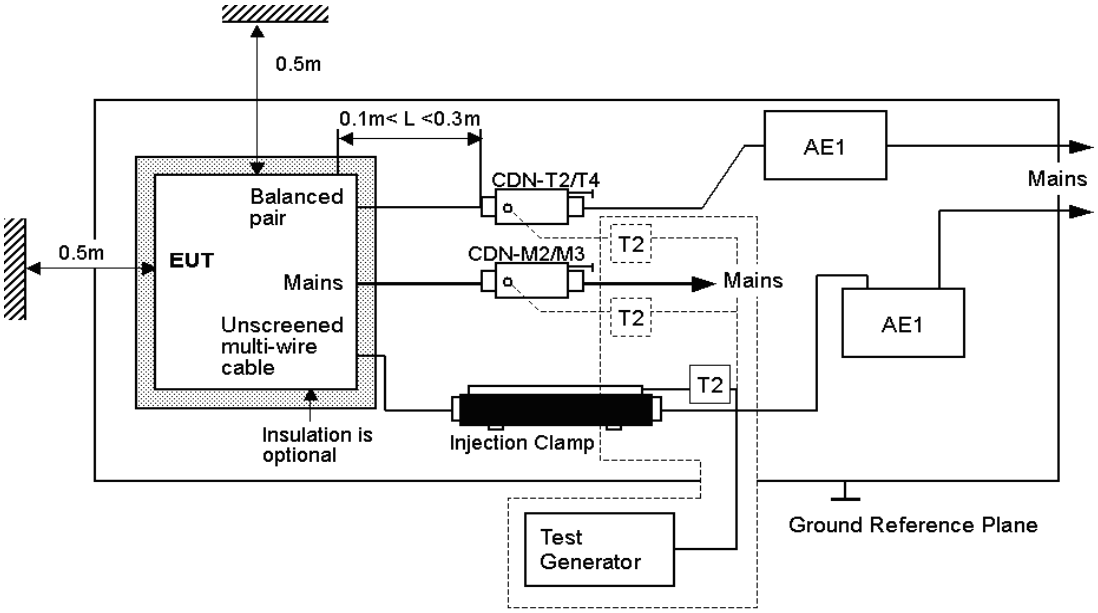
l. AM/FM/DAB equipment with a coaxial broadcast receiver tuner port is classified as Group 2 equipment if the manufacturer declares that the equipment is not intended to be connected to a CATV or other cable distribution network.

m. The broadcast reception function shall be tested in each reception mode for which the receiver is designed, for example analogue reception, DVB-T, DVB-T2, DVB-C, DVB-C2, DVB-S, DVB-S2. The receiver shall be tuned to one channel and provided with an appropriate wanted signal on that channel or other input typical of normal use.

7.7.4 DEVIATION FROM TEST STANDARD

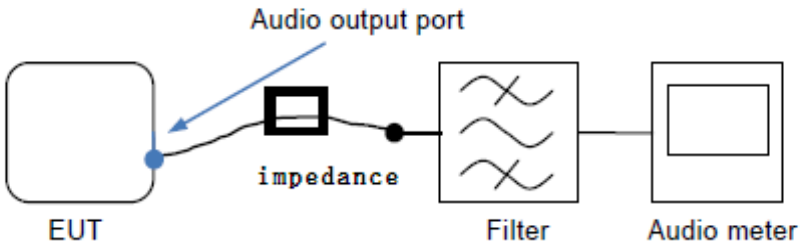
No deviation.

7.7.5 TEST SETUP

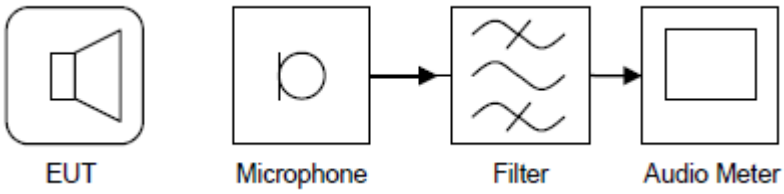


NOTE: The EUT clearance from any metallic obstacles shall be at least 0.5m.
All non-excited input ports of the CDNs shall be terminated by 50Ω loads.

For Electrical measurements setup:



For Acoustic measurements setup:



NOTE:

1. The EUT installed in a representative system was placed on a non-conductive table 0.8 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.
2. Filter: 1kHz 3dB band pass filter.

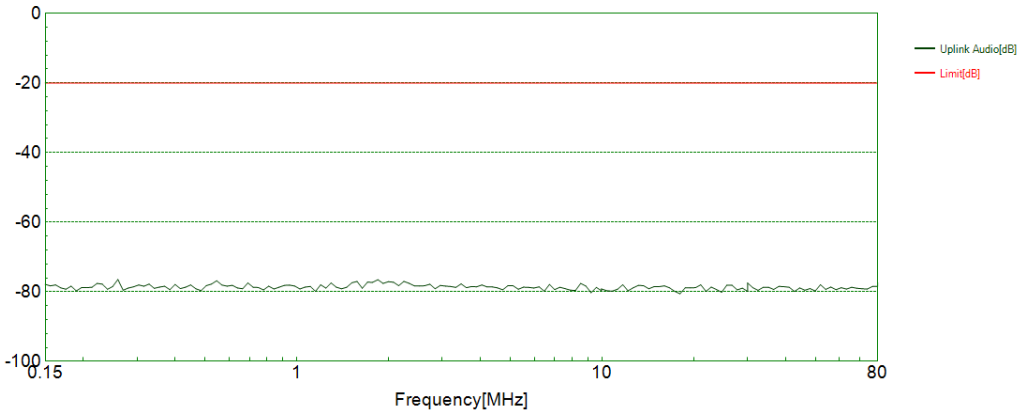
7.7.6 TEST RESULTS

TEST MODE	See section 2.2	TEST VOLTAGE	See section 2.2
ENVIRONMENTAL CONDITIONS	24.6deg. C, 51.5% RH	TESTED BY: Wang	

Test mode	Test method	Reference Level	Audio output	Interference Ratio
AC Line	Acoustic	AUX IN	6.86dBV	-76.45
AC Line	Acoustic	TV OPTICAL	6.45dBV	-75.33
AC Line	Acoustic	TV(ARC)	6.37dBV	-74.21
Test Result		Pass		
performance criteria		A		

Worst case mode: **AUX IN**

Note: The value of the reference level was reduce 20dB as the limit.



7.8 CONDUCTED RADIO FREQUENCY DISTURBANCES (CS) (EN301 489)

7.8.1 TEST SPECIFICATION

Basic Standard:	EN 61000-4-6
Frequency Range:	0.15 MHz ~ 80 MHz
Field Strength:	3 Vrms
Modulation:	1 kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of preceding frequency value
Coupled cable:	Power Mains, Unshielded
Coupling device:	CDN-M2 (2wires)

7.8.2 TEST INSTRUMENT

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Signal Generator	Rohde&Schwarz	SME06	829498/006	Oct. 20,17	Oct. 19,18
CDN	Luthi	L-801M2/M3	2015	Sep.27,17	Sep. 26,18
CDN(AUX)	TESEQ	CDN M016	27452	Nov. 15,17	Nov. 14,18
CDN	TESEQ	T200A	26944	Apr. 11,18	Apr. 10,19
CDN	TESEQ	T400A	26536	Apr. 11,18	Apr. 10,19
CDN	TESEQ	ST08A	32256	Apr. 11,18	Apr. 10,19
6dB 50Watt Attenuator	HUBER+SUHNER	5906.17.0005	303688	Oct. 20,17	Oct. 19,18
Power Amplifier	PRANA	DR 220	1512-1788	NA	NA
Electromagnetic Injection Clamp	Luthi	EM101	35640	Sep.14,17	Sep. 13,18
Test Software	Tonscend	TS+	2.5.0.0	N/A	N/A
Test Software	ADT	BVADT_CS_V7.6.2	N/A	N/A	N/A

NOTE: 1. The test was performed in CS Room.

2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

7.8.3 TEST PROCEDURE

g. The test was performed with the test generator connected to each of the coupling and decoupling devices in turn, while the other non-excited RF input ports of the coupling devices are terminated by a 50-ohm load resistor.

h. The frequency range was swept from 150 kHz to 80 MHz, using the signal level established during the setting process and with a disturbance signal of 80 % amplitude. The signal was modulated with a 1 kHz sine wave, pausing to adjust the RF signal level or the switch coupling devices as necessary. The sweep rate was 1.5 x 10^{-3} decades/s. Where the frequency range is swept incrementally, the step size was 1 % of preceding frequency value from 150 kHz to 80 MHz.

i. One of the CDNS not used for injection was terminated with 50 Ω ,providing only one return path. All other CDNs were coupled as doupled networks.

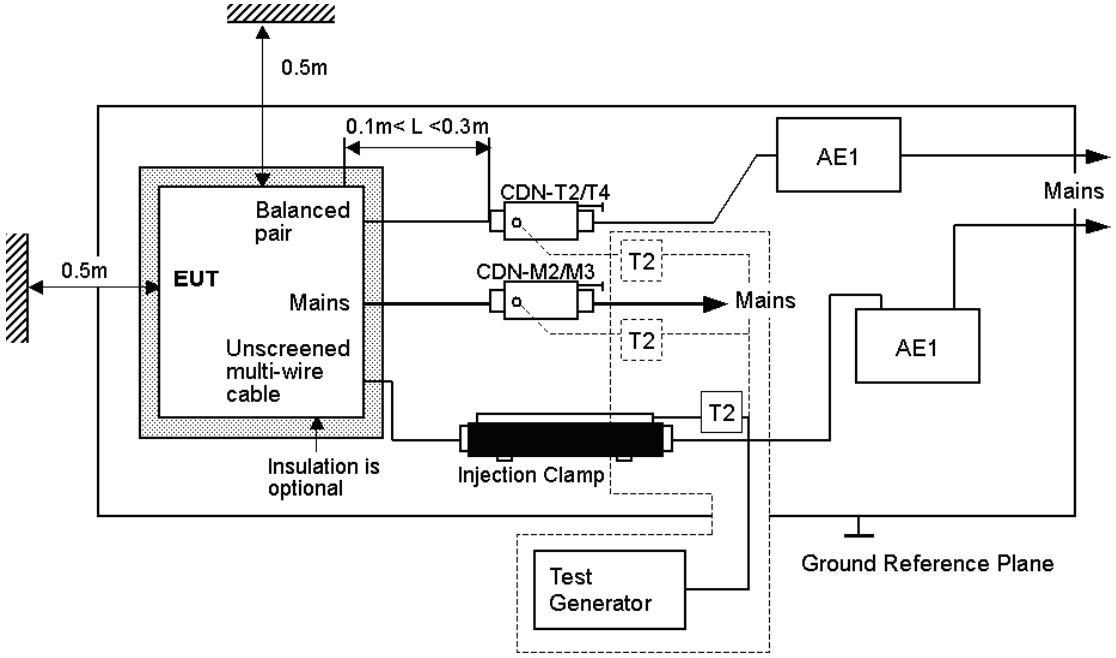
j. The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised, and able to respond. Sensitive frequencies such as clock frequency(ies) and harmonics or frequencies of dominant interest, was analyzed separately.

k. Attempts was made to fully exercise the EUT during testing, and to fully interrogate all exercise modes selected for susceptibility.

7.8.4 DEVIATION FROM TEST STANDARD

No deviation.

7.8.5 TEST SETUP



NOTE: The EUT clearance from any metallic obstacles shall be at least 0.5m.
All non-excited input ports of the CDNs shall be terminated by 50Ω loads.

Note: 1. The EUT is setup 0.1 m above Ground Reference Plane.
2. The CDNs and / or EM clamp used for real test depends on ports and cables configuration of EUT.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

NOTE:

The equipment to be tested is placed on an insulating support of 0.1 meters height above a ground reference plane. All relevant cables shall be provided with the appropriate coupling and decoupling devices at a distance between 0.1 meters and 0.3 meters from the projected geometry of the EUT on the ground reference plane.

7.8.6 TEST RESULTS

TEST VOLTAGE	See section 2.2	ENVIRONMENTAL CONDITIONS	24.6deg. C, 51.6% RH
TESTED BY	Wang		

Voltage (V)	Test Frequency Note#1 (MHz)	Tested Line	Injection Method.	Test Result	Remark
3	0.15 –80 MHz	AC Line	CDN-M2	A	N/A

Note#1: Tested Israel SII Frequencies 0.2,0.53,1,1.5,7.1,13.56,21,27.12,40.68,65,68 MHz

NOTE: A: There was no change compared with initial operation during the test.

7.9 POWER FREQUENCY MAGNETIC FIELD IMMUNITY TEST(EN55035)

7.9.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-8
Frequency Range:	50Hz
Field Strength:	1A/m,
Observation Time:	1 minute
Inductance Coil:	Rectangular type, 1mx1m

7.9.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Magnetic Field Tester	HAEFELY	MAG100.1	150579	Oct. 13,17	Oct. 12,18
Test Software	N/A	N/A	N/A	N/A	N/A

NOTE: 1. The test was performed in EMS Room 843.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

7.9.3 TEST PROCEDURE

a. The equipment is configured and connected to satisfy its functional requirements.

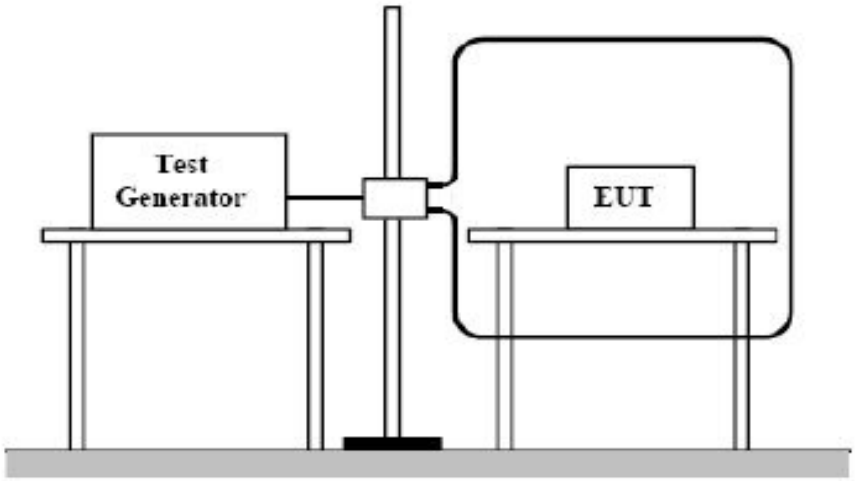
b. The power supply, input and output circuits shall be connected to the sources of power supply, control and signal.

c. The cables supplied or recommended by the equipment manufacturer shall be used. 1 meter of all cables used shall be exposed to the magnetic field.

7.9.4 DEVIATION FROM TEST STANDARD

No deviation.

7.9.5 TEST SETUP



NOTE:

TABLETOP EQUIPMENT
The equipment shall be subjected to the test magnetic field by using the induction coil of standard dimension (1 m x 1 m). The induction coil shall then be rotated by 90 degrees in order to expose the EUT to the test field with different orientations.

FLOOR-STANDING EQUIPMENT
The equipment shall be subjected to the test magnetic field by using induction coils of suitable dimensions. The test shall be repeated by moving and shifting the induction coils, in order to test the whole volume of the EUT for each orthogonal direction. The test shall be repeated with the coil shifted to different positions along the side of the EUT, in steps corresponding to 50 % of the shortest side of the coil. The induction coil shall then be rotated by 90 degrees in order to expose the EUT to the test field with different orientations.

7.9.6 TEST RESULTS

TEST MODE	See section 2.2	TEST VOLTAGE	See section 2.2
ENVIRONMENTAL CONDITIONS	22.3deg. C, 52.9% RH	**TESTED BY**: Walker	

Magnetic field direction	Testing result	Remark
X - Axis	A	1A/m
Y - Axis	A	1A/m
Z - Axis	A	1A/m

NOTE: A: There was no change compared with initial operation during the test.

7.10 VOLTAGE DIP/SHORT INTERRUPTIONS/VOLTAGE VARIATIONS (DIPS) IMMUNITY TEST (EN55035)

7.10.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-11
Test Duration Time:	Minimum three test events in sequence
Interval between Event:	Minimum ten seconds
Phase Angle:	0° & 180°
Test Cycle:	3 times

7.10.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
DIPS Tester	HAEFELY	PLINE 1610	150370	Apr. 11,18	Apr. 10,19
Test Software	HAEFELY	SWPL1610 1.43	N/A	N/A	N/A

NOTE: 1. The test was performed in EMS Room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

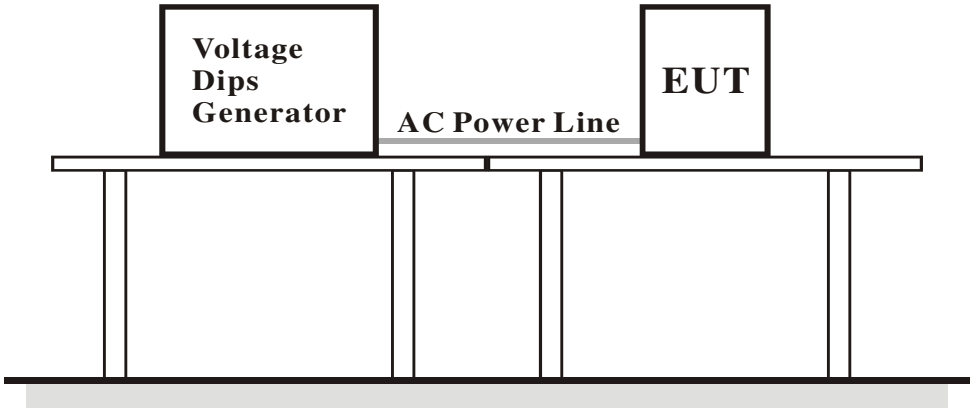
7.10.3 TEST PROCEDURE

The EUT shall be tested for each selected combination of test levels and duration with a sequence of three dips/interruptions with intervals of 10 s minimum (between each test event). Each representative mode of operation shall be tested. Abrupt changes in supply voltage shall occur at zero crossings of the voltage waveform.

7.10.4 DEVIATION FROM TEST STANDARD

No deviation.

7.10.5 TEST SETUP



7.10.6 TEST RESULTS

TEST MODE	See section 2.2	TEST VOLTAGE	AC 100-240V 50/60Hz
ENVIRONMENTAL CONDITIONS	22.5deg. C, 54.9% RH	TESTED BY: Walker	

Ut : 230 Vac 50 Hz	Durations		Event interval (sec)	Total events (time)	Test result
Voltage dips (%)	(period)	(ms)			
>95	0.5	10	10	3	A
30	25	500	10	3	A
>95	250	5000	10	3	C

Ut : 110 Vac 60 Hz	Durations		Event interval (sec)	Total events (time)	Test result
Voltage dips (%)	(period)	(ms)			
>95	0.5	10	10	3	A
30	30	500	10	3	A
>95	300	5000	10	3	C

NOTE: A: There was no change compared with initial operation during the test.

C: The EUT stopped operation when at the 100% voltage interruption and it could be recover by user.

7.11 VOLTAGE DIP/SHORT INTERRUPTIONS/VOLTAGE VARIATIONS (DIPS) IMMUNITY TEST (EN301 489)

7.11.1 TEST SPECIFICATION

Basic Standard:	EN 61000-4-11
Test Levels:	Voltage Dips: i) 0% residual for 0.5 cycle ii) 0% residual for 1 cycle iii) 70% residual for 25 cycle Voltage Interruptions: iv) 0% residual for 250 cycle
Test Duration Time:	3 test events in sequence
Interval between Event:	10 seconds
Phase Angle:	0°/180°

7.11.2 TEST INSTRUMENT

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
DIPS Tester	HAEFELY	PLINE 1610	150370	Apr. 01,18	Mar. 31,19
Test Software	HAEFELY	SWPL1610 1.43	N/A	N/A	N/A

NOTE: 1. The test was performed in EMS Room.

2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

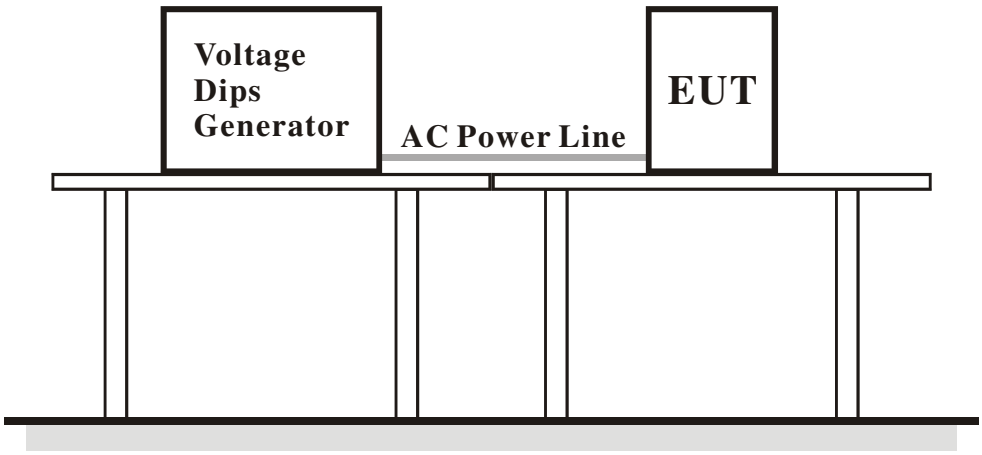
7.11.3 TEST PROCEDURE

The EUT was tested for each selected combination of test levels and duration with a sequence of 3 dips/interruptions with intervals of 10s minimum (between each test event). Each representative mode of operation shall be tested. Abrupt changes in supply voltage shall occur at zero crossings of the voltage waveform.

7.11.4 DEVIATION FROM TEST STANDARD

No deviation.

7.11.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

7.11.6 TEST RESULTS

TEST VOLTAGE	AC 100-240V 50/60Hz	ENVIRONMENTAL CONDITIONS	22.5deg. C, 54.9% RH
TESTED BY	Walker		

Ut : 230 Vac 50 Hz	Durations		Event interval (sec)	Total events (time)	Test result
Voltage dips (%)	(period)	(ms)			
0	0.5	10	10	3	A
0	1	20	10	3	A
70	25	500	10	3	A
0	250	5000	10	3	C

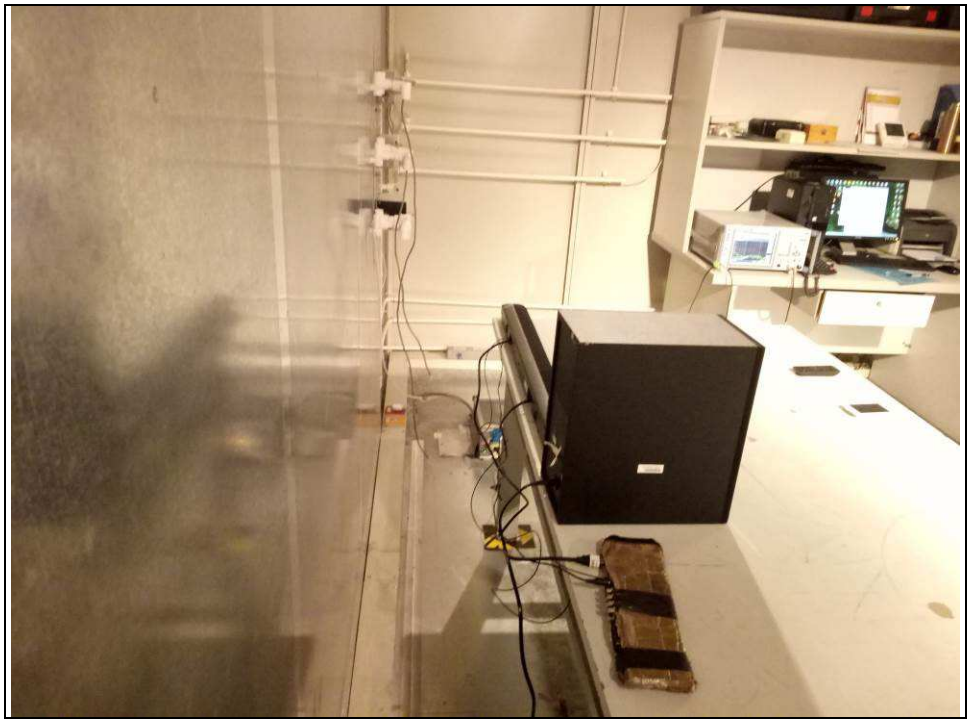
Ut : 110 Vac 50 Hz	Durations		Event interval (sec)	Total events (time)	Test result
Voltage dips (%)	(period)	(ms)			
0	0.5	10	10	3	A
0	1	20	10	3	A
70	25	500	10	3	A
0	250	5000	10	3	C

NOTE: A: There was no change compared with initial operation during the test.

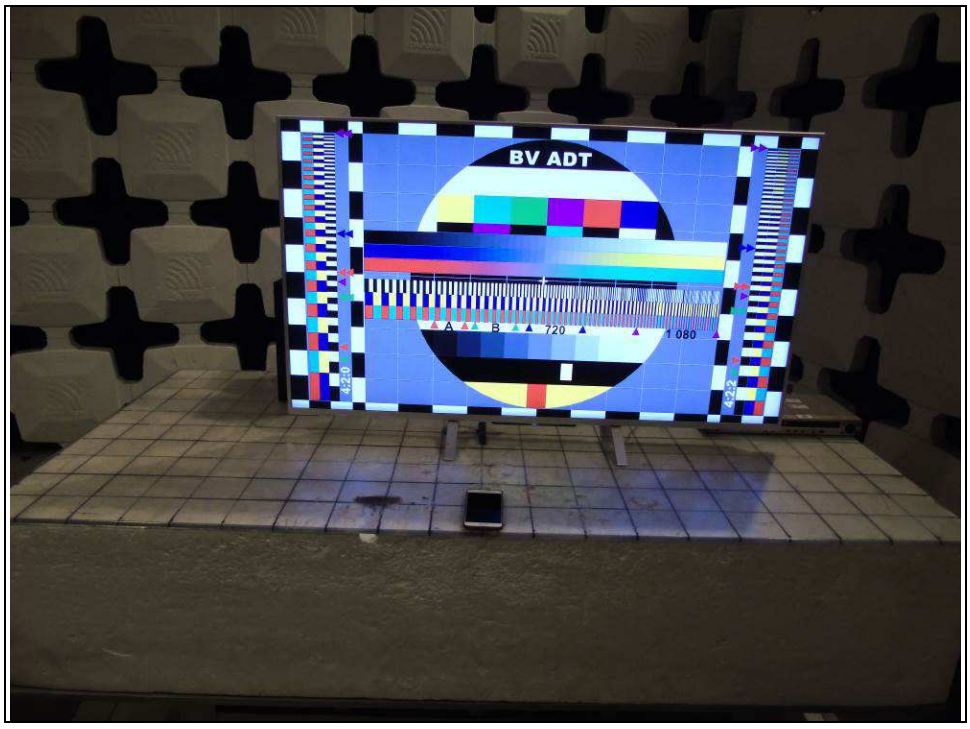
C: The EUT stopped operation when at the 100% voltage interruption and it could be recover by user.

8 PHOTOGRAPHS OF THE TEST CONFIGURATION

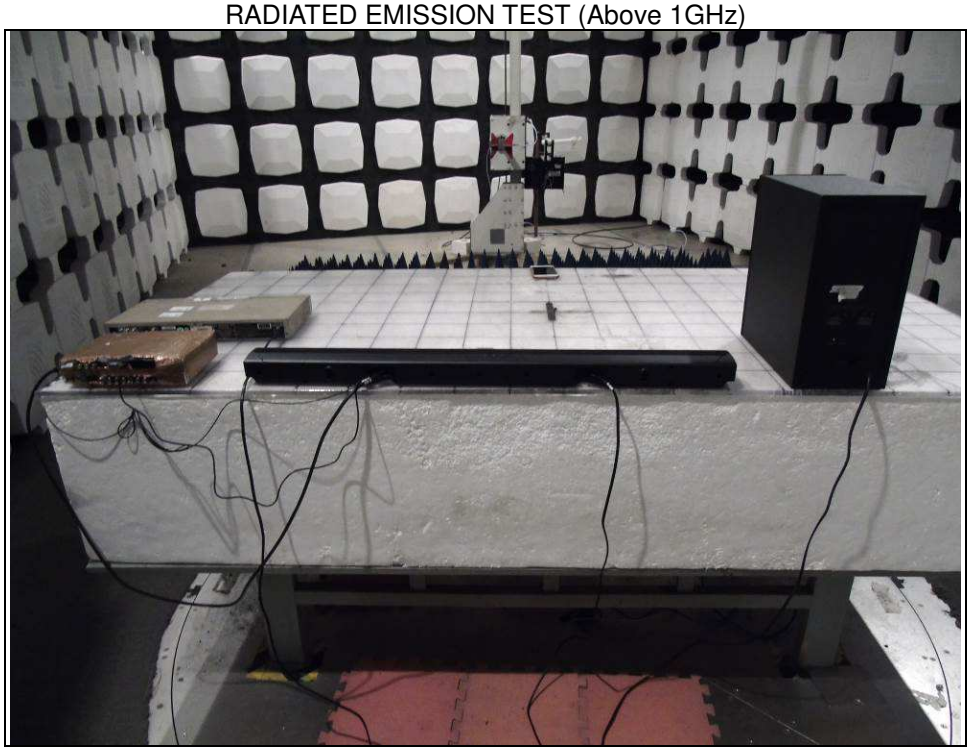
CONDUCTED EMISSION TEST

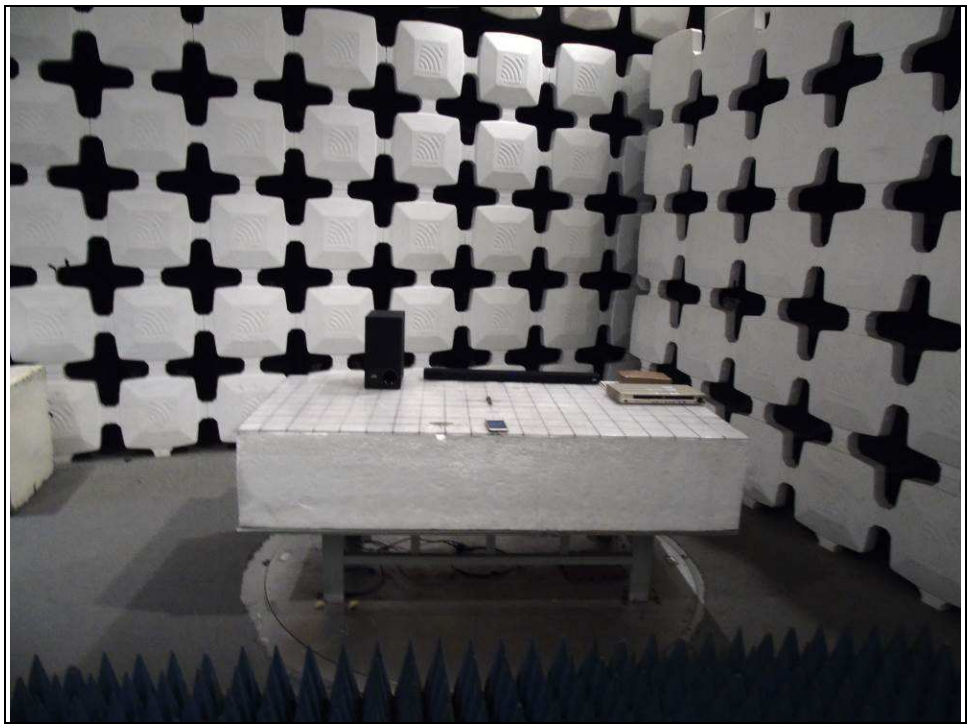


RADIATED EMISSION TEST (30MHz-1GHz)

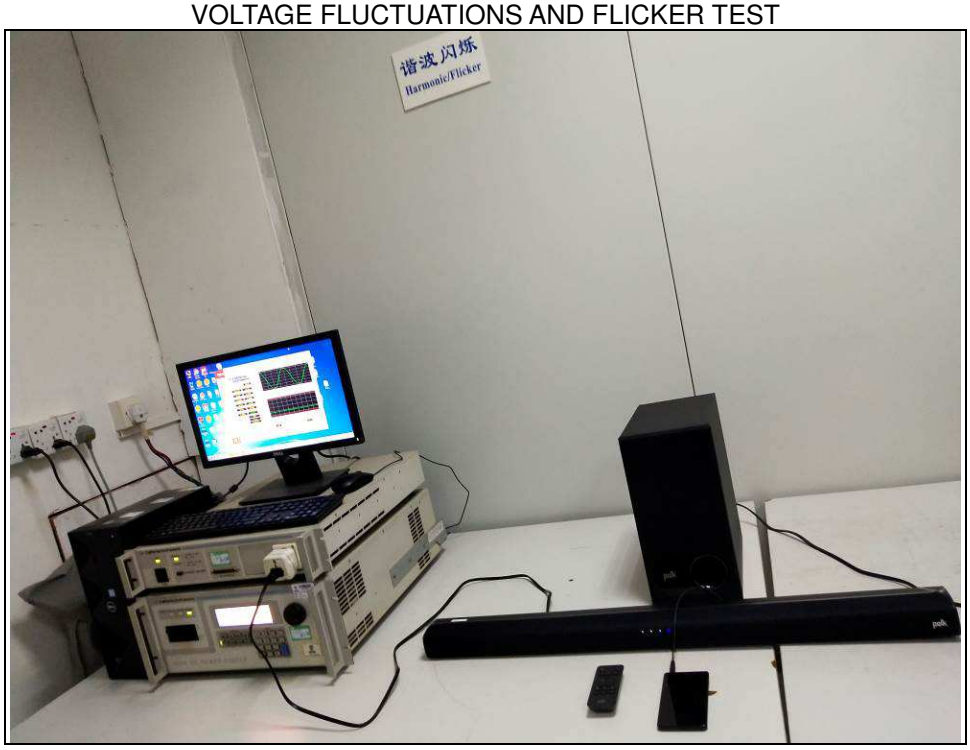


RADIATED EMISSION TEST (Above 1GHz)



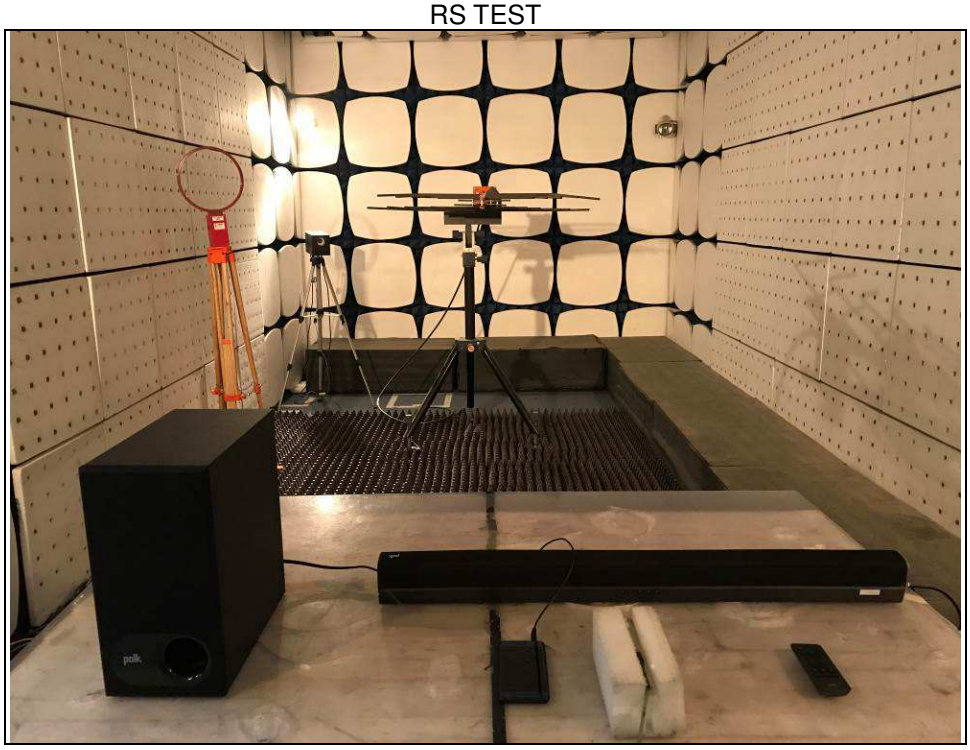


HARMONICS EMISSION TEST &
VOLTAGE FLUCTUATIONS AND FLICKER TEST



ESD TEST

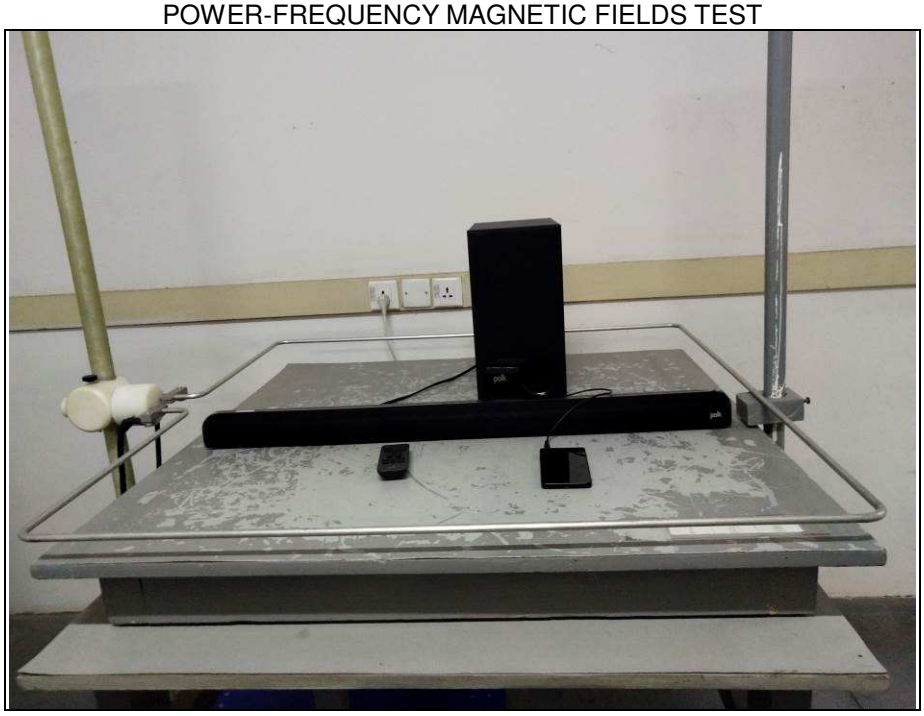
RS TEST



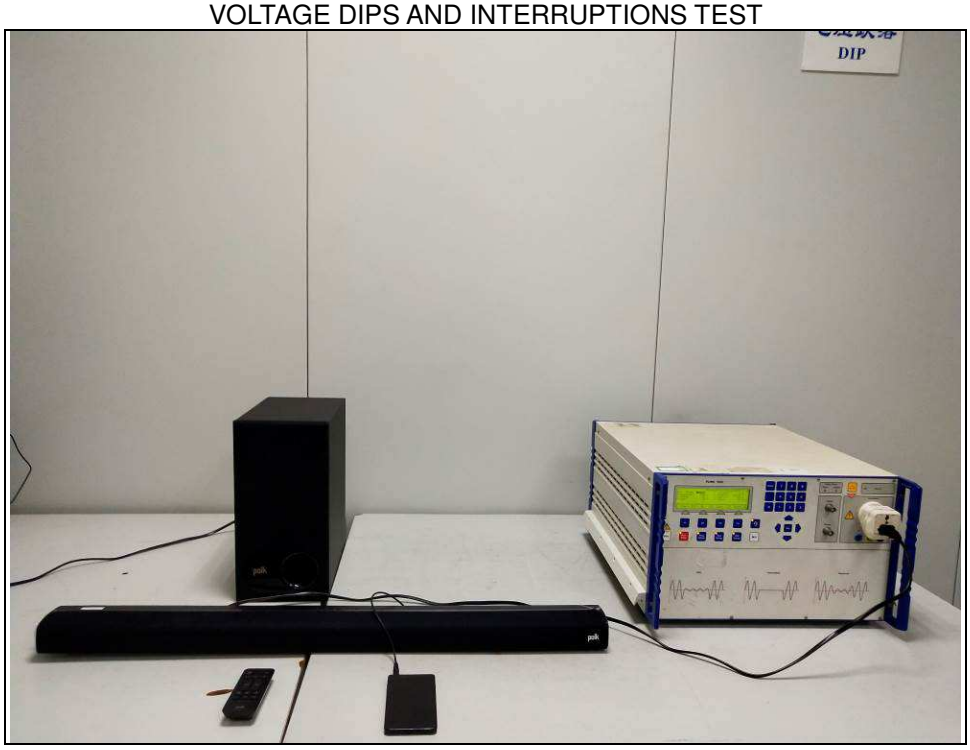
EFT & SURGE TESTS

CS TEST

POWER-FREQUENCY MAGNETIC FIELDS TEST



VOLTAGE DIPS AND INTERRUPTIONS TEST



9 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

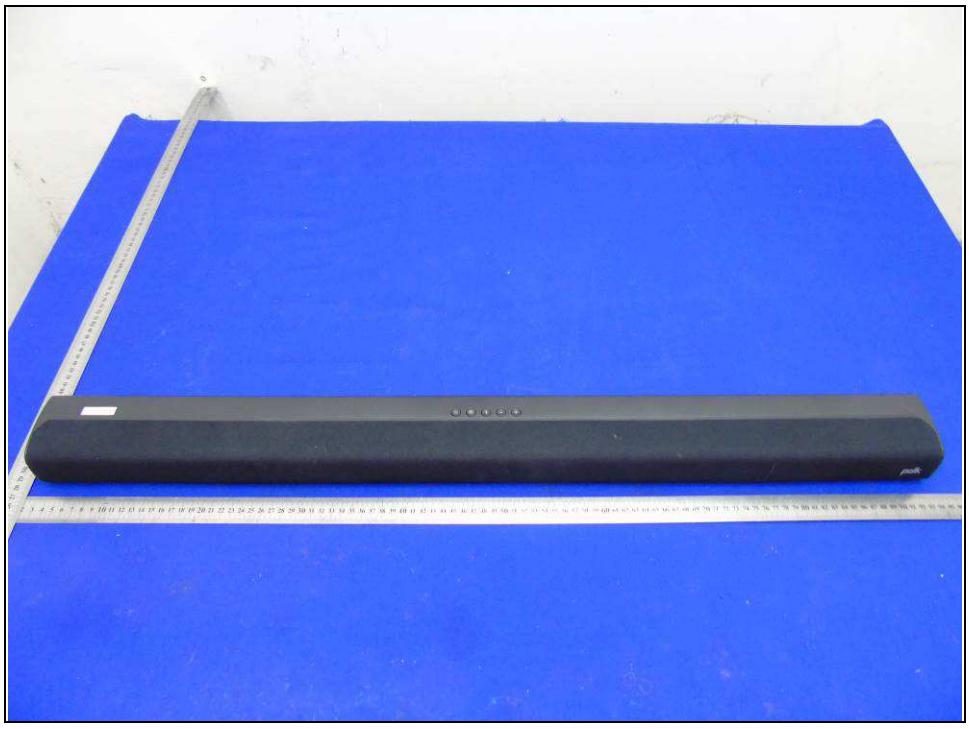
No any modifications were made to the EUT by the lab during the test.

---END---

PHOTOGRAPHS OF THE EUT

AC cable Plug is EU type

AC cable Plug is US type



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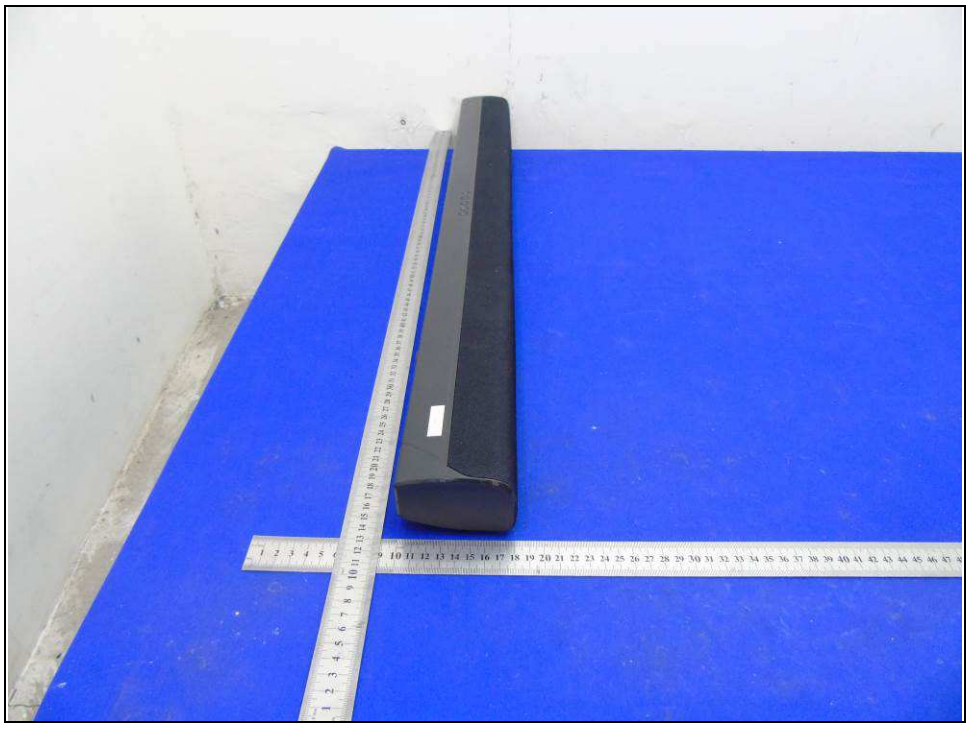

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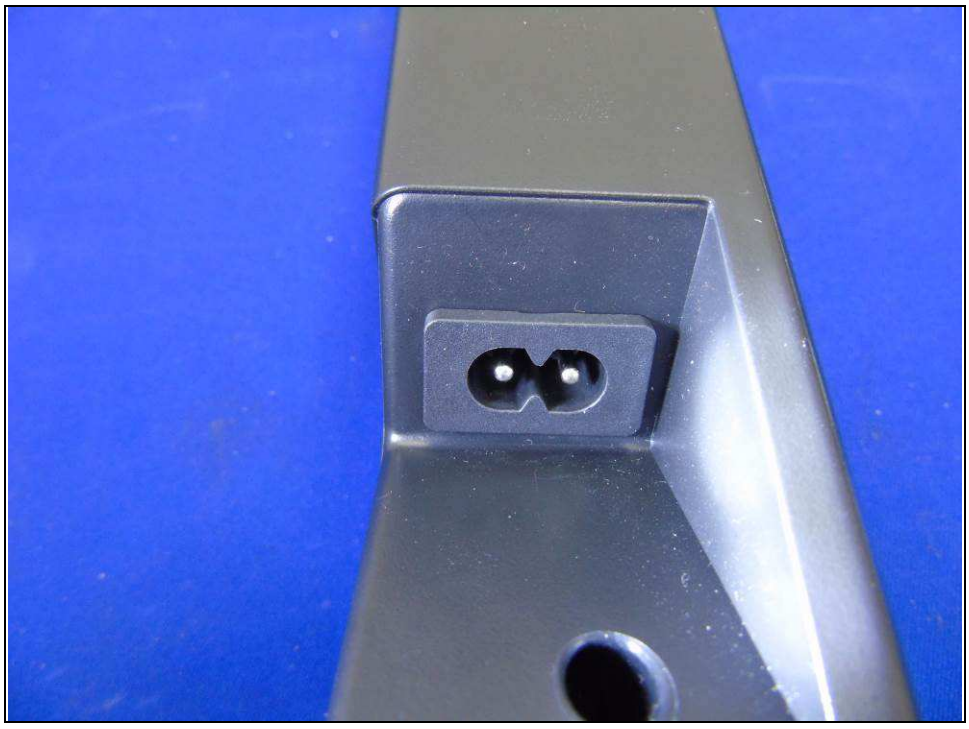

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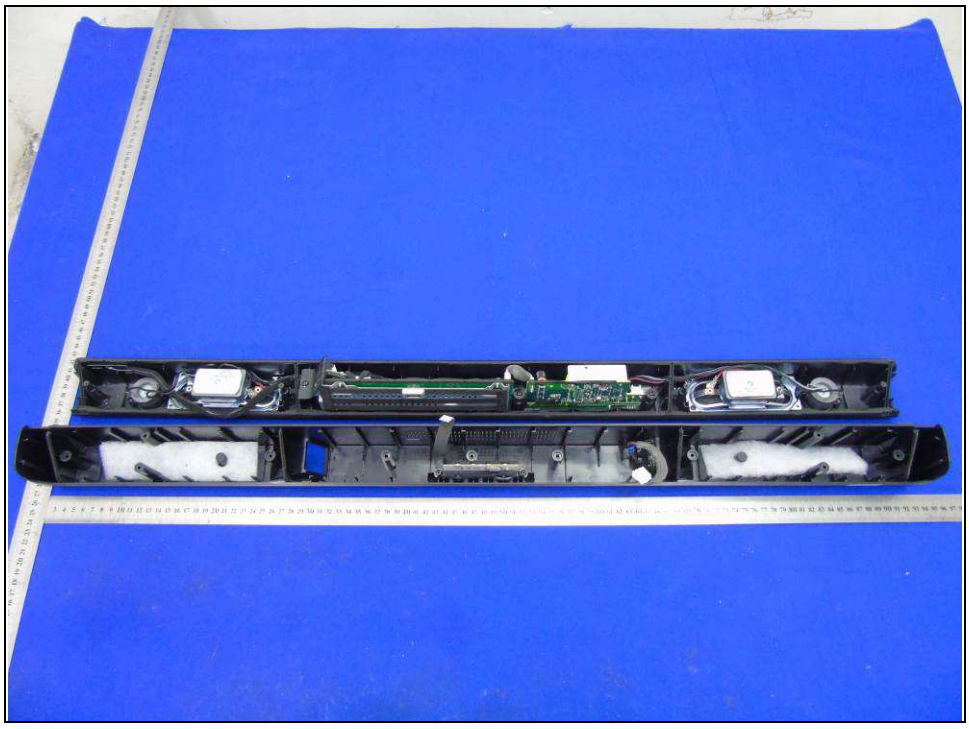

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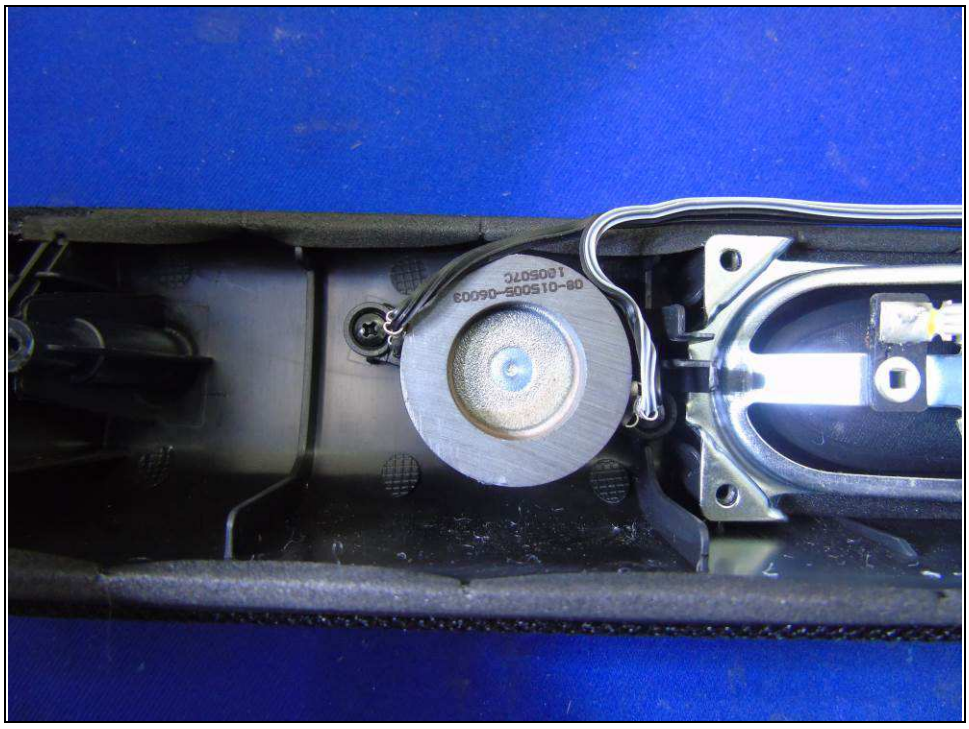

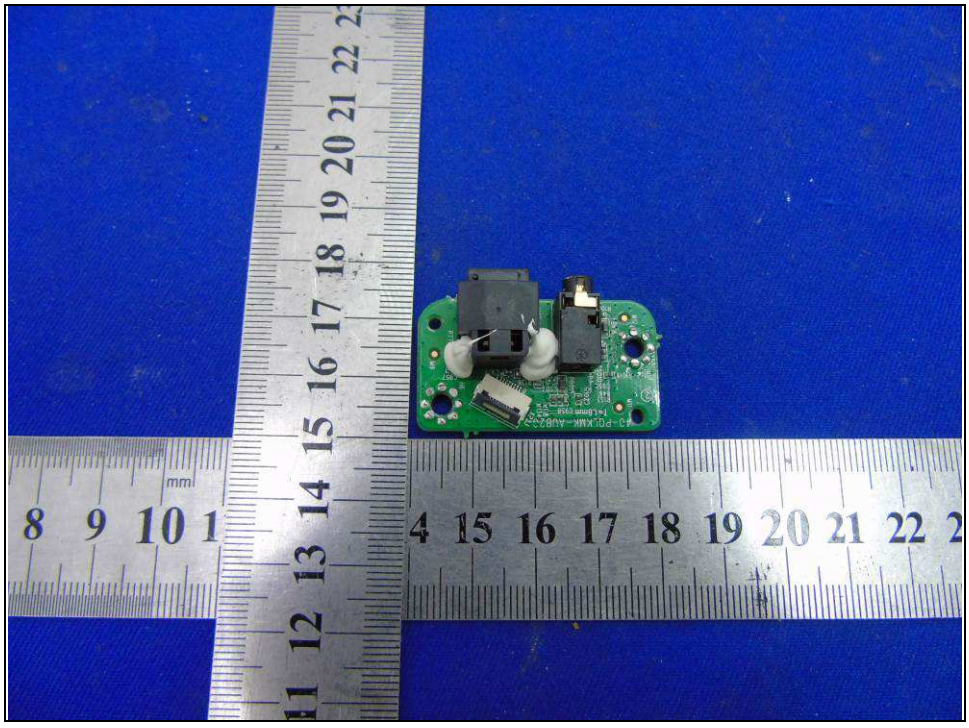

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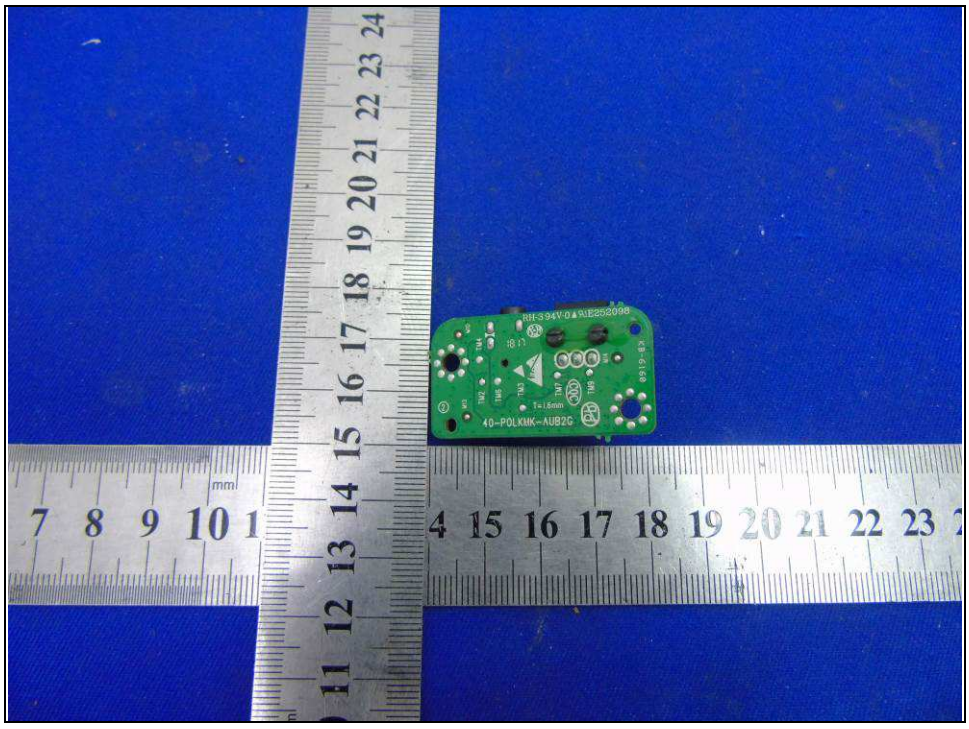
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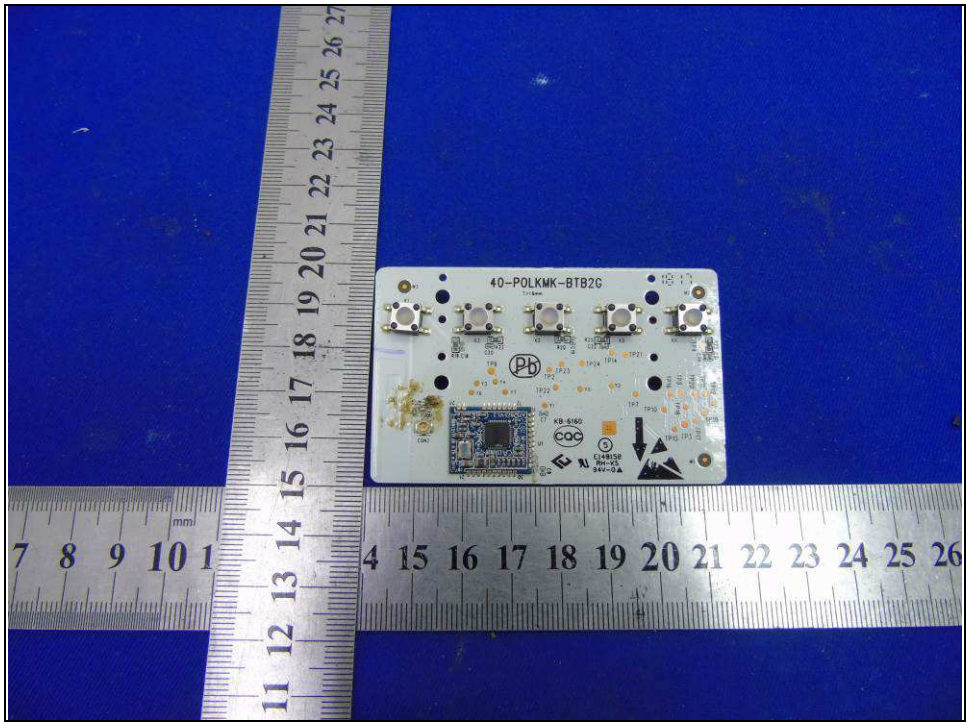
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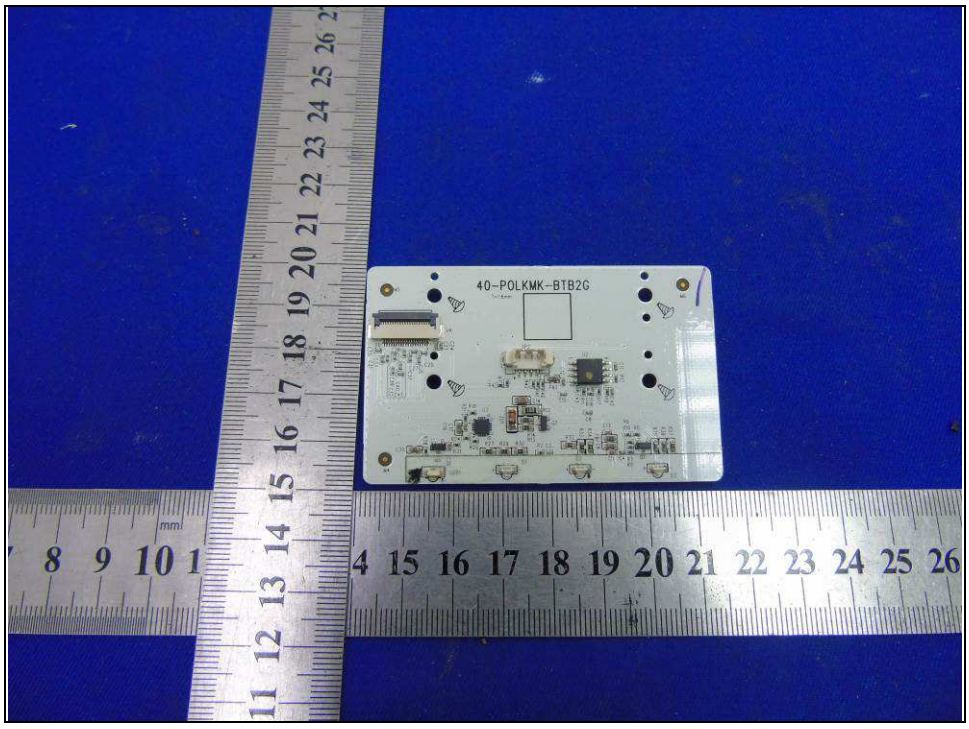
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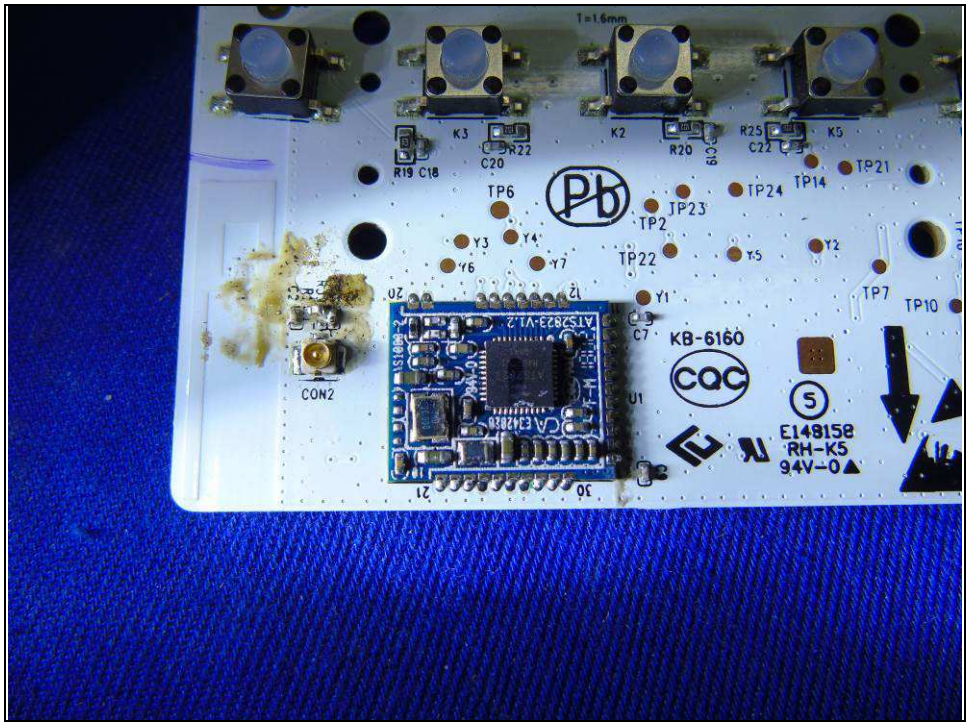
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K2
K5
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C20
R22
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TP2
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TP22
TP7
TP10
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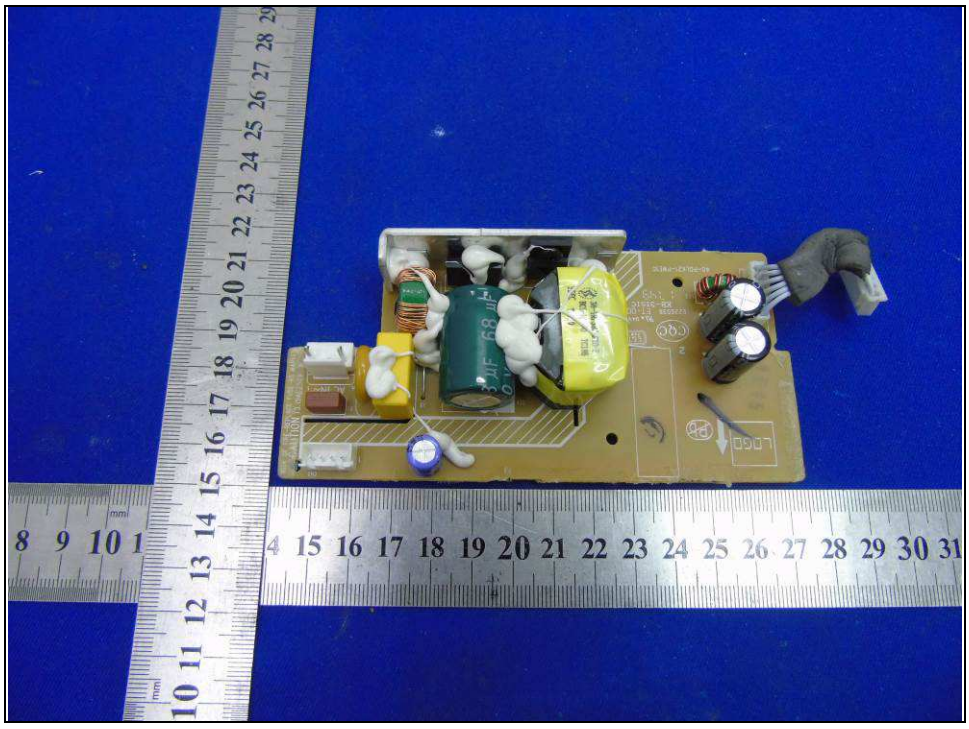

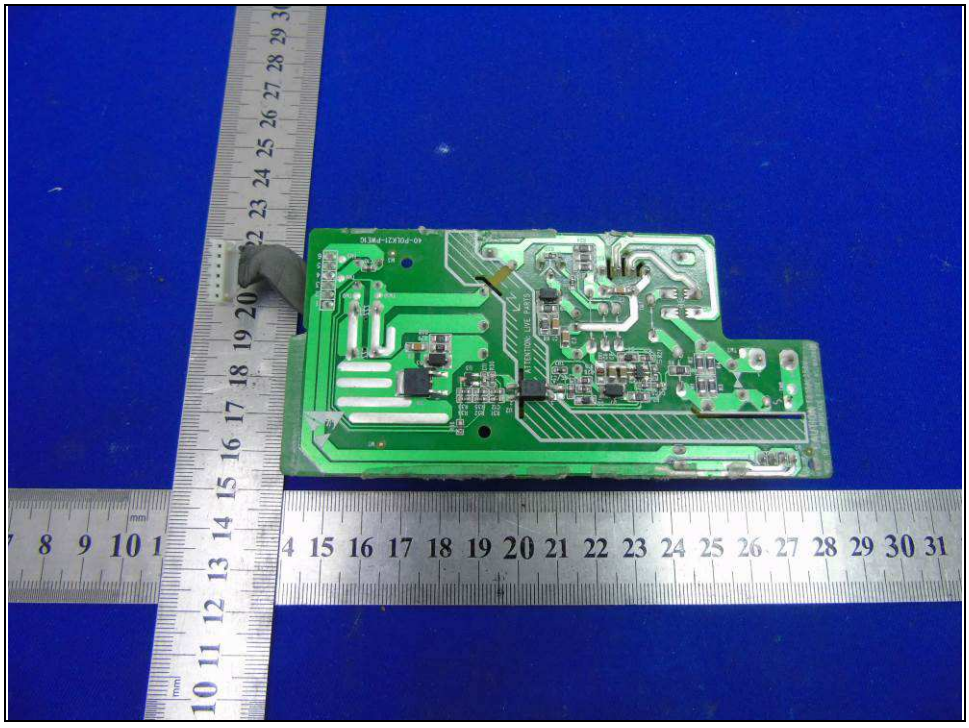

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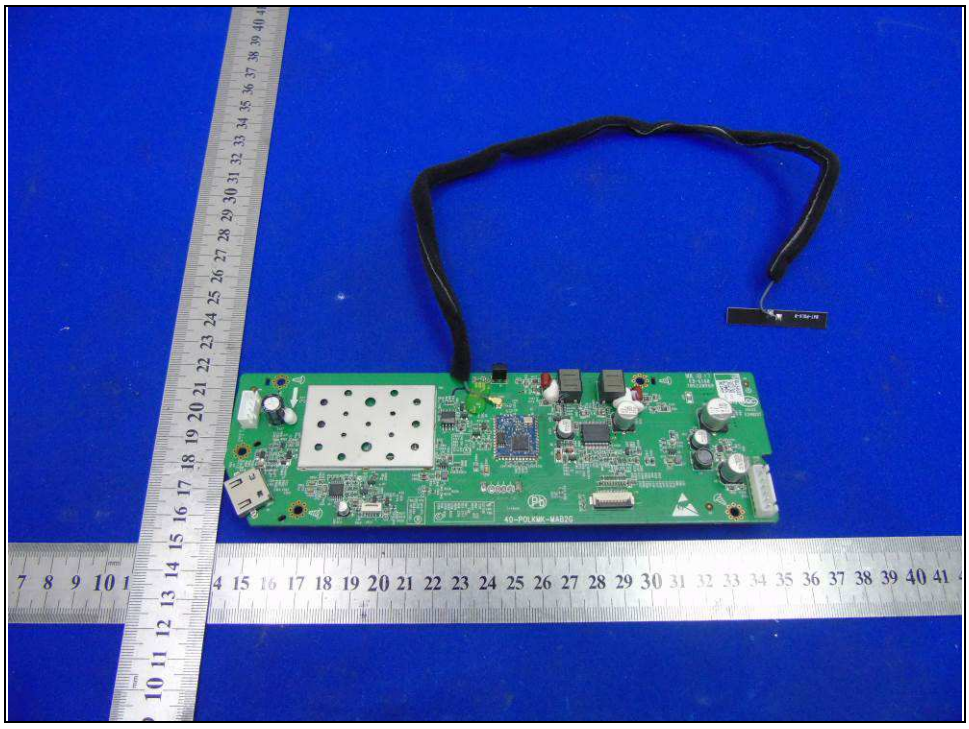

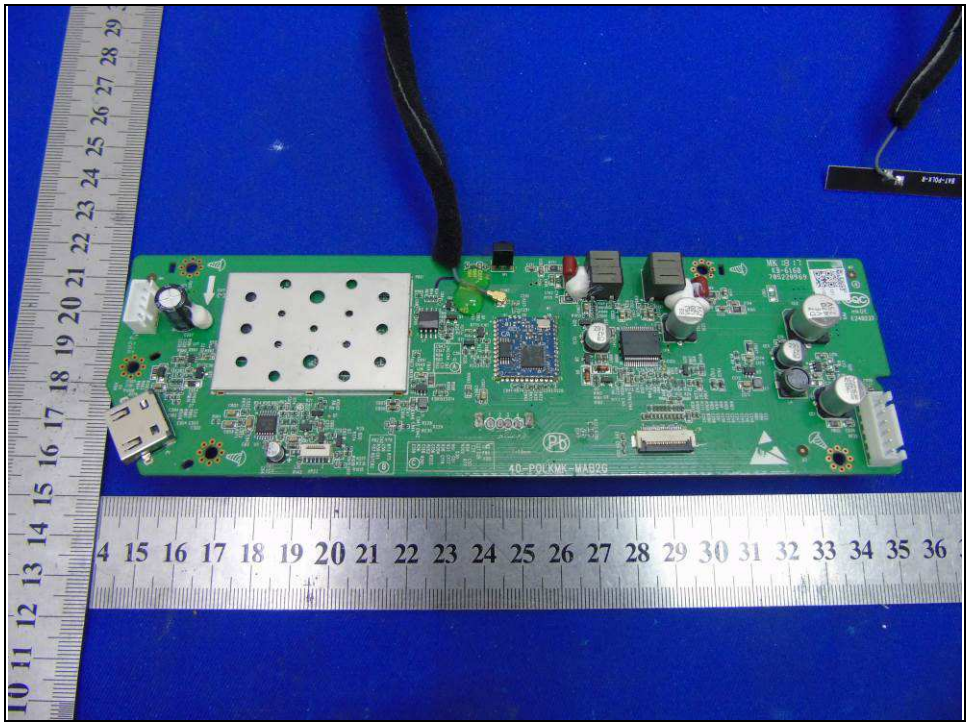

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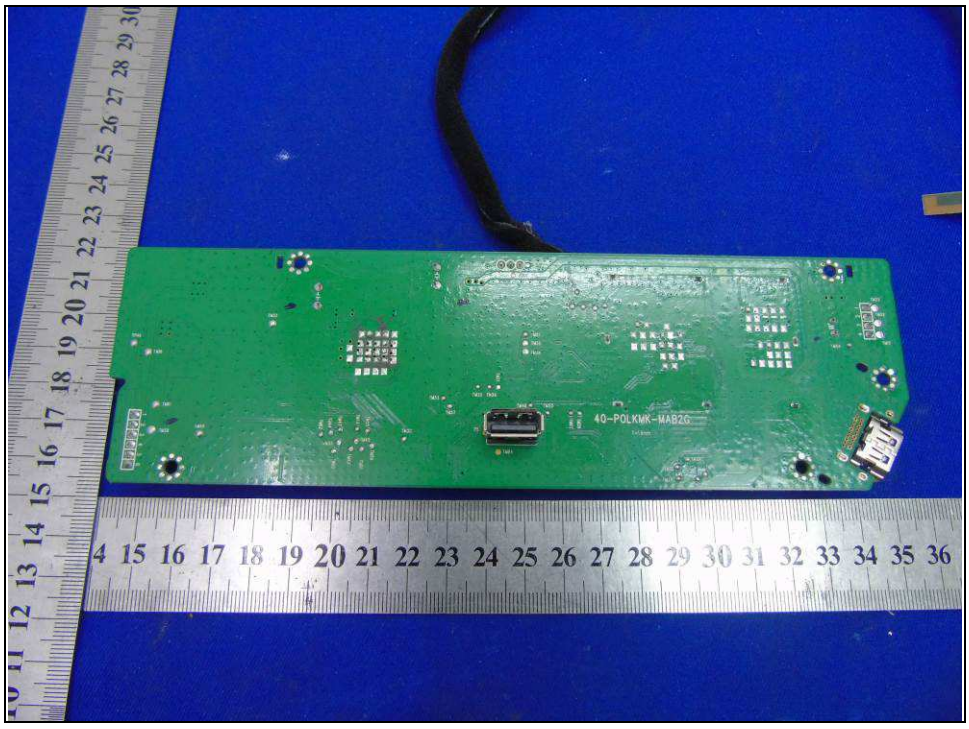
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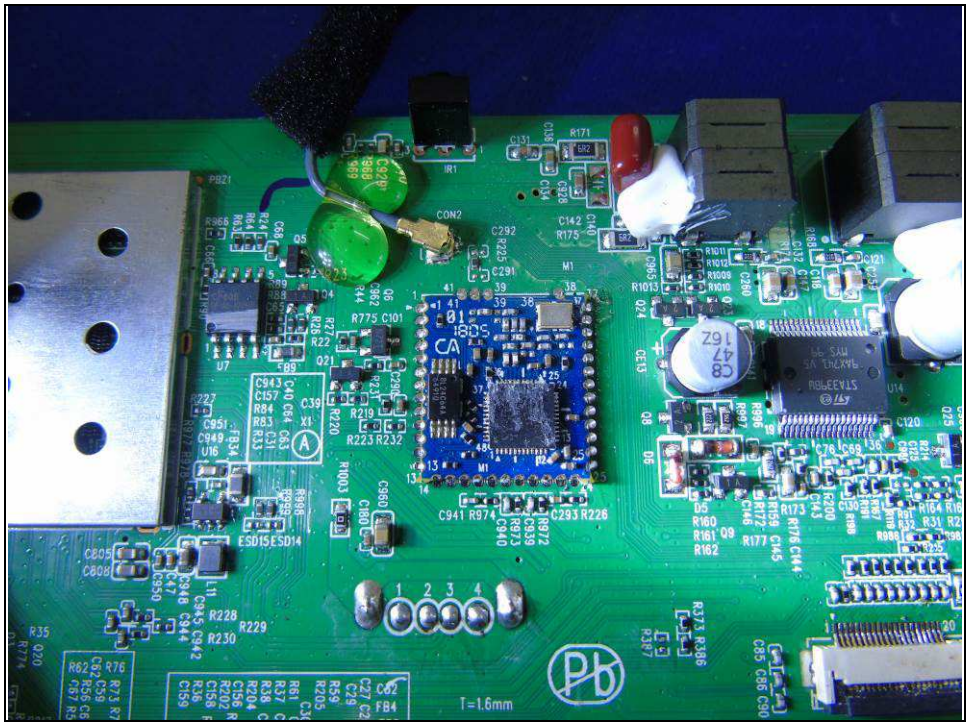
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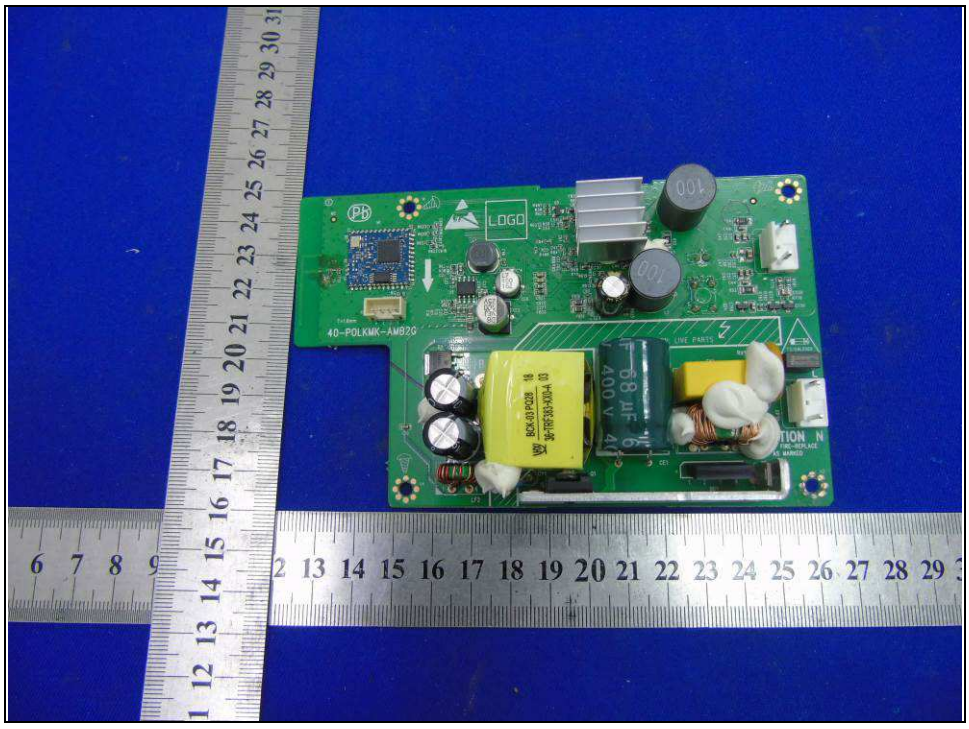
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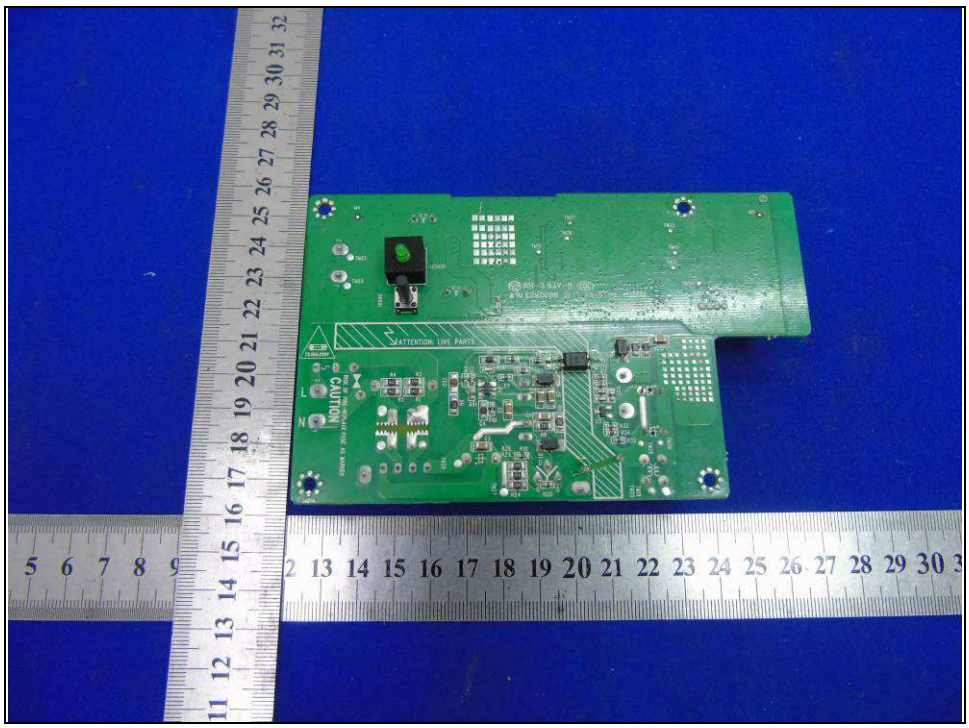
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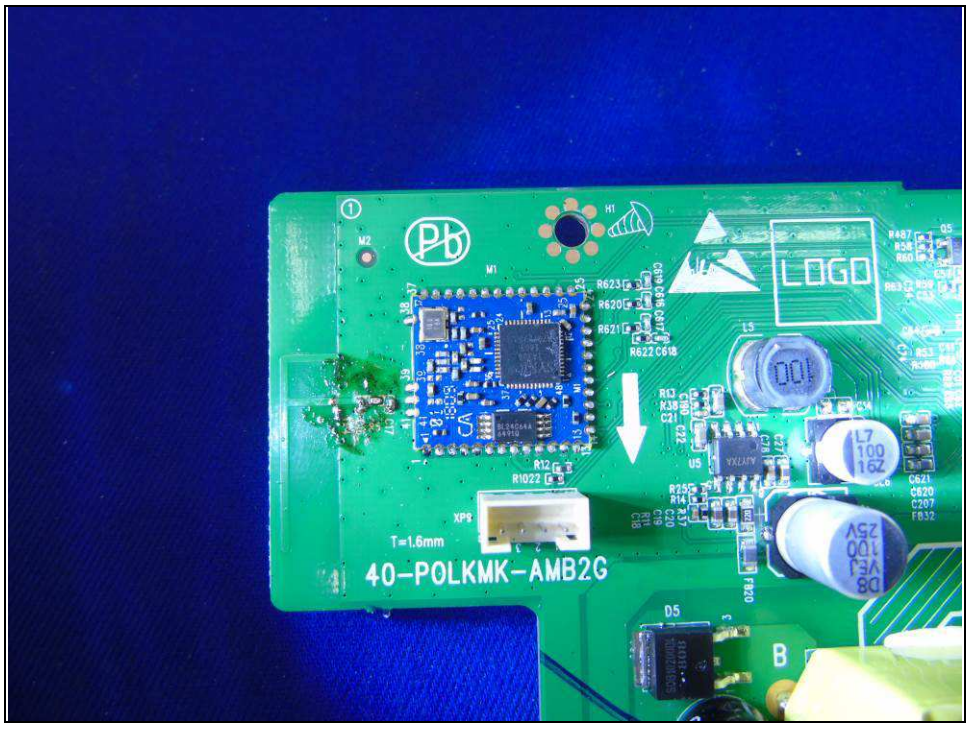
CAUTION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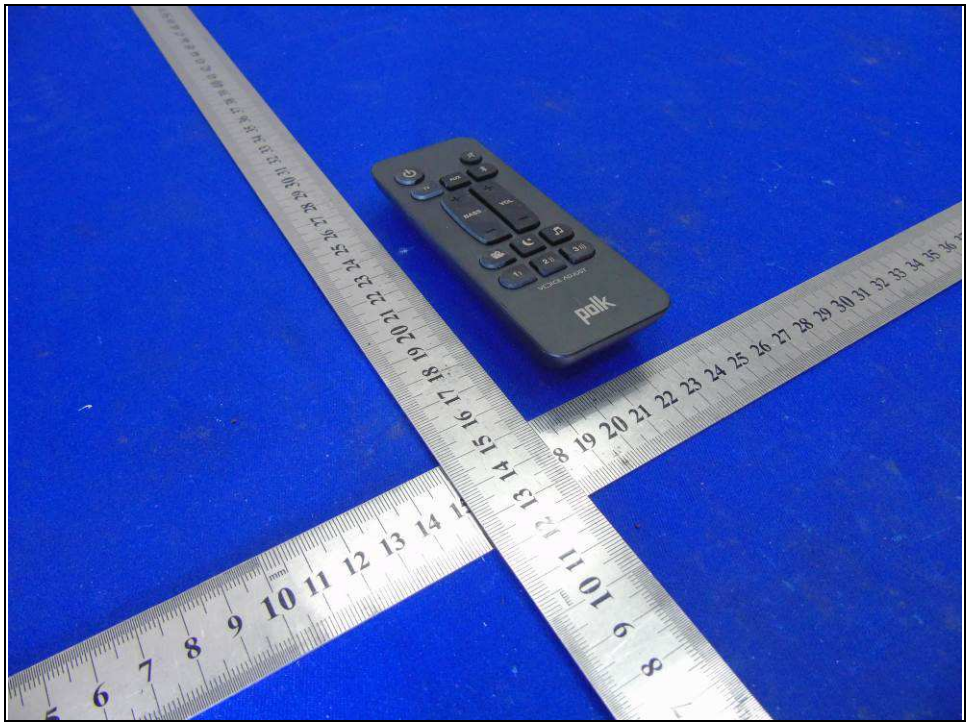
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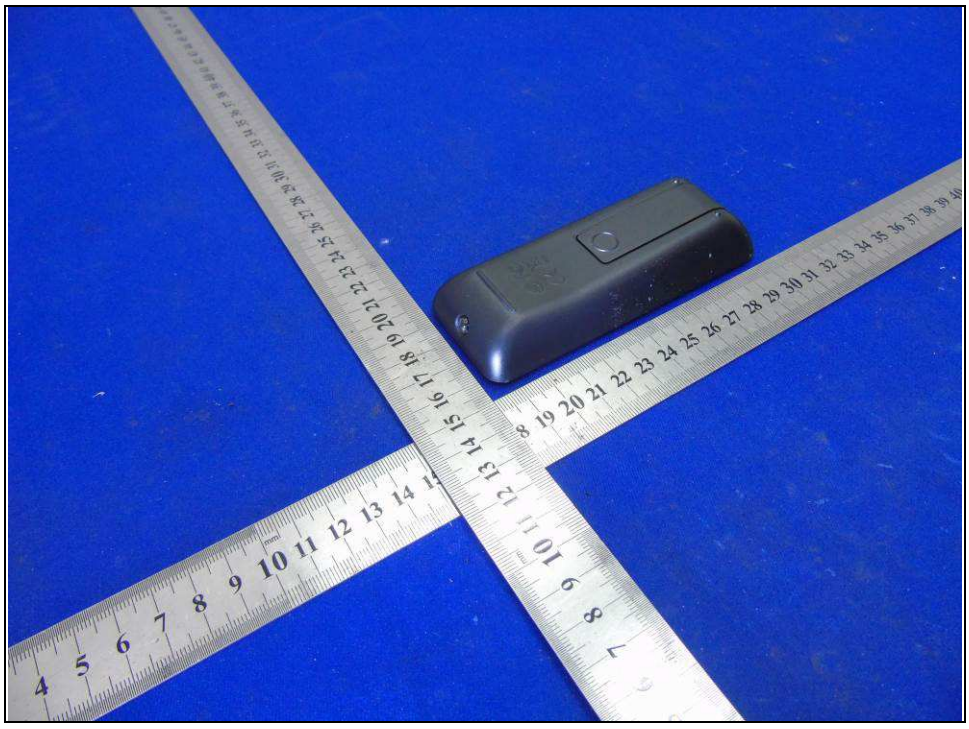

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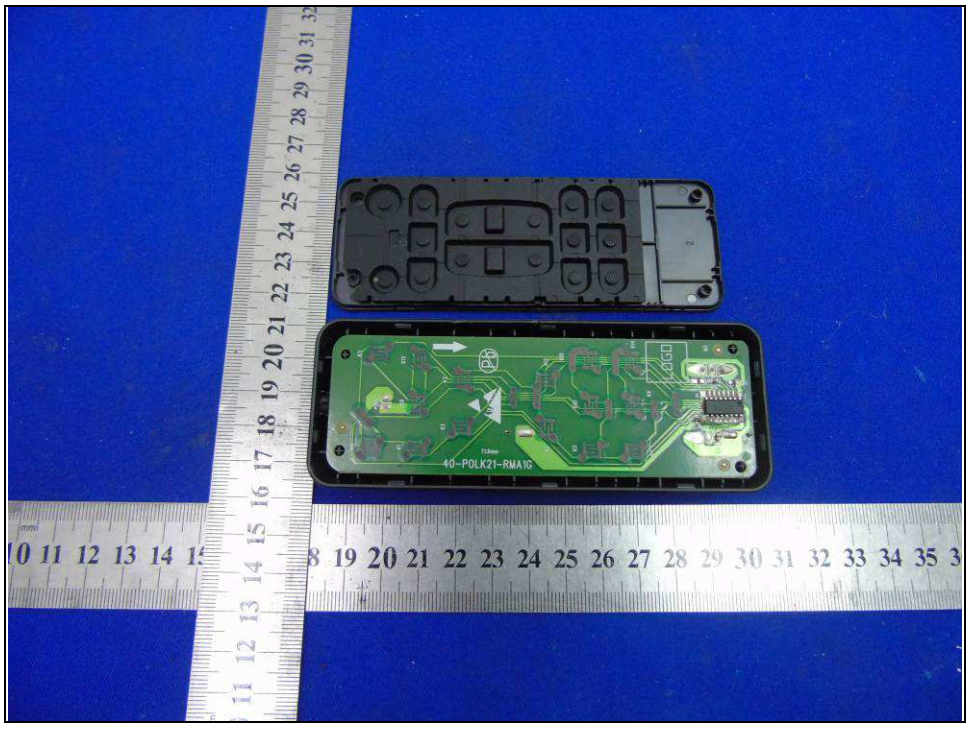

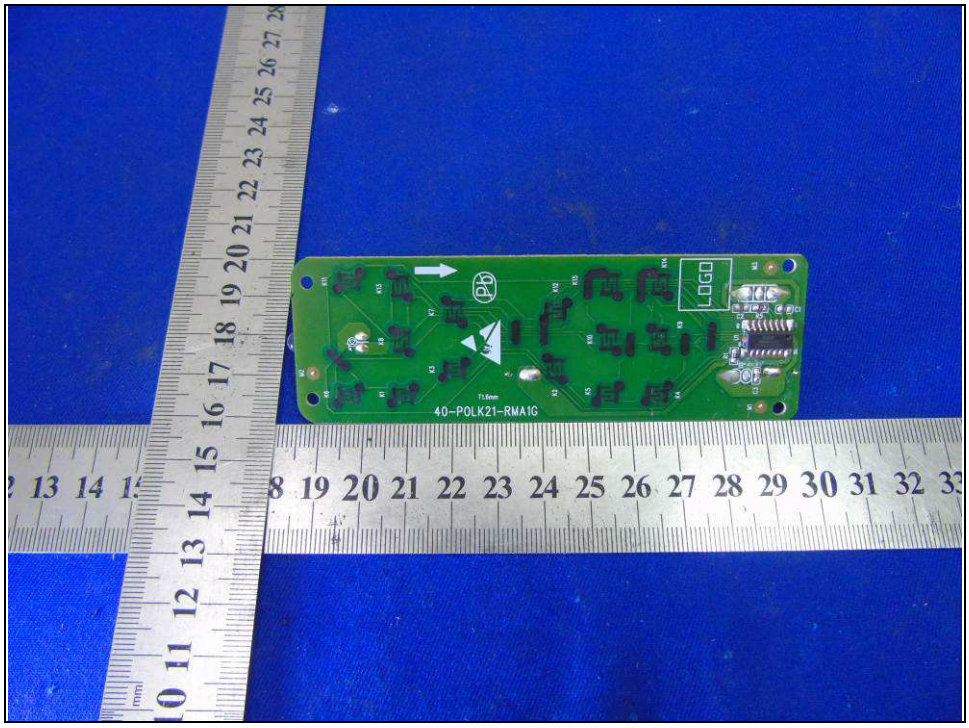

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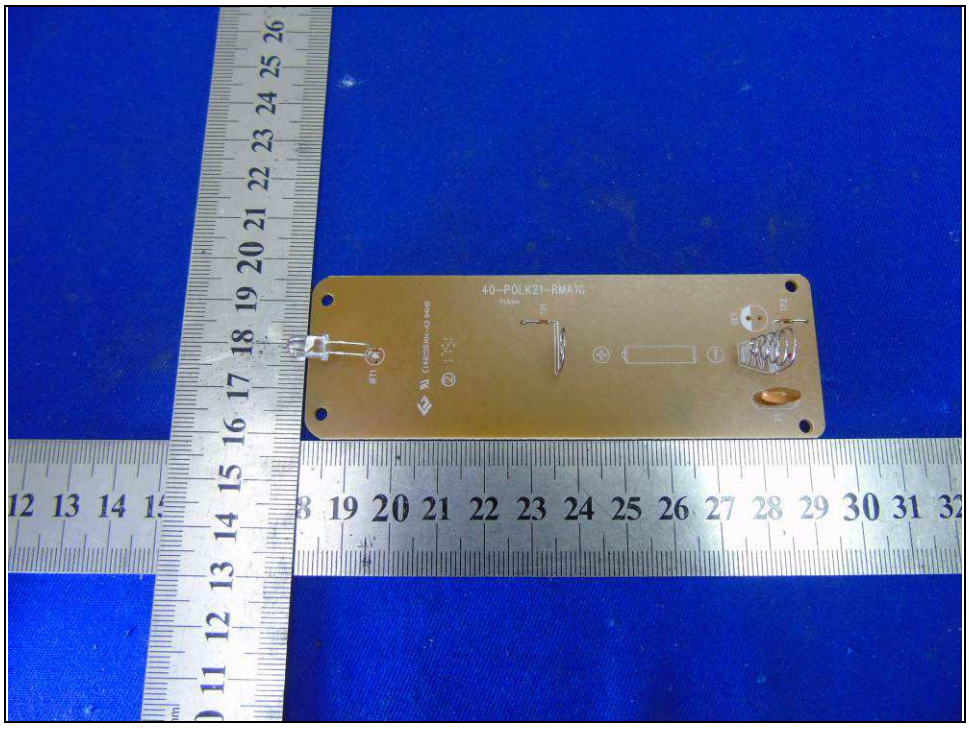

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Certificate # 2951.01

TEST REPORT

Applicant	TCL Technoly Electronics(Huizhou) Co., Ltd.
Address	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, China, 516006.

Manufacturer or Supplier	Sound United, LLC
Address	1 Viper Way Vista, CA 92081 USA
Product	HOME THEATER SYSTEM
Brand Name	Polk
Model	SIGNA S2 SOUND BAR
Additional Model & Model Difference	N/A
Date of tests	May 31, 2018 ~ Jul. 18, 2018 Apr. 29, 2021 ~ May 12, 2021

The submitted sample of the above equipment has been tested according to the requirements of the following standard:

☒ **EN 300 328 V2.2.2 (2019-07)**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Lucas Chen Project Engineer / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
Lucas	Date: Jun. 02, 2021

TABLE OF CONTENTS

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RE180531N039-1	Original release	Aug. 02, 2018
RE2104WDG0442	Base on the original report RE180531N039-1, updated the standard version, it needed to be retest RSE (below 1GHz) and Receiver Blocking test items after engineer evaluated.	Jun. 02, 2021

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

EN 300 328 V2.2.2		
Clause	**Test Parameter**	**Results**
	TRANSMITTER PARAMETERS	
4.3.1.2	RF Output Power	Pass
4.3.2.3	Power Spectral Density (Modulations other than FHSS equipment)	Pass
4.3.1.3	Duty cycle, Tx-sequence, Tx-gap (Non-adaptive equipment)	Not Applicable
4.3.1.4	Accumulated Transmit Time, Frequency Occupation and Hopping Sequence (FHSS equipment)	Pass
4.3.1.5	Hopping Frequency Separation (FHSS equipment)	Pass
4.3.1.6	Medium Utilisation (Non-Adaptive Equipment)	Not Applicable
4.3.1.7	Adaptivity (Adaptive Equipment)	Not Applicable (Note)
4.3.1.8	Occupied Channel Bandwidth	Pass
4.3.1.9	Transmitter Unwanted Emission in the OOB Domain	Pass
4.3.1.10	Transmitter Unwanted Emissions in the Spurious Domain	Pass
4.3.1.13	Geo-location capability	Not Applicable
	Receiver Parameters	
4.3.1.11	Receiver Spurious Emissions	Pass
4.3.1.12	Receiver Blocking	Pass

Note: These requirements do not apply for equipment with a maximum declared RF Output power of less than 10 dBm EIRP or for equipment when operating in a mode where the RF Output power is less than 10 dBm EIRP.

1.1 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 07,22
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Feb. 24,22
Bilog Antenna	Teseq	CBL 6111D	30643	May 29,21
Horn Antenna	ETS-Lindgren	3117	00062558	May 29,21
GPS Generator+ Antenna	TOJOIN	GNSS-5000A	E1-010119	N/A
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	May 22,21
Test Software	ADT	ADT_Radiated_V 7.6.15.9.2	N/A	N/A
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170147	May 09, 22
Amplifier	Burgeon	BPA-530	100220	Mar. 13,22
Broadband Preamplifier (1GHz~18GHz)	SCHWARZBECK	BBV9718	305	May 08,22
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Mar. 13,22
Power Sensor	Keysight	U2021XA	MY55060016	N/A
Power Sensor	Keysight	U2021XA	MY55060018	Jun. 03,21
Digital Multimeter	FLUKE	15B	A1220009DG	Aug. 05,21
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Nov. 03,21
Oscilloscope	Agilent	DSO9254A	MY51260160	Aug. 10,21
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV7	102331	May 13, 21
Spectrum Analyzer	Keysight	N9020A	MY55400499	Feb. 24,22
Signal Generator	Agilent	N5183A	MY50140980	Aug. 10,21
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Sep. 04,21
Wireless Connectivity Tester	Rohde&Schwarz	CMW270	100908	Sep. 26,21
Vector Signal Generator	Rohde&Schwarz	SMBV100A	257579	Sep. 04,21
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	N/A
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A

NOTES:

1. The test was performed in 966 Chamber and RF Oven room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.

For Receiver Blocking test and Adaptivity test:

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
Wireless Connectivity Tester	Rohde&Schwarz	CMW270	100908	Sep. 26,21
Signal Analyzer	Rohde&Schwarz	FSV7	102331	May 13, 21
Spectrum Analyzer	Keysight	N9020A	MY55400499	Feb. 24,22
Signal Generator	Agilent	N5183A	MY50140980	Aug. 10,21
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Sep. 04,21
Power Sensor	Keysight	U2021XA	MY55060016	N/A
Power Sensor	Keysight	U2021XA	MY55060018	Jun. 03,21
Vector Signal Generator	Rohde&Schwarz	SMBV100A	257579	Sep. 04,21
Agile Signal Generator	Agilent	8645A	Agilent	N/A
Shield Box	TOJOIN	MS4345-C	SZA18A 3038	N/A
Attenuator	TOJOIN	CHB-8-90-1-B 50SMA	0803002	N/A
COM Power Splitter	TOJOIN	PS-TX-2B	020801	N/A
COM Power Splitter	TOJOIN	PS-TX-2B	020802	N/A
Test sofware	TonScend	JS1120-3-1	JS-001	N/A

NOTES:

1. The test was performed in RF Oven room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

1.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Parameter	Uncertainty
Occupied Channel Bandwidth	±1.132 %
RF output power, conducted	±0.56dB
Power Spectral Density, conducted	±1.017dB
Unwanted Emissions, conducted	±1.017dB
All emissions, radiated	±4.84dB
Temperature	±0.23°C
Supply voltages	±0.1 %
Time	±4 %

1.3 MAXIMUM MEASUREMENT UNCERTAINTY

For the test methods, according to ETSI EN 300 328 standard, the measurement uncertainty figures shall be calculated in accordance with ETR 100 028-1 [4] and shall correspond to an expansion factor (coverage factor) k = 1,96 or k = 2 (which provide confidence levels of respectively 95 % and 95,45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Maximum measurement uncertainty

Parameter	Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±1,5 dB
Power Spectral Density, conducted	±3 dB
Unwanted Emissions, conducted	±3 dB
All emissions, radiated	±6 dB
Temperature	±3 °C
Supply voltages	±3 %
Time	±5 %

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	HOME THEATER SYSTEM
TEST MODEL	SIGNA S2 SOUND BAR
ADDITIONAL MODEL	N/A
NOMINAL VOLTAGE	AC 100-240V 50-60Hz 40W
OPERATING TEMPERATURE RNAGE	-10 ~ +60℃
MODULATION TECHNOLOGY	FHSS, DTS
MODULATION TYPE	GFSK, π/4 DQPSK, 8DPSK For FHSS BT-LE(GFSK) for DTS
OPERATING FREQUENCY	2402MHz ~ 2480MHz
ADAPTIVE/NON-ADAPTIVE	☐ non-adaptive Equipment ☒ adaptive Equipment without the possibility to switch to a non-adaptive mode ☐ adaptive Equipment which can also operate in a non-adaptive mode
EIRP POWER (MAX.)	3.88dBm
ANTENNA TYPE	PCB Antenna, 2dBi Gain
DATA CABLE SUPPLIED	Optical Line: Unshielded detachable 1.80m AC Line: Unshielded detachable 1.45m HDMI Line: Shielded detachable 1.50m

NOTES:

1. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.
2. For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.
3. Please refer to the EUT photo document for detailed product photo.

2.2 DESCRIPTION OF TEST MODES

79 channels are provided to BT (GFSK, π/4 DQPSK, 8 DPSK)

CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
0	**2402**	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	**78**	**2480**
19	2421	**39**	**2441**	59	2461		

40 channels are provided to BT-LE (GFSK)

CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

2.2.1 CONFIGURATION OF SYSTEM UNDER TEST

Please see section 4 photograph of the test configuration for reference.

2.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT Configure Mode	Applicable to									Description
	ROP	PSD	ATT/FO/HS	HFS	OCB	OOB	SE< 1G	SE≥ 1G	RB	
A	√	√	√	√	√	√	√	√	√	Powered by AC 230V

Where **ROP:** RF Output Power **PSD:** Power Spectral Density

ATT/MFO/HS: Accumulated Transmit Time / Frequency Occupation/ Hopping Sequence **DC/TS/TG:** Duty Cycle/ Tx-Sequence / Tx-gap

HFS: Hopping Frequency Separation **OCB:** Occupied Channel Bandwidth

OOB: Transmitter r unwanted emissioin in the out-of-band domain **SE<1G:** Spurious Emissions below 1GHz

SE≥1G: Spurious Emissions above 1GHz **RB:** Receiver Blocking

RF OUTPUT POWER TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	Hopping mode	FHSS	GFSK	DH5
A	0 to 78	Hopping mode	FHSS	8DPSK	3DH5
A	0 to 39	0,19, 39	DTS	GFSK	1 Mbps

POWER SPECTRAL DENSITY TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 39	0,19, 39	DTS	GFSK	1 Mbps

ACCUMULATED TRANSMIT TIME / FREQUENCY OCCUPATION / HOPPING SEQUENCE:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	Hopping mode	FHSS	GFSK	DH1, DH3, DH5
A	0 to 78	Hopping mode	FHSS	8DPSK	3DH1, 3DH3, 3DH5

HOPPING FREQUENCY SEPARATION:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	0, 78	FHSS	GFSK	DH5
A	0 to 78	0, 78	FHSS	8DPSK	3DH5

OCCUPIED CHANNEL BANDWIDTH:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT configure mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	0, 78	FHSS	GFSK	DH5
A	0 to 78	0, 78	FHSS	8DPSK	3DH5
A	0 to 39	0, 39	DTS	GFSK	1 Mbps

TRANSMITTER UNWANTED EMISSION IN THE OUT-OF-BAND DOMAIN:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT configure mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	Hopping mode	FHSS	GFSK	DH5
A	0 to 78	Hopping mode	FHSS	8DPSK	3DH5
A	0 to 39	0, 39	DTS	GFSK	1 Mbps

SPURIOUS EMISSIONS TEST (BELOW 1 GHZ):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT configure mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	78	FHSS	GFSK	DH5

SPURIOUS EMISSIONS TEST (ABOVE 1 GHZ):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT configure mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	0, 78	FHSS	GFSK	DH5
A	0 to 78	0, 78	FHSS	8DPSK	3DH5
A	0 to 39	0, 39	DTS	GFSK	1 Mbps

RECEIVER BLOCKING TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	Hopping mode	FHSS	GFSK	DH5
A	0 to 39	0, 39	DTS	GFSK	1 Mbps

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
ROP	25deg. C, 60%RH	AC 230V 50Hz	Sen He
PSD	25deg. C, 60%RH	AC 230V 50Hz	Sen He
ATT/MFO/HS	25deg. C, 60%RH	AC 230V 50Hz	Sen He
HFS	25deg. C, 60%RH	AC 230V 50Hz	Sen He
OCB	25deg. C, 60%RH	AC 230V 50Hz	Sen He
OOB	25deg. C, 60%RH	AC 230V 50Hz	Sen He
SE<1G	26deg. C, 59%RH	AC 230V 50Hz	Panda
SE≥1G	25deg. C, 55%RH	AC 230V 50Hz	Vincent
RB	25deg. C, 55%RH	AC 230V 50Hz	Vincent

2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook	DELL	Inspiron	N/A	N.A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	AC Line: Unshielded,Detachable 0.8m;DC Line: Unshielded,Non-detachable 1.8m, with one core

2.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

EN 300 328 V2.2.2 (2019-07)

All test items have been performed and recorded as per the above standards.

3 TEST PROCEDURE AND RESULTS

TRANSMITTER PARAMETERS

3.1 RF OUTPUT POWER

3.1.1 LIMITS OF RF OUTPUT POWER

CONDITION	FREQUENCY BAND	LIMIT (E.I.R.P)
Under all test conditions	2400 ~ 2483.5 MHz	AV: 20dBm

3.1.2 TEST PROCEDURES

Refer to chapter 5.4.2.2 of EN 300 328 V2.2.2.

MEASUREMENT METHOD	
☒ Conducted measurement	☐ Radiated measurement

3.1.3 DEVIATION FROM TEST STANDARD

No deviation.

3.1.4 TEST SETUP

The measurement was performed at both normal environmental conditions and at the extremes of the operating temperature. This measurement was performed during normal operation (hopping) and operating on all hopping positions. The equipment was configured to operate under its worst case situation with respect to output power. (In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator.)

3.1.5 TEST RESULTS

TEST CONDITION			EIRP POWER (dBm)	LIMIT (dBm)
GFSK				
Tnom(℃)	+25	Vnom(v)	2.32	20
Tmin(℃)	-10		**2.64**	
Tmax(℃)	+60		1.49	
8DPSK				
Tnom(℃)	+25	Vnom(v)	1.13	20
Tmin(℃)	-10		1.38	
Tmax(℃)	+60		0.44	

NOTE: EIRP = Conducted output power + ANT Gain

TEST CONDITION			EIRP POWER (dBm)			LIMIT (dBm)
			(CH0) 2402 MHz	(CH19) 2440 MHz	(CH39) 2480 MHz	
BT-LE GFSK						
T_{nom}(℃)	+25	Vnom(v)	2.96	3.17	3.55	20
T_{min}(℃)	-10		3.33	3.43	**3.88**	20
T_{max}(℃)	+60		2.56	2.53	2.87	20

NOTE: EIRP = Conducted output power + ANT Gain

3.2 POWER SPECTRAL DENSITY

3.2.1 LIMIT OF POWER SPECTRAL DENSITY

CONDITION	FREQUENCY BAND	LIMIT (e.i.r.p.)
Under normal conditions	2400 ~ 2483.5 MHz	10dBm / 1MHz

3.2.2 TEST PROCEDURE

Refer to chapter 5.4.3.2 of ETSI EN 300 328 V2.2.2.

Measurement Method	
☒ Conducted measurement	☐ Radiated measurement
☒ Option 1: For equipment with continuous and non-continuous transmissions	
☐ Option 2: For equipment with continuous transmission capability or for equipment operating (or with the capability to operate) with a constant duty cycle (e.g. Frame Basedequipment)	

3.2.3 DEVIATION FROM TEST STANDARD

No deviation.

3.2.4 TEST SETUP

The test setup has been constructed as the normal test condition. In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator. Controlling software has been activated to set the EUT on specific status.

3.2.5 TEST RESULTS

BT-LE GFSK

CHANNEL	CHANNEL FREQUENCY (MHz)	POWER DENSITY (dBm/1MHz) (E.I.R.P)	LIMIT (dBm/1MHz) (E.I.R.P)	PASS/FAIL
0	2402	2.88	10	PASS
19	2440	3.09	10	PASS
39	2480	3.46	10	PASS

3.3 ACCUMULATED TRANSMIT TIME, FREQUENCY OCCUPATION AND HOPPING SEQUENCE

3.3.1 LIMITS OF ACCUMULATED TRANSMIT TIME, FREQUENCY OCCUPATION AND HOPPING SEQUENCE

Accumulated Transmit Time	
Condition	**Limit**
☐Non-adaptive frequency hopping systems	≤ 15 ms
☒Adaptive frequency hopping systems	≤ 400 ms

Frequency Occupation	
Condition	**Limit**
☐Non-adaptive frequency hopping systems	Equal to one dwell time within a period not exceeding four times the product of the dwell time per hop and the number of hopping frequencies in use.
☒Adaptive frequency hopping systems	

hopping Sequence(s)	
Condition	**Limit**
☐Non-adaptive frequency hopping systems	≥5 hopping frequencies or 15/minimum Hopping Frequency Separation in MHz, whichever is the greater.
☒Adaptive frequency hopping systems	Operating frequency band ≥58.45MHz (Operating over a minimum of 70 % of the operating in the band 2,4 GHz to 2,4835 GHz)
	≥15 hopping frequencies or 15/minimum Hopping Frequency Separation in MHz, whichever is the greater.

3.3.2 TEST PROCEDURE

Refer to chapter 5.4.4.2 of EN 300 328 V2.2.2.

Measurement	
☒Conducted measurement	☐ Radiated measurement

3.3.3 DEVIATION FROM TEST STANDARD

No deviation

3.3.4 TEST SETUP

The measurement was performed at normal environmental conditions only. The equipment was configured to operate at its maximum Dwell Time and maximum Duty Cycle. The measurement was performed on a minimum of 2 hopping frequencies chosen arbitrary from the actual hopping sequence. (In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator.)

3.3.5 TEST RESULTS

GFSK:

Accumulated Transmit Time									
Mode	Number of Hopping Channel	Number of transmission in a period (channel number*0.4 sec)				Length of transmission time (ms)	Result (ms)	Limit (ms)	Pass / Fail
		Period (Sec)	Sweep time (Sec)	Times in a sweep	Number in a period				
DH1	79	31.6	4	39	308.1	0.478	147.2718	400	Pass
DH3	79	31.6	4	21	165.9	1.695	281.2005	400	Pass
DH5	79	31.6	4	10	79.0	2.956	233.5240	400	Pass

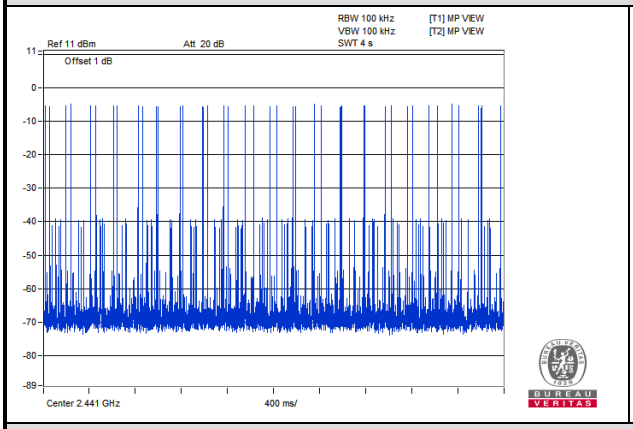
8DPSK:

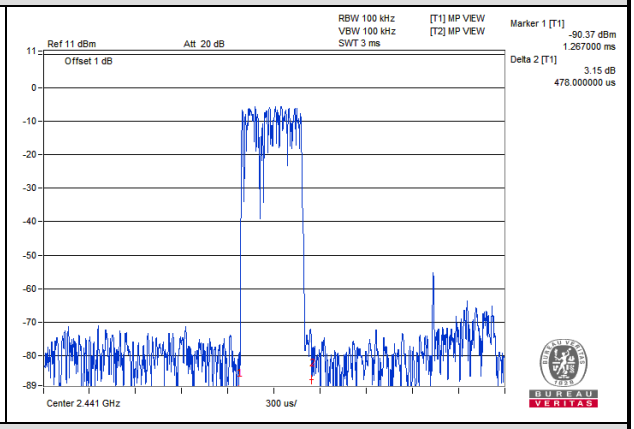
Accumulated Transmit Time									
Mode	Number of Hopping Channel	Number of transmission in a period (channel number*0.4 sec)				Length of transmission time (ms)	Result (ms)	Limit (ms)	Pass / Fail
		Period (Sec)	Sweep time (Sec)	Times in a sweep	Number in a period				
3DH1	79	31.6	4	39	308.1	0.442	136.1802	400	Pass
3DH3	79	31.6	4	20	158.0	1.699	268.4420	400	Pass
3DH5	79	31.6	4	12	94.8	2.956	280.2288	400	Pass

NOTE: Test plots of the transmitting time slot are shown as below.

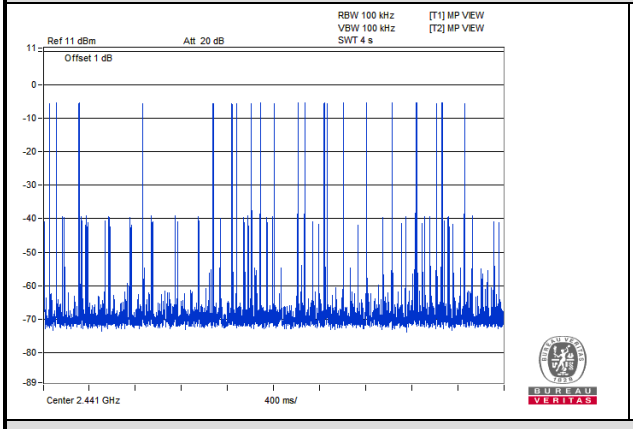
GFSK:

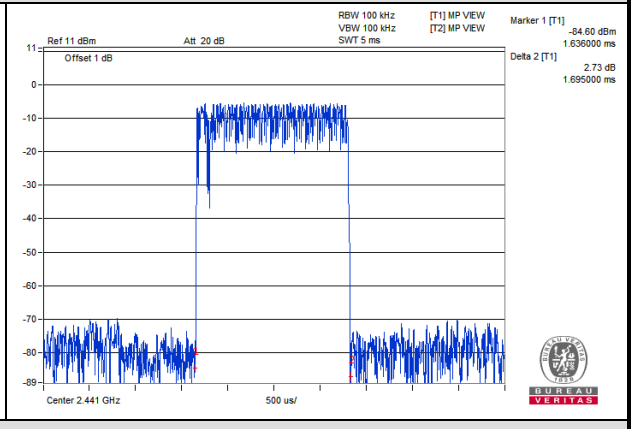
DH1



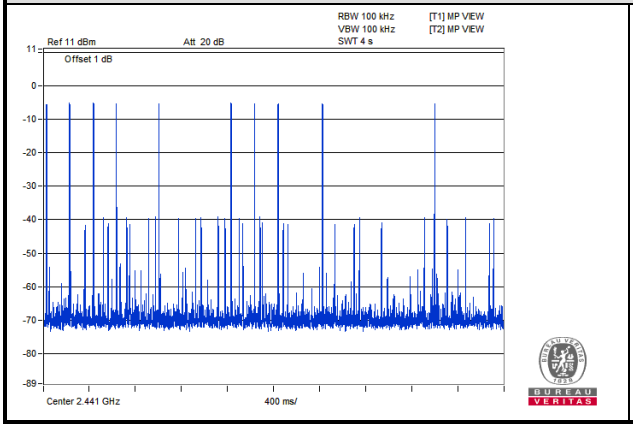


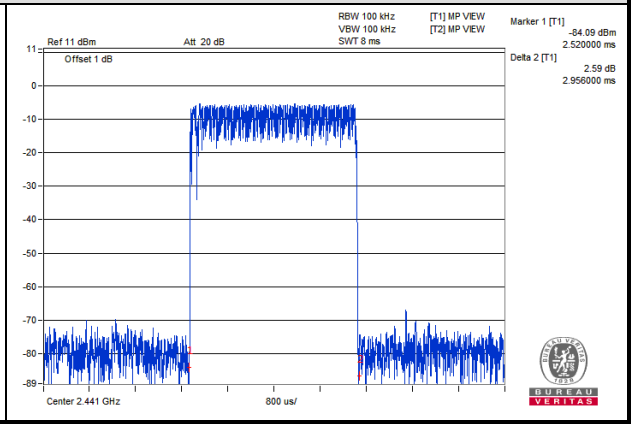
DH3





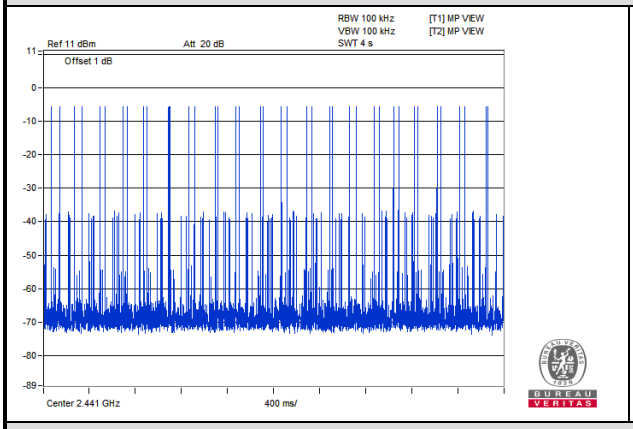
DH5

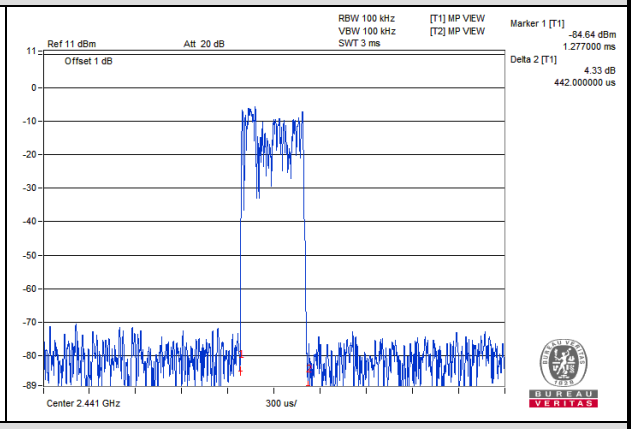




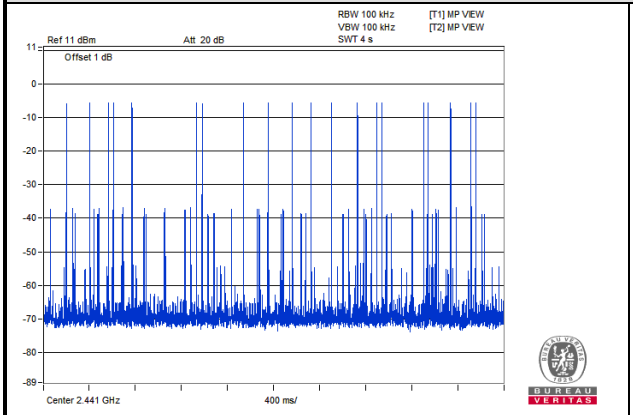
8DPSK:

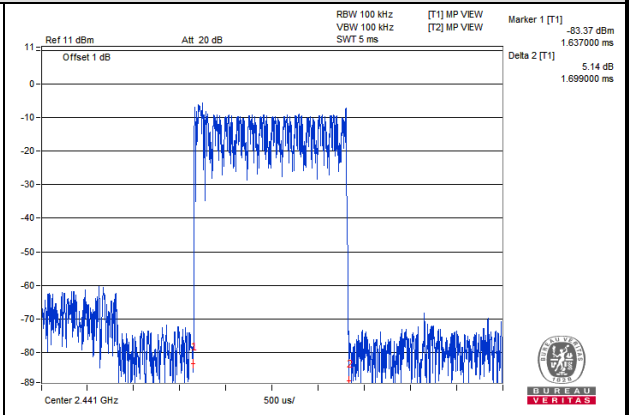
3DH1



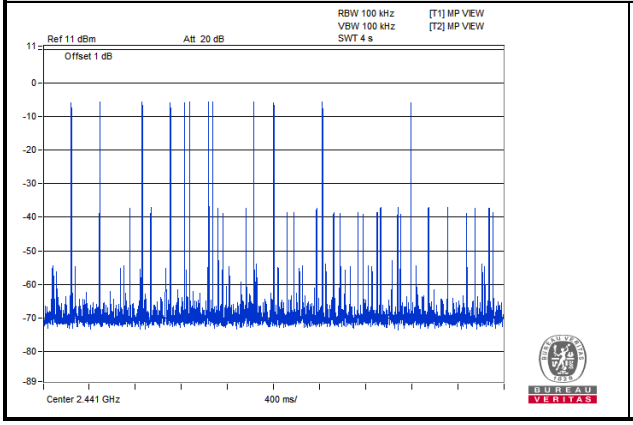


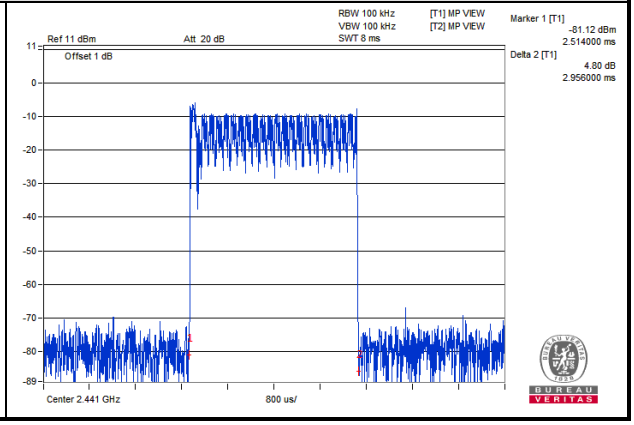
3DH3





3DH5





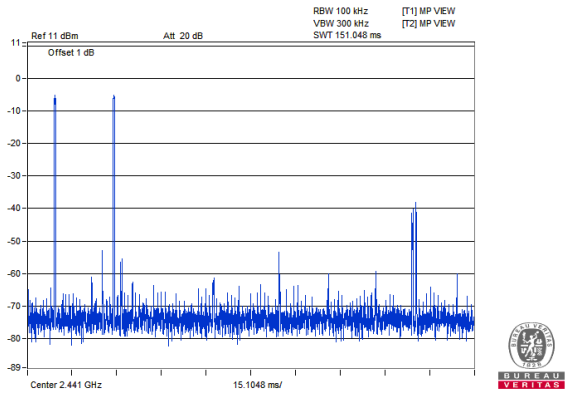
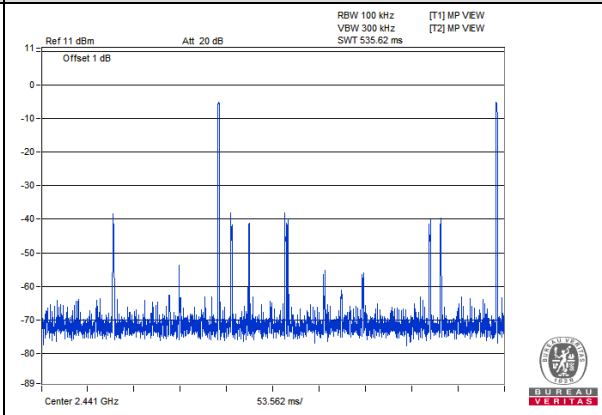
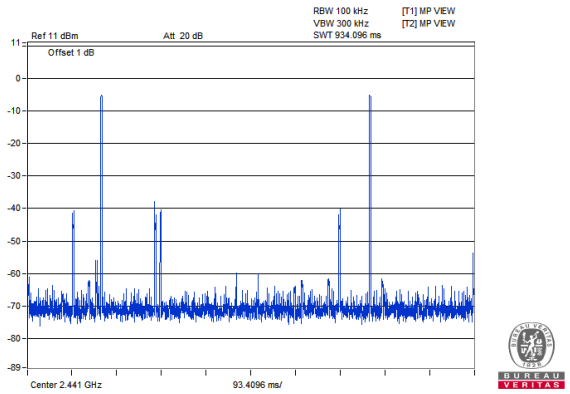
GFSK

MINIMUM FREQUENCY OCCUPATION TIME						
Mode	Number of Hopping Channel	Number of transmission in a period of 4*Dwell time*number of hopping channel	Length of transmission time (ms)	Result (ms)	Minimum Limit (ms)	PASS / FAIL
DH1	79	2	0.478	0.956	0.478	PASS
DH3	79	2	1.695	3.39	1.695	PASS
DH5	79	2	2.956	5.912	2.956	PASS

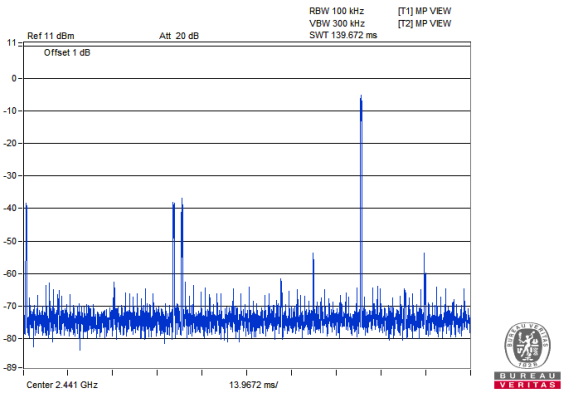
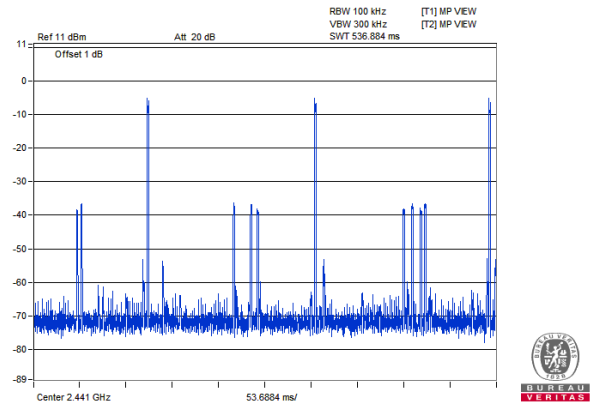
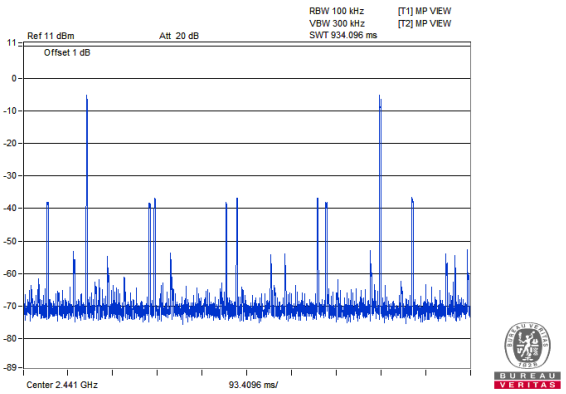
8DPSK

MINIMUM FREQUENCY OCCUPATION TIME						
Mode	Number of Hopping Channel	Number of transmission in a period of 4*Dwell time*number of hopping channel	Length of transmission time (ms)	Result (ms)	Minimum Limit (ms)	PASS / FAIL
3DH1	79	1	0.442	0.442	0.442	PASS
3DH3	79	3	1.699	5.097	1.699	PASS
3DH5	79	2	2.956	5.912	2.956	PASS

GFSK

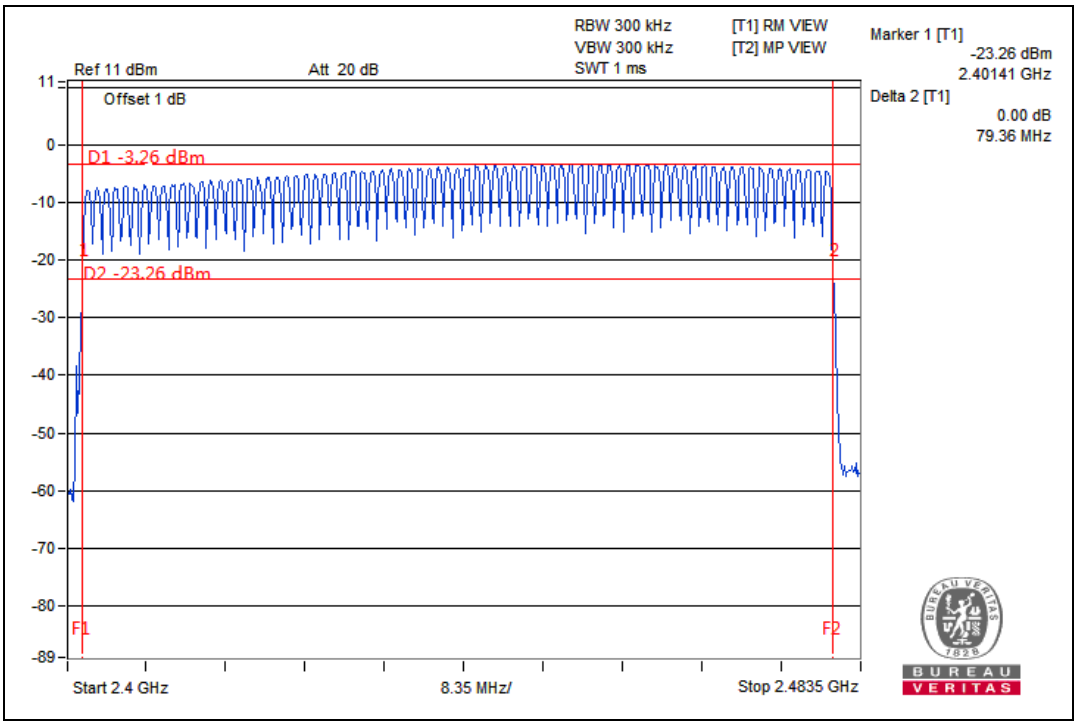
DH1	DH3
	
DH5	
	

8DPSK

3DH1	3DH3
	
3DH5	
	

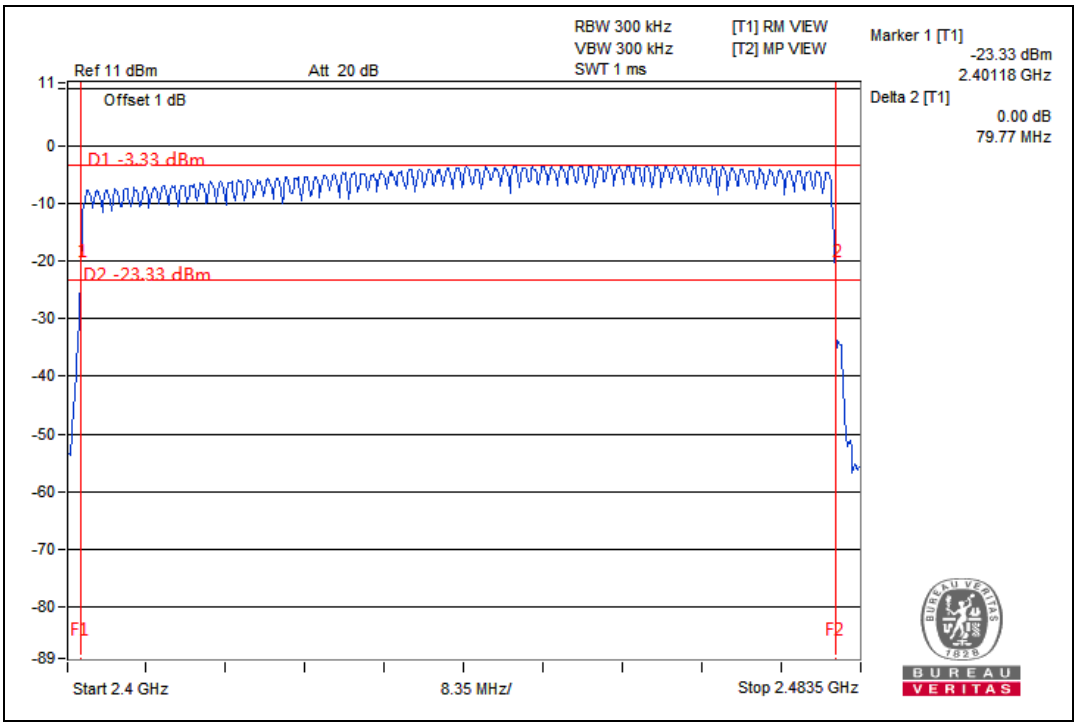
GFSK:

hopping sequence(s)		
Amount of Hopping frequency	**Limit**	**Pass/Fail**
79	≥15 hopping frequencies	Pass
Operating hopping Bandwidth (MHz)	**Limit**	**Pass/Fail**
79.36	≥58.45MHz	Pass



8DPSK:

hopping sequence(s)		
Amount of Hopping frequency	**Limit**	**Pass/Fail**
79	≥15 hopping frequencies	Pass
Operating hopping Bandwidth (MHz)	**Limit**	**Pass/Fail**
79.77	≥58.45MHz	Pass



3.4 HOPPING FREQUENCY SEPARATION

3.4.1 LIMITS OF HOPPING FREQUENCY SEPARATION

Condition	Limit
☐Non-adaptive frequency hopping systems	The minimum Hopping Frequency Separation shall be equal to Occupied Channel Bandwidth of a single hop, with a minimum separation of 100 kHz.
☒Adaptive frequency hopping systems	The minimum Hopping Frequency Separation shall be 100 kHz.

3.4.2 TEST PROCEDURE

Refer to chapter 5.4.5.2 of EN 300 328 V2.2.2.

Measurement	
☒Conducted measurement	☐ Radiated measurement

3.4.3 DEVIATION FROM TEST STANDARD

No deviation

3.4.4 TEST SETUP

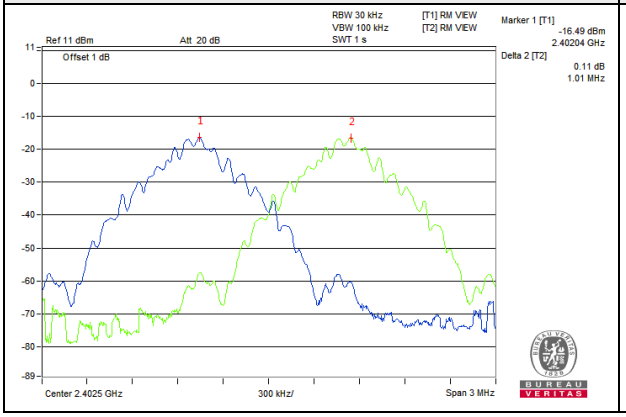
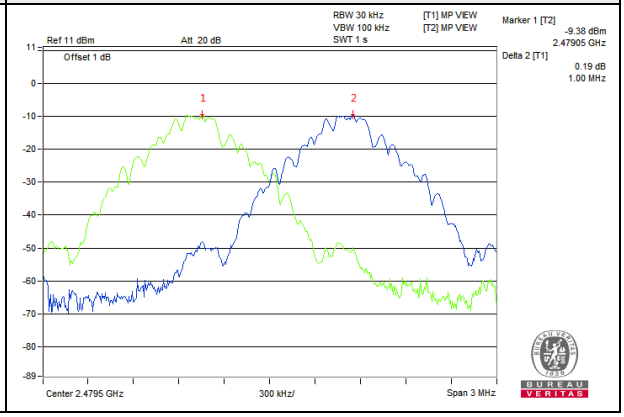
The measurement was performed at normal environmental conditions only. The measurement was performed on 2 adjacent hopping frequencies. The equipment was configured to operate under its worst case situation with respect to output power. (In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator.)

3.4.5 TEST RESULTS

GFSK:

Channel Number	Frequency (MHz)	Channel Separation (MHz)	Minimum Limit (MHz)	Pass /Fail
0	2402	1.01	0.1	Pass
78	2480	1.00	0.1	Pass

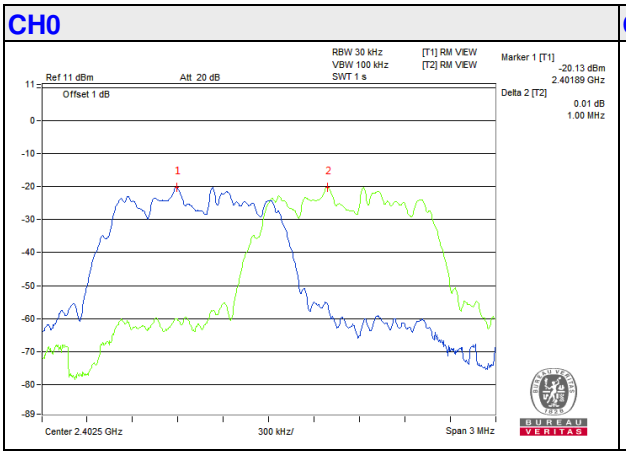
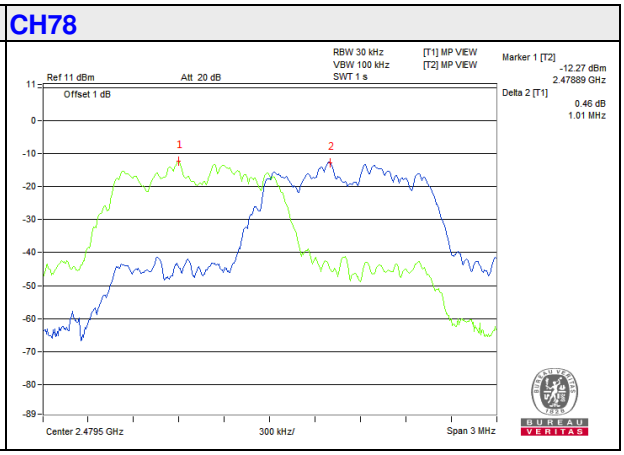
Note: The limitation is from OCB of a single hop and this value must greater and equal to 100kHz.

CH0	CH78
	

8DPSK:

Channel Number	Frequency (MHz)	Channel Separation (MHz)	Minimum Limit (MHz)	Pass /Fail
0	2402	1.00	0.1	Pass
78	2480	1.01	0.1	Pass

Note: The limitation is from OCB of a single hop and this value must greater and equal to 100kHz.

CH0	CH78
	

3.5 OCCUPIED CHANNEL BANDWIDTH

3.5.1 LIMIT OF OCCUPIED CHANNEL BANDWIDTH

Condition		Limit
All types of equipment		Shall fall completely within the band 2400 to 2483.5 MHz.
Additional requirement	For non-adaptive using wide band modulations other than FHSS system and e.i.r.p >10dBm.	Less than 20MHz
	For non-adaptive Frequency Hopping system and e.i.r.p >10dBm.	Less than 5MHz

3.5.2 TEST PROCEDURE

Refer to chapter 5.4.7.2 of EN 300 328 V2.2.2.

Measurement	
☒Conducted measurement	☐ Radiated measurement

3.5.3 DEVIATION FROM TEST STANDARD

No deviation.

3.5.4 TEST SETUP

The measurement was performed at normal environmental conditions only. This measurement was performed at the lowest and the highest channel. Using software to force the EUT to hop or transmit on a single Hopping Frequency. The equipment was configured to operate under its worst case situation with respect to output power. (In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator.) Controlling software has been activated to set the EUT on specific status.

3.5.5 TEST RESULTS

GFSK:

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	Measured Frequencies		Limit	Pass/Fail
			F_L (MHz)	F_H (MHz)		
0	2402	0.89	2401.56	2402.45	F_L > 2.4 GHz and F_H < 2.4835 GHz	PASS
78	2480	0.89	2479.56	2480.45		PASS

Note: F_L is the lowest frequency of the 99% occupied bandwidth of power envelope.
F_H is the highest frequency of the 99% occupied bandwidth of power envelope.

8DPSK:

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	Measured Frequencies		Limit	Pass/Fail
			F_L (MHz)	F_H (MHz)		
0	2402	1.17	2401.43	2402.6	F_L > 2.4 GHz and F_H < 2.4835 GHz	PASS
78	2480	1.20	2479.41	2480.61		PASS

Note: F_L is the lowest frequency of the 99% occupied bandwidth of power envelope.
F_H is the highest frequency of the 99% occupied bandwidth of power envelope.

BT-LE GFSK

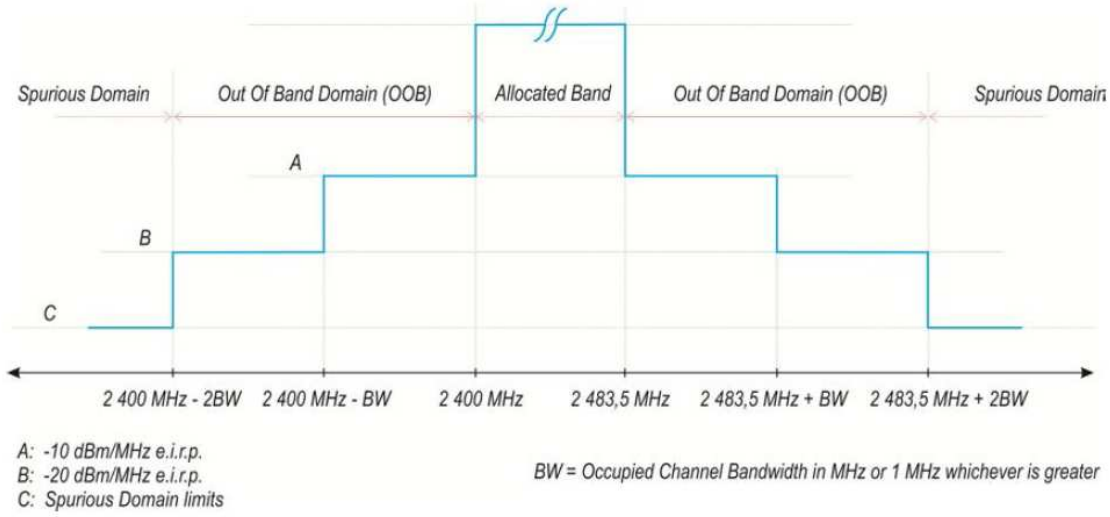
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	Measured Frequencies		Limit	Pass/Fail
			F_L (MHz)	F_H (MHz)		
0	2402	1.05	2401.50	2402.55	F_L > 2.4 GHz and F_H < 2.4835 GHz	PASS
39	2480	1.05	2479.50	2480.55		PASS

Note: F_L is the lowest frequency of the 99% occupied bandwidth of power envelope.
F_H is the highest frequency of the 99% occupied bandwidth of power envelope.

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

3.6.1 LIMITS OF TRANSMITTER UNWANTED EMISSION IN THE OUT-OF-BAND DOMAIN

Condition	Limit
Under normal conditions	The transmitter unwanted emissions in the out-of-band domain but outside the allocated band, shall not exceed the values provided by the mask in below figure.



3.6.2 TEST PROCEDURE

Refer to chapter 5.4.8.2 of EN 300 328 V2.2.2.

Measurement	
☒ Conducted measurement	☐ Radiated measurement

3.6.3 DEVIATION FROM TEST STANDARD

No deviation

3.6.4 TEST SETUP

The measurement was performed at normal environmental conditions only. The equipment was performed normal operation (hopping) during test. The equipment was configured to operate under its worst case situation with respect to output power. (In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator.) The frequency has to be recorded for the right and left end above threshold of highest and lowest channel respectively.

3.6.5 TEST RESULTS

GFSK

Channel Frequency		2402MHz				2480MHz			
Test Condition		OOB Emission (MHz)				OOB Emission (MHz)			
		2399 ~ 2400		2398 ~ 2399		2483.5 ~ 2484.5		2484.5 ~ 2485.5	
		Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)
Tnom 25℃	Vnom(v)	2399.50	-65.42	2398.50	-64.33	2484.00	-66.29	2485.00	-66.30
Power Limit (dBm/MHz)		-10.00		-20.00		-10.00		-20.00	
Pass/Fail		Pass		Pass		Pass		Pass	

8DPSK

Channel Frequency		2402MHz				2480MHz			
Test Condition		OOB Emission (MHz)				OOB Emission (MHz)			
		2398.79 ~ 2400		2397.58 ~ 2398.79		2483.5 ~ 2484.71		2484.71 ~ 2485.92	
		Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)
Tnom 25℃	Vnom(v)	2399.50	-65.78	2398.33	-66.91	2484.00	-66.35	2485.17	-65.97
Power Limit (dBm/MHz)		-10.00		-20.00		-10.00		-20.00	
Pass/Fail		Pass		Pass		Pass		Pass	

BT-LE GFSK

Channel Frequency		2402MHz				2480MHz			
Test Condition		OOB Emission (MHz)				OOB Emission (MHz)			
		2398.97 ~ 2400		2397.94 ~ 2398.97		2483.5 ~ 2484.52		2484.52 ~ 2485.54	
		Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)
Tnom 25℃	Vnom(v)	2399.50	-56.21	2398.45	-60.42	2484.00	-59.42	2485.05	-61.52
Power Limit (dBm/MHz)		-10.00		-20.00		-10.00		-20.00	
Pass/Fail		Pass		Pass		Pass		Pass	

3.7 TRANSMITTER SPURIOUS EMISSIONS

3.7.1 LIMITS OF TRANSMITTER SPURIOUS EMISSIONS

Frequency Range	Maximum Power Limit (e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz))	Bandwidth
30 MHz to 47 MHz	-36dBm	100kHz
47 MHz to 74 MHz	-54dBm	100kHz
74 MHz to 87,5 MHz	-36dBm	100kHz
87,5 MHz to 118 MHz	-54dBm	100kHz
118 MHz to 174 MHz	-36dBm	100kHz
174 MHz to 230 MHz	-54dBm	100kHz
230 MHz to 470 MHz	-36dBm	100kHz
470 MHz to 694 MHz	-54dBm	100kHz
694 MHz to 1 GHz	-36dBm	100kHz
1GHz ~ 12.75GHz	-30dBm	1MHz

Note: These limits are e.r.p. for emissions below 1 GHz and as e.i.r.p. for emissions above 1 GHz.

3.7.2 TEST PROCEDURE

Refer to chapter 5.4.9.2 of EN 300 328 V2.2.2.

Measurement Method	
☐ Conducted measurement	☒ Radiated measurement
For Conducted measurement: The level of unwanted emissions shall be measured as their power in a specified load (conducted spurious emissions) and their effective radiated power when radiated by the cabinet or structure of the equipment with the antenna connector(s) terminated by a specified load (cabinet radiation).	
Conducted measurement (For equipment with multiple transmit chains): ☐ Option 1: The results for each of the transmit chains for the corresponding 1MHz segments shall be added and compared with the limits. ☐ Option 2: The results for each of the transmit chains shall be individually compared with the limits after these limits have been reduced by 10 x log (N) (number of active transmit chains)	

3.7.3 DEVIATION FROM TEST STANDARD

No deviation.

3.7.4 TEST SETUP

1. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).
2. The measurements were performed when normal hopping was disabled. In this case measurements were performed when operating at the lowest and the highest hopping frequency.
3. The equipment was configured to operate under its worst case situation with respect to output power.
4. The measurement was performed at normal environmental conditions only. Controlling software has been activated to set the EUT on specific status.

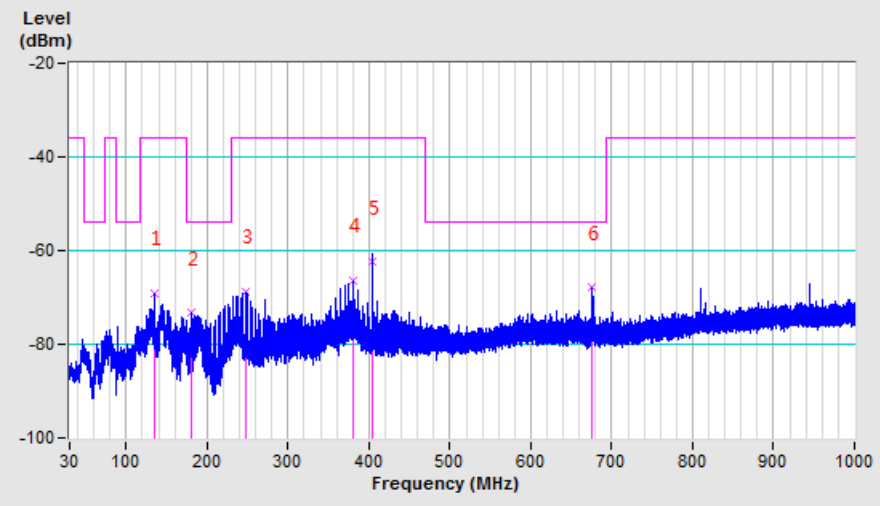
3.7.5 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

BT_GFSK

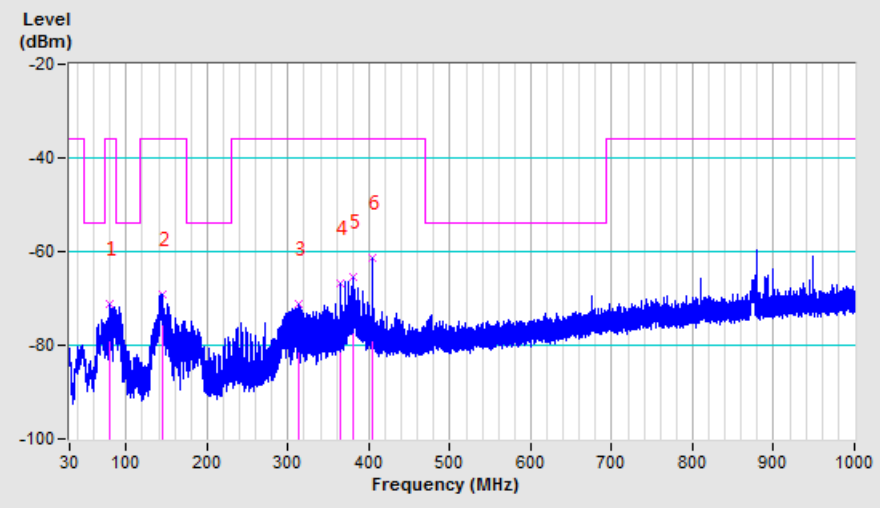
FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	78

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
134.99	H	-69.10	-36.00	-33.10
180.58	H	-73.32	-54.00	-19.32
247.28	H	-68.88	-36.00	-32.88
381.01	H	-66.52	-36.00	-30.52
404.94	H	-62.48	-36.00	-26.48
674.95	H	-67.90	-54.00	-13.90



FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	78

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
80.05	V	-71.23	-36.00	-35.23
144.01	V	-69.14	-36.00	-33.14
312.76	V	-71.16	-36.00	-35.16
364.07	V	-66.62	-36.00	-30.62
380.98	V	-65.50	-36.00	-29.50
404.97	V	-61.19	-36.00	-25.19



ABOVE 1GHz DATA

BT_GFSK_DH5

FREQUENCY RANGE	1GHz ~ 12.75GHz	OPERATING CHANNEL	0, 78

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
0	4804.00	H	-57.02	-30.00	-27.02
	4804.00	V	-55.86	-30.00	-25.86
	7206.00	H	-53.61	-30.00	-23.61
	7206.00	V	-53.76	-30.00	-23.76
78	4960.00	H	-52.30	-30.00	-22.30
	4960.00	V	-49.82	-30.00	-19.82
	7440.00	H	-51.59	-30.00	-21.59
	7440.00	V	-53.17	-30.00	-23.17

BT_8DPSK_3DH5

FREQUENCY RANGE	1GHz ~ 12.75GHz	OPERATING CHANNEL	0, 78

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
0	4804.00	H	-41.04	-30.00	-11.04
	4804.00	V	-37.01	-30.00	-7.01
	7206.00	H	-53.68	-30.00	-23.68
	7206.00	V	-48.44	-30.00	-18.44
78	4960.00	H	-48.61	-30.00	-18.61
	4960.00	V	-48.61	-30.00	-18.61
	7440.00	H	-45.71	-30.00	-15.71
	7440.00	V	-52.71	-30.00	-22.71

BT-LE GFSK

FREQUENCY RANGE	1GHz ~ 12.75GHz	OPERATING CHANNEL	0, 39

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
0	4803.48	V	-33.77	-30.00	-3.77
	4804.26	H	-35.88	-30.00	-5.88
	7206.00	H	-46.90	-30.00	-16.90
	7206.00	V	-44.41	-30.00	-14.41
39	4959.75	V	-33.88	-30.00	-3.88
	4960.53	**H**	**-33.29**	**-30.00**	**-3.29**
	7440.00	H	-47.46	-30.00	-17.46
	7440.00	V	-46.53	-30.00	-16.53

RECEIVER PARAMETERS

3.8 RECEIVER SPURIOUS RADIATION

3.8.1 LIMIT OF RECEIVER SPURIOUS RADIATION

Frequency Range	Maximum Power Limit (e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz))
30MHz ~ 1GHz	-57dBm
1GHz ~ 12.75GHz	-47dBm

Note: These limits are e.r.p. for emissions below 1 GHz and as e.i.r.p. for emissions above 1 GHz.

3.8.2 TEST PROCEDURE

Refer to chapter 5.4.10.2 of EN 300 328 V2.2.2.

Measurement Method	
☐ Conducted measurement	☒ Radiated measurement
For Conducted measurement: The level of unwanted emissions shall be measured as their power in a specified load (conducted spurious emissions) and their effective radiated power when radiated by the cabinet or structure of the equipment with the antenna connector(s) terminated by a specified load (cabinet radiation).	
Conducted measurement (For equipment with multiple transmit chains): ☐ Option 1: The results for each of the transmit chains for the corresponding 1MHz segments shall be added and compared with the limits. ☐ Option 2: The results for each of the transmit chains shall be individually compared with the limits after these limits have been reduced by 10 x log (N) (number of active transmit chains)	

3.8.3 DEVIATION FROM TEST STANDARD

No deviation.

3.8.4 TEST SETUP

1. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).
2. Testing was performed when the equipment was in a receive-only mode.
3. The measurements were performed when normal hopping was disabled. In this case measurements were performed when operating at the lowest and the highest hopping frequency.
4. The measurement was performed at normal environmental conditions only. Controlling software has been activated to set the EUT on specific status.

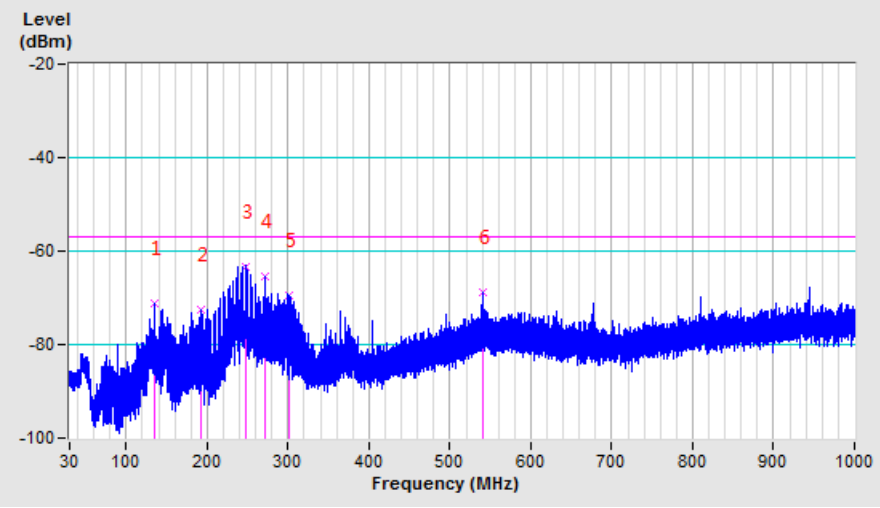
3.8.5 TEST RESULTS

RX BELOW 1GHz WORST-CASE DATA

GFSK

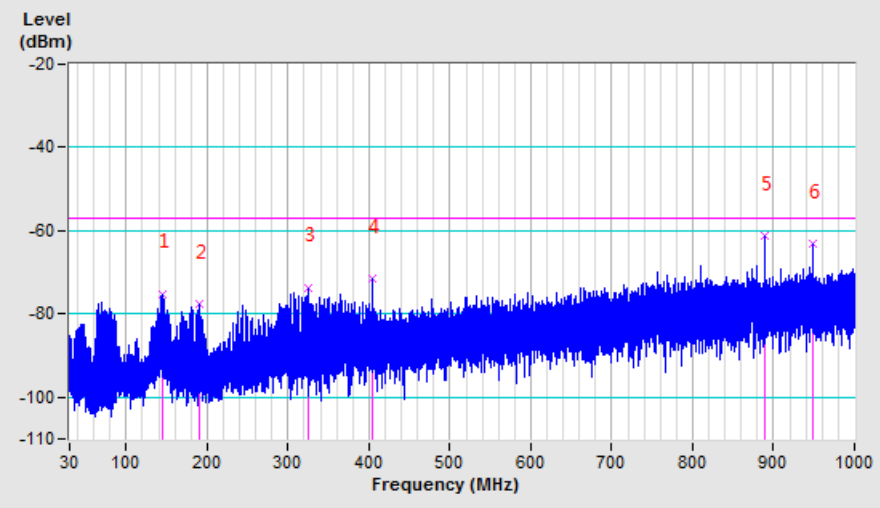
FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	78

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
134.99	H	-71.19	-57.00	-14.19
191.96	H	-72.53	-57.00	-15.53
247.28	H	-63.44	-57.00	-6.44
270.95	H	-65.44	-57.00	-8.44
300.40	H	-69.49	-57.00	-12.49
539.96	H	-68.71	-57.00	-11.71



FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	78

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	**Antenna Polarization**	**Level (dBm)**	**Limit (dBm)**	**Margin (dB)**
144.36	V	-75.14	-57.00	-18.14
190.31	V	-77.48	-57.00	-20.48
324.14	V	-73.62	-57.00	-16.62
404.94	V	-71.53	-57.00	-14.53
889.65	**V**	**-61.25**	**-57.00**	**-4.25**
948.69	V	-62.98	-57.00	-5.98



RX ABOVE 1GHz WORST-CASE DATA

GFSK

FREQUENCY RANGE	1GHz ~ 12.75GHz	OPERATING CHANNEL	0, 78

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
0	**4804.00**	**H**	**-50.28**	**-47.00**	**-3.28**
	4804.00	V	-51.25	-47.00	-4.25
	7206.00	H	-51.85	-47.00	-4.85
	7206.00	V	-50.85	-47.00	-3.85
78	4960.00	H	-51.25	-47.00	-4.25
	4960.00	V	-50.58	-47.00	-3.58
	7440.00	H	-50.57	-47.00	-3.57
	7440.00	V	-51.89	-47.00	-4.89

BT-LE GFSK

SPURIOUS EMISSION FREQUENCY RANGE	1GHz ~ 12.75GHz	OPERATING CHANNEL	0, 39

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
0	4804.00	H	-50.65	-47.00	-3.65
	4804.00	V	-51.55	-47.00	-4.55
	7206.00	H	-51.84	-47.00	-4.84
	7206.00	V	-52.74	-47.00	-5.74
39	4960.00	H	-50.65	-47.00	-3.65
	4960.00	V	-51.26	-47.00	-4.26
	7440.00	H	-51.84	-47.00	-4.84
	7440.00	V	-52.54	-47.00	-5.54

3.9 RECEIVER BLOCKING

3.9.1 LIMIT OF RECEIVER BLOCKING

This requirement applies to all receiver categories.

Receiver Category		
☐Category 1(EIRP>10dBm)	☒Category 2(EIRP≦10dBm)	☐Category 3(EIRP≦0dBm)
Minimum performance criterion	☒PER ≦10%	
	☐Alternative performance criteria (See note)	
Note: The manufacturer was declared the minimum performance criterion shall be no loss of the wireless transmission function needed for the intended use of the equipment.		

Receiver Category 1 Equipment			
Wanted signal mean power from companion device (dBm)(See note 1 and 4)	**Blocking Signal Frequency (MHz)**	**Blocking Signal Power (dBm) (See note 4)**	**Type of blocking signal**
(-133dBm+10xlog$_{10}$(OCBW) Or -68dBm whichever is less (See note 2)	2 380 2 504	-34	CW
(-139dBm+10xlog$_{10}$(OCBW) Or -74dBm 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.

Receiver Category 2 Equipment			
Wanted signal mean power from companion device (dBm)(See note 1 and 3)	**Blocking Signal Frequency (MHz)**	**Blocking Signal Power (dBm) (See note 3)**	**Type of blocking signal**
(-139dBm+10x$\log_{10}$(OCBW)+10dB) Or -74dBm+10dB) 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.			

Receiver Category 3 Equipment			
Wanted signal mean power from companion device (dBm) (See note 1 and 3)	**Blocking Signal Frequency (MHz)**	**Blocking Signal Power (dBm) (See note 3)**	**Type of blocking signal**
(-139dBm+10x$\log_{10}$(OCBW)+20dB) Or -74dBm+20dB) 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.			

3.9.2 TEST PROCEDURE

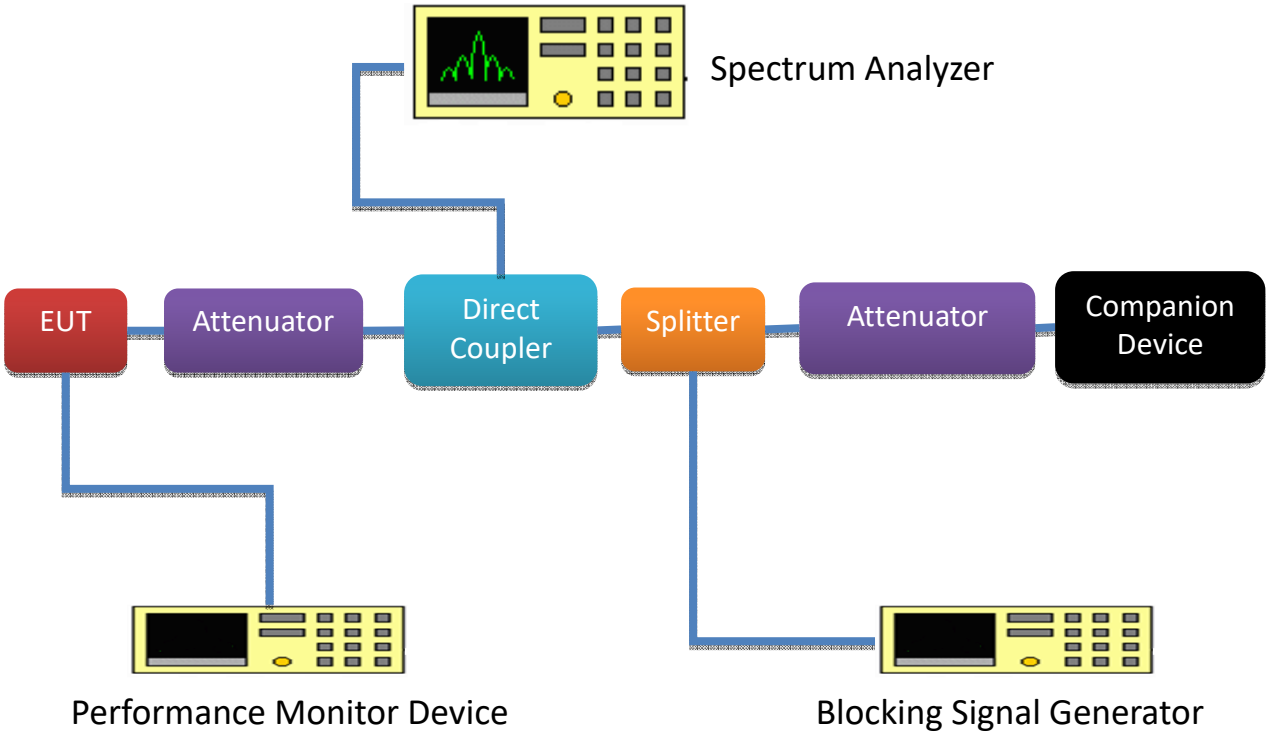
Refer to chapter 5.4.11.2 of EN 300 328 V2.2.2.

Measurement Method	
☒ Conducted measurement	☐ Radiated measurement

3.9.3 DEVIATION FROM TEST STANDARD

No deviation.

3.9.4 TEST SETUP CONFIGURATION



3.9.5 TEST RESULTS

FHSS:

Receiver Category 2 Equipment

Receiver blocking performance when operating at Hopping mode				
$OCBW_{min}$: 0.89MHz			antenna gain(G) : 2dBi	
The actual blocking signal power(Note1)			☒ at the antenna connector ☐ in front of the antenna	
Note1: For the conducted measurements , the level shall be corrected as follows: the actual blocking signal power = blocking signal power + antenna gain				
Wanted signal mean power from companion device (dBm)	**Blocking signal frequency (MHz)**	**The actual blocking signal power (dBm)**	**PER(%)**	**Pass/Fail**
-69.51	2380	-32	0.1	PASS
	2504		0.4	PASS
	2300		0.2	PASS
	2584		0.0	PASS

BT-LE:

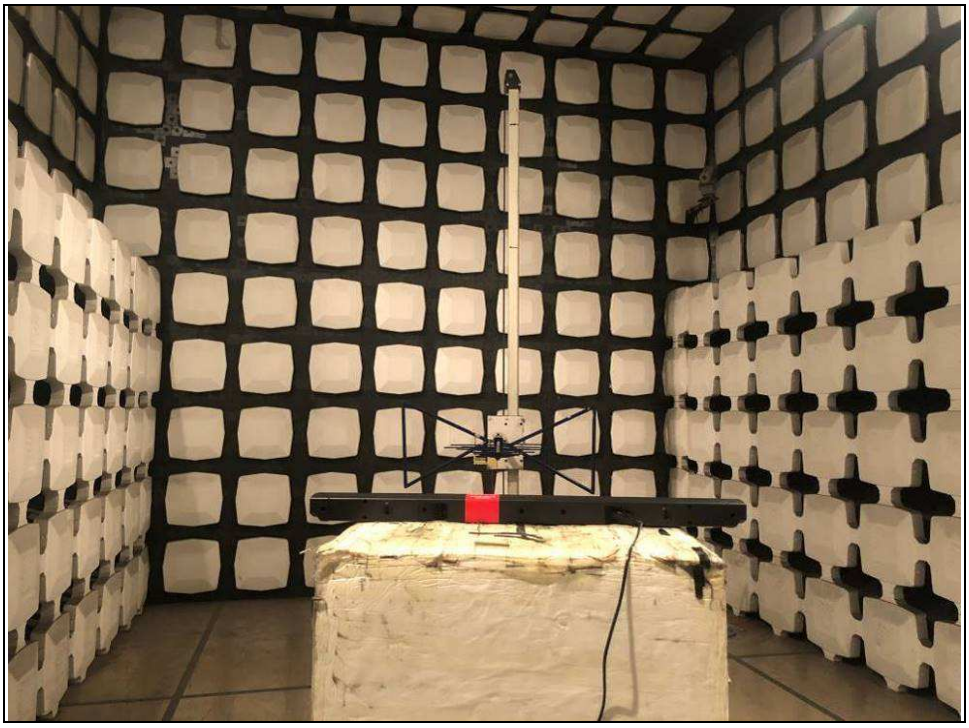
Receiver Catergory 2 Equipment

Receiver blocking performance when operating at the lowest operating channel(CH0)				
$OCBW_{min}$: 1.05MHz			antenna gain(G) : 2dBi	
The actual blocking signal power(Note1)			☒ at the antenna connector ☐ in front of the antenna	
Note1: For the conducted measurements , the level shall be corrected as follows: the actual blocking signal power = blocking signal power + antenna gain				
Wanted signal mean power from companion device (dBm)	**Blocking signal frequency (MHz)**	**The actual blocking signal power (dBm)**	**PER(%)**	**Pass/Fail**
-68.79	2300.0	-32	**0.3**	PASS
	2380.0		**0.0**	PASS

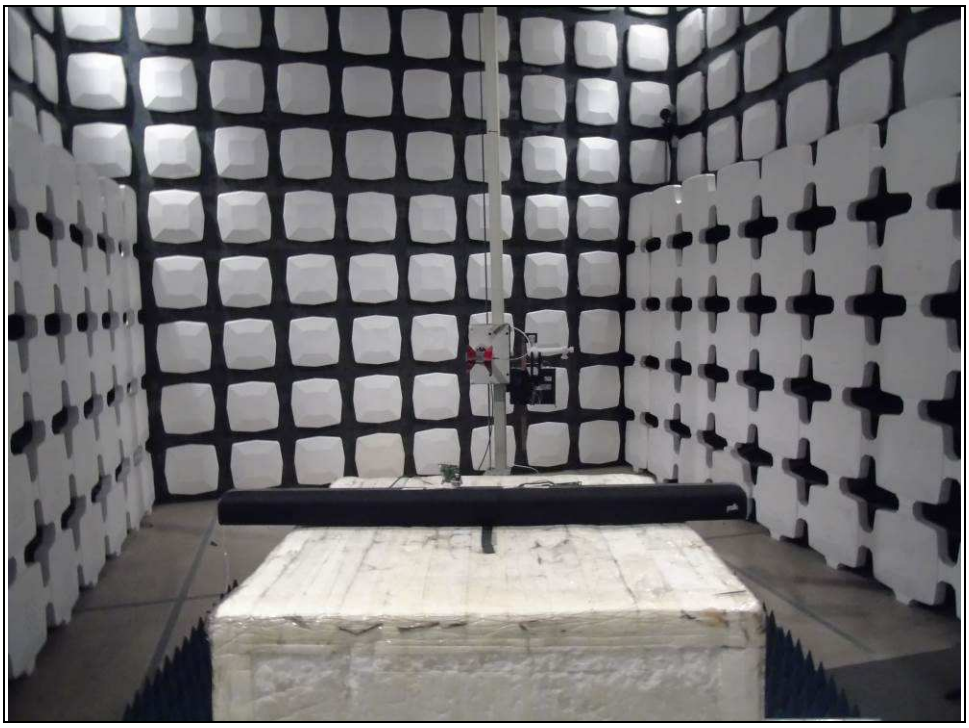
Receiver blocking performance when operating at the Highest operating channel(CH39)				
$OCBW_{min}$: 1.05MHz			antenna gain(G) : 2dBi	
The actual blocking signal power(Note1)			☒ at the antenna connector ☐ in front of the antenna	
Note1: For the conducted measurements , the level shall be corrected as follows: the actual blocking signal power = blocking signal power + antenna gain				
Wanted signal mean power from companion device (dBm)	**Blocking signal frequency (MHz)**	**The actual blocking signal power (dBm)**	**PER(%)**	**Pass/Fail**
-68.79	2504.0	-32	0.1	PASS
	2584.0		0.0	PASS

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

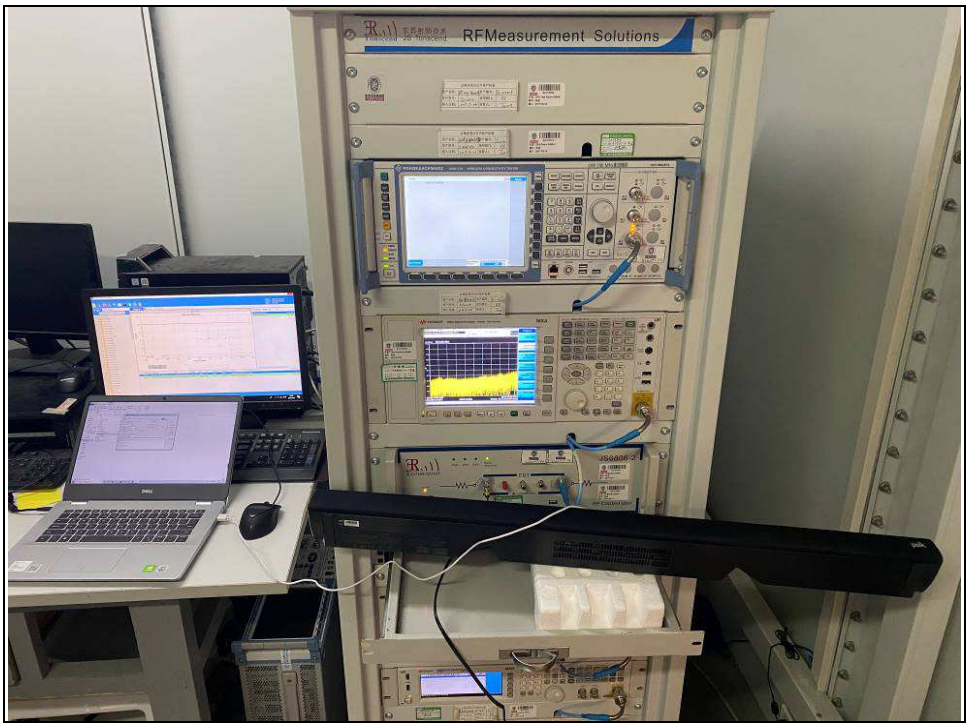
SPURIOUS EMISSION TEST BELOW 1GHz



SPURIOUS EMISSION TEST ABOVE 1GHz



RECEIVING BLOCKING



5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

--- END ---

TEST REPORT

Applicant	TCL Technoly Electronics(Huizhou) Co., Ltd.
Address	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, China, 516006.

Manufacturer or Supplier	Sound United, LLC
Address	1 Viper Way Vista, CA 92081 USA
Product	HOME THEATER SYSTEM
Brand Name	Polk
Model	SIGNA S2 SOUND BAR
Additional Model & Model Difference	N/A
Date of tests	May 31, 2018 ~ Jul. 18, 2018

The submitted sample of the above equipment has been tested according to the requirements of the following standard:

☒ **EN 300 328 V2.1.1 (2016-11)**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Andy Zhu Project Engineer / EMC Department	Approved by Glyn He Supervisor / EMC Department
	Date: Aug. 02, 2018

TABLE OF CONTENTS

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RE180531N039-1	Original release	Aug. 02, 2018

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

EN 300 328 V2.1.1		
Clause	**Test Parameter**	**Results**
	TRANSMITTER PARAMETERS	
4.3.1.2	RF Output Power	Pass
4.3.2.3	Power Spectral Density (Modulations other than FHSS equipment)	Pass
4.3.1.3	Duty cycle, Tx-sequence, Tx-gap (Non-adaptive equipment)	Not Applicable
4.3.1.4	Accumulated Transmit Time, Frequency Occupation and Hopping Sequence (FHSS equipment)	Pass
4.3.1.5	Hopping Frequency Separation (FHSS equipment)	Pass
4.3.1.6	Medium Utilisation (Non-Adaptive Equipment)	Not Applicable
4.3.1.7	Adaptivity (Adaptive Equipment)	Not Applicable (Note)
4.3.1.8	Occupied Channel Bandwidth	Pass
4.3.1.9	Transmitter Unwanted Emission in the OOB Domain	Pass
4.3.1.10	Transmitter Unwanted Emissions in the Spurious Domain	Pass
4.3.1.13	Geo-location capability	Not Applicable
	Receiver Parameters	
4.3.1.11	Receiver Spurious Emissions	Pass
4.3.1.12	Receiver Blocking	Pass

Note: These requirements do not apply for equipment with a maximum declared RF Output power of less than 10 dBm EIRP or for equipment when operating in a mode where the RF Output power is less than 10 dBm EIRP.

1.1 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 21,18	Mar. 20,19
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Mar. 21,18	Mar. 20,19
Bilog Antenna	Teseq	CBL 6111D	30643	Jul. 28, 17	Jul. 27, 18
Horn Antenna	ETS-Lindgren	3117	00062558	Jul. 02,18	Jul. 01,19
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Feb. 10,18	Feb. 09,19
Test Software	ADT	ADT_Radiated _V7.6.15.9.2	N/A	N/A	N/A
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170147	May 05,18	May 04,19
Amplifier	Burgeon	BPA-530	100220	Apr. 18,18	Apr. 18,19
Broadband Preamplifier (1GHz~18GHz)	SCHWARZBECK	BBV9718	305	Apr. 18,18	Apr. 18,19
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 08,17	Nov. 07,18
Power Sensor	Keysight	U2021XA	MY55060016	May 19,18	May 18,19
Power Sensor	Keysight	U2021XA	MY55060018	May 19,18	May 18,19
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 21, 17	Oct.20, 18
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep.05,17	Sep. 04,18
Oscilloscope	Agilent	DSO9254A	MY51260160	Nov. 08,17	Nov. 07,18
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV7	102331	Nov. 04,17	Nov. 03,18
Spectrum Analyzer	Keysight	N9020A	MY55400499	Mar. 21,18	Mar. 20,19
Signal Generator	Agilent	N5183A	MY50140980	Jan. 02,18	Jan. 01,19
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Jan. 02,18	Jan. 01,19
Wireless Connectivity Tester	Rohde&Schwarz	CMW270	100908	Jan. 10, 18	Jan. 09, 19
Vector Signal Generator	Rohde&Schwarz	SMBV100A	257199	Apr. 18, 18	Apr. 17, 19
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	Aug. 10,17	Aug. 09,18
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A	N/A

NOTE:

1. The test was performed in 966 Chamber and RF Oven room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.

For Receiver Blocking test and Adaptivity test:

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Wireless Connectivity Tester	Rohde&Schwarz	CMW270	100908	Jan. 10, 18	Jan. 09, 19
Test sofware	TonScend	JS1120-3-1	JS-001	N/A	N/A
Spectrum Analyzer	Keysight	N9020A	MY55400499	Mar. 21,18	Mar. 20,19
Signal Generator	Agilent	N5183A	MY50140980	Jan. 02,18	Jan. 01,19
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Jan. 02,18	Jan. 01,19

NOTE:

1. The test was performed in RF Oven room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

1.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Parameter	Uncertainty
Occupied Channel Bandwidth	±1.132x10^{-4} %
RF output power, conducted	±1.017dB
Power Spectral Density, conducted	±1.017dB
Unwanted Emissions, conducted	±2.855dB
All emissions, radiated	±2.855dB
Temperature	±0.7°C
Supply voltages	±0.04 %
Time	±4 %

1.3 MAXIMUM MEASUREMENT UNCERTAINTY

For the test methods, according to ETSI EN 300 328 standard, the measurement uncertainty figures shall be calculated in accordance with ETR 100 028-1 [4] and shall correspond to an expansion factor (coverage factor) k = 1,96 or k = 2 (which provide confidence levels of respectively 95 % and 95,45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Maximum measurement uncertainty

Parameter	Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±1,5 dB
Power Spectral Density, conducted	±3 dB
Unwanted Emissions, conducted	±3 dB
All emissions, radiated	±6 dB
Temperature	±3 °C
Supply voltages	±3 %
Time	±5 %

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	HOME THEATER SYSTEM
BRAND	Polk
TEST MODEL	SIGNA S2 SOUND BAR
ADDITIONAL MODELS	N/A
NOMINAL VOLTAGE	AC 100-240V 50-60Hz 40W
OPERATING TEMPERATURE RNAGE	-10 ~ +60℃
MODULATION TECHNOLOGY	FHSS, DTS
MODULATION TYPE	GFSK, π/4 DQPSK, 8DPSK For FHSS BT-LE(GFSK) for DTS
OPERATING FREQUENCY	2402MHz ~ 2480MHz
ADAPTIVE/NON-ADAPTIVE	☐ non-adaptive Equipment ☒ adaptive Equipment without the possibility to switch to a non-adaptive mode ☐ adaptive Equipment which can also operate in a non-adaptive mode
EIRP POWER (MAX.)	3.88dBm
ANTENNA TYPE	PCB Antenna, 2dBi Gain
DATA CABLE SUPPLIED	Optical Line: Unshielded detachable 1.80m AC Line: Unshielded detachable 1.45m HDMI Line: Shielded detachable 1.50m

NOTE:

1. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.
2. For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.
3. Please refer to the EUT photo document (Reference No.: 180531N039) for detailed product photo.

2.2 DESCRIPTION OF TEST MODES

79 channels are provided to BT (GFSK, π/4 DQPSK, 8 DPSK)

CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
0	**2402**	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	**78**	**2480**
19	2421	**39**	**2441**	59	2461		

40 channels are provided to BT-LE (GFSK)

CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

2.2.1 CONFIGURATION OF SYSTEM UNDER TEST

Please see section 4 photograph of the test configuration for reference.

2.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT Configure Mode	Applicable to									Description
	ROP	PSD	ATT/FO/HS	HFS	OCB	OOB	SE< 1G	SE≥ 1G	RB	
A	√	√	√	√	√	√	√	√	√	Powered by AC 230V

Where **ROP:** RF Output Power **PSD:** Power Spectral Density

ATT/MFO/HS: Accumulated Transmit Time / Frequency Occupation/ Hopping Sequence **DC/TS/TG:** Duty Cycle/ Tx-Sequence / Tx-gap

HFS: Hopping Frequency Separation **OCB:** Occupied Channel Bandwidth

OOB: Transmitter r unwanted emissioin in the out-of-band domain **SE<1G:** Spurious Emissions below 1GHz

SE≥1G: Spurious Emissions above 1GHz **RB:** Receiver Blocking

RF OUTPUT POWER TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	Hopping mode	FHSS	GFSK	DH5
A	0 to 78	Hopping mode	FHSS	8DPSK	3DH5
A	0 to 39	0,19, 39	DTS	GFSK	1 Mbps

POWER SPECTRAL DENSITY TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 39	0,19, 39	DTS	GFSK	1 Mbps

ACCUMULATED TRANSMIT TIME / FREQUENCY OCCUPATION / HOPPING SEQUENCE:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	Hopping mode	FHSS	GFSK	DH1, DH3, DH5
A	0 to 78	Hopping mode	FHSS	8DPSK	3DH1, 3DH3, 3DH5

HOPPING FREQUENCY SEPARATION:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	0, 78	FHSS	GFSK	DH5
A	0 to 78	0, 78	FHSS	8DPSK	3DH5

OCCUPIED CHANNEL BANDWIDTH:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT configure mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	0, 78	FHSS	GFSK	DH5
A	0 to 78	0, 78	FHSS	8DPSK	3DH5
A	0 to 39	0, 39	DTS	GFSK	1 Mbps

TRANSMITTER UNWANTED EMISSION IN THE OUT-OF-BAND DOMAIN:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT configure mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	Hopping mode	FHSS	GFSK	DH5
A	0 to 78	Hopping mode	FHSS	8DPSK	3DH5
A	0 to 39	0, 39	DTS	GFSK	1 Mbps

SPURIOUS EMISSIONS TEST (BELOW 1 GHZ):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT configure mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
B	0 to 78	78	FHSS	GFSK	DH5
B	0 to 39	39	DTS	GFSK	1 Mbps

SPURIOUS EMISSIONS TEST (ABOVE 1 GHZ):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT configure mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
B	0 to 78	0, 78	FHSS	GFSK	DH5
B	0 to 78	0, 78	FHSS	8DPSK	3DH5
B	0 to 39	0, 39	DTS	GFSK	1 Mbps

RECEIVER BLOCKING TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	Hopping mode	FHSS	GFSK	DH5
A	0 to 39	0, 39	DTS	GFSK	1 Mbps

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
ROP	25deg. C, 60%RH	AC 230V 50Hz	Sen He
PSD	25deg. C, 60%RH	AC 230V 50Hz	Sen He
ATT/MFO/HS	25deg. C, 60%RH	AC 230V 50Hz	Sen He
HFS	25deg. C, 60%RH	AC 230V 50Hz	Sen He
OCB	25deg. C, 60%RH	AC 230V 50Hz	Sen He
OOB	25deg. C, 60%RH	AC 230V 50Hz	Sen He
SE<1G	25deg. C, 55%RH	AC 230V 50Hz	Arnold
SE≥1G	25deg. C, 55%RH	AC 230V 50Hz	Arnold
RB	25deg. C, 60%RH	AC 230V 50Hz	Sen He

2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit without any other necessary accessory or support units.

2.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

EN 300 328 V2.1.1 (2016-11)

All test items have been performed and recorded as per the above standards.

3 TEST PROCEDURE AND RESULTS

TRANSMITTER PARAMETERS

3.1 RF OUTPUT POWER

3.1.1 LIMITS OF RF OUTPUT POWER

CONDITION	FREQUENCY BAND	LIMIT (E.I.R.P)
Under all test conditions	2400 ~ 2483.5 MHz	AV: 20dBm

3.1.2 TEST PROCEDURES

Refer to chapter 5.4.2.2 of EN 300 328 V2.1.1.

MEASUREMENT METHOD	
☒ Conducted measurement	☐ Radiated measurement

3.1.3 DEVIATION FROM TEST STANDARD

No deviation.

3.1.4 TEST SETUP

The measurement was performed at both normal environmental conditions and at the extremes of the operating temperature. This measurement was performed during normal operation (hopping) and operating on all hopping positions. The equipment was configured to operate under its worst case situation with respect to output power. (In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator.)

3.1.5 TEST RESULTS

TEST CONDITION			EIRP POWER (dBm)	LIMIT (dBm)
GFSK				
Tnom(℃)	+25	Vnom(v)	2.32	20
Tmin(℃)	-10		**2.64**	20
Tmax(℃)	+60		1.49	20
8DPSK				
Tnom(℃)	+25	Vnom(v)	1.13	20
Tmin(℃)	-10		1.38	20
Tmax(℃)	+60		0.44	20

NOTE: EIRP = Conducted output power + ANT Gain

TEST CONDITION			EIRP POWER (dBm)			LIMIT (dBm)
			(CH0) 2402 MHz	(CH19) 2440 MHz	(CH39) 2480 MHz	
BT-LE GFSK						
T_{nom}(℃)	+25	Vnom(v)	2.96	3.17	3.55	20
T_{min}(℃)	-10		3.33	3.43	**3.88**	20
T_{max}(℃)	+60		2.56	2.53	2.87	20

NOTE: EIRP = Conducted output power + ANT Gain

3.2 POWER SPECTRAL DENSITY

3.2.1 LIMIT OF POWER SPECTRAL DENSITY

CONDITION	FREQUENCY BAND	LIMIT (e.i.r.p.)
Under normal conditions	2400 ~ 2483.5 MHz	10dBm / 1MHz

3.2.2 TEST PROCEDURE

Refer to chapter 5.4.3.2 of ETSI EN 300 328 V2.1.1.

Measurement Method	
☒ Conducted measurement	☐ Radiated measurement
☒ Option 1: For equipment with continuous and non-continuous transmissions	
☐ Option 2: For equipment with continuous transmission capability or for equipment operating (or with the capability to operate) with a constant duty cycle (e.g. Frame Basedequipment)	

3.2.3 DEVIATION FROM TEST STANDARD

No deviation.

3.2.4 TEST SETUP

The test setup has been constructed as the normal test condition. In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator. Controlling software has been activated to set the EUT on specific status.

3.2.5 TEST RESULTS

BT-LE GFSK

CHANNEL	CHANNEL FREQUENCY (MHz)	POWER DENSITY (dBm/1MHz) (E.I.R.P)	LIMIT (dBm/1MHz) (E.I.R.P)	PASS/FAIL
0	2402	2.88	10	PASS
19	2440	3.09	10	PASS
39	2480	3.46	10	PASS

3.3 ACCUMULATED TRANSMIT TIME, FREQUENCY OCCUPATION AND HOPPING SEQUENCE

3.3.1 LIMITS OF ACCUMULATED TRANSMIT TIME, FREQUENCY OCCUPATION AND HOPPING SEQUENCE

Accumulated Transmit Time	
Condition	**Limit**
☐Non-adaptive frequency hopping systems	≤ 15 ms
☒Adaptive frequency hopping systems	≤ 400 ms

Frequency Occupation	
Condition	**Limit**
☐Non-adaptive frequency hopping systems	Equal to one dwell time within a period not exceeding four times the product of the dwell time per hop and the number of hopping frequencies in use.
☒Adaptive frequency hopping systems	

hopping Sequence(s)	
Condition	**Limit**
☐Non-adaptive frequency hopping systems	≥5 hopping frequencies or 15/minimum Hopping Frequency Separation in MHz , whichever is the greater.
☒Adaptive frequency hopping systems	Operating frequency band ≥58.45MHz (Operating over a minimum of 70 % of the operating in the band 2,4 GHz to 2,4835 GHz)
	≥15 hopping frequencies or 15/minimum Hopping Frequency Separation in MHz, whichever is the greater.

3.3.2 TEST PROCEDURE

Refer to chapter 5.4.4.2 of EN 300 328 V2.1.1.

Measurement	
☒Conducted measurement	☐ Radiated measurement

3.3.3 DEVIATION FROM TEST STANDARD

No deviation

3.3.4 TEST SETUP

The measurement was performed at normal environmental conditions only. The equipment was configured to operate at its maximum Dwell Time and maximum Duty Cycle. The measurement was performed on a minimum of 2 hopping frequencies chosen arbitrary from the actual hopping sequence. (In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator.)

3.3.5 TEST RESULTS

GFSK:

Accumulated Transmit Time									
Mode	Number of Hopping Channel	Number of transmission in a period (channel number*0.4 sec)				Length of transmission time (ms)	Result (ms)	Limit (ms)	Pass / Fail
		Period (Sec)	Sweep time (Sec)	Times in a sweep	Number in a period				
DH1	79	31.6	4	39	308.1	0.478	147.2718	400	Pass
DH3	79	31.6	4	21	165.9	1.695	281.2005	400	Pass
DH5	79	31.6	4	10	79.0	2.956	233.5240	400	Pass

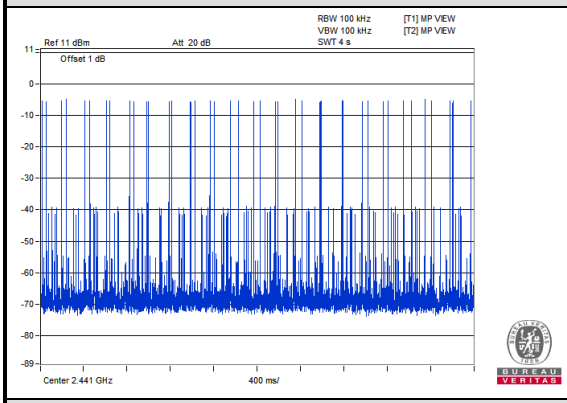
8DPSK:

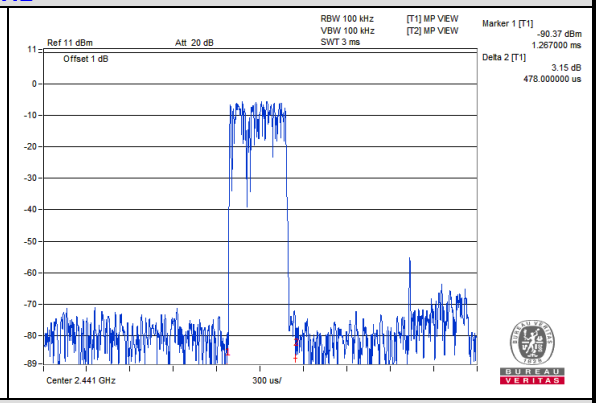
Accumulated Transmit Time									
Mode	Number of Hopping Channel	Number of transmission in a period (channel number*0.4 sec)				Length of transmission time (ms)	Result (ms)	Limit (ms)	Pass / Fail
		Period (Sec)	Sweep time (Sec)	Times in a sweep	Number in a period				
3DH1	79	31.6	4	39	308.1	0.442	136.1802	400	Pass
3DH3	79	31.6	4	20	158.0	1.699	268.4420	400	Pass
3DH5	79	31.6	4	12	94.8	2.956	280.2288	400	Pass

NOTE: Test plots of the transmitting time slot are shown as below.

GFSK:

DH1





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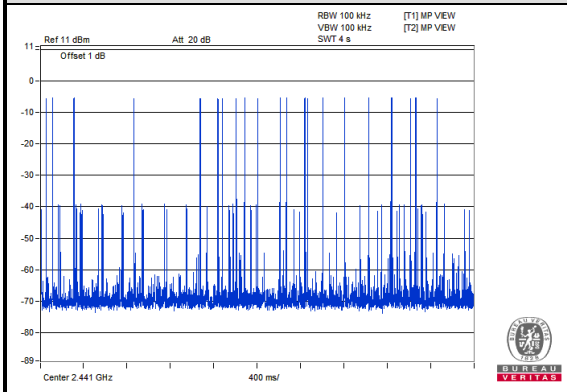
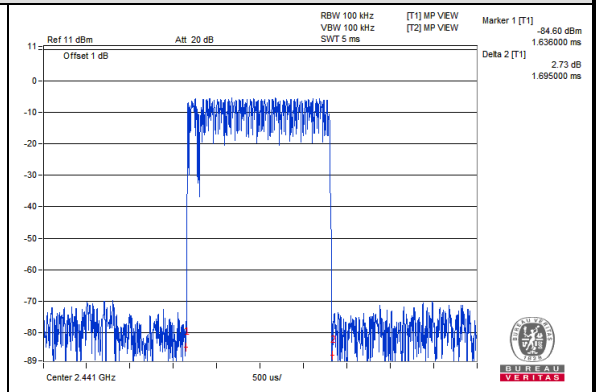
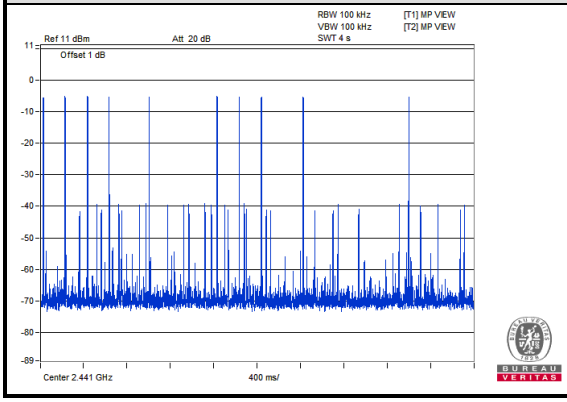
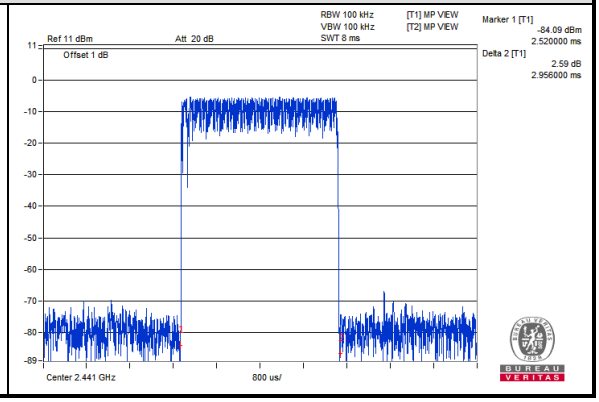




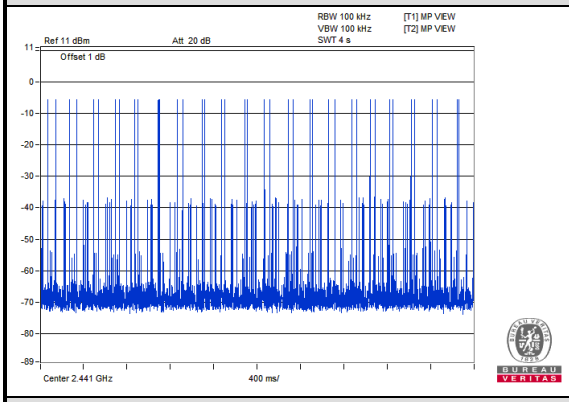
DH5

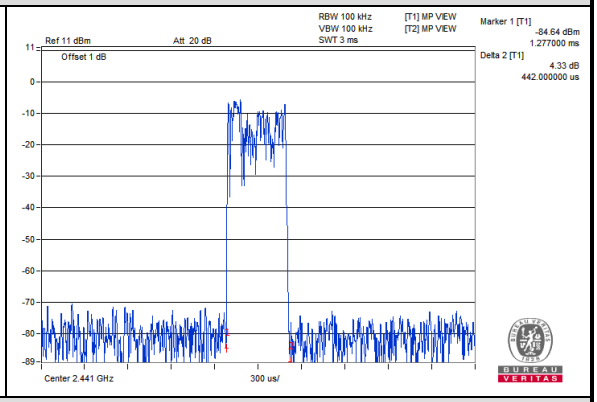




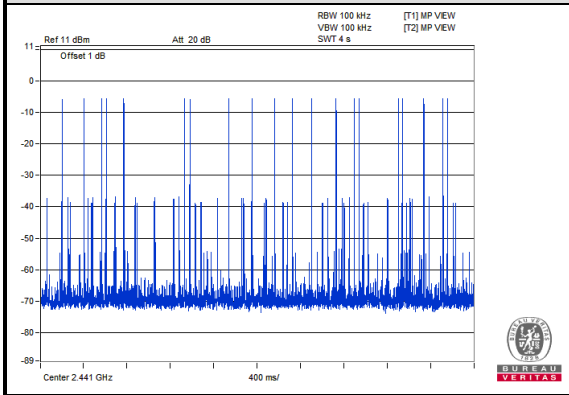
8DPSK:

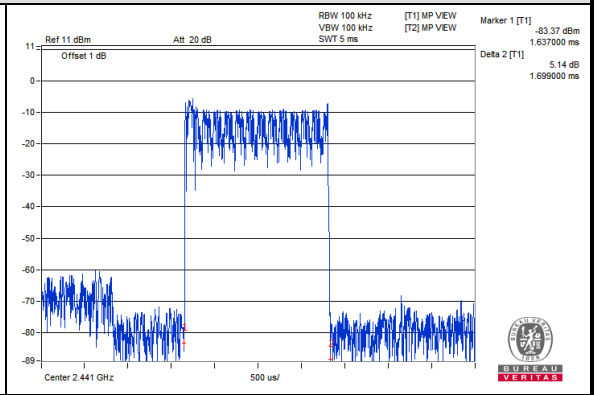
3DH1



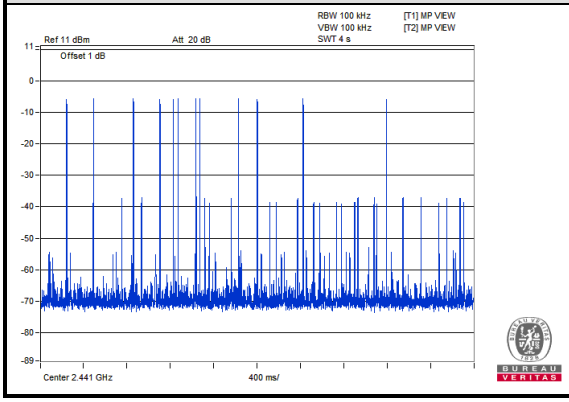


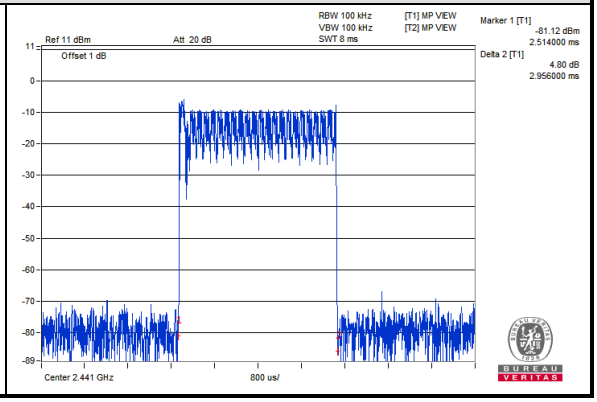
3DH3





3DH5





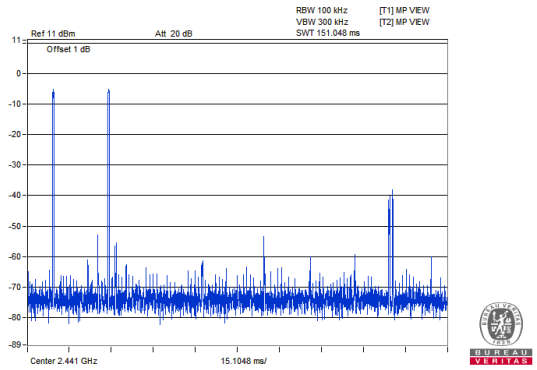
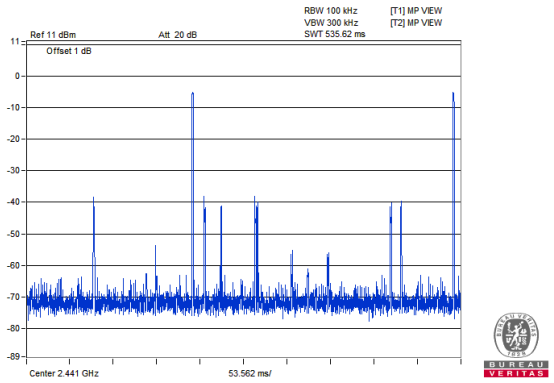
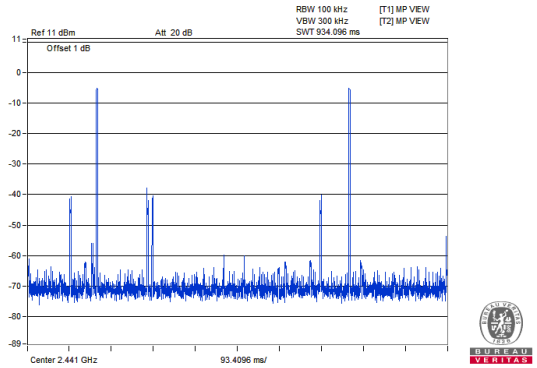
GFSK

MINIMUM FREQUENCY OCCUPATION TIME						
Mode	Number of Hopping Channel	Number of transmission in a period of 4*Dwell time*number of hopping channel	Length of transmission time (ms)	Result (ms)	Minimum Limit (ms)	PASS / FAIL
DH1	79	2	0.478	0.956	0.478	PASS
DH3	79	2	1.695	3.39	1.695	PASS
DH5	79	2	2.956	5.912	2.956	PASS

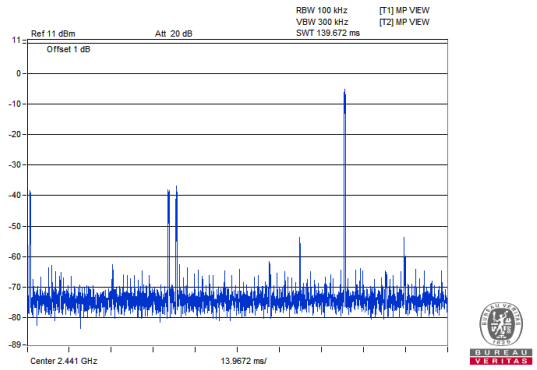
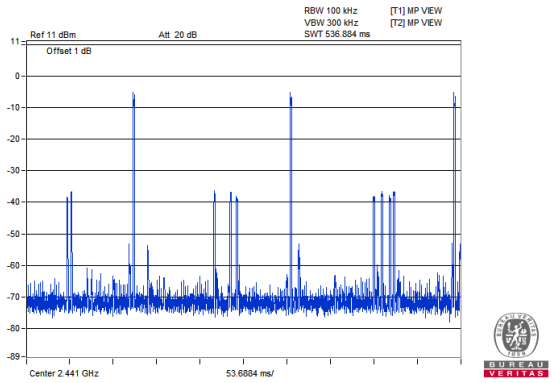
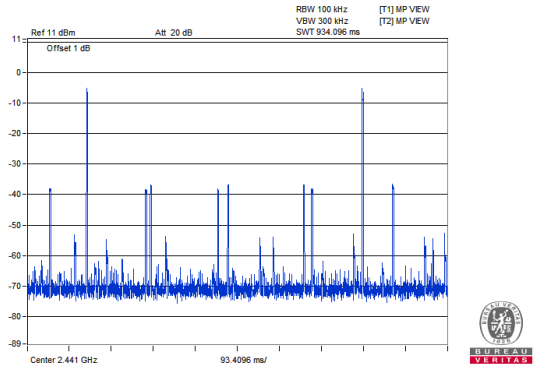
8DPSK

MINIMUM FREQUENCY OCCUPATION TIME						
Mode	Number of Hopping Channel	Number of transmission in a period of 4*Dwell time*number of hopping channel	Length of transmission time (ms)	Result (ms)	Minimum Limit (ms)	PASS / FAIL
3DH1	79	1	0.442	0.442	0.442	PASS
3DH3	79	3	1.699	5.097	1.699	PASS
3DH5	79	2	2.956	5.912	2.956	PASS

GFSK

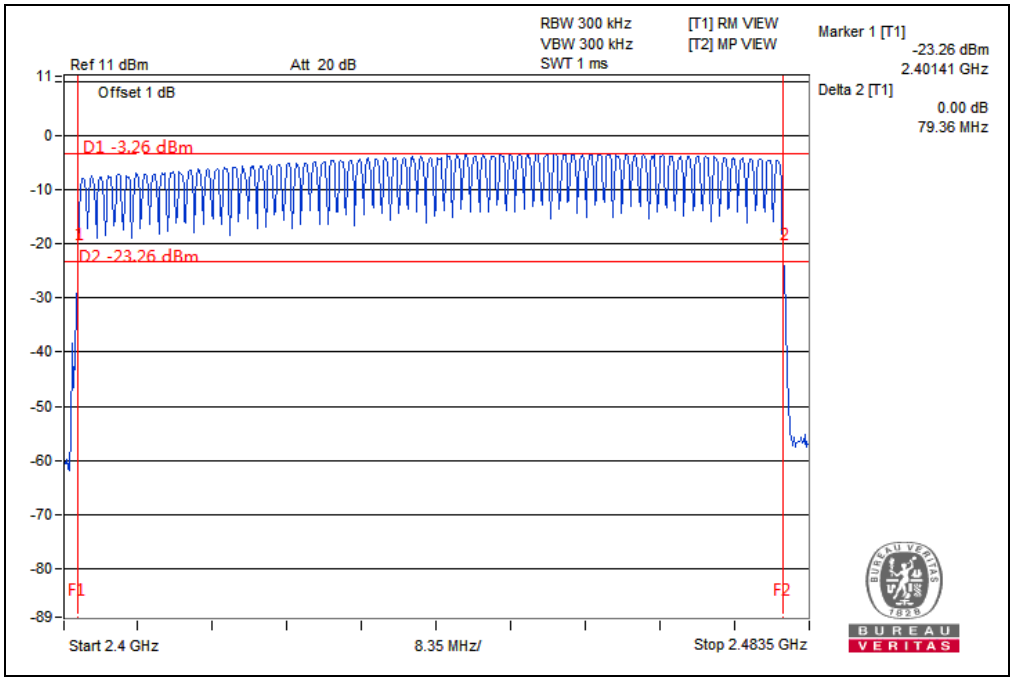
DH1	DH3
	
DH5	
	

8DPSK

3DH1	3DH3
	
3DH5	
	

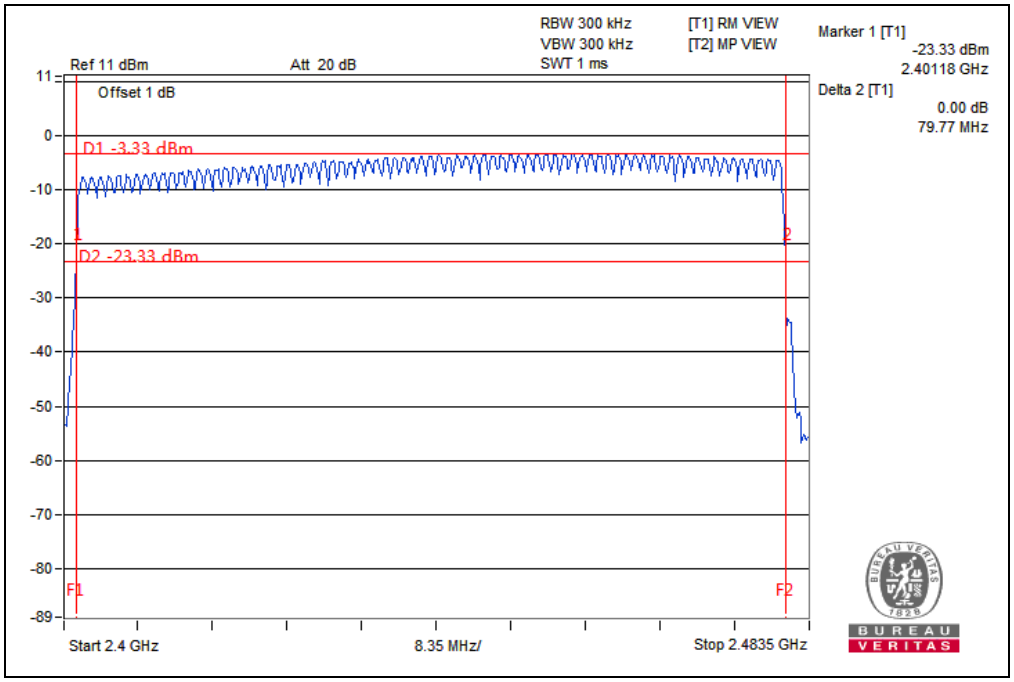
GFSK:

hopping sequence(s)		
Amount of Hopping frequency	**Limit**	**Pass/Fail**
79	≥15 hopping frequencies	Pass
Operating hopping Bandwidth (MHz)	**Limit**	**Pass/Fail**
79.36	≥58.45MHz	Pass



8DPSK:

hopping sequence(s)		
Amount of Hopping frequency	**Limit**	**Pass/Fail**
79	≥15 hopping frequencies	Pass
Operating hopping Bandwidth (MHz)	**Limit**	**Pass/Fail**
79.77	≥58.45MHz	Pass



3.4 HOPPING FREQUENCY SEPARATION

3.4.1 LIMITS OF HOPPING FREQUENCY SEPARATION

Condition	Limit
☐Non-adaptive frequency hopping systems	The minimum Hopping Frequency Separation shall be equal to Occupied Channel Bandwidth of a single hop, with a minimum separation of 100 kHz.
☒Adaptive frequency hopping systems	The minimum Hopping Frequency Separation shall be 100 kHz.

3.4.2 TEST PROCEDURE

Refer to chapter 5.4.5.2 of EN 300 328 V2.1.1.

Measurement	
☒Conducted measurement	☐ Radiated measurement

3.4.3 DEVIATION FROM TEST STANDARD

No deviation

3.4.4 TEST SETUP

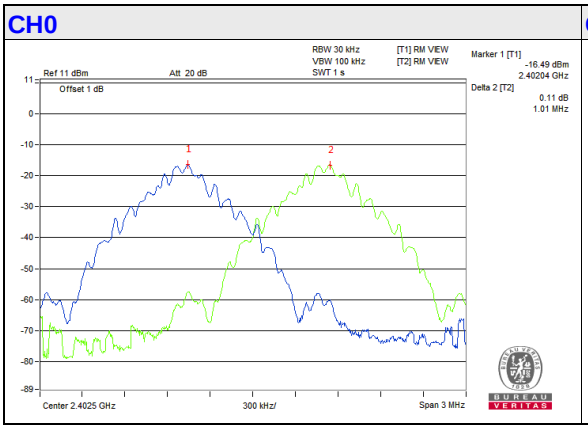
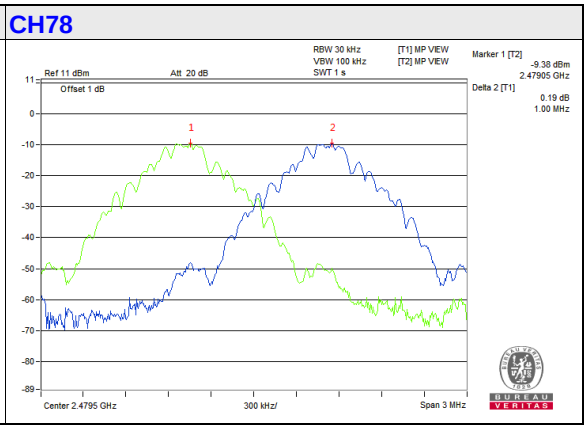
The measurement was performed at normal environmental conditions only. The measurement was performed on 2 adjacent hopping frequencies. The equipment was configured to operate under its worst case situation with respect to output power. (In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator.)

3.4.5 TEST RESULTS

GFSK:

Channel Number	Frequency (MHz)	Channel Separation (MHz)	Minimum Limit (MHz)	Pass /Fail
0	2402	1.01	0.1	Pass
78	2480	1.00	0.1	Pass

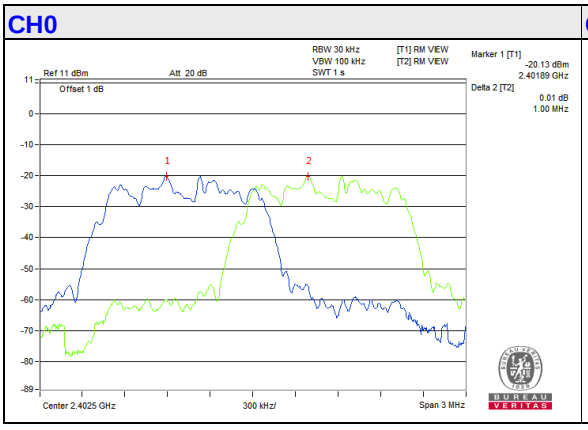
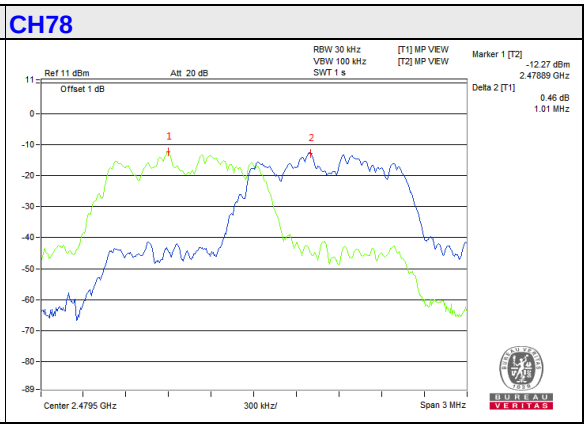
Note: The limitation is from OCB of a single hop and this value must greater and equal to 100kHz.

CH0	CH78
	

8DPSK:

Channel Number	Frequency (MHz)	Channel Separation (MHz)	Minimum Limit (MHz)	Pass /Fail
0	2402	1.00	0.1	Pass
78	2480	1.01	0.1	Pass

Note: The limitation is from OCB of a single hop and this value must greater and equal to 100kHz.

CH0	CH78
	

3.5 OCCUPIED CHANNEL BANDWIDTH

3.5.1 LIMIT OF OCCUPIED CHANNEL BANDWIDTH

Condition		Limit
All types of equipment		Shall fall completely within the band 2400 to 2483.5 MHz.
Additional requirement	For non-adaptive using wide band modulations other than FHSS system and e.i.r.p >10dBm.	Less than 20MHz
	For non-adaptive Frequency Hopping system and e.i.r.p >10dBm.	Less than 5MHz

3.5.2 TEST PROCEDURE

Refer to chapter 5.4.7.2 of EN 300 328 V2.1.1.

Measurement	
☒Conducted measurement	☐ Radiated measurement

3.5.3 DEVIATION FROM TEST STANDARD

No deviation.

3.5.4 TEST SETUP

The measurement was performed at normal environmental conditions only. This measurement was performed at the lowest and the highest channel. Using software to force the EUT to hop or transmit on a single Hopping Frequency. The equipment was configured to operate under its worst case situation with respect to output power. (In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator.) Controlling software has been activated to set the EUT on specific status.

3.5.5 TEST RESULTS

GFSK:

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	Measured Frequencies		Limit	Pass/Fail
			F_L (MHz)	F_H (MHz)		
0	2402	0.89	2401.56	2402.45	F_L > 2.4 GHz and F_H < 2.4835 GHz	PASS
78	2480	0.89	2479.56	2480.45		PASS

Note: F_L is the lowest frequency of the 99% occupied bandwidth of power envelope.
F_H is the highest frequency of the 99% occupied bandwidth of power envelope.

8DPSK:

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	Measured Frequencies		Limit	Pass/Fail
			F_L (MHz)	F_H (MHz)		
0	2402	1.17	2401.43	2402.6	F_L > 2.4 GHz and F_H < 2.4835 GHz	PASS
78	2480	1.20	2479.41	2480.61		PASS

Note: F_L is the lowest frequency of the 99% occupied bandwidth of power envelope.
F_H is the highest frequency of the 99% occupied bandwidth of power envelope.

BT-LE GFSK

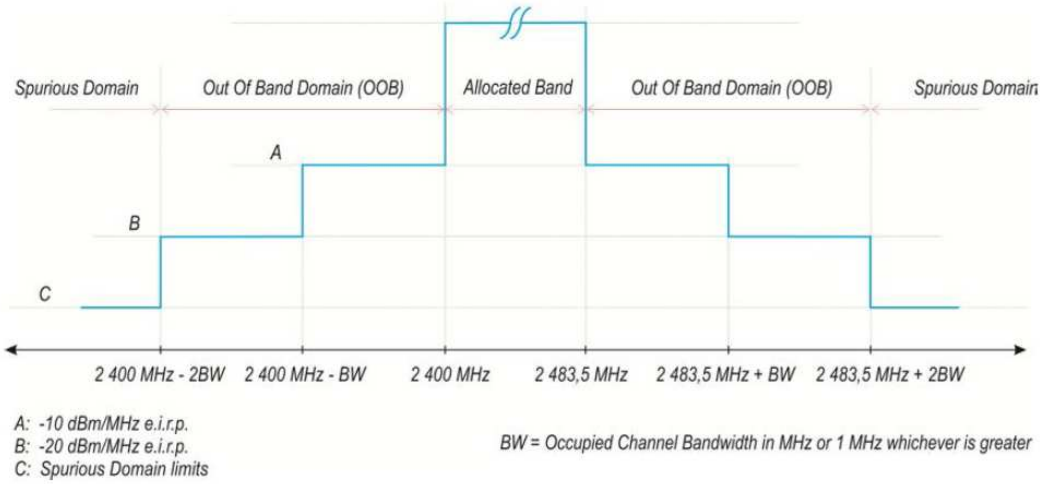
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	Measured Frequencies		Limit	Pass/Fail
			F_L (MHz)	F_H (MHz)		
0	2402	1.05	2401.50	2402.55	F_L > 2.4 GHz and F_H < 2.4835 GHz	PASS
39	2480	1.05	2479.50	2480.55		PASS

Note: F_L is the lowest frequency of the 99% occupied bandwidth of power envelope.
F_H is the highest frequency of the 99% occupied bandwidth of power envelope.

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

3.6.1 LIMITS OF TRANSMITTER UNWANTED EMISSION IN THE OUT-OF-BAND DOMAIN

Condition	Limit
Under normal conditions	The transmitter unwanted emissions in the out-of-band domain but outside the allocated band, shall not exceed the values provided by the mask in below figure.



3.6.2 TEST PROCEDURE

Refer to chapter 5.4.8.2 of EN 300 328 V2.1.1.

Measurement	
☒ Conducted measurement	☐ Radiated measurement

3.6.3 DEVIATION FROM TEST STANDARD

No deviation

3.6.4 TEST SETUP

The measurement was performed at normal environmental conditions only. The equipment was performed normal operation (hopping) during test. The equipment was configured to operate under its worst case situation with respect to output power. (In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator.) The frequency has to be recorded for the right and left end above threshold of highest and lowest channel respectively.

3.6.5 TEST RESULTS

GFSK:

Channel Frequency		2402MHz				2480MHz			
Test Condition		OOB Emission (MHz)				OOB Emission (MHz)			
		2399 ~ 2400		2398 ~ 2399		2483.5 ~ 2484.5		2484.5 ~ 2485.5	
		Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)
Tnom 25℃	Vnom(v)	2399.50	-65.42	2398.50	-64.33	2484.00	-66.29	2485.00	-66.30
Power Limit (dBm/MHz)		-10.00		-20.00		-10.00		-20.00	
Pass/Fail		Pass		Pass		Pass		Pass	

8DPSK:

Channel Frequency		2402MHz				2480MHz			
Test Condition		OOB Emission (MHz)				OOB Emission (MHz)			
		2398.83 ~ 2400		2397.66 ~ 2398.83		2483.5 ~ 2484.7		2484.7 ~ 2485.9	
		Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)
Tnom 25℃	Vnom(v)	2399.50	-65.78	2398.33	-66.91	2484.00	-66.35	2485.17	-65.97
Power Limit (dBm/MHz)		-10.00		-20.00		-10.00		-20.00	
Pass/Fail		Pass		Pass		Pass		Pass	

BT-LE GFSK

Channel Frequency		2402MHz				2480MHz			
Test Condition		OOB Emission (MHz)				OOB Emission (MHz)			
		2398.95 ~ 2400		2397.9 ~ 2398.95		2483.5 ~ 2484.55		2484.55 ~ 2485.6	
		Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)
Tnom 25℃	Vnom(v)	2399.50	-56.21	2398.45	-60.42	2484.00	-59.42	2485.05	-61.52
Power Limit (dBm/MHz)		-10.00		-20.00		-10.00		-20.00	
Pass/Fail		Pass		Pass		Pass		Pass	

3.7 TRANSMITTER SPURIOUS EMISSIONS

3.7.1 LIMITS OF TRANSMITTER SPURIOUS EMISSIONS

Frequency Range	Maximum Power Limit (e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz))	Bandwidth
30 MHz to 47 MHz	-36dBm	100kHz
47 MHz to 74 MHz	-54dBm	100kHz
74 MHz to 87,5 MHz	-36dBm	100kHz
87,5 MHz to 118 MHz	-54dBm	100kHz
118 MHz to 174 MHz	-36dBm	100kHz
174 MHz to 230 MHz	-54dBm	100kHz
230 MHz to 470 MHz	-36dBm	100kHz
470 MHz to 862 MHz	-54dBm	100kHz
862 MHz to 1 GHz	-36dBm	100kHz
1GHz ~ 12.75GHz	-30dBm	1MHz

Note: These limits are e.r.p. for emissions below 1 GHz and as e.i.r.p. for emissions above 1 GHz.

3.7.2 TEST PROCEDURE

Refer to chapter 5.4.9.2 of EN 300 328 V2.1.1.

Measurement Method	
☐ Conducted measurement	☒ Radiated measurement
For Conducted measurement: The level of unwanted emissions shall be measured as their power in a specified load (conducted spurious emissions) and their effective radiated power when radiated by the cabinet or structure of the equipment with the antenna connector(s) terminated by a specified load (cabinet radiation).	
Conducted measurement (For equipment with multiple transmit chains): ☐ Option 1: The results for each of the transmit chains for the corresponding 1MHz segments shall be added and compared with the limits. ☐ Option 2: The results for each of the transmit chains shall be individually compared with the limits after these limits have been reduced by 10 x log (N) (number of active transmit chains)	

3.7.3 DEVIATION FROM TEST STANDARD

No deviation.

3.7.4 TEST SETUP

1. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).
2. The measurements were performed when normal hopping was disabled. In this case measurements were performed when operating at the lowest and the highest hopping frequency.
3. The equipment was configured to operate under its worst case situation with respect to output power.
4. The measurement was performed at normal environmental conditions only. Controlling software has been activated to set the EUT on specific status.

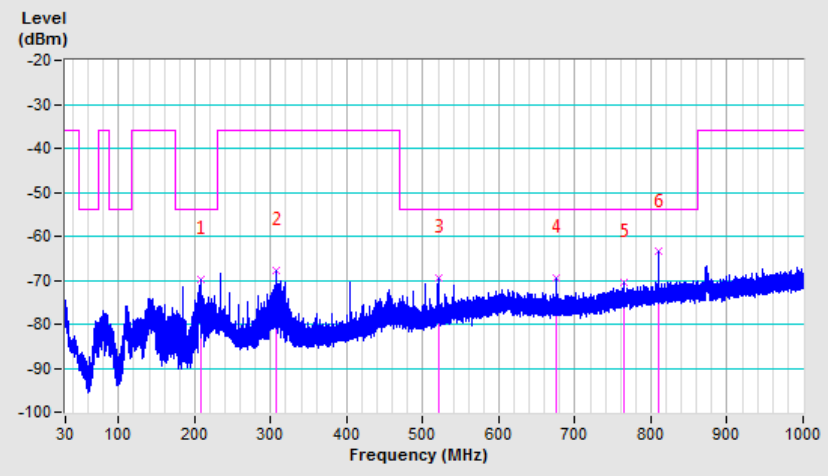
3.7.5 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

BT_GFSK

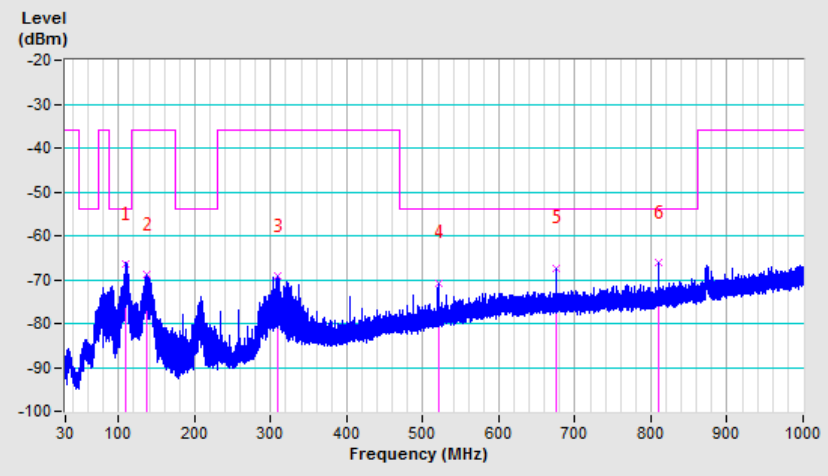
FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	78

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
207.28	H	-69.91	-54.00	-15.91
307.16	H	-67.88	-36.00	-31.88
520.01	H	-69.51	-54.00	-15.51
674.95	H	-69.48	-54.00	-15.48
764.97	H	-70.54	-54.00	-16.54
809.98	H	-63.50	-54.00	-9.50



FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	78

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
108.89	V	-66.54	-54.00	-12.54
137.25	V	-68.95	-36.00	-32.95
309.68	V	-69.25	-36.00	-33.25
519.98	V	-70.88	-54.00	-16.88
674.95	V	-67.34	-54.00	-13.34
809.98	V	-66.22	-54.00	-12.22

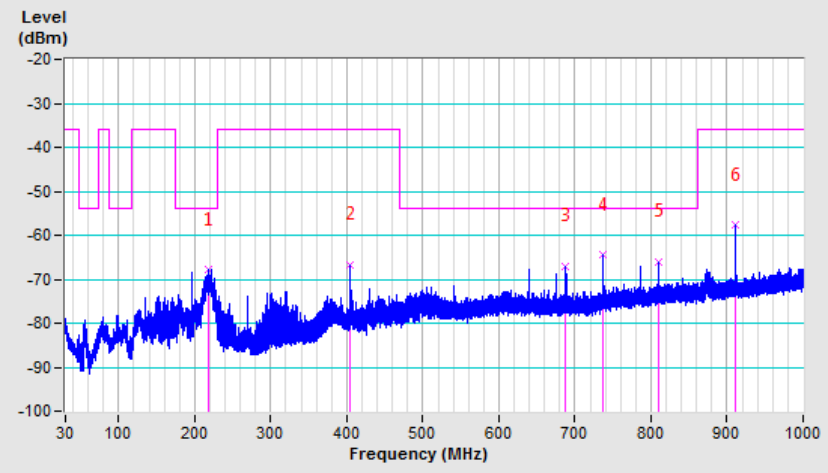


BELOW 1GHz WORST-CASE DATA

BT-LE GFSK

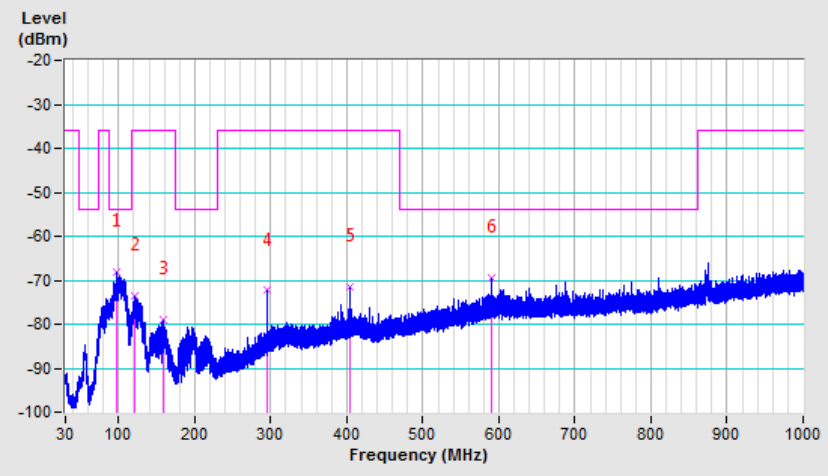
FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	39

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
218.92	H	-67.92	-54.00	-13.92
404.97	H	-66.68	-36.00	-30.68
688.11	H	-67.08	-54.00	-13.08
737.32	H	-64.56	-54.00	-10.56
809.98	H	-66.03	-54.00	-12.03
911.34	H	-57.77	-36.00	-21.77



FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	39

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
98.29	V	-68.01	-54.00	-14.01
121.57	V	-73.52	-36.00	-37.52
158.98	V	-79.03	-36.00	-43.03
294.87	V	-72.34	-36.00	-36.34
404.97	V	-71.43	-36.00	-35.43
589.85	V	-69.33	-54.00	-15.33



ABOVE 1GHz WORST-CASE DATA

BT_GFSK_DH5

FREQUENCY RANGE	1GHz ~ 12.75GHz	OPERATING CHANNEL	0, 78

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
0	4804.00	H	-57.02	-30.00	-27.02
	4804.00	V	-55.86	-30.00	-25.86
	7206.00	H	-53.61	-30.00	-23.61
	7206.00	V	-53.76	-30.00	-23.76
78	4960.00	H	-52.30	-30.00	-22.30
	4960.00	V	-49.82	-30.00	-19.82
	7440.00	H	-51.59	-30.00	-21.59
	7440.00	V	-53.17	-30.00	-23.17

BT_8DPSK_3DH5

FREQUENCY RANGE	1GHz ~ 12.75GHz	OPERATING CHANNEL	0, 78

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
0	4804.00	H	-41.04	-30.00	-11.04
	4804.00	V	-37.01	-30.00	-7.01
	7206.00	H	-53.68	-30.00	-23.68
	7206.00	V	-48.44	-30.00	-18.44
78	4960.00	H	-48.61	-30.00	-18.61
	4960.00	V	-48.61	-30.00	-18.61
	7440.00	H	-45.71	-30.00	-15.71
	7440.00	V	-52.71	-30.00	-22.71

BT-LE GFSK

FREQUENCY RANGE	1GHz ~ 12.75GHz	OPERATING CHANNEL	0, 39

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
0	4803.48	V	-33.77	-30.00	-3.77
	4804.26	H	-35.88	-30.00	-5.88
	7206.00	H	-46.90	-30.00	-16.90
	7206.00	V	-44.41	-30.00	-14.41
39	4959.75	V	-33.88	-30.00	-3.88
	4960.53	**H**	**-33.29**	**-30.00**	**-3.29**
	7440.00	H	-47.46	-30.00	-17.46
	7440.00	V	-46.53	-30.00	-16.53

RECEIVER PARAMETERS

3.8 RECEIVER SPURIOUS RADIATION

3.8.1 LIMIT OF RECEIVER SPURIOUS RADIATION

Frequency Range	Maximum Power Limit (e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz))
30MHz ~ 1GHz	-57dBm
1GHz ~ 12.75GHz	-47dBm

Note: These limits are e.r.p. for emissions below 1 GHz and as e.i.r.p. for emissions above 1 GHz.

3.8.2 TEST PROCEDURE

Refer to chapter 5.4.10.2 of EN 300 328 V2.1.1.

Measurement Method	
☐ Conducted measurement	☒ Radiated measurement
For Conducted measurement: The level of unwanted emissions shall be measured as their power in a specified load (conducted spurious emissions) and their effective radiated power when radiated by the cabinet or structure of the equipment with the antenna connector(s) terminated by a specified load (cabinet radiation).	
Conducted measurement (For equipment with multiple transmit chains): ☐ Option 1: The results for each of the transmit chains for the corresponding 1MHz segments shall be added and compared with the limits. ☐ Option 2: The results for each of the transmit chains shall be individually compared with the limits after these limits have been reduced by 10 x log (N) (number of active transmit chains)	

3.8.3 DEVIATION FROM TEST STANDARD

No deviation.

3.8.4 TEST SETUP

1. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).
2. Testing was performed when the equipment was in a receive-only mode.
3. The measurements were performed when normal hopping was disabled. In this case measurements were performed when operating at the lowest and the highest hopping frequency.
4. The measurement was performed at normal environmental conditions only. Controlling software has been activated to set the EUT on specific status.

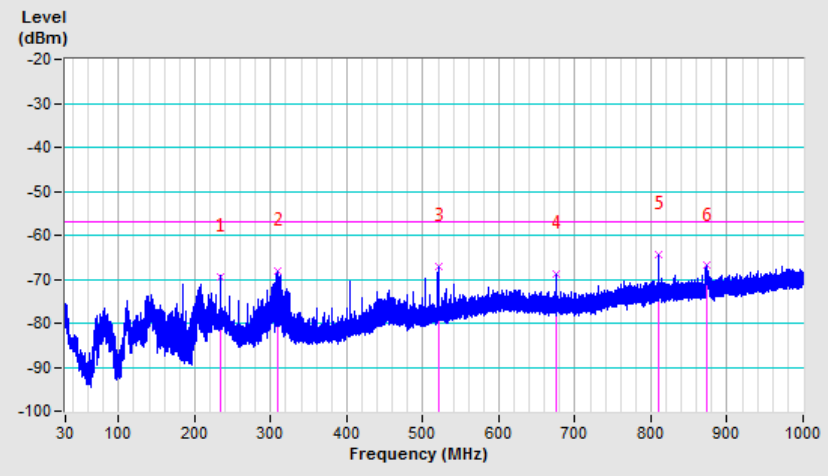
3.8.5 TEST RESULTS

RX WORST-CASE DATA

GFSK

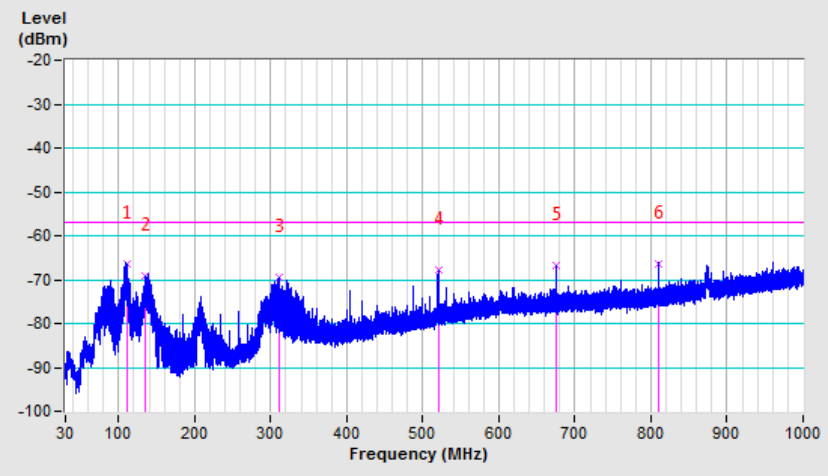
FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	0

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	**Antenna Polarization**	**Level (dBm)**	**Limit (dBm)**	**Margin (dB)**
233.44	H	-69.54	-57.00	-12.54
309.46	H	-68.02	-57.00	-11.02
519.98	H	-67.07	-57.00	-10.07
674.99	H	-68.87	-57.00	-11.87
809.98	**H**	**-64.38**	**-57.00**	**-7.38**
872.38	H	-66.93	-57.00	-9.93



FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	0

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
110.80	V	-66.36	-57.00	-9.36
135.41	V	-69.02	-57.00	-12.02
311.14	V	-69.55	-57.00	-12.55
519.98	V	-67.69	-57.00	-10.69
674.95	V	-66.85	-57.00	-9.85
809.94	V	-66.51	-57.00	-9.51

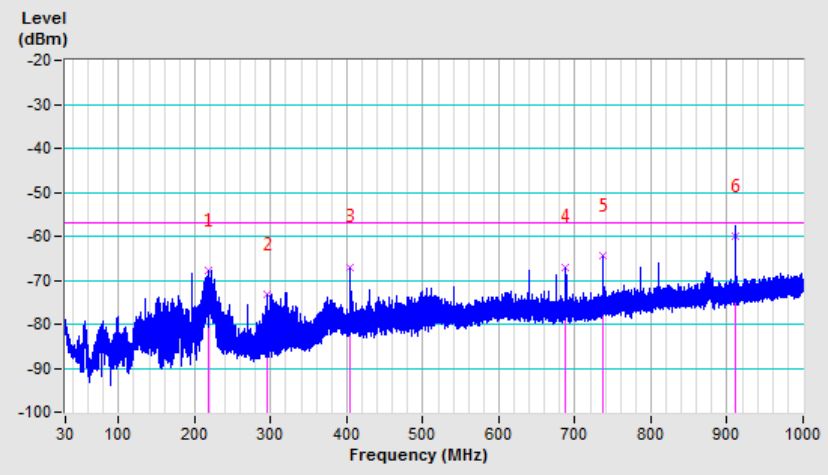


RX BELOW 1GHz WORST-CASE DATA

BT-LE GFSK

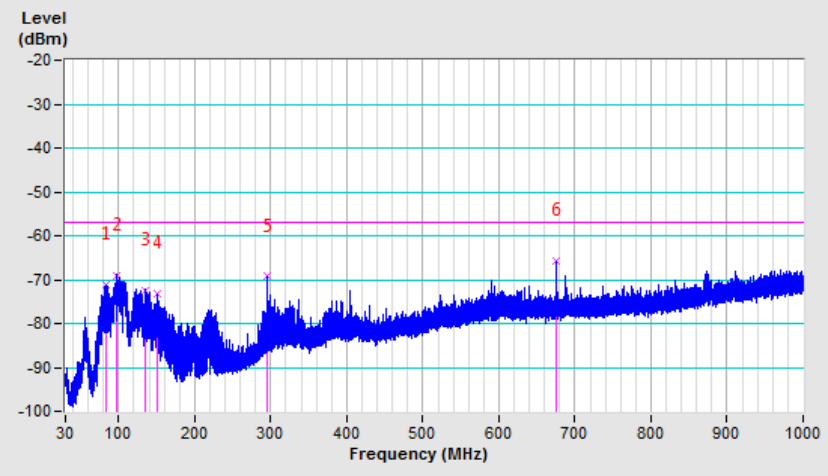
FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	39

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	**Antenna Polarization**	**Level (dBm)**	**Limit (dBm)**	**Margin (dB)**
218.92	H	-67.92	-57.00	-10.92
294.94	H	-73.33	-57.00	-16.33
404.97	H	-66.95	-57.00	-9.95
688.11	H	-67.08	-57.00	-10.08
737.32	H	-64.56	-57.00	-7.56
911.41	**H**	**-60.15**	**-57.00**	**-3.15**



FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	39

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
84.29	V	-71.04	-57.00	-14.04
98.26	V	-69.05	-57.00	-12.05
134.95	V	-72.48	-57.00	-15.48
151.09	V	-73.27	-57.00	-16.27
294.91	V	-69.32	-57.00	-12.32
674.99	V	-65.84	-57.00	-8.84



RX ABOVE 1GHz DATA

GFSK

FREQUENCY RANGE	1GHz ~ 12.75GHz	OPERATING CHANNEL	0, 78

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
0	**4804.00**	**H**	**-50.28**	**-47.00**	**-3.28**
	4804.00	V	-51.25	-47.00	-4.25
	7206.00	H	-51.85	-47.00	-4.85
	7206.00	V	-50.85	-47.00	-3.85
78	4960.00	H	-51.25	-47.00	-4.25
	4960.00	V	-50.58	-47.00	-3.58
	7440.00	H	-50.57	-47.00	-3.57
	7440.00	V	-51.89	-47.00	-4.89

BT-LE GFSK

SPURIOUS EMISSION FREQUENCY RANGE	1GHz ~ 12.75GHz	OPERATING CHANNEL	0, 39

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
0	4804.00	H	-50.65	-47.00	-3.65
	4804.00	V	-51.55	-47.00	-4.55
	7206.00	H	-51.84	-47.00	-4.84
	7206.00	V	-52.74	-47.00	-5.74
39	4960.00	H	-50.65	-47.00	-3.65
	4960.00	V	-51.26	-47.00	-4.26
	7440.00	H	-51.84	-47.00	-4.84
	7440.00	V	-52.54	-47.00	-5.54

3.9 RECEIVER BLOCKING

3.9.1 LIMIT OF RECEIVER BLOCKING

This requirement applies to all receiver categories.

Receiver Category		
☐Category 1(EIRP>10dBm)	☒Category 2(EIRP≦10dBm)	☐Category 3(EIRP≦0dBm)
Minimum performance criterion	☒PER ≦10%	
	☐Alternative performance criteria (See note)	
Note: The manufacturer was declared performance criteria is x% for the intended use of the equipment.		

Receiver Category 1 Equipment			
Wanted signal mean power from companion device (dBm)	**Blocking Signal Frequency (MHz)**	**Blocking Signal Power (dBm) (See note 2)**	**Type of blocking signal**
P_{min} + 6 dB	2 380 2 503.5	-53	CW
P_{min} + 6 dB	2 300 2 330 2 360	-47	CW
P_{min} + 6 dB	2 523.5 2 553.5 2 583.5 2 613.5 2 643.5 2 673.5	-47	CW
NOTE 1: P_{min} is the minimum level of the wanted signal (in dBm) required to meet the minimum performance criteria as defined in clause 4.3.2.11.3 in the absence of any blocking signal. NOTE 2: The levels specified are levels in front of the UUT antenna. In case of conducted measurements, the levels have to be corrected by the actual antenna assembly gain.			

Receiver Category 2 Equipment			
Wanted signal mean power from companion device (dBm)	**Blocking Signal Frequency (MHz)**	**Blocking Signal Power (dBm) (See note 2)**	**Type of blocking signal**
P_{min} + 6 dB	2 380 2 503.5	-57	CW
P_{min} + 6 dB	2 300 2 583.5	-47	CW
NOTE 1: P_{min} is the minimum level of the wanted signal (in dBm) required to meet the minimum performance criteria as defined in clause 4.3.2.11.3 in the absence of any blocking signal. NOTE 2: The levels specified are levels in front of the UUT antenna. In case of conducted measurements, the levels have to be corrected by the actual antenna assembly gain.			

Receiver Category 3 Equipment			
Wanted signal mean power from companion device (dBm)	**Blocking Signal Frequency (MHz)**	**Blocking Signal Power (dBm) (See note 2)**	**Type of blocking signal**
P_{min} + 12 dB	2 380 2 503.5	-57	CW
P_{min} + 12 dB	2 300 2 583.5	-47	CW
NOTE 1: P_{min} is the minimum level of the wanted signal (in dBm) required to meet the minimum performance criteria as defined in clause 4.3.2.11.3 in the absence of any blocking signal. NOTE 2: The levels specified are levels in front of the UUT antenna. In case of conducted measurements, the levels have to be corrected by the actual antenna assembly gain.			

3.9.2 TEST PROCEDURE

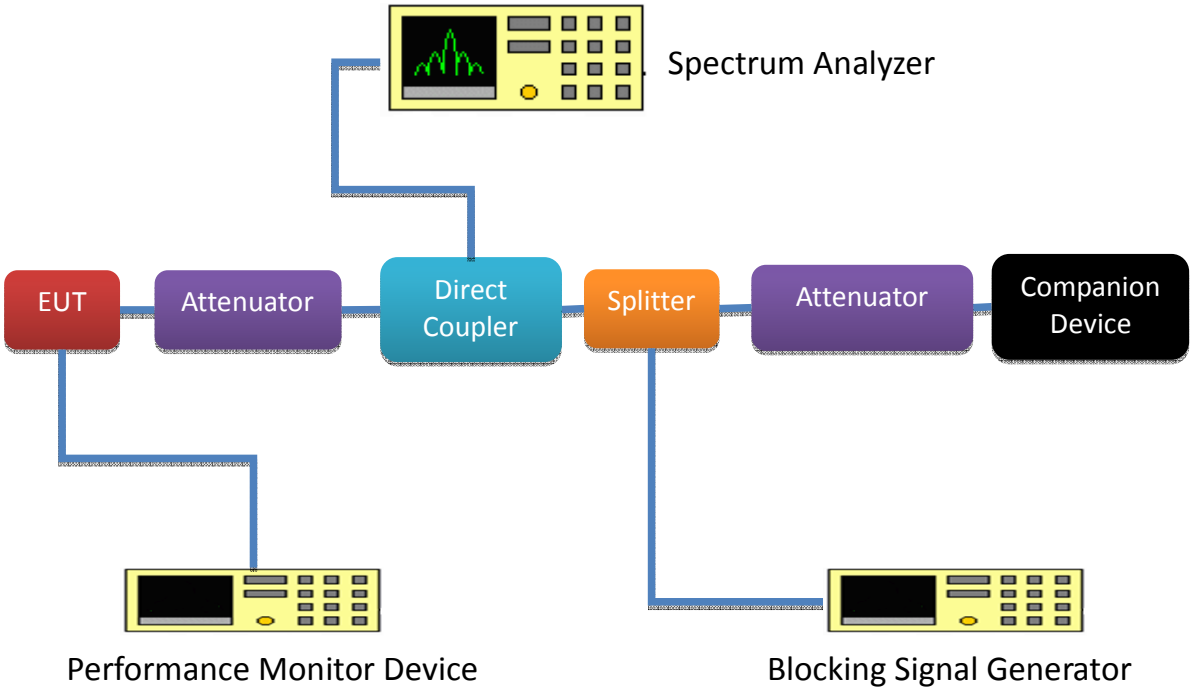
Refer to chapter 5.4.11.2 of EN 300 328 V2.1.1.

Measurement Method	
☒ Conducted measurement	☐ Radiated measurement

3.9.3 DEVIATION FROM TEST STANDARD

No deviation.

3.9.4 TEST SETUP CONFIGURATION



3.9.5 TEST RESULTS

FHSS:

Receiver Category 2 Equipment

Receiver blocking performance when operating at Hopping mode				
P_{min}: -81.48dBm			antenna gain(G) : 2 dBi	
The actual blocking signal power(Note1)			☒ at the antenna connector ☐ in front of the antenna	
Note1: For the conducted measurements , the level shall be corrected as follows: the actual blocking signal power = blocking signal power + antenna gain				
Wanted signal mean power from companion device (dBm)	**Blocking signal frequency (MHz))**	**The actual blocking signal power (dBm)**	**PER(%)**	**Pass/Fail**
P_{min} + 6 dB	2380	-55	0.2	PASS
	2503.5	-55	0.5	PASS
	2300	-45	0.2	PASS
	2583.5	-45	0.1	PASS

BT-LE:

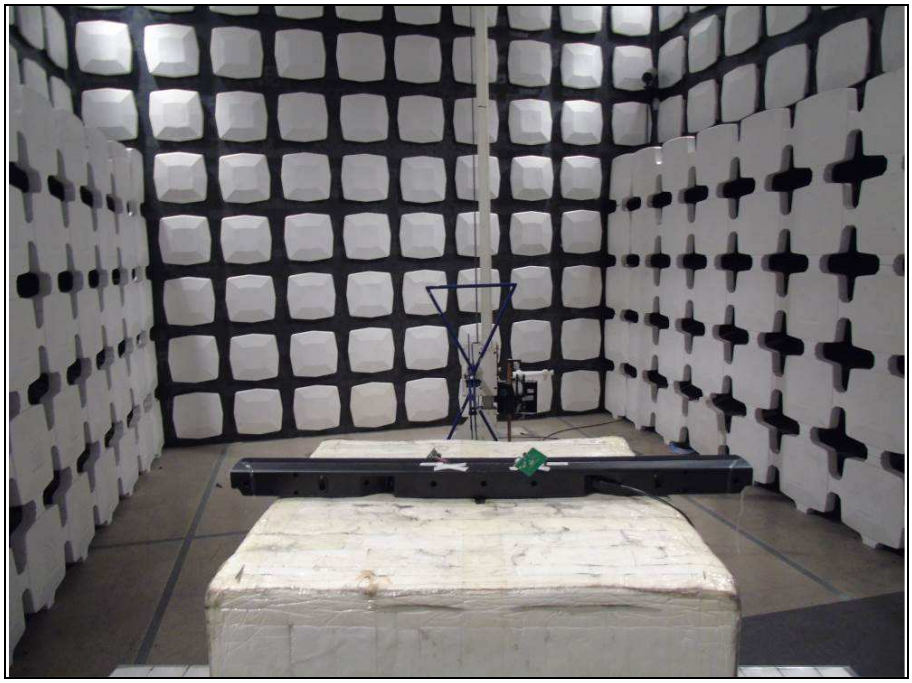
Receiver Category 2 Equipment

Receiver blocking performance when operating at the lowest operating channel(CH0)				
P_{min}: -77.48dBm			antenna gain(G) : 2 dBi	
The actual blocking signal power(Note1)			☒ at the antenna connector ☐ in front of the antenna	
Note1: For the conducted measurements , the level shall be corrected as follows: the actual blocking signal power = blocking signal power + antenna gain				
Wanted signal mean power from companion device (dBm)	**Blocking signal frequency (MHz))**	**The actual blocking signal power (dBm)**	**PER(%)**	**Pass/Fail**
P_{min} + 6 dB	2380	-55	0	PASS
	2503.5	-55	0.2	PASS
	2300	-45	0.4	PASS
	2583.5	-45	0.3	PASS

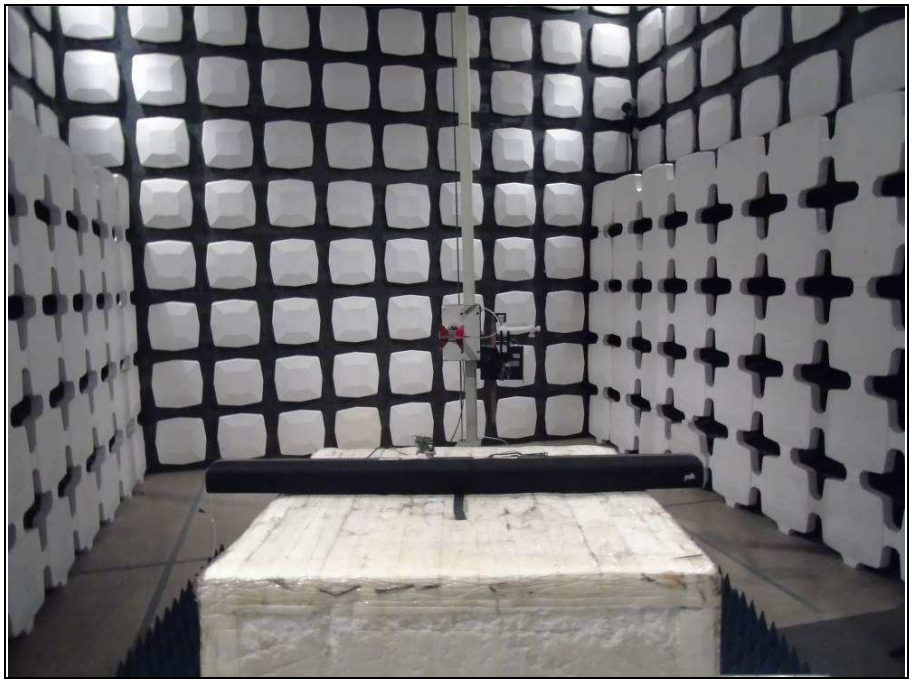
Receiver blocking performance when operating at the Highest operating channel(CH39)				
P_{min}: -79.69dBm			antenna gain(G) : 2 dBi	
The actual blocking signal power(Note1)			☒ at the antenna connector ☐ in front of the antenna	
Note1: For the conducted measurements , the level shall be corrected as follows: the actual blocking signal power = blocking signal power + antenna gain				
Wanted signal mean power from companion device (dBm)	**Blocking signal frequency (MHz))**	**The actual blocking signal power (dBm)**	**PER(%)**	**Pass/Fail**
P_{min} + 6 dB	2380	-55	0.6	PASS
	2503.5	-55	0.4	PASS
	2300	-45	0.4	PASS
	2583.5	-45	0.5	PASS

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

SPURIOUS EMISSION TEST BELOW 1GHz



SPURIOUS EMISSION TEST ABOVE 1GHz



RECEIVING BLOCKING

5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

--- END ---

TEST REPORT

Applicant	TCL Technoly Electronics(Huizhou) Co., Ltd.
Address	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, China, 516006.

Manufacturer or Supplier	Sound United, LLC
Address	1 Viper Way Vista, CA 92081 USA
Product	HOME THEATER SYSTEM
Brand Name	Polk
Models	SIGNA S2 SOUND BAR
Additional Model & Model Difference	N/A
Date of tests	May 31, 2018 ~ Jul. 18, 2018

The submitted sample of the above equipment has been tested according to the requirements of the following standard:

☒ **Final Draft EN 300 440 V2.2.1 (2018-05)**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Andy Zhu Project Engineer / EMC Department	Approved by Glyn He Supervisor / EMC Department
	Date: Aug. 02, 2018

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RE180531N039-2	Original release	Aug. 02, 2018

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: Final Draft EN 300 440 V2.2.1 (2018-05)			
Standard Subclause	**Test Type and Limit**	**Result**	**Remark**
	TRANSMITTER PARAMETERS		
4.2.2	Equivalent Isotropic Radiated Power	PASS	Applicable
4.2.3	Permitted range of operating frequency	PASS	Applicable
4.2.4	Unwanted emissions in the spurious domain	PASS	Applicable
4.2.5	Duty Cycle	N/A	Not Applicable
	RECEIVER PARAMETERS		
4.3.3	Adjacent channel selectivity	N/A	Not Applicable
4.3.4	Blocking or desensitization	PASS	Applicable
4.3.5	Radiated spurious emission	PASS	Applicable

Receiver categories

Receiver category	Relevant receiver clauses	Risk assessment of receiver performance	The EUT Category
1	4.3.3, 4.3.4 and 4.3.5	Highly reliable SRD communication media; e.g. serving human life inherent systems (may result in a physical risk to a person).	-
2	4.3.4 and 4.3.5	Medium reliable SRD communication media e.g. causing inconvenience to persons, which cannot simply be overcome by other means.	-
3	4.3.4 and 4.3.5	Standard reliable SRD communication media e.g. Inconvenience to persons, which can simply be overcome by other means (e.g. manual).	√

If receiver category 1 or 2 is selected, this shall be stated in both the test report and in the user's manual for the equipment.

1.1 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 21,18	Mar. 20,19
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Mar. 21,18	Mar. 20,19
Bilog Antenna	Teseq	CBL 6111D	30643	Jul. 28, 17	Jul. 27, 18
Horn Antenna	ETS-Lindgren	3117	00062558	Jul. 02,18	Jul. 01,19
GPS Generator+ Antenna	TOJOIN	GNSS-5000A	E1-010119	Sep. 08,17	Sep. 07,18
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Feb. 10,18	Feb. 09,19
Test Software	ADT	ADT_Radiated _V7.6.15.9.2	N/A	N/A	N/A
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170147	May 05,18	May 04,19
Amplifier	Burgeon	BPA-530	100220	Apr. 18,18	Apr. 18,19
Broadband Preamplifier (1GHz~18GHz)	SCHWARZBECK	BBV9718	305	Apr. 18,18	Apr. 18,19
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 08,17	Nov. 07,18
Power Sensor	Keysight	U2021XA	MY55060016	May 19,18	May 18,19
Power Sensor	Keysight	U2021XA	MY55060018	May 19,18	May 18,19
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 21, 17	Oct.20, 18
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep.05,17	Sep. 04,18
Oscilloscope	Agilent	DSO9254A	MY51260160	Nov. 08,17	Nov. 07,18
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV7	102331	Nov. 04,17	Nov. 03,18
Spectrum Analyzer	Keysight	N9020A	MY55400499	Mar. 21,18	Mar. 20,19
Signal Generator	Agilent	N5183A	MY50140980	Jan. 02,18	Jan. 01,19
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Jan. 02,18	Jan. 01,19
Wireless Connectivity Tester	Rohde&Schwarz	CMW270	100908	Jan. 10, 18	Jan. 09, 19
Vector Signal Generator	Rohde&Schwarz	SMBV100A	257199	Apr. 18, 18	Apr. 17, 19
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	Aug. 10,17	Aug. 09,18
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A	N/A

NOTE:

1. The test was performed in 966 Chamber and RF Oven room.
2. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.

For Receiver Blocking test and Adjacent channel selectivity test:

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Wireless Connectivity Tester	Rohde&Schwarz	CMW270	100908	Jan. 10, 18	Jan. 09, 19
Test sofware	TonScend	JS1120-3-1	JS-001	N/A	N/A
Spectrum Analyzer	Keysight	N9020A	MY55400499	Mar. 21,18	Mar. 20,19
Signal Generator	Agilent	N5183A	MY50140980	Jan. 02,18	Jan. 01,19
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Jan. 02,18	Jan. 01,19

NOTE:

1. The test was performed in RF Oven room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

1.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

Parameter	Uncertainty
Radio frequency	$\pm 1.06 \times 10^{-8}$
Radiated emission of transmitter, valid up to 26.5GHz	±4.81dB
Radiated emission of receiver, valid up to 26.5GHz	±4.81dB
Temperature	±0.23 °C
Humidity	±0.3 %
Voltages(DC)	±0.1 %
Voltages(AC, <10kHz)	±0.22 %

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.3 MAXIMUM MEASUREMENT UNCERTAINTY

For the test methods, according to ETSI EN 300 440 standard, the measurement uncertainty figures shall be calculated in accordance with TR 100 028 [7] and shall correspond to an expansion factor (coverage factor) k = 1,96 or k = 2 (which provide confidence levels of respectively 95 % and 95,45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Maximum measurement uncertainty

Parameter	Uncertainty
Radio frequency	$\pm 1 \times 10^{-7}$
Radiated emission of transmitter, valid up to 26.5GHz	±6.0 dB
Radiated emission of receiver, valid up to 26.5GHz	±6.0 dB
Temperature	±1°C
Humidity	±5.0 %
Voltages(DC)	±1.0 %
Voltages(AC, <10kHz)	±2.0 %

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	HOME THEATER SYSTEM		
MODEL NO.	SIGNA S2 SOUND BAR		
ADDITIONAL MODELS	N/A		
NOMINAL VOLTAGE	AC 100-240V 50-60Hz 40W		
OPERATING VOLTAGE RANGE	Vnom= 230V	Vmin=207V	Vmax=253V
OPERATING TEMPERATURE RNAGE	-10 ~ +60℃		
MODULATION TYPE	GFSK		
OPERATING FREQUENCY	2404-2476MHz		
EIRP POWER	-0.38dBm (Max.)		
ANTENNA TYPE	FPCB Antenna, with 3.08dBi gain		
CABLE SUPPLIED	Optical Line: Unshielded detachable 1.80m AC Line: Unshielded detachable 1.45m HDMI Line: Shielded detachable 1.50m		
RECEIVER CATEGORY	☐Category 1	☐Category 2	☒Category 3

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.
3. Please refer to the EUT photo document (Reference No.: 180531N039) for detailed product photo.

2.2 DESCRIPTION OF TEST MODES

SAMPLE	MODE	FREQUENCY
SOUND BAR	Transmitting/ Receiving	2404MHz-2476MHz

Channel List

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	**2404**	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	**2476**
8	2418	18	2438	28	2458		
9	2420	**19**	**2440**	29	2460		
10	2422	20	2442	30	2462		

Channel	Freq. (MHz)
Low	2404
Middle	2440
High	2476

2.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product, according to the specifications of the manufacturers; it must comply with the requirements of the following standards:

Final Draft EN 300 440 V2.2.1 (2018-05)

All test items have been performed and recorded as per the above standards.

2.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	LONG WEI	PS-6403D	010934269	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.0m

NOTE: All power cords of the above support units are non-shielded (1.8m).

3 TEST TYPES AND RESULTS

TRANSMITTER PARAMETERS

3.1 EQUIVALENT ISOTROPIC RADIATED POWER

3.1.1 LIMITS OF EQUIVALENT ISOTROPIC RADIATED POWER

Condition	Limit (e.i.r.p)
Generic use	10 mW e.i.r.p.

For Extreme temperature ranges:

Category	Temperature range	The EUT Category
I (General)	-20°C to +55°C	-
II (Portable)	-10°C to +55°C	-
III (Equipment for normal indoor use)	5°C to +35°C	-
Other(Declared by the manufacturer)	-10°C to +60°C	√

3.1.2 TEST PROCEDURES

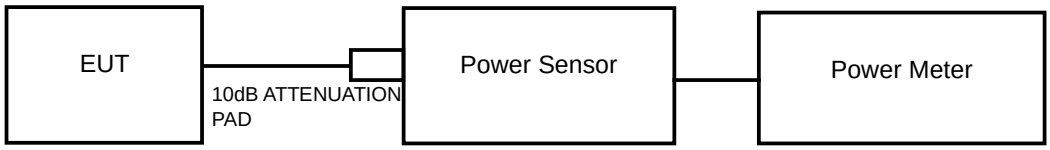
Refer to chapter 4.2.2.3 of Final Draft EN 300 440 V2.2.1 (2018-05).

3.1.3 DEVIATION FROM TEST STANDARD

No deviation.

3.1.4 TEST SETUP

1. Ran a test program to control EUT transmit at specific channel
2. A power meter was used to read the response of the power sensor.
3. Record the power level.
4. EIRP = antenna gain + power level of step 3.



The -6dB bandwidth is less than 20 MHz, so determine the appropriate method of measurement: see clauses 4.2.2.3.1

3.1.5 TEST RESULTS

TEST CONDITION			EQUIVALENT ISOTROPIC RADIATED POWER (dBm)		
			(Low) 2404MHz	(Middle) 2440MHz	(High) 2476MHz
T_{nom}(°C)	+25	V_{nom}(v)	-3.88	-2.54	-0.73
T_{min}(°C)	-10	V_{min}(v)	-3.54	-2.19	**-0.38**
		V_{max}(v)	-3.52	-2.22	-0.42
T_{max}(°C)	+60	V_{min}(v)	-4.62	-3.15	-1.11
		V_{max}(v)	-4.57	-3.15	-1.06

3.2 PERMITTED RANGE OF OPERATING FREQUENCIES

3.2.1 LIMITS OF PERMITTED RANGE OF OPERATING FREQUENCIES

The width of the power envelope is f_H –f_L for a give operating frequency. In equipment that allow adjustment or selection of different frequencies, the power envelope take up different positions in the allowed band. The frequency range is determined by the lowest value of f_L and the highest value of f_H resulting from the adjustment of the equipment to the lowest and highest operating frequency.

CONDITION	LIMIT
Under all test conditions	F_L >2400.0MHz F_H < 2483.5MHz

3.2.2 TEST PROCEDURES

Refer to chapter 4.2.3.3 of Final Draft EN 300 440 V2.2.1 (2018-05).

3.2.3 DEVIATION FROM TEST STANDARD

No deviation.

3.2.4 TEST SETUP

The EUT and probe antenna were placed into the temperature oven. The probe has to be connected with spectrum analyzer. The power source of the EUT has to be connected with the power supply for voltage change. The frequency has to be recorded for the right and left end above threshold of highest and lowest channel respectively.

3.2.5 TEST RESULTS

TEST CONDITION			FREQUENCY (MHz)	
			LOWEST	HIGHEST
T_{nom}(°C)	+25	V_{nom}(v)	2401.59	2478.71
T_{min}(°C)	-10	V_{min}(v)	2401.54	2478.81
		V_{max}(v)	2401.55	2478.77
T_{max}(°C)	+60	V_{min}(v)	2401.67	2478.64
		V_{max}(v)	2401.63	2478.67
Measured frequency (lowest and highest)			FL = 2401.54	FH = 2478.81

3.3 MEASUREMENT RADIATED SPURIOUS EMISSION

3.3.1 LIMITS OF MEASUREMENT RADIATED SPURIOUS EMISSION

Frequency Range	47MHz to 74MHz 87.5MHz to 108MHz 174MHz to 230MHz 470MHz to 862MHz	Other Frequencies Below 1GHz	>1GHz
Limit (Operating)	4nW (–54dBm)	250nW (–36dBm)	1 μW (–30dBm)
Limit (Standby)	2nW (–57dBm)	2nW (–57dBm)	20nW (–47dBm)

3.3.2 TEST PROCEDURES

Refer to chapter 4.2.4.3 of Final Draft EN 300 440 V2.2.1 (2018-05).

3.3.3 DEVIATION FROM TEST STANDARD

No deviation.

3.3.4 TEST SETUP

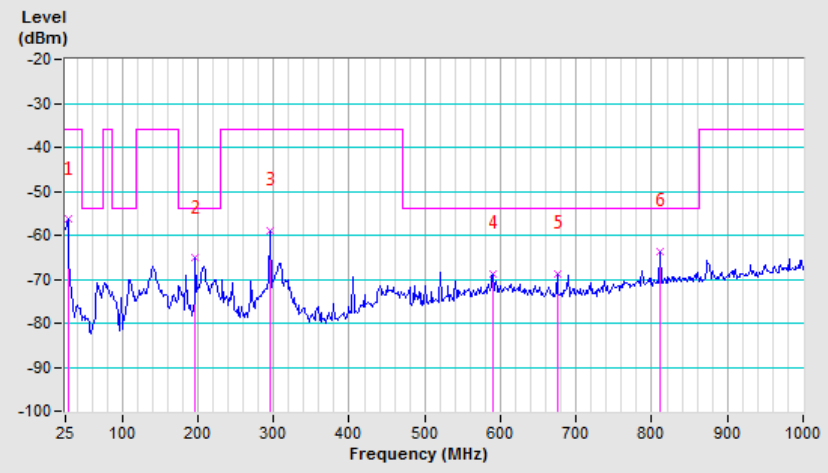
1. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).
2. The test setup has been constructed as the normal use condition. Controlling software (provided by manufacturer) has been activated to set the EUT on specific status.

3.3.5 TEST RESULTS

TX BELOW 1GHz DATA

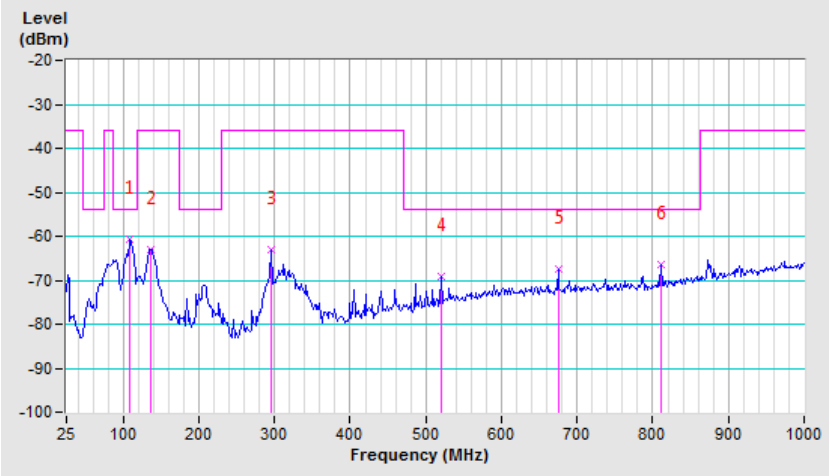
SPURIOUS EMISSION FREQUENCY RANGE	25MHz ~ 1GHz	OPERATING CHANNEL	Low

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
28.12	H	-56.41	-36.00	-20.41
196.87	H	-65.24	-54.00	-11.24
295.31	H	-58.87	-36.00	-22.87
590.62	H	-68.67	-54.00	-14.67
675.00	H	-68.84	-54.00	-14.84
810.94	H	-63.81	-54.00	-9.81



SPURIOUS EMISSION FREQUENCY RANGE	25MHz ~ 1GHz	OPERATING CHANNEL	Low

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
109.37	V	-60.73	-54.00	-6.73
135.94	V	-62.96	-36.00	-26.96
295.31	V	-63.08	-36.00	-27.08
520.31	V	-69.16	-54.00	-15.16
675.00	V	-67.48	-54.00	-13.48
810.94	V	-66.41	-54.00	-12.41



TX ABOVE 1GHz DATA

SPURIOUS EMISSION FREQUENCY RANGE	1GHz ~ 25GHz	OPERATING CHANNEL	Low , High

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
Low	4808.10	H	-39.65	-30.00	-9.65
	4808.10	V	-39.25	-30.00	-9.25
	7212.00	H	-46.29	-30.00	-16.29
	7212.00	V	-44.82	-30.00	-14.82
High	4950.32	V	-39.05	-30.00	-9.05
	4952.00	H	-40.23	-30.00	-10.23
	9908.65	H	-35.17	-30.00	-5.17
	9908.65	V	-39.70	-30.00	-9.70

3.4 DUTY CYCLE (NOT APPLY)

3.4.1 LIMITS OF DUTY CYCLE

Frequency Band	Duty Cycle	Application
2400MHz to 2483.5MHz	No Restriction	Generic use
2400MHz to 2483.5MHz	No Restriction	Detection, movement and alert applications
(a) 2446MHz to 2454MHz	No Restriction	RFID
(b) 2446MHz to 2454MHz	15%	RFID
5725MHz to 5875MHz	No Restriction	Generic use
9200MHz to 9500MHz	No Restriction	Detection, movement and alert applications
9500MHz to 9975MHz	No Restriction	Detection, movement and alert applications
10.5GHz to 10.6GHz	No Restriction	Detection, movement and alert applications
13.4GHz to 14.0GHz	No Restriction	Detection, movement and alert applications
17.1GHz to 17.3GHz	DDA or equivalent techniques	GBSAR detecting and movement and alert applications
24.00GHz to 24.25GHz	No Restriction	Detection, movement and alert applications

3.4.2 TEST PROCEDURES

Refer to chapter 4.2.5.3 of Final Draft EN 300 440 V2.2.1 (2018-05).

3.4.3 DEVIATION FROM TEST STANDARD

No deviation.

3.4.4 TEST SETUP

The test setup has been constructed as the normal use condition. Controlling software (provided by manufacturer) has been activated to set the EUT on specific status.

3.4.5 TEST RESULTS

This product does not apply.

RECEIVER PARAMETERS

3.5 ADJACENT CHANNEL SELECTIVITY

3.5.1 LIMITES OF ADJACENT CHANNEL SELECTIVITY

The adjacent channel selectivity of the equipment under specified conditions shall not be less than -30 dBm + k

Receiver category	Limit
1	-30dBm + K

The correction factor, k, is as follows:

k = -20logf -10logBW

Where:

f is the frequency in GHz;

BW is the channel bandwidth in MHz.

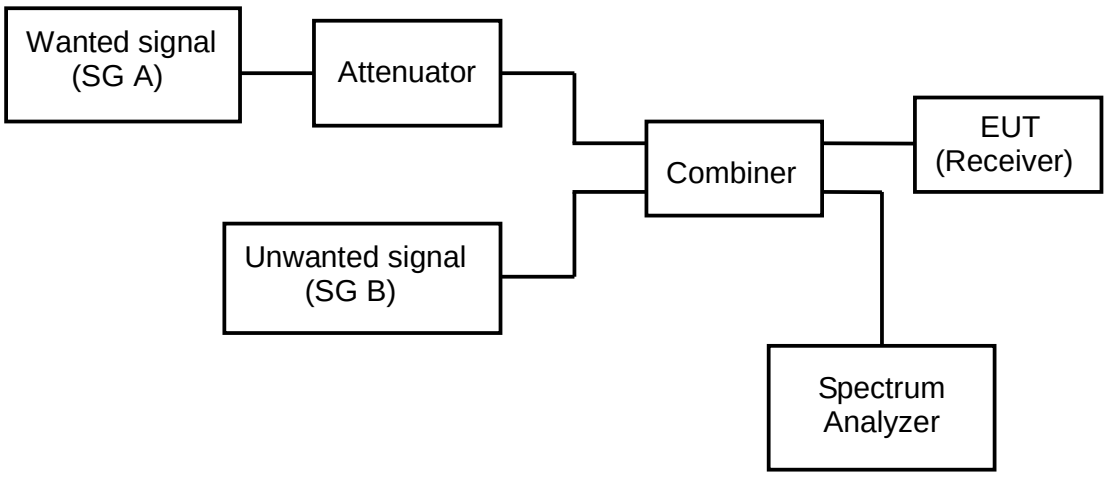
The factor k is limited within the following:

-40 dB < k < 0 dB

3.5.2 TEST PROCEDURES

Refer to chapter 4.3.3.3 of Final Draft EN 300 440 V2.2.1 (2018-05).

3.5.3 TEST SETUP



3.5.4 TEST RESULTS

This product does not apply.

3.6 BLOCKING OR DESENSITIZATION

3.6.1 LIMITES OF RECEIVER BLOCKING

The blocking level, shall not be less than the values given in table

Receiver category	Limit
1	-30dBm + K
2	-45dBm + K
3	-60dBm + K

The correction factor, k, is as follows:

k = -20logf -10logBW

Where:

f is the frequency in GHz;

BW is the channel bandwidth in MHz.

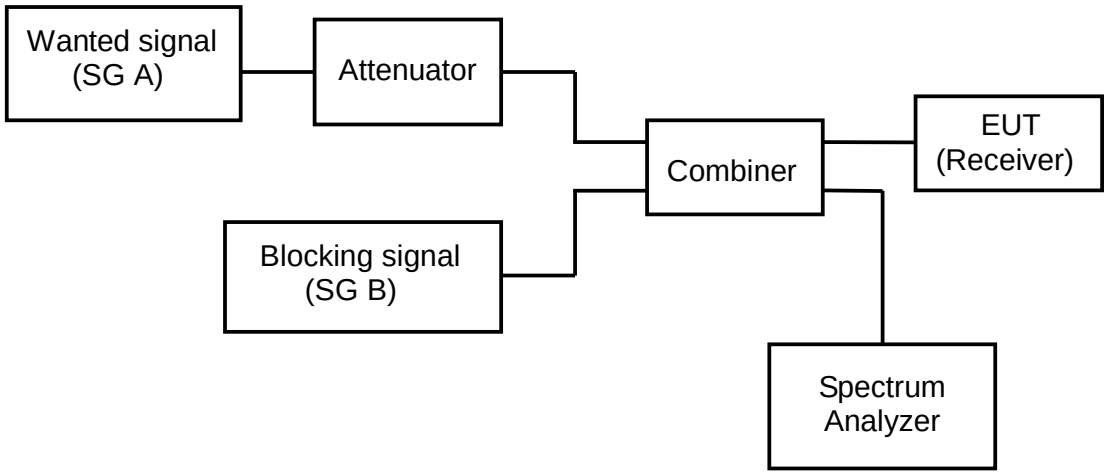
The factor k is limited within the following:

-40 dB < k < 0 dB

3.6.2 TEST PROCEDURES

Refer to chapter 4.3.4.3 of Final Draft EN 300 440 V2.2.1 (2018-05).

3.6.3 TEST SETUP



3.6.4 TEST RESULTS

Receiver Category 3 Equipment

Blocking measure of the capability	
P_{min}: -75.98dBm	
The actual blocking signal power(Note)	☒ at the antenna connector
	☐ in front of the antenna
Note: For the conducted measurements, the same level should be used at the antenna connector irrespective of antenna gain.	

Operation mode	Operation frequency (MHz)	Wanted signal power (dBm)	Offset of the bandwidth (times)	Blocking signal frequency(MHz)	Blocking signal Power (dBm)	Minimum Limit (dBm)
Normal working	2404	-72.98	-10	2358.608	-56.87	-73.97
			-20	2315.408	-50.43	
			-50	2185.808	-45.58	
	2476		+10	2523.201	-57.13	-74.40
			+20	2568.101	-49.63	
			+50	2702.801	-44.72	

Note:

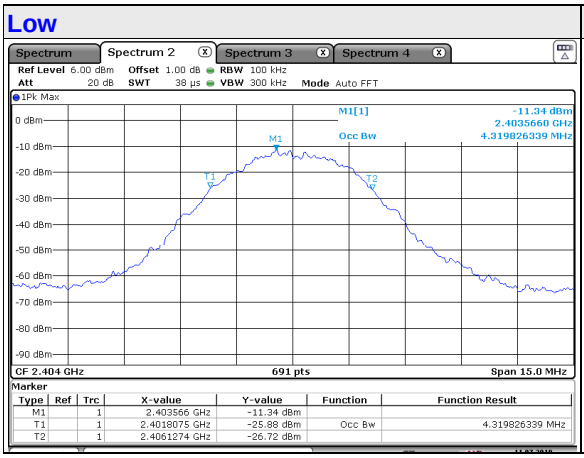
Lower Channel: K=-20logf -10logBW=-13.9735

Upper Channel: K=-20logf -10logBW=-14.3975

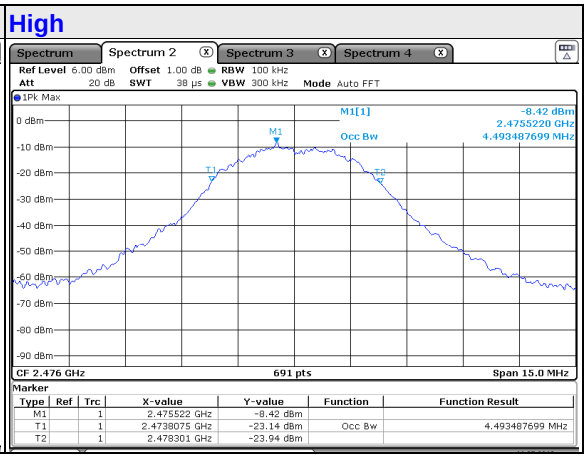
OCCUPIED BANDWIDTH(FOR REFERENCE)

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)
Low	2404	4.320
High	2476	4.493

Low



High



3.7 RECEIVER SPURIOUS EMISSIONS

3.7.1 LIMITS OF RECEIVER SPURIOUS EMISSIONS

Frequency range	Frequencies below 1GHz	Frequencies above 1GHz
Limit	2nW or -57dBm	20nW or -47dBm

3.7.2 TEST PROCEDURES

Refer to chapter 4.3.5.3 of Final Draft EN 300 440 V2.2.1 (2018-05).

3.7.3 DEVIATION FROM TEST STANDARD

No deviation.

3.7.4 TEST SETUP

1. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).
2. The test setup has been constructed as the normal use condition. Controlling software (provided by manufacturer) has been activated to set the EUT on specific status.

3.7.5 TEST RESULTS

RX BELOW 1GHz DATA

SPURIOUS EMISSION FREQUENCY RANGE	25MHz ~ 1GHz	OPERATING CHANNEL	Low

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
28.12	H	-65.23	-57.00	-8.23
84.37	V	-64.80	-57.00	-7.80
109.37	**V**	**-60.21**	**-57.00**	**-3.21**
137.50	V	-63.18	-57.00	-6.18
142.19	H	-67.19	-57.00	-10.19
196.87	H	-66.49	-57.00	-9.49
295.31	H	-60.40	-57.00	-3.40
295.31	V	-62.31	-57.00	-5.31
810.94	H	-63.75	-57.00	-6.75
810.94	V	-65.30	-57.00	-8.30
873.44	H	-65.85	-57.00	-8.85
873.44	V	-65.66	-57.00	-8.66

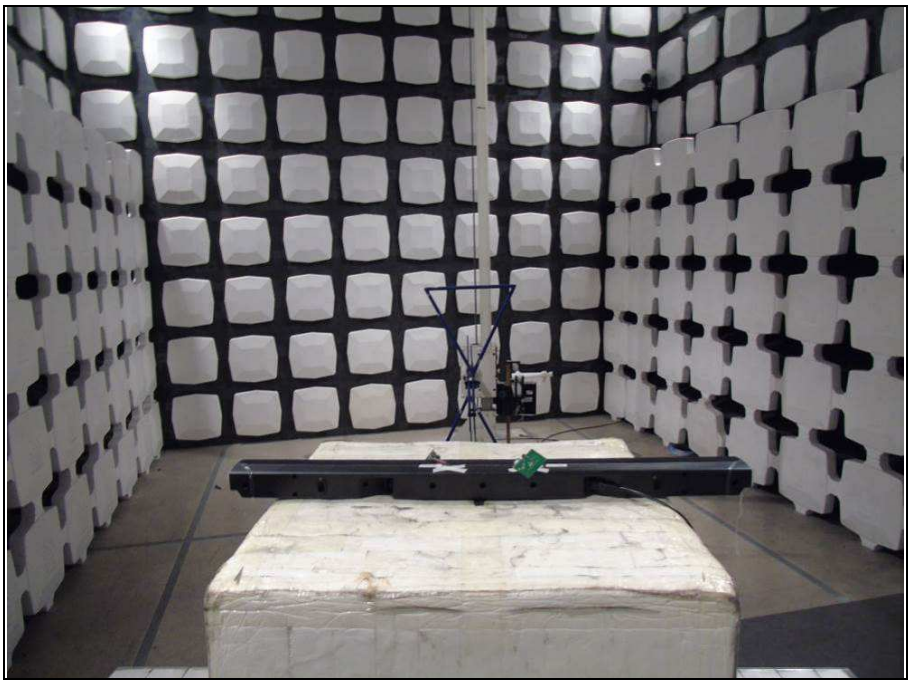
RX ABOVE 1GHz DATA

SPURIOUS EMISSION FREQUENCY RANGE	1GHz ~ 25GHz	OPERATING CHANNEL	Low , High

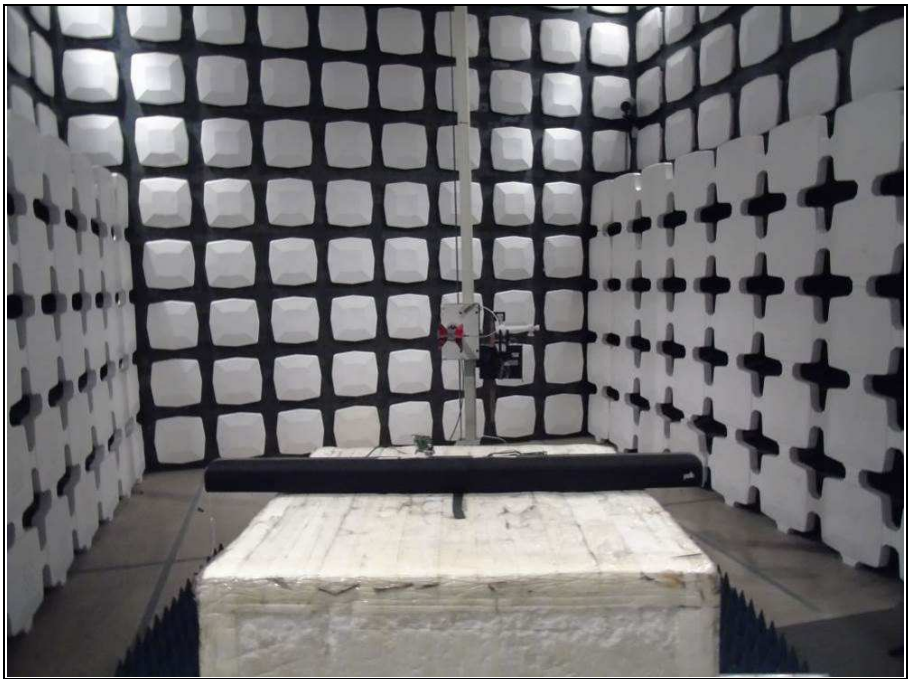
SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
Low	4812.00	H	-50.84	-47.00	-3.84
	4812.00	V	-50.63	-47.00	-3.63
	7218.00	H	-54.12	-47.00	-7.12
	7218.00	V	-53.84	-47.00	-6.84
High	4952.00	H	-50.54	-47.00	-3.54
	4952.00	**V**	**-50.23**	**-47.00**	**-3.23**
	7428.00	H	-53.38	-47.00	-6.38
	7428.00	V	-53.69	-47.00	-6.69

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

SPURIOUS EMISSION TEST BELOW 1GHz



SPURIOUS EMISSION TEST ABOVE 1GHz



5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

---END---

TEST REPORT

Applicant	TCL Technoly Electronics(Huizhou) Co., Ltd.
Address	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, China, 516006.

Manufacturer or Supplier	Sound United, LLC
Address	1 Viper Way Vista, CA 92081 USA
Product	HOME THEATER SYSTEM
Brand Name	Polk
Models	SIGNA S2 SUBWOOFER
Additional Model & Model Difference	N/A
Date of tests	May 31, 2018 ~ Jul. 18, 2018

The submitted sample of the above equipment has been tested according to the requirements of the following standard:

☒ **Final Draft EN 300 440 V2.2.1 (2018-05)**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Andy Zhu Project Engineer / EMC Department	Approved by Glyn He Supervisor / EMC Department
	Date: Aug. 02, 2018

TABLE OF CONTENTS

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RE180531N039-3	Original release	Aug. 02, 2018

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: Final Draft EN 300 440 V2.2.1 (2018-05)			
Standard Subclause	**Test Type and Limit**	**Result**	**Remark**
	TRANSMITTER PARAMETERS		
4.2.2	Equivalent Isotropic Radiated Power	PASS	Applicable
4.2.3	Permitted range of operating frequency	PASS	Applicable
4.2.4	Unwanted emissions in the spurious domain	PASS	Applicable
4.2.5	Duty Cycle	N/A	Not Applicable
	RECEIVER PARAMETERS		
4.3.3	Adjacent channel selectivity	N/A	Not Applicable
4.3.4	Blocking or desensitization	PASS	Applicable
4.3.5	Radiated spurious emission	PASS	Applicable

Receiver categories

Receiver category	Relevant receiver clauses	Risk assessment of receiver performance	The EUT Category
1	4.3.3, 4.3.4 and 4.3.5	Highly reliable SRD communication media; e.g. serving human life inherent systems (may result in a physical risk to a person).	-
2	4.3.4 and 4.3.5	Medium reliable SRD communication media e.g. causing inconvenience to persons, which cannot simply be overcome by other means.	-
3	4.3.4 and 4.3.5	Standard reliable SRD communication media e.g. Inconvenience to persons, which can simply be overcome by other means (e.g. manual).	√

If receiver category 1 or 2 is selected, this shall be stated in both the test report and in the user's manual for the equipment.

1.1 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 21,18	Mar. 20,19
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Mar. 21,18	Mar. 20,19
Bilog Antenna	Teseq	CBL 6111D	30643	Jul. 28, 17	Jul. 27, 18
Horn Antenna	ETS-Lindgren	3117	00062558	Jul. 02,18	Jul. 01,19
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Feb. 10,18	Feb. 09,19
Test Software	ADT	ADT_Radiated _V7.6.15.9.2	N/A	N/A	N/A
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170147	May 05,18	May 04,19
Amplifier	Burgeon	BPA-530	100220	Apr. 18,18	Apr. 18,19
Broadband Preamplifier (1GHz~18GHz)	SCHWARZBECK	BBV9718	305	Apr. 18,18	Apr. 18,19
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 08,17	Nov. 07,18
Power Sensor	Keysight	U2021XA	MY55060016	May 19,18	May 18,19
Power Sensor	Keysight	U2021XA	MY55060018	May 19,18	May 18,19
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 21, 17	Oct.20, 18
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep.05,17	Sep. 04,18
Oscilloscope	Agilent	DSO9254A	MY51260160	Nov. 08,17	Nov. 07,18
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV7	102331	Nov. 04,17	Nov. 03,18
Spectrum Analyzer	Keysight	N9020A	MY55400499	Mar. 21,18	Mar. 20,19
Signal Generator	Agilent	N5183A	MY50140980	Jan. 02,18	Jan. 01,19
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Jan. 02,18	Jan. 01,19
Wireless Connectivity Tester	Rohde&Schwarz	CMW270	100908	Jan. 10, 18	Jan. 09, 19
Vector Signal Generator	Rohde&Schwarz	SMBV100A	257199	Apr. 18, 18	Apr. 17, 19
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	Aug. 10,17	Aug. 09,18
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A	N/A

NOTE:

1. The test was performed in 966 Chamber and RF Oven room.
2. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.

For Receiver Blocking test and Adjacent channel selectivity test:

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Wireless Connectivity Tester	Rohde&Schwarz	CMW270	100908	Jan. 10, 18	Jan. 09, 19
Test sofware	TonScend	JS1120-3-1	JS-001	N/A	N/A
Spectrum Analyzer	Keysight	N9020A	MY55400499	Mar. 21,18	Mar. 20,19
Signal Generator	Agilent	N5183A	MY50140980	Jan. 02,18	Jan. 01,19
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Jan. 02,18	Jan. 01,19

NOTE:

1. The test was performed in RF Oven room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

1.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

Parameter	Uncertainty
Radio frequency	$\pm 1.06 \times 10^{-8}$
Radiated emission of transmitter, valid up to 26.5GHz	±4.81dB
Radiated emission of receiver, valid up to 26.5GHz	±4.81dB
Temperature	±0.23 °C
Humidity	±0.3 %
Voltages(DC)	±0.1 %
Voltages(AC, <10kHz)	±0.22 %

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.3 MAXIMUM MEASUREMENT UNCERTAINTY

For the test methods, according to ETSI EN 300 440 standard, the measurement uncertainty figures shall be calculated in accordance with TR 100 028 [7] and shall correspond to an expansion factor (coverage factor) k = 1,96 or k = 2 (which provide confidence levels of respectively 95 % and 95,45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Maximum measurement uncertainty

Parameter	Uncertainty
Radio frequency	$\pm 1 \times 10^{-7}$
Radiated emission of transmitter, valid up to 26.5GHz	±6.0 dB
Radiated emission of receiver, valid up to 26.5GHz	±6.0 dB
Temperature	±1°C
Humidity	±5.0 %
Voltages(DC)	±1.0 %
Voltages(AC, <10kHz)	±2.0 %

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	HOME THEATER SYSTEM		
MODEL NO.	SIGNA S2 SUBWOOFER		
ADDITIONAL MODELS	N/A		
NOMINAL VOLTAGE	AC 100-240V 50-60Hz 40W		
OPERATING VOLTAGE RANGE	Vnom= 230V	Vmin=207V	Vmax=253V
OPERATING TEMPERATURE RNAGE	-10 ~ +60℃		
MODULATION TYPE	GFSK		
OPERATING FREQUENCY	2404-2476MHz		
EIRP POWER	1.9dBm (Max.)		
ANTENNA TYPE	PCB Antenna, with 2dBi gain		
CABLE SUPPLIED	AC Line: Unshielded detachable 1.45m		
RECEIVER CATEGORY	☐Category 1	☐Category 2	☒Category 3

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.
3. Please refer to the EUT photo document (Reference No.: 180531N039) for detailed product photo.

2.2 DESCRIPTION OF TEST MODES

SAMPLE	MODE	FREQUENCY
SOUND BAR	Transmitting/ Receiving	2404MHz-2476MHz

Channel List

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	**2404**	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	**37**	**2476**
8	2418	18	2438	28	2458		
9	2420	**19**	**2440**	29	2460		
10	2422	20	2442	30	2462		

Channel	Freq. (MHz)
Low	2404
Middle	2440
High	2476

Note: The more detailed channel, please refer to the product specifications

2.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product, according to the specifications of the manufacturers; it must comply with the requirements of the following standards:

Final Draft EN 300 440 V2.2.1 (2018-05)

All test items have been performed and recorded as per the above standards.

2.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	LONG WEI	PS-6403D	010934269	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.0m

NOTE: All power cords of the above support units are non-shielded (1.8m).

3 TEST TYPES AND RESULTS

TRANSMITTER PARAMETERS

3.1 EQUIVALENT ISOTROPIC RADIATED POWER

3.1.1 LIMITS OF EQUIVALENT ISOTROPIC RADIATED POWER

Condition	Limit (e.i.r.p)
Generic use	10 mW e.i.r.p.

For Extreme temperature ranges:

Category	Temperature range	The EUT Category
I (General)	-20°C to +55°C	-
II (Portable)	-10°C to +55°C	-
III (Equipment for normal indoor use)	5°C to +35°C	-
Other(Declared by the manufacturer)	-10°C to +60°C	√

3.1.2 TEST PROCEDURES

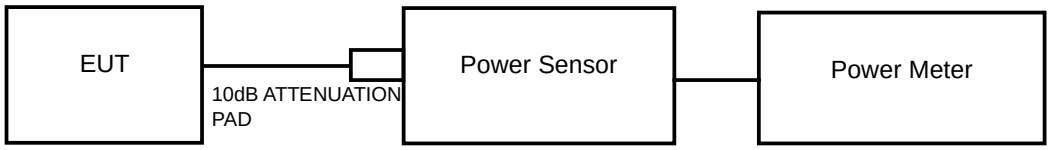
Refer to chapter 4.2.2.3 of Final Draft EN 300 440 V2.2.1 (2018-05).

3.1.3 DEVIATION FROM TEST STANDARD

No deviation.

3.1.4 TEST SETUP

1. Ran a test program to control EUT transmit at specific channel
2. A power meter was used to read the response of the power sensor.
3. Record the power level.
4. EIRP = antenna gain + power level of step 3.



The -6dB bandwidth is less than 20 MHz, so determine the appropriate method of measurement: see clauses 4.2.2.3.1

3.1.5 TEST RESULTS

TEST CONDITION			EQUIVALENT ISOTROPIC RADIATED POWER (dBm)		
			(Low) 2404MHz	(Middle) 2440MHz	(High) 2476MHz
T_{nom}(°C)	+25	V_{nom}(v)	-5.54	-4.27	-2.42
T_{min}(°C)	-10	V_{min}(v)	-5.02	-3.95	**-1.90**
		V_{max}(v)	-5.00	-3.94	-1.92
T_{max}(°C)	+60	V_{min}(v)	-5.75	-4.42	-2.93
		V_{max}(v)	-5.75	-4.44	-2.90

3.2 PERMITTED RANGE OF OPERATING FREQUENCIES

3.2.1 LIMITS OF PERMITTED RANGE OF OPERATING FREQUENCIES

The width of the power envelope is f_H –f_L for a give operating frequency. In equipment that allow adjustment or selection of different frequencies, the power envelope take up different positions in the allowed band. The frequency range is determined by the lowest value of f_L and the highest value of f_H resulting from the adjustment of the equipment to the lowest and highest operating frequency.

CONDITION	LIMIT
Under all test conditions	F_L >2400.0MHz F_H < 2483.5MHz

3.2.2 TEST PROCEDURES

Refer to chapter 4.2.3.3 of Final Draft EN 300 440 V2.2.1 (2018-05).

3.2.3 DEVIATION FROM TEST STANDARD

No deviation.

3.2.4 TEST SETUP

The EUT and probe antenna were placed into the temperature oven. The probe has to be connected with spectrum analyzer. The power source of the EUT has to be connected with the power supply for voltage change. The frequency has to be recorded for the right and left end above threshold of highest and lowest channel respectively.

3.2.5 TEST RESULTS

TEST CONDITION			FREQUENCY (MHz)	
			LOWEST	HIGHEST
T_{nom}(°C)	+25	V_{nom}(v)	2401.76	2478.54
T_{min}(°C)	-10	V_{min}(v)	2401.71	2478.64
		V_{max}(v)	2401.74	2478.66
T_{max}(°C)	+60	V_{min}(v)	2401.84	2478.47
		V_{max}(v)	2401.79	2478.46
Measured frequency (lowest and highest)			FL = 2401.71	FH = 2478.66

3.3 MEASUREMENT RADIATED SPURIOUS EMISSION

3.3.1 LIMITS OF MEASUREMENT RADIATED SPURIOUS EMISSION

Frequency Range	47MHz to 74MHz 87.5MHz to 108MHz 174MHz to 230MHz 470MHz to 862MHz	Other Frequencies Below 1GHz	>1GHz
Limit (Operating)	4nW (–54dBm)	250nW (–36dBm)	1 μW (–30dBm)
Limit (Standby)	2nW (–57dBm)	2nW (–57dBm)	20nW (–47dBm)

3.3.2 TEST PROCEDURES

Refer to chapter 4.2.4.3 of Final Draft EN 300 440 V2.2.1 (2018-05).

3.3.3 DEVIATION FROM TEST STANDARD

No deviation.

3.3.4 TEST SETUP

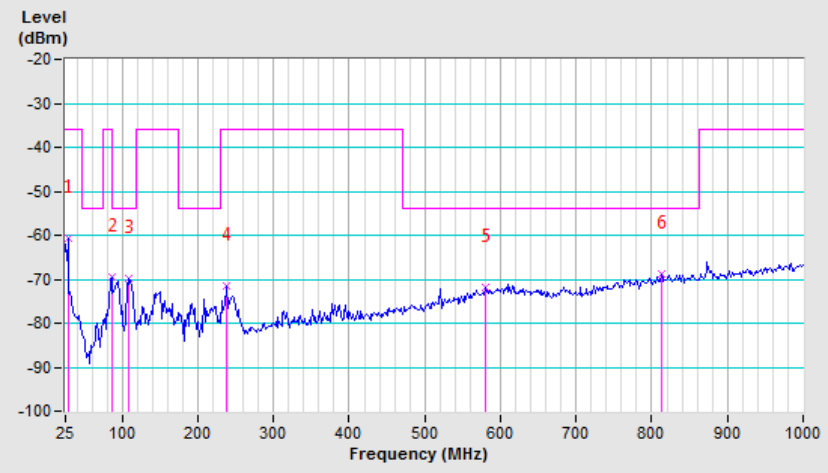
1. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).
2. The test setup has been constructed as the normal use condition. Controlling software (provided by manufacturer) has been activated to set the EUT on specific status.

3.3.5 TEST RESULTS

TX BELOW 1GHz DATA

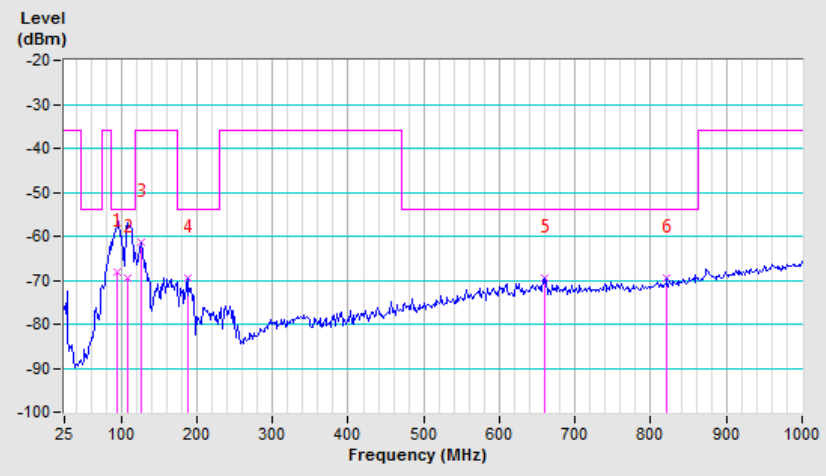
SPURIOUS EMISSION FREQUENCY RANGE	25MHz ~ 1GHz	OPERATING CHANNEL	Low

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
28.12	H	-60.60	-36.00	-24.60
85.94	H	-69.34	-36.00	-33.34
107.81	H	-69.89	-54.00	-15.89
237.50	H	-71.44	-36.00	-35.44
579.69	H	-71.87	-54.00	-17.87
812.50	H	-68.84	-54.00	-14.84



SPURIOUS EMISSION FREQUENCY RANGE	25MHz ~ 1GHz	OPERATING CHANNEL	Low

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	**Antenna Polarization**	**Level (dBm)**	**Limit (dBm)**	**Margin (dB)**
95.31	**V**	**-67.98**	**-54.00**	**-13.98**
107.81	V	-69.50	-54.00	-15.50
126.56	V	-61.20	-36.00	-25.20
187.50	V	-69.51	-54.00	-15.51
659.37	V	-69.40	-54.00	-15.40
821.87	V	-69.41	-54.00	-15.41



TX ABOVE 1GHz DATA

SPURIOUS EMISSION FREQUENCY RANGE	1GHz ~ 25GHz	OPERATING CHANNEL	Low , High

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
Low	4808.10	H	-37.97	-30.00	-7.97
	4808.10	V	-33.84	-30.00	-3.84
	7212.00	H	-44.91	-30.00	-14.91
	7212.00	V	-44.78	-30.00	-14.78
High	4950.32	H	-44.16	-30.00	-14.16
	4950.32	V	-37.16	-30.00	-7.16
	7429.49	H	-39.43	-30.00	-9.43
	7429.49	V	-39.74	-30.00	-9.74

3.4 DUTY CYCLE (NOT APPLY)

3.4.1 LIMITS OF DUTY CYCLE

Frequency Band	Duty Cycle	Application
2400MHz to 2483.5MHz	No Restriction	Generic use
2400MHz to 2483.5MHz	No Restriction	Detection, movement and alert applications
(a) 2446MHz to 2454MHz	No Restriction	RFID
(b) 2446MHz to 2454MHz	15%	RFID
5725MHz to 5875MHz	No Restriction	Generic use
9200MHz to 9500MHz	No Restriction	Detection, movement and alert applications
9500MHz to 9975MHz	No Restriction	Detection, movement and alert applications
10.5GHz to 10.6GHz	No Restriction	Detection, movement and alert applications
13.4GHz to 14.0GHz	No Restriction	Detection, movement and alert applications
17.1GHz to 17.3GHz	DDA or equivalent techniques	GBSAR detecting and movement and alert applications
24.00GHz to 24.25GHz	No Restriction	Detection, movement and alert applications

3.4.2 TEST PROCEDURES

Refer to chapter 4.2.5.3 of Final Draft EN 300 440 V2.2.1 (2018-05).

3.4.3 DEVIATION FROM TEST STANDARD

No deviation.

3.4.4 TEST SETUP

The test setup has been constructed as the normal use condition. Controlling software (provided by manufacturer) has been activated to set the EUT on specific status.

3.4.5 TEST RESULTS

This product does not apply.

RECEIVER PARAMETERS

3.5 ADJACENT CHANNEL SELECTIVITY

3.5.1 LIMITES OF ADJACENT CHANNEL SELECTIVITY

The adjacent channel selectivity of the equipment under specified conditions shall not be less than -30 dBm + k

Receiver category	Limit
1	-30dBm + K

The correction factor, k, is as follows:

k = -20logf -10logBW

Where:

f is the frequency in GHz;

BW is the channel bandwidth in MHz.

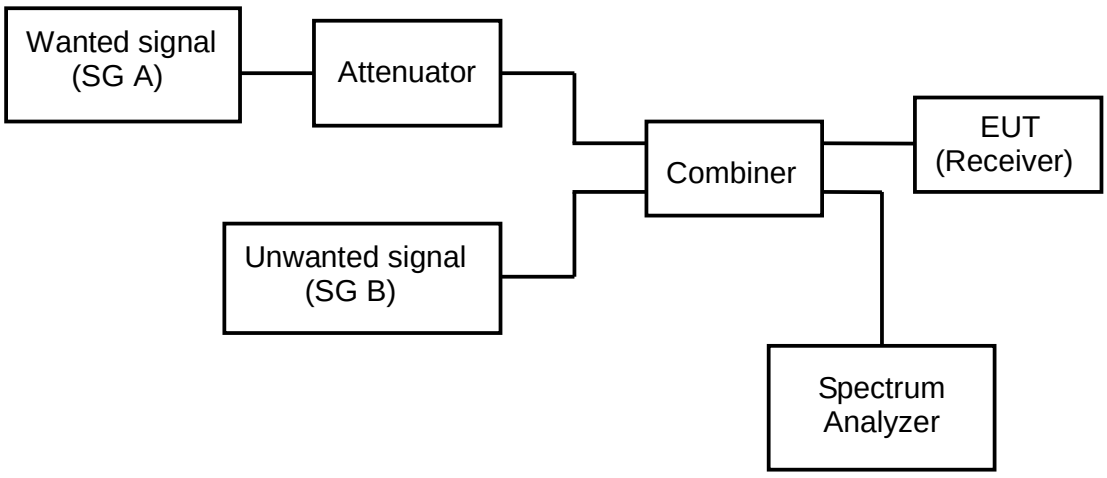
The factor k is limited within the following:

-40 dB < k < 0 dB

3.5.2 TEST PROCEDURES

Refer to chapter 4.3.3.3 of Final Draft EN 300 440 V2.2.1 (2018-05).

3.5.3 TEST SETUP



3.5.4 TEST RESULTS

This product does not apply.

3.6 BLOCKING OR DESENSITIZATION

3.6.1 LIMITES OF RECEIVER BLOCKING

The blocking level, shall not be less than the values given in table

Receiver category	Limit
1	-30dBm + K
2	-45dBm + K
3	-60dBm + K

The correction factor, k, is as follows:

k = -20logf -10logBW

Where:

f is the frequency in GHz;

BW is the channel bandwidth in MHz.

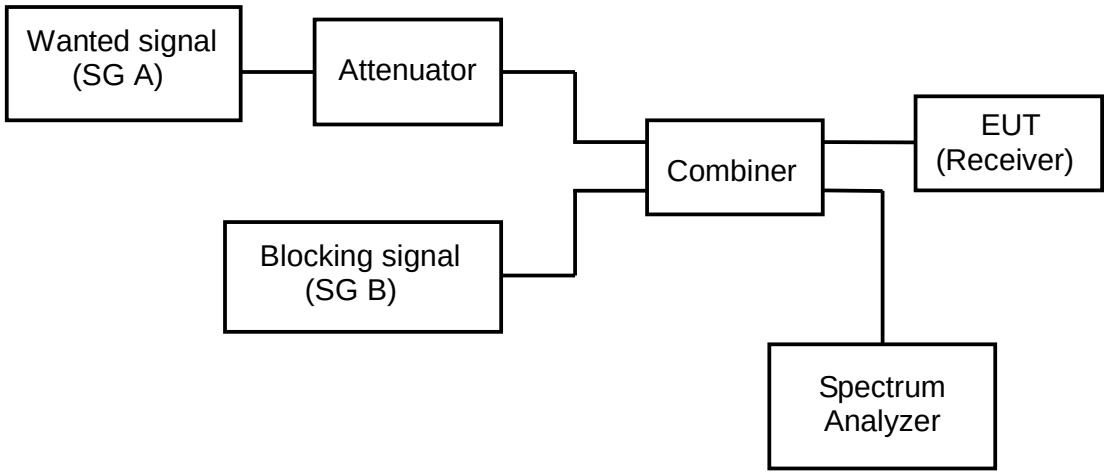
The factor k is limited within the following:

-40 dB < k < 0 dB

3.6.2 TEST PROCEDURES

Refer to chapter 4.3.4.3 of Final Draft EN 300 440 V2.2.1 (2018-05).

3.6.3 TEST SETUP



3.6.4 TEST RESULTS

Receiver Category 3 Equipment

Blocking measure of the capability	
P_{min}: -74.12dBm	
The actual blocking signal power(Note)	☒ at the antenna connector
	☐ in front of the antenna
Note: For the conducted measurements, the same level should be used at the antenna connector irrespective of antenna gain.	

Operation mode	Operation frequency (MHz)	Wanted signal power (dBm)	Offset of the bandwidth (times)	Blocking signal frequency(MHz)	Blocking signal Power (dBm)	Minimum Limit (dBm)
Normal working	2404	-71.12	-10	2358.651	-57.43	-73.97
			-20	2315.451	-51.86	
			-50	2185.851	-46.93	
	2476		+10	2521.793	-56.47	-74.27
			+20	2565.393	-50.36	
			+50	2696.193	-45.81	

Note:

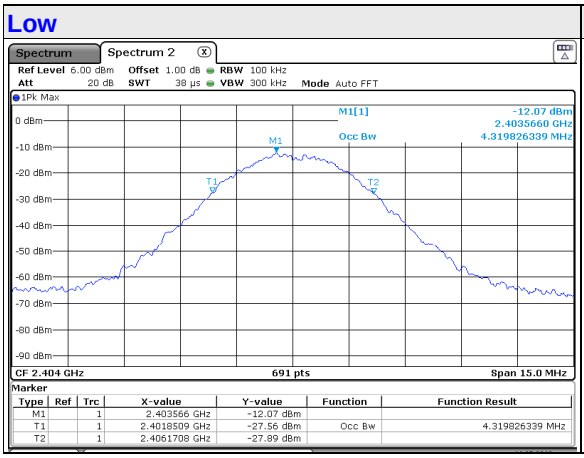
Lower Channel: K=-20logf -10logBW=-13.9735

Upper Channel: K=-20logf -10logBW=-14.2699

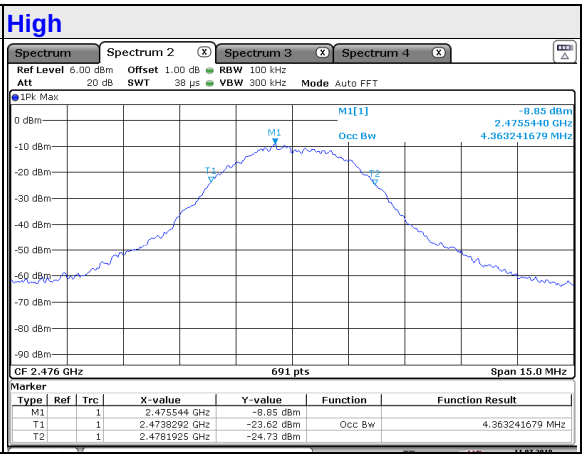
OCCUPIED BANDWIDTH(FOR REFERENCE)

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)
Low	2404	4.320
High	2476	4.363

Low



High



3.7 RECEIVER SPURIOUS EMISSIONS

3.7.1 LIMITS OF RECEIVER SPURIOUS EMISSIONS

Frequency range	Frequencies below 1GHz	Frequencies above 1GHz
Limit	2nW or -57dBm	20nW or -47dBm

3.7.2 TEST PROCEDURES

Refer to chapter 4.3.5.3 of Final Draft EN 300 440 V2.2.1 (2018-05).

3.7.3 DEVIATION FROM TEST STANDARD

No deviation.

3.7.4 TEST SETUP

1. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).
2. The test setup has been constructed as the normal use condition. Controlling software (provided by manufacturer) has been activated to set the EUT on specific status.

3.7.5 TEST RESULTS

RX BELOW 1GHz DATA

SPURIOUS EMISSION FREQUENCY RANGE	25MHz ~ 1GHz	OPERATING CHANNEL	Low

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
85.96	H	-68.68	-57.00	-11.68
95.31	V	-68.30	-57.00	-11.30
110.83	H	-69.85	-57.00	-12.85
126.56	V	-61.46	-57.00	-4.46
141.92	H	-69.01	-57.00	-12.01
164.06	V	-68.49	-57.00	-11.49
207.21	H	-71.51	-57.00	-14.51
242.96	H	-72.07	-57.00	-15.07
645.31	V	-68.76	-57.00	-11.76
874.09	H	-66.14	-57.00	-9.14
875.00	V	-67.09	-57.00	-10.09
943.75	V	-66.00	-57.00	-9.00

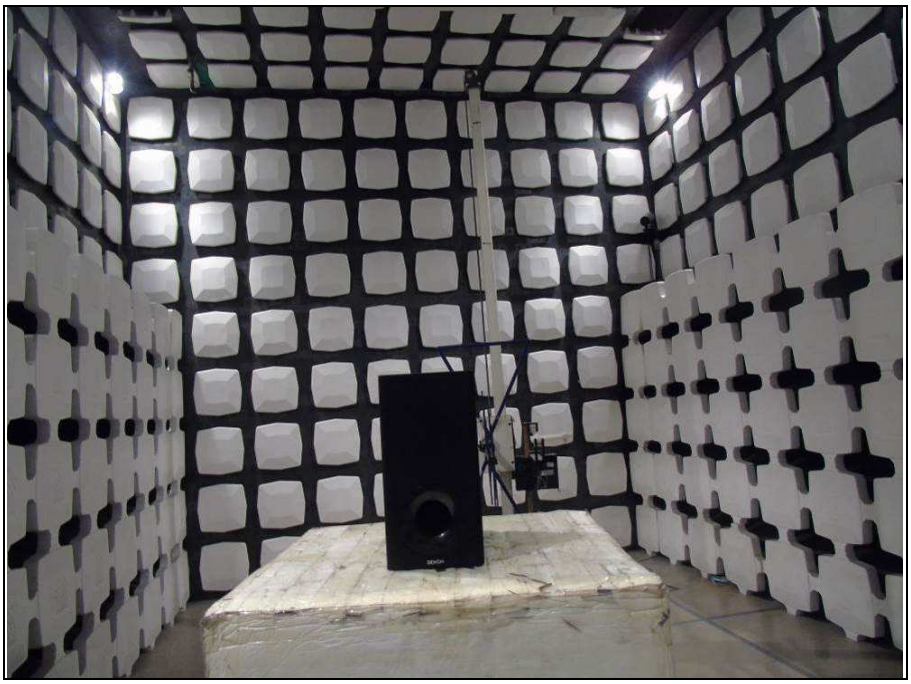
RX ABOVE 1GHz DATA

SPURIOUS EMISSION FREQUENCY RANGE	1GHz ~ 25GHz	OPERATING CHANNEL	Low , High

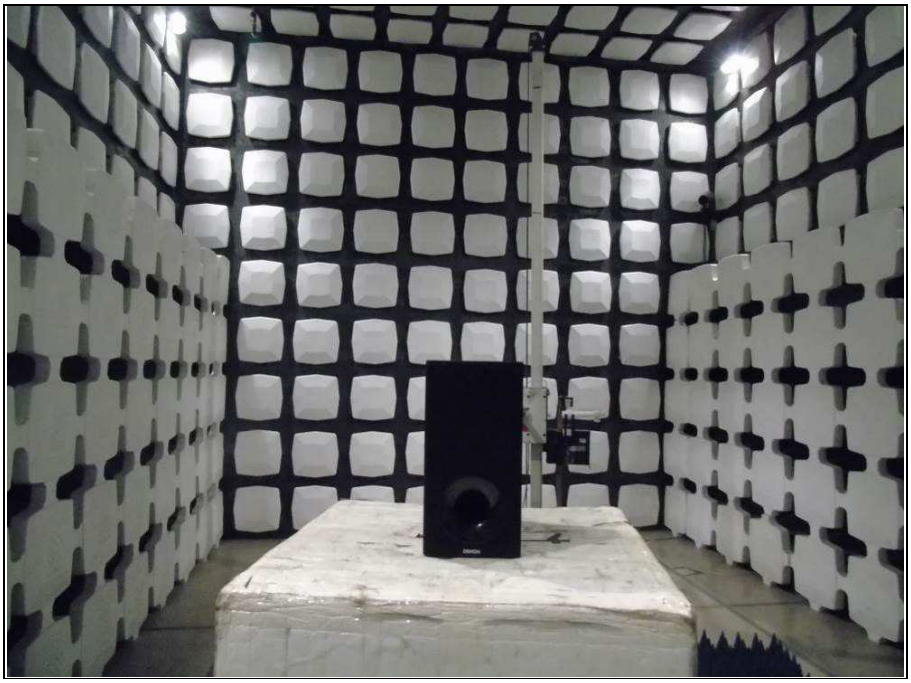
SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
Low	4814.10	H	-37.97	-30.00	-7.97
	4814.10	V	-33.84	-30.00	-3.84
	7218.00	H	-44.91	-30.00	-14.91
	7218.00	V	-44.78	-30.00	-14.78
High	4950.32	H	-44.16	-30.00	-14.16
	4950.32	V	-37.16	-30.00	-7.16
	7429.49	H	-39.43	-30.00	-9.43
	7429.49	V	-39.74	-30.00	-9.74

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

SPURIOUS EMISSION TEST BELOW 1GHz



SPURIOUS EMISSION TEST ABOVE 1GHz



5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

---END---

TEST REPORT

Applicant	TCL Technoly Electronics(Huizhou) Co., Ltd.
Address	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, China, 516006.

Manufacturer or Supplier	Sound United, LLC
Address	1 Viper Way Vista, CA 92081 USA
Product	HOME THEATER SYSTEM
Brand Name	Polk
Model	SIGNA S2 SOUND BAR
Additional Models & Model Difference	N/A
Date of tests	May 31, 2018 ~ Jul. 18, 2018

The submitted sample of the above equipment has been tested according to the requirements of the following standard:

☒ **EN 62479:2010**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Andy Zhu Project Engineer / EMC Department	Approved by Glyn He Supervisor / EMC Department
	 Date: Aug. 02, 2018

Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch

No. 34, Chenwulu Section, Guantai Rd., Houjie Town, Dongguan City,
Guangdong 523942, China

Tel: +86 769 8593 5656
Fax: +86 769 8593 1080
Email: customerservice.dg@cn.bureauveritas.com

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SE180531N039-1	Original release	Aug. 02, 2018

Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch

No. 34, Chenwulu Section, Guantai Rd., Houjie Town, Dongguan City,
Guangdong 523942, China

Tel: +86 769 8593 5656
Fax: +86 769 8593 1080
Email: customerservice.dg@cn.bureauveritas.com

1. GENERAL INFORMATION

1.1. GENERAL DESCRIPTION OF EUT

PRODUCT	HOME THEATER SYSTEM
MODEL NO.	SIGNA S2 SOUND BAR
ADDITIONAL MODEL	N/A
NOMINAL VOLTAGE	AC 100-240V 50-60Hz 40W
MODULATION TECHNOLOGY	FHSS, DTS
MODULATION TYPE	GFSK, π/4 DQPSK, 8DPSK For FHSS BT-LE(GFSK) for DTS GFSK for 2.4G Wireless
OPERATING FREQUENCY	2402MHz ~ 2480MHz For BT 2404MHz-2476MHz for 2.4G Wireless
EIRP POWER	3.88dBm For BT -0.38dBm For 2.4G Wireless
ANTENNA TYPE	PCB Antenna, 2dBi Gain For BT FPCB Antenna, 3.08dBi Gain For 2.4G Wireless

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.

3. Please refer to the EUT photo document (Reference No.: 180531N039) for detailed product photo.

2. RF EXPOSURE MEASUREMENT

2.1 INTRODUCTION

This International Standard provides simple conformity assessment methods for low-power electronic and electrical equipment to an exposure limit relevant to electromagnetic fields (EMF). If such equipment cannot be shown to comply with the applicable EMF exposure requirements using the methods included in this standard for EMF assessment, then other standards, including IEC 62311 or other (EMF) product standards, may be used for conformity assessment. This European Standard supersedes EN 50371:2002.

2.2 COMPLIANCE CRITERIA

Compliance of electromagnetic emissions from electronic and electrical equipment with the basic restrictions usually is determined by measurements and, in some cases, calculation of the exposure level. If the electrical power used by or radiated by the equipment is sufficiently low, the electromagnetic fields emitted will be incapable of producing exposures that exceed the basic restrictions. This standard provides simple EMF assessment procedures for this low power equipment.

Any relevant compliance assessment procedure which is consistent with the state of the art, reproducible and gives valid results can be used.

For transmitters intended for use with more than one antenna configuration option, the combination of transmitter and antenna(s) which generates the highest available antenna power and/or average total radiated power shall be assessed.

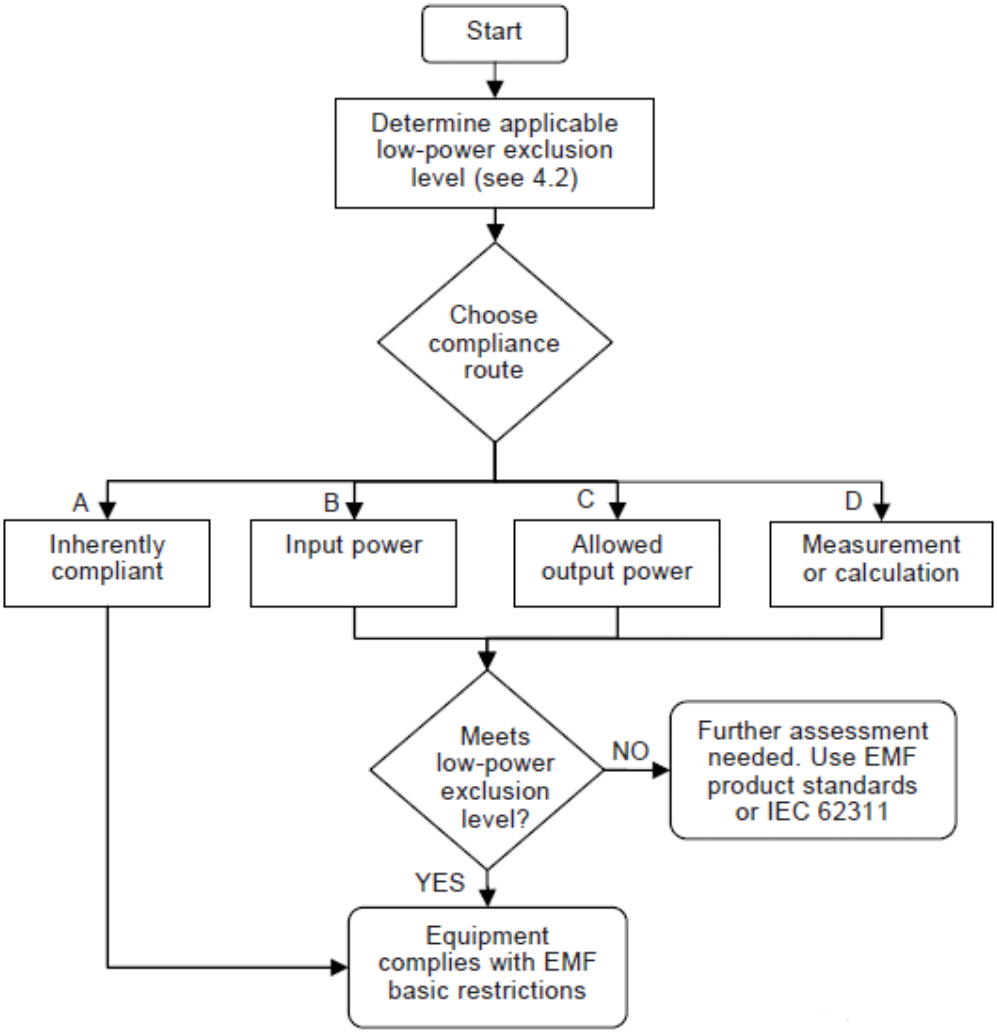
2.3 NORMATIVE REFERENCE

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Publication	Year	Title	EN/HD	Year
IEC 62311 (mod)	-	Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz -300 GHz)	EN 62311: 2008	-

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

2.4 ROUTES TO SHOW COMPLIANCE WITH LOW-POWER EXCLUSION LEVEL



2.5 TEST RESULTS

CALCULATION FOR MAXIMUM EIRP:

AV Power (EIRP)(dBm)	Power (EIRP)(mW)	Low-power exclusion level (mW)
3.88 For BT	2.443	20
-0.38 For 2.4G Wireless	0.916	20

Certificate # 2951.01

TEST REPORT

Applicant	TCL Technoly Electronics(Huizhou) Co., Ltd.
Address	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, China, 516006.

Manufacturer or Supplier	Sound United, LLC
Address	1 Viper Way Vista, CA 92081 USA
Product	HOME THEATER SYSTEM
Brand Name	Polk
Model	SIGNA S2 SUBWOOFER
Additional Models & Model Difference	N/A
Date of tests	May 31, 2018 ~ Jul. 18, 2018

The submitted sample of the above equipment has been tested according to the requirements of the following standard:

☒ **EN 62479:2010**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Andy Zhu Project Engineer / EMC Department	Approved by Glyn He Supervisor / EMC Department
Andy	Date: Aug. 02, 2018

Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SE180531N039-2	Original release	Aug. 02, 2018

Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch

No. 34, Chenwulu Section, Guantai Rd., Houjie Town, Dongguan City,
Guangdong 523942, China

Tel: +86 769 8593 5656
Fax: +86 769 8593 1080
Email: customerservice.dg@cn.bureauveritas.com

1. GENERAL INFORMATION

1.1. GENERAL DESCRIPTION OF EUT

PRODUCT	HOME THEATER SYSTEM
MODEL NO.	SIGNA S2 SUBWOOFER
ADDITIONAL MODEL	N/A
NOMINAL VOLTAGE	AC 100-240V 50-60Hz 40W
MODULATION TYPE	GFSK for 2.4G Wireless
OPERATING FREQUENCY	2404-2476MHz
EIRP POWER	-1.90dBm (Max.)
ANTENNA TYPE	PCB Antenna, with 2dBi gain

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.

3. Please refer to the EUT photo document (Reference No.: 180531N039) for detailed product photo.

2. RF EXPOSURE MEASUREMENT

2.1 INTRODUCTION

This International Standard provides simple conformity assessment methods for low-power electronic and electrical equipment to an exposure limit relevant to electromagnetic fields (EMF). If such equipment cannot be shown to comply with the applicable EMF exposure requirements using the methods included in this standard for EMF assessment, then other standards, including IEC 62311 or other (EMF) product standards, may be used for conformity assessment. This European Standard supersedes EN 50371:2002.

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For transmitters intended for use with more than one antenna configuration option, the combination of transmitter and antenna(s) which generates the highest available antenna power and/or average total radiated power shall be assessed.

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Publication	Year	Title	EN/HD	Year
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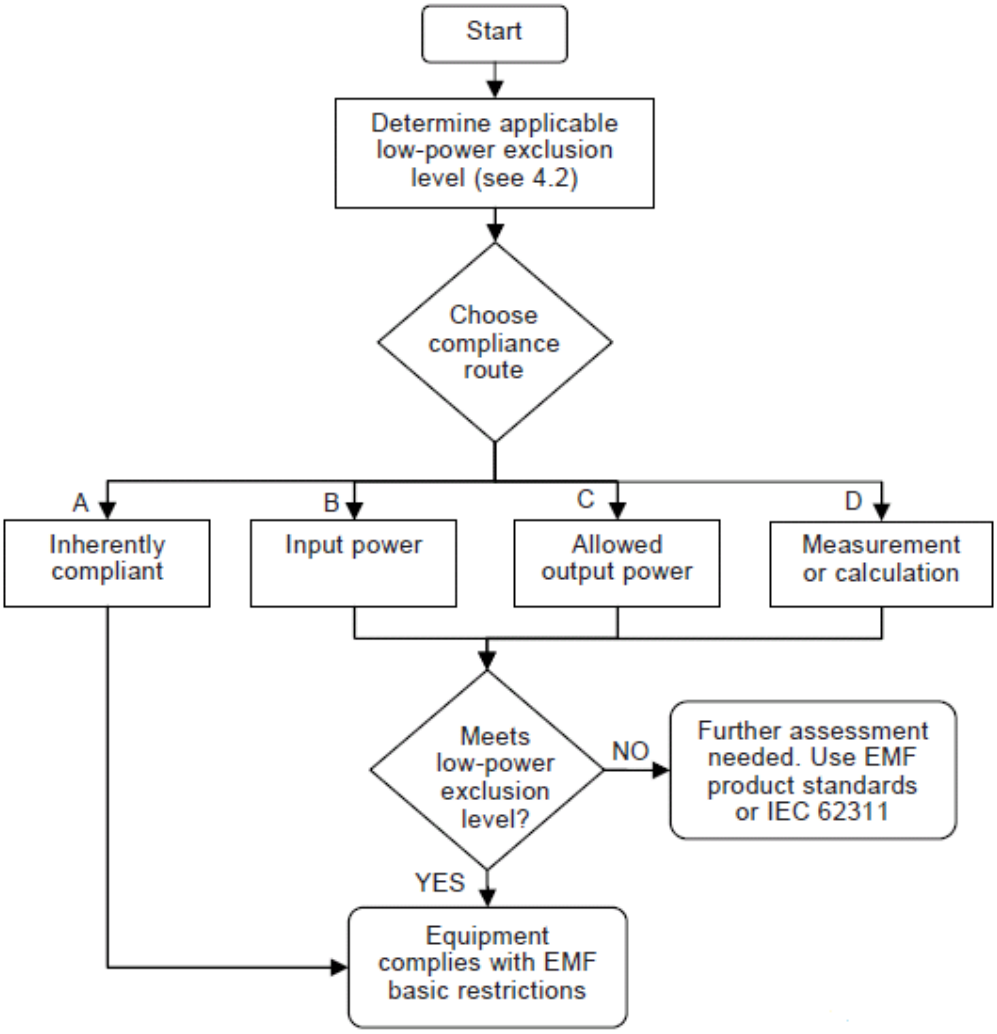
2.4 ROUTES TO SHOW COMPLIANCE WITH LOW-POWER EXCLUSION LEVEL



2.5 TEST RESULTS

CALCULATION FOR MAXIMUM EIRP:

AV Power (EIRP)(dBm)	Power (EIRP)(mW)	Low-power exclusion level (mW)
-1.90	0.646	20

Sound United, LLC
5541 Fermi Court Carlsbad, CA 92008, USA

Statement of the requirements between current EC regulation 1275/2008 with amendment 801/2013 and new EC regulation 2023/826 regarding ErP

We (Sound United, LLC) are a manufacturer that produces and sells AV products. Regarding ErP regulation, we have checked the requirments between current regulation 1275/2008 with amendment 801/2013 and new regulation 2023/826, and confirmed that there is no design change required for our AV products.
For that purpose, we hereby declare and state to use test reports and measurement results based on the current regulations, 1275/2008 and amendment 801/2013, as technical documentation because our AV products meet the requirements under new ErP regulation 2023/826. For more details, please refer to the attached technical documentation.

Manufacturer: Sound United, LLC
Address : 5541 Fermi Court Carlsbad, CA 92008, USA

Responsible: Takamitsu Hashimoto
General Manager, NPD Quality Assurance
Date: 28-March-2025

橋本貴光

D&M
D&M Holdings Inc.
2-1 Nisshin-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, 210-8569 Japan
Tel : +81-44-670-2665 Fax : +81-44-670-2697

Test Report for Energy-related Products (ErP) EU Regulation No.1275/2008 and its frame work directive 2009/125/EC including amendment 801/2013

General Information:

Report Date:	17-Dec-20	Report No.:	SU-ERP18064-R4
Manufacturer:	Sound United LLC.		
Factory	Refer to "Factory information".		
Model Tested:	Signa S2		
Appliance Type	Home Theater System		
Brand Name:	Polk		
Country of Origin:	China		
Test Method:	EN50564:2011 : Electrical and electronic household and office equipment Measurement of low power consumption (IEC 62301:2011 (Modified))		
Product Type	Type C		

Test Results:

Date Tested:	6-Jun-18	Ambient Temperature:	25 °C
Power Supply:	230V~ / 50,60Hz	THD:	≤2%
Operating Condition (Refer to the user's manual)		Description of the mode select	Measured power consumption (Watts)
Off mode		-	N/A
Initial Standby mode		Normal Standby(BAR)	0.312
Initial Standby mode		Normal Standby(SUB)	0.290
Max. consumed Standby mode if any		-	N/A
Max. consumed Network Standby mode if any		Bluetooth Standby(BAR)	1.732
Other Network Standby mode if any		Bluetooth Standby(SUB)	1.349
Other Network Standby mode if any		-	N/A
Other Network Standby mode if any		-	N/A
Other function than Off/Standby modes if any		N/A	N/A
Power management function		Yes	
Functional time of power management		15min	

Complied with ErP from 7 January, 2013 (≤0.5W & Power Management)	Yes
Complied with ErP from 1 January, 2017 (≤8W: HiNA, ≤3W: Other Network)	Yes

Checked by: Akihiko Fujita

Approved by:

Mikio Nagata, Senior Manager
NPD, Quality Assurance.
Sound United, LLC

Technical Report for Commision Regulation (EU) No. 801/2013

Information about networked equipment (ErP):

the number and type of network ports except wireless network ports.	1 network ports. Bluetooth	Automatically changes modes for standby	When this product is in the stop state and there is no input signal and operation for 15 minutes, it automatically enters the standby mode. The default setting is “On”.
Whether all network ports are deactivated before delivery	Initial: Normal Standby mode		
HiNA equipment or Other equipment	This model is other equipment.	Trigger that is used to reactivate the equipment	Push any buttons on the following items when the product is network standby mode. a) product b) remote control
Communication protocol used by the equipment	☐ARP, ☐TCP/IP unicast, ☐TCP/IP multicast, ☐UDP, ☐DHCP, ☐Bonjour, ☐HTTP, ☐SSL, ■AVRCP, ■A2DP, ■HDMI（ARC),		
Any notes for network standby	Please configure the Blutooth standby setup according to the user manual.		

Test Result of Network Standby (ErP):

Claus	Ecodesing requirements from 1/1/2015	Result - Remark	Verdict
3a)	Possibility of deactivating wireless network connection(s) Any networked equipment that can be connected to a wireless network shall offer the user the possibility to deactivate the wireless network connection(s). This requirement does not apply to products which rely on a single wireless network connection for intended use and have no wired network connection.	This product's network standby required is Bluetooth only, In this case, exclusion sentence is applied. Wireless modules are used for BAR-SUB communication, The ErP request is not applied to this communication, Because it is a communication closed in the one package.	Pass
3b)	Power management for networked equipment Equipment shall, unless inappropriate for the intended use, offer a power management function or a similar function. When equipment is not providing a main function, and other energy-using product(s) are not dependent on its functions, the power management function shall switch equipment after the shortest possible period of time appropriate for the intended use of the equipment, automatically into a condition having networked standby. In a condition providing networked standby, the power management function may switch equipment automatically into standby mode or off mode or another condition which does not exceed the applicable power consumption requirements for standby and/or off mode. The power management function, or a similar function, shall be available for all network ports of the networked equipment. The power management function, or a similar function, shall be activated, unless all network ports are deactivated. In that latter case the power management function, or a similar function, shall be activated if any of the network ports is activated. The default period of time after which the power management function, or a similar function, switches the equipment automatically into a condition providing networked standby shall not exceed 20 minutes.	Power management function is enabled at the shipping. Our product complies with ERP LOT6. Bluetooth standby function is arbitrary setting by customer. In this case, Our product complies with ERP LOT26. This product can not arbitrary setting the power management function by customer. Power management function is always “On”. When this product is in the stop state and there is no input signal and operation for 15 minutes, it automatically enters the normal standby mode/Bluetooth standby mode.	Pass
3c)	Networked equipment that has one or more standby modes shall comply with the requirements for these standby mode(s) when all network ports are deactivated.	Our products following the provisions of EC/EU directives, that as above.	Pass
3d)	Networked equipment other than HiNA equipment shall comply with the provisions under 2(d) when all network ports are deactivated.	Our product complies with ERP LOT6 when disabled of the Network function.	Pass
3e)	Power consumption in a condition providing networked standby: The power consumption of HiNA equipment or equipment with HiNA functionality in a condition providing networked standby into which the equipment is switched by the power management function, or a similar function shall not exceed 12W. The power consumption of other networked equipment in a condition providing networked standby into which the equipment is switched by the power management function, or a similar function, shall not exceed 6W. The power consumption limits as stipulated in point (e) shall not apply to: (i) printing equipment with a power supply of a rated power larger than 750 W; (ii) large format printing equipment; (iii) tele-presence systems; (iv) desktop thin clients; (v) workstations; (vi) mobile workstations; (vii) small-scale servers; (viii) computer servers.	☐ HiNA equipment ■ Other networked equipment Blutooth standby mode(Max) :1.732W (*1) This product's network standby required is Bluetooth only, In this case, exclusion sentence is applied. Wireless modules are used for BAR-SUB communication, The ErP request is not applied to this communication, Because it is a communication closed in the one package.	Pass

Power consumption summary sheet

Model name	Polk Signa S2 AM6215-A(E2)
Date of measurement	2018/7/20
Power supply voltage	230 V
Power supply frequency	50/60 Hz
Temperature	25 ℃
Applicable standard	IEC62301:2011
Measurement equipment	YOKOGAWA WT310E
Domestic Identification #	L4522
Calibration expire date	Oct-2018
Power supply equipment	NF KP3000S
Domestic Identification #	No.3
Location	Kawasaki QA
Measured by	Fujita

Approve	Check	Measure
Nagata	Nakano	Fujita

Unit: W

STANDBY MODE	Initial setting	95% reliability limit	Judge	Spec. (≦W)	#27	#38	#96			
					LPP	LPP	LPP			
1 BAR Bluetooth Standby (50Hz)		1.732	OK	2.0	1.571	1.620	1.525			
1 BAR Bluetooth Standby (60Hz)		1.714	OK	2.0	1.569	1.620	1.539			
2 Sub Bluetooth Standby (50Hz)		1.144	OK	2.0	1.055	1.094	1.082			
2 Sub Bluetooth Standby (60Hz)		1.349	OK	2.0	1.057	1.122	1.191			
3 BAR Deep Standby (50Hz)	v	0.310	OK	0.45	0.301	0.296	0.293			
3 BAR Deep Standby (60Hz)		0.312	OK	0.45	0.302	0.295	0.294			
4 Sub Deep Standby (50Hz)	v	0.286	OK	0.45	0.268	0.262	0.273			
4 Sub Deep Standby (60Hz)		0.290	OK	0.45	0.261	0.263	0.274			

Measured 3 units

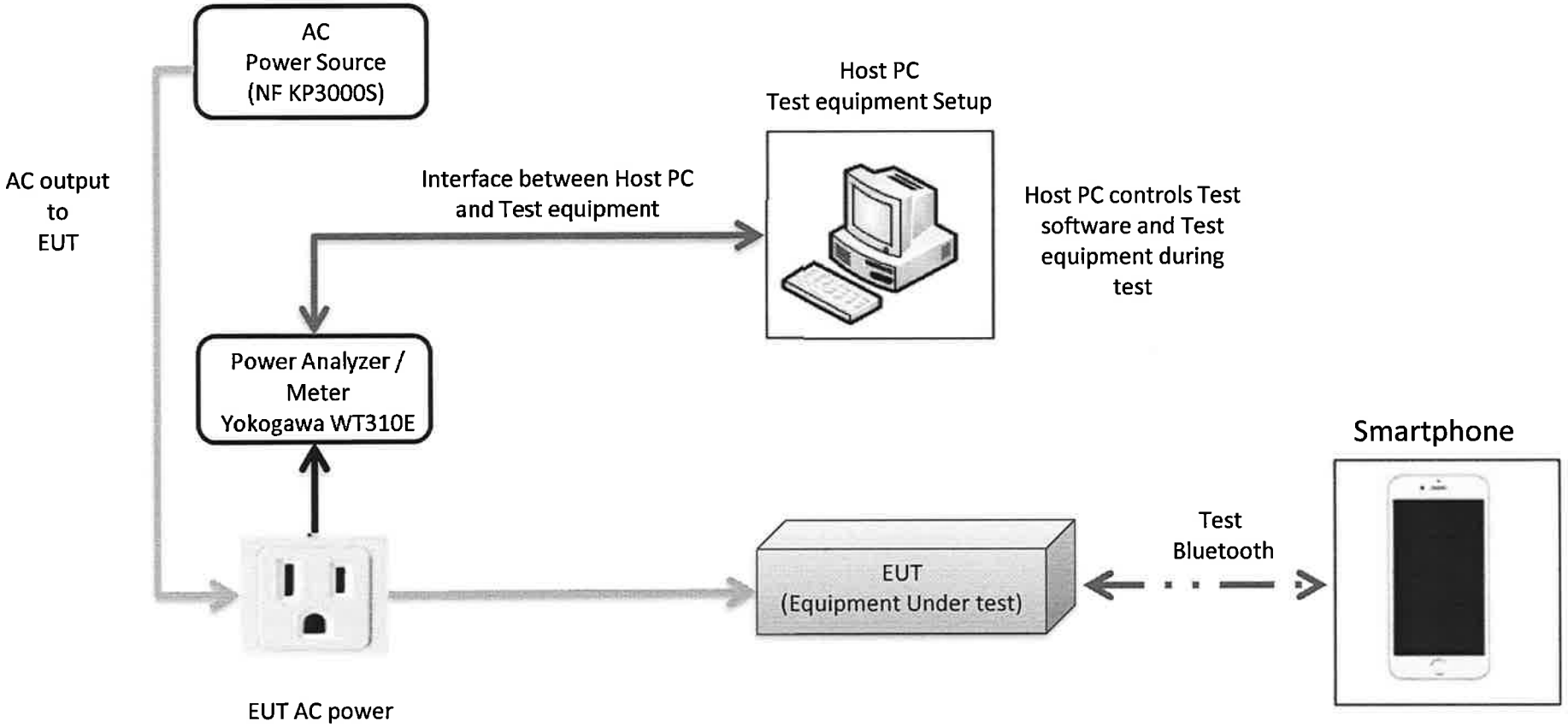
・Use Power consumption Measurement Software tool, and input result of "Average Power".
・Measurement power consumption input to 3 places of decimals.
・Measure more than 3 units,
and transcription 95% reliability power consumption from "Standby power consumption judgment sheet".

※Note
2013/1/17/～ ErP directory forced defined ≦0.50W(95%reliability)

Comment

version3: changed t-distribution table(gray cell)

Set-up and circuits used for measurements : Bluetooth Standby (Network ON)



Power consumption summary sheet

Model name	Polk Signa S2 AM6215-A(E2)
Date of measurement	2018/7/20
Power supply voltage	230 V
Power supply frequency	50/60 Hz
Temperature	25 ℃
Applicable standard	IEC62301 : 2011
Measurement equipment	YOKOGAWA WT310E
Domestic Identification #	L4522
Calibration expire date	Oct-2018
Power supply equipment	NF KP3000S
Domestic Identification #	No.3
Location	Kawasaki QA
Measured by	Fujita

Approve	Check	Measure
Nagata	Nakano	Fujita

Unit: W

STANDBY MODE	Initial setting	95% reliability limit	Judge	Spec. (≦W)	#27	#38	#96			
					LPP	LPP	LPP			
1 BAR Bluetooth Standby (50Hz)		1.732	**OK**	2	1.571	1.620	1.525			
1 BAR Bluetooth Standby (60Hz)		1.714	**OK**	2	1.569	1.620	1.539			

Measured 3 units

・Use Power consumption Measurement Software tool, and input result of "Average Power".
・Measurement power consumption input to 3 places of decimals.
・Measure more than 3 units,
and transcription 95% reliability power consumption from "Standby power consumption judgment sheet".

※Note
2013/1/17/～ ErP directory forced defined ≦0.50W(95%reliability)

Comment

Description how operating mode is obtained:

1. Reset the EUT
2. Putting in operation based on manual.
3.Press the "TV" button on the remote control for more than 5 seconds to enable the "Bluetooth Standby" mode
4. A music track playback in smartphone over Bluetooth is carried out and stopped.
5. Press the power button on EUT to Standby-mode.
6. The measurement is carried out after LED indicator on the Soundbar is turned off.

Standby power consumption judgment sheet
mode: BAR Bluetooth Standby (50Hz)

(Europe: ErP directive t-distribution 95% reliability check)

	Result
Data1	1.571
Data2	1.620
Data3	1.525
Data4	
Data5	
Data6	
Data7	
Data8	
Data9	
Data10	
Data11	
Data12	
Data13	
Summation (Σ)	4.716

* More than 3 units data required
* Add measurement unit when data is not enough.
* If Judge result is NG, check spec/unit or add more EUT unit.

Model name:	Polk Signa S2 AM6215-A(E2)
Spec.	=<2.000W
Mode:	BAR Bluetooth Standby (50Hz)
Number of unit	3

	Limit
Spec.	2
Deviation σ(sigma)	9.009
Conformance ratio(%)	100.00%
Non-conformance ra	0.00%

Standard deviation	s=	0.0475

Average	1.57
Max	1.62
Min	1.53

95% area from t-Distribution

v(n-1)=	2

v	P/2=0.05
1	6.314
2	2.920
3	2.353
4	2.132
5	2.015
6	1.943
7	1.895
8	1.860
9	1.833
10	1.812
11	1.796
12	1.782

95% reliability	index(k)	2.92

95% reliability		Judge
Limit (W)	1.7322	OK

Therefore,
Polk Signa S2 AM6215-A(E2) 's power consumption is
1.7322 Watts or less with 95% reliability.

※Note
2013/1/17/～ ErP directory forced defined ≦0.50W(95%reliability)

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR	Firmware Ver.F1.02
Serial Number	AM6220061800027	C2PD04018V
Rated voltage / frequency	230 V / 50 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.013 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.090 V / 49.999 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:12:26 (LR Stable)
Power variation	2.880 %
Max Power Value	1.597 W
Last Power Value	1.566 W
Accumulated energy	0.326 Wh
Average Power	1.571 W

Detail Measured data

Item	Data
Apparent Power	8.146 VA
Real Power Factor	0.192

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 17:09

Remarks column

Network on Stand-by (LED OFF)

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR	Firmware Ver.F1.02
Serial Number	AM6220061800038	C2PD04018V
Rated voltage / frequency	230 V / 50 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.013 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.080 V / 50.000 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	2.675 %
Max Power Value	1.645 W
Last Power Value	1.631 W
Accumulated energy	0.270 Wh
Average Power	1.620 W

Detail Measured data

Item	Data
Apparent Power	8.251 VA
Real Power Factor	0.198

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	20 / 07 / 2018 09:21

Remarks column

Network on Stand-by (LED OFF)

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR	Firmware Ver.F1.02
Serial Number	AM6220061800096	C2PD04018V
Rated voltage / frequency	230 V / 50 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.013 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.090 V / 50.000 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	2.839 %
Max Power Value	1.550 W
Last Power Value	1.524 W
Accumulated energy	0.254 Wh
Average Power	1.525 W

Detail Measured data

Item	Data
Apparent Power	8.071 VA
Real Power Factor	0.189

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 13:54

Remarks column

Network on Stand-by (LED OFF)

Standby power consumption judgment sheet
mode: BAR Bluetooth Standby (60Hz)

(Europe: ErP directive t-distribution 95% reliability check)

	Result
Data1	1.569
Data2	1.620
Data3	1.539
Data4	
Data5	
Data6	
Data7	
Data8	
Data9	
Data10	
Data11	
Data12	
Data13	
Summation (Σ)	4.728

* More than 3 units data required
* Add measurement unit when data is not enough.
* If Judge result is NG, check spec/unit or add more EUT unit.

Model name:	Polk Signa S2 AM6215-A(E2)
Spec.	=<2.000W
Mode:	BAR Bluetooth Standby (60Hz)
Number of unit	3

	Limit
Spec.	2
Deviation σ(sigma)	10.354
Conformance ratio(%)	100.00%
Non-conformance ra	0.00%

Standard deviation	s=	0.0410

Average	1.58
Max	1.62
Min	1.54

95% area from t-Distribution

v(n-1)=	2

v	P/2=0.05
1	6.314
2	2.920
3	2.353
4	2.132
5	2.015
6	1.943
7	1.895
8	1.860
9	1.833
10	1.812
11	1.796
12	1.782

95% reliability	index(k)	2.92

95% reliability		Judge
Limit (W)	1.7141	OK

Therefore,
Polk Signa S2 AM6215-A(E2) 's power consumption is
1.7141 Watts or less with 95% reliability.

※Note
2013/1/17/～ ErP directory forced defined ≦0.50W(95%reliability)

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR	Firmware Ver.F1.02
Serial Number	AM6220061800027	C2PD04018V
Rated voltage / frequency	230 V / 60 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.012 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.130 V / 59.999 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	2.077 %
Max Power Value	1.589 W
Last Power Value	1.582 W
Accumulated energy	0.262 Wh
Average Power	1.569 W

Detail Measured data

Item	Data
Apparent Power	8.903 VA
Real Power Factor	0.178

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 17:32

Remarks column

Network on Stand-by (LED OFF)

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR	Firmware Ver.F1.02
Serial Number	AM6220061800038	C2PD04018V
Rated voltage / frequency	230 V / 60 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.012 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.110 V / 59.999 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	1.889 %
Max Power Value	1.641 W
Last Power Value	1.620 W
Accumulated energy	0.270 Wh
Average Power	1.620 W

Detail Measured data

Item	Data
Apparent Power	8.937 VA
Real Power Factor	0.181

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	20 / 07 / 2018 09:03

Remarks column

Network on Stand-by (LED OFF)

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR	Firmware Ver.F1.02
Serial Number	AM6220061800096	C2PD04018V
Rated voltage / frequency	230 V / 60 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.013 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.130 V / 59.999 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	1.926 %
Max Power Value	1.558 W
Last Power Value	1.537 W
Accumulated energy	0.256 Wh
Average Power	1.539 W

Detail Measured data

Item	Data
Apparent Power	8.846 VA
Real Power Factor	0.174

Test and laboratory details

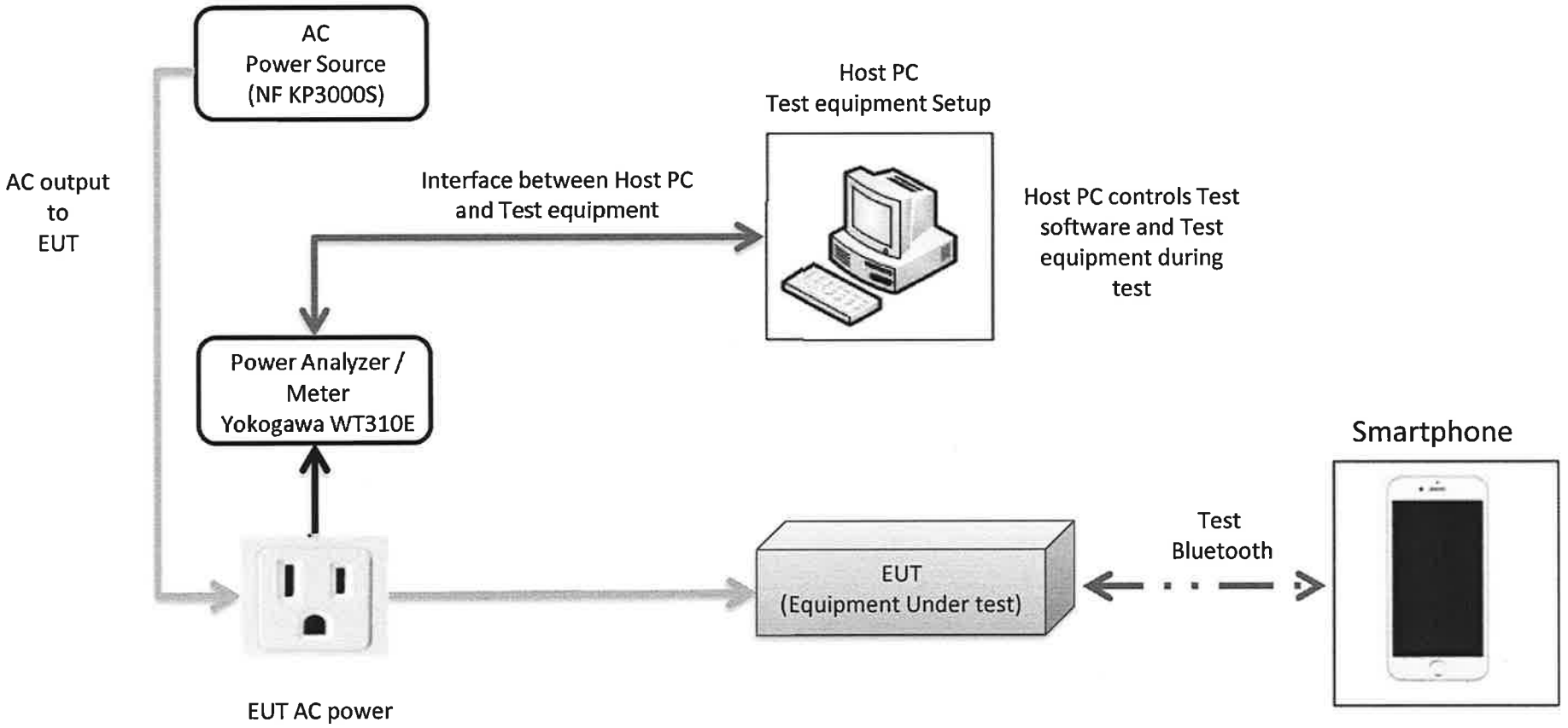
<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 13:37

Remarks column

Network on Stand-by (LED O

Set-up and circuits used for measurements : Bluetooth Standby (Network ON)



Power consumption summary sheet

Model name	Polk Signa S2 AM6215-A(E2)
Date of measurement	2018/7/20
Power supply voltage	230 V
Power supply frequency	50/60 Hz
Temperature	25 ℃
Applicable standard	IEC62301 : 2011
Measurement equipment	YOKOGAWA WT310E
Domestic Identification #	L4522
Calibration expire date	Oct-2018
Power supply equipment	NF KP3000S
Domestic Identification #	No.3
Location	Kawasaki QA
Measured by	Fujita

Approve	Check	Measure
Nagata	Nakano	Fujita

Unit: W

STANDBY MODE	Initial setting	95% reliability limit	Judge	Spec. (≦W)	#27	#38	#96			
					LPP	LPP	LPP			
2 Sub Bluetooth Standby (50Hz)		1.144	**OK**	2	1.055	1.094	1.082			
2 Sub Bluetooth Standby (60Hz)		1.349	**OK**	2	1.057	1.122	1.191			

Measured 3 units

- Use Power consumption Measurement Software tool, and input result of "Average Power".
- Measurement power consumption input to 3 places of decimals.
- Measure more than 3 units,
  and transcription 95% reliability power consumption from "Standby power consumption judgment sheet".

※Note
2013/1/17/～ ErP directory forced defined ≦0.50W(95%reliability)

Comment

Description how operating mode is obtained:

1. Reset the EUT
2. Putting in operation based on manual.
3. Press the "TV" button on the remote control for more than 5 seconds to enable the "Bluetooth Standby" mode
4. A music track playback in smartphone over Bluetooth is carried out and stopped.
5. Press the power button on EUT to Standby-mode.
6. The measurement is carried out after LED indicator on the Soundbar is turned off.

Standby power consumption judgment sheet
mode: Sub Bluetooth Standby (50Hz)

(Europe: ErP directive t-distribution 95% reliability check)

	Result
Data1	1.055
Data2	1.094
Data3	1.082
Data4	
Data5	
Data6	
Data7	
Data8	
Data9	
Data10	
Data11	
Data12	
Data13	
Summation (Σ)	3.231

* More than 3 units data required
* Add measurement unit when data is not enough.
* If Judge result is NG, check spec/unit or add more EUT unit.

Model name:	Polk Signa S2 AM6215-A(E2)
Spec.	=<2.000W
Mode:	Sub Bluetooth Standby (50Hz)
Number of unit	3

	Limit
Spec.	2
Deviation σ(sigma)	46.208
Conformance ratio(%)	100.00%
Non-conformance ra	0.00%

Standard deviation	s=	0.0200

Average	1.08
Max	1.09
Min	1.06

95% area from t-Distribution

v(n-1)=	2

v	P/2=0.05
1	6.314
2	2.920
3	2.353
4	2.132
5	2.015
6	1.943
7	1.895
8	1.860
9	1.833
10	1.812
11	1.796
12	1.782

95% reliability	index(k)	2.92

95% reliability		Judge
Limit (W)	1.1444	OK

Therefore,
Polk Signa S2 AM6215-A(E2) 's power consumption is
1.1444 Watts or less with 95% reliability.

※Note
2013/1/17/～ ErP directory forced defined ≦0.50W(95%reliability)

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR(SubWoofer)	Firmware Ver.F1.02
Serial Number	AM6220061800027	C2PD04018V
Rated voltage / frequency	230 V / 50 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.013 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.090 V / 50.000 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	2.801 %
Max Power Value	1.071 W
Last Power Value	1.054 W
Accumulated energy	0.176 Wh
Average Power	1.055 W

Detail Measured data

Item	Data
Apparent Power	6.957 VA
Real Power Factor	0.152

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 16:40

Remarks column

Network on Stand-by (LED ON)

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR(SubWoofer)	Firmware Ver.F1.02
Serial Number	AM6220061800038	C2PD04018V
Rated voltage / frequency	230 V / 50 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.012 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.090 V / 49.999 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:11:33 (LR Stable)
Power variation	2.790 %
Max Power Value	1.111 W
Last Power Value	1.090 W
Accumulated energy	0.211 Wh
Average Power	1.094 W

Detail Measured data

Item	Data
Apparent Power	6.787 VA
Real Power Factor	0.161

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	20 / 07 / 2018 10:03

Remarks column

Network on Stand-by (LED ON)

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR(SubWoofer)	Firmware Ver.F1.02
Serial Number	AM6220061800096	C2PD04018V
Rated voltage / frequency	230 V / 50 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.012 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.090 V / 49.999 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	1.650 %
Max Power Value	1.091 W
Last Power Value	1.081 W
Accumulated energy	0.180 Wh
Average Power	1.082 W

Detail Measured data

Item	Data
Apparent Power	7.041 VA
Real Power Factor	0.154

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 14:13

Remarks column

Network on Stand-by (LED ON)

Standby power consumption judgment sheet
mode: Sub Bluetooth Standby (60Hz)

(Europe: ErP directive t-distribution 95% reliability check)

	Result
Data1	1.057
Data2	1.122
Data3	1.191
Data4	
Data5	
Data6	
Data7	
Data8	
Data9	
Data10	
Data11	
Data12	
Data13	
Summation (Σ)	3.37

* More than 3 units data required
* Add measurement unit when data is not enough.
* If Judge result is NG, check spec/unit or add more EUT unit.

Model name:	Polk Signa S2 AM6215-A(E2)
Spec.	=<2.000W
Mode:	Sub Bluetooth Standby (60Hz)
Number of unit	3

	Limit
Spec.	2
Deviation σ(sigma)	13.083
Conformance ratio(%)	100.00%
Non-conformance ra	0.00%

Standard deviation	s=	0.0670

Average	1.12
Max	1.19
Min	1.06

95% area from t-Distribution

v(n-1)=	2

v	P/2=0.05
1	6.314
2	2.920
3	2.353
4	2.132
5	2.015
6	1.943
7	1.895
8	1.860
9	1.833
10	1.812
11	1.796
12	1.782

95% reliability	index(k)	2.92

95% reliability		Judge
Limit (W)	1.3493	OK

Therefore,
Polk Signa S2 AM6215-A(E2) 's power consumption is
1.3493 Watts or less with 95% reliability.

※Note
2013/1/17/～ ErP directory forced defined ≦0.50W(95%reliability)

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR(SubWoofer)	Firmware Ver.F1.02
Serial Number	AM6220061800027	C2PD04018V
Rated voltage / frequency	230 V / 60 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.013 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.130 V / 59.999 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	1.689 %
Max Power Value	1.066 W
Last Power Value	1.057 W
Accumulated energy	0.176 Wh
Average Power	1.057 W

Detail Measured data

Item	Data
Apparent Power	7.836 VA
Real Power Factor	0.135

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 16:23

Remarks column

Network on Stand-by (LED ON)

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR(SubWoofer)	Firmware Ver.F1.02
Serial Number	AM6220061800038	C2PD04018V
Rated voltage / frequency	230 V / 60 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.013 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.130 V / 59.999 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:12:46 (LR Stable)
Power variation	79.107 %
Max Power Value	1.187 W
Last Power Value	1.163 W
Accumulated energy	0.239 Wh
Average Power	1.122 W

Detail Measured data

Item	Data
Apparent Power	7.720 VA
Real Power Factor	0.151

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	20 / 07 / 2018 10:25

Remarks column

Network on Stand-by (LED ON)

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR(SubWoofer)	Firmware Ver.F1.02
Serial Number	AM6220061800096	C2PD04018V
Rated voltage / frequency	230 V / 60 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.014 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.130 V / 60.000 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	1.582 %
Max Power Value	1.201 W
Last Power Value	1.191 W
Accumulated energy	0.198 Wh
Average Power	1.191 W

Detail Measured data

Item	Data
Apparent Power	8.145 VA
Real Power Factor	0.146

Test and laboratory details

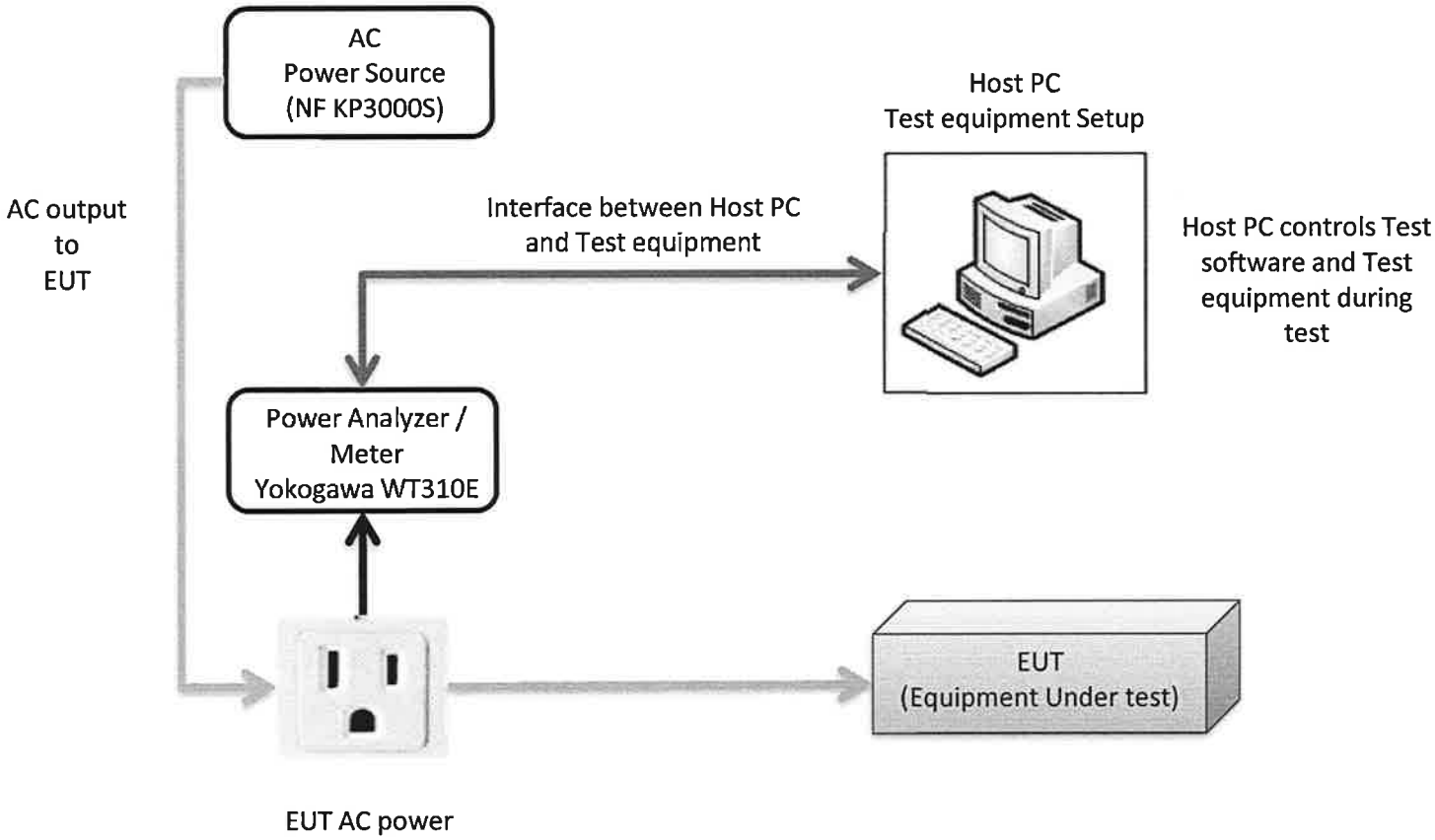
<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 14:38

Remarks column

Network on Stand-by (LED ON)

Set-up and circuits used for measurements : Deep Standby



Power consumption summary sheet

Model name	Polk Signa S2 AM6215-A(E2)
Date of measurement	2018/7/20
Power supply voltage	230 V
Power supply frequency	50/60 Hz
Temperature	25 ℃
Applicable standard	IEC62301 : 2011
Measurement equipment	YOKOGAWA WT310E
Domestic Identification #	L4522
Calibration expire date	Oct-2018
Power supply equipment	NF KP3000S
Domestic Identification #	No.3
Location	Kawasaki QA
Measured by	Fujita

Approve	Check	Measure
Nagata	Nakano	Fujita

Unit: W

STANDBY MODE	Initial setting	95% reliability limit	Judge	Spec. (≦W)	#27	#38	#96			
					LPP	LPP	LPP			
3 BAR Deep Standby (50Hz)	v	0.310	**OK**	0.45	0.301	0.296	0.293			
3 BAR Deep Standby (60Hz)		0.312	**OK**	0.45	0.302	0.295	0.294			

Measured 3 units

・Use Power consumption Measurement Software tool, and input result of "Average Power".
・Measurement power consumption input to 3 places of decimals.
・Measure more than 3 units,
and transcription 95% reliability power consumption from "Standby power consumption judgment sheet".

※Note
2013/1/17/～ ErP directory forced defined ≦0.50W(95%reliability)

Comment

Description how operating mode is obtained:

1. Reset the EUT
2. Putting in operation based on manual. (Bluetooth Standby mode:OFF)
3. Press the power button on EUT to Standby-mode.
4. The measurement is carried out after LED indicator on the Soundbar is turned off.

Standby power consumption judgment sheet
mode: BAR Deep Standby (50Hz)

(Europe: ErP directive t-distribution 95% reliability check)

	Result
Data1	0.301
Data2	0.296
Data3	0.293
Data4	
Data5	
Data6	
Data7	
Data8	
Data9	
Data10	
Data11	
Data12	
Data13	
Summation (Σ)	0.89

* More than 3 units data required
* Add measurement unit when data is not enough.
* If Judge result is NG, check spec/unit or add more EUT unit.

Model name:	Polk Signa S2 AM6215-A(E2)
Spec.	=<0.450W
Mode:	BAR Deep Standby (50Hz)
Number of unit	3

	Limit
Spec.	0.45
Deviation σ(sigma)	37.940
Conformance ratio(%)	100.00%
Non-conformance ra	0.00%

Standard deviation	s=	0.0040

Average	0.30
Max	0.30
Min	0.29

95% area from t-Distribution

v(n-1)=	2

v	P/2=0.05
1	6.314
2	2.920
3	2.353
4	2.132
5	2.015
6	1.943
7	1.895
8	1.860
9	1.833
10	1.812
11	1.796
12	1.782

95% reliability	index(k)	2.92

95% reliability		Judge
Limit (W)	0.3103	OK

Therefore,
Polk Signa S2 AM6215-A(E2) 's power consumption is
0.3103 Watts or less with 95% reliability.

※Note
2013/1/17/～ ErP directory forced defined ≦0.50W(95%reliability)

Standby power consumption judgment sheet
mode: BAR Deep Standby (60Hz)

(Europe: ErP directive t-distribution 95% reliability check)

	Result
Data1	0.302
Data2	0.295
Data3	0.294
Data4	
Data5	
Data6	
Data7	
Data8	
Data9	
Data10	
Data11	
Data12	
Data13	
Summation (Σ)	0.891

* More than 3 units data required
* Add measurement unit when data is not enough.
* If Judge result is NG, check spec/unit or add more EUT unit.

Model name:	Polk Signa S2 AM6215-A(E2)
Spec.	=<0.450W
Mode:	BAR Deep Standby (60Hz)
Number of unit	3

	Limit
Spec.	0.45
Deviation σ(sigma)	35.101
Conformance ratio(%)	100.00%
Non-conformance ra	0.00%

Standard deviation	s=	0.0044

Average	0.30
Max	0.30
Min	0.29

95% area from t-Distribution

v(n-1)=	2

v	P/2=0.05
1	6.314
2	2.920
3	2.353
4	2.132
5	2.015
6	1.943
7	1.895
8	1.860
9	1.833
10	1.812
11	1.796
12	1.782

95% reliability	index(k)	2.92

95% reliability		Judge
Limit (W)	0.3117	OK

Therefore,
Polk Signa S2 AM6215-A(E2) 's power consumption is
0.3117 Watts or less with 95% reliability.

※Note
2013/1/17/～ ErP directory forced defined ≦0.50W(95%reliability)

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR	Firmware Ver.F1.02
Serial Number	AM6220061800027	C2PD04018V
Rated voltage / frequency	230 V / 50 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.013 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.100 V / 49.998 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	8.917 %
Max Power Value	0.314 W
Last Power Value	0.291 W
Accumulated energy	0.050 Wh
Average Power	0.301 W

Detail Measured data

Item	Data
Apparent Power	5.609 VA
Real Power Factor	0.052

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 18:10

Remarks column

Deep Stand-by

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR	Firmware Ver.F1.02
Serial Number	AM6220061800038	C2PD04018V
Rated voltage / frequency	230 V / 50 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.012 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.100 V / 50.000 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	9.061 %
Max Power Value	0.309 W
Last Power Value	0.296 W
Accumulated energy	0.049 Wh
Average Power	0.296 W

Detail Measured data

Item	Data
Apparent Power	5.557 VA
Real Power Factor	0.053

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 19:01

Remarks column

Deep Stand-by

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR	Firmware Ver.F1.02
Serial Number	AM6220061800096	C2PD04018V
Rated voltage / frequency	230 V / 50 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Low power mode(Off mode)
Cycle period	00:05:00
THD *(Upper Limit)	0.012 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.080 V / 50.000 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	9.121 %
Max Power Value	0.307 W
Last Power Value	0.296 W
Accumulated energy	0.049 Wh
Average Power	0.293 W

Detail Measured data

Item	Data
Apparent Power	5.684 VA
Real Power Factor	0.052

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 13:00

Remarks column

Deep Stand-by

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR	Firmware Ver.F1.02
Serial Number	AM6220061800027	C2PD04018V
Rated voltage / frequency	230 V / 60 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.013 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.130 V / 60.000 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	5.178 %
Max Power Value	0.309 W
Last Power Value	0.301 W
Accumulated energy	0.050 Wh
Average Power	0.302 W

Detail Measured data

Item	Data
Apparent Power	6.662 VA
Real Power Factor	0.045

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 17:49

Remarks column

Deep Stand-by

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR	Firmware Ver.F1.02
Serial Number	AM6220061800038	C2PD04018V
Rated voltage / frequency	230 V / 60 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.014 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.140 V / 59.999 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	4.967 %
Max Power Value	0.302 W
Last Power Value	0.296 W
Accumulated energy	0.049 Wh
Average Power	0.295 W

Detail Measured data

Item	Data
Apparent Power	6.602 VA
Real Power Factor	0.045

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 19:19

Remarks column

Deep Stand-by

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR	Firmware Ver.F1.02
Serial Number	AM6220061800096	C2PD04018V
Rated voltage / frequency	230 V / 60 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Low power mode(Off mode)
Cycle period	00:05:00
THD *(Upper Limit)	0.014 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.120 V / 59.999 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	5.298 %
Max Power Value	0.302 W
Last Power Value	0.295 W
Accumulated energy	0.049 Wh
Average Power	0.294 W

Detail Measured data

Item	Data
Apparent Power	6.758 VA
Real Power Factor	0.044

Test and laboratory details

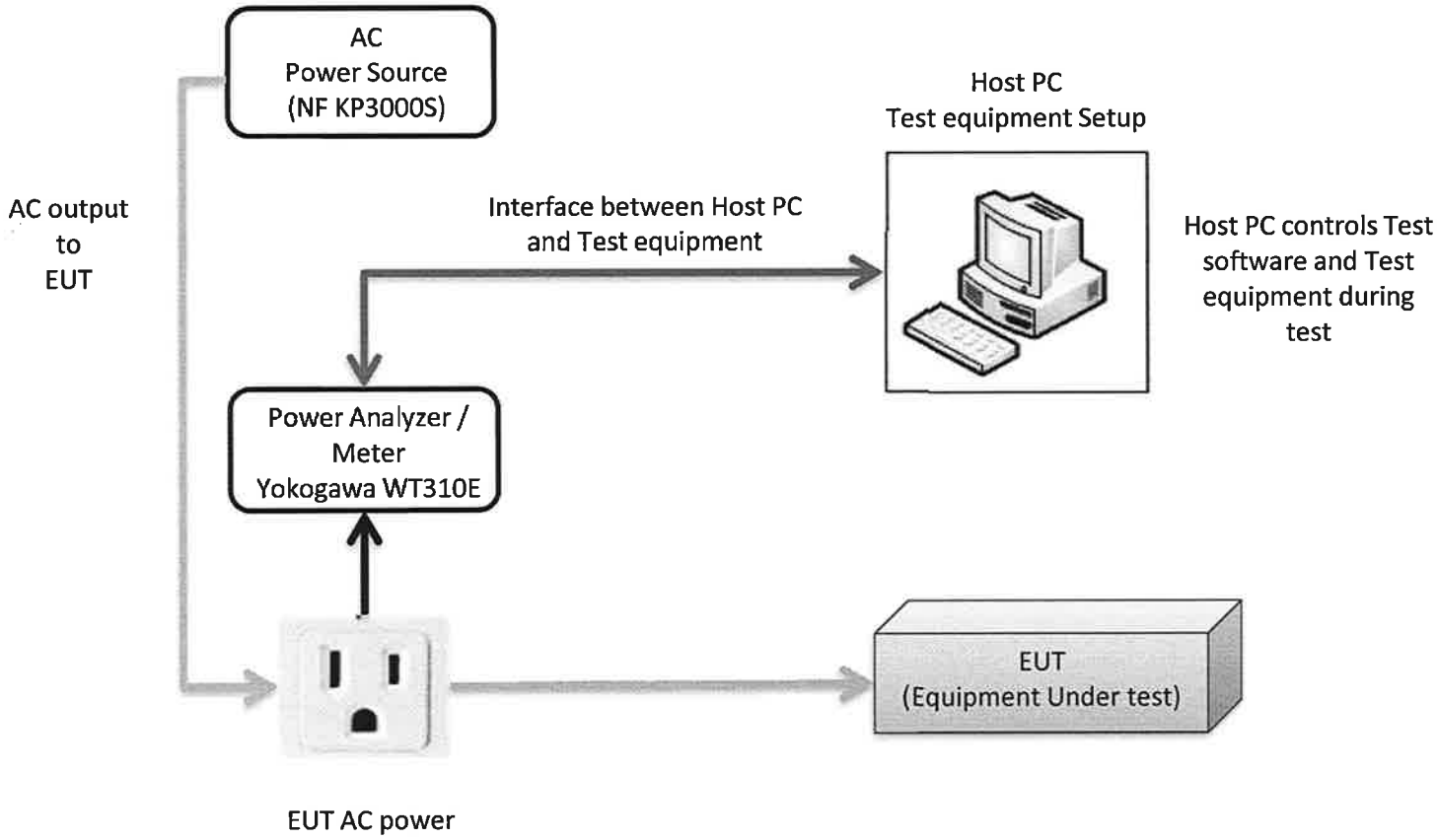
<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 13:17

Remarks column

Deep Stand-by

Set-up and circuits used for measurements : Deep Standby



Power consumption summary sheet

Model name	Polk Signa S2 AM6215-A(E2)
Date of measurement	2018/7/20
Power supply voltage	230 V
Power supply frequency	50/60 Hz
Temperature	25 ℃
Applicable standard	IEC62301 : 2011
Measurement equipment	YOKOGAWA WT310E
Domestic Identification #	L4522
Calibration expire date	Oct-2018
Power supply equipment	NF KP3000S
Domestic Identification #	No.3
Location	Kawasaki QA
Measured by	Fujita

Approve	Check	Measure
Nagata	Nakano	Fujita

Unit: W

STANDBY MODE	Initial setting	95% reliability limit	Judge	Spec. (≦W)	#27	#38	#96			
					LPP	LPP	LPP			
4 Sub Deep Standby (50Hz)	v	0.286	**OK**	0.45	0.268	0.262	0.273			
4 Sub Deep Standby (60Hz)		0.290	**OK**	0.45	0.261	0.263	0.274			

Measured 3 units

- Use Power consumption Measurement Software tool, and input result of "Average Power".
- Measurement power consumption input to 3 places of decimals.
- Measure more than 3 units,
  and transcription 95% reliability power consumption from "Standby power consumption judgment sheet".

※Note
2013/1/17/～ ErP directory forced defined ≦0.50W(95%reliability)

Comment

Description how operating mode is obtained:

1. Reset the EUT
2. Putting in operation based on manual. (Bluetooth Standby mode:OFF)
3. Press the power button on EUT to Standby-mode.
4. The measurement is carried out after LED indicator on the Subwoofer is turned off.

Standby power consumption judgment sheet
mode: Sub Deep Standby (50Hz)

(Europe: ErP directive t-distribution 95% reliability check)

	Result
Data1	0.268
Data2	0.262
Data3	0.273
Data4	
Data5	
Data6	
Data7	
Data8	
Data9	
Data10	
Data11	
Data12	
Data13	
Summation (Σ)	0.803

* More than 3 units data required
* Add measurement unit when data is not enough.
* If Judge result is NG, check spec/unit or add more EUT unit.

Model name:	Polk Signa S2 AM6215-A(E2)
Spec.	=<0.450W
Mode:	Sub Deep Standby (50Hz)
Number of unit	3

	Limit
Spec.	0.45
Deviation σ(sigma)	33.106
Conformance ratio(%)	100.00%
Non-conformance ra	0.00%

Standard deviation	s=	0.0055

Average	0.27
Max	0.27
Min	0.26

95% area from t-Distribution

v(n-1)=	2

v	P/2=0.05
1	6.314
2	2.920
3	2.353
4	2.132
5	2.015
6	1.943
7	1.895
8	1.860
9	1.833
10	1.812
11	1.796
12	1.782

95% reliability	index(k)	2.92

95% reliability		Judge
Limit (W)	0.2862	OK

Therefore,
Polk Signa S2 AM6215-A(E2) 's power consumption is
0.2862 Watts or less with 95% reliability.

※Note
2013/1/17/～ ErP directory forced defined ≦0.50W(95%reliability)

Standby power consumption judgment sheet
mode: Sub Deep Standby (60Hz)

(Europe: ErP directive t-distribution 95% reliability check)

	Result
Data1	0.261
Data2	0.263
Data3	0.274
Data4	
Data5	
Data6	
Data7	
Data8	
Data9	
Data10	
Data11	
Data12	
Data13	
Summation (Σ)	0.798

* More than 3 units data required
* Add measurement unit when data is not enough.
* If Judge result is NG, check spec/unit or add more EUT unit.

Model name:	Polk Signa S2 AM6215-A(E2)
Spec.	=<0.450W
Mode:	Sub Deep Standby (60Hz)
Number of unit	3

	Limit
Spec.	0.45
Deviation σ(sigma)	26.286
Conformance ratio(%)	100.00%
Non-conformance ra	0.00%

Standard deviation	s=	0.0070

Average	0.27
Max	0.27
Min	0.26

95% area from t-Distribution

v(n-1)=	2

v	P/2=0.05
1	6.314
2	2.920
3	2.353
4	2.132
5	2.015
6	1.943
7	1.895
8	1.860
9	1.833
10	1.812
11	1.796
12	1.782

95% reliability	index(k)	2.92

95% reliability		Judge
Limit (W)	0.2896	OK

Therefore,
Polk Signa S2 AM6215-A(E2) 's power consumption is
0.2896 Watts or less with 95% reliability.

※Note
2013/1/17/～ ErP directory forced defined ≦0.50W(95%reliability)

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR(SubWoofer)	Firmware Ver.F1.02
Serial Number	AM6220061800027	C2PD04018V
Rated voltage / frequency	230 V / 50 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.012 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.100 V / 50.001 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:13 (LR Stable)
Power variation	32.507 %
Max Power Value	0.363 W
Last Power Value	0.283 W
Accumulated energy	0.046 Wh
Average Power	0.268 W

Detail Measured data

Item	Data
Apparent Power	5.649 VA
Real Power Factor	0.050

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 15:46

Remarks column

Deep Stand-by

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR(SubWoofer)	Firmware Ver.F1.02
Serial Number	AM6220061800038	C2PD04018V
Rated voltage / frequency	230 V / 50 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.013 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.100 V / 49.999 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	33.705 %
Max Power Value	0.359 W
Last Power Value	0.246 W
Accumulated energy	0.044 Wh
Average Power	0.262 W

Detail Measured data

Item	Data
Apparent Power	5.299 VA
Real Power Factor	0.046

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	20 / 07 / 2018 11:28

Remarks column

Deep Stand-by

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR(SubWoofer)	Firmware Ver.F1.02
Serial Number	AM6220061800096	C2PD04018V
Rated voltage / frequency	230 V / 50 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.013 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.090 V / 50.000 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	36.340 %
Max Power Value	0.377 W
Last Power Value	0.243 W
Accumulated energy	0.046 Wh
Average Power	0.273 W

Detail Measured data

Item	Data
Apparent Power	5.677 VA
Real Power Factor	0.043

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 15:20

Remarks column

Deep Stand-by

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR(SubWoofer)	Firmware Ver.F1.02
Serial Number	AM6220061800027	C2PD04018V
Rated voltage / frequency	230 V / 60 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.013 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.130 V / 59.999 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	33.894 %
Max Power Value	0.357 W
Last Power Value	0.242 W
Accumulated energy	0.043 Wh
Average Power	0.261 W

Detail Measured data

Item	Data
Apparent Power	6.693 VA
Real Power Factor	0.036

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 16:06

Remarks column

Deep Stand-by

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR(SubWoofer)	Firmware Ver.F1.02
Serial Number	AM6220061800038	C2PD04018V
Rated voltage / frequency	230 V / 60 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.013 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.140 V / 59.999 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	34.072 %
Max Power Value	0.361 W
Last Power Value	0.242 W
Accumulated energy	0.044 Wh
Average Power	0.263 W

Detail Measured data

Item	Data
Apparent Power	6.316 VA
Real Power Factor	0.038

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	20 / 07 / 2018 10:50

Remarks column

Deep Stand-by

IEC 62301 Test Report

IEC62301 Second Edition compliance

Appliance(equipment) Details

<Product description>
<Details of manufacture marked on the product>
N/A

Item	Appliance	Equipment
Brand	DENON	YOKOGAWA
Model	Signa S2	WT310
Type	SOUND BAR(SubWoofer)	Firmware Ver.F1.02
Serial Number	AM6220061800096	C2PD04018V
Rated voltage / frequency	230 V / 60 Hz	-
Voltage Range	-	300V
Current Range	-	100mA

Test Parameters

<Information and documentation on the instrumentation>
N/A

Item	Data
Name of mode	N/A
Mode category	Active mode
Cycle period	00:05:00
THD *(Upper Limit)	0.013 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	25 degree
Other Ambient conditions	N/A
Test voltage / frequency	230.140 V / 60.000 Hz

Measured data, for each mode as applicable

<If applicable, technical justification of inappropriateness for intended use>
N/A
<Any notes regarding the operation>
N/A

Measured data

Item	Data
Measurement period	00:10:00 (LR Stable)
Power variation	33.512 %
Max Power Value	0.373 W
Last Power Value	0.347 W
Accumulated energy	0.046 Wh
Average Power	0.274 W

Detail Measured data

Item	Data
Apparent Power	6.841 VA
Real Power Factor	0.051

Test and laboratory details

<Applicant name and address>
N/A
<Laboratory name and address>
N/A
<Test officer(s)>
A.Fujita
<Approver>
N/A

Item	Data
Test report No./reference	N/A
Date of test	19 / 07 / 2018 15:03

Remarks column

Deep Stand-by

D&M
D&M Holdings Inc.
2-1 Nisshin-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, 210-8569 Japan
Tel : +81-44-670-2665 Fax : +81-44-670-2697

Test Report for Restriction of Hazardous Substances (RoHS)
EU Directive 2011/65/EU

General Information:

Report Date:	28-Jul-21	Report No.:	SU-RoHS18064-R5
Manufacturer:	Sound United LLC.		
Address:	5541 Fermi Court, Carlsbad, CA 92008, USA		
Factory:	Refer to "Factory information".		
Model Tested:	Signa S2		
Appliance Type	Home Theater System		
Brand Name:	Polk		
Country of Origin:	China		
Harmonised Standards:	EN IEC63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances (IEC 63000:2016)		

Test Results: For more detail, refer to the attached parts list.

Date Reported:	28-Jul-21		
Substance	Limit (%)	Containing substances	Judgment
Lead	0.1	Yes*1	Pass
Mercury	0.1	ND*2	Pass
Cadmium	0.01	ND*2	Pass
Hexavalent chromium	0.1	ND*2	Pass
Polybrominated biphenyls (PBB)	0.1	ND*2	Pass
Polybrominated diphenyl ethers (PBDE)	0.1	ND*2	Pass
Bis (2-ethylhexyl) phthalate (DEHP)	0.1	ND*2	Pass
Butyl benzyl phthalate (BBP)	0.1	ND*2	Pass
Dibutyl phthalate (DBP)	0.1	ND*2	Pass
Diisobutyl phthalate (DIBP)	0.1	ND*2	Pass

*1: These are included to only those parts defined as exemption in ANNEX Ⅲ.

*2: ND = Not Detected

Checked by: Kazuyoshi Tanaka

Approved by:

Mikio Nagata, Senior Manager
NPD, Quality Assurance.
Sound United, LLC