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TEST REPORT

On Behalf of



Cablecard Multi-Functional Wireless Charger



Prepared for :



Prepared By :

World Standardization Certification & Testing Group (Shenzhen) Co., Ltd.

Building A-B, Baoshi Road, Baoshi Science & Technology Park, Bao'an District, Shenzhen, Guangdong, China

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Date of Test:

13 March 2020 to 30 March 2020

Date of Report:

07 April 2020

Report Number:

WSCT-IT200400062A

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Report No.: WSCT-IT200400062A Issued: 07 April 2020 Revised: None

Revision History Of Report

Rev.	Issue No.	Revisions	Effect Page	Revised By
00	WSCT-IT200400062A	Initial Issue	ALL	Wang Fengbing

ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

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

Report reference No : WSCT-IT200400062A

Tested by

(Testing Engineer) : Wu Xiaobo

Wu Xiaobo

Checked by

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Testing Laboratory Name : World Standardization Certification & Testing Group (Shenzhen) Co., Ltd.

Address : Building A-B, Baoshi Road, Baoshi Science & Technology Park, Bao'an District, Shenzhen, Guangdong, China

Testing location : Same as above

Applicant's Name

Address

Test specification

Standard : EN 62368-1:2014+A11:2017

Test procedure : TEST REPORT

Non-standard test method : N/A

Test Report Form No : EN62368_1B

TRF originator : UL(US)

Master TRF : 2014-03





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Test item description Cablecard Multi-Functional Wireless Charger

Trademark

Manufacturer.....

Address

Model and/or type reference

Rating(s) Input: 5V --- 2A
Output: 5V --- 1A



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TEST ITEM PARTICULARS:

Classification of use by	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input checked="" type="checkbox"/> Children likely to be present
Supply Connection.....	<input type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input checked="" type="checkbox"/> External Circuit - not Mains connected - <input checked="" type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance	<input type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +____%/ -____% <input checked="" type="checkbox"/> None
Supply Connection – Type	<input checked="" type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input checked="" type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input checked="" type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input checked="" type="checkbox"/> other: <u>not mains connected</u>
Considered current rating of protective device as part of building or equipment installation	N/A Installation location: <input type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input checked="" type="checkbox"/> other: <u>not mains connected</u>
Class of equipment	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III





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Access location	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maxium operating ambient :	<u>40</u> °C
IP protection class	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP__
Power Systems	<input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - ____ V _{L-L}
Altitude during operation (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Altitude of test laboratory (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Mass of equipment (kg)	<input checked="" type="checkbox"/> <u>0.046</u> 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.....	13 March 2020
Date (s) of performance of tests	13 March 2020 to 30 March 2020





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General remarks

The test results presented in this report only to the object tested.

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The test results presented in this report relate only to the item tested.

"(see remark #)" refers to a remark appended to the report.

"(see Annex #)" refers to an annex appended to the report.

"(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 point is used as the decimal separator.

List of Attachments:

Attachment No. 1: Photograph

Attachment No. 2: Equipment list

Comments

Brief description of the test sample:

The equipment is a Cablecard Multi-Functional Wireless Charger for the general use in information technology equipment or audio/video equipment.

The manufacturer specified maximum ambient temperature is 40°C.

Summary of Testing and Conclusions

The sample(s) tested complies with the requirements of EN 62368-1:2014+A11:2017





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Copy of marking plate:

Cablecard Multi-Functional Wireless Charger

Model No.: BM3016

Micro USB Input: 5V --- 2A

Wireless output: 5V --- 1A



BETEC GROUP LIMITED
MADE IN CHINA

Remark: There is reference lable. Final lable should be including the content of them.





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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)
Internal circuits	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	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 of enclosure	MS1
Mass of the unit	MS1





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ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:

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)

Plastic enclosure

TS1

Radiation (Clause 10)

(Note: List the types of radiation present in the product and the corresponding energy source classification.)

Example: DVD – Class 1 Laser Product RS1

Type of radiation

Corresponding classification (RS)

LED for indicating

RS1





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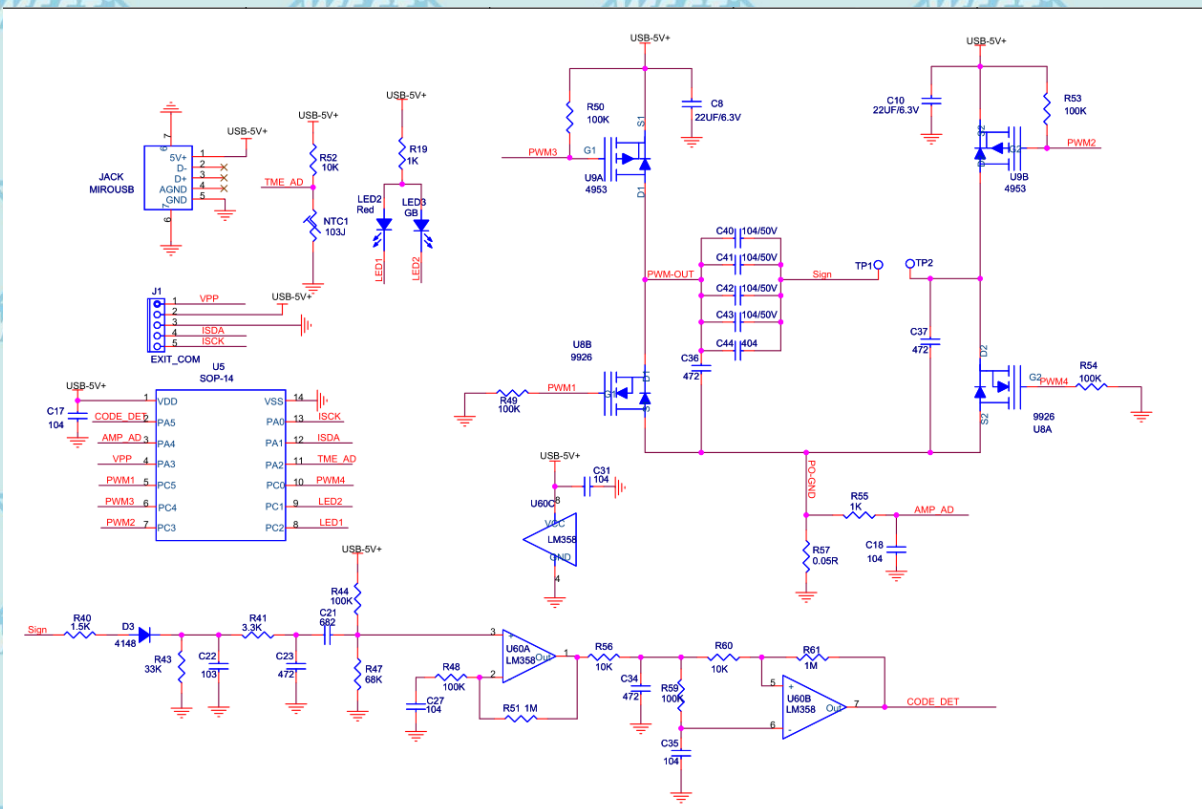
ENERGY SOURCE DIAGRAM

Indicate which energy sources are included in the energy source diagram. Insert diagram below

☐ ES ☐ PS ☐ MS ☐ TS ☐ RS

The whole product is supplied by a source which is ES1, considered as ES1

All circuit inside the product is considered as PS1.





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OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced(Enclosure)
Ordinary	ES1: All internal circuits	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS1: 15 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Enclosure	PS1: <15 Watt circuit (Internal circuit and)	See 6.3	V-1	N/A
PCB	PS1: <15 Watt circuit (Internal circuit)	See 6.3	V-0	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1: Edges and corners	N/A	N/A	N/A
Ordinary	MS1: Mass of the unit	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced





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Ordinary	TS1: Plastic enclosure	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	LED for indicating	N/A	N/A	N/A
Supplementary Information:				
(1) See attached energy source diagram for additional details.				
(2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				





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EN62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
4	General Requirements		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
4.1.3	Equipment design and construction	No accessible part which could cause injury	P
4.1.15	Markings and instructions :	(See Annex F)	P
4.4.4	Safeguard robustness	See below	P
4.4.4.2	Steady force tests :	(See Annex T.4)	P
4.4.4.3	Drop tests :	(See Annex T.7)	P
4.4.4.4	Impact tests :		N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests :		N/A
4.4.4.6	Glass Impact tests :		N/A
4.4.4.7	Thermoplastic material tests :	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard :		N/A
4.4.4.9	Accessibility and safeguard effectiveness	No damage	P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions	P
4.6	Fixing of conductors		N/A
4.6.1	Fix conductors not to defeat a safeguard		N/A
4.6.2	10 N force test applied to :		N/A





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EN62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.7	Equipment for direct insertion into mains socket - outlets		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		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 :	It's impossible entry of a conductive object from outside the equipment.	N/A

5	Electrically-caused injury		P
5.2.1	Electrical energy source classifications :	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current :	See appended table 5.2)	P
5.2.2.3	Capacitance limits :		N/A
5.2.2.4	Single pulse limits :	No such single pulses with the EUT	N/A
5.2.2.5	Limits for repetitive pulses :	No such repetitive pulses with the EUT	N/A
5.2.2.6	Ringing signals :	No such ringing signals with the EUT	N/A
5.2.2.7	Audio signals :		N/A
5.3	Protection against electrical energy sources	See below	P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	See below	P
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only ES1 circuit and the enclosure (safeguard) are accessed to person.	P





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EN62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.3.2.2	Contact requirements		N/A
	a) Test with test probe from Annex V :		N/A
	b) Electric strength test potential (V) :		N/A
	c) Air gap (mm) :		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		N/A
5.4.1.2	Properties of insulating material		N/A
5.4.1.3	Humidity conditioning :		N/A
5.4.1.4	Maximum operating temperature for insulating materials :		N/A
5.4.1.5	Pollution degree :		--
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
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





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Clause	Requirement – Test	Result – Remark	Verdict
5.4.3	Creepage distances :		N/A
5.4.3.1	General		N/A
5.4.3.3	Material Group :		--
5.4.4	Solid insulation		N/A
5.4.4.2	Minimum distance through insulation :		N/A
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) :		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material :		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz :		N/A
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ) :		--
5.4.6	Insulation of internal wire as part of supplementary safeguard :		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		N/A
	Relative humidity (%) :		--
	Temperature (°C) :		--
	Duration (h) :		--
5.4.9	Electric strength test :		N/A
5.4.9.1	Test procedure for a solid insulation type test		N/A
5.4.9.2	Test procedure for routine tests		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
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 DU_{sa} :		--
	$U_{op} = U_{peak} + DU_{sp} + DU_{sa}$:		--
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
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





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Clause	Requirement – Test	Result – Remark	Verdict
5.6.2	Requirement for protective conductors		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
	Supply Voltage (V) :		--
	Measured current (mA) :		--





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Clause	Requirement – Test	Result – Remark	Verdict
	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	PS (power source) classification determined by measuring the maximum power in Figures 34 and 35 for load and power source circuits.	P
6.2.2.1	General	See the following details.	P
6.2.2.2	Power measurement for worst-case load fault :	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault :	(See appended table 6.2.2)	P
6.2.2.4	PS1 :	(See appended table 6.2.2)	P
6.2.2.5	PS2 :		N/A
6.2.2.6	PS3 :		N/A
6.2.3	Classification of potential ignition sources		N/A
6.2.3.1	Arcing PIS :		N/A
6.2.3.2	Resistive PIS :		N/A
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials :	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P





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Clause	Requirement – Test	Result – Remark	Verdict
6.3.1 (b)	Combustible materials outside fire enclosure	No such materials used.	N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method by 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		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		P
	Special conditions if conductors on printed boards are opened or peeled	No such case happened.	N/A
6.4.3.3	Single Fault Conditions :		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits		N/A
6.4.5.2	Supplementary safeguards :		N/A
6.4.6	Control of fire spread in PS3 circuit		N/A
6.4.7	Separation of combustible materials from a PIS	See below	P
6.4.7.1	General :	Only small parts of combustible material (with mass less than 4g) on the PCB is not considered as PIS does not require separation from PIS. Separation requirements from PIS to the plastic enclosure see also clause 6.4.8.4	P
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	See below	P
6.4.8.1	Fire enclosure and fire barrier material properties	V-1 fire enclosure used, min. V-0 PCB used, considered as fire enclosure.	P
6.4.8.2.1	Requirements for a fire barrier		N/A





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6.4.8.2.2	Requirements for a fire enclosure	See cl.6.4.8.1	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	See below	P
6.4.8.3.1	Fire enclosure and fire barrier openings	Fire enclosure with only openings for USB connector.	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 :	V-1 fire enclosure used, V-0 PCB used, considered as fire enclosure.	N/A
6.5	Internal and external wiring		P
6.5.1	Requirements		P
6.5.2	Cross-sectional area (mm ²) :		--
6.5.3	Requirements for interconnection to building wiring :	No such interconnection to building wiring.	N/A
6.6	Safeguards against fire due to connection to additional equipment		N/A
	External port limited to PS2 or complies with Clause Q.1		N/A

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		P
7.2	Reduction of exposure to hazardous substances		P
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





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	Instructional safeguard (ISO 7010) :		--
7.6	Batteries :		N/A

8	MECHANICALLY-CAUSED INJURY		P
8.1	General	See the following details.	P
8.2	Mechanical energy source classifications	Sharp edges and corners, classified as MS1 Equipment mass < 7 kg, classified as MS1	P
8.3	Safeguards against mechanical energy sources	MS1	N/A
8.4	Safeguards against parts with sharp edges and corners	Accessible edges and corners of the equipment are rounded and are classified as MS1.	N/A
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		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	Classification MS1 according to table 35, line 5 and no stability	N/A





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Clause	Requirement – Test	Result – Remark	Verdict
		requirement.	
8.6.1	Product classification		N/A
	Instructional Safeguard :		--
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force :		--
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt :		--
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force) :		N/A
	Position of feet or movable parts :		--
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) :		N/A
8.7.2	Direction and applied force :		N/A
8.8	Handles strength		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 :		--
8.1	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		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable N :		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas		N/A
	Button/Ball diameter (mm) :		--

9	Thermal burn injury		P
9.2	Thermal energy source classifications	All accessible surfaces 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	See above.	P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard	Enclosure temperatures do not exceed TS1 limits.	P
9.4.2	Instructional safeguard :		N/A

10	RADIATION		P
10.2	Radiation energy source classification	RS1: The LED only used for indicating, which is considered as exempt group according to EN 62471	P
10.2.1	General classification		N/A
10.3	Protection against laser radiation	No 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	No protection needed for RS1 indicating LED.	N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons :		N/A
10.4.1.b)	RS3 accessible to a skilled person :		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
	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 conditions :		N/A
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	No such equipment	N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A) :		N/A
	Output voltage, unweighted r.m.s. :		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards :		N/A
	Equipment safeguard prevent ordinary person to RS2 :		--
	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



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Clause	Requirement – Test	Result – Remark	Verdict
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	See the following details.	P
B.2.1	General requirements :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers :		N/A
B.2.3	Supply voltage and tolerances		N/A
B.2.5	Input test :	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements :	(See appended table B.3)	P
B.3.2	Covering of ventilation openings	No ventilation openings provided.	N/A
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector :	No setting of voltage selector within the EUT	N/A
B.3.5	Maximum load at output terminals :		P
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	All safeguards remained effectively.	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or	(See appended table B.4)	N/A





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Clause	Requirement – Test	Result – Remark	Verdict
	short-circuited :		
B.4.3	Motor tests		N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature :		N/A
B.4.4	Short circuit of functional insulation	See the following details.	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards within the EUT	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		N/A
B.4.6	Short circuit or disconnect of passive components	(See appended table B.3 & B.4)	P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation	N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	No change to circuits classified in 5.3	P
B.4.9	Battery charging under single fault conditions :		N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
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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		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V) :		--
	Rated load impedance (Ω) :		--
E.2	Audio amplifier abnormal operating conditions		N/A

F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General requirements	See the following details.	P
	Instructions – Language :	English	--
F.2	Letter symbols and graphical symbols	See the following details.	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	Equipment marking is located on the exterior surface and is easily visible.	P
F.3.2	Equipment identification markings	See the following details.	P
F.3.2.1	Manufacturer identification :	See copy of marking plate.	--
F.3.2.2	Model identification :	See copy of marking plate.	--
F.3.3	Equipment rating markings	See the following details.	P
F.3.3.1	Equipment with direct connection to mains		N/A
F.3.3.2	Equipment without direct connection to mains		--
F.3.3.3	Nature of supply voltage :		--
F.3.3.4	Rated voltage :		--
F.3.3.4	Rated frequency :		--
F.3.3.6	Rated current or rated power :		--





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Clause	Requirement – Test	Result – Remark	Verdict
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		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings :		N/A
F.3.5.2	Switch position identification marking :		N/A
F.3.5.3	Replacement fuse identification and rating markings :		N/A
F.3.5.4	Replacement battery identification marking :		N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		N/A
F.3.6.1	Class I Equipment		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 :		--
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking	See the following details.	P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test, 15 sec. for water and 15 sec. for petroleum spirit. After each test, the marking remained legible.	P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use	Relevant safety caution texts and installation instruction are available.	P
	c) Equipment intended to be fastened in place		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
	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		P
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		P

G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General requirements	No switch used	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	Relays		N/A
G.2.1	General requirements	No relays used	N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	Protection Devices		N/A
G.3.1	Thermal cut-offs		N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
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		N/A
G.3.4	Overcurrent protection devices		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions :		N/A
G.4	Connectors		N/A
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration :		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	Wound Components		N/A
G.5.1	Wire insulation in wound components		N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) :		--
	Temperature (°C) :		--
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	Transformers		N/A
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) :		N/A
	Position :		--
	Method of protection :		--
G.5.3.2	Insulation		N/A





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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





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Clause	Requirement – Test	Result – Remark	Verdict
G.7	Mains supply cords		N/A
G.7.1	General requirements		N/A
	Type :		--
	Rated current (A) :		--
	Cross-sectional area (mm ²), (AWG) :		--
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
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 :		--





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Clause	Requirement – Test	Result – Remark	Verdict
G.9.1 d)	IC limiter output current (max. 5A) :		--
G.9.1 e)	Manufacturers' defined drift :		--
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	Resistors		N/A
G.10.1	General requirements		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		P
G.13.1	General requirements	See the following details.	P
G.13.2	Uncoated printed boards	Only need to comply with functional insulation, see only B.4.4.	P
G.13.3	Coated printed boards	No coated printed board provided within the equipment.	N/A
G.13.4	Insulation between conductors on the same inner		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
	surface		
	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
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	No such ICX provided within the equipment.	N/A
b)	Impulse test using circuit 2 with U_c = to transient voltage :		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage :		--





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Clause	Requirement – Test	Result – Remark	Verdict
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

K	SAFETY INTERLOCKS		N/A
K.1	General requirements	No safety interlock provided within the equipment.	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





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Clause	Requirement – Test	Result – Remark	Verdict
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	No battery used	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
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance :		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature :		--
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





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Clause	Requirement – Test	Result – Remark	Verdict
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume 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 :	Pollution degree considered	--

O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		N/A
	Figures O.1 to O.20 of this Annex applied :		--

P	SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS		N/A
P.1	General requirements		N/A
P.2.2	Safeguards against entry of foreign object		N/A
	Location and Dimensions (mm) :		--
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts :		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
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) :		--
	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		P
Q.1	Limited power sources	See appended table Annex Q.1	P
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		P
	- Regulating network limited output under normal operating and simulated single fault condition	A regulating network limits the output in compliance with table Q.1 both under normal operating conditions and after any single fault	P
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method	See appended table Annex Q.1	P
Q.2	Test for external circuits – paired conductor cable	No such circuit for connection to the EUT	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





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Clause	Requirement – Test	Result – Remark	Verdict
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material :		--
	Wall thickness (mm) :		--
	Conditioning (°C) :		--
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material :		--
	Wall thickness (mm) :		--
	Conditioning (°C) :		--
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material :		--
	Wall thickness (mm) :		--
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire 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		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
	completely		
	After fifth flame application, flame extinguished within 1 min		N/A

T	MECHANICAL STRENGTH TESTS		P
T.1	General requirements		P
T.2	Steady force test, 10 N :		N/A
T.3	Steady force test, 30 N :		N/A
T.4	Steady force test, 100 N :	(See appended table T.4)	P
T.5	Steady force test, 250 N :		N/A
T.6	Enclosure impact test		N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test :	(See appended table T.7)	P
T.8	Stress relief test :	(See appended table T.8)	P
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J) :		--
	Height (m) :		--
T.10	Glass fragmentation test :		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) :		--

U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		P
U.1	General requirements	No CRT used	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		P
V.2	Accessible part criterion		P





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EN62368-1			
Clause	Requirement – Test	Result – Remark	Verdict

EN62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT

IEC 62368-1

EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

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

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

Attachment Form No.....: EU_GD_IEC62368_1B_II

Attachment Originator: Nemko AS

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

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





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EN62368-1						
Clause	Requirement – Test				Result – Remark	
	Delete all the “country” notes in the reference document (IEC 62368-1:2014) according to the following list:					P
	0.2.1	Note	1	Note 3	4.1.15	Note
	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c
	5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note
	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3
	5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4
	10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3
	For special national conditions, see Annex ZB.					P
1	Add the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.					P



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EN62368-1

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





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EN62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
10.5.1	<p>Add the following after the first paragraph:</p> <p>For RS 1 compliance is checked by measurement under the following conditions:</p> <p>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.</p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p>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.</p> <p>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.</p> <p>For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.</p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>		N/A
10.6.1	<p>Add the following paragraph to the end of the subclause:</p> <p>EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>	No such x-radiation generated from the equipment.	N/A





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Clause	Requirement – Test	Result – Remark	Verdict
10.Z1	<p>Add the following new subclause after 10.6.5.</p> <p>10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</p> <p>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).</p> <p>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</p>		N/A
G.7.1	<p>Add the following note:</p> <p>NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>		N/A





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EN62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
Bibliography	<p>Add the following standards:</p> <p>Add the following notes for the standards indicated:</p> <p>IEC 60130-9 NOTE Harmonized as EN 60130-9.</p> <p>IEC 60269-2 NOTE Harmonized as HD 60269-2.</p> <p>IEC 60309-1 NOTE Harmonized as EN 60309-1.</p> <p>IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series.</p> <p>IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4.</p> <p>IEC 60664-5 NOTE Harmonized as EN 60664-5.</p> <p>IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified).</p> <p>IEC 61508-1 NOTE Harmonized as EN 61508-1.</p> <p>IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1.</p> <p>IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4.</p> <p>IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6.</p> <p>IEC 61643-1 NOTE Harmonized as EN 61643-1.</p> <p>IEC 61643-21 NOTE Harmonized as EN 61643-21.</p> <p>IEC 61643-311 NOTE Harmonized as EN 61643-311.</p> <p>IEC 61643-321 NOTE Harmonized as EN 61643-321.</p> <p>IEC 61643-331 NOTE Harmonized as EN 61643-331.</p>		N/A
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		N/A





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EN62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.1.15	<p>Denmark, Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>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.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord."</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p>		N/A
4.7.3	<p>United Kingdom</p> <p>To the end of the subclause the following is added:</p> <p>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</p>		N/A
5.2.2.2	<p>Denmark</p> <p>After the 2nd paragraph add the following:</p> <p>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.</p>		N/A





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EN62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.4.11.1 and Annex G	<p>Finland and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>For separation of the telecommunication network from earth the following is applicable:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> • 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. <p>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</p> <ul style="list-style-type: none"> • 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. <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> • the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, 	No TNV circuits.	N/A





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EN62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11;</p> <ul style="list-style-type: none"> the additional testing shall be performed on all the test specimens as described in EN 60384-14; <p>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.</p>		N/A
5.5.2.1	<p>Norway</p> <p>After the 3rd paragraph the following is added:</p> <p>Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).</p>		N/A
5.5.6	<p>Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>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.</p>	No such resistors.	N/A
5.6.1	<p>Denmark</p> <p>Add to the end of the subclause</p> <p>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.</p> <p><i>Justification:</i></p> <p>In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>		N/A





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EN62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.6.4.2.1	Ireland and United Kingdom After the indent for pluggable equipment type A , the following is added: – the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm ² to 1,5 mm ² in cross-sectional area.		N/A
5.7.5	Denmark To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high protective conductor current.	N/A





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EN62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.7.6.1	<p>Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>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.</p> <p>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.</p> <p>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:</p> <p>“Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)”</p> <p>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.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p>	Not such system.	N/A





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EN62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>“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.”</p> <p>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.”.</p>		N/A
5.7.6.2	<p>Denmark</p> <p>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 .</p>	No external circuits.	N/A
B.3.1 and B.4	<p>Ireland and United Kingdom</p> <p>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</p>		N/A





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EN62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
G.4.2	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a.</p> <p>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a</p> <p><i>Justification:</i></p> <p>Heavy Current Regulations, Section 6c</p>	No power supply cord provided.	N/A





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EN62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
G.4.2	United Kingdom To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
G.7.1	United Kingdom To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	Ireland To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A





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EN62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
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
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. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int +49-531-592-6320, Internet: http://www.ptb.de	No CRT within the equipment.	N/A





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4.1.2	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹
PCB	GOLDENMAX INTERNATIONAL TECHNOLOGY (ZHUHAI) LTD	GDM-R1, ILM-R1	V-0, 130°C	UL 796, UL 94	UL E330731
(Alternative)	Interchangeable	Interchangeable	V-0, 130°C	UL 796, UL 94	UL
Plastic enclosure	CHI MEI CORPORATION	PA-765A(+)	V-1, 80°C, Min.1.5mm thickness	UL 94	UL E56070
Note(s):					





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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		
		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	
--	--	--	--	





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

4.8.5	TABLE: Lithium coin/button cell batteries mechanical test result			N/A
Test position	Surface tested	Force (N)	Duration force applied (s)	
--	--	--	--	
--	--	--	--	
Supplementary information:				

5.2	Table: Classification of electrical energy sources						P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
1	5.0V	Internal circuit	Normal	5.0Vdc	--	DC	ES1
			Abnormal	--	--	--	
			Single fault –SC/OC:	--	--	--	
5.2.2.3 – Capacitance Limits							





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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	--	--	--	

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 –

Abnormal –

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





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5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements			P			
	Supply voltage (V)	5VDC	5VDC	--			
	Test condition:	Only charging	Charging and normal operation				
	Ambient T _{min} (°C)	--	--	--			
	Ambient T _{max} (°C)	--	--	--			
	Tma (°C)	--	--	--			
Maximum measured temperature T of part/at:		T (°C)		Allowed T _{max} (°C)			
Power input wire		41.1	49.8	Ref.			
PCB near U5		45.6	69.5	130			
PCB near U60		45.1	67.3	130			
C33		45.6	69.6	105			
Internal enclosure near U5		44.7	63.7	80			
Ambient		40.0	40.0	--			
For accessible part							
External enclosure near U5*		28.5	42.6	77			
Ambient		25.0	25.0	--			
Supplementary information:							
Note 1: The apparatus was submitted and evaluated of maximum manufacture's recommened abmient(Tma) of 40°C.							
Note 2: The temperatures were measured under the worse case normal mode defined in table B.2.1.							
Note 3: * Temperature limit for TS1 of accessible enclosure according to Table 38.							
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--





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Supplementary information:

Note 1: Tma should be considered as directed by applicable 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):	--





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Pollution Degree:			--
Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)
--	--	--	--
Supplementary information:			

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

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements					N/A
Distance through insulation di at/of:	Peak voltage (V)	Frequency (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:				
--	--	--	--	
Basic/supplementary:				
--	--	--	--	
Reinforced:				
--	--	--	--	
Routine Tests:				





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

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

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

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part	N/A
Supply voltage		—





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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	--
--	7	--

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.

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
DC power	Output	Power (W) :	5.70	5.70	PS1
		V _A (V) :	4.75	4.75	
		I _A (A) :	1.2	1.2	
DC power	Output (U5 pin1-4 S-C)	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	

Supplementary Information:

(*) Measurement taken only when limits at 3 seconds exceed PS1 limits





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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 (Vp x Irms)	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)				N/A
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
--	--	--	--	--	--
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_	





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Pressure (operating) (MPa)	WSCT	WSCT	MS_
Operating time (minutes)			--
Explosion method			--
Max particle length escaping enclosure (mm) ..			MS_
Max particle length beyond 1 m (mm)			MS_
Overall result			
Supplementary information:			

B.2.5 TABLE: Input test							P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
5.0	1.34	2.0	6.70	--	--	--	Loading 5V 1A
Supplementary information:							

B.3 TABLE: Abnormal operating condition tests								P
Ambient temperature (°C)					25°C, if not specified			--
Power source for EUT: Manufacturer, model/type, output rating :					See below			--
Component No.	Fault Condition	Supply voltage, (V)	Test time (h)	Fuse no.	Fuse current, (A)	T-coupl e	Temp. (°C)	Observation
Output	o-l	5.0	4h26mins	--	--	Type J	External enclosure near U5: 42.8°C Ambient: 25.0°C	Output overload to 1.2A and unit shut down at 1.3A, No hazards
Supplementary information:								





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B.4 TABLE: Fault condition tests								P
Ambient temperature (°C)					25°C, if not specified			--
Power source for EUT: Manufacturer, model/type, output rating ..					See below			--
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
C10	S-C	5.0	10 mins	--	--	--	--	Unit shut down immediately, no hazards.
U5 pin 1-4	S-C	5.0	10 mins	--	--	--	--	Unit shut down immediately, no hazards.
R50	S-C	5.0	10 mins	--	--	--	--	Unit shut down immediately, no hazards.
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) In fault column, S-C= Short-Circuited, L-R= locked-rotor.								
2) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; besides, all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions.								
3) The test result shown no Class 1 or 2 energy source become Class 3 level during and after single fault condition.								

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	--	--	--	--	--	--	--	--	--		





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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 fault condition	--	--	--	--	--	--	--	--	--		
Test results:											
- Chemical leaks						No leaks		--			
- Explosion of the battery						No explosion		--			
- Emission of flame or expulsion of molten metal						No emission		--			
- Electric strength tests of equipment after completion of tests						--		--			
Supplementary information:											

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

Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation
--	--	--	--	--





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Battery identification	Charging at $T_{\text{lowest}} (^{\circ}\text{C})$	Observation	Charging at $T_{\text{highest}} (^{\circ}\text{C})$	Observation
Supplementary Information:				

Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)					P	
Note: Measured UOC (V) with all load circuits disconnected:							
Output Circuit	Components	U _{oc} (V)	I _{sc} (A)		S (VA)		
			Meas.	Limit	Meas.	Limit	
Output	Normal condition	5.0	1.2	8	5.70	100	
Output	U5 pin 1-4 S-C	0*	0	8	0	100	
Supplementary Information:							
1. SC=Short circuit.							
2. *Unit shut-down							

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Part/Location	Material	Thickness (mm)	Force(N)	Test Duration (sec)	Observation	
Top enclosure	Plastic	Min. 1.5	100	5	No damaged, no hazards.	
Side enclosure	Plastic	Min. 1.5	100	5	No damaged, no hazards.	
Bottom enclosure	Plastic	Min. 1.5	100	5	No damaged, no hazards.	
Supplementary information:						

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





Report No.: WSCT-IT200400062A Issued: 07 April 2020 Revised: None

Supplementary information:

T.7	TABLE: Drop tests				P
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Top enclosure	Plastic	Min. 1.5	1000	No damaged, no hazards.	
Side enclosure	Plastic	Min. 1.5	1000	No damaged, no hazards.	
Bottom enclosure	Plastic	Min. 1.5	1000	No damaged, no hazards.	
Supplementary information:					

T.8	TABLE: Stress relief test				P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Completed sample	Plastic enclosure	Min. 1.5	70	7	No damaged, no hazards.
Supplementary information: For details refer to appended table 4.1.2.					





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Attachment No. 1

Photo documentation

Photo 1

View:

BM3016

☐ front

☐ rear

☐ right side

☐ left side

☒ top

☐ bottom

☐ internal



Photo 2

View:

BM3016

☐ front

☐ rear

☐ right side

☐ left side

☐ top

☒ bottom

☐ internal





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Photo 3

View:

BM3016

☐ front

☐ rear

☒ right side

☐ left side

☐ top

☐ bottom

☐ internal



Photo 4

View:

BM3016

☐ front

☐ rear

☐ right side

☐ left side

☐ top

☐ bottom

☒ internal





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Photo 5

View:

BM3016

☐ front

☐ rear

☐ right side

☐ left side

☐ top

☐ bottom

☒ internal



Photo 6

View:

BM3016

☐ front

☐ rear

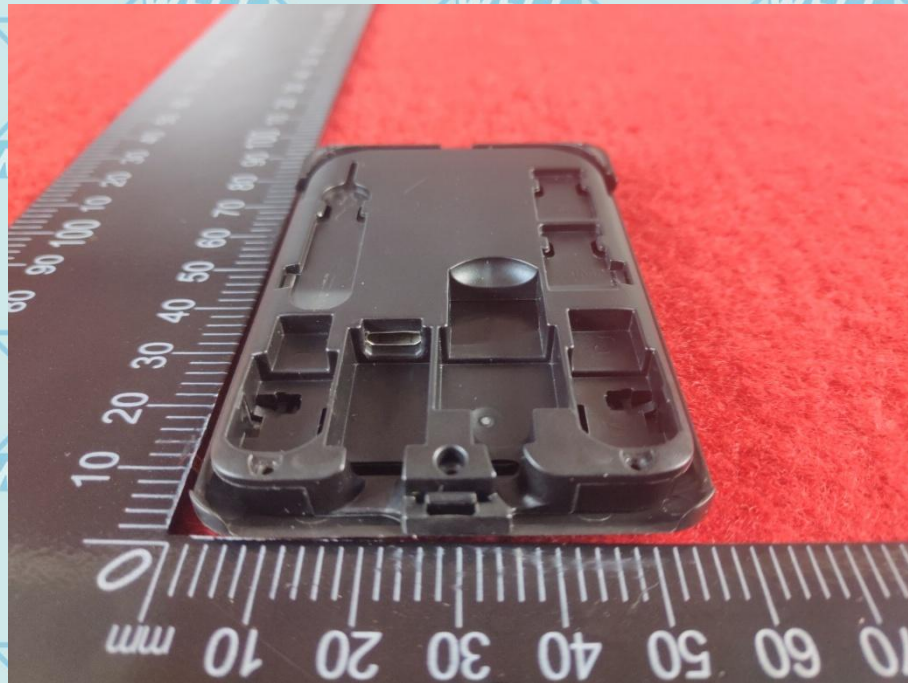
☐ right side

☐ left side

☐ top

☐ bottom

☒ internal





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Photo 7

View:

BM3016

☐ front

☐ rear

☐ right side

☐ left side

☐ top

☐ bottom

☒ internal

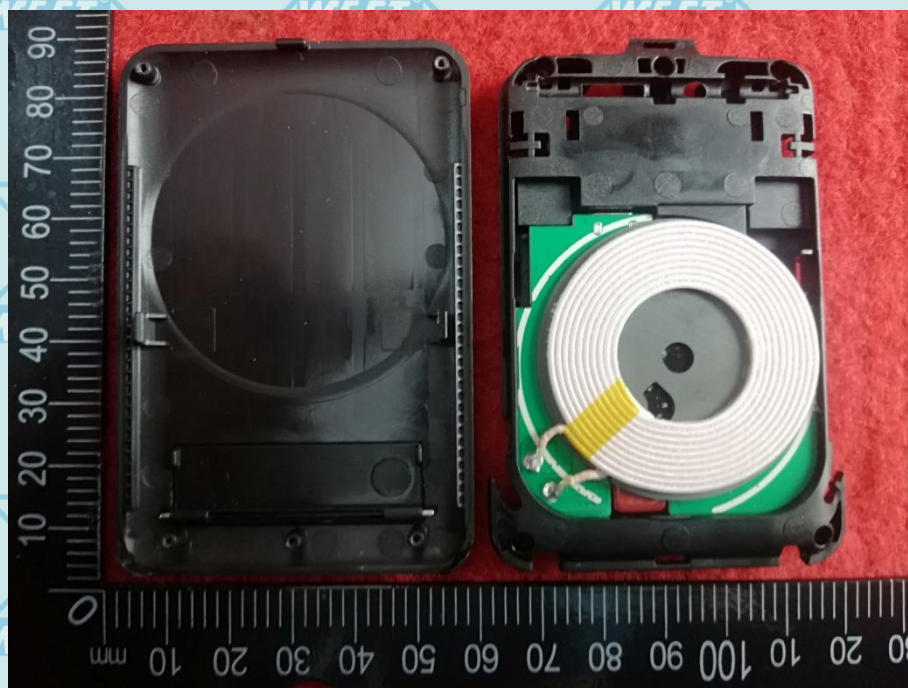


Photo 8

View:

BM3016

☐ front

☐ rear

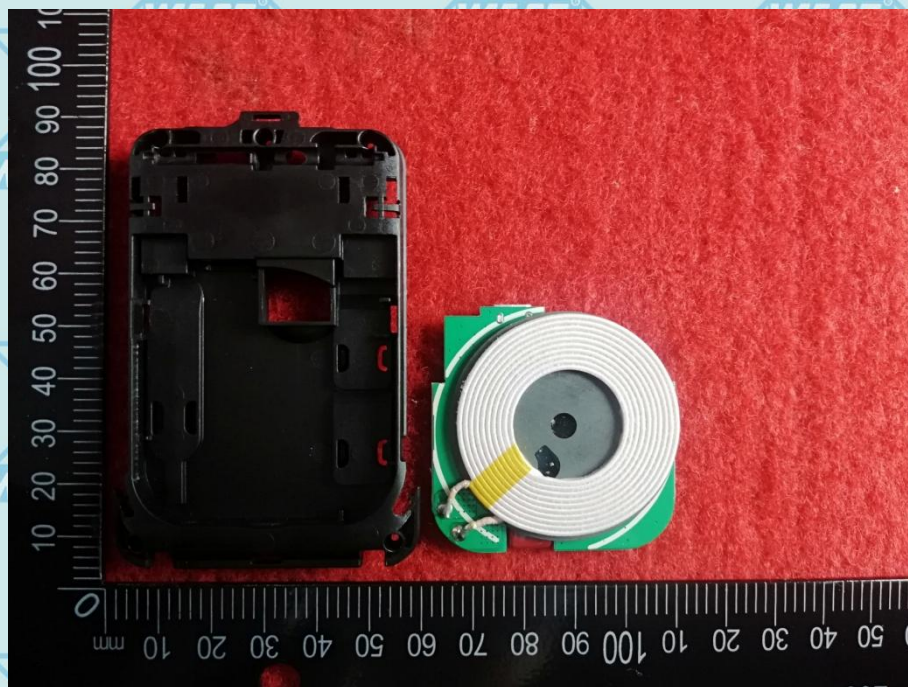
☐ right side

☐ left side

☐ top

☐ bottom

☒ internal





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Photo 9

View:

BM3016

☐ front

☐ rear

☐ right side

☐ left side

☐ top

☐ bottom

☒ internal

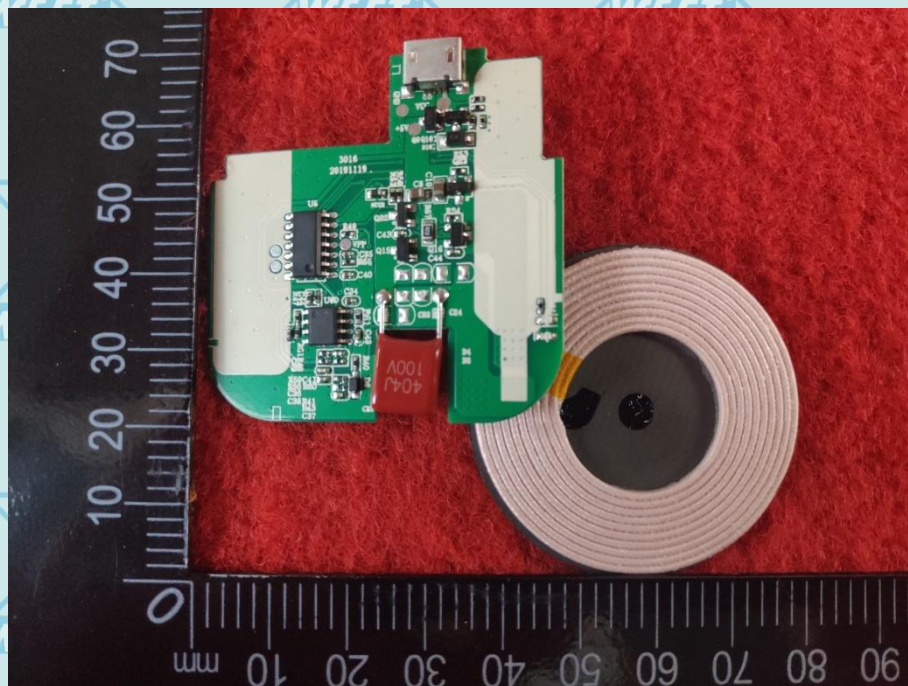


Photo 10

View:

BM3016

☐ front

☐ rear

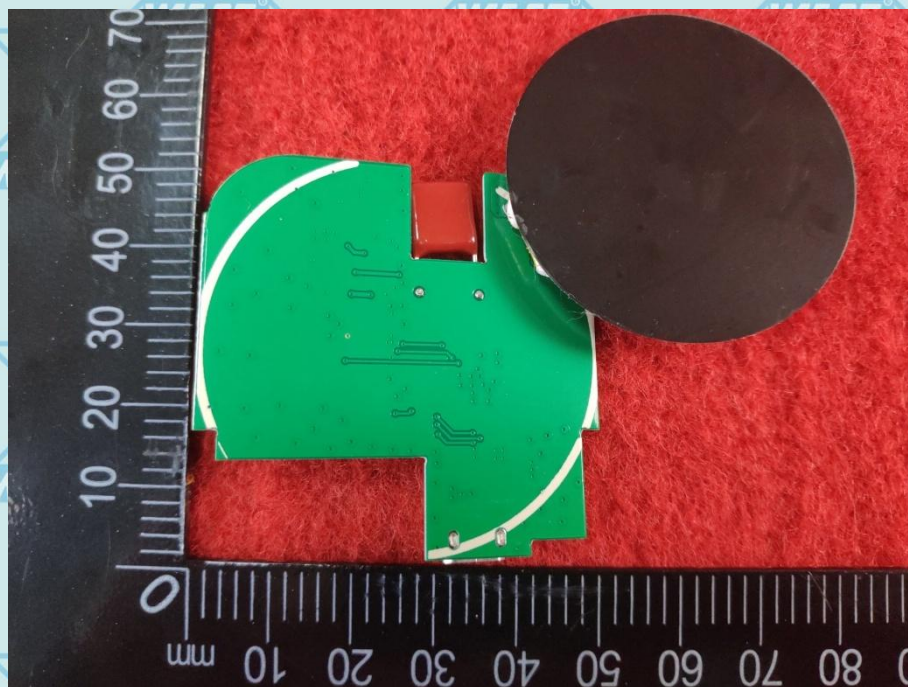
☐ right side

☐ left side

☐ top

☐ bottom

☒ internal





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Attachment No. 2

Equipment list

Code	Name	Model/ Type	S/N	Calibrated date	Next Calibration Date	Manufacture	Used or not
WSCTEE-001	Plug Torque Tester	ZLT-LJ2	LJ021402	2019.08.14	2020.08.13	Guangzhou Zhilitong	
WSCTEE-002	Tumbling Barrel Tester	GT-1	G011307	2019.08.15	2020.08.14	Guangzhou Zhilitong	
WSCTEE-003	Stability Board	WD-1	W010507	2019.08.15	2020.08.14	Guangzhou Zhilitong	
WSCTEE-004	Glow Wire Test Set	GTR-B	R023207	2019.05.06	2020.05.05	Guangzhou Zhilitong	
WSCTEE-005	Needle Flame Test Set	ZY-Z	Y021207	2019.08.15	2020.08.14	Guangzhou Zhilitong	
WSCTEE-006	Hot line Coil Resistance Meter	RC-2	200978	2019.08.14	2020.08.13	Hangzhou Weibo	
WSCTEE-007	Automatic Frequency Converter	AN9703 OTS	069712327L	2020.03.16	2021.03.15	Ainuo	
WSCTEE-008	Insulation Resistance Tester	AN9671	079602136	2020.03.16	2021.03.15	Ainuo	
WSCTEE-009	Digital Power Meter	PF210	199764	2019.05.06	2020.05.05	Hangzhou Weibo	
WSCTEE-010	Digital Power Meter	8716C	870611014	2019.05.06	2020.05.05	Qingdao Qingzhi	
WSCTEE-011	Data Acquisition/Switch Unit	34970A	MY41030818	2019.08.14	2020.08.13	Agilent	
WSCTEE-012	Desktop Multi Meter	GDN-82 45	CG810127	2019.05.06	2020.05.05	Good Will	
WSCTEE-013	Desktop Multi Meter	GDW-8 245	CG810128	2019.05.06	2020.05.05	Good Will	
WSCTEE-014	Temp.&Humi. Chamber	GDJS-5 00-40	--	2019.05.13	2020.05.12	Guangzhou Gongwen	
WSCTEE-015	Pink Noise Generator	DF1681	DH06006133	2019.05.13	2020.05.12	Ningbo Zhongce	
WSCTEE-016	Function Generator	GFG-82 16A	CH811153	2019.08.14	2020.08.13	Good Will	
WSCTEE-017	Digital LCR	YD2810 B	10HB-5832	2019.08.14	2020.08.13	Yangzi	
WSCTEE-018	Electronic weight	BCSS-3	080556	2019.08.14	2020.08.13	Balance Electron	√



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Code	Name	Model/ Type	S/N	Calibrated date	Next Calibration Date	Manufacture	Used or not
WSCTEE-019	Audio Generator	GAG-810	GE0874109	2020.03.16	2021.03.15	Good Will	
WSCTEE-020	Oven	101A-3	33016	2019.08.14	2020.08.13	ShangHai Rongfeng	√
WSCTEE-021	Digital Caliper	(0~150)mm	K17E197526	2020.03.16	2021.03.15	Shanghai	√
WSCTEE-022	Torque Driven	100LTD K	--	2019.08.14	2020.08.13	Nakamura	
WSCTEE-023	Oscilloscope	TDS3012B	B036872	2019.08.14	2020.08.13	Tektronix	
WSCTEE-024	Pull & Push Scale	FB-30K	192869	2019.08.14	2020.08.13	Imada	√
WSCTEE-025	AC/DC Dielectric Resistance Test Meter	AN9634 H	069610322	2020.03.16	2021.03.15	Ainuo	
WSCTEE-026	Ground Bond Meter	AN9616 H	079602157	2019.05.06	2020.05.05	Ainuo	
WSCTEE-027	Leakage Current	AN9620 H	079601341	2019.05.06	2020.05.05	Ainuo	
WSCTEE-028	DC Resistance Meter	YD2511	2073	2019.05.06	2020.05.05	Yangzi	
WSCTEE-029	Voltage Regulator	SVC-20 KVA	0502072	2020.03.16	2021.03.15	Yangzhou Huatai	
WSCTEE-030	DC Power	TPR-30 10D	9410205510	2019.08.14	2020.08.13	Longwei	√
WSCTEE-031	Data Acquisition/ Switch Unit	34970A	MY44020255	2019.08.14	2020.08.13	Agilent	√
WSCTEE-032	0.5J Spring Hammer	CJ-3	C031207	2019.08.15	2020.08.14	Guangzhou Zhilitong	
WSCTEE-033	1J Spring Hammer	CJ-3	C031307	2019.08.15	2020.08.14	Guangzhou Zhilitong	
WSCTEE-034	0.2J Spring Hammer	CJ-3	C031107	2019.08.15	2020.08.14	Guangzhou Zhilitong	
WSCTEE-035	Ball Pressure	QY-1	Q010707	2019.08.15	2020.08.14	Guangzhou Zhilitong	
WSCTEE-036	Stop Watch	PC2810	--	2020.03.19	2021.03.18	Shenzhen Huibo	√





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Code	Name	Model/ Type	S/N	Calibrated date	Next Calibration Date	Manufacture	Used or not
WSCTEE-037	Digital Multimeter	115C	93420101	2019.08.14	2020.08.13	Fluke	
WSCTEE-038	Test pin	TZ-31	V310307	2020.03.18	2021.03.17	Guangzhou Zhilitong	
WSCTEE-039	Test pin	TZ-32	V320307	2020.03.14	2023.03.13	Guangzhou Zhilitong	
WSCTEE-040	Test probe	ST-01	S011107	2017.08.17	2020.08.16	Guangzhou Zhilitong	
WSCTEE-041	Test pin	ZX-14	X140107	2019.08.15	2020.08.14	Guangzhou Zhilitong	
WSCTEE-042	Ball Pressure	QY-1	Q012807	2018.03.14	2021.03.13	Guangzhou Zhilitong	
WSCTEE-043	Test finger	WZ-1	E010907	2018.08.16	2021.08.15	Guangzhou Zhilitong	
WSCTEE-044	Test finger	WZ-2	E020907	2018.08.16	2021.08.15	Guangzhou Zhilitong	
WSCTEE-045	Test Flat pin	TZ-40	V400107	2019.08.15	2020.08.14	Guangzhou Zhilitong	
WSCTEE-046	Test Small pin	TZ-14	V140207	2019.08.15	2020.08.14	Zhilitong	
WSCTEE-047	Test finger	TZ-12	H020507	2020.03.14	2023.03.13	Guangzhou Zhilitong	
WSCTEE-048	Test finger	ZJ-1	Z011207	2020.03.14	2023.03.13	Guangzhou Zhilitong	
WSCTEE-049	Articulated test Finger	PA100A	U080807	2018.08.16	2021.08.15	Guangzhou Zhilitong	
WSCTEE-050	Test finger	GZ-1	F011107	2017.08.17	2020.08.16	Guangzhou Zhilitong	
WSCTEE-051	Test finger	ZX-1	X010707	2017.08.17	2020.08.16	Guangzhou Zhilitong	
WSCTEE-052	Test pin	ZX-1	X010707-2	2020.03.14	2023.03.13	Guangzhou Zhilitong	
WSCTEE-053	Test pin	WZ-2	V600208	2017.08.17	2020.08.16	Guangzhou Zhilitong	
WSCTEE-058	Test hook	ZLT-L18	--	2017.08.17	2020.08.16	Shenzhen Hengxintai	
WSCTEE-059	Clock	QUART Z	--	2019.08.15	2020.08.14	Hengshi	√
WSCTEE-060	Tape	7.5m	--	2019.05.06	2020.05.05	Rongsheng	√
WSCTEE-061	Data Acquisition/ Switch Unit	34970A	MY44026389	2019.08.14	2020.08.13	Agilent	



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Code	Name	Model/ Type	S/N	Calibrated date	Next Calibration Date	Manufacture	Used or not
WSCTEE-062	Digital Power Meter	CP-280	280902	2019.08.14	2020.08.13	IDRC	
WSCTEE-063	Electronic scale	150kg	20070322060	2020.03.16	2021.03.15	Yinuowei	
WSCTEE-064	Leakage Current	Simpson 228/SK5 25-1148	--	2019.05.06	2020.05.05	USASimpson	
WSCTEE-065	Steel Ball	GQ-1	--	2018.08.16	2021.08.15	Guangzhou Zhilitong	
WSCTEE-066	Dielectric strength test device	WSCT04	--	2019.08.15	2020.08.14	Shenzhen Hengxintai	
WSCTEE-067	Digital Power Meter	PF9800	709387	2020.03.16	2021.03.15	YUANFANG	
WSCTEE-068	Digital Power Meter	PF9800	709394	2019.08.14	2020.08.13	YUANFANG	
WSCTEE-069	Metal Rod	--	--	2017.08.17	2020.08.16	--	
WSCTEE-072	Electronic Load	IT8512	002002186376001076	2020.03.16	2021.03.15	ITECH Eletronics	
WSCTEE-073	Electronic Load	IT8512	002002186376001077	2020.03.16	2021.03.15	ITECH Eletronics	
WSCTEE-078	Electric drying oven with forced convection	101A-3	32232	2019.08.14	2020.08.13	SHANGHAI RONGFENG	
WSCTEE-079	Steel Ball	GQ-2	0021486	2017.08.17	2020.08.16	Zhilitong	
WSCTEE-080	Weight	35IB	905	2020.02.10	2023.02.09	Penglaishi Shuiling	
WSCTEE-081	Weight	30IB	906	2020.02.10	2023.02.09	Penglaishi Shuiling	
WSCTEE-082	Weight	20IB	907	2020.02.10	2023.02.09	Penglaishi Shuiling	
WSCTEE-083	Weight	10IB	908	2020.02.10	2023.02.09	Penglaishi Shuiling	
WSCTEE-084	Weight	5IB	--	2020.02.10	2023.02.09	Penglaishi Shuiling	
WSCTEE-085	Weight	1IB	--	2020.02.10	2023.02.09	Penglaishi Shuiling	
WSCTEE-086	Digital Power Meter	8705B	870906342	2019.08.14	2020.08.13	Qingdao Qingzhi	
WSCTEE-087	Digital Power Meter	8705B	870906341	2019.08.14	2020.08.13	Qingdao Qingzhi	



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Code	Name	Model/ Type	S/N	Calibrated date	Next Calibration Date	Manufacture	Used or not
WSCTEE-088	Digital Power Meter	8716C	870906281	2019.08.14	2020.08.13	Qingdao Qingzhi	
WSCTEE-089	Digital Power Meter	8716C	870906280	2019.08.14	2020.08.13	Qingdao Qingzhi	
WSCTEE-090	Data Acquisition /Switch Unit	34970A	MY52051354	2019.08.14	2020.08.13	Agilent	
WSCTEE-091	Data Acquisition /Switch Unit	34970A	MY41030096	2019.08.14	2020.08.13	Agilent	
WSCTEE-092	ELectronic Load	IT8512	0020021863 76001048	2019.08.14	2020.08.13	ITECH Eletronics	
WSCTEE-093	ELectronic Load	IT8512	0020021863 74001002	2019.08.14	2020.08.13	ITECH Eletronics	
WSCTEE-094	Multi functional gradient measuring instrument	0~90°	--	2020.03.16	2021.03.15	Wenzhou Nanfang	
WSCTEE-095	Probe	TZ-60	V600108	2017.08.17	2020.08.16	Zhilitong	
WSCTEE-096	Probe	TZ-60	V600208	2017.08.17	2020.08.16	Zhilitong	
WSCTEE-097	Oscilloscope Carbon	TX-2250	--	2019.08.14	2020.08.13	ProsKit	
WSCTEE-098	Oscilloscope Carbon	HP9258	--	2019.08.14	2020.08.13	ProsKit	
WSCTEE-099	Magnifier	CT-200 U	--	2019.08.14	2020.08.13	--	
WSCTEE-100	Digital power Meter	WT210	91LA25633	2019.05.22	2020.05.21	YOKOGAWA	
WSCTEE-102	100kg pull & push Scale	SKN-1	3113J03275	2020.03.16	2021.03.15	SUNDOO	
WSCTEE-103	Tracking Index Tester	HD-NH-1	--	2019.05.06	2020.05.05	HongDu	
WSCTEE-104	Hammer	0.35J	--	2019.08.15	2020.08.14	Shenzhen Zhongzi	
WSCTEE-105	Hammer	0.7J	--	2019.08.15	2020.08.14	Shenzhen Zhongzi	
WSCTEE-106	Creepage distance test card	(1.0~10.0)m m	12040909	2019.05.13	2020.05.12	Shenzhen Zhongzi	
WSCTEE-107	Thermocouple	J	--	2020.03.18	2021.03.17	OMEGA	



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Code	Name	Model/ Type	S/N	Calibrated date	Next Calibration Date	Manufacture	Used or not
WSCTEE-108	Electronic load	M9712	0900209601 20912053	2019.08.14	2020.08.13	Maynuo	
WSCTEE-109	Electronic load	M9712	0900209601 20912074	2019.08.14	2020.08.13	Maynuo	
WSCTEE-110	Electronic load	M9712	0900209601 20912064	2019.08.14	2020.08.13	Maynuo	
WSCTEE-111	Electronic load	M9712	--	2019.08.14	2020.08.13	Maynuo	
WSCTEE-112	Data Acquisition/Switch Unit	34970A	US37048000	2019.08.14	2020.08.13	Agilent	
WSCTEE-113	Data Acquisition/Switch Unit	34970A	MY44046852	2019.08.14	2020.08.13	Agilent	
WSCTEE-114	Data Acquisition/Switch Unit	34970A	US37015805	2019.08.14	2020.08.13	Agilent	
WSCTEE-115	Data Acquisition/Switch	34970A	US37015798	2019.08.14	2020.08.13	Agilent	
WSCTEE-116	Data Acquisition/Switch Unit	34970A	MY44097129	2019.08.14	2020.08.13	Agilent	
WSCTEE-117	Data Acquisition/Switch Unit	34970A	US37026031	2019.08.14	2020.08.13	Agilent	
WSCTEE-119	Temperature and humidity meter	KT-903	--	2020.03.18	2021.03.17	Shanghai Yijie automation	
WSCTEE-120	Pull & Push Scale	NK-50	2050131105 450	2020.03.16	2021.03.15	KANDPI	
WSCTEE-121	Horizontal vertical combustion tester	DTE-DF	--	2019.08.15	2020.08.14	Shenzhen Huacetong	
WSCTEE-122	Oscilloscope	TDS301 2B	BO42290	2019.05.06	2020.05.05	Tektronix	
WSCTEE-123	Automatic Frequency Converter	KAP-31 030	--	2020.03.16	2021.03.15	Shenzhen Kenuoma	
WSCTEE-182	Suger tester	DTE-D2 00	HCT2014082 100	2019.08.15	2020.08.14	Shenzhen Huacetong	
WSCTEE-184	Signal Generator	SK-D12	--	2019.05.13	2020.05.12	Testo	





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Code	Name	Model/ Type	S/N	Calibrated date	Next Calibration Date	Manufacture	Used or not
WSCTEE-185	Pull & Push Scale	10N	5314F01074	2019.08.14	2020.08.13	Wenzhou Sandu	
WSCTEE-186	Test Plug	ZLT-L19	1191403	2017.08.17	2020.08.16	Guangzhou Zhilitong	
WSCTEE-187	Oscilloscope	P6015A	--	2019.05.06	2020.05.05	Tektronix	
WSCTEE-188	Intelligent modulator	SK7101	20160512-21	2018.03.14	2021.03.13	SUOKETAI	
WSCTEE-202	Test resistance	--	--	2017.08.17	2020.08.16	--	
WSCTBS-008	Electric vibration test system	DC-220 0-28	130823	2019.08.15	2020.08.14	Suzhou Sushi	
WSCTEA-001	Breaking Capacity & Normal Operation Tester	HD-LL-2	11012730	2019.08.15	2020.08.14	HongDu	
WSCTEA-002	Pure Resistance Load Power Supplier	HD-RL- 40B	11012727	2019.08.15	2020.08.14	HongDu	
WSCTEA-003	Voltage drop Tester	HD-YL- 2	11012728	2019.08.15	2020.08.14	HongDu	
WSCTEA-004	Touch polarity tester	HD-303 AX	11012734	2019.08.15	2020.08.14	HongDu	
WSCTEA-006	Dumbbell-knif e	C	--	2019.08.15	2020.08.14	Zhilitong	
WSCTEA-007	Dumbbell-knif e	D	--	2019.08.15	2020.08.14	Zhilitong	
WSCTEA-008	Soft cable's flexibility tester	HD-730 2	11012729	2019.08.15	2020.08.14	HongDu	
WSCTEA-009	Image measurement instrument	YVM201 0VT	110462	2019.08.15	2020.08.14	DONGGUAN YUANXIN	
WSCTEA-010	Cable retention tester	JN-BCL- 2099	BCL-2099-11 76	2019.08.15	2020.08.14	JEN	
WSCTEA-011	Plug Bending Tester	HD-887 0	11012726	2019.08.15	2020.08.14	HongDu	





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Code	Name	Model/ Type	S/N	Calibrated date	Next Calibration Date	Manufacture	Used or not
WSCTEA-012	testing under high temperature & pressure equipment	HD-PHT -1	11012732	2019.08.15	2020.08.14	HongDu	
WSCTEA-013	Heat cable distortion tester	HD-812 0	--	2019.08.15	2020.08.14	HongDu	
WSCTEA-009	Image measuring instrument	KA-300	110462	2019.08.15	2020.08.14	Yanuxnig	



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