Test Report issued under the responsibility of:

Guangzhou ITL Co., Ltd.

TEST REPORT **IEC 62368-1** **Audio/video, information and communication technology equipment** **Part 1: Safety requirements**	
Report Number .....:	230519001
Date of issue.....:	2023-06-10
Total number of pages .....:	58
Name of Testing Laboratory preparing the Report.....:	Guangzhou ITL Co., Ltd.
Applicant's name.....:	Guangzhou V-Solution Telecommunication Technology Co., Ltd.
Address.....:	601,Building B2,No.162,Science Avenue,Science City,Guangzhou High-tech Industrial Development Zone,Guangdong Province, China
Test specification:	
Standard ..... :	IEC 62368-1:2014
Test procedure ..... :	LVD
Non-standard test method ..... :	N/A
TRF template used ..... :	IECEE OD-2020-F1:2021, Ed.1.4
Test Report Form No. ..... :	IEC62368_1D
Test Report Form(s) Originator.. :	UL(US)
Master TRF..... :	Dated 2022-04-14

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

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test Item description ..... :		GPON OLT	
Trade Mark(s)		V·SOL	
Manufacturer ..... :		Same as applicant	
Model/Type reference ..... :		V1600GS	
Ratings ..... :		Input: 100-240V~, 50/60Hz, 1.0A Max	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CE Testing Laboratory:**	Guangzhou ITL Co., Ltd.	
Testing location/ address .....:		1-2/F., South Block, Building A2, No.3, Keyan Road, Science City, High-Tech Industrial Development Zone, Guangzhou, Guangdong, China	
Tested by (name, function, signature)		Don Yang Project handler	Don Yang
Approved by (name, function, signature)....		Bob Dai Reviewer	Bob Dai
☐	**Testing procedure: CTF Stage 1:**	N/A	
Testing location/ address..... :		N/A	
Tested by (name, function, signature).....		N/A	
Approved by (name, function, signature)....		N/A	
☐	**Testing procedure: CTF Stage 2:**	N/A	
Testing location/ address.....		N/A	
Tested by (name, function, signature).....		N/A	
Witnessed by (name, function, signature)...		N/A	
Approved by (name, function, signature)....		N/A	
☐	**Testing procedure: CTF Stage 3 :**	N/A	
☐	**Testing procedure: CTF Stage 4:**	N/A	
Testing location/ address.....:		N/A	
Tested by (name, function, signature).....		N/A	
Witnessed by (name, function, signature)...		N/A	
Approved by (name, function, signature)....		N/A	
Supervised by (name, function, signature) .		N/A	

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

Attachment No.1: 9 pages of EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES for EN 62368-1:2014+A11:2017.

Attachment No. 2: 10 pages of photos.

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
All applicable tests were performed through this standard. The submitted samples were tested and found to comply with the requirements of: IEC 62368-1:2014 (Second Edition) EN 62368-1:2014+A11:2017	Guangzhou ITL Co., Ltd. 1-2/F., South Block, Building A2, No.3, Keyan Road, Science City, High-Tech Industrial Development Zone, Guangzhou, Guangdong, China

Summary of compliance with National Differences:

List of countries addressed:

EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

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

Use of uncertainty of measurement for decisions on conformity (decision rule) :

☒ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

☐ Other:… (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

Information on uncertainty of measurement:

The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

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

Copy of marking plate (Representative)

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.

- CE marking and WEEE symbol should be at least 5.0 mm and 7.0 mm respectively in height.

TEST ITEM PARTICULARS:	
Classification of use by.....:	☒ Ordinary person ☐ Instructed person ☐ Skilled person ☐ Children likely to be present
Supply Connection.....:	☒ AC Mains ☐ DC Mains ☐ External Circuit - not Mains connected - ☐ ES1 ☐ ES2 ☐ ES3
Supply % Tolerance .....:	☒ +10%/-10% ☐ +20%/-15% ☐ +___%/ -_____% ☐ None
Supply Connection – Type .....:	☒ pluggable equipment type A - ☐ non-detachable supply cord ☒ appliance coupler ☐ direct plug-in ☐ mating connector ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☐ other:
Considered current rating of protective device as part of building or equipment installation.....:	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 ☐ Class II with functional earthing ☐ Not classifed
Access location .....:	☐ restricted access location ☒ N/A
Pollution degree (PD) .....:	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maxium operating ambient.....:	55°C
IP protection class .....:	☐ IPX0 ☒ IP20___
Power Systems .....:	☒ TN ☐ TT ☐ IT - ____ $V_{L-L;}$ ☐ dc mains ☐ N/A
Altitude during operation (m) .....:	☐ 2000 m or less ☒ up to 5000 m
Altitude of test laboratory (m) .....:	☒ 2000 m or less ☐ _____ m
Mass of equipment (kg) .....:	☒ Approx. 1.18kg

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.....:	2023-05-19
Date (s) of performance of tests .....:	2023-05-19 to 2023-06-06

General remarks:

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

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

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies)..... :	Guangzhou V-Solution Telecommunication Technology Co., Ltd. Building B, Dingxing Wisdom Valley, No.11 Huangqishan Road, Yonghe Economic Development Zone, Huangpu District, Guangzhou City, Guangdong Province, P.R.China

General product information and other remarks:

Product Description

1. The equipment under test (EUT) connects to mains through a certified detachable power supply cord.
2. The approved detachable supply cord which the cross-sectional area is minimum 0.5mm^2 is not sold with equipment
3. The EUT is for indoor use only and intends to be used in tropical climate (maximum temperature 55°C) and the maximun altitude is 5000m.
4. Before placing the products in the different countries, the manufacturer must ensure that Operating Instructions, Ratings Labels and Warnings Labels are in an Accepted or Official Language of the country in question; The equipment complies with the National Standards and/or Electrical Codes of the country, province or city or in question.

Model Differences

N/A

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

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.)	
Electrically-caused injury (Clause 5): (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input ES1	
Source of electrical energy	**Corresponding classification (ES)**
All internal circuits and components except signal ports	ES3 (declared)
Between L and N of mains plug	ES3 (declared)
Between DC fan accessible and earth	ES1
Between any one of signal terminals and earth	ES1
Between metallic enclosure and earth	ES1
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): PS2	
Source of power or PIS	**Corresponding classification (PS)**
All internal circuits and components except signal ports	PS3, Arcing PIS, Resistive PIS (declared)
Signal ports	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)**
Sharp edges and Corners	MS1
Equipment weight	MS1
DC fan	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 parts	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)**
Signal indicators (Low power LEDs)	RS1

ENERGY SOURCE DIAGRAM
Indicate which energy sources are included in the energy source diagram. Insert diagram below
☐ **ES** ☐ **PS** ☐ **MS** ☐ **TS** ☐ **RS** Details see **ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE**

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	**Possible Hazard**			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES3: All internal circuits and components except signal ports	N/A	N/A	Enclosure See 5.4.2, 5.4.3, 5.5.3 and 5.5.4
Ordinary (only for class I construction)	ES3: All internal circuits and components except signal ports	See 5.4.2, 5.4.3, 5.4.4	See 5.6	N/A
Ordinary	ES3: Between L and N of mains plug	N/A	N/A	See 5.5.2.2
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Enclosure	PS3 circuit	See 6.3	Metal enclosure	N/A
PCB	PS3 circuit	See 6.3	V-1 or better	N/A
Internal wiring	PS3	See 6.3	See 6.5	N/A
The other components/materials	PS3	See 6.3	See 6.4.6	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
N/A	N/A	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	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		P
4.1.2	Use of components	(See appended table 4.1.2)	P
4.1.3	Equipment design and construction		P
4.1.15	Markings and instructions ..... :	(See Annex F)	P
4.4.4	Safeguard robustness		P
4.4.4.2	Steady force tests..... :	(See Annex T.4, T.5)	P
4.4.4.3	Drop tests..... :		N/A
4.4.4.4	Impact tests..... :	(See Annex T.6)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests ..... :		N/A
4.4.4.6	Glass Impact tests..... :		N/A
4.4.4.7	Thermoplastic material tests ..... :	Not used	N/A
4.4.4.8	Air comprising a safeguard ..... :	See Annex T	P
4.4.4.9	Accessibility and safeguard effectiveness	After test, except for PS3, class 3 energy source shall not become accessible and all safeguard remain effective.	P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions	P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard		P
4.6.2	10 N force test applied to ..... :	(See appended table T.2, T.3, T.4, T.5)	P
4.7	Equipment for direct insertion into mains socket - outlets	Not such apparatus	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..... :	See annex P	P

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Clause	Requirement + Test	Result - Remark	Verdict

5	**ELECTRICALLY-CAUSED INJURY**		**P**
5.2.1	Electrical energy source classifications ..... :	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current ..... :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits..... :	(See appended table 5.2)	P
5.2.2.4	Single pulse limits ..... :	No single pulse introduced	N/A
5.2.2.5	Limits for repetitive pulses ..... :	No repetitive pulses introduced	N/A
5.2.2.6	Ringing signals ..... :		N/A
5.2.2.7	Audio signals ..... :	(See Clause E.1)	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
5.3.2.2	Contact requirements	Only ES1 circuit can be accessed for this product.	P
	a) Test with test probe from Annex V ..... :	No contact to any ES3 parts with test probe	P
	b) Electric strength test potential (V)..... :		N/A
	c) Air gap (mm) ..... :	Comply with minimum distance according Table 9	P
5.3.2.4	Terminals for connecting stripped wire	No such terminal	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		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, 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
5.4.1.5	Pollution degree..... :	Pollution degree 2 considered	—
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	Max. RMS voltage: 280V; Max. Peak voltage: 516V	P
5.4.1.9	Insulating surfaces		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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 ..... :		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..... :	2500V peak	—
	b) d.c. mains transient voltage ..... :	No such transient voltage	—
	c) external circuit transient voltage..... :	No such transient voltage	—
	d) transient voltage determined by measurement ..... :	No need to conduct this test	—
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..... :	1.48 for clearance for operated up to 5000m above sea level	P
5.4.3	Creepage distances ..... :	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group ..... :	Material group IIIb is assumed to be used	—
5.4.4	Solid insulation		P
5.4.4.2	Minimum distance through insulation ..... :	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices	Certified optocouplers used.	P
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) ..... :	At least 2 layers insulation tape are wrapped around T1 core	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..... :		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components	Approved triple insulation wire used	P
5.4.4.9	Solid insulation at frequencies >30 kHz..... :		N/A
5.4.5	Antenna terminal insulation	No such equipment	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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		P
	Relative humidity (%)..... :	93%	—
	Temperature (°C) ..... :	40°C	—
	Duration (h) ..... :	120h	—
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		N/A
5.4.10	Protection against transient voltages between external circuit	No transient voltage from external circuit	N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test..... :		N/A
5.4.10.2.3	Steady-state test ..... :		N/A
5.4.11	Insulation between external circuits and earthed circuitry..... :		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V) ..... :		—
	Nominal voltage U_{peak} (V)..... :		—
	Max increase due to variation U_{sp} ..... :		—
	Max increase due to ageing ΔU_{sa} ..... :		—
	$U_{op}= U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ ..... :		—
5.5	Components as safeguards		
5.5.1	General		P
5.5.2	Capacitors and RC units		P
5.5.2.1	General requirement	Approved capacitors complied with IEC 60384-14	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector ..... :	(See appended table 5.5.2.2)	P
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See sub-clause 5.4 or Annex G.12)	P
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
5.5.7	SPD's	(See Annex G.8) Varistor is used between L and N	P
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		P
5.6.2	Requirement for protective conductors		P
5.6.2.1	General requirements		P
5.6.2.2	Colour of insulation	Green-and-yellow	P
5.6.3	Requirement for protective earthing conductors	G pin of the approved AC inlet is used as protective earthing conductor	P
	Protective earthing conductor size (mm^2) .....:	AC Inlet used	—
5.6.4	Requirement for protective bonding conductors		P
5.6.4.1	Protective bonding conductors		P
	Protective bonding conductor size (mm^2). .....:	Min. 18AWG	—
	Protective current rating (A)	16A	—
5.6.4.3	Current limiting and overcurrent protective devices	No such parts	N/A
5.6.5	Terminals for protective conductors		P
5.6.5.1	Requirement		P
	Conductor size (mm^2), nominal thread diameter (mm). .....:	Nominal thread diameter: 3.8mm	P
5.6.5.2	Corrosion		P
5.6.6	Resistance of the protective system		P
5.6.6.1	Requirements		P
5.6.6.2	Test Method Resistance (Ω).....:	(See appended table 5.6.6.2)	P
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.2.1	Measurement of touch current.....:	(See appended table 5.2.2.2, Annex B.3 & B.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).....:	Single equipment	—
	Multiple connections to mains (one connection at a time/simultaneous connections).....:	Single connection	—
5.7.4	Earthed conductive accessible parts.....:	(See appended table 5.7.2.2, 5.7.4)	P
5.7.5	Protective conductor current		N/A
	Supply Voltage (V).....:		—
	Measured current (mA).....:		—
	Instructional Safeguard.....:		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		N/A

6	**ELECTRICALLY- CAUSED FIRE**		**P**
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications		P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault... :	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault..... :	(See appended table 6.2.2)	P
6.2.2.4	PS1 ..... :	(See appended table 6.2.2)	P
6.2.2.5	PS2 ..... :	(See appended table 6.2.2)	P
6.2.2.6	PS3 ..... :	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS ..... :	(See appended table 6.2.3.1)	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.3.2	Resistive PIS ..... :	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... :	No ignition and no such temperature attained within the equipment. (See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method of 'control fire spread' is used. (Metal enclosure is used)	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits	No such circuit	N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	Method of 'control fire spread' is used.	N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions ..... :		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards ..... :	Components other than PCB and wires are: - Mounted on PCB rated V-1 or better, or made of V-2/VTM-2 or better. (See appended tables 4.1.2 and Annex G)	P
6.4.6	Control of fire spread in PS3 circuit	Metallic enclosure is used	P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.1	General ..... :		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		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		P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3.1	Fire enclosure and fire barrier openings	Metallic enclosure is used	P
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 .....:	Metal enclosure	P
6.5	Internal and external wiring		P
6.5.1	Requirements	VW-1 wires used, which considered to equivalent to IEC/TS 60695-11-21	P
6.5.2	Cross-sectional area (mm^2) .....:	(see appended table 4.1.2)	—
6.5.3	Requirements for interconnection to building wiring ..... :		N/A
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1	(See Annex Q.)	N/A
7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		**N/A**
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions ..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010) .....:		—
7.6	Batteries.....:		N/A
8	**MECHANICALLY-CAUSED INJURY**		**P**
8.1	General		P
8.2	Mechanical energy source classifications	MS1: Sharp edges and Corners, MS1: Mass weight	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners	MS1	N/A
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts	DC fan: MS1 (Plastic blades, m=0.028kg, r=20mm, N=7800rpm) Located in metal enclosure and not assesible.	P
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		N/A
8.6.1	Product classification		N/A
	Instructional Safeguard ..... :		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force .....:		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt .....:		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force) .....:		N/A
	Position of feet or movable parts.....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
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.....:		—
8.10	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		N/A
	Button/Ball diameter (mm)..... :		—
9	**THERMAL BURN INJURY**		**P**
9.2	Thermal energy source classifications	Accessible areas: TS1	P
9.3	Safeguard against thermal energy sources		N/A
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

10	**RADIATION**		**P**
10.2	Radiation energy source classification	RS1: Signal indicators (Low power LEDs)	P
10.2.1	General classification		P
10.3	Protection against laser radiation		N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault ..... :		N/A
	Instructional safeguard ..... :		—
	Tool..... :		—
10.4	Protection against visible, infrared, and UV radiation		P
10.4.1	General	RS1 only	P
10.4.1.a)	RS3 for Ordinary and instructed persons .....:		N/A
10.4.1.b)	RS3 accessible to a skilled person.....:		N/A
	Personal safeguard (PPE) instructional safeguard .....:		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1. :	RS1: LED indicator and LCD panel Indicator LEDs are low power for indication only.	P
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

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

B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		**P**
B.2	Normal Operating Conditions		P
B.2.1	General requirements.....:	(See summary of testing & appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers .....:	See Annex E	N/A
B.2.3	Supply voltage and tolerances	Rated input 100-240V~; ±10% tolerance was considered.	P
B.2.5	Input test.....:	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements.....:	(See appended table B.3)	P
B.3.2	Covering of ventilation openings		P
B.3.3	D.C. mains polarity test	A.C. mains supply only	N/A
B.3.4	Setting of voltage selector .....:	No such voltage selector	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.3.5	Maximum load at output terminals .....:	(See appended table B.3)	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		P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited .....:	No such controlling device	N/A
B.4.3	Motor tests		P
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....:	(See Clause G.5)	P
B.4.4	Short circuit of functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.4)	P
B.4.6	Short circuit or disconnect of passive components	(See appended table B.4)	N/A
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		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	No UV radiation within the EUT.	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
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		P
	Instructions – Language .....:	Instructions in English are reviewed.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations		P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification .....:	See the copy of marking plate	—
F.3.2.2	Model identification .....:	See the copy of marking plate	—
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage.....:	Symbol “~” provided	—
F.3.3.4	Rated voltage.....:	100-240V	—
F.3.3.4	Rated frequency.....:	50/60Hz	—
F.3.3.6	Rated current or rated power.....:	1.0A	—
F.3.3.7	Equipment with multiple supply connections	No multiple supply connection	N/A
F.3.4	Voltage setting device	No such device	N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings.....:	No such outlet used.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.2	Switch position identification marking.....:	The IEC60417-5007 and IEC60417-5008 (I and 0) are marked on the power switch.	P
F.3.5.3	Replacement fuse identification and rating markings .....:	The fuses were located within the equipment and not replaceable by an ordinary person or an instructed person. “T6.3AL/250V” marked on PCB near F1; “T3.15AL/250V” marked on PCB near F2	P
F.3.5.4	Replacement battery identification marking.....:		N/A
F.3.5.5	Terminal marking location		P
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	 marked in approved AC Inlet	P
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 .....:	IP20	—
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. And then again for 15 sec. With the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling and lifting of the label edge. After each test, the marking remained legible.	P
F.4	Instructions		P

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

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal link used	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	Approved current fuse used	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		N/A
G.3.5.2	Single faults conditions.....:		N/A
G.4	**Connectors**		P
G.4.1	Spacings		P
G.4.2	Mains connector configuration .....:	IEC/EN 60320-1 approved appliance inlet used.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		P
G.5	**Wound Components**		P
G.5.1	Wire insulation in wound components.....	Approved TIW used for secondary winding of T1.	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Protection against mechanical stress by insulation bushing	P
G.5.1.2 b)	Construction subject to routine testing		P
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**		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....:	Tested with appliance	P
	Position.....:	T1	—
	Method of protection .....:	Electronic protection	—

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3.2	Insulation	Primary windings/core and secondary windings are separated by Reinforced insulation (The core is considered as primary part as it is not isolated from Primary)	P
	Protection from displacement of windings.....:	By bobbin and tape	—
G.5.3.3	Overload test.....:	Overload condition cannot occur	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**		P
G.5.4.1	General requirements	DC fan	P
	Position .....:		—
G.5.4.2	Test conditions		P
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		P
G.5.4.6.2	Tested in the unit		P
	Maximum Temperature .....:	(See appended table B.3)	P
	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		P
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	**Mains supply cords**		N/A
G.7.1	General requirements	Detachable supply cord is not sold with equipment	N/A
	Type.....:		—
	Rated current (A).....:		—
	Cross-sectional area (mm^2), (AWG).....:		—
G.7.2	Compliance and test method	Detachable power cord is used	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**		P
G.8.1	General requirements	Approved component is used (See appended table 4.1.2)	P
G.8.2	Safeguard against shock		P
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test .....:		N/A
G.8.3.3	Temporary overvoltage.....:		N/A
G.9	**Integrated Circuit (IC) Current Limiters**		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.	No such IC	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	Refer from clause 5.4.5.2	N/A
G.10.3.3	Impulse test		N/A
G.11	**Capacitor and RC units**		P
G.11.1	General requirements	Approved component is used (See appended table 4.1.2)	P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	**Optocouplers**		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....:	Optocouplers comply with IEC 60747-5-5:2007 (see appended table 4.1.2)	P
	Type test voltage Vini .....:	Min. 5000Vac	—
	Routine test voltage, Vini,b .....:	Min. 5000Vac	—
G.13	**Printed boards**		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction).....:		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation .....:		N/A
	Number of insulation layers (pcs) .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
b)	Impulse test using circuit 2 with Uc = to transient voltage .....:		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage .....:		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....:		—
D3)	Resistance .....:		—
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		**N/A**
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
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	Triple insulated winding wiring is used as reinforced safeguard in the isolating transformer that has been evaluated to IEC/EN 62368-1 or UL 2353. (See appended table 4.1.2)	P
K	**SAFETY INTERLOCKS**		**N/A**
K.1	General requirements		N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance.....:		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method.....:		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....:		N/A
K.7.2	Overload test, Current (A) .....:		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test .....:		N/A
L	**DISCONNECT DEVICES**		**P**
L.1	General requirements		P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized	Mains plug or AC inlet is regarded as disconnect device.	P
L.4	Single phase equipment		P

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Clause	Requirement + Test	Result - Remark	Verdict
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		**N/A**
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method) .. :		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- 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..... :		—
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

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Clause	Requirement + Test	Result - Remark	Verdict
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 ..... :		—
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**		P
P.1	General requirements		P
P.2.2	Safeguards against entry of foreign object		P
	Location and Dimensions (mm) ..... :	Diameter < 5mm	—

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Clause	Requirement + Test	Result - Remark	Verdict
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	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 ..... :		N/A
P.4.2 c)	Mechanical strength testing..... :		N/A
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		N/A
Q.1	Limited power sources		N/A
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		—
	Current limiting method ..... :		—
R	**LIMITED SHORT CIRCUIT TEST**		**N/A**
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A

IEC 62368-1			
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**		**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	Metal enclosure used	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 completely		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	After fifth flame application, flame extinguished within 1 min		N/A
T	**MECHANICAL STRENGTH TESTS**		**P**
T.1	General requirements		P
T.2	Steady force test, 10 N .....:	(See appended table T.2, T.3, T.4, T.5)	P
T.3	Steady force test, 30 N .....:		N/A
T.4	Steady force test, 100 N .....:		N/A
T.5	Steady force test, 250 N .....:	(See appended table T.2, T.3, T.4, T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test	(See appended table T.6)	P
	Swing test		N/A
T.7	Drop test .....:		N/A
T.8	Stress relief test .....:	Metal enclosure used	N/A
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....:		—
	Height (m) .....:		—
T.10	Glass fragmentation test .....:		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) .....:		—
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		**N/A**
U.1	General requirements		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

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

4.1.2	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Metal enclosure	Interchangeable	Interchangeable	Min. 1.0mm	IEC/EN 62368-1	Tested with appliance
PCB	SHEN ZHEN SUN & LYNN CIRCUITS CO LTD.	SL-M	V-0, 130°C	UL 94 UL 796	UL E234156
AC inlet	Shenzhen Kangyongda Electronics Co.,Ltd.	DE-14	250V,10A	IEC/EN 60320-1, UL 498	UL E362692
Primary internal wire	Dongguan ZhongZheng Wire & Cable Tech Co., Ltd.	1672	18AWG, Min. 105°C, 300V, VW-1	UL 758	UL E336285
Alternative	Interchangeable	Interchangeable	Min. 18AWG, 300V, VW-1, minimum 80 °C	UL 758	UL
Earthing wire	DONGGUAN TRIUMPHCABLE CO LTD	1015	18AWG, Min. 105°C, 600V, VW-1	UL 758	UL E249743
Alternative	Interchangeable	Interchangeable	Min. 18AWG, 300V, VW-1, minimum 80 °C	UL 758	UL
Secondary internal wire	DONGGUAN WENCHANG ELECTRONIC CO LTD	1015	Min. 18AWG, 600V, VW-1, minimum 105 °C	UL 758	UL E214500
Alternative	Interchangeable	Interchangeable	Min. 18AWG, 600V, VW-1, minimum 105 °C	UL 758	UL
Primary wire Connector	Yueqing Changshun Electronics Co., Ltd.	CS39602-Y, CS39602-A, CS39602-AW	6A, 250VAC, V-0, 85°C	UL 94, CSA-C22.2 No. 182.3	UL E238126
Switch	LECI Electronics Co., Ltd.	RS601D	250VAC, 105°C	UL 61058-1	UL E258800
DC fan	HONGKONG DONGXINGYUE TECHNOLOGY CO LTD	DF4020B12M	12VDC, 0.12A, 7800rpm/min, 200mm 2.54-3P, 80°C	UL 507 IEC/EN 62368-1	UL E491037 Tested with appliance

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

Insulation sheet	Sichuan Dongfang Insulating Material Co., Ltd.	DFR-BK(b)	V-0, thickness 0.43mm, 115° C	UL 94 UL 746C	UL E199019
Fuse (F1)	Shenzhen Lanson Electronics Co., Ltd	SMT	T6.3AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1 UL248-14	VDE 40013102 UL E221465
(Alternative)	Dongguan Chevron Electronic Technology Co., Ltd.	SET	T6.3AL, 250V	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1 UL248-14	VDE 40038565 UL E258589
Fuse (F2)	Shenzhen Lanson Electronics Co., Ltd	SMT	T3.15AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1 UL248-14	VDE 40012592 UL E221465
(Alternative)	Dongguan Chevron Electronic Technology Co., Ltd.	SET	T3.15AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1 UL248-14	VDE 40038565 UL E258589
Varistor (MOV1, MOV2, MOV3) optional	DONGGUAN CITY DAFU ELECTRONICS CO LTD	NDF14D561K NDF14D621K	Min. 300V, 125°C(test by UL for 6KV/3KAcombination pulse), coating V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2 UL1449	TUV SUD: No. B 115032 0001Rev.00 UL E502211
(Alternative)	Xiangtai Electronics (shenzhen) Co., Ltd	FNR-14H561 FNR-14H621	Min. 300V, 85°C(test by UL for 6KV/3KAcombination pulse), coating V-0	IEC/EN 61051-1 IEC/EN 61051-2 IEC/EN 61051-2-2 UL 1449	VDE 40041629 UL E472470
(Alternative)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	MYD-14K561 MYD-14K621	Min. 300V, 85°C(test by UL for 6KV/3KAcombination pulse), coating V-0	IEC/EN 61051-1 IEC/EN 61051-2 IEC/EN 61051-2-2 UL 1449	VDE 40008242 UL E325462
X capacitor (CX1)	Dongguan City Dafu Electronics Co., Ltd.	MPX Series	Max.0.33uF Min.250Vac 110°C	IECI/ EN/UL 60384-14	UL E465278 VDE 40044620

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

(Alternative)	Dongguan Weiqing Electronic Co., Ltd.	MPX	Max.0.33uF Min.250Vac 110°C	IECI/ EN/UL 60384-14	UL E466405 VDE 40040406
(Alternative)	Xiangtai Electronics (Shenzhen) Co., Ltd.	MPX /MKPSeries	Max.0.33uF Min.250Vac 110°C	IECI/ EN/UL 60384-14	UL E357475 VDE 40036065
Bleeder resistor	Interchangeable	Interchangeable	Each 2.0MΩ Max, Min. 1/4W	--	Tested with appliance
Y-Capacitor (CY1, CY2)	Xiang tai Electronic (Shenzhen) Co., Ltd.	YT	Max.2200pF Min. 250Vac 125°C, Y2 type	UL 60384-14	UL E319473 VDE 40044114
(Alternative)	DONGGUAN CITY DAFU ELECTRONICS CO LTD	CT7 Y2 Series	Max.2200pF Min. 250Vac 125°C, Y2 type	UL 60384-14	UL E465278 VDE 40041521
(Alternative)	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max.2200pF Min. 250Vac 125°C, Y2 type	UL 60384-14	UL E154899 VDE 40036246
(Alternative)	Shenzhen Song Te Electronics Co., Ltd.	CT7-series	Max.2200pF Min. 250Vac 125°C, Y2 type	IEC/EN/UL 60384-14	UL E302622 VDE 40044449
Y-Capacitor (CY3, CY4)	Xiang tai Electronic (Shenzhen) Co., Ltd.	YT	Max.1000pF Min. 250Vac 125°C, Y2 type	UL 60384-14	UL E319473 VDE 40044114
(Alternative)	DONGGUAN CITY DAFU ELECTRONICS CO LTD	CT7 Y2 Series	Max.1000pF Min. 250Vac 125°C, Y2 type	UL 60384-14	UL E465278 VDE 40041521
(Alternative)	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max.1000pF Min. 250Vac 125°C, Y2 type	UL 60384-14	UL E154899 VDE 40036246
(Alternative)	Shenzhen Song Te Electronics Co., Ltd.	CT7-series	Max.1000pF Min. 250Vac 125°C, Y2 type	IEC/EN/UL 60384-14	UL E302622 VDE 40044449

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

Optocoupler (U3)	Everlight Electronics Co., Ltd.	EL817	Int. dcr=6.0mm, ext.dcr=7.7mm, 110°C	IEC/EN60747-5-5 UL 1577	VDE 132249 UL E214129
(Alternative)	Lite-On Technology Corporation	LTV-817	Int. dcr=5.2mm, Ext. dcr=7.8mm, 110°C	IEC/EN 60747-5-5 UL 1577	VDE 40015248 UL E113898
(Alternative)	Bright Led Electronics Corp.	BPC-817	int. dcr=4.0mm, ext. dcr=7.6mm, 100°C	IEC/EN 60747-5-5 UL 1577	VDE 40007240 UL E236324
(Alternative)	Shenzhen Orient Components Co. Ltd.	ORPC817 x	int. dcr=5.2mm, ext. dcr=7.62mm, 110°C	IEC/EN 60747-5-5 UL 1577	VDE 40029733 UL E323844
Electrolytic Capacitor (EC1)	Interchangeable	Interchangeable	10uF, 450V, 105°C	IEC/EN 62368-1	Test with appliance
Electrolytic Capacitor (EC2)	Interchangeable	Interchangeable	47uF, 450V, 105°C	IEC/EN 62368-1	Test with appliance
Rectifier Bridge (BD1)	Interchangeable	Interchangeable	Min. 2A, Min. 600Vac	IEC/EN 62368-1	Test with appliance
Output wire	Interchangeable	Interchangeable	Min. 20AWG, 300V, 105 ºC	UL 758	UL
Thermistor (RT1) (optional)	Interchangeable	Interchangeable	Min2. 5Ω Min.1A	UL 1434	UL
Coil choke (LF1)	DONG GUAN ARK ELECTRONICS CO. , LTD	14.03.0033	Min 20mH, 130°C	IEC/EN 62368-1	Test with appliance
- Base	T375HF	CHANG CHUN PLASTICS CO., LTD	Phenolic, Rated V-0, 150°C	UL 94 UL 746C	UL E59481
- Magnet wire	Guangdong Liziwire Electric Technology Co Ltd	@* UEW 180	180°C	UL 1446	UL E504985
-(Alternative)	WELL ASCENT ELECTRONIC (GANZHOU) CO LTD	XUEWH	180°C	UL 1446	UL E318511
(Alternative)	Interchangeable	Interchangeable	Min 20mH, 130°C	IEC/EN 62368-1	Test with appliance

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Clause	Requirement + Test	Result - Remark	Verdict

Transformer (T1)	XSFT ELECTRONICS CO.,LTD	13.05.0042	Class B	IEC/EN 62368-1	Test with appliance
- Bobbin	SUMITOMO BAKELITE CO LTD	PM9820	Phenolic, Rated V-0, 150 °C,	UL 94 UL 746C	UL E41429
- Magnet wire	HUIZHOU ZHAOXINYUAN ELECTRONICS TECHNOLOGY CO LTD	xUEW	130°C	UL 1446	UL E344738
-(Alternative)	HENG YA ELECTRIC (DONGGUAN) LIMITED	TYTUN-B130	130°C	UL 1446	UL E197768
- Triple insulation wire	FURUKAWA ELECTRIC CO LTD	TEX-E	130°C	IEC/EN 62368-1 UL 2353	VDE 006735 UL E206440
- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD	CT*(c)（g）	130°C	UL 510A	UL E165111
- Varnish	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260 (a)	130°C	UL 1446	UL E228349

Supplementary information:

1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.
2) Description line content is optional. Main line description needs to clearly detail the component used for testing.

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Clause	Requirement + Test	Result - Remark	Verdict

4.8.4, 4.8.5	**TABLE: Lithium coin/button cell batteries mechanical tests**		**N/A**
(The following mechanical tests are conducted in the sequence noted.)			
4.8.4.2	**TABLE: Stress Relief test**		—
Part	**Material**	**Oven Temperature (°C)**	**Comments**
--	--	--	--
4.8.4.3	**TABLE: Battery replacement test**		—
Battery part no..... :			—
Battery Installation/withdrawal		Battery Installation/Removal Cycle	Comments
		1	--
		2	--
		3	--
		4	--
		5	--
		6	--
		8	--
		7	--
		9	--
		10	--
4.8.4.4	**TABLE: Drop test**		—
Impact Area	Drop Distance	Drop No.	Observations
--	--	--	--
4.8.4.5	**TABLE: Impact**		—
Impacts per surface	**Surface tested**	**Impact energy (Nm)**	**Comments**
--	--	--	--
4.8.4.6	**TABLE: Crush test**		—
Test position	**Surface tested**	**Crushing Force (N)**	**Duration force applied (s)**
--	--	--	--
Supplementary information:			

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

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

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	264V60Hz	All internal circuits and components	Normal:	--	--	--	ES3 (declared)
			Abnormal:	--	--	--	
			Single fault – SC/OC:	--	--	--	
2	264V60Hz	Between any one of signal terminals and earth	Normal	--	0.196mApeak	60	ES1[#]
			Abnormal: overload	--	0.196mApeak	60	
			Single fault – SC/OC: BD1 pin ”AC”-“V+”	--	0.264mApeak	60	
3	264V60Hz	Between metallic enclosure and earth	Normal	--	0.368mApeak	60	ES1[#]
			Abnormal: overload	--	0.368mApeak	60	
			Single fault – SC/OC: BD1 pin ”AC”-“V+”	--	0.424mApeak	60	

Supplementary information:
(#): Refer to Table Annex B.3 & B.4 for details of others abnormal and single faults.
SC=Short Circuit, OC=Open Circuit

5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
1	264Vac	L-N	Normal	CX1 with maximum 20% tolerance (330) x1.2=396nF	374	ES3(declared)
			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	--	--	--	

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Clause	Requirement + Test	Result - Remark	Verdict

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

Test Conditions:

Normal –

Abnormal -

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

Note: Evaluated in approved Switching power supply.

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements**					**P**
	Supply voltage (V) ..... :	*90V50Hz*	*264V50Hz*	--	--	—
	Ambient T_{min} (°C) ..... :	24.0	23.6	--	--	—
	Ambient T_{max} (°C) ..... :	24.3	23.8	--	--	—
	Tma (°C) ..... :	55.0	55.0	--	--	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
AC inlet		61.0	60.8	--	--	70
Input wire		62.7	62.4	--	--	80
Earth wire		61.4	61.2	--	--	80
PCB near BD1		70.9	68.3	--	--	130
CY4 body		56.0	55.7	--	--	125
CY3 body		64.2	63.3	--	--	125
MOV1 body		63.8	63.4	--	--	85
PCB near RT1		66.7	64.8	--	--	130
PCB near U1		71.2	78.2	--	--	130
CX1 body		65.3	64.9	--	--	110
LF1 winding		67.0	66.2	--	--	130

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Clause	Requirement + Test	Result - Remark	Verdict

EC2 body	69.2	68.7	--	--	105
CY1 body	70.7	69.8	--	--	125
CY2 body	68.6	68.0	--	--	125
T1 winding	74.3	73.9	--	--	110
T1 core	73.8	73.4	--	--	110
U3 body	66.3	65.9	--	--	110
PCB near U4	71.5	71.1	--	--	130
EC6 body	67.6	67.3	--	--	105
LF2 winding	66.6	66.1	--	--	130
Output wire	66.5	66.0	--	--	80
Connector CN1	75.2	74.9	--	--	85
PCB near D1	78.1	77.6	--	--	130
CE2 body	73.2	72.7	--	--	105
PCB near IC51	86.0	85.5	--	--	130
PCB near IC10	82.6	82.1	--	--	130
Fan winding	65.3	64.8	--	--	80
Ambient	55.0	55.0	--	--	--
Switch	29.0 (Tma=25° C)	28.5 (Tma=25° C)	--	--	77
Metal enclosure	30.7 (Tma=25° C)	30.4 (Tma=25° C)	--	--	60

Supplementary information:

Note 1: Tma should be considered as directed by appliable requirement

Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

Note 3: Heating test was conducted in 23.6-24.0°C ambient, all points except external enclosure was adjusted to 55°C Tma, the points of external enclosure was adjusted to 25°C ambient.

Condition: Normal working

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:

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

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)
AC inlet	Shenzhen Kangyongda Electronics Co.,Ltd.	125	1.01
Primary wire Connector	Yueqing Changshun Electronics Co., Ltd.	125	1.21
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)
For whole product							
Primary part of powerboard to Earth conductor/ internal metal enclosure (BI)	<420	<250	0.06	2.3	8.0	2.8	8.0
Between L/N pin and earthing pin(AC inlet) (BI)	<420	<250	0.06	2.3	3.0	2.5	3.0
For power supply							
L and N before fuse F1 (FI)	<420	<250	0.06	2.3	3.3	2.5	3.3
F1 two terminals (BI)	<420	<250	0.06	2.3	2.6	2.5	2.6
Between primary trace and secondary trace under CY1 (BI)	<420	<250	0.06	2.3	3.6	2.5	3.6
Between primary trace and secondary trace under CY2 (SI)	<420	<250	0.06	2.3	3.6	2.5	3.6
Between primary trace and secondary trace under U3 (RI)	<420	<250	0.06	4.5	6.8	5.6	6.8
Primary circuits and secondary circuits under T1 (RI)	516	280	60.2	4.5	7.2	5.6	7.2
T1 primary winding and secondary pin (RI)	516	280	60.2	4.5	8.3	5.6	8.3
T1 core and secondary pin	516	280	60.2	4.5	5.9	5.6	5.9

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Clause	Requirement + Test	Result - Remark	Verdict

Between primary T1 core and CY2 secondary pin (RI)	516	280	60.2	4.5	8.8	5.6	8.8
Between primary T1 winding and secondary component (EC6) (RI)	516	280	60.2	4.5	11.4	5.6	11.4
Primary circuits and earthed metal enclosure (BI)	<420	<250	0.06	2.3	5.0	2.5	5.0

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: BI: basic insulation; SI: supplementary insulation; DI: double insulation; RI: reinforced insulation. FI: functional insulation

Sec.: secondary; Pri.: primary.

Note 4: Internal power board has been approved separately.

Note 5:This equipment is intended to be operated under altitude up to 5,000m, so the clearance is multiplied by the altitude correction factors(1.48, linear interpolation used), specified in table 17 of Clause 5.4.2.5.

Note 6: The required minimum clearence corresponding to Required Withstand Voltage is:1.5x1.48=2.3mm (for BI) /3.0x1.48=4.5mm(for RI);
The required minimum clearence corresponding to Using Peak Working Voltage is:
1.27x1.48=1.9mm(for BI) /2.54x1.48=3.8mm (for RI)
So the higher value of above-mentioned is listed within this column.

5.4.2.3	**TABLE: Minimum Clearances distances using required withstand voltage**			**P**
	Overvoltage Category (OV):			II
	Pollution Degree:			2
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)
See above table 5.4.2.2, 5.4.2.4 and 5.4.3		2500Vpeak	2.3(1.5*1.48) for BI, FI 4.5(3.0*1.48) for RI	See above table 5.4.2.2, 5.4.2.4 and 5.4.3

Supplementary information:

BI: basic insulation; SI: supplementary insulation; DI: double insulation; RI: reinforced insulation. FI: functional insulation

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

Supplementary information: Not used the alternative method to determine the clearances.

5.4.4.2, 5.4.4.5 c)	**TABLE: Distance through insulation measurements**	**P**

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

5.4.4.9					
Distance through insulation di at/of:	Peak voltage (V)	Frequency (Hz)	Material	Required DTI (mm)	DTI (mm)
Primary wires	420	60	See appended table 4.1.2	0.4	>0.4mm thickness
Insulation sheet	516	60.2k	See appended table 4.1.2	0.4	>0.4mm thickness
Optocoupler (U3)	420	60	See appended table 4.1.2	Min. 0.4	See appended table 4.1.2
Supplementary information: --					

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 (removed the fuse)	DC	2500	No
Basic/~~supplementary~~:			
Input to metal enclosure	DC	2500	No
Insulation sheet	DC	2500	No
Reinforced:			
Input to signal ports	DC	4000	No
Primary circuits and secondary circuits	DC	4000	No
Transformer T1 primary winding and secondary winding	DC	4000	No
Transformer T1 primary core and secondary winding	DC	4000	No
Routine Tests:			
--	--	--	--
Supplementary information: Test after humidity treatment, heating test, and for the first 2 items (Reinforced) also after each fault condition test. The core is regarded as primary circuit/component.			

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

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

264V, 60Hz	Phase to Neutral	N	On	4Vpeak	ES1
264V, 60Hz	Phase to Neutral	N	Off	32Vpeak	ES1
264V, 60Hz	Phase to Neutral	S (R1 open)	On	8Vpeak	ES1
264V, 60Hz	Phase to Neutral	S (R1 open)	Off	40Vpeak	ES1

Supplementary information:

X-capacitors installed for testing are: CX1 with maximum 20% tolerance, 330x1.2=396nF

☒ bleeding resistor rating: (R1+R2)//(R27+R28) = (2.0+2.0)// (2.0+2.0) =2.0MΩ

☐ 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.

Note: Evaluated in approved power supply board.

5.6.6.2	**TABLE: Resistance of protective conductors and terminations**			**P**
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
From protective earth pin of AC inlet to farthest metal enclosure	32	2	--	0.016
Supplementary information:				

5.7.2.2, 5.7.4	**TABLE: Earthed accessible conductive part**	**P**
Supply voltage ..... :	264V60Hz	—
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)
Between any metal accessible and earth	1	Power Switch on: N: 0.368mApk R: 0.368mApk Power Switch off: N: 0.01mApk R: 0.01mApk
	2*	N/A
	3	N/A
	4	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	5	N/A
	6	N/A
	8	N/A

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.

N: Normal condition, R: Reverse condition.

Fault conditions No. 2 -8 are not applicable for these products.

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
All internal circuits except for signal ports	Normal condition & fault condition	Power (W) :	--	--	PS3(declared)
		V_A (V) :	--	--	
		I_A (A) :	--	--	
Signal ports#	Normal condition & fault condition	Power (W) :	Max. 0.15	--	PS1
		V_A (V) :	Max. 1.80	--	
		I_A (A) :	Max. 0.08	--	

Supplementary Information:

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

SC: short circuit, OL: overload, OC: open circuit.

#: All signal ports considered.

6.2.3.1	**Table: Determination of Potential Ignition Sources (Arcing PIS)**			**P**
Location	Open circuit voltage After 3 s (Vp)	Measured r.m.s current (Irms)	Calculated value (V_p x I_{rms})	Arcing PIS? Yes / No
All internal circuits except for signal ports	--	--	--	Yes (declared)

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.

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

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

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.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
90V50Hz	0.211	--	9.8	--	F1, F2	0.211	Normal operation continuously
90V60Hz	0.213	--	9.8	--	F1, F2	0.213	
100V50Hz	0.180	1.0	9.0	--	F1, F2	0.180	
100V60Hz	0.183	1.0	9.1	--	F1, F2	0.183	
240V50Hz	0.104	1.0	10.1	--	F1, F2	0.104	
240V60Hz	0.106	1.0	10.2	--	F1, F2	0.106	

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Clause	Requirement + Test	Result - Remark	Verdict

264V50Hz	0.100	--	9.8	--	F1, F2	0.100
264V60Hz	0.101	--	9.9	--	F1, F2	0.101

Supplementary information:

B.3	**TABLE: Abnormal operating condition tests**								**P**
Ambient temperature (°C) :						See below table			—
Power source for EUT: Manufacturer, model/type, output rating :						--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)		Observation
Whole EUT	Blocked ventilation openings	264V, 60Hz	1h38min	F1, F2	0.101	--	T1 winding	80.4 (Tma= 55°C)	Ambient: 24.3°C Max. touch current: 0.368mApeak (ES1) NB / NT / NC / NF / NH
							T1 core	78.3 (Tma= 55°C)	
							Switch	32.0 (Tma= 25°C)	
							Metal enclosure	33.7 (Tma= 25°C)	
DC Fan	Blocked	264V, 60Hz	1h42min	F1, F2	0.093	--	T1 winding	84.0 (Tma= 55°C)	Ambient: 24.0°C Max. touch current: 0.368mApeak (ES1) NB / NT / NC / NF / NH
							T1 core	83.2 (Tma= 55°C)	
							Switch	32.6 (Tma= 25°C)	
							Metal enclosure	34.4 (Tma= 25°C)	

Supplementary information:

1) Note for abbreviation:

SC: short circuit, OL: overload, OC: open circuit; BV: blocked ventilation opening.

SD - EUT shut down by protection; CT - Constant temperatures were obtained;

CD - Components damaged; NB - No indication of dielectric breakdown;

NH - No hazard; YC – Cheesecloth charred or flamed; DB – Dielectric breakdown:

NT – Tissue paper remained intact; NC – Cheesecloth remained intact:

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Clause	Requirement + Test	Result - Remark	Verdict

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) :						See below table		—
Power source for EUT: Manufacturer, model/type, output rating :						--		—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
YT – Tissue paper charred or flamed; NF- no flame or flame extinguished in 10s. 2) The Hi-pot test conducted successfully after the completion of fault condition test.								

B.4	TABLE: Fault condition tests							P
Ambient temperature (°C) .....:						See below table		—
Power source for EUT: Manufacturer, model/type, output rating .:						--		—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
BD1 pin 1-3	SC	264V, 60Hz	<1s	F1, F2	0	--	--	Ambient: 24.0°C Max. touch current: 0.424mApeak (ES1) F2 opened immediately, NB / NT / NC / NF / NH
EC1	SC	264V, 60Hz	<1s	F1, F2	0	--	--	Ambient: 24.0°C Max. touch current: 0.424mApeak (ES1) F2 opened immediately, NB / NT / NC / NF / NH
T1 pin 1-3	SC	264V, 60Hz	10min	F1, F2	0.018	--	--	Ambient: 24.0°C Max. touch current: 0.368mApeak (ES1) SD / NB / NT / NC / NF / NH
T1 pin 2-6	SC	264V, 60Hz	10min	F1, F2	0.018	--	--	Ambient: 24.0°C Max. touch current: 0.368mApeak (ES1) SD / NB / NT / NC / NF / NH

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Clause	Requirement + Test	Result - Remark	Verdict

T1 pin 7/8-9/10	SC	264V, 60Hz	10min	F1, F2	0.018	--	--	Ambient: 24.0°C Max. touch current: 0.368mApeak (ES1) SD / NB / NT / NC / NF / NH
U3 pin 1-2	SC	264V, 60Hz	10min	F1, F2	0.018	--	--	Ambient: 24.0°C Max. touch current: 0.368mApeak (ES1) SD / NB / NT / NC / NF / NH
U3 pin 3-4	SC	264V, 60Hz	10min	F1, F2	0.018	--	--	Ambient: 24.0°C Max. touch current: 0.368mApeak (ES1) SD / NB / NT / NC / NF / NH
U3 pin 1	OC	264V, 60Hz	10min	F1, F2	0.018	--	--	Ambient: 24.0°C Max. touch current: 0.368mApeak (ES1) SD / NB / NT / NC / NF / NH
U3 pin 3	OC	264V, 60Hz	10min	F1, F2	0.018	--	--	Ambient: 24.0°C Max. touch current: 0.368mApeak (ES1) SD / NB / NT / NC / NF / NH

Supplementary information:

1) Note for abbreviation:

SC: short circuit, OL: overload, OC: open circuit; BV: blocked ventilation opening.

SD - EUT shut down by protection; CT - Constant temperatures were obtained;

CD - Components damaged; NB - No indication of dielectric breakdown;

NH - No hazard; YC – Cheesecloth charred or flamed; DB – Dielectric breakdown:

NT – Tissue paper remained intact; NC – Cheesecloth remained intact:

YT – Tissue paper charred or flamed; NF- no flame or flame extinguished in 10s.

2) The Hi-pot test conducted successfully after the completion of fault condition test.

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Clause	Requirement + Test	Result - Remark	Verdict

Annex M	**TABLE: Batteries**									**N/A**
The tests of Annex M are applicable only when appropriate battery data is not available										--
Is it possible to install the battery in a reverse polarity position?..... :						--				--
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition	--	--	--	--	--	--	--	--	--	
Max. current during fault condition	--	--	--	--	--	--	--	--	--	
Test results:							--			Verdict
- Chemical leaks							--			--
- Explosion of the battery							--			--
- Emission of flame or expulsion of molten metal							--			--
- Electric strength tests of equipment after completion of tests							--			--
Supplementary information:										

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

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

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

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

T.2, T.3, T.4, T.5	**TABLE: Steady force test**				**P**
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Internal wires and components	--	--	10	5	Clearance and creepage distance still complied with the requirement of this standard
Rear	Metal	0.43mm thickness	250	5	No cracking, all safeguards remain effective.
Top	Metal	0.43mm thickness	250	5	No cracking, all safeguards remain effective.
Side	Metal	0.43mm thickness	250	5	No cracking, all safeguards remain effective.
Supplementary information:					

T.6, T.9	**TABLE: Impact tests**			**P**
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation
Rear	Metal	0.43mm thickness	1300	No damage
Top	Metal	0.43mm thickness	1300	No damage
Side	Metal	0.43mm thickness	1300	No damage
Supplementary information:				

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

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

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

T.8	**TABLE: Stress relief test**				**N/A**
--	--	--	--	--	--
Supplementary information:					

Attachment No. 1
EU Group Differences

IEC62368_1D - 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_1D_II

Attachment Originator..... : Nemko AS

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

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

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.		N/A
1	**Add** the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.		N/A

4.Z1	**Add** the following new subclause after 4.9: To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. **mains**, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for **pluggable equipment type B** or **permanently connected equipment**, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for **pluggable equipment type A** the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.	Comply with a),b)	P
5.4.2.3.2.4	**Add** the following to the end of this subclause: The requirement for interconnection with **external circuit** is in addition given in EN 50491-3:2009.		N/A
10.2.1	Add the following to [c] and [d] in table 39: For additional requirements, see 10.5.1.		N/A

10.5.1	**Add** the following after the first paragraph: *For RS 1 compliance is checked by measurement under the following conditions:* *In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.* NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. *The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus.* *Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.* *For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.* NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.		N/A
10.6.1	**Add** the following paragraph to the end of the subclause: EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		N/A
10.Z1	**Add** the following new subclause after 10.6.5. **10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz** The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566		N/A
G.7.1	**Add** the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		N/A

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

5.2.2.2	**Denmark** After the 2nd paragraph add the following: A warning (marking **safeguard**) for high **touch current** is required if the **touch current** exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A
5.4.11.1 and Annex G	**Finland and Sweden** To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: • the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; • the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		N/A
5.5.2.1	**Norway** After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		P

5.5.6	**Finland, Norway** and **Sweden** To the end of the subclause the following is added: Resistors used as **basic safeguard** or bridging **basic insulation** in **class I pluggable equipment type A** shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	**Denmark** **Add** to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. *Justification:* In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.	Shall be evaluated when national approvals	N/A
5.6.4.2.1	**Ireland and United Kingdom** After the indent for **pluggable equipment type A**, the following is added: – the **protective current rating** is taken to be 13 A, this being the largest rating of fuse used in the **mains** plug.	Shall be evaluated when national approvals	N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm^2 to 1,5 mm^2 in cross-sectional area.		N/A
5.7.5	**Denmark** To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the **protective conductor current** exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A

5.7.6.1	**Norway and Sweden** To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.” Translation to Swedish: ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.		N/A
5.7.6.2	**Denmark** To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .		N/A

B.3.1 and B.4	**Ireland and United Kingdom** The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of **direct plug-in equipment**, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the **direct plug-in equipment**, until the requirements of Annexes B.3.1 and B.4 are met		N/A
G.4.2	**Denmark** To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a *Justification:* Heavy Current Regulations, Section 6c	Shall be evaluated when national approvals.	N/A
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.	Shall be evaluated when national approvals.	N/A
G.7.1	**Ireland** To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	**Ireland and United Kingdom** To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm^2 is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A
ZC	**ANNEX ZC, NATIONAL DEVIATIONS (EN)**		N/A
10.5.2	**Germany** The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. *Justification:* German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. **NOTE** Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int +49-531-592-6320, Internet: http://www.ptb.de		N/A

Photo documentation

Details of: Over view

Details of: Overview

Photo documentation

Details of: Overview

Details of: Internal view

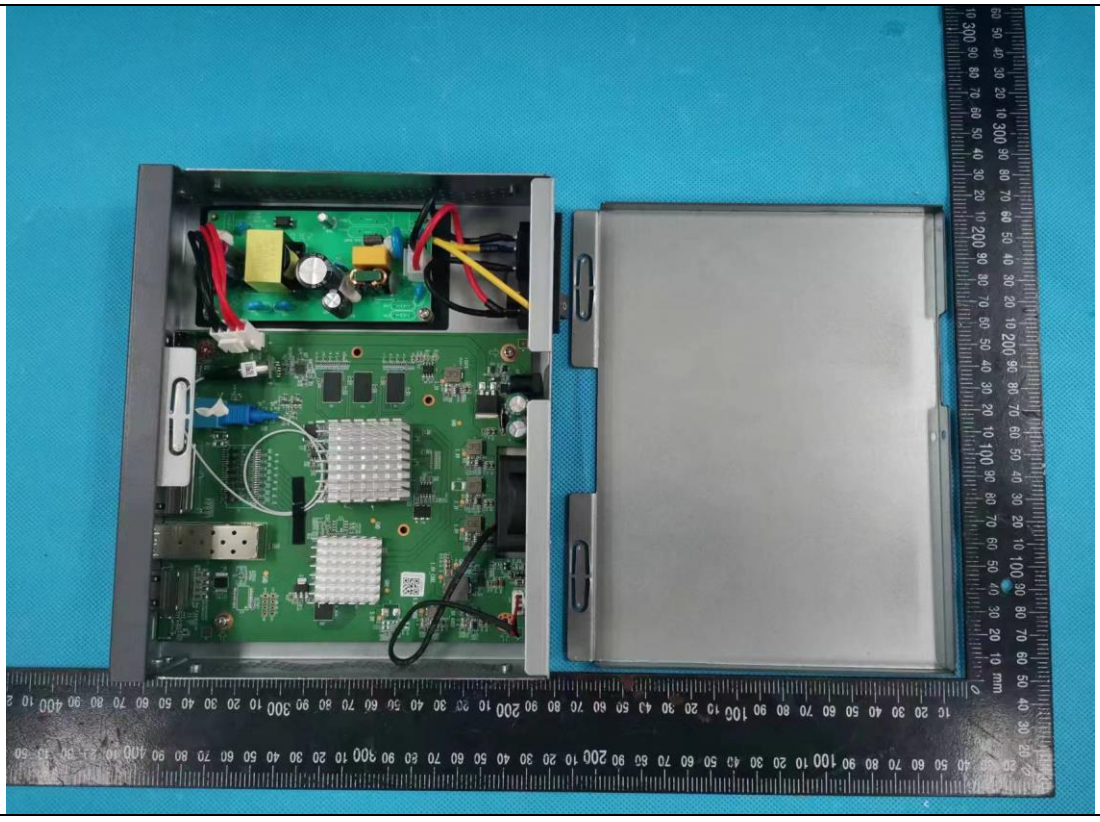
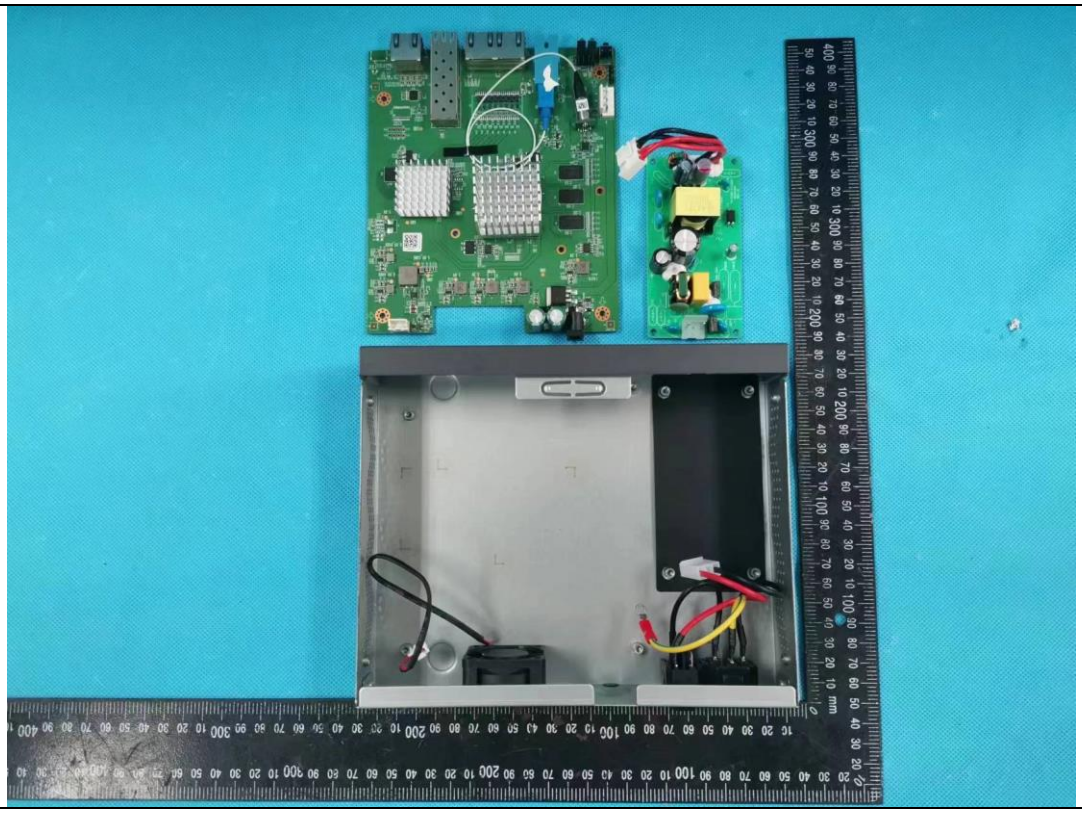


Photo documentation

Details of: Internal view



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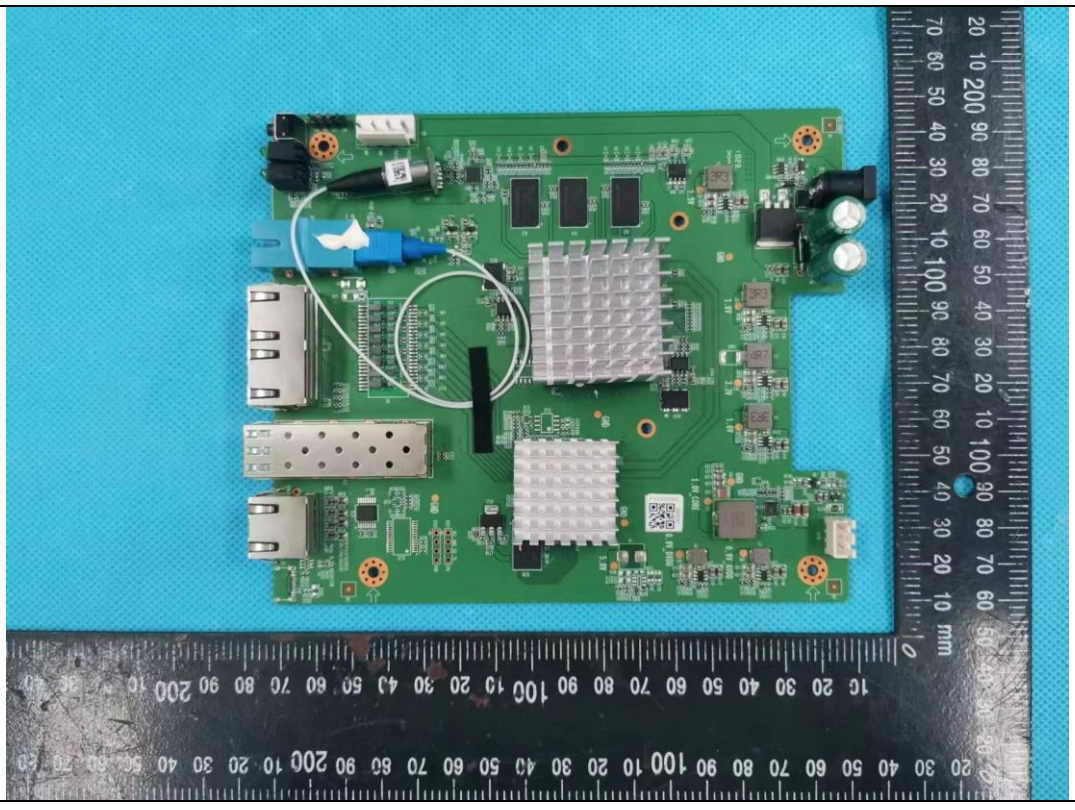
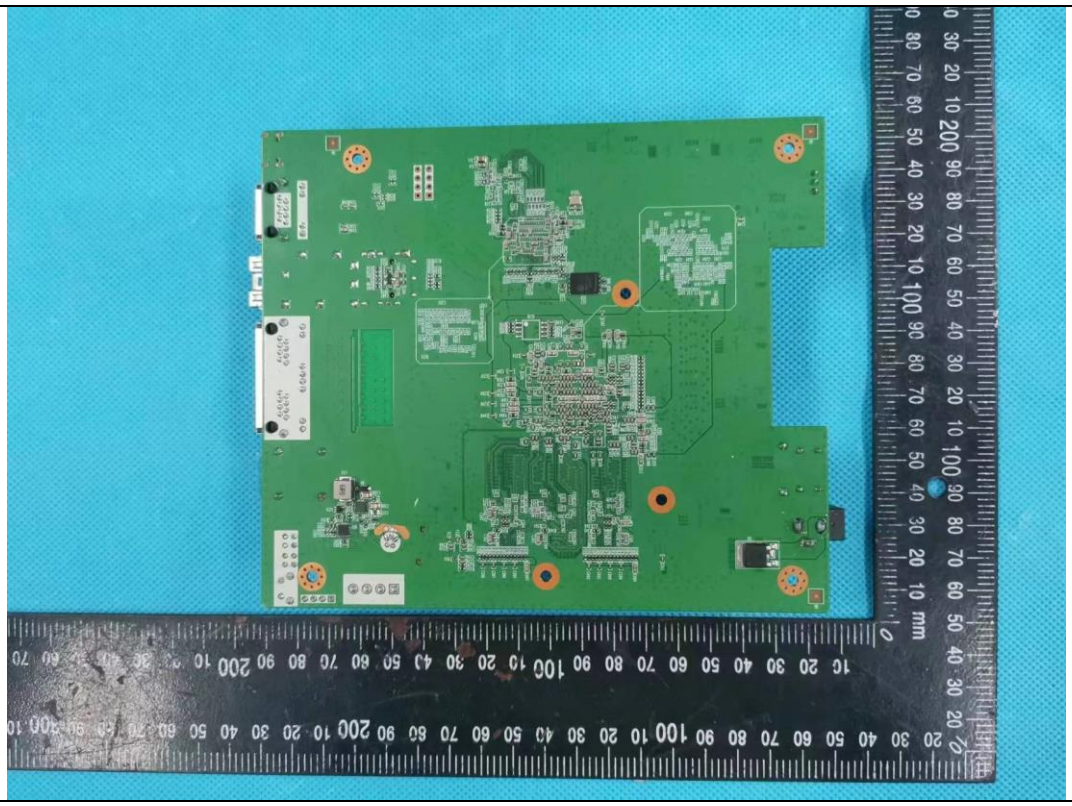


Photo documentation

Details of: Control PCB view



Details of: Overview for power supply

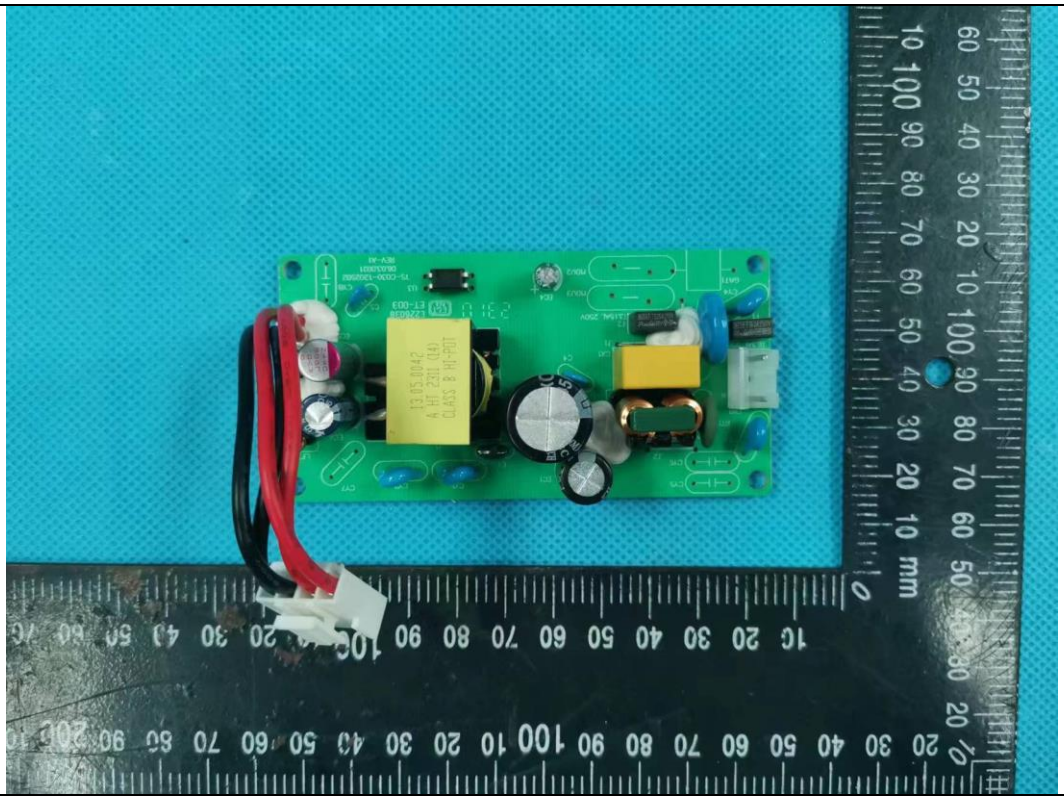


Photo documentation

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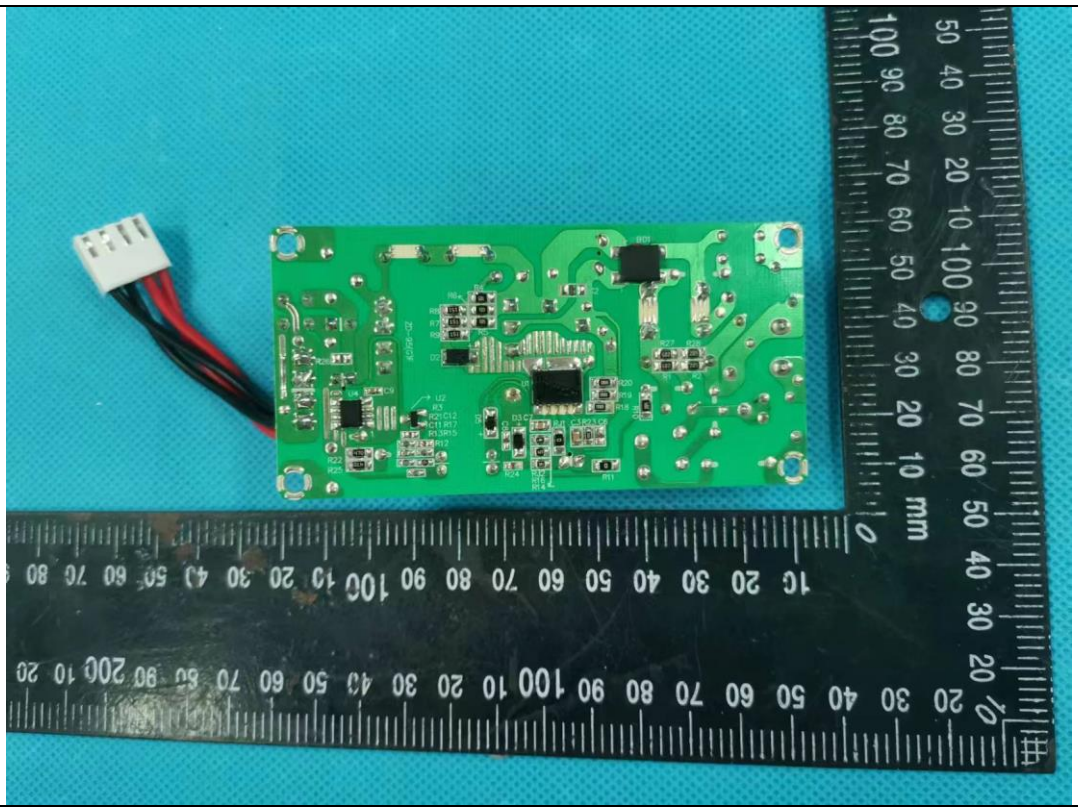

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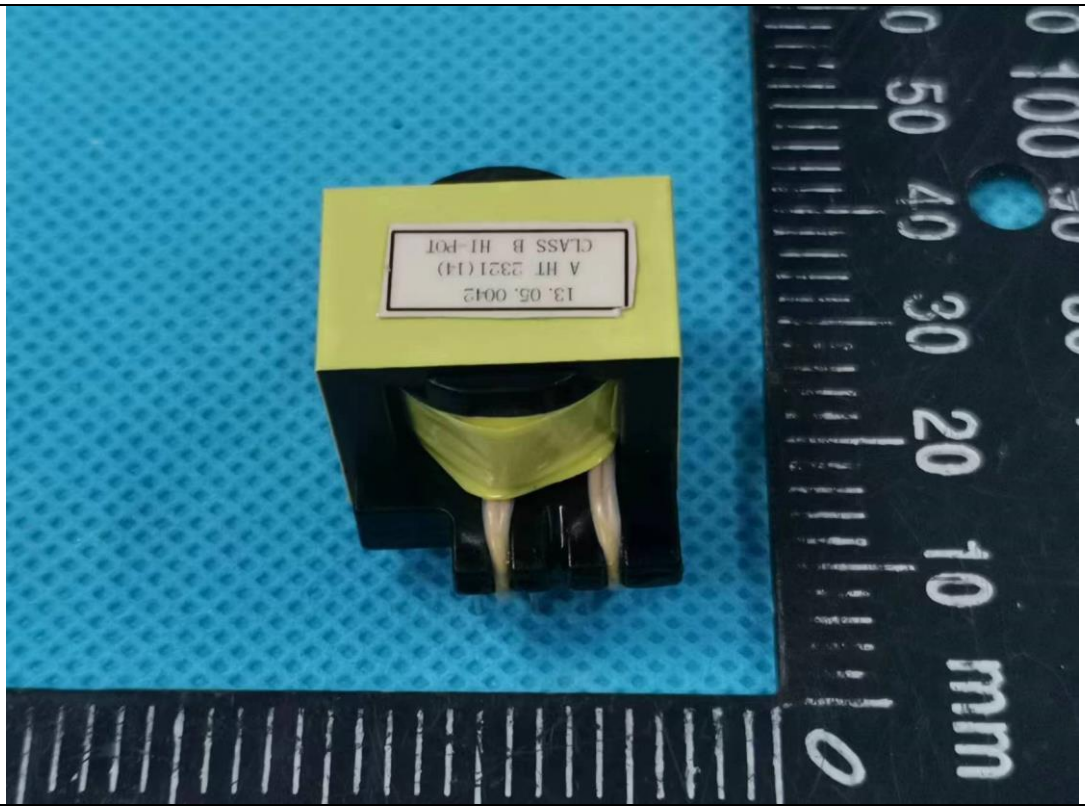
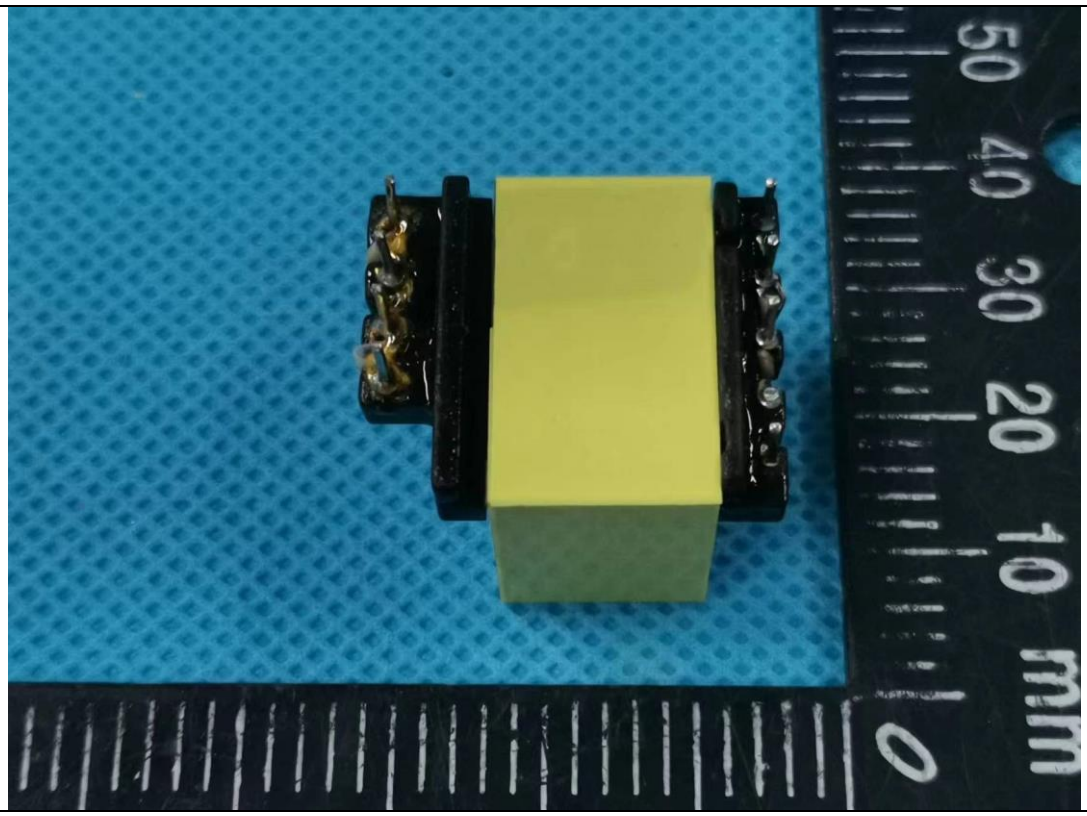


Photo documentation

Details of: Overview for Transformer T1



Details of: Internal view for Transformer T1

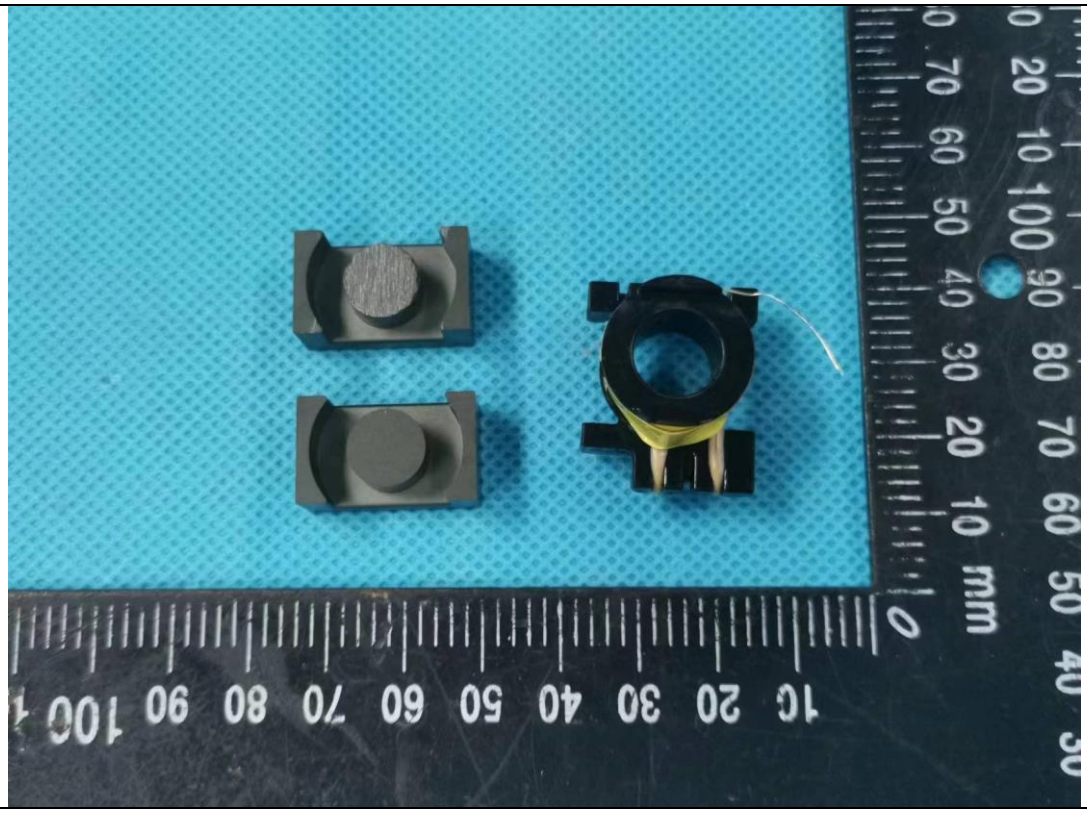
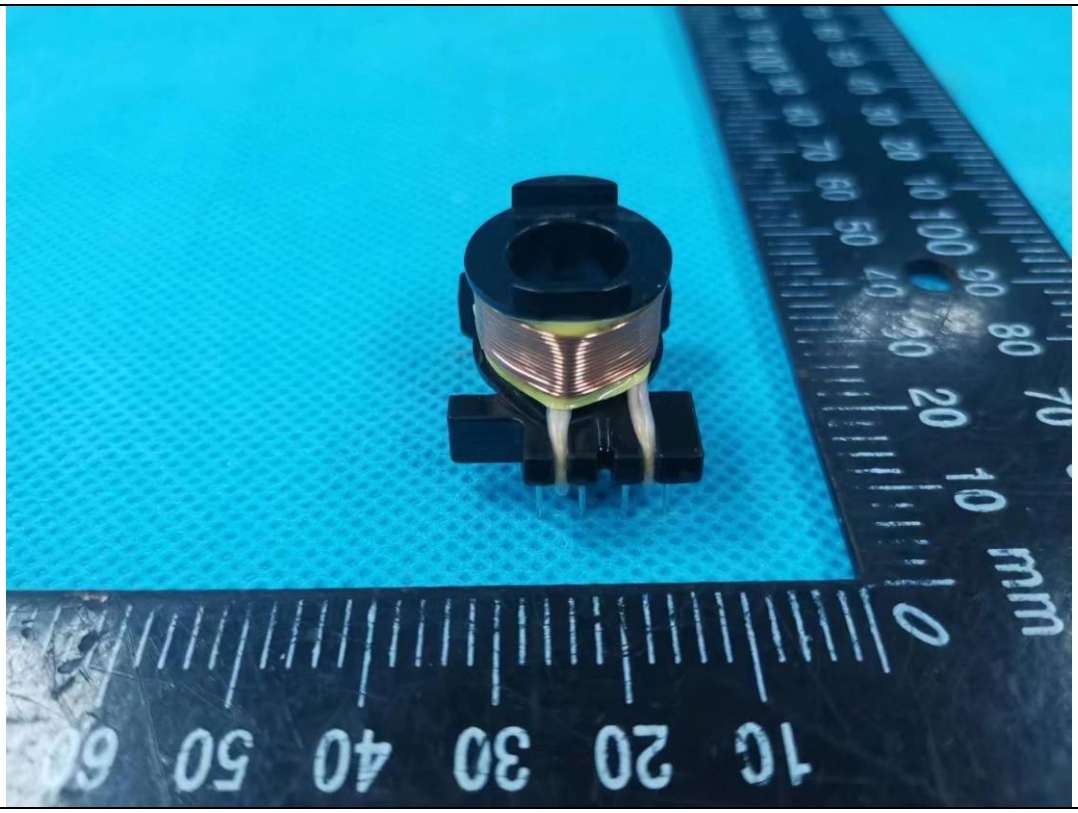


Photo documentation

Details of: Secondary view for N5 winding of T1



Details of: Primary view for N5 winding of T1

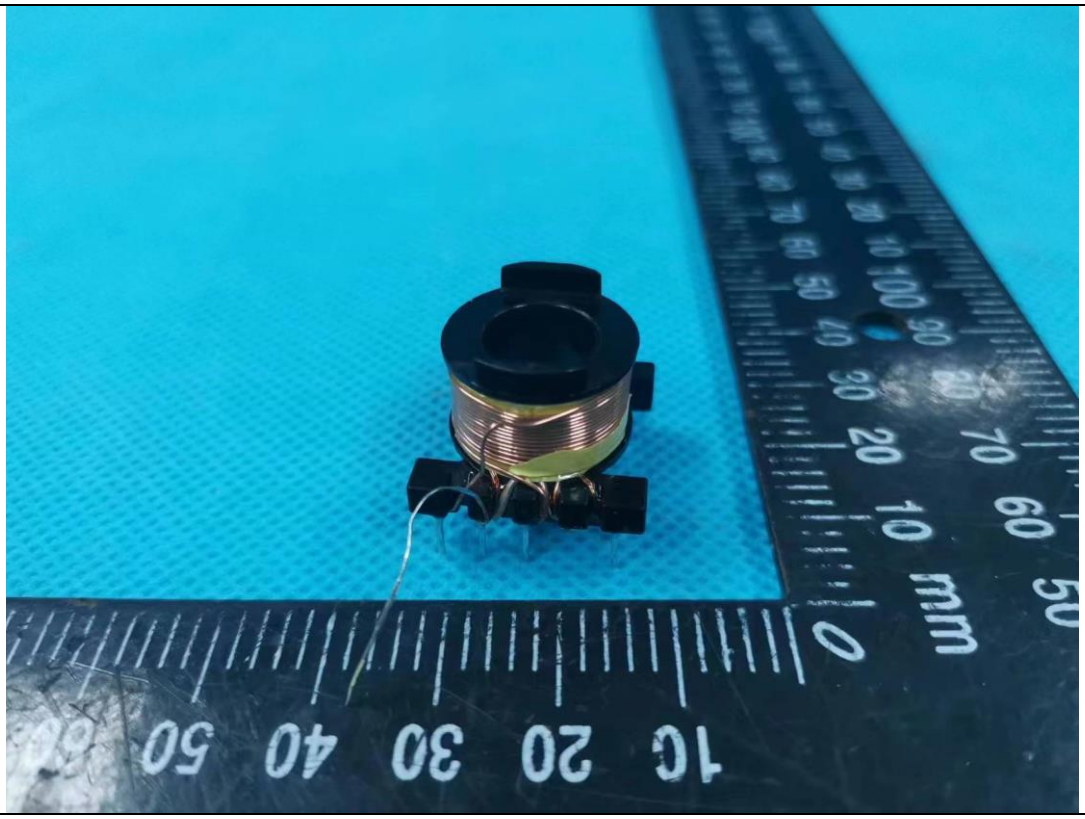
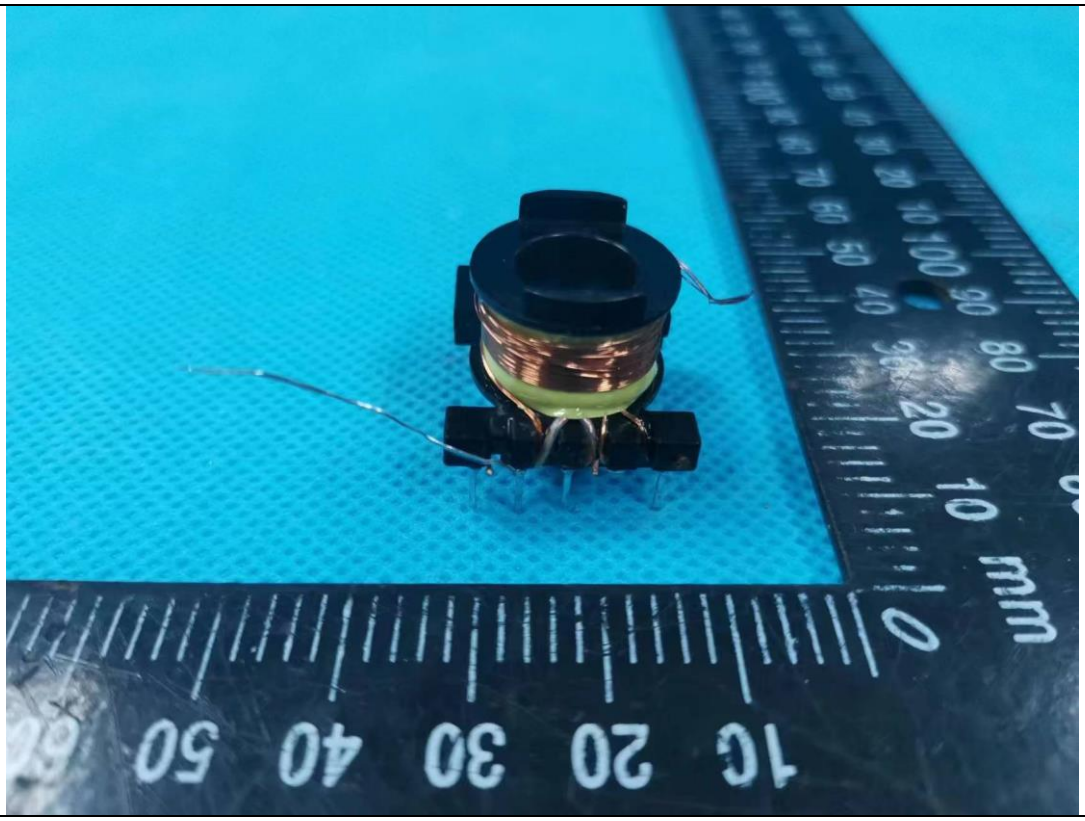


Photo documentation

Details of: N4 winding of T1



Details of: Secondary view for N3 winding of T1

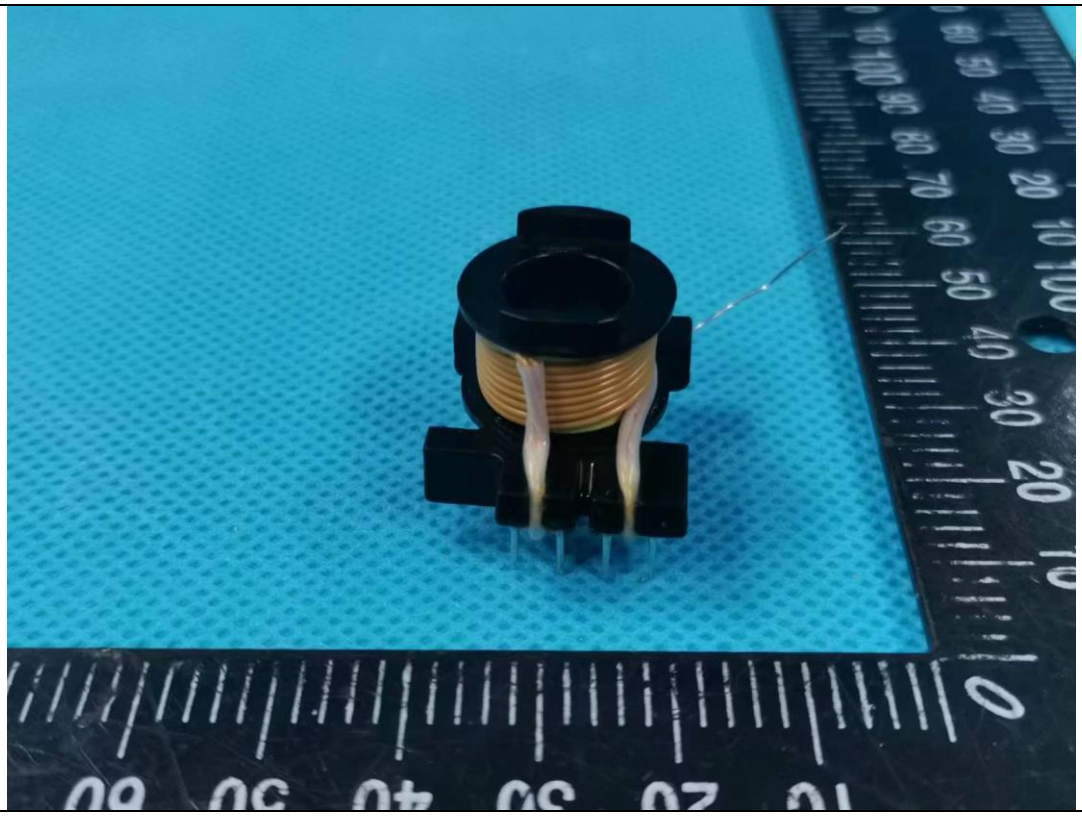
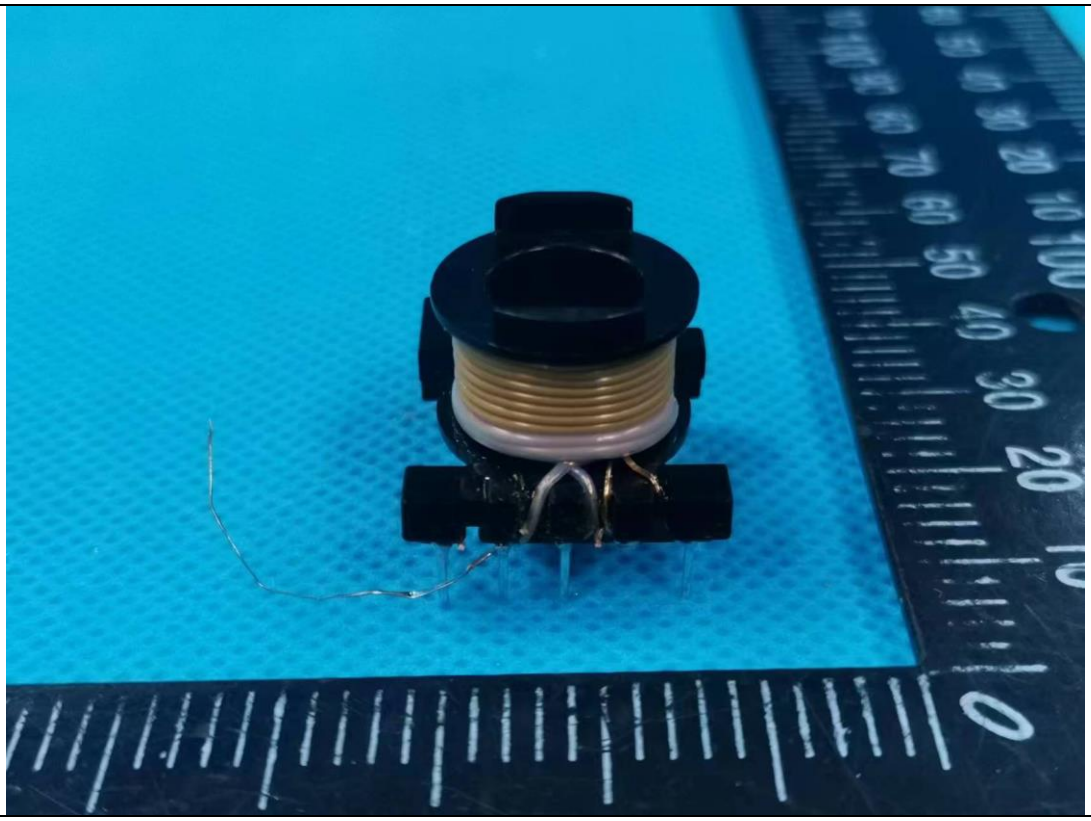


Photo documentation

Details of: Primary view for N3 winding of T1



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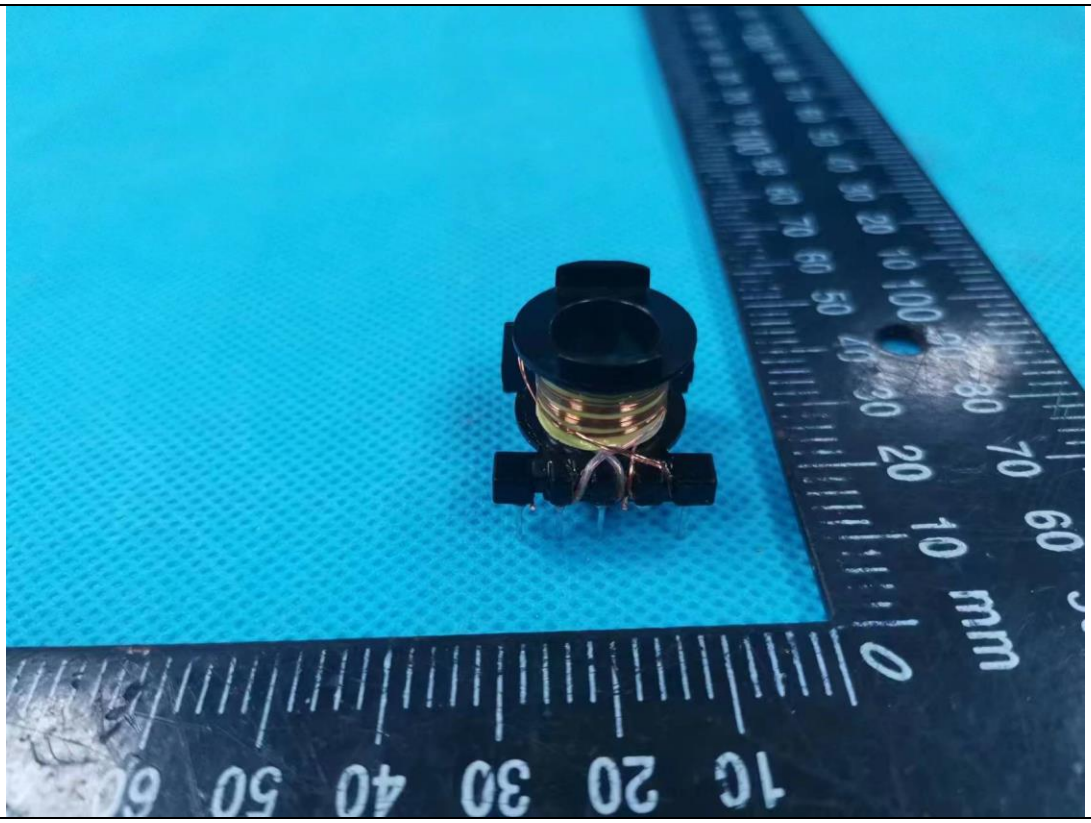
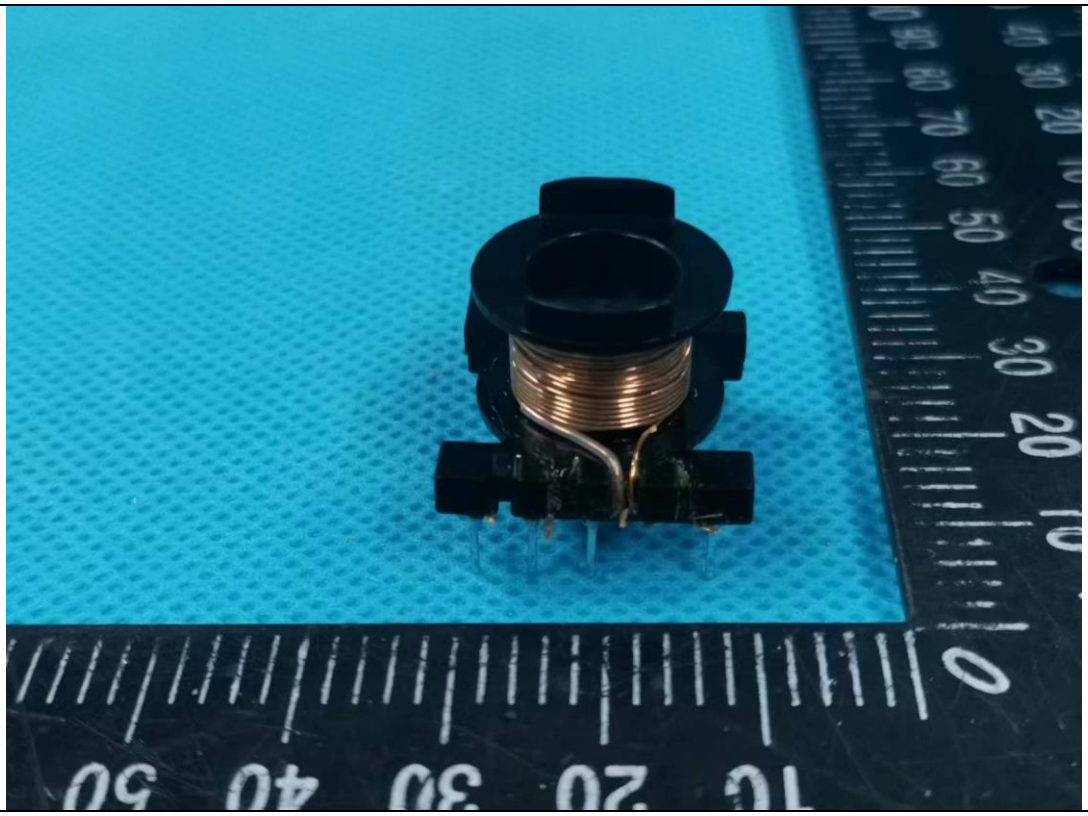


Photo documentation

Details of: N1 winding of T1



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