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 ..... :	4789193891
Date of issue ..... :	2020-02-10
Total number of pages ..... :	55
Applicant's name ..... :	JVCKENWOOD Corporation
Address ..... :	2967-3 Ishikawamachi Hachioji-shi, Tokyo, 192-8525 Japan
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

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Test Item description ..... :	DIGITAL MEIDA RECEIVER	
Trade Mark ..... :	JVC (For Model: KD-X472DBT, KD-X272DBT, KD-X172DB) KENWOOD (For Model: KMR-M506DAB, KMM-BT506DAB)	
Manufacturer ..... :	Same as Applicant	
Model/Type reference ..... :	KD-X472DBT, KD-X272DBT, KD-X172DB (JVC model) KMR-M506DAB, KMM-BT506DAB (KENWOOD model)	
Ratings ..... :	12 V ⎓, 6 A	
Testing procedure and testing location:		
☒ CB Testing Laboratory:	UL Japan, Inc.	
Testing location/ address .....:	4383-326 Asama-cho, Ise-shi, Mie, 516-0021 Japan	
☐ Associated CB Testing Laboratory:		
Testing location/ address .....:		
Tested by (name + signature) .....:	Tomohiko Maeda / Project Handler	Tomohiko Maeda
Approved by (name + signature).....:	Tadao Nakayama / Reviewer	Tadao Nakayama
☐ Testing procedure: TMP/CTF Stage 1		
Testing location/ address ..... :		
Tested by (name + signature) .....:		
Approved by (name + signature).....:		
☐ Testing procedure: WMT/CTF Stage 2		
Testing location/ address .....:		
Tested by (name + signature) .....:		
Witnessed by (name + signature).....:		
Approved by (name + signature).....:		
☐ Testing procedure: SMT/CTF Stage 3 or 4		
Testing location/ address .....:		
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 - National Differences for IEC 62368-1:2014 (EU)	(Total – 9 pages)
Attachment 2 - National Differences for IEC 62368-1:2014 (IT)	(Total – 3 pages)
Enclosures	(Total – 10 pages)

Summary of testing:

Tests performed (name of test and test clause): Power Measurements (6.2.2.2, 6.2.2.3) Normal Operating Conditions Temperature Test (6.3) Input Test: Single Phase (Annex B.2.5) Normal Operating Conditions Temperature Measurement (Annex B.2.6) Simulated Abnormal Operating Conditions (Annex B.3) Simulated Single Fault Conditions (Annex B.4) Single Fault Conditions: Reduce The Likelihood Of Ignition (6.4.3, Annex B.4)	**Testing location:** **CBTL: UL Japan, Inc., 4383-326 Asama-cho, Ise-shi, Mie, 516-0021, Japan**

Summary of compliance with National Differences:

List of countries addressed: EU

IEC 62368-1:2014: DK, IT (IECEE website as of 2020-02-10)

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

Copy of marking plate:

Refer to Enclosure titled Markings. (See Enclosure No. 2)

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 (Considered as 12.0 Vdc ± 10 %
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.....:	10 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: _None_
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 maxium operating ambient:	35 °C
IP protection class .....:	☒ IPX0 ☐ IP___
Power Systems .....:	N/A ☐ TN ☐ TT ☐ IT - 230 V $_{L-L}$
Altitude during operation (m) .....:	☒ 2000 m or less ☐ _____ m
Altitude of test laboratory (m) .....:	☒ 2000 m or less ☐ _____ m
Mass of equipment (kg) .....:	☒ Approximately 0.626 kg

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..... :	2019-12-13, 2019-12-19
Date (s) of performance of tests..... :	2020-01-23 to 2020-01-24
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) ..... :	**Production Factory:** PT.JVC ELECTRONICS INDONESIA JL.SURYA LESTARI KAV I-16B, SURYACIPTA CITY OF INDUSTRY, KUTAMEKAR, CIAMPEL, KARAWANG 41363, JAWA BARAT, INDONESIA

GENERAL PRODUCT INFORMATION:
Product Description – This apparatus is component type, DIGITAL MEIDA RECEIVER, Models KD-X472DBT, KD-X272DBT, KD-X172DB (Trademark: JVC) and KMR-M506DAB, KMM-BT506DAB (Trademark: KENWOOD).
Model Differences – Model KD-X472DBT is basic model. Model KD-X272DBT is identical to basic model except model designation, key color. Model KD-X172DB is identical to basic model except model designation, key color and Bluetooth Module. KMR-M506DAB is identical to basic model except model designation, Trademark. KMM-BT506DAB is identical to basic model except model designation, Trademark. All tests were conducted at basic model KD-X472DBT as a representative.

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

This report is based on previously conducted testing and the review of product construction of original CBTR Ref. No. 4789193890, dated 2019-10-31, CBTC Ref. No. JP-21265-UL issued date 2019-11-05 issued by UL Japan Inc. in which the product has been investigated to IEC 60065:2014. Refer to Section "Test performed (name of test and test clause)" covering all applicable performance tests.

Compliance with the following test requirements was determined upon the review of the previous test results where the test method and conditions are identical:

- Normal Operating Conditions Temperature (6.3)
- Input: Single Phase (Annex B.2.5)
- Normal Operating Conditions Temperature Measurement (Annex B.2.6)
- Simulated Abnormal Operating Conditions (Annex B.3)
- Simulated Single Fault Conditions (Annex B.4)
- Single Fault Conditions: Reduce The Likelihood Of Ignition (6.4.3, Annex B.4)

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.

Test Conditions:

- All tests were conducted with test jigs by the applicant.

- All tests were conducted under maximum normal load condition.
Maximum normal load condition was continuously operation condition as following.
No. 1: Audio Output is setting to 1/8 of the non-clipped output power to the rated load impedance (4 ohm) with USB memory (including 1 kHz sine wave signal) playing and the load of DC output at 350 mA.
No. 2: Audio Output is setting to 1/8 of the non-clipped output power to the rated load impedance (4 ohm) with Bluetooth (including 1 kHz sine wave signal) playing, the load of USB dummy load at 1.5 A and the load of DC output at 350 mA by applicant's request.)

The results of comparative input test used Maximum normal load condition No. 1 and No. 2, it was judged that condition of maximum power consumption was No. 2.
Unless otherwise noted, all relevant tests were conducted at Maximum normal load condition at No. 2 as representative.

Technical Considerations:

- The power supply source is 12.0 Vdc ± 10 % from external d.c. power supply and rated load impedance (4 Ω) by applicant's request. The test supply source is capable of delivering 40 A due to the applicant request.
- Enclosure except front panel was considered not be in accessible parts by other than skilled person, due to considering end-product installation into vehicle.

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 circuits	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 circuits except below	PS3 (Declared)
All circuits after IC301 18 pin (Speaker Output)	PS2
All circuits after IC901 1 pin	PS1
All circuits after IC901 2 pin	PS1
All circuits after IC901 3 pin	PS1
All circuits after IC901 4 pin	PS1
All circuits after IC901 13 pin	PS2
All circuits after IC901 15 pin	PS2
All circuits after IC540 6 pin	PS2
All circuits after IC560 3 pin	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	--
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	MS1
Equipment mass	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)**
Accessible external parts (Front Panel)	TS1

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)**
LCD Panel	RS1
Indicator	RS1

ENERGY SOURCE DIAGRAM
Indicate which energy sources are included in the energy source diagram. Insert diagram below
N/A ☐ **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)
N/A	--	--	--	--
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Printed Wiring Board	PS3: All circuits	Temperature in “N” and “A”	No ignition in “S” and min. V-1	N/A
	PS2: All circuits	Temperature in “N” and “A”	Min. V-1	N/A
All electrical components except above	PS3: All circuits	Temperature in “N” and “A”	No ignition in “S”, and Complied with Clause 6.4.7	N/A
	PS2: All circuits	Temperature in “N” and “A”	Mounted on Minimum V-1 printed wiring board	N/A
Combustible materials (Base of L990, DC Connector (CN990), Connector (J321))	PS3: All circuits	Temperature in “N” and “A”	No ignition in “S” and minimum V-1 material	N/A
Other combustible materials except above	PS3: All circuits (Declared).	Temperature in “N” and “A”	No ignition in “S”, and Complied with Clause 6.4.7	N/A
	PS2: All circuits	Temperature in “N” and “A”	Mounted on Minimum V-1 printed wiring board	N/A

7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
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	--	--	--	--
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	--	--	--	--
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	--	--	--	--
Supplementary Information: (1) See attached energy source diagram for additional details. (2) “N” – Normal Condition; “A” – Abnormal Condition; “S” Single Fault Condition				

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	See appended table 4.1.2.	P
4.1.3	Equipment design and construction		P
4.1.15	Markings and instructions.....:	See Annex F.	P
4.4.4	Safeguard robustness		N/A
4.4.4.2	Steady force tests.....:		N/A
4.4.4.3	Drop tests .....:		N/A
4.4.4.4	Impact tests .....:		N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:		N/A
4.4.4.6	Glass Impact tests.....:		N/A
4.4.4.7	Thermoplastic material tests .....:		N/A
4.4.4.8	Air comprising a safeguard.....:		N/A
4.4.4.9	Accessibility and safeguard effectiveness		N/A
4.5	Explosion		P
4.6	Fixing of conductors	ES1 only in this equipment.	N/A
4.6.1	Fix conductors not to defeat a safeguard		N/A
4.6.2	10 N force test applied to .....:		N/A
4.7	Equipment for direct insertion into mains socket - outlets	No direct plug-in equipment considered.	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 provided.	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery.....:		—
4.8.4	Battery Compartment Mechanical Tests .....:		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object.....:	See Annex P.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5	**ELECTRICALLY-CAUSED INJURY**		P
5.2.1	Electrical energy source classifications..... :	The equipment is supplied from vehicle battery as 12 Vdc and no step-up circuits in the equipment.	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current..... :	The product is supplied from vehicle battery 12 Vdc as classified as ES1.	P
5.2.2.3	Capacitance limits ..... :		N/A
5.2.2.4	Single pulse limits ..... :		N/A
5.2.2.5	Limits for repetitive pulses ..... :		N/A
5.2.2.6	Ringing signals ..... :		N/A
5.2.2.7	Audio signals ..... :	See Annex E.	P
5.3	Protection against electrical energy sources	No safeguard required.	N/A
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards		N/A
5.3.2.2	Contact requirements		N/A
	a) Test with test probe from Annex V ..... :		N/A
	b) Electric strength test potential (V) ..... :		N/A
	c) Air gap (mm) ..... :		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		N/A
5.4.1.2	Properties of insulating material	All insulations are used as functional insulation and properly used for the purpose.	N/A
5.4.1.3	Humidity conditioning ..... :		N/A
5.4.1.4	Maximum operating temperature for insulating materials ..... :		N/A
5.4.1.5	Pollution degree ..... :		—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage		N/A
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A

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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.6	Insulation of internal wire as part of supplementary safeguard.....:		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		N/A
	Relative humidity (%).....:		—
	Temperature (°C) .....:		—
	Duration (h) .....:		—
5.4.9	Electric strength test.....:	All circuits are classified as ES1.	N/A
5.4.9.1	Test procedure for a solid insulation type test		N/A
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test .....:		N/A
5.4.10.2.3	Steady-state test.....:		N/A
5.4.11	Insulation between external circuits and earthed circuitry .....:		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V).....:		—
	Nominal voltage U_{peak} (V).....:		—
	Max increase due to variation U_{sp} .....:		—
	Max increase due to ageing ΔU_{sa} .....:		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ .....:		—
5.5	Components as safeguards		
5.5.1	General		N/A
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....:		N/A
5.5.3	Transformers		N/A
5.5.4	Optocouplers		N/A
5.5.5	Relays		N/A
5.5.6	Resistors		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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.....:		N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors	No protective conductors required.	N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm^2) .....:		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm^2). .....:		—
	Protective current rating (A) ..... :		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement		N/A
	Conductor size (mm^2), nominal thread diameter (mm). .....:		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω).....:		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		N/A
5.7.2	Measuring devices and networks		N/A
5.7.2.1	Measurement of touch current .....:		N/A
5.7.2.2	Measurement of prospective touch voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		N/A
	System of interconnected equipment (separate connections/single connection) .....:		—
	Multiple connections to mains (one connection at a time/simultaneous connections).....:		—
5.7.4	Earthed conductive accessible parts.....:		N/A
5.7.5	Protective conductor current		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Supply Voltage (V).....:		—
	Measured current (mA).....:		—
	Instructional Safeguard.....:		N/A
5.7.6	Prospective touch voltage and touch current due to 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		N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		N/A

6	**ELECTRICALLY- CAUSED FIRE**		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	See “ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE”.	P
6.2.2.1	General		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 and “ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE”.	P
6.2.2.5	PS2 ..... :	See appended table 6.2.2 and “ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE”.	P
6.2.2.6	PS3 ..... :	See “ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE”.	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS ..... :	No arcing PIS involved.	N/A
6.2.3.2	Resistive PIS ..... :	All electrical components in PS2 and PS3 were considered as Resistive PIS.	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... :	See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6.	P
6.3.1 (b)	Combustible materials outside fire enclosure	Minimum HB except for small parts that would contribute negligible fuel to fire.	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	PS3: Applied with “reduce the likelihood of ignition”. PS2: Applied with “control fire spread”.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	See appended table B.4	P
6.4.3.1	General		P
6.4.3.2	Supplementary Safeguards	Components complied with sub-clause 6.4.7 are provided.	P
	Special conditions if conductors on printed boards are opened or peeled	No conductors on printed circuit boards were opened or peeled.	P
6.4.3.3	Single Fault Conditions..... :	See appended table B.4.	P
	Special conditions for temperature limited by fuse	Fuse not complying with the IEC 60127 series opened within 1 s for three consecutive times.	P
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards ..... :	See appended table 4.1.2. All electrical components in PS2 circuit are mounted on minimum V-1 printed wiring board. Printed boards that constitute PIS are minimum V-1.	P
6.4.6	Control of fire spread in PS3 circuit		N/A
6.4.7	Separation of combustible materials from a PIS	PS3: Applied with “reduce the likelihood of ignition”.	P
6.4.7.1	General..... :	Components are materials rated V-1 or better, or mass of less than 4 g are provided.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.7.2	Separation by distance	Base of L990, DC Connector (CN990), Connector (J321): Minimum V-1 material Other combustible materials: Less than 4 g	P
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		N/A
6.4.8.1	Fire enclosure and fire barrier material properties	No fire enclosure or fire barrier required.	N/A
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure		N/A
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		N/A
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....:		N/A
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....:		N/A
	Flammability tests for the bottom of a fire enclosure .....:		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) .....:		N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....:		N/A
6.5	Internal and external wiring		P
6.5.1	Requirements	Insulation of internal wires in PS2 or PS3 circuits made by PVC, TFE, PTFE, FEP, polychloroprene, polyimide or VW-1 material.	P
6.5.2	Cross-sectional area (mm^2) .....:	--	—
6.5.3	Requirements for interconnection to building wiring .....:	No such wiring considered.	N/A
6.6	Safeguards against fire due to connection to additional equipment		N/A
	External port limited to PS2 or complies with Clause Q.1	Output is limited PS2 or less.	P

7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		N/A
7.2	Reduction of exposure to hazardous substances	No such hazardous substances	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
		involved.	
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions ..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010) .....:		—
7.6	Batteries .....:		N/A
8	**MECHANICALLY-CAUSED INJURY**		P
8.1	General		P
8.2	Mechanical energy source classifications	Edges and corners: MS1 Equipment mass: MS1	P
8.3	Safeguards against mechanical energy sources		N/A
8.4	Safeguards against parts with sharp edges and corners	MS1: No sharp edge and corner in operator accessible area.	P
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts		N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard..... :		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks .....:		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard.....:		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N) .....:		N/A
8.5.5	High Pressure Lamps	No high pressure lamps provided.	N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test.....:		N/A
8.6	Stability	The equipment is installed into vehicle and classified as MS1.	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard.....:		—
8.6.2	Static stability		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.2.2	Static stability test		N/A
	Applied Force .....:		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt .....:		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....:		N/A
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling	Since the equipment is installed into vehicle, the wall or ceiling mount was not considered even though the bracket for installing into vehicle was provided.	N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....:		N/A
8.7.2	Direction and applied force.....:		N/A
8.8	Handles strength	No handle provided.	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 .....:		—
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.....:		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force .....:		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N).....:		—
8.10.6	Thermoplastic temperature stability (°C).....:		N/A
8.11	Mounting means for rack mounted equipment	No mounting means for rack mount provided.	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.12	Telescoping or rod antennas.....	No telescoping antenna or rod antenna provided.	N/A
	Button/Ball diameter (mm).....:		—
9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications	Accessible parts are classified as TS1. See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6	P
9.3	Safeguard against thermal energy sources	No safeguard required due to TS1.	N/A
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard .....:		N/A
10	**RADIATION**		P
10.2	Radiation energy source classification		P
10.2.1	General classification	LCD Module (< 10000 cd/m^2): RS1 Indicators: RS1	P
10.3	Protection against laser radiation		N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault..... :		N/A
	Instructional safeguard ..... :		—
	Tool ..... :		—
10.4	Protection against visible, infrared, and UV radiation	Indicators and LCD Module used.	P
10.4.1	General	Classified as RS1.	P
10.4.1.a)	RS3 for Ordinary and instructed persons .....:		N/A
10.4.1.b)	RS3 accessible to a skilled person.....:		N/A
	Personal safeguard (PPE) instructional safeguard.....:		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 . :		N/A
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	The luminance of LCD Panel	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	conditions.....:	does not exceed 10^4c/m^2 classified as RS1.	
10.4.2	Instructional safeguard .....:		N/A
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment:		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards.....:		N/A
	Instructional safeguard for skilled person..... :		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation .....:		—
	Abnormal and single-fault condition ..... :		N/A
	Maximum radiation (pA/kg)..... :		N/A
10.6	Protection against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A)..... :		N/A
	Output voltage, unweighted r.m.s..... :		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards ..... :		N/A
	Equipment safeguard prevent ordinary person to RS2..... :		—
	Means to actively inform user of increase sound pressure..... :		—
	Equipment safeguard prevent ordinary person to RS2..... :		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output..... :		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A)..... :		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A)..... :		—

B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.2	Normal Operating Conditions		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.2.1	General requirements..... :	See Test Item Particulars and appended test tables.	P
	Audio Amplifiers and equipment with audio amplifiers ..... :	See Annex E.	P
B.2.3	Supply voltage and tolerances	12.0 Vdc ± 10 % were considered by applicant request.	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		N/A
B.3.3	D.C. mains polarity test	No DC mains considered.	N/A
B.3.4	Setting of voltage selector..... :	No voltage selector provided.	N/A
B.3.5	Maximum load at output terminals .....:	See appended table B.3.	P
B.3.6	Reverse battery polarity	Based on construction, not possible to insert the battery to reverse polarity.	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	The speaker output was not able to increased cause it was decreased in operating.	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions		P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited ..... :	No such device provided.	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		P
B.4.4.1	Short circuit of clearances for functional insulation	See appended table B.4.	P
B.4.4.2	Short circuit of creepage distances for functional insulation	See appended table B.4.	P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	See appended table B.4.	P
B.4.6	Short circuit or disconnect of passive components	See appended table B.4.	P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	See appended table B.4.	P
B.4.9	Battery charging under single fault conditions ... :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation	No UV involved.	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**		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		P
E.1	Audio amplifier normal operating conditions		P
	Audio signal voltage (V) .....:	Input voltage: 10.8 Vdc Front Left/Right: 1.92 Vrms Rear Left/Right:: 1.92 Vrms Input voltage: 12.0 Vdc Front Left/Right: 2.15 Vrms Rear Left/Right:: 2.14 Vrms Input voltage: 13.2 Vdc Front Left/Right: 2.46 Vrms Rear Left/Right:: 2.44 Vrms	—
	Rated load impedance (Ω) .....:	Front Left/Right, Rear Left/Right: 4 Ω	—
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		P
	Instructions – Language .....:	English only evaluated.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	On top chassis	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification .....:	JVC or KENWOOD	—
F.3.2.2	Model identification .....:	KD-X472DBT, KD-X272DBT, KD-X172DB (JVC model) KMR-M506DAB, KMM-BT506DAB (KENWOOD model)	—
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		N/A
F.3.3.2	Equipment without direct connection to mains	Supplied from vehicle battery.	P
F.3.3.3	Nature of supply voltage .....:	⎓ (IEC 60417-5031) markings immediately follow the equipment voltage rating.	—
F.3.3.4	Rated voltage .....:	12 V ⎓	—
F.3.3.4	Rated frequency .....:	N/A	—
F.3.3.6	Rated current or rated power .....:	6 A	—
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings ..... :		N/A
F.3.5.2	Switch position identification marking ..... :		N/A
F.3.5.3	Replacement fuse identification and rating markings ..... :	Not intended to service by ordinary persons. For reference: Marked: “FUSE 10A”	P
F.3.5.4	Replacement battery identification marking ..... :	No batteries provided.	N/A
F.3.5.5	Terminal marking location	Class III equipment	N/A
F.3.6	Equipment markings related to equipment classification		N/A
F.3.6.1	Class I Equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....:	(None)	—
F.3.8	External power supply output marking	No such equipment considered.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.9	Durability, legibility and permanence of marking		N/A
F.3.10	Test for permanence of markings	The equipment is for building-in.	N/A
F.4	Instructions		N/A
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use	The equipment is for building-in.	N/A
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		N/A
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A
G	**COMPONENTS**		P
G.1	**Switches**		N/A
G.1.1	General requirements	No applicable switch provided.	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		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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H) ..... :		—
	Single Fault Condition ..... :		—
	Test Voltage (V) and Insulation Resistance (Ω). :		—
G.3.3	PTC Thermistors	No such devices which relied upon as a safeguard.	N/A
G.3.4	Overcurrent protection devices		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided	Blade fuse and Fuse are tested three times under single fault condition.	P
G.3.5.2	Single faults conditions.....:	See appended table 4.1.2	P
G.4	**Connectors**		N/A
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration .....:		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	**Wound Components**		N/A
G.5.1	Wire insulation in wound components.....		N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) .....:		—
	Temperature (°C) .....:		—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	**Transformers**		N/A
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) .....:		N/A
	Position.....:		—
	Method of protection .....:		—
G.5.3.2	Insulation		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Protection from displacement of windings.....:		—
G.5.3.3	Overload test ..... :		N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding Temperatures testing in the unit		N/A
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	**Motors**		N/A
G.5.4.1	General requirements		N/A
	Position .....:		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) .....:		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V).....:		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....:		N/A
	Electric strength test (V).....:		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature .....:		N/A
	Electric strength test (V) .....:		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....:		N/A
	Electric strength test (V).....:		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage .....:		—
G.6	**Wire Insulation**		N/A
G.6.1	General		N/A
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	**Mains supply cords**		N/A
G.7.1	General requirements		N/A
	Type.....:		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A).....:		—
	Cross-sectional area (mm^2), (AWG) ..... :		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) .....:		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)....:		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry ..... :		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) ..... :		—
	Diameter (m) .....:		—
	Temperature (°C) .....:		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	**Varistors**		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test .....:		N/A
G.8.3.3	Temporary overvoltage .....:		N/A
G.9	**Integrated Circuit (IC) Current Limiters**		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.		N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....:		—
G.9.1 d)	IC limiter output current (max. 5A) .....:		—
G.9.1 e)	Manufacturers' defined drift .....:		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	**Resistors**		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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**		N/A
G.11.1	General requirements		N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
G.12	**Optocouplers**		N/A
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....:		N/A
	Type test voltage Vini .....:		—
	Routine test voltage, Vini,b .....:		—
G.13	**Printed boards**		N/A
G.13.1	General requirements		N/A
G.13.2	Uncoated printed boards		N/A
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction).....:		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation.....:		N/A
	Number of insulation layers (pcs) .....:		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements .....:		N/A
G.15	**Liquid filled components**		N/A
G.15.1	General requirements		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	**IC including capacitor discharge function (ICX)**		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A
b)	Impulse test using circuit 2 with Uc = to transient voltage .....:		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage .....:		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....:		—
D3)	Resistance .....:		—
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) .....:		—
H.3.1.2	Voltage (V) .....:		—
H.3.1.3	Cadence; time (s) and voltage (V) .....:		—
H.3.1.4	Single fault current (mA):.....:		—
H.3.2	Tripping device and monitoring voltage .....:		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....:		—
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		N/A
	General requirements		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
K	**SAFETY INTERLOCKS**		N/A
K.1	General requirements		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**		N/A
L.1	General requirements		N/A
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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.4.2.2 a)	Charging voltage, current and temperature .....:		—
M.4.2.2 b)	Single faults in charging circuitry .....:		—
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
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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume *V*z (m^3/s)..... :		—
M.8.2.3	Correction factors..... :		—
M.8.2.4	Calculation of distance *d* (mm) ..... :		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) :		N/A
N	**ELECTROCHEMICAL POTENTIALS**		N/A
	Metal(s) used ..... :		—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		N/A
	Figures O.1 to O.20 of this Annex applied..... :	No clearance and creepage distance required.	—
P	**SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS**		P
P.1	General requirements		P
P.2.2	Safeguards against entry of foreign object	There are no openings on Front Panel.	P
	Location and Dimensions (mm) ..... :		—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts ..... :		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) ..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C)..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Tr (°C) ..... :		—
	Ta (°C)..... :		—
P.4.2 b)	Abrasion testing ..... :		N/A
P.4.2 c)	Mechanical strength testing ..... :		N/A
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		N/A
Q.1	Limited power sources		N/A
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		—
	Current limiting method..... :		—
R	**LIMITED SHORT CIRCUIT TEST**		N/A
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)). ..... :		N/A
S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		P
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material ..... :		—
	Wall thickness (mm)..... :		—
	Conditioning (°C)..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material ..... :		—
	Wall thickness (mm)..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		P
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 .....:		—
	Wall thickness (mm).....:		—
	Conditioning (test condition), (°C).....:		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
T	**MECHANICAL STRENGTH TESTS**		N/A
T.1	General requirements		N/A
T.2	Steady force test, 10 N .....:		N/A
T.3	Steady force test, 30 N .....:		N/A
T.4	Steady force test, 100 N .....:		N/A
T.5	Steady force test, 250 N .....:		N/A
T.6	Enclosure impact test		N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test .....:		N/A
T.8	Stress relief test .....:		N/A
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....:		—
	Height (m) .....:		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
T.10	Glass fragmentation test .....:		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) .....:		—
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements	No CRT provided.	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	Figure V.1 considered.	P
V.2	Accessible part criterion		P

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

4.1.2	TABLE: List of critical components	P

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1]
DC Connector (CN990)	Interchangeable	Interchangeable	Minimum V-1	IEC 60695-11-10:2013 (UL 94)	(UL)
Base of L990	Interchangeable	Interchangeable	Minimum V-1	IEC 60695-11-10:2013 (UL 94)	(UL)
Connector (J321)	Interchangeable	Interchangeable	Minimum V-1	IEC 60695-11-10:2013 (UL 94)	(UL)
Printed Wiring Board (Main PWB)	Nan Ya Plastics Corp CCL DEPT Electronic Material Div	NP-140TL	Minimum V-0, 180 °C (*1)	IEC 60695-11-10:2013 (UL 94)	(UL)
Printed Wiring Board (Panel PWB)	Interchangeable	Interchangeable	Minimum V-1, 130 °C	IEC 60695-11-10:2013 (UL 94)	(UL)
Front Panel	Interchangeable	Interchangeable	Minimum HB	IEC 60695-11-10:2013 (UL 94)	(UL)
Blade fuse	Jenn Feng Electric Industrial Co., Ltd.	AST10A	10 A, 32 Vdc	IEC 62368-1:2014	(Tested in equipment)

Supplementary information:

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

(*1) The flammability test for the Main PWB was performed under Project No. 4789065621.

The CBTL has verified the component information.

EN standards were used to verify the compliance of the some critical components, because EN standards were well harmonized to IEC standard and technically equivalent.

License available upon request.

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

4.8.4.3	**TABLE: Battery replacement test**	—
Battery part no. .....:		—
Battery Installation/withdrawal	Battery Installation/Removal Cycle	Comments
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	10	

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

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

4.8.4.6	**TABLE: Crush test**		—
Test position	**Surface tested**	**Crushing Force (N)**	**Duration force applied (s)**
Supplementary information:			

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

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

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

Supplementary information:

5.2	Table: Classification of electrical energy sources	N/A

5.2.2.2 – Steady State Voltage and Current conditions

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
			Normal				
			Abnormal				
			Single fault – SC/OC				

5.2.2.3 - Capacitance Limits

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

5.2.2.4 - Single Pulses

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

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

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

Test Conditions:

Normal – N/A

Abnormal – N/A

Supplementary information: SC=Short Circuit, OC=Short Circuit

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

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements**					P
	Supply voltage (V) ..... :	See below.	See below.	--	--	—
	Ambient T_{min} (°C) ..... :	--	--	--	--	—
	Ambient T_{max} (°C) ..... :	--	--	--	--	—
	Tma (°C) ..... :	--	--	--	--	—

Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)
Normal Operating Conditions					
Supply voltage (V)	13.2 Vdc	13.2 Vdc	--	--	--
Ambient	22	Tma: 35	--	--	--
Main PWB					
L990 coil / PWB Rated	109	122	--	--	180
IC301 LC / PWB Rated	128	141	--	--	180
IC901 LC / PWB Rated	100	113	--	--	180
IC540 BC / PWB Rated	102	115	--	--	180
IC560 BC / PWB Rated	97	110	--	--	180
IC161 BC / PWB Rated	100	113	--	--	180
IC701 BC / PWB Rated	100	113	--	--	180
A1303 (Bluetooth Module) / PWB Rated	89	102	--	--	180
Panel PWB					
IC1 BC / PWB Rated	79	92	--	--	130
Accessible parts					
Ambient	22	Adjusted to 25	--	--	Allowed T_{max} (°C)
KH, Display surface / >1s and <10s	45	48	--	--	77
OE, Front Panel top / >1s and <10s	40	43	--	--	77
Supplementary information: Abbreviations: BC = Component Body Connection on the printed board, LC = Lead Connection on the printed board, PWB = Printed Wiring Board					

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

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
N/A	--	--	--	--	--	--	--
Supplementary information: Note 1: Tma should be considered as directed by appliable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							

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

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

5.4.2.2, 5.4.2.4 and 5.4.3	**TABLE: Minimum Clearances/Creepage distance**						N/A
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)[1]	Required cl (mm)	cl (mm)[2]	Required[3] cr (mm)	cr (mm)
Supplementary information: Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test Note 3: Provide Material Group							

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

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

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

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

5.4.9	TABLE: Electric strength tests		N/A
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Functional:			
N/A			
Basic/supplementary:			
N/A			
Reinforced:			
N/A			
Routine Tests:			
N/A			
Supplementary information:			

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

5.5.2.2	TABLE: Stored discharge on capacitors					N/A
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification	

Supplementary information:

X-capacitors installed for testing are:

☐ bleeding resistor rating:

☐ ICX: N/A

Notes:

A. Test Location:

Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth

B. Operating condition abbreviations:

N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition

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

Supplementary information:

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		
	2*		
	3		
	4		
	5		
	6		
	8		

Supplementary Information:

Notes:

[1] Supply voltage is the anticipated maximum Touch Voltage

[2] Earthed neutral conductor [Voltage differences less than 1% or more]

[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3

[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.

[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.

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

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
IC301 18 pin (Speaker Terminal FR+	Worst-case fault (IC301 18 pin load fault)	Power (W) :	9.09	--	PS2
		V_A (V) :	2.014	--	
		I_A (A) :	4.57	--	
	Worst-case power source fault (IC301 7 - 18 pin)	Power (W) :	43.56	43.56	
		V_A (V) :	13.2	13.2	
		I_A (A) :	3.3	3.3	
IC901 1 pin	Worst-case fault (IC901 1 pin load fault)	Power (W) :	9.09	--	PS1
		V_A (V) :	11.36	--	
		I_A (A) :	0.80	--	
	Worst-case power source fault (IC901 1 - 7 pin)	Power (W) :	(*1)	(*1)	
		V_A (V) :	(*1)	(*1)	
		I_A (A) :	(*1)	(*1)	
IC901 2 pin	Worst-case fault (IC901 2 pin load fault)	Power (W) :	7.10	--	PS1
		V_A (V) :	10.92	--	
		I_A (A) :	0.65	--	
	Worst-case power source fault (IC901 2 - 7 pin)	Power (W) :	(*1)	(*1)	
		V_A (V) :	(*1)	(*1)	
		I_A (A) :	(*1)	(*1)	
IC901 3 pin	Worst-case fault (IC901 3 pin load fault)	Power (W) :	5.55	--	PS1
		V_A (V) :	11.10	--	
		I_A (A) :	0.50	--	
	Worst-case power source fault (IC901 3 - 7 pin)	Power (W) :	2.41	--	
		V_A (V) :	12.75	--	
		I_A (A) :	0.189	--	
IC901 4 pin	Worst-case fault (IC901 4 pin load fault)	Power (W) :	5.27	--	PS1
		V_A (V) :	8.783	--	
		I_A (A) :	0.60	--	
	Worst-case power source fault (IC901 4 - 7 pin)	Power (W) :	Less than 1	--	
		V_A (V) :	--	--	
		I_A (A) :	--	--	

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

Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s*)	PS Classification
IC901 13 pin	Worst-case fault (IC901 13 pin load fault)	Power (W) :	--	18.4	PS2
		V_A (V) :	--	4.279	
		I_A (A) :	--	4.30	
	Worst-case power source fault (IC901 7 - 13 pin)	Power (W) :	2.99	--	
		V_A (V) :	12.72	--	
		I_A (A) :	0.235	--	
IC901 15 pin	Worst-case fault (IC901 15 pin load fault)	Power (W) :	2.96	--	PS2
		V_A (V) :	3.116	--	
		I_A (A) :	0.95	--	
	Worst-case power source fault (IC901 7 - 15 pin)	Power (W) :	--	32.04	
		V_A (V) :	--	12.13	
		I_A (A) :	--	2.641	
IC540 6 pin	Worst-case fault (IC540 6 pin load fault)	Power (W) :	--	18.7	PS2
		V_A (V) :	--	4.452	
		I_A (A) :	--	4.20	
	Worst-case power source fault (IC540 6 - 7 pin)	Power (W) :	2.19	--	
		V_A (V) :	12.73	--	
		I_A (A) :	0.172	--	
IC560 3 pin	Worst-case fault (IC560 3 pin load fault)	Power (W) :	11.0	--	PS1
		V_A (V) :	2.619	--	
		I_A (A) :	4.20	--	
	Worst-case power source fault (IC560 2 - 3 pin)	Power (W) :	Less than 1	--	
		V_A (V) :	--	--	
		I_A (A) :	--	--	

Supplementary Information:
(*) Measurement taken only when limits at 3 seconds exceed PS1 limits
Tests were conducted with Supply Voltage 12 Vdc.
Abbreviations: S/C = Short-Circuit
(*1): This point was not measured. Because it did not transform voltage by this Integrated Circuit.

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

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

Supplementary information:

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

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

Supplementary Information:

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

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

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

8.5.5	TABLE: High Pressure Lamp	N/A
Description	Values	Energy Source Classification
Lamp type.....:		—
Manufacturer .....:		—
Cat no. .....:		—
Pressure (cold) (MPa).....:		MS_
Pressure (operating) (MPa) .....:		MS_
Operating time (minutes) .....:		—
Explosion method .....:		—
Max particle length escaping enclosure (mm) .:		MS_
Max particle length beyond 1 m (mm).....:		MS_
Overall result .....:		
Supplementary information:		

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

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
10.8 Vdc	1.0	--	12.0	--	Blade fuse	1.0	Power on with USB memory (including 1 kHz sine wave signal) playing and the load of DC output at 350 mA by applicant's request
10.8 Vdc	1.74	--	20.8		Blade fuse	1.74	Power on with Bluetooth (including 1 kHz sine wave signal) playing, the load of USB dummy load at 1.5 A and the load of DC output at 350 mA by applicant's request
10.8 Vdc	3.41	--	36.8	--	Blade fuse	3.41	Maximum normal load condition. Audio Output is setting to 1/8 of the non-clipped output power to the rated load impedance (4 ohm) with Bluetooth (including 1 kHz sine wave signal) playing, the load of USB dummy load at 1.5 A and the load of DC output at 350 mA by applicant's request.) (*1)
12.0 Vdc	3.50	6	42.0	--	Blade fuse	3.50	Ditto. (*2)
13.2 Vdc	3.67	--	48.4	--	Blade fuse	3.67	Ditto. (*3)

Supplementary information:

Speaker outputs are as follows.

(*1) Front Left / Right 1.92 V, 0.92 W ;Rear Left / Right 1.92 V, 0.92 W; Speaker impedance

(*2) Front Left / Right 2.15 V, 1.16 W ;Rear Left / Right 2.14 V, 1.14 W; Speaker impedance

(*3) Front Left / Right 2.46 V, 1.51 W ;Rear Left / Right 2.44 V, 1.49 W; Speaker impedance

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

B.3	TABLE: Abnormal operating condition tests	P
Ambient temperature (°C) .....:	22-24	—
Power source for EUT: Manufacturer, model/type, output rating ..:	--	—

Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Panel PWB								
CN3950 1 - 7 pin (USB terminal)	S/C	13.2 Vdc	30 min	Blade fuse	Between 2.16 and 2.31	--	--	USB output decreased immediately. (No heat)
CN3950 1 - 7 pin (USB terminal)	O/L	13.2 Vdc	30 min	Blade fuse	3.15	IC540	120 (*1)	2.0 A load IC540 heated.
CN3950 1 - 7 pin (USB terminal)	O/L	13.2 Vdc	30 min	Blade fuse	2.18	--	--	2.2 A load USB output shut down immediately. (No heat)

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) Calculated at Tma: 35 °C

Abbreviations: S/C = Short-Circuit, O/L = Overload, LC = Lead Connection on the printed board, BC = Component Body Connection on the printed board, FL, FR = Front Left / Right, RR, RL = Rear Left / Right

B.4	TABLE: Fault condition tests	P
Ambient temperature (°C) .....:	22-24	—
Power source for EUT: Manufacturer, model/type, output rating .:	--	—

Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Main PWB	--	--	--	--	--	--	--	--
C990	S/C	13.2 Vdc	Less than 1 sec	Blade fuse	40 to 0	--	--	Blade fuse F901 (10 A, Built-in Rear connector) opened immediately. TRSR at 3 times.

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

Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
IC301 pin 7-10	S/C	13.2 Vdc	30 min	Blade fuse	1.42	--	--	All speaker output shut down immediately. No heated parts.
IC301 9 - 10 pin	S/C	13.2 Vdc	30 min	Blade fuse	1.43	--	--	All speaker output shut down immediately. No heated parts.
Speaker Terminal (FL+ - FL-)	S/C	13.2 Vdc	30 min	Blade fuse	2.94	IC301	156 (“1)	IC301 heated.
C909	S/C	13.2 Vdc	15 min	Blade fuse	0.18 to 0	--	--	Input current decreased immediately and after 10sec unit shut down. No heated parts.
C914	S/C	13.2 Vdc	30 min	Blade fuse	2.93	IC901	129 (*1)	IC901 heated.
C903	S/C	13.2 Vdc	30 min	Blade fuse	1.70	IC901	125 (*1)	IC901 heated.
C907	S/C	13.2 Vdc	30 min	Blade fuse	0.12	--	--	Input current decreased immediately. No heated parts.
C912	S/C	13.2 Vdc	30 min	Blade fuse	0.44	IC540	122 (*1)	IC540 heated.
IC560 3 - 4 pin	S/C	13.2 Vdc	30 min	Blade fuse	0.69	IC560 BC L561 BC	121 (*1) 118 (*1)	IC560, L561 heated.

Supplementary information:

(*1) Calculated at Tma: 35 °C

Abbreviations: S/C = Short-Circuit, O/L = Overload, LC = Lead Connection on the printed board, BC = Component Body Connection on the printed board, TRSR = Test repeated similar result, FL, FR = Front Left / Right

IEC 62368-1			
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:										

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

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				
Supplementary Information:					

Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation
Supplementary Information:				

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

T.2, T.3, T.4, T.5	TABLE: Steady force test				N/A
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Supplementary information:					

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

IEC 62368-1			
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				N/A
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
--	--	--	--	--	--
Supplementary information:					

List of test equipment used:

A completed list of used test equipment shall be provided in the Test Reports when a Manufacturer Testing Laboratory according to TMP/CTF stage 1 or WMT/CTF stage 2 procedure has been used.

Clause	Measurement / testing	Testing / measuring equipment / material used	Range used	Calibration date
N/A: All tests were performed at UL Japan, Inc.				

Enclosures
National Differences

EU Group Differences (including Denmark)

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	9/22/2017
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	CENELEC COMMON MODIFICATIONS (EN)		Pass
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed “Z”.		Pass
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		Pass
	Delete all the “country” notes in the reference document (IEC 62368-1:2014) according to the following list:		Pass

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

	For special national conditions, see Annex ZB.		Pass
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.		N/A
4.Z1	Protective devices included as integral parts of the equipment or as parts of the building installation:		N/A
	a) Included as parts of the equipment		N/A
	b) For components in series with the mains; by devices in the building installation		N/A
	c) For pluggable type B or permanently connected; by devices in the building installation		N/A
5.4.2.3.2.4	**Add** the following to the end of this subclause: The requirement for interconnection with **external circuit** is in addition given in EN 50491-3:2009.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.2.1	**Add** the following to c) and d) in table 39: For additional requirements, see 10.5.1.		N/A
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
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.		Pass

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		N/A
4.1.15	**Denmark, Finland, Norway and Sweden** To the end of the subclause the following is added: **Class I pluggable equipment type A** intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and **accessible** parts, have a marking stating that the equipment shall be connected to an earthed **mains** socket-outlet. The marking text in the applicable countries shall be as follows: In **Denmark**: “Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.” In **Finland**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In **Norway**: “Apparatet må tilkoples jordet stikkontakt” In **Sweden**: “Apparaten skall anslutas till jordat uttag”		N/A
4.7.3	**United Kingdom** To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex		N/A
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.		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		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	• 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.		
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.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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	**Ireland and United Kingdom** 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
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		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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.”.		
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 .		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		N/A
G.4.2	**Denmark:** Appliances rated ≤13 A provided with a plug according to DS 60884-2-D1:2011. Class I equipment provided with socket-outlets provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having rated >13 A or poly-phase equipment provided with a supply cord with a plug, plug 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 rated 2,5 A in accordance		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	with DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth 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		
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
ZC	**ANNEX ZC, NATIONAL DEVIATIONS (EN)**		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A

Enclosures

National Differences IEC 62368-1:2014

Italy

Report No.: **4789193891**

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 62368-1** **ITALY NATIONAL DIFFERENCES** (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to ..... : CEI EN 62368-1:2016			
Attachment Form No. ..... : IT_ND_IEC62368_1B **Attachment Originator**..... : IMQ S.p.A. **Master Attachment**..... : Date 2020-01-31			
Copyright © 2020 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		
F.1	**Italy** The following requirements shall be fulfilled: • The power consumption in Watts (W) shall be indicated on TV receivers and in their instruction for use (Measurement according to EN 60555-2). Note: *EN 60555-2 has since been replaced by IEC 60107-1:1997.* • TV receivers shall be provided with an instruction for use, schematic diagrams and adjustments procedure in Italian language. • Marking for controls and terminals shall be in Italian language. Abbreviation and international symbols are allowed provided that they are explained in the instruction for use. • The ECC manufacturers are bound to issue a conformity declaration according to the above requirements in the instruction manual. The correct statement for conformity to be written in the instruction manual, shall be: *Questo apparecchio è fabbricato nella CEE nel rispetto delle disposizioni del D.M. marzo 1992 ed è in particolare conforme alle prescrizioni dell'art. 1 dello stesso D.M.* • The first importers of TV receivers manufactured outside EEC are bound to submit the TV receivers for previous conformity certification to the Italian Post Ministry (PP.TT). The TV receivers shall have on the backcover the certification number in the		N/A

Report No.: **4789193891**

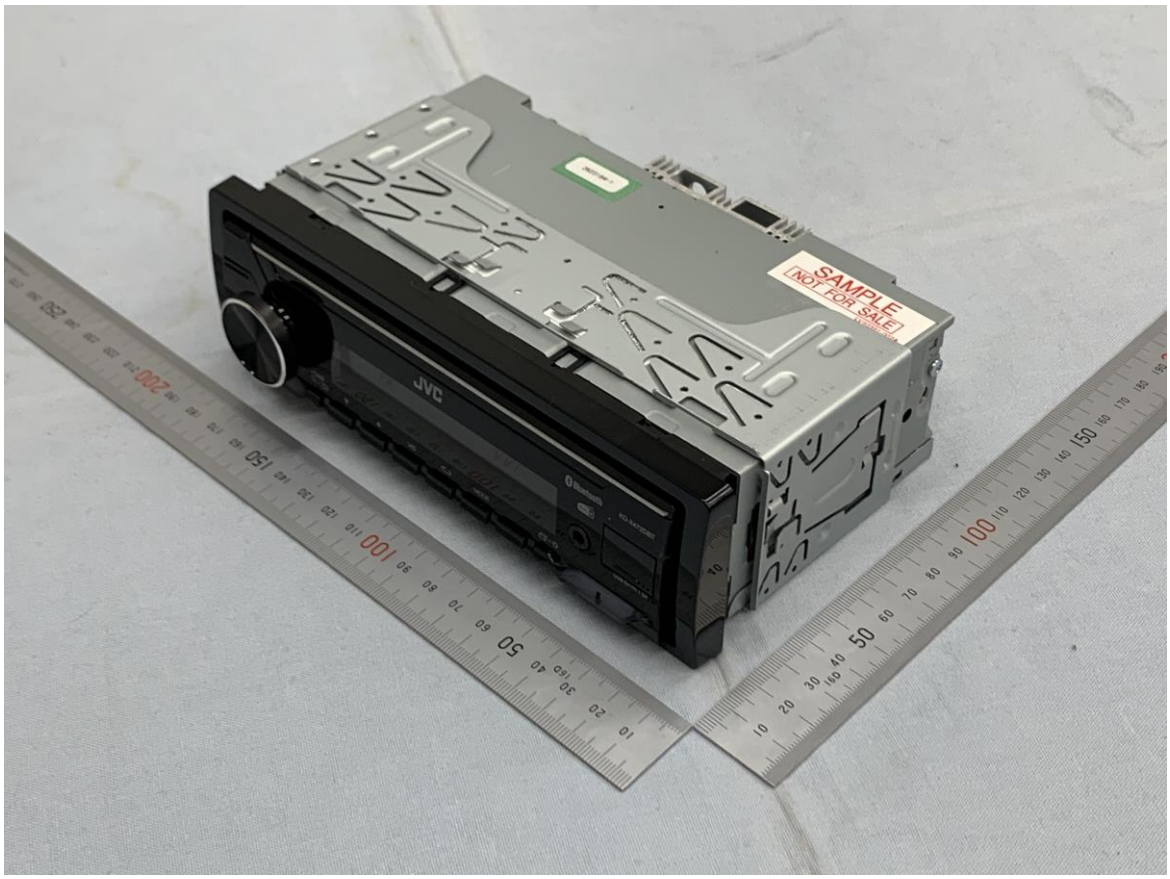
IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	following form: D.M. 26/03/1992 xxxxx/xxxxx/S or T or pT S for stereo T for Teletext pT for retrofitable teletext *Justification:* Ministerial Decree of 26 March 1992 : National rules for television receivers trade. NOTE/: *Ministerial decree above contains additional, but not safety relevant requirements*		

List of Enclosures

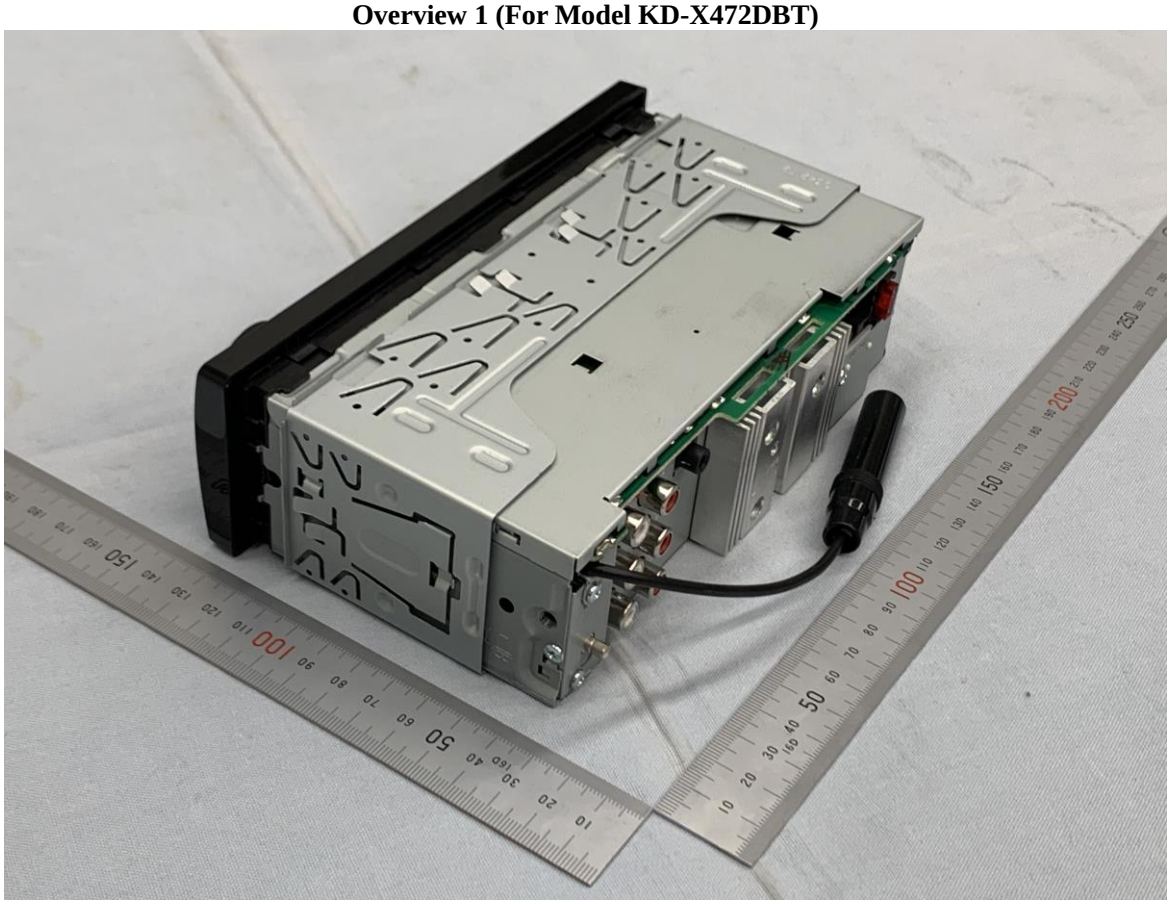
No.	Type	Attached
Enclosure No. 1	Photographs	☒
Enclosure No. 2	Markings	☒
Enclosure No. 3	Miscellaneous	☐
Enclosure No. 4	Schematics	☐
Enclosure No. 5	Diagrams	☐
Enclosure No. 6	Licenses	☐

ENCLOSURE No. 1

Photographs



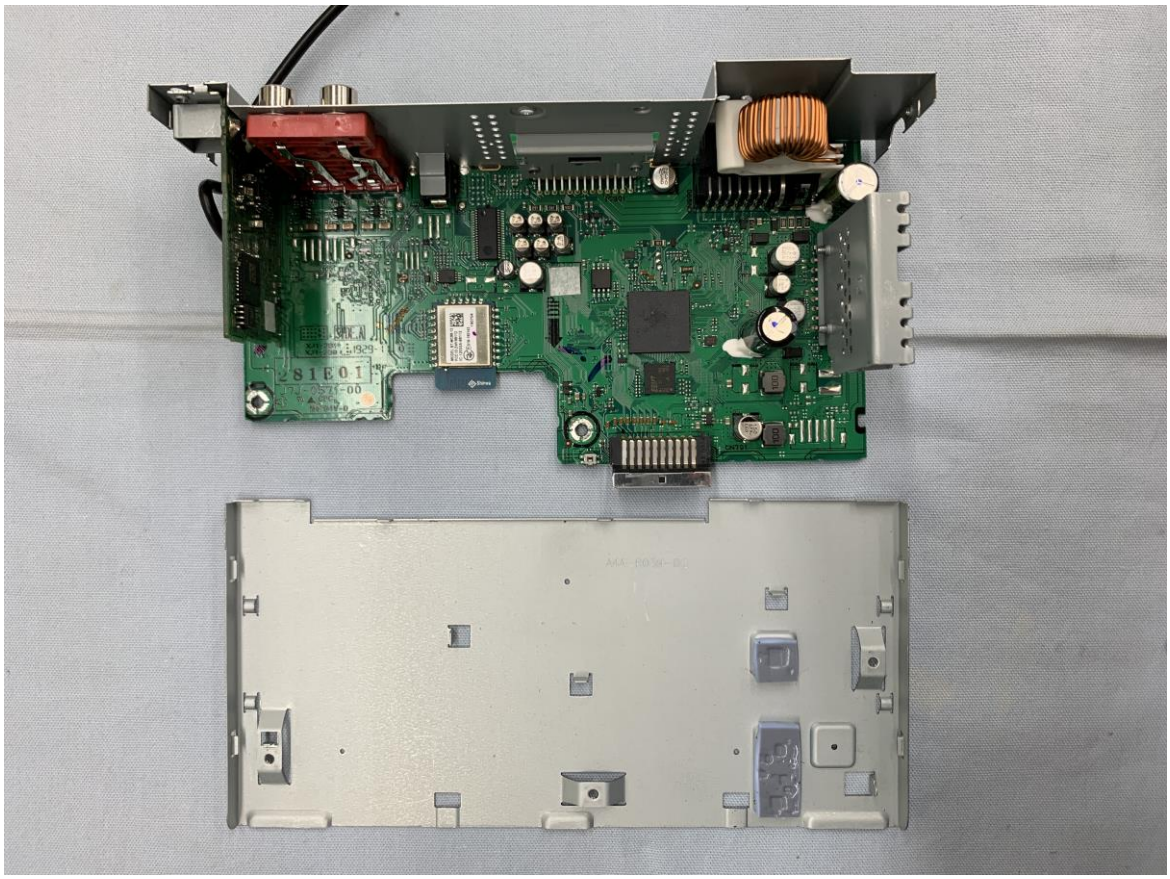
Overview 1 (For Model KD-X472DBT)



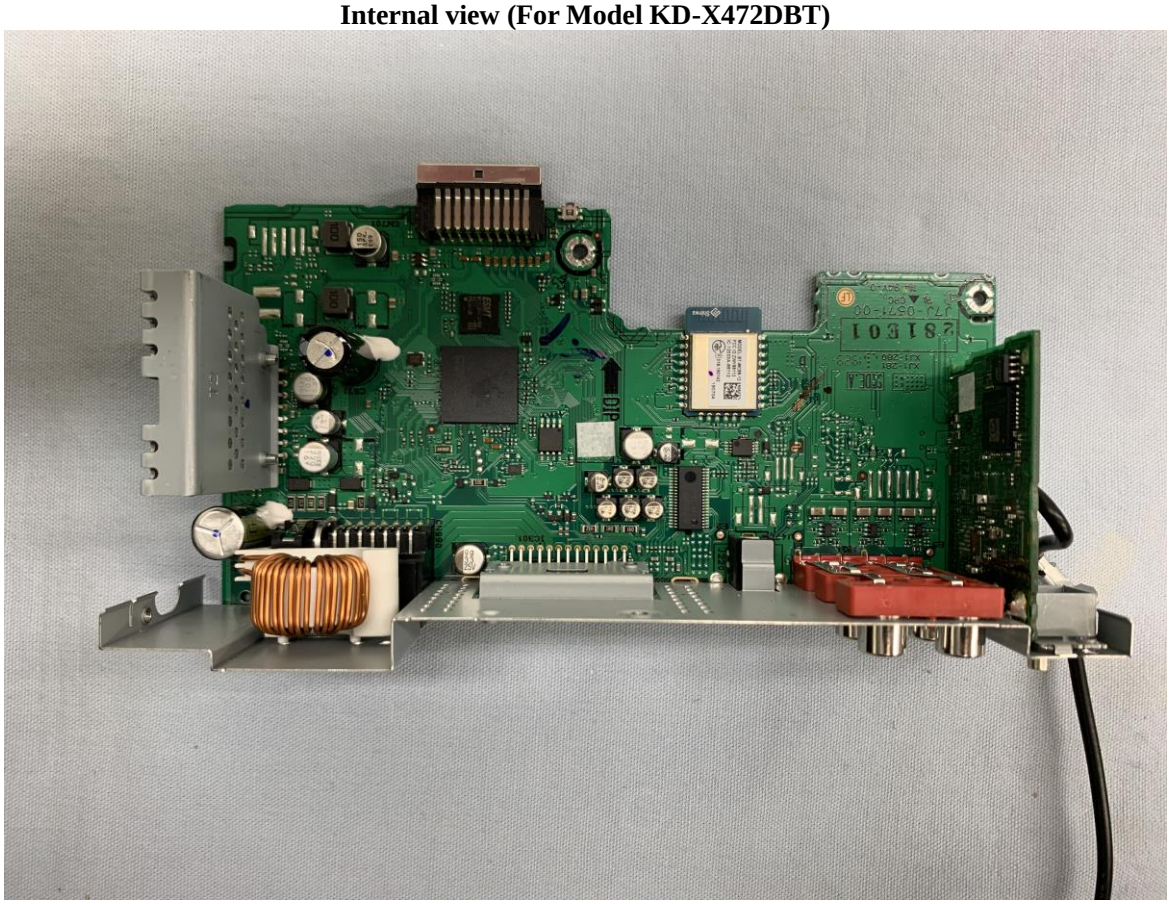
Overview 2 (For Model KD-X472DBT)

Overview 3 without Panel (For Model KD-X472DBT)

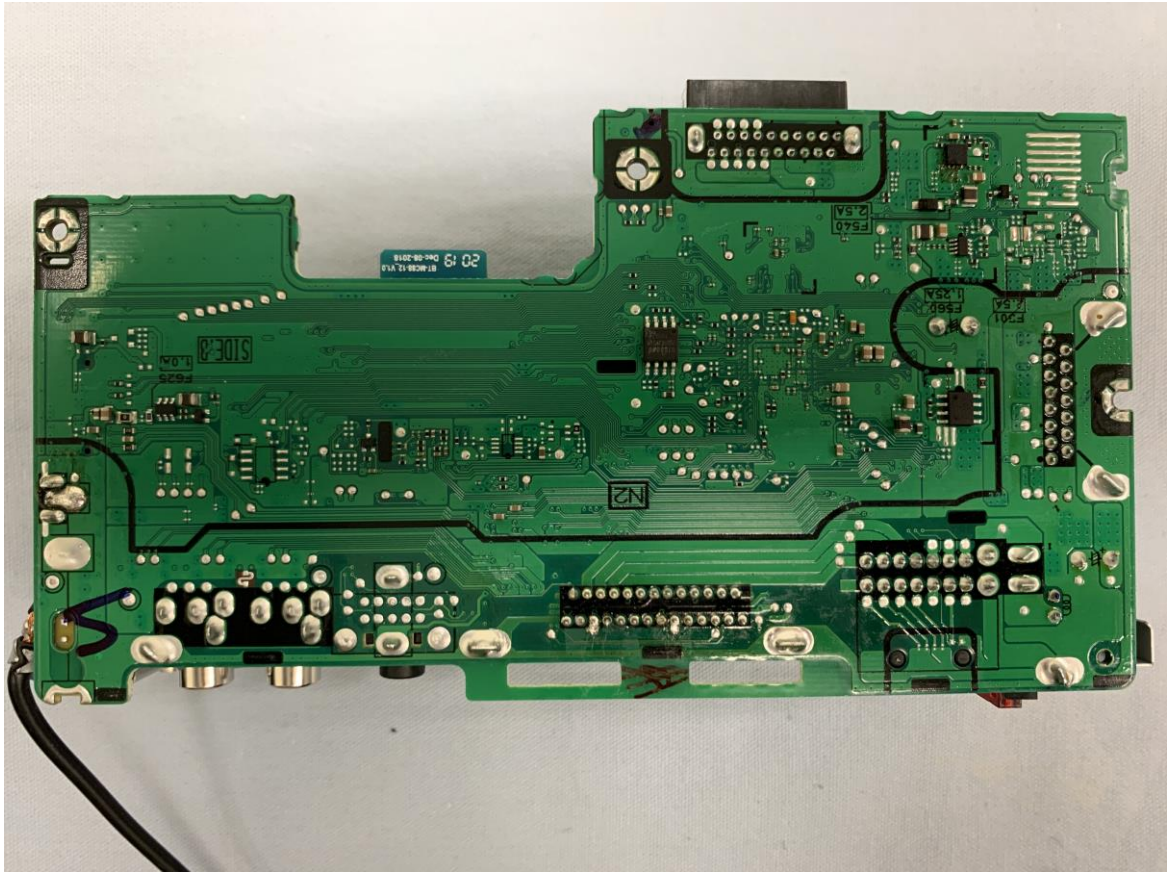
Overview 4 without Panel (For Model KD-X472DBT)



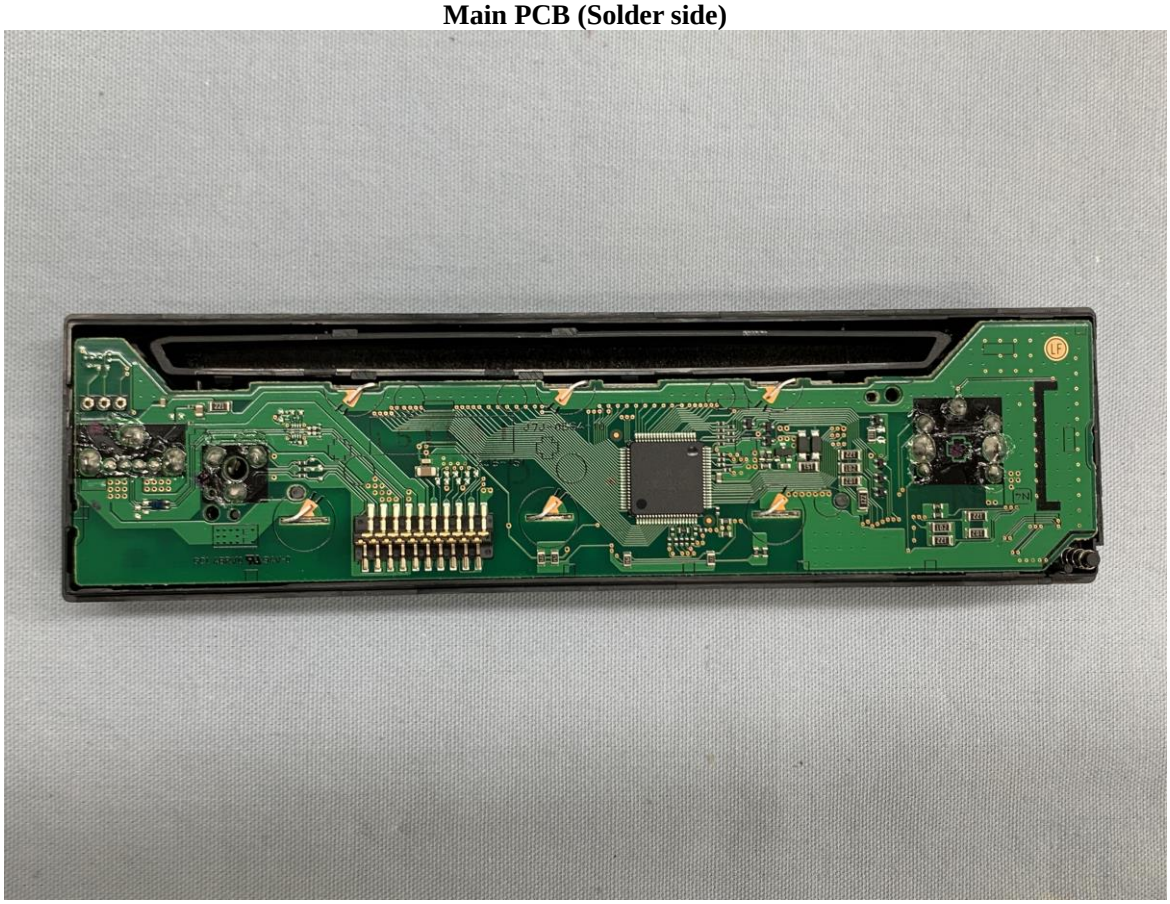
Internal view (For Model KD-X472DBT)



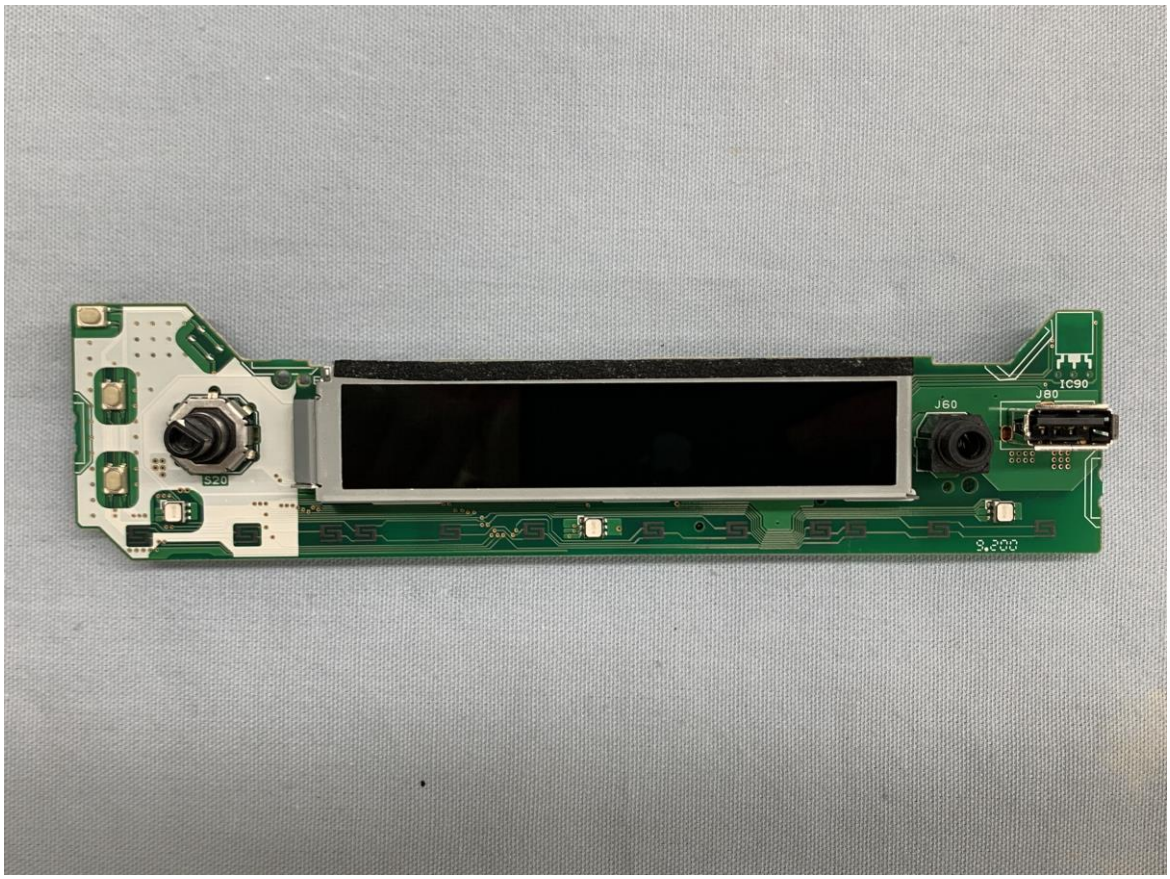
Main PCB (Component side)



Main PCB (Solder side)



Panel PCB (Rear side)



Panel PCB (Front side)

ENCLOSURE No. 2

Markings

KD-X472DBT:

KD-X272DBT:

KD-X172DB:

KMM-BT506DAB:

KMR-M506DAB: