TEST REPORT

IEC 62368-1

Audio/video, information and communication technology equipment

Part 1: Safety requirements

Report Number. ..... :	BCTC-FY170603853S
Date of issue ..... :	Jun. 22, 2017
Total number of pages ..... :	52
Testing Laboratory Name ..... :	**Shenzhen BCTC Testing Co., Ltd.**
Address ..... :	BCTC Building & 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China
Applicant's Name ..... :	**ITEAD Intelligent Systems Co., Ltd**
Address ..... :	5F, Building A, Yuxing Multiple-use Building, Huaya Industrial Park, Jihua Road., Longhua Dist, Shenzhen, GD, 518000, China
Test specification	
Standard ..... :	IEC 62368-1:2014, EN 62368-1:2014.
Test procedure ..... :	CE-LVD
Procedure deviation ..... :	N/A
Non-standard test method ..... :	N/A
Test Report Form	
Test Report Form No. ..... :	IEC62368_1B
Test Report Form(s) Originator ..... :	UL(US)
Master TRF ..... :	2014-03

Test item description ..... :	**Sonoff GSM/GPRS Smart Switch**
Manufacturer …… ……:	**ITEAD Intelligent Systems Co., Ltd**
Address ..... :	5F, Building A, Yuxing Multiple-use Building, Huaya Industrial Park, Jihua Road., Longhua Dist, Shenzhen, GD, 518000, China
Trademark ..... :	SONOFF
Model and/or type reference ..... :	**Sonoff G1, Sonoff G2, Sonoff G12, Sonoff G14, Sonoff G16, Sonoff G18, Sonoff G22, Sonoff G24, Sonoff G26, Sonoff G28.**
Rating(s) ..... :	**See the following marking plate**

Testing procedure and testing location:

Testing Laboratory.....:	**Shenzhen BCTC Testing Co., Ltd.**
Address .....:	BCTC Building & 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China
Date of Test.....:	**Jun. 14, 2017 to Jun. 22, 2017**
Tested by (name + signature) .....:	Sabrina Liang
Reviewed by (name + signature) .....:	Seven Zheng
Approved by (name + signature) .....:	Awen He

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

-- Attachment I : 3 pages for EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

-- Attachment II: 3 pages for Photo documentation from 50-52.

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
-- EN 62368-1:2014; The submitted samples were found to comply with the requirements of above specification.	BCTC Building & 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China

Copy of marking plate

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

Sonoff GSM/GPRS Smart Switch
Model No.: Sonoff G1
Input: AC90-250V~ 50/60Hz 16A
Max. Load : AC220V 3000W

Importer: XXXXXX
Address: XXXXXX
Manufacturer: ITEAD Intelligent Systems Co., Ltd
Address: 5F, Building A, Yuxing Multiple-use Building, Huaya Industrial Park, Jihua Road., Longhua Dist, Shenzhen, GD, 518000, China
Made in China

Remark on above marking:

1, The height of CE symbols is more than 5 mm;

2, The height of WEEE symbols is more than 7 mm;

TEST ITEM PARTICULARS:	
Classification of use by ..... :	☒ Ordinary person ☐ Instructed person ☐ Skilled person ☐ Children likely to be present
Supply Connection ..... :	☒ AC Mains ☐ DC Mains ☐ External Circuit - not Mains connected - ☐ ES1 ☐ ES2 ☒ ES3
Supply % Tolerance ..... :	☒ +10%/-10% ☐ +20%/-15% ☐ +____%/ -_____% ☐ None
Supply Connection – Type ..... :	☐ pluggable equipment type A - ☐ non-detachable supply cord ☐ appliance coupler ☐ direct plug-in ☐ mating connector ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☒ other: Terminal block
Considered current rating of protective device as part of building or equipment installation ..... :	16 A; Installation location: ☐ building; ☒ equipment
Equipment mobility..... :	☐ movable ☐ hand-held ☐ transportable ☒ stationary ☐ for building-in ☐ direct plug-in ☐ rack-mounting ☐ wall-mounted
Over voltage category (OVC) ..... :	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other: _____
Class of equipment ..... :	☒ Class I ☐ Class II ☐ Class III
Access location ..... :	☐ restricted access location ☒ N/A
Pollution degree (PD) ..... :	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maxium operating ambient :	25°C
IP protection class ..... :	☒ IPX0 ☐ IP___
Power Systems ..... :	☒ TN ☐ TT ☐ IT - ____ V_{L-L}
Altitude during operation (m) ..... :	☒ 2000 m or less ☐ _____ m
Altitude of test laboratory (m) ..... :	☒ 2000 m or less ☐ _____ m
Mass of equipment (kg) ..... :	☒ 0.087kg
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..... :	Jun. 14, 2017
Date (s) of performance of tests..... :	Jun. 14, 2017 to Jun. 22, 2017

GENERAL REMARKS:	
"(See Enclosure #)" refers to additional information appended to the report. **"(See appended table)" refers to a table appended to the report.** **Throughout this report a ☐ comma / ☒ point is used as the decimal separator.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☐ **Yes** ☒ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
GENERAL PRODUCT INFORMATION:	
Product Description 1. The equipment is a "Sonoff GSM/GPRS Smart Switch" with Audio/video, information and communication technology equipment. 2. These series appliances are Sonoff GSM/GPRS Smart Switch, They are with the same construction and circuit theory, The differences among them are model name, All tests were conducted at the model of Sonoff G1. The test results comply with the requirement of the relevant standards.	

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)**
Primary circuits supplied by AC mains supply	ES3
Output terminal	ES1
Input terminal (Discharge of X cap)	ES3
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): PS2	
Source of power or PIS	**Corresponding classification (PS)**
All primary circuits and secondary circuits inside the equipment enclosure	PS3
Output terminal (maximum 29.5W)	PS2
Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component Glycol	
Source of hazardous substances	**Corresponding chemical**
N/A	N/A
Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2	
Source of kinetic/mechanical energy	**Corresponding classification (MS)**
Sharp edges and corners	MS1
Equipment mass	MS1
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1	
Source of thermal energy	**Corresponding classification (TS)**
Accessible surfaces	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)**
N/A	N/A

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	**Possible Hazard**			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES3: All primary circuits	N/A	N/A	Equipment enclosure
Ordinary	ES1: Output terminal	N/A	N/A	N/A
Ordinary	ES3: Input Terminal	N/A	N/A	Bleeding resistor, ICX combined in PWM IC
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
All combustible materials within equipment fire enclosure	PS3: All primary circuits and secondary circuits inside the equipment enclosure	Equipment safeguard (e.g., no ignition occurs)	Equipment safeguard (e.g., control of fire spread)	N/A
Connections of secondary equipment (external wiring)	PS2	N/A	VW-1 for USA/CAN	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: Sharp edges and corners	N/A	N/A	N/A
Ordinary	MS1: Equipment mass	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS1: Accessible surfaces	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
Supplementary Information: (1) See attached energy source diagram for additional details. (2) “N” – Normal Condition; “A” – Abnormal Condition; “S” Single Fault				

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Clause	Requirement + Test	Result - Remark	Verdict
4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies	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
4.1.2	Use of components	See table 4.1.2	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.2, T.3, T.4, T.5)	P
4.4.4.3	Drop tests..... :	(See Annex T.7)	N/A
4.4.4.4	Impact tests..... :	(See Annex T.9)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests ..... :	No internal enclosure.	N/A
4.4.4.6	Glass Impact tests ..... :	No such glass used.	N/A
4.4.4.7	Thermoplastic material tests..... :	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard ..... :	(See Annex T)	P
4.4.4.9	Accessibility and safeguard effectiveness	After test, all safeguard remains effective, No damaged	P
4.5	Explosion	No explosion	N/A
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard	All conductive parts are fixed on PCB by at least two soldering points; The primary and secondary lead wire were soldered to PCB and fixed by glue.	P
4.6.2	10 N force test applied to ..... :	Applied 10 N force, no loosen	P
4.7	Equipment for direct insertion into mains socket - outlets		N/A
4.7.2	Mains plug part complies with the relevant standard ..... :	See below	N/A
4.7.3	Torque (Nm)..... :		N/A
4.8	Products containing coin/button cell batteries	No lithium coin/button cell battery used.	N/A
4.8.2	Instructional safeguard	No lithium coin/button cell battery used.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.8.3	Battery Compartment Construction	No lithium coin/button cell battery used.	N/A
	Means to reduce the possibility of children removing the battery ..... :	No lithium coin/button cell battery used.	—
4.8.4	Battery Compartment Mechanical Tests..... :	(See Table 4.8.4)	N/A
4.8.5	Battery Accessibility	No lithium coin/button cell battery used.	N/A
4.9	Likelihood of fire or shock due to entry of conductive object ..... :	(See Annex P)	N/A

5	**ELECTRICALLY-CAUSED INJURY**		P
5.2.1	Electrical energy source classifications ..... :		N/A
5.2.2	ES1, ES2 and ES3 limits	The accessible terminal and enclosure is considered as ES1 circuit. See appended table 5.2)	N/A
5.2.2.2	Steady-state voltage and current ..... :		N/A
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 ..... :	No such audio signals with the EUT	N/A
5.3	Protection against electrical energy sources		N/A
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	See below.	N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only ES1 could be accessible to ordinary person.	N/A
5.3.2.2	Contact requirements		N/A
	a) Test with test probe from Annex V..... :	The probe could not insert into the equipment as there is no ventilation on the product.	N/A
	b) Electric strength test potential (V) ..... :	The probe could not insert into the equipment as there is no ventilation on the product.	N/A
	c) Air gap (mm) ..... :	The probe could not insert into the equipment as there is no ventilation on the product.	N/A
5.3.2.4	Terminals for connecting stripped wire	No such terminals intended to be used by ordinary person.	N/A
5.4	Insulation materials and requirements		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.2	Properties of insulating material	The choice and application have taken into account as specified in this Clause 5 and Annex T except natural rubber, hygroscopic materials or asbestos are not used as insulation.	P
5.4.1.3	Humidity conditioning ..... :	(See sub-clause 5.4.8)	P
5.4.1.4	Maximum operating temperature for insulating materials ..... :	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree ..... :	Pollution degree 2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2	N/A
5.4.1.5.3	Thermal cycling	Pollution degree 2	N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses	Evaluation is reached according to clause 5.4.9.1.	P
5.4.1.8	Determination of working voltage		P
5.4.1.9	Insulating surfaces	Considered.	P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	See below	P
5.4.1.10.2	Vicat softening temperature ..... :	(See appended table 5.4.1.10.2)	N/A
5.4.1.10.3	Ball pressure ..... :	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	P
5.4.2.3	Determining clearance using required withstand voltage ..... :	(See appended table 5.4.2.3)	P
	a) a.c. mains transient voltage..... :	2500Vac	—
	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	(See appended table 5.4.2.4)	N/A
5.4.2.5	Multiplication factors for clearances and test voltages ..... :		N/A
5.4.3	Creepage distances..... :	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group ..... :	IIIb	—
5.4.4	Solid insulation	Enclosure is compliance with 5.4.4.2.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.2	Minimum distance through insulation ..... :	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material		P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material		P
	Number of layers (pcs) ..... :	Two layers of insulation tape used as reinforced insulation, any combination of two layers pass the electric strength test.	P
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..... :	(See appended Table 5.4.9)	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		P
5.4.4.9	Solid insulation at frequencies >30 kHz..... :	(See appended Table 5.4.4.9)	P
5.4.5	Antenna terminal insulation	See below	P
5.4.5.1	General	Test was conducted between mains and output terminal of the EUT.	P
5.4.5.2	Voltage surge test	See G.10.3.2	P
	Insulation resistance (MΩ) ..... :	>>4 MΩ	—
5.4.6	Insulation of internal wire as part of supplementary safeguard ..... :	(See appended table 5.4.4.2)	N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%) ..... :	95%	—
	Temperature (°C) ..... :	25°C	—
	Duration (h) ..... :	48h	—
5.4.9	Electric strength test..... :	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test		P
5.4.9.2	Test procedure for routine tests		P
5.4.10	Protection against transient voltages between external circuit		N/A
5.4.10.1	Parts and circuits separated from external circuits	(See appended table 5.4.9)	N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.2.2	Impulse test ..... :	(See appended table 5.4.9)	N/A
5.4.10.2.3	Steady-state test ..... :	(See appended table 5.4.9)	N/A
5.4.11	Insulation between external circuits and earthed circuitry ..... :		P
5.4.11.1	Exceptions to separation between external circuits and earth		P
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V) ..... :		—
	Nominal voltage U_{peak} (V) ..... :		—
	Max increase due to variation U_{sp} ..... :		—
	Max increase due to ageing ΔU_{sa} ..... :		—
	$U_{op}= U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ ..... :		—
5.5	Components as safeguards		
5.5.1	General		P
5.5.2	Capacitors and RC units	Y capacitor and X capacitor complying with IEC 60384-14 is used.	P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector ..... :	(See appended table 5.5.2.2)	N/A
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	No such component	N/A
5.5.5	Relays	Approved component used	P
5.5.6	Resistors	No such component	N/A
5.5.7	SPD's	Approved component used	P
5.5.7.1	Use of an SPD connected to reliable earthing	No such component	N/A
5.5.7.2	Use of an SPD between mains and protective earth		P
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable ..... :	(See Annex G.10.3)	P
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors		P
5.6.2.1	General requirements		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
	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		P
5.7.2	Measuring devices and networks	Figure 4 of IEC 60990 was used in determining of the limit of ES1.	P
5.7.2.1	Measurement of touch current .....:	(See appended table 5.7.4)	P
5.7.2.2	Measurement of prospective touch voltage		P
5.7.3	Equipment set-up, supply connections and earth connections		P
	System of interconnected equipment (separate connections/single connection).....:		—
	Multiple connections to mains (one connection at a time/simultaneous connections).....:		—
5.7.4	Earthed conductive accessible parts.....:		P
5.7.5	Protective conductor current		N/A
	Supply Voltage (V) .....:		—
	Measured current (mA) .....:		—
	Instructional Safeguard .....:	(See F.4 and F.5)	N/A
5.7.6	Prospective touch voltage and touch current due to external circuits	No external circuits.	N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		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

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Clause	Requirement + Test	Result - Remark	Verdict

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		N/A
6.2.2.1	General		N/A
6.2.2.2	Power measurement for worst-case load fault....:	(See appended table 6.2.2)	N/A
6.2.2.3	Power measurement for worst-case power source fault.....:	(See appended table 6.2.2)	N/A
6.2.2.4	PS1 .....:	(See appended table 6.2.2)	N/A
6.2.2.5	PS2 .....:	(See appended table 6.2.2)	N/A
6.2.2.6	PS3 .....:	Primary part is considered as PS3	N/A
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS .....:	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS .....:	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... :	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure	No such materials used.	N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Approved fire enclosure used	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits	See above.	N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	See above.	N/A
6.4.3.1	General	See above.	N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions ..... :		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
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 the following details.	P
6.4.7.1	General ..... :	(See tables 6.2.3.1 and 6.2.3.2)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.7.2	Separation by distance	No separation	N/A
6.4.7.3	Separation by a fire barrier	No separation	N/A
6.4.8	Fire enclosures and fire barriers	V-0 plastic enclosure used	P
6.4.8.1	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	V-0 plastic enclosure used	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		N/A
6.4.8.3.1	Fire enclosure and fire barrier openings	No openings.	N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) ..... :	No opening on the enclosure	N/A
	Needle Flame test	No opening on the enclosure	N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) ..... :	No opening on the enclosure	N/A
	Flammability tests for the bottom of a fire enclosure ..... :	No opening on the enclosure	N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) ..... :	No removable door or cover on the equipment	N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating :	V-0 plastic enclosure used and no distance between PIS and enclosure	P
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 ..... :	(See Annex Q.)	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**		N/A
7.2	Reduction of exposure to hazardous substances	No hazardous chemicals within the equipment.	N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions.....:		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
7.6	Batteries ..... :	(See Annex M)	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, and equipment mass are both classified as MS1	P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners	Accessible edges and corners of the equipment are rounded and are classified as MS1.	P
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts	No moving parts within the equipment.	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 .....:	(See Annex F.4 and Annex K)	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 .....:	(See appended table 8.5.5.2)	N/A
8.6	Stability	Equipment maximum mass 0.087kg < 7 kg, classified as MS1.	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard .....:		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force..... :		—
8.6.2.3	Downward Force Test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt ..... :		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force) ..... :		N/A
	Position of feet or movable parts ..... :		—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) ..... :		N/A
8.7.2	Direction and applied force..... :		N/A
8.8	Handles strength	No such handles.	N/A
8.8.1	Classification		N/A
8.8.2	Applied Force ..... :		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force..... :		—
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard ..... :		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force..... :		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N)..... :		—
8.10.6	Thermoplastic temperature stability (°C) ..... :		N/A
8.11	Mounting means for rack mounted equipment		N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable *N* .....:		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas.....	(See Annex T)	N/A
	Button/Ball diameter (mm)..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
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		P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard ..... :		N/A

10	**RADIATION**		N/A
10.2	Radiation energy source classification	No such radiation from the equipment.	N/A
10.2.1	General classification		N/A
10.3	Protection against laser radiation	No such radiation from the equipment.	N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault .....:	(See attached laser test report)	N/A
	Instructional safeguard.....:		—
	Tool .....:		—
10.4	Protection against visible, infrared, and UV radiation	No such radiation from the equipment.	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
	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	No such radiation from the equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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 consideration for the purpose of personal music players.	N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A) .....:		N/A
	Output voltage, unweighted r.m.s. .....:		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards.....:		N/A
	Equipment safeguard prevent ordinary person to RS2 .....:		—
	Means to actively inform user of increase sound pressure .....:		—
	Equipment safeguard prevent ordinary person to RS2 .....:		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output .....:		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A) .....:		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A) .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements.....:	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers.....:	Not such equipment.	N/A
B.2.3	Supply voltage and tolerances	±10%	P
B.2.5	Input test.....:		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	The EUT is not connected to a D.C. mains	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.....:	(See appended table B.3&B.4)	P
B.3.6	Reverse battery polarity	No battery within the EUT	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 short-circuited.....:	No such device	N/A
B.4.3	Motor tests	No motor within the EUT	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.3 &B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3 &B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	B.3	P
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.3 &B.4)	P
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

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	(See appended table B.3&B.4)	P
B.4.9	Battery charging under single fault conditions....:	No battery involved in the EUT	N/A
C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation	No such UV generated from the equipment.	N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
D	**TEST GENERATORS**		N/A
D.1	Impulse test generators	No such consideration.	N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		N/A
E.1	Audio amplifier normal operating conditions	No such consideration.	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		P
	Instructions – Language ..... :	Evaluated the user manual in English version. The manufacturer commits to provide them in the language of the countries where the product will be distributed.	—
F.2	Letter symbols and graphical symbols	Complied	P
F.2.1	Letter symbols according to IEC60027-1	Complied	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Complied	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	On the product	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification ..... :	Trade mark: SONOFF	—

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.2.2	Model identification ..... :	Sonoff G1	—
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains	Considered	P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage ..... :	~ used for input voltage, ⎓ used for output voltage	—
F.3.3.4	Rated voltage..... :	90-250V~	—
F.3.3.4	Rated frequency ..... :	50/60 Hz	—
F.3.3.6	Rated current or rated power..... :	16A	—
F.3.3.7	Equipment with multiple supply connections	No such device	N/A
F.3.4	Voltage setting device	No such device	N/A
F.3.5	Terminals and operating devices	No such device	N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings ..... :	No such device	N/A
F.3.5.2	Switch position identification marking..... :	No such device	N/A
F.3.5.3	Replacement fuse identification and rating markings ..... :	No replaceable fuse	N/A
F.3.5.4	Replacement battery identification marking..... :	No such device	N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment		P
F.3.6.1.1	Protective earthing conductor terminal		P
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		P
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking ..... :	IPX0 product without marking	—
F.3.8	External power supply output marking	Marked on the label	P
F.3.9	Durability, legibility and permanence of marking	Marking plate was provided on the enclosure and it was legible, permanent and easily discernible.	P
F.3.10	Test for permanence of markings	Complied	P
F.4	Instructions		P

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

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal link provided within the equipment.	N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H)..... :		—
	Single Fault Condition..... :		—
	Test Voltage (V) and Insulation Resistance (Ω) . :		—
G.3.3	PTC Thermistors	No PTC thermistor provided within the equipment.	N/A
G.3.4	Overcurrent protection devices	All sources of fuse (R1) complied with IEC 60127-1, IEC 60127-3.	P
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	No such component.	N/A
G.3.5.2	Single faults conditions ..... :	(See appended Table B.4)	P
G.4	**Connectors**		P
G.4.1	Spacings		P
G.4.2	Mains connector configuration ..... :		P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	**Wound Components**		P
G.5.1	Wire insulation in wound components	(See Annex J)	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Insulation tube used as physical separation	P
G.5.1.2 b)	Construction subject to routine testing	See G.5.1.2 a)	P
G.5.2	Endurance test on wound components	See G.5.1.2 a)	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**		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1)..... :	The transformer meets the requirements given in G.5.3.2 and G.5.3.3.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Position ..... :	T1	—
	Method of protection ..... :	Reinforced insulation	—
G.5.3.2	Insulation	See above and appended table B.3 & B.4.	P
	Protection from displacement of windings ..... :	Insulation tape used	—
G.5.3.3	Overload test..... :		P
G.5.3.3.1	Test conditions	The test loads are applied to the output of the power supply unit	P
G.5.3.3.2	Winding Temperatures testing in the unit	(See appended table B.3&B.4)	P
G.5.3.3.3	Winding Temperatures - Alternative test method	Alternative test method was not considered.	N/A
G.5.4	**Motors**		N/A
G.5.4.1	General requirements	No such devices within the EUT	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**		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.6.1	General	Triple-insulated winding wiring used as reinforced safeguard in the isolating transformer that complied with Annex J.	P
G.6.2	Solvent-based enamel wiring insulation	Insulation is not relied on solvent-based enamel.	N/A
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 ..... :	(See appended table 5.4.11.1)	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**		P
G.8.1	General requirements	Complied.	P
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 ..... :	(See appended table B.3)	N/A
G.9	**Integrated Circuit (IC) Current Limiters**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.9.1 a)	Manufacturer defines limit at max. 5A.	No IC current limiter provided within the equipment.	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA ..... :		—
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	No resistor used for safety guard	N/A
G.10.3.3	Impulse test		N/A
G.11	**Capacitor and RC units**		P
G.11.1	General requirements	Y-capacitor and X-capacitor used as safeguard and complied with IEC/EN 60384-14.	P
G.11.2	Conditioning of capacitors and RC units	At least 21 days at 40 ± 2℃ and 93 ± 3% RH.	P
G.11.3	Rules for selecting capacitors		P
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	The insulation between conductors on the outer surfaces of an uncoated printed board complied with the minimum clearance and creepage requirements	P
G.13.3	Coated printed boards	No coated printed board provided within the equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction) ..... :		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation ..... :	(See appended table 5.4.4.5)	N/A
	Number of insulation layers (pcs) ..... :		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements ..... :	(See G.13)	N/A
G.15	**Liquid filled components**		N/A
G.15.1	General requirements		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 component used	N/A
b)	Impulse test using circuit 2 with Uc = to transient voltage ..... :		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage ..... :		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
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**		P
	General requirements	Approved TIW used	P
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	(See Annex G)	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..... :	(See appended table B.4)	N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method..... :		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) ..... :		N/A
K.7.2	Overload test, Current (A) ..... :		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test ..... :	(See appended table 5.4.11)	N/A
L	**DISCONNECT DEVICES**		P
L.1	General requirements		P

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Clause	Requirement + Test	Result - Remark	Verdict
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources	Only one a.c. mains connection.	N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		N/A
M.1	General requirements	No such 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
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..... :	(See Table M.4)	—
M.4.2.2 b)	Single faults in charging circuitry..... :	(See Annex B.4)	—
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

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Clause	Requirement + Test	Result - Remark	Verdict
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
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume *Vz* (m^3/s) .....:		—
M.8.2.3	Correction factors .....:		—
M.8.2.4	Calculation of distance *d* (mm) .....:		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) .....:		N/A
N	**ELECTROCHEMICAL POTENTIALS**		N/A
	Metal(s) used.....:	Pollution degree considered	—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		P
	Figures O.1 to O.20 of this Annex applied .....:		—
P	**SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS**		P
P.1	General requirements	See the following details.	P
P.2.2	Safeguards against entry of foreign object		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Location and Dimensions (mm) ..... :	No opening	—
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.....:	No opening	N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) .....:		N/A
P.3	Safeguards against spillage of internal liquids	No internal liquids	N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C) .....:		—
	Tr (°C).....:		—
	Ta (°C).....:		—
P.4.2 b)	Abrasion testing .....:	(See G.13.6.2)	N/A
P.4.2 c)	Mechanical strength testing..... :	(See Annex T)	N/A
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		P
Q.1	Limited power sources		N/A
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		—
	Current limiting method ..... :		—
R	**LIMITED SHORT CIRCUIT TEST**		**N/A**
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
R.3	Test method Supply voltage (V) and short-circuit current (A)). .....:		N/A
S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		**P**
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	The fire enclosure was made of rated min. V-0 material.	N/A
	Samples, material ..... :	Plastic enclosure, SE1X(GG)(f1)	—
	Wall thickness (mm) ..... :	Min. 2.0 mm	—
	Conditioning (°C) ..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out	Approved V-0 enclosure used.	N/A
	- Material not consumed completely	Approved V-0 enclosure used.	N/A
	- Material extinguishes within 30s	Approved V-0 enclosure used.	N/A
	- No burning of layer or wrapping tissue	Approved V-0 enclosure used.	N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		P
	Samples, material ..... :	Enclosure, SE1X(GG)(f1)	—
	Wall thickness (mm) ..... :	Min. 2.0 mm	—
	Conditioning (°C) ..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out	Approved V-0 enclosure used.	N/A
	Test specimen does not show any additional hole	Approved V-0 enclosure used.	N/A
S.3	Flammability test for the bottom of a fire enclosure	Approved V-0 enclosure used.	P
	Samples, material ..... :	Enclosure, SE1X(GG)(f1)	—
	Wall thickness (mm) ..... :	Min. 2.0 mm	—
	Cheesecloth did not ignite	Approved V-0 enclosure used.	N/A
S.4	Flammability classification of materials	Approved V-0 enclosure used.	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 completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
T	**MECHANICAL STRENGTH TESTS**		**P**
T.1	General requirements		P
T.2	Steady force test, 10 N ..... :	(See appended table T.2)	P
T.3	Steady force test, 30 N ..... :	(See appended table T3)	N/A
T.4	Steady force test, 100 N ..... :	(See appended table T4)	N/A
T.5	Steady force test, 250 N ..... :	(See appended table T5)	P
T.6	Enclosure impact test	(See appended table T.6,T.9)	P
	Fall test	(See appended table T.6,T.9)	P
	Swing test	(See appended table T.6,T.9)	P
T.7	Drop test ..... :	(See appended table T7)	N/A
T.8	Stress relief test..... :	(See appended table T8)	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..... :	(See sub-clause 4.4.4.9)	N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) ..... :		—
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements		N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen ..... :	(See Annex T)	N/A
V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		P
V.1	Accessible parts of equipment	Following the probes test specified in this annex except Figure V.3., V.4 and V.5 is not suitable.	P
V.2	Accessible part criterion	No live parts can be accessible.	P

4.1.2	TABLE: List of critical components				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1]
Plastic Enclosure	SABIC JAPAN L L C	SE1X(GG)(f1)	V-1 or Better, 105℃ min.2.0mm	UL 94	UL E45587
Terminal block	Heavy power Co., Ltd.	PA66	10A/400V	UL1059	UL
PCB	Interchangeable	Interchangeable	V-0, 130 °C	UL 796	UL
Fuse (R1)	Zhongshan Lanbao Electrical Appliances Co., Ltd.	RTI-10 Serie(s)	T1AL, 250Vac	EN 60127-1 EN 60127-3	VDE 40017009
Y Capacitor (CY1)	JNC	JN221K	Max. 220 pF 400 VAC, 125 °C, Y1 type	IEC/EN 60384-14	VDE
X Capacitor (C1)	DAIN	MKP	275VAC, Max. 0.047μF, 40/100/21	IEC/EN 60384-14	VDE
Varistor	Cham How Corp	10D471K	470V	UL 1449	UL
Transformer (T1)	JI'AN HUAHENG ELECTRONIC INDUSTRIAL CO.,LTD	EE13	Class B.	IEC 62368-1	Tested with appliance
--Bobbin	CHANG CHUN PLASTICS CO LTD	T375J	150℃, V-0	UL 94	UL E59481
--Winding	SHENZHEN DARUN SCIENCE AND TECHNOLOGY CO LTD	DRTIW-B	130℃	UL 758	UL E335841
--Triple insulation wire	DONGGUAN HAOKE ELECTRONICS TECHNOLOGY CO LTD	HKTIW, TIW-B	130℃	UL 2353	UL E349887
--Insulation tape	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A(b)	130℃	UL 510	UL E246950
-Tube	FLUOTECH INDUTSTRIAL CO.,LTD	PTFE 200℃	Min.300 V, 200 ºC, VW-1	UL 224	UL E156256
--VARNISH	CHANGXIAN CHEMICAL CO LTD	WP-2952F-2G	130 °C	UL 1446	UL E72979

Relay	HKE	V6-S-DC5V	10A 250VAC 16A 250VAC 10A 30VDC	IEC/EN 60335-2-80 IEC/EN 60335-2-98 IEC/EN 61810-1	TUV
Supplementary information:					

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

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.)			
--	--	--	--
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					N/A
5.2.2.2 – Steady State Voltage and Current conditions						
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				U (Vrms or Vpk)	I (Apk or Arms) / Hz	
--	--	--	--	--	-- / --	ES1
			--	--	-- / --	
			--	--	-- / --	
Note: All condition are considered, the maximum values are shown in the above table. Steady state is considered established when the voltage or current values persist for 2 s or longer.						

5.2.2.3 - Capacitance Limits						
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
--	--	--	--	--	--	ES3
			--	--	--	
			--	--	--	
Note: All modes are considered, the maximum values are shown in the above table.						

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

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements**							P
	Supply voltage (V)	AC81V/ 60Hz	AC275V / 60Hz	--	--	--	--	
	Test condition	--	--	--	--	--	--	
	Ambient T(°C)	24.3	24.7	--	--	--	--	
Maximum measured temperature T of part/at:		T (°C)						Allowed T_{max} (°C)
1. Terminal block		43.8	47.6	--	--	--	--	120
2. PCB near BR1		70.1	74.4	--	--	--	--	130
3. X Capacitor (C1)		59.5	63.2	--	--	--	--	100
4. C3 body		74.3	78.6	--	--	--	--	105
5. Y Capacitor (CY1)		62.8	66.2	--	--	--	--	125
6. PCB near T1		80.5	84.7	--	--	--	--	130
7. T1 coil		81.2	84.9	--	--	--	--	110
8. T1 core		77.6	80.4	--	--	--	--	Ref.
9. PCB near U2		68.9	73.1	--	--	--	--	130
10. PCB near Q1		71.4	74.7	--	--	--	--	130
11. C25 body		65.1	68.3	--	--	--	--	105
12. K1 body		73.5	77.0	--	--	--	--	Ref.
13. Enclosure outside		51.8	53.6	--	--	--	--	95
14. Enclosure inside		54.2	56.7	--	--	--	--	95

Supplementary information:

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

Supplementary information: Note1: Ambient T is the actual test ambient. Note2: Tma is the max

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		P
Allowed impression diameter (mm) ..... :		≤ 2 mm	—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)
Terminal block	See table 4.1.2	125	0.9
Supplementary information:			

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)[1]	Required cl (mm)	cl (mm)[2]	Required[3] cr (mm)	cr (mm)
Functional insulation							
L to N before fuse R1	420	250	<30	2.0	4.7	2.5	5.3
Two pins under fuse R1	420	250	<30	1.5	2.8	2.5	2.8
Reinforced insulation							
Primary circuit to accessible enclosure	420	250	<30	3.0	>5.0	5.0	>5.0
Supplementary information: Note: See table 5.4.2.4 if this is based on electric strength test							

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

Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)
Primary to secondary and accessible part -	2500 Vpeak	3.0	Refer to table 5.4.2.2, 5.4.2.4 and 5.4.3 for details
Primary trace of different polarity before R1	2500 Vpeak	1.5	Refer to table 5.4.2.2, 5.4.2.4 and 5.4.3 for

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

Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)
			details

Supplementary information:

Note 4: The all models were checked only the maximum voltage and minimum clearance & creepage distance were shown on the above table.

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**	P

Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
Plastic enclosure	420	--	See table 4.1.2	0.4	See table 4.1.2

Supplementary information: The all models are considered, only the maximum test voltage and minimum distance through insulation were shown on the table.

5.4.9	**TABLE: Electric strength tests**	**P**

Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Functional:			
L to N (fuse opened)	DC	2500 V	No
Basic/supplementary:			
--	--	--	--
Reinforced:			
L/N to plastic enclosure with foil	DC	4000 V	No
Routine Tests:			
--	--	--	--
--	--	--	--

Supplementary information:
Above test performed immediately after the humidity test.

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: CX1=0.047uF

☐ bleeding resistor rating:

☐ ICX: U1

Notes:

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:

6.2.2	Table: Electrical power sources (PS) measurements for classification				N/A
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s*)	PS Classification
Output connector + to -;	Normal	Power (W) :	--	--	PS2
		V_A (V) :	--	--	
		I_A (A) :	--	--	
Output connector + to -;	R18 short	Power (W) :	--	--	PS2
		V_A (V) :	--	--	
		I_A (A) :	--	--	

Supplementary Information:

(*) Measurement taken only when limits at 3 seconds exceed PS1 limits. Measurement taken only when limits at 5 seconds exceed PS2 limits

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)	P

Location	Open circuit voltage After 3 s (Vp)	Measured r.m.s current (Irms)	Calculated value (V_p x I_{rms})	Arcing PIS? Yes / No
All primary circuits and secondary circuits inside the equipment enclosure	*	*	*	*

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.

The output circuit is not arcing PIS as the open voltage of which is less than 50Vpeak.

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)	P

Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No
All primary circuits and secondary circuits inside the equipment enclosure	*	*	*	*	*

Supplementary Information:

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

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

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

8.5.5	TABLE: High Pressure Lamp	N/A

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

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

B.3	TABLE: Abnormal operating condition tests								N/A
Ambient temperature (°C) ..... :						--			—
Power source for EUT: Manufacturer, model/type, output rating . :						Refer to below			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation	
--	--	--	--	--	--	--	--	--	
						--	--		
						--	--		
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.									

B.4	TABLE: Fault condition tests							P
Ambient temperature (°C) ..... :					24.8			—
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
T1 pin 3-4	Short	250Vac/60 Hz	10mins	R1	0.021	--	--	Unit shutdown immediately, no hazards, no damaged.
T1 pin 1-5	Short	250Vac/60 Hz	10mins	R1	0.023	--	--	Unit shutdown immediately, no hazards, no damaged.
T1 pin A-B	Short	250Vac/60 Hz	10mins	R1	0.019	--	--	Unit shutdown immediately, no hazards, no damaged.
BR1	Short	250Vac/60 Hz	1s	R1	0	--	--	*R1 opened immediately, no hazards.
C3	Short	250Vac/60 Hz	1s	R1	0	--	--	*R1 opened immediately, no hazards.

C25	Short	250Vac/60 Hz	10mins	R1	0.016	--	--	Unit shutdown immediately, no hazards, no damaged.

Supplementary information:
For fault condition with current fuse opened, all sources listed in table 4.1.2 are evaluated and the same results were got.

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

	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition	--	--	--	--	--	--	--	--	--
Max. current during fault condition	--	--	--	--	--	--	--	--	--

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

Annex M.4	**Table: Additional safeguards for equipment containing secondary lithium batteries**	N/A

Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	
--	Normal	--	--	--	N/A
--	Abnormal	--	--	--	N/A
--	Single fault –SC/OC	--	--	--	N/A
--	Normal	--	--	--	N/A
--	Abnormal	--	--	--	N/A
--	Single fault – SC/OC	--	--	--	N/A

Supplementary Information:

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

Annex Q.1	**TABLE: Circuits intended for interconnection with building wiring (LPS)**	N/A

Note: Measured UOC (V) with all load circuits disconnected:

Output Circuit	Components	U_{oc} (V)	I_{sc} (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--
--	--	--	--	--	--	--
Supplementary Information:						

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

Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Top enclosure	Plastic	Min.2.0	250	5	No damaged
Side enclosure	Plastic	Min.2.0	250	5	No damaged
Bottom enclosure	Plastic	Min.2.0	250	5	No damaged
Supplementary information:					

T.6, T.9	**TABLE: Impact tests**	**P**

Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation
Top enclosure	Plastic	--	1300	No damaged
Side enclosure	Plastic	--	1300	No damaged
Supplementary information:				

T.7	**TABLE: Drop tests**	**N/A**

Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation
--	--	--	--	--
--	--	--	--	--
Supplementary information:				

T.8	**TABLE: Stress relief test**	**P**

Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Completed sample	Plastic enclosure (for all sources)	Min.2.0	70	7	No damaged, the hazardous live parts cannot be touched
Supplementary information:					

ATTACHMENT TO TEST REPORT IEC 62368-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
(Audio/video, information and communication technology equipment Part 1: Safety requirements)

Differences according to ..... : EN 62368-1:2014

Attachment Form No. ..... : EU_GD_IEC62368_1B

Attachment Originator ..... : Intertek Semko AB

Master Attachment ..... : Date (2015-08)

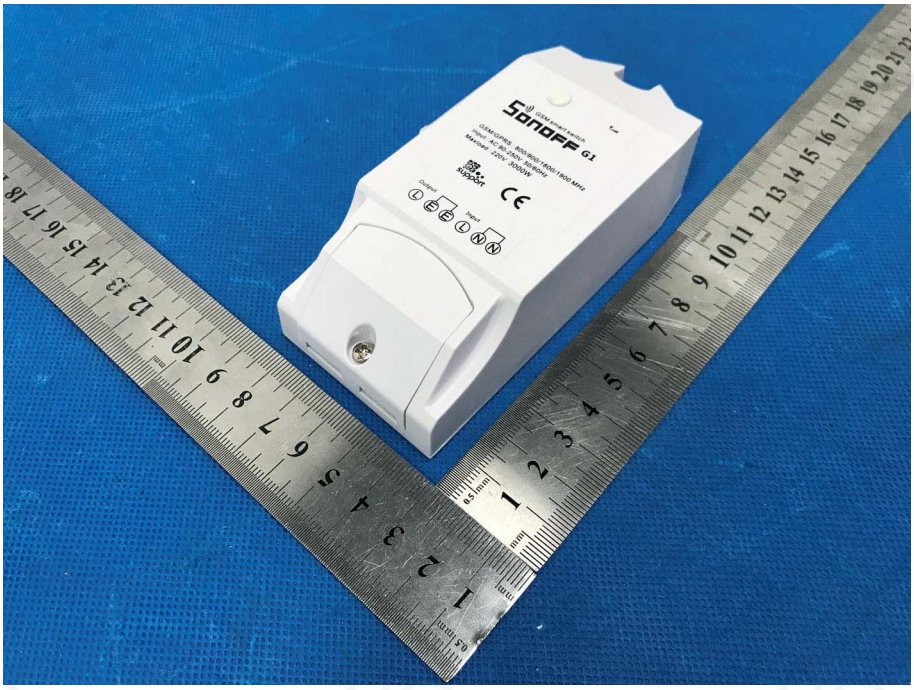
IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	CENELEC COMMON MODIFICATIONS (EN)		
1	NOTE Z1		N/A
4.Z1	Protective devices included as integral parts of the equipment or as parts of the building installation:		N/A
	a) Included as parts of the equipment		N/A
	b) For components in series with the mains; by devices in the building installation		N/A
	c) For pluggable type B or permanently connected; by devices in the building installation		N/A
5.4.2.3.2.4	Interconnection with external circuit		N/A
10.2.1	Additional requirements in 10.5.1		N/A
10.5.1	RS1 compliance measurement conditions		N/A
10.6.2.1	EN 71-1:2011, 4.20 and methods and distances		N/A
10.Z1	Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz		N/A
G.7.1	NOTE Z1		N/A
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		
4.1.15	**Denmark, Finland, Norway and Sweden:** Class I pluggable equipment type A marking		N/A
4.7.3	**United Kingdom:** Torque test socket-outlet BS 1363, and the plug part BS 1363.		N/A
5.2.2.2	**Denmark:** Warning for high touchcurrent		N/A
5.4.11.1 and Annex G	**Finland and Sweden:** Separation of the telecommunication network from earth		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.2.1	**Norway:** Capacitors rated for the applicable line-to-line voltage (230 V).		N/A
5.5.6	**Finland, Norway and Sweden:** Resistors used as basic safeguard or bridging basic insulation comply with G.10.1 and G.10.2.		N/A
5.6.1	**Denmark:** Protection for pluggable equipment type A; integral part of the equipment		N/A
5.6.4.2.1	**Ireland and United Kingdom:** The protective current rating is taken to be 13 A		N/A
5.6.5.1	**Ireland and United Kingdom:** Conductor sizes of flexible cords to be accepted by terminals for equipment rated 10 A to 13 A		N/A
5.7.5	**Denmark:** The installation instruction affixed to the equipment if high protective conductor current		N/A
5.7.6.1	**Norway and Sweden:** Television distribution system isolation text in user manual		N/A
5.7.6.2	**Denmark:** Warning for high touch current		N/A
B.3.1 and B.4	**Ireland and United Kingdom:** Tests conducted using an external miniature circuit breaker or protective devices included as an integral part of the direct plug-in equipment		N/A
G.4.2	**Denmark:** Appliances rated ≤13 A provided with a plug according to DS 60884-2-D1:2011.		N/A
	Class I equipment provided with socket-outlets provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.		N/A
	If a single-phase equipment having rated >13 A or poly-phase equipment provided with a supply cord with a plug, plug in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.		N/A
	Mains socket outlets intended for providing power to Class II apparatus rated 2,5 A in accordance with DS 60884-2-D1:2011 standard sheet DKA 1-4a.		N/A
	Other current rating socket outlets in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.		N/A
	Mains socket-outlets with earth in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a		N/A

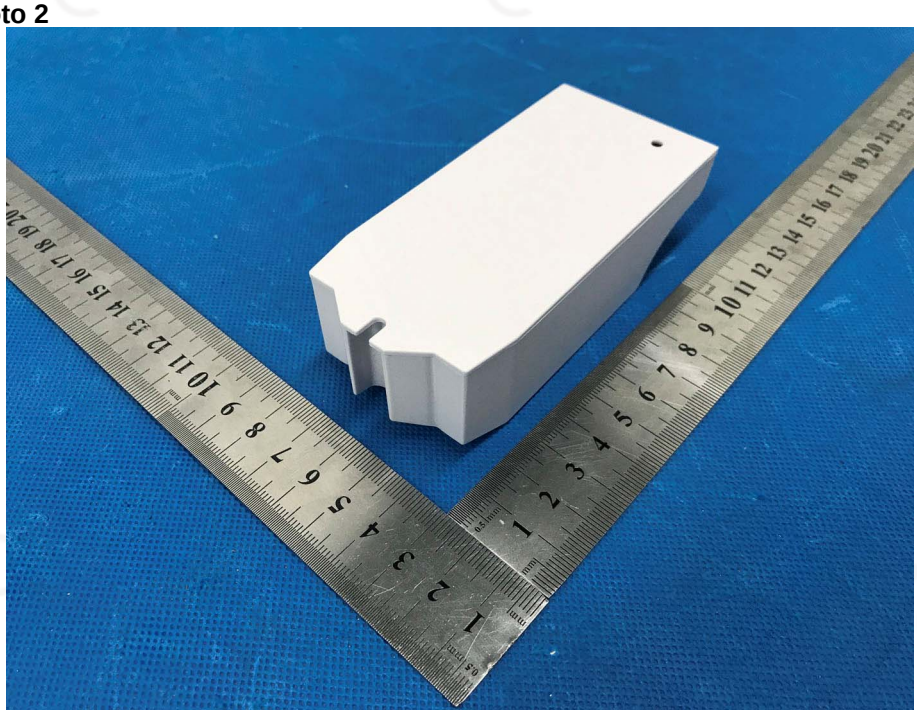
IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	**United Kingdom:** The plug part of direct plug-in equipment assessed to BS 1363		N/A
G.7.1	**United Kingdom:** Equipment fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768		N/A
G.7.1	**Ireland:** Apparatus provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use		N/A
G.7.2	**Ireland and United Kingdom:** A power supply cord for equipment which is rated over 10 A and up to and including 13 A.		N/A
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		
10.5.2	**Germany:** Cathode ray tube intended for the display of visual images, authorization or application of type approval and marking.		N/A
F.1	**Italy:** The power consumption in Watts (W) indicated on TV receiver and in instruction for use		N/A
	TV receivers provided with an instruction for use, schematic diagrams and adjustments procedure in Italian language.		N/A
	Marking for controls and terminals in Italian language.		N/A
	Conformity declaration according to the above requirements in the instruction manual		N/A
	First importers of TV receivers manufactured outside EEC previous conformity certification to the Italian Post Ministry and Certification number on the backcover.		N/A

ANNEX A:
Photo-documentation

EUT Photo 1



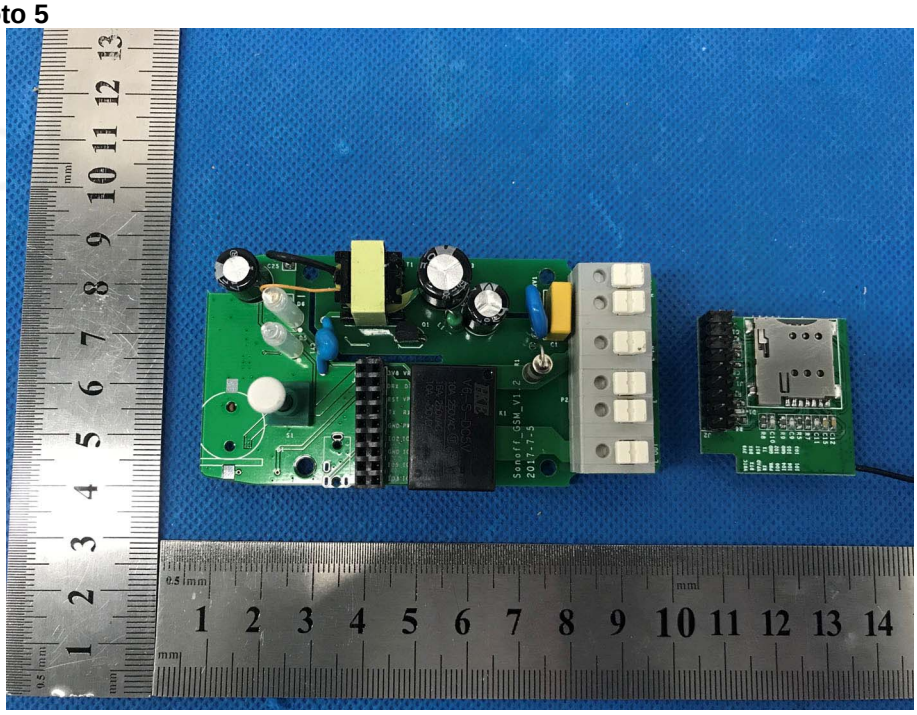
EUT Photo 2



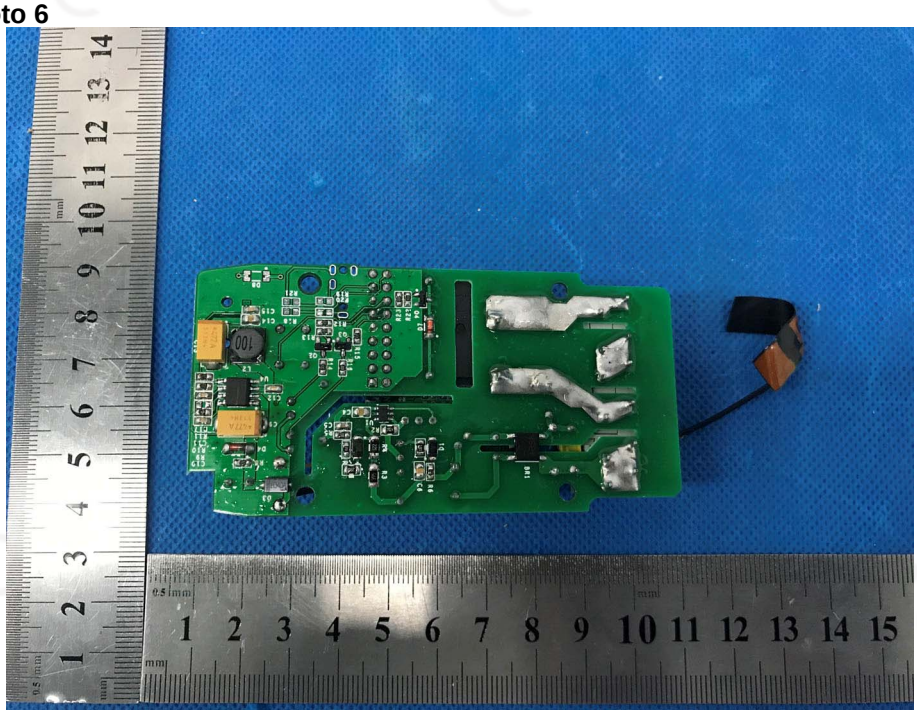
EUT Photo 3

EUT Photo 4

EUT Photo 5



EUT Photo 6



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