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

Report Number ..... :	180301431SHA-001
Date of issue ..... :	2018-09-18
Total number of pages ..... :	92
Applicant's name ..... :	GlobTek, Inc.
Address ..... :	186 VETERANS DRIVE NORTHVALE NJ 07647 USA
Test specification:	
Standard ..... :	IEC 62368-1:2014 (Second Edition)
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC62368_1B
Test Report Form(s) Originator ..... :	UL(US)
Master TRF ..... :	2014-03

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

General disclaimer:

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

Test Item description ..... :	ITE POWER SUPPLY	
Trade Mark ..... :	GlobTek® ,Inc. www.globtek.com (GlobTek)	
Manufacturer..... :	Same as applicant	
Model/Type reference ..... :	GT*86100-**-W2** (Details refer page 6)	
Ratings ..... :	Input : 100-240V~,50-60Hz,0.3A Output: 5-5.2VDC, Max.2A, Max 10W	
Testing procedure and testing location:		
☒ CB Testing Laboratory:	Intertek Testing Services Shanghai	
Testing location/ address .....:	Building No. 86, 1198 Qinzhou Road (North) 200233 Shanghai CHINA	
☐ Associated CB Testing Laboratory:		
Testing location/ address .....:		
Tested by (name + signature) .....:	Frank Zhu (Engineer)	Frank Zhu
Approved by (name + signature).....:	Jacky Shu (Mandated Reviewer)	Jacky Shu
☐ Testing procedure: TMP/CTF Stage 1		
Testing location/ address ..... :		
Tested by (name + signature) .....:		
Approved by (name + signature).....:		
☐ Testing procedure: WMT/CTF Stage 2		
Testing location/ address .....:		
Tested by (name + signature) .....:		
Witnessed by (name + signature).....:		
Approved by (name + signature).....:		
☐ Testing procedure: SMT/CTF Stage 3 or 4		
Testing location/ address .....:		
Tested by (name + signature) .....:		
Approved by (name + signature).....:		
Supervised by (name + signature) .....:		

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

Page 58 – 67: Group- and national differences for the CENELEC countries
Page 68 – 78: National differences for Australia/New Zealand
Page 79 – 92: Appendix I Photograph of the Equipment under test (EUT)
Appendix II: EN 50075 test report: 180501603SHA-001(total 9 pages)
Appendix III: AS/NZS 3112 test report: 180301431SHA-001(total 41 pages)

Summary of testing:

All tests are performed and the most disadvantageous results are recorded. We conclude that the appliances comply with this standard.

Tests performed (name of test and test clause):	**Testing location:**
The equipment under test (EUT) fulfilled the test requirement according to the standard IEC 62368-1:2014 / EN 62368-1:2014+A11:2017.	Building No.86, 1198 Qinzhou Road (North), 200233 Shanghai, China

Summary of compliance with National Differences:

List of countries addressed:

Group- and national differences for the CENELEC countries.

National differences for Australia and New Zealand have been checked.

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

Copy of marking plate:

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

Note: The above markings are the minimum requirements required by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.

Other models are with similar label as corresponding above models except different model name and output ratings.

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 ..... :	16A (20A for Noth America) Installation location: ☐ building; ☒ equipment
Equipment mobility ..... :	☐ movable ☐ hand-held ☐ transportable ☐ stationary ☐ for building-in ☒ direct plug-in ☐ rack-mounting ☐ wall-mounted
Over voltage category (OVC) ..... :	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other:
Class of equipment ..... :	☐ Class I ☒ Class II ☐ Class III
Access location ..... :	☐ restricted access location ☒ N/A
Pollution degree (PD) ..... :	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maxium operating ambient :	40°C
IP protection class ..... :	☒ IPX0 ☐ IP___
Power Systems ..... :	☒ TN ☒ TT ☐ IT - ____ V $_{L-L}$
Altitude during operation (m) ..... :	☐ 2000 m or less ☒ 5000 m
Altitude of test laboratory (m) ..... :	☐ 2000 m or less ☒ 50 m
Mass of equipment (kg) ..... :	☒ Approx. 0.046kg
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 ..... :	2017-10-30
Date (s) of performance of tests ..... :	2017-10-30 to 2018-03-01, 2018-03-16 to 2018-06-22

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.

Determination of the test result includes consideration of measurement uncertainty from the test equipment and methods.

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The samples submitted from for evaluation are representative of the products from each factory.

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

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

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

Name and address of factory (ies) ..... :	1.GlobTek, Inc. 186 VETERANS DRIVE NORTHVALE NJ 07647 USA 2.GlobTek (Suzhou) Co., Ltd Building 4, No. 76 JinLing East Road, Suzhou Industrial Park, Suzhou, JiangSu, 215021, China

GENERAL PRODUCT INFORMATION:

Product Description –

Product covered by this report is ITE power supply module. GT*86100-**-W2** series for Limited Power Source (LPS) application.

Direct plug-in power supplies are provided with suitable external enclosure. The external enclosure and plug holder parts of the enclosure are ultrasonic welded.

The power supplies are rated class II equipment.

GT*86100-**-W2**:
The 1st "*" part can be 'M' or '-' or 'H' for market identification and not related to safety.
The 2nd"*" denotes the rated output wattage designation, which can be "01" to "10", with interval of 1.
The 3rd "*" denotes the rated output voltage designation, which can be "05","5.1","5.2" or "05","05.1","05.2".
The 4th"*" designates type of plug and can be E for European plug ,U for British plug, blank for North American /Japan plug/Taiwan plug, C for China plug, A for Australia plug, K for Korea plug.
The 5th "*" can be "-USB" or blank, -USB denote the power supplies use USB port, when it is blank, denote the power supplies use DC output wires.

Models GTM86100-1005-W2E-USB and GTM86100-1005-W2A are tested as typical models, model differences were also considered in this report.

Model	Output Voltage	Max. output current	Max. output power
GT*86100-**-W2**	5-5.2VDC	2A	10W
GTM86100-1005-W2E-USB	5VDC	2A	10W
GTM86100-1005-W2A	5VDC	2A	10W

All models were evaluated for maximum manufacturer's recommended ambient of 40 °C.

Model Differences

All models have the similar circuit schematic, components, critical components and also the similar construction. The difference is minor secondary circuit, plug type, output ratings and output wires.

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

N/A

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)**
input circuit	ES3
USB output circuit	ES1
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): PS2	
Source of power or PIS	**Corresponding classification (PS)**
All circuits except USB output circuit	PS3
USB output circuit	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 mass	MS1
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1	
Source of thermal energy	**Corresponding classification (TS)**
Accessible enclosure surface	TS1
Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product RS1	
Type of radiation	**Corresponding classification (RS)**
LED indicator	RS1

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: input circuit	-	-	Enclosure
Ordinary	ES1:PSU output circuit	-	-	-
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Plastic enclosure	PS3: All circuits except USB output circuit	No excessive temperature	Plastic enclosure used as fire enclosure.	-
USB port	PS1: USB output circuit	-	-	-
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
-	-	-	-	-
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1: sharp edges and corners of EUT	-	-	-
Ordinary	MS1: Equipment mass	-	-	-
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS1: Accessible enclosure surface	-	-	-
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	RS1: LED indicator	-	-	-
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	(see appended table 4.1.2)	P
4.1.2	Use of components		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.5)	P
4.4.4.3	Drop tests .....:	(See Annex T.5)	P
4.4.4.4	Impact tests .....:		N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:		N/A
4.4.4.6	Glass Impact tests .....:		N/A
4.4.4.7	Thermoplastic material tests.....:	70°C,7h	P
4.4.4.8	Air comprising a safeguard.....:		N/A
4.4.4.9	Accessibility and safeguard effectiveness		P
4.5	Explosion		N/A
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 .....:	components	P
4.7	Equipment for direct insertion into mains socket - outlets		P
4.7.2	Mains plug part complies with the relevant standard.....:	Meet the requirements of relevant mains plug standard.	P
4.7.3	Torque (Nm) .....:	0.02Nm(EU type) 0.04Nm(AU type)	P
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
5	**ELECTRICALLY-CAUSED INJURY**		P
5.2.1	Electrical energy source classifications.....:	(see appended table 5.2)	P

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Clause	Requirement + Test	Result - Remark	Verdict
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 ..... :	60V	P
5.2.2.4	Single pulse limits ..... :		N/A
5.2.2.5	Limits for repetitive pulses ..... :		N/A
5.2.2.6	Ringing signals ..... :		N/A
5.2.2.7	Audio signals ..... :		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		P
	a) Test with test probe from Annex V ..... :	Not contact a bare internal conductive part.	P
	b) Electric strength test potential (V) ..... :		N/A
	c) Air gap (mm) ..... :	Min. 2mm	P
5.3.2.4	Terminals for connecting stripped wire		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 clause 5.4.8	P
5.4.1.4	Maximum operating temperature for insulating materials ..... :	(see appended table 5.4.1.4)	P
5.4.1.5	Pollution degree ..... :	PD2	—
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		P
5.4.1.9	Insulating surfaces		P
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 ..... :	Plug holder:125°C,1.2mm	P
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage		P

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Clause	Requirement + Test	Result - Remark	Verdict
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	—
	b) d.c. mains transient voltage ..... :		—
	c) external circuit transient voltage ..... :		—
	d) transient voltage determined by measurement ... :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages ..... :	1.48	P
5.4.3	Creepage distances ..... :	(see appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group ..... :	IIIb	—
5.4.4	Solid insulation		P
5.4.4.2	Minimum distance through insulation ..... :	0.4mm	P
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material		P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material		P
	Number of layers (pcs) ..... :	2	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		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz ..... :		N/A
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ)..... :		—
5.4.6	Insulation of internal wire as part of supplementary safeguard ..... :		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		P

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Clause	Requirement + Test	Result - Remark	Verdict
	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		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		P
5.5.1	General		P
5.5.2	Capacitors and RC units		P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector....:	$V_{t=2sec}$=3.8V; τ=28ms	P
5.5.3	Transformers		P
5.5.4	Optocouplers		N/A
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
5.5.7	SPD's		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

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....:		N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm^2) .....:		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm^2). .....:		—
	Protective current rating (A) ..... :		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement		N/A
	Conductor size (mm2), nominal thread diameter (mm). :		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω).....:		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current .....:	From L/N to enclosure: 0.005mA From L/N to output:0.087mA	P
5.7.2.2	Measurement of prospective touch voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		N/A
	System of interconnected equipment (separate connections/single connection) .....:		—
	Multiple connections to mains (one connection at a time/simultaneous connections) .....:		—
5.7.4	Earthed conductive accessible parts.....:		N/A
5.7.5	Protective conductor current		N/A
	Supply Voltage (V).....:		—
	Measured current (mA).....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructional Safeguard.....:	-	N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		N/A
6	**ELECTRICALLY- CAUSED FIRE**		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	All circuits are classified as PS3	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 ..... :		N/A
6.2.2.5	PS2 ..... :		N/A
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 ..... :		N/A
6.2.3.2	Resistive PIS ..... :	All components in internal circuits are regarded as Resistive PIS.	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... :	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Control fire spread method.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions ..... :		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		N/A
6.4.5.2	Supplementary safeguards .....:		N/A
6.4.6	Control of fire spread in PS3 circuit		P
6.4.7	Separation of combustible materials from a PIS	All internal power sources are enclosed by fire enclosure.	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		P
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
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....:	No opening.	P
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....:	No opening.	P
	Flammability tests for the bottom of a fire enclosure .....:		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) .....:		N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....:	fire enclosures are made of V-0 class material.	P
6.5	Internal and external wiring		N/A
6.5.1	Requirements		N/A
6.5.2	Cross-sectional area (mm^2) .....:		—
6.5.3	Requirements for interconnection to building wiring .....:		N/A
6.6	Safeguards against fire due to connection to additional equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	External port limited to PS2 or complies with Clause Q.1		N/A
7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		N/A
7.2	Reduction of exposure to hazardous substances	No hazardous chemicals.	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		P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners		P
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts		N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard..... :		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks .....:		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard.....:		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N) .....:		N/A
8.5.5	High Pressure Lamps		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

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.1	Product classification		N/A
	Instructional Safeguard.....:		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force.....:		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt.....:		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....:		N/A
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....:		N/A
8.7.2	Direction and applied force.....:		N/A
8.8	Handles strength		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....:		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force .....:		—
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		
	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

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Clause	Requirement + Test	Result - Remark	Verdict
8.12	Telescoping or rod antennas.....		N/A
	Button/Ball diameter (mm).....:		—
9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications	(See appended table 5.4.1.4)	P
9.3	Safeguard against thermal energy sources	TS1	P
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard .....:		N/A
10	**RADIATION**		P
10.2	Radiation energy source classification		P
10.2.1	General classification	RS1, LED indicator only.	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		N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons .....:		N/A
10.4.1.b)	RS3 accessible to a skilled person.....:		N/A
	Personal safeguard (PPE) instructional safeguard.....:		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 . :		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions ..... :		N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque.....:		N/A
10.4.1.f)	UV attenuation.....:		N/A
10.4.1.g)	Materials resistant to degradation UV .....:		N/A
10.4.1.h)	Enclosure containment of optical radiation.....:		N/A
10.4.1.i)	Exempt Group under normal operating conditions.....:		N/A
10.4.2	Instructional safeguard .....:		N/A
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment:		N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict
B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers ..... :		N/A
B.2.3	Supply voltage and tolerances		P
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements..... :	(See appended table B.3)	P
B.3.2	Covering of ventilation openings		N/A
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector ..... :		N/A
B.3.5	Maximum load at output terminals ..... :		N/A
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	During an abnormal operating, condition that does not lead to a single fault condition, all safeguards are remained effective. After restoration of normal operating conditions, all safeguards are compliant with applicable requirements.	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited ..... :		N/A
B.4.3	Motor tests		N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature ..... :		N/A
B.4.4	Short circuit of functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation		P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnect of passive components		P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	During and after single fault conditions, accessible parts do not exceed the relevant energy class and no flame and ignition inside the equipment.	P
B.4.9	Battery charging under single fault conditions ... :		N/A
C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
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 .....:	English checked.	—
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

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification .....:	See marking plate	—
F.3.2.2	Model identification .....:	See 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.....:	See marking plate	—
F.3.3.4	Rated voltage .....:	See marking plate	—
F.3.3.4	Rated frequency.....:	See marking plate	—
F.3.3.6	Rated current or rated power .....:	See marking plate	—
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings..... :		N/A
F.3.5.2	Switch position identification marking ..... :		N/A
F.3.5.3	Replacement fuse identification and rating markings..... :		N/A
F.3.5.4	Replacement battery identification marking ..... :		N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		P
F.3.6.2.1	Class II equipment with or without functional earth		P
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....:		—
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		P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use		P

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Clause	Requirement + Test	Result - Remark	Verdict
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		P
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
j)	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		P
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		P
G	**COMPONENTS**		P
G.1	**Switches**		N/A
G.1.1	General requirements		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	**Relays**		N/A
G.2.1	General requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	**Protection Devices**		P
G.3.1	Thermal cut-offs		N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691		N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H) ..... :		—
	Single Fault Condition ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Test Voltage (V) and Insulation Resistance (Ω). :		—
G.3.3	PTC Thermistors		N/A
G.3.4	Overcurrent protection devices		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**		N/A
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration .....:		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	**Wound Components**		P
G.5.1	Wire insulation in wound components.....	(See Annex J)	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		P
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) .....:		—
	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).....:	(see appended table 4.1.2)	P
	Position.....:	(see appended table 4.1.2)	—
	Method of protection .....:	With external overcurrent protection.	—
G.5.3.2	Insulation		P
	Protection from displacement of windings.....:	Blocked by margin wall.	—
G.5.3.3	Overload test..... :	(See appended table B.3)	P
G.5.3.3.1	Test conditions		P
G.5.3.3.2	Winding Temperatures testing in the unit		P
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	**Motors**		N/A
G.5.4.1	General requirements		N/A
	Position .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) .....:		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V).....:		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....:		N/A
	Electric strength test (V).....:		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature .....:		N/A
	Electric strength test (V) .....:		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....:		N/A
	Electric strength test (V).....:		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage .....:		—
G.6	**Wire Insulation**		P
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		N/A
	Type.....:		—
	Rated current (A).....:		—
	Cross-sectional area (mm^2), (AWG)..... :		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)....:		—
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	VDE approved VDR.	P
G.8.2	Safeguard against shock		P
G.8.3	Safeguard against fire		P
G.8.3.2	Varistor overload test .....:		N/A
G.8.3.3	Temporary overvoltage .....:		N/A
G.9	**Integrated Circuit (IC) Current Limiters**		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.		N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....:		—
G.9.1 d)	IC limiter output current (max. 5A) .....:		—
G.9.1 e)	Manufacturers' defined drift .....:		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	**Resistors**		N/A
G.10.1	General requirements		N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.11	**Capacitor and RC units**		P
G.11.1	General requirements		P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	**Optocouplers**		N/A
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....:		N/A
	Type test voltage Vini .....:		—
	Routine test voltage, Vini,b .....:		—
G.13	**Printed boards**		P
G.13.1	General requirements		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) .....:		—
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

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

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Clause	Requirement + Test	Result - Remark	Verdict
	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 .....:	(See appended table 5.4.11)	N/A
L	**DISCONNECT DEVICES**		P
L.1	General requirements		P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature .....:		—
M.4.2.2 b)	Single faults in charging circuitry .....:		—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) .....:		N/A
M.6.2	Leakage current (mA) .....:		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
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**		P
	Figures O.1 to O.20 of this Annex applied ..... :	Figures O.1	—
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) ..... :	No openings exceed 5mm in any dimension.	—
P.2.3	Safeguard against the consequences of entry of foreign object		P
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts ..... :		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) ..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C)..... :		—
	Tr (°C) ..... :		—
	Ta (°C)..... :		—
P.4.2 b)	Abrasion testing ..... :		N/A
P.4.2 c)	Mechanical strength testing ..... :		N/A
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		P
Q.1	Limited power sources		P
Q.1.1 a)	Inherently limited output		P

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Clause	Requirement + Test	Result - Remark	Verdict
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		P
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) .....:		—
	Current limiting method.....:		—
R	**LIMITED SHORT CIRCUIT TEST**		N/A
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)). .....:		N/A
S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Cheesecloth did not ignite		
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
	After fifth flame application, flame extinguished within 1 min		N/A
T	**MECHANICAL STRENGTH TESTS**		P
T.1	General requirements		P
T.2	Steady force test, 10 N .....:	(See appended table T.2)	P
T.3	Steady force test, 30 N .....:		N/A
T.4	Steady force test, 100 N .....:		N/A
T.5	Steady force test, 250 N .....:	(See appended table T.5)	P
T.6	Enclosure impact test		N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test .....:	(See appended table T.7)	P
T.8	Stress relief test .....:	(See appended table T.8)	P
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....:		—
	Height (m) .....:		—
T.10	Glass fragmentation test .....:		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) .....:		—
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements		N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
U.3	Protective Screen.....:	(See Annex T)	N/A
V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		P
V.1	Accessible parts of equipment		P
V.2	Accessible part criterion		P

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

4.1.2	TABLE: List of critical components				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1]
- Description[2] :	Main body				
Enclosure (all parts)	SABIC JAPAN L L C	SE1X	V-1, Min. thickness: 1.5mm, 105°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	SE100	V-1, Min. thickness: 1.5mm, 80°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	940	V-0, Min. thickness: 1.5mm, 120°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	CX7211	V-0, Min. thickness: 1.5mm, 90°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	C2950	V-0, Min. thickness: 1.5mm, 75°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	925U	V-0, Min. thickness: 1.5mm, 115°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	945	V-0, Min. thickness: 1.5mm, 120°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	CH6410	V-0, Min. thickness: 1.5mm, 100°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	EXCY0198	V-0, Min. thickness: 1.5mm, 100°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E207780
Alt. use	SABIC INNOVATIVE PLASTICS B V	SE1X, SE1	V-1, Min. thickness: 1.5mm,105°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	C2950	V-0, Min. thickness: 1.5mm, 75°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E45329

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

Alt. use	SABIC INNOVATIVE PLASTICS B V	CX7211	V-0, Min. thickness: 1.5mm, 90°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	945	V-0, Min. thickness: 1.5mm, 120°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	HF500R	V-0, Min. thickness: 1.5mm, 125°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E45329
Alt. use	ASAHI KASEI CORPORATION	540V	V-1, Min. thickness: 1.5mm, 100°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance E82268
Alt. use	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR6005	V-0, Min. thickness: 1.5mm, 105°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E41613
Alt. use	COVESTRO DEUTSCHLAND AG [PC RESINS]	6485	V-0, Min. thickness: 1.5mm, 115°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E41613
Alt. use	IDEMITSU KOSAN CO LTD	AZ2201	V-0, Min. thickness: 1.5mm, 125°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E48268
Plug unit (for EU type) (for model GT*86100-**-W2*-USB (end appliance))	GlobTek INC	--	2.5A, 250VAC	EN 50075:1900	Refer Intertek Report No. 180501603SHA-001
Plug unit (for AU type) (for model GT*86100-**-W2*-USB (end appliance))	GlobTek INC	--	10A, 250VAC	AS/NZS 3112:2011+A1:2012+A2:2013+A3:2016	Refer Intertek Report No. 180501604SHA-001
Plug holder	SABIC Japan L L C	SE1X	V-1, Min. thickness: 1.5mm, 105°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	945	V-0, Min. thickness: 1.5mm, 120°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E207780

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Clause	Requirement + Test	Result - Remark	Verdict

Alt. use	NAN YA PLASTICS CORP PLASTICS 3RD DIV	6410G5	V-0, Min. thickness: 1.5mm, 115°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E130155
Alt. use	SABIC INNOVATIVE PLASTICS B V	SE1X, SE1	V-1, Min. thickness: 1.5mm, 105°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	945	V-0, Min. thickness: 1.5mm, 120°C	IEC/EN 62368-1 UL 94 UL 746C	Tested with appliance UL E45329
PCB	Shenzhen Wuzhu Tech Co Ltd	WZ-4	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E170968
Alt. use	WALEX ELECTRONIC(WU XI)CO LTD	T2, T2A, T2B, T4	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E154355
Alt. use	DONGGUAN HE TONG ELECTRONICS CO LTD	CEM1, 2V0 FR4	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E243157
Alt. use	Huizhou Shunjia Electronics Co Ltd	SJ-B	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E320884
Alt. use	Cheerful Electronics(HK)Ltd	02,03,03A	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E199724
Alt. use	Dongguan Daysun Electronic Co Ltd	DS2	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E251754
Alt. use	Suzhou City Yilihua Electronics Co Ltd	YLH-1	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E251781
Alt. use	DAFENG AREX ELECTRONICS TECHNOLOGY CO LTD	02V0, 04V0, 03V0	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E186016
Alt. use	BRITE PLUS ELECTRONICS(SU ZHOU)CO LTD	DKV0-3A DGV0-3A	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E177671

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Clause	Requirement + Test	Result - Remark	Verdict

Alt. use	KUOTIANG ENT LTD	C-2 C-2A	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E227299
Alt. use	SHENZHEN TONGCHUANXIN ELECTRONICS CO LTD	TCX	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E250336
Alt. use	PACIFIC WIN INDUSTRIAL LTD	PW-02 PW-03	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E228070
Alt. use	YUANMAN PRINTED CIRCUIT CO LTD	1V0	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E74757
Alt. use	SUZHOU XINKE ELECTRONICS CO LTD	XK-2, XK-3	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E231590
Alt. use	KUNSHAN CITY HUA SHENG CIRCUIT BOARD CO LTD	HS-S	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E229877
Alt. use	JIANGSU DIFEIDA ELECTRONICS CO LTD	DFD-1	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E213009
Alt. use	SHANGHAI H-FAST ELECTRONIC CO LTD	211001, 411001	V-0, 130° C Min. 1.0mm	Applicable parts of IEC/EN 62368-1	Tested with appliance UL E337862
Resistor Fuse(RT1)(Formdoel series: GT*86100-**-W2*-USB only)	Anhui Changsheng Electronics Co., Ltd	RXF21-2W	3.3ohm, 2W	IEC/EN 62368-1	VDE 40024768
Alt. use	Shenzhen Great Electronics Co. Ltd.	RXF	3.3ohm, 2W	IEC/EN 62368-1	VDE 40026608
Alt. use	Shenzhen Kayocota Electronics Co., Ltd	FRKNP	3.3ohm, 2W	IEC/EN 62368-1	VDE 40043957
Alt. use	TZAI YUAN Enterprise Co., Ltd	KNF	3.3ohm, 2W	IEC/EN 62368-1	VDE 40035589

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Clause	Requirement + Test	Result - Remark	Verdict

Current fuse (F1)	LITTELFUSE WICKMANN WERKE	392	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 126983 UL E67006
Alt. use	Ever Island Electric Co., Ltd. & Walter Electric	2010 series	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40018781 UL E220181
Alt. use	Shenzhen Lanson Electronics Co. Ltd.	SMT	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40012592 UL E221465
Alt. use	Conquer Electronics Co., Ltd.	MST	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017157 UL E82636
Alt. use	Cooper Bussmann LLC	SS-5	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40015513 UL E19180
Alt. use	Bel Fuse Ltd.	RST-Serie(s)	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40011144 UL E20624
Alt. use	SMART ELECTRONICS INC	SPT	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40014285 UL E238986
Alt. use	SUNNY EAST ENTERPRISE CO LTD	TSP series	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40027173 UL E133774
Alt. use	Conquer Electronics Co., Ltd.	PTU	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017157 UL E82636

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Clause	Requirement + Test	Result - Remark	Verdict

Alt. use	Littelfuse Inc	877	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40023242 UL E10480
Alt. use	NIPPON SEISEN CABLE LTD	SLT	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40013103 UL E120786
Alt. use	Walter Electronic Co. Ltd.	ICP	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40012824 UL E56092
Alt. use	XC ELECTRONICS (SHENZHEN) CORP LTD	5TE	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40029550 UL E249609
Alt. use	XC ELECTRONICS (SHENZHEN) CORP LTD	4T series	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40029295 UL E249609
Y capacitor (CY1, CY2) (Optional)	TDK-EPC Corporation, Capacitors Group Circuit Devices Business Group	CD	Y1, AC250V, max 2200pF, 25/085/21/B	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40029780 UL E37861
Alt. use	Murata Mfg. Co., Ltd.	KX	Y1, AC250V, max 2200pF, 25/125/21/B	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40002831 UL E37921
Alt. use	Success Electronics Co., Ltd.	SE	Y1, AC250V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40037211 UL E114280
Alt. use	Success Electronics Co., Ltd.	SB	Y1, AC250V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40037221 UL E114280
Alt. use	JYA-NAY Co., Ltd.	JN	Y1, AC250V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40001831 UL E201384

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

Alt. use	WELSON INDUSTRIAL CO LT D	WD	Y1, AC250V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40016157 UL E104572
Alt. use	SAMWHA CAPACITOR CO LTD	SD	Y1, AC250V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40015804 UL E97754
Alt. use	NAN JING YUYUE ELECTRONICS CO LTD	CT7	Y1, AC250V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40008010 UL E237728
Alt. use	YINAN DON'S ELECTRONIC COMPONENT CO LTD	CT81	Y1, AC250V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 135256 UL E145038
Alt. use	JYH CHUNG ELECTRONICS CO LTD	JD	Y1, AC400V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 137027 UL E187963
Alt. use	JYH CHUNG ELECTRONICS CO LTD.	JY	Y2, AC300V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 137027 UL E187963
Transformer (T1)	GlobTek / BOAM / HAOPUWEI / Dee Van Enterprise Co., Ltd.	90E10PFX0-xxxx for Model: GT*86100-**-W2*-USB only; 90E10PF02-xxxx for Model: GT*86100-**-W2* only (“xxxx” to denote the part number, can be any alphanumeric character for marketing purposes only.	Class B	IEC/EN 62368-1	Tested with appliance

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

-Bobbin	HITACHI CHEMICAL CO LTD	CP-J-8800	V-0, 150°C, thickness 0.45 mm min.	IEC/EN 62368-1 UL 94	Tested with appliance UL E42956
- Alt. use	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, thickness 0.45 mm min.	IEC/EN 62368-1 UL 94	Tested with appliance UL E41429
- Alt. use	SUMITOMO BAKELITE CO LTD	PM-9630	V-0, 150°C, thickness 0.45 mm min.	IEC/EN 62368-1 UL 94	Tested with appliance UL E41429
- Alt. use	CHANG CHUN PLASTICS CO LTD	T375J	V-0, 140°C, thickness 0.74 mm min.	IEC/EN 62368-1 UL 94	Tested with appliance UL E59481
- Alt. use	CHANG CHUN PLASTICS CO LTD	T373J	V-0, 150°C, thickness 0.45 mm min.	IEC/EN 62368-1 UL 94	Tested with appliance UL E59481
- Alt. use	CHANG CHUN PLASTICS CO LTD	T375HF	V-0, 150°C, thickness 0.45 mm min.	IEC/EN 62368-1 UL 94	Tested with appliance UL E59481
- Magnet wire	Golden Ocean	UEW-X	130`C	IEC/EN 62368-1	Tested with appliance UL E225143
Alt. use	Da Yang	UEW	130ºC	IEC/EN 62368-1	Tested with appliance UL E176101
Alt. use	Wa Tai	UEW	130ºC	IEC/EN 62368-1	Tested with appliance UL E243939
Alt. use	Feng Ching	UEW	130ºC	IEC/EN 62368-1	Tested with appliance UL E172395
Alt. use	TAI-I	UEW	130ºC	IEC/EN 62368-1	Tested with appliance UL E234896
Alt. use	NINGBO JINTIAN NEW MATERIAL CO LTD	2UEW	155ºC	IEC/EN 62368-1	Tested with appliance UL E227047
-Triple-insulated wire (Secondary)	Furukawa Electric Co., Ltd.	TEX-E	Class B, reinforced insulation	IEC/EN 62368-1 UL 2353	VDE 006735 UL E206440

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

- Alt. use	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B,TWE-3	Class B, reinforced insulation	IEC/EN 62368-1 UL 2353	VDE 40033527 UL E332529
- Alt. use	DAH JIN TECHNOLOGY CO LTD	TLW-B	Class B, reinforced insulation	IEC/EN 62368-1 UL 2353	VDE 40019324 UL E236542
- Alt. use	COSMOLINK CO. Ltd.	TIW-M	Class B, reinforced insulation	IEC/EN 62368-1 UL 2353	VDE 138053 UL E213764
- Alt. use	YOUNG CHANG SILICONE CO LTD	STW-B	Class B, reinforced insulation	IEC/EN 62368-1 UL 2353	VDE 40013359 UL E303298
- Alt. use	Great Leoflon Industrial Co., Ltd.	TRW (B) Serie(s)	Class B, reinforced insulation	IEC/EN 62368-1 UL 2353	VDE 136581 UL E211989
- Alt. use	E&B TECHNOLOGY CO LTD	E&B-B-X.XX	Reinforced insulation, Class B	IEC/EN 62368-1 UL 2353	VDE 40023473 UL E315265
- Alt. use	DONGGUAN KOSHEN INSULATOR CO LTD	TIW-B	Reinforced insulation, Class B	IEC/EN 62368-1 UL 2353	Tested with appliance UL E365580
-Insulating tape	SYMBIO INC	35660,35661, 35660Y	130°C	IEC/EN 62368-1 UL 510	Tested with appliance UL E50292
- Alt. use	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1, 1350T-1	130°C	IEC/EN 62368-1 UL 510	Tested with appliance UL E17385
- Alt. use	BONDTEC PACIFIC CO LTD	370S	130°C	IEC/EN 62368-1 UL 510	Tested with appliance UL E175868
- Alt. use	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ, CT, WF	130°C	IEC/EN 62368-1 UL 510	Tested with appliance UL E165111
- Alt. use	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	130°C	IEC/EN 62368-1 UL 510	Tested with appliance UL E246950

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

- Alt. use	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	130°C	IEC/EN 62368-1 UL 510	Tested with appliance UL E246820
-PTFE tubing	GREAT HOLDING INDUSTRIAL CO LTD	TFT, TFS	300V, 200ºC	IEC/EN 62368-1	Tested with appliance UL E156256
-Alt. use	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	WF	600V, 200ºC	IEC/EN 62368-1	Tested with appliance UL E203950
-Alt. use	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TT-T, CB-TT-S	300V, 200ºC	IEC/EN 62368-1	Tested with appliance UL E180908
-Alt. use	ZEUS	TFE-TW-300, TFE-SW-600	Min.300V, 200`C.	IEC/EN 62368-1	Tested with appliance UL E64007
Varistor MOV1 (Optional)(For Model: GT*86100-**-W2* only)	CENTRA SCIENCE CORP	CNR-10D471K, CNR-10D511K, CNR-14D471K, CNR-14D511K	Min. 300Vac, 40/85/56, fulfilled 6kV/3kA pulse test. V-1.	IEC 61051-2 IEC 62368-1	VDE 40008220 UL E316325
-Alt. use	Joyin Co Ltd	JVR10N471K, JVR10N511K, JVR14N471K, JVR14N511K	Min. 300Vac, 40/85/56, fulfilled 6kV/3kA pulse test.V-1.	IEC 61051-2 IEC 62368-1	VDE 005937
-Alt. use	Fenghua Advanced Technology Holding Co Ltd. Xianhua New Sensitive Components & Sensor Branch Co.	FNR-10K471K, FNR-10K511K, FNR-14K471K, FNR-14K511K	Min. 300Vac, min. 385Vdc, 40/85/56, fulfilled 6kV/3kA pulse test. V-1.	IEC 61051-2 IEC 62368-1	VDE 40008242

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

-Alt. use	Success Electronics Co Ltd	SVR10D471K, SVR10D511K, SVR14D471K, SVR14D511K	Min. 300Vac, min. 385Vdc, 40/85/56, fulfilled 6kV/3kA pulse test.V-1.	IEC 61051-2 IEC 62368-1	VDE 123677
-Alt. use	Thinking Electronic Industrial Co Ltd	TVR10471K, TVR10511K, TVR14471K, TVR14511K	Min. 300Vac, min. 385Vdc, 40/85/56, fulfilled 6kV/3kA pulse test.V-1.	IEC 61051-2 IEC 62368-1	VDE 40021243
-Alt. use	Brightking Inc.	CNR471KD10, CNR511KD10, CNR471KD14, CNR511KD14	Min. 300Vac, min. 385Vdc, 40/85/56, fulfilled 6kV/3kA pulse test.V-1.	IEC 61051-2 IEC 62368-1	VDE 40022070
-Alt. use	Brightking (Shenzhen) Co., Ltd.	14D471K, 14D511K	Min. 300Vac, min. 385Vdc, 40/85/56, fulfilled 6kV/3kA pulse test.V-1.	IEC 61051-2 IEC 62368-1	VDE 40027827
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					

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	240Vac	USB port	Normal	5Vdc	-	-	ES1
			Abnormal	5Vdc	-	-	
			Single fault – SC/OC	0Vdc	-	-	
2	240Vac	input circuit	Normal	240Vrms	-	-	ES3
			Abnormal	-	-	-	
			Single fault – SC/OC	-	-	-	

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

3	-	-	Normal	-	-	-	-
			Abnormal	-	-	-	
			Single fault – SC/OC	-	-	-	

5.2.2.3 - Capacitance Limits

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

5.2.2.4 - Single Pulses

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

5.2.2.5 - Repetitive Pulses

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

Test Conditions:

Normal –

Abnormal -

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

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

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) .....:	90	264	90	264	—
	Ambient T_{min} (°C) ..... :	40.0	40.0	25.0	25.0	—
	Ambient T_{max} (°C) ..... :	40.0	40.0	25.0	25.0	—
	Tma (°C) ..... :	40.0	40.0	40.0	40.0	—
	Model .....:	GTM86100-1005-W2E-USB				—
Maximum measured temperature T of part/at…...:		T (°C)				Allowed T_{max} (°C)
1.Enclosure Inside near Inlet Blade		—	—	49.3	42.9	75
2. PWB near Rectifier Bridge (BD1)		91.3	80.5	—	—	130
3.Choke (L1) Coil		87.2	78.0	—	—	110
4. Capacitor (C1) body near Transform		85.5	76.9	—	—	105
5. Capacitor (C2) body near Transform		89.3	81.4	—	—	105
6. PWB near near Q1		103.0	94.6	—	—	130
7.Transformer (T1) Primary Winding		105.2	102.4	—	—	110*
8.Transformer (T1) Secondary Winding		103.8	99.7	—	—	110*
9.Transformer (T1) Core		98.9	94.3	—	—	Ref.
10.CY1 body near Transformer		85.0	81.0	—	—	125
11.CY2 body near Transformer		81.0	78.5	—	—	125
12.Capacitor (C7) body		76.9	75.8	—	—	105
13.Capacitor (C8) body		97.9	92.8	—	—	105
14.Enclosure Inside near Transformer (T1) Top		—	—	55.9	53.8	75
15.Enclosure Outside near Transformer (T1) Top		—	—	52.7	50.4	75
Supplementary information: * indicated thermocouple method was used to measure the winding, so the limit value reduced 10K.						

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: N/A							

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

	TABLE: Temperature measurements					P
	Supply voltage (V) ..... :	90	264	90	264	—
	Ambient T_{min} (°C) .....:	40.0	40.0	25.0	25.0	—
	Ambient T_{max} (°C) .....:	40.0	40.0	25.0	25.0	—
	Tma (°C) .....:	40.0	40.0	40.0	40.0	—
	Model ..... :	GTM86100-1005-W2A				—
Maximum measured temperature T of part/at……:		T (°C)				Allowed T_{max} (°C)
1.Enclosure Inside near Inlet Blade		—	—	49.7	38.9	75
2. PWB near Rectifier Bridge (BD1)		87.8	64.6	—	—	130
3.Choke (L1) Coil		99.1	68.4	—	—	110
4. Capacitor (C1) body near Transform		84.3	66.3	—	—	105
5. Capacitor (C2) body near Transform		91.5	79.8	—	—	105
6. Transformer (T1) Primary Winding		91.2	86.2	—	—	110*
7.Transformer (T1) Secondary Winding		92.1	91.4	—	—	110*
8.Transformer (T1) Core		92.0	86.5	—	—	Ref.
9.CY1 body near Transformer		80.7	76.3	—	—	125
10.CY2 body near Transformer		69.0	67.3	—	—	125
11.Capacitor (C7) body		80.1	79.3	—	—	105
12.Capacitor (C8) body		67.2	66.4	—	—	105
13.Enclosure Inside near Transformer (T1) Top		—	—	46.9	44.5	75
14.Enclosure Outside near Transformer (T1) Top		—	—	46.1	44.2	75
15.Output Cord		59.2	58.1	—	—	80
16. MOV1 near PCB		85.6	72.4	—	—	130
Supplementary information:* indicated thermocouple method was used to measure the winding, so the limit value reduced 10K.						

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: N/A							

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

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)
Plug holder	1)	125	1.2
Supplementary information: 1) Refer to table 4.1.2			

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)
Model: GTM86100-1005-W2E-USB							
L to N before fuse(FI)	340	240	60Hz	2.3[4]	Min.4.0	2.4	Min.4.0
Two poles of fuse(FI)	340	240	60Hz	2.3[4]	Min.3.0	2.4	Min.3.0
CY1 Primary Pin to another Pin(BI)	340	240	60Hz	2.3[4]	3.9	2.4	3.9
CY2 Secondary Pin to another Pin(SI)	340	240	60Hz	2.3[4]	4.2	2.4	4.2
Live parts to Enclosure parts(RI)	396	272	60Hz	4.5[4]	Min.7.0	5.5[5]	Min.7.0
Live parts to accessible parts(RI)	396	272	60Hz	4.5[4]	Min.7.0	5.5[5]	Min.7.0
Primary circuit to secondary circuits (PCB trace under T1) (RI)	412	273	60Hz	4.5[4]	Min.7.0	5.5[5]	Min.7.0
Transformer Primary winding to secondary winding(RI)	412	273	60Hz	4.5[4]	Min.7.0	5.5[5]	Min.7.0
Transformer Primary winding to core(RI)	412	273	60Hz	4.5[4]	Min.7.0	5.5[5]	Min.7.0
Model: GTM86100-1005-W2A							
L to N before fuse(FI)	340	240	60Hz	2.3[4]	Min.4.0	2.4	Min.4.0
Two poles of fuse(FI)	340	240	60Hz	2.3[4]	Min.3.0	2.4	Min.3.0
CY1 Primary Pin to another Pin(BI)	340	240	60Hz	2.3[4]	3.9	2.4	3.9
CY2 Secondary Pin to another Pin(SI)	340	240	60Hz	2.3[4]	4.2	2.4	4.2
Live parts to Enclosure parts(RI)	400	274	60Hz	4.5[4]	Min.7.0	5.5[5]	Min.7.0
Live parts to accessible parts(RI)	400	274	60Hz	4.5[4]	Min.7.0	5.5[5]	Min.7.0
Primary circuit to secondary circuits (PCB trace under T1) (RI)	420	276	60Hz	4.5[4]	Min.7.0	5.5[5]	Min.7.0
Transformer Primary winding to secondary winding(RI)	420	276	60Hz	4.5[4]	Min.7.0	5.5[5]	Min.7.0
Transformer Primary winding to core(RI)	420	276	60Hz	4.5[4]	Min.7.0	5.5[5]	Min.7.0
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							

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Clause	Requirement + Test	Result - Remark	Verdict

Note 3: Provide Material Group

Note 4: Required value was multiplied by the factor 1.48 due to the maximum specified altitude of 5000m

Note 5: Required creepage not less than required clearance

Note 6: Minimum 0.4 mm thick Mylar sheet or two layers of insulating tape wrap around internal conductive parts along the enclosure joint. This method is applied only to the model sold to high elevation region. Otherwise, the clearance and creepage distance is measured as 5.7/5.7 mm.

Note 7: Two layers of insulating tape or two layers of insulating tube wrap around the heatsink

5.4.4.2, 5.4.4.5 c) 5.4.4.9	**TABLE: Distance through insulation measurements**				P
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
Model: GTM86100-1005-W2E-USB					
T1 transformer bobbin (RI)	412	60Hz	1)	0.4	0.6
Insulating tapes in transformer T1 (RI)	412	60Hz	1)	2 layers	2 layers
Thin sheet material at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
Insulation tape around transformer	412	60Hz	1)	2 layers	2 layers
Model: GTM86100-1005-W2A					
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
T1 transformer bobbin (RI)	420	60Hz	1)	0.4	0.6
Insulating tapes in transformer T1 (RI)	420	60Hz	1)	2 layers	2 layers
Thin sheet material at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
Insulation tape around transformer	420	60Hz	1)	2 layers	2 layers
Supplementary information: 1) Refer to table 4.1.2					

5.4.9	**TABLE: Electric strength tests**	P

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

Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
GTM86100-1005-W2E-USB, GTM86100-1005-W2A			
Primary circuit to body (RI)	AC	4000Vp	No
Primary circuit to secondary circuit (RI)	AC	4000Vp	No
Primary winding to secondary winding of T1 (RI)	AC	4000Vp	No
Primary winding to core (RI)	AC	4000Vp	No
Insulation tape around transformer per layer (RI)	AC	4000Vp	No
Insulation sheet (BI)	AC	2600Vp	No
Primary and secondary of Y1 capacitor (RI)	DC	4000Vp	No
Supplementary information: N/A			

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
A	All circuits exclude USB port	Power (W) :	>100	>100	PS3
		V_A (V) :	-	-	
		I_A (A) :	-	-	
B	USB port	Power (W) :	Max.9.8	Max.9.8	PS1
		V_A (V) :	-	-	
		I_A (A) :	-	-	
C	-	Power (W) :	-	-	-
		V_A (V) :	-	-	
		I_A (A) :	-	-	
D	-	Power (W) :	-	-	-
		V_A (V) :	-	-	
		I_A (A) :	-	-	
Supplementary Information: (*) Measurement taken only when limits at 3 seconds exceed PS1 limits					

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

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

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
input	Normal	13.9W	13.9W	No	Yes

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.

B.2.5	TABLE: Input test					P
U (V)	I (A)	Irated (A)	P (W)	Fuse No	Ifuse (A)	Condition/status
Model: GTM86100-1005-W2E-USB						
90	0.248	--	13.5	F1	0.248	Max Normal Load, 50 Hz
90	0.262	--	13.4	F1	0.262	Max Normal Load, 60 Hz
100	0.227	0.3	13.4	F1	0.227	Max Normal Load, 50 Hz
100	0.243	0.3	13.4	F1	0.243	Max Normal Load, 60 Hz
240	0.126	0.3	13.6	F1	0.126	Max Normal Load, 50 Hz
240	0.133	0.3	13.6	F1	0.133	Max Normal Load, 60 Hz
264	0.120	--	13.9	F1	0.120	Max Normal Load, 50 Hz
264	0.125	--	13.9	F1	0.125	Max Normal Load, 60 Hz
Model: GTM86100-1005.2-W2E-USB						

IEC 62368-1						
Clause	Requirement + Test				Result - Remark	Verdict
90	0.247	--	13.3	F1	0.247	Max Normal Load, 50 Hz
90	0.251	--	13.4	F1	0.251	Max Normal Load, 60 Hz
100	0.229	0.3	13.2	F1	0.229	Max Normal Load, 50 Hz
100	0.231	0.3	13.3	F1	0.231	Max Normal Load, 60 Hz
240	0.126	0.3	13.4	F1	0.126	Max Normal Load, 50 Hz
240	0.128	0.3	13.7	F1	0.128	Max Normal Load, 60 Hz
264	0.118	--	13.6	F1	0.118	Max Normal Load, 50 Hz
264	0.120	--	13.8	F1	0.125	Max Normal Load, 60 Hz
Model: GTM86100-1005-W2A						
90	0.244	--	13.5	F1	0.244	Max Normal Load, 50 Hz
90	0.244	--	13.5	F1	0.244	Max Normal Load, 60 Hz
100	0.220	0.3	13.5	F1	0.220	Max Normal Load, 50 Hz
100	0.222	0.3	13.4	F1	0.222	Max Normal Load, 60 Hz
240	0.122	0.3	13.8	F1	0.122	Max Normal Load, 50 Hz
240	0.120	0.3	13.5	F1	0.120	Max Normal Load, 60 Hz
264	0.116	--	13.6	F1	0.116	Max Normal Load, 50 Hz
264	0.114	--	14.0	F1	0.114	Max Normal Load, 60 Hz
Model: GTM86100-1005.2-W2A						
90	0.243	--	13.6	F1	0.243	Max Normal Load, 50 Hz
90	0.246	--	13.6	F1	0.246	Max Normal Load, 60 Hz
100	0.219	0.3	13.4	F1	0.219	Max Normal Load, 50 Hz
100	0.225	0.3	13.4	F1	0.225	Max Normal Load, 60 Hz
240	0.123	0.3	13.6	F1	0.123	Max Normal Load, 50 Hz
240	0.122	0.3	13.5	F1	0.122	Max Normal Load, 60 Hz
264	0.114	--	14.0	F1	0.114	Max Normal Load, 50 Hz
264	0.116	--	13.7	F1	0.116	Max Normal Load, 60 Hz
Supplementary information:						

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

B.3	TABLE: Abnormal operating tests							P
Ambient temperature (°C) ..... :						22-25, if no else specified		—
Power source for EUT: Manufacturer, model/type, output rating .:						YOKOGAWA, WT310, 600VAC,20A		—
Component No.	Abnormal Condition	Supply voltage (V)	Test time (ms)	Fuse no.	Fuse current (A)	T-couple	Temp. (°C)	Observation
GTM86100-1005-W2E-USB								
C1	Sc	264	1s	F1	>10→0	-	-	Fuse F1 opened immediately no hazard
C2	Sc	264	1s	F1	>10→0	-	-	Fuse F1 opened immediately no hazard
R6	Sc	264	2h	F1	0.121	-	-	Unit work normally no hazard
R3	Sc	264	1h	F1	0.02	-	-	Unit shutdown immediately recoverable no hazard
D5	Sc	264	2h	F1	0.121	-	-	Unit work normally no hazard
D6	Sc	264	1h	F1	0.02	-	-	Unit shutdown immediately recoverable no hazard
R4	Sc	264	1s	F1	>10→0	-	-	Fuse F1 opened immediately no hazard
R11	Sc	264	1h	F1	0.02	-	-	Unit shutdown immediately recoverable no hazard
R13	Sc	264	2h	F1	0.121	-	-	Unit work normally no hazard
T1 pin1-2	Sc	264	1s	F1	>10→0	-	-	Fuse F1 opened immediately no hazard
T1 pin6-7	Sc	264	1h	F1	0.03	-	-	Unit shutdown immediately recoverable no hazard
R16	Sc	264	1h	F1	0.02	-	-	Unit shutdown immediately recoverable no hazard
D8	Sc	264	1h	F1	0.02	-	-	Unit shutdown immediately recoverable no hazard
C9	Sc	264	2h	F1	0.121	-	-	Unit work normally no hazard
Output	OI	264	2h	--	--	K	T1 winding: 130°C, Ta: 23°C	Max. output current: 2.4A. no hazard
GTM86100-1005-W2A								
C1	Sc	264	1s	F1	>10→0	K	-	Fuse F1 opened immediately no hazard

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

C2	Sc	264	1s	F1	>10→0	-	-	Fuse F1 opened immediately no hazard
R6	Sc	264	2h	F1	0.114	-	-	Unit work normally no hazard
R3	Sc	264	1h	F1	0.02	-	-	Unit shutdown immediately recoverable no hazard
D1	Sc	264	2h	F1	0.114	-	-	Unit work normally no hazard
R8	Sc	264	1s	F1	>10→0	-	-	Fuse F1 opened immediately no hazard
R9	Sc	264	1h	F1	0.02	-	-	Unit shutdown immediately recoverable no hazard
T1 pin 1-2	Sc	264	1s	F1	>10→0	-	-	Fuse F1 opened immediately no hazard
T1 pin A-B	Sc	264	1h	F1	0.03	-	-	Unit shutdown immediately recoverable no hazard
R12	Sc	264	1h	F1	0.02	-	-	Unit shutdown immediately recoverable no hazard
Output	OI	264	2h	--	--	K	T1 winding: 125.5°C, Ta: 23°C	Max. output current: 2.4A. no hazard
Supplementary information:"Sc" means short-circuited test, "OI" means overload test, "Oc" means open-circuited test; "Uoc" means output voltage without load.								

Annex Q.1	**TABLE: Circuits intended for interconnection with building wiring (LPS)**					P
Note: Measured UOC (V) with all load circuits disconnected:						
Model: GTM86100-1005-W2E-USB						
Output Circuit	Components	U_{oc} (V)	I_{sc} (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
USB port	Normal condition	5.1	2.4	≤ 8.0 A	9.8	≤ 100 VA
USB port	Single fault condition (R4 Short circuit)	--	0	≤ 8.0 A	0	≤ 100 VA
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
Enclosure	Plastics	1.5	250	5	No hazard.
Supplementary information: N/A					

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

T.7	TABLE: Drop tests			P
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation
Enclosure	Plastics	1.5	1000	No hazard.
Supplementary information:				

T.8	TABLE: Stress relief test				P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Enclosure	Plastics	1.5	70	7	No hazard.

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT

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

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

Attachment Form No. ..... : EU_GD_IEC62368_1B_II

Attachment Originator ..... : Nemko AS

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

	CENELEC COMMON MODIFICATIONS (EN)	P
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".	--
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.		P
1	**Add** the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.		P

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	**Add** the following new subclause after 4.9: To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. **mains**, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for **pluggable equipment type B** or **permanently connected equipment**, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for **pluggable equipment type A** the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		N/A
5.4.2.3.2.4	**Add** the following to the end of this subclause: The requirement for interconnection with **external circuit** is in addition given in EN 50491-3:2009.		N/A
10.2.1	Add the following to [c] and [d] in table 39: For additional requirements, see 10.5.1.		P

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	**Add** the following after the first paragraph: *For RS 1 compliance is checked by measurement under the following conditions:* *In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.* NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. *The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus.* *Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.* *For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.* NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.		N/A
10.6.1	**Add** the following paragraph to the end of the subclause: EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		P
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		P
G.7.1	**Add** the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Bibliography	**Add** the following standards: **Add** the following notes for the standards indicated: IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		N/A
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		N/A
4.1.15	**Denmark, Finland, Norway** and **Sweden** To the end of the subclause the following is added: **Class I pluggable equipment type A** intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and **accessible** parts, have a marking stating that the equipment shall be connected to an earthed **mains** socket-outlet. The marking text in the applicable countries shall be as follows: In **Denmark**: “Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.” In **Finland**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In **Norway**: “Apparatet må tilkoples jordet stikkontakt” In **Sweden**: “Apparaten skall anslutas till jordat uttag”		N/A
4.7.3	**United Kingdom** To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.2	**Denmark** After the 2nd paragraph add the following: A warning (marking **safeguard**) for high **touch current** is required if the **touch current** exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		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).		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.		N/A
5.6.4.2.1	**Ireland and United Kingdom** After the indent for **pluggable equipment type A**, the following is added: – the **protective current rating** is taken to be 13 A, this being the largest rating of fuse used in the **mains** plug.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm^2 to 1,5 mm^2 in cross-sectional area.		N/A
5.7.5	**Denmark** To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the **protective conductor current** exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	**Norway and Sweden** To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.” Translation to Swedish: ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	**Denmark** To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .		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		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	**United Kingdom** To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
G.7.1	**United Kingdom** To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	**Ireland** To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	**Ireland and United Kingdom** To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm^2 is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZC	*ANNEX ZC, NATIONAL DEVIATIONS (EN)*		**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

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT

IEC 62368-1
(AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES

(**Audio/video, information and communication technology equipment**)

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

Attachment Form No. ..... : AU_NZ_ND_IEC62368_1B

Attachment Originator..... : JAS-ANZ

Master Attachment..... : 2018-02

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

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	-AS/NZS 60695.11.10, *Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods* -AS/NZS 60884.1, *Plugs and socket-outlets for household and similar purposes, Part 1: General requirements* -AS/NZS 60950.1:2015, *Information technology equipment—Safety*, Part 1: *General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)* IEC 61032:1997, *Protection of persons and equipment by enclosures—Probes for verification* -AS/NZS 61558.1:2008 (including Amendment 2:2015), *Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 2.1, MOD)* -AS/NZS 61558.2.16, *Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.*		
4.1.1	**Application of requirements and acceptance of materials, components and subassemblies** 1 *Replace* the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'. 2 *Replace* the text 'IEC 60065' with 'AS/NZS 60065'.		P
4.7	**Equipment for direct insertion into mains socket-outlets**		N/A
4.7.2	**Requirements** *Delete* the text of the second paragraph and *replace* with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.		N/A
4.7.3	**Compliance Criteria** *Delete* the first paragraph and Note 1 and Note 2 and *replace* with the following: *Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.*		N/A
4.8	*Delete* existing clause title and *replace* with the following: **4.8 Products containing coin/button cell batteries**		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

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

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

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Clause	Requirement + Test	Result - Remark	Verdict

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

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Clause	Requirement + Test	Result - Remark	Verdict

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

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Clause	Requirement + Test	Result - Remark	Verdict

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

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Clause	Requirement + Test	Result - Remark	Verdict
6.201	**External power supplies, docking stations and other similar devices** For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage— – at all ES1 outlets or connectors shall not increase by more than 10% of its rated output voltage under normal operating condition; and – of a USB outlet or connector shall not increase by more than 3 V or 10% of its rated output voltage under normal operating conditions, whichever is higher. For equipment with multiple rated output voltages, the requirements apply with the equipment configured for each rated output voltage in turn. NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. *Compliance shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single-fault conditions of Annex B.4*		N/A
6.202	**Resistance to fire—Alternative tests**		N/A
6.202.1	**General** Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the equipment, or the following: a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length. b) The following parts which would contribute negligible fuel to a fire: – small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; – small electrical components, such as capacitors with a volume not exceeding 1 750 mm3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10. NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another.	See table 1.5.1	P

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Clause	Requirement + Test	Result - Remark	Verdict

	Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4. For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5. The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.		N/A
6.202.2	**Testing of non-metallic materials** Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.	Approved.	N/A
6.202.3	**Testing of insulating materials** Parts of insulating material supporting Potential Ignition Sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE: Contacts in components such as switch contacts are considered to be connections		N/A
	For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test need not be tested		N/A
	The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications: **Clause of AS/NZS 60695.11.5** — Change **9 Test procedure** **9.2 Application of needle-flame** — *Delete* the first and second paragraphs and *replace* with the following: The specimen shall be arranged so that the		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

		flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner. The duration of application of the test flame shall be 30 s 1 s.		
	9.3 Number of test specimens	*Replace* with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.		
	11 Evaluation of test results	*Replace* with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.		
	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the relevant part is not thinner than the sample tested.			
6.202.4	**Testing in the event of non-extinguishing material** If parts, other than enclosures, do not withstand the glow wire tests of Clause 6.202.3, by failure to extinguish within 30 s after the removal of the glowwire tip, the needle-flame test detailed in Clause 6.202.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of Clause 6.202.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested. NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing.			N/A

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

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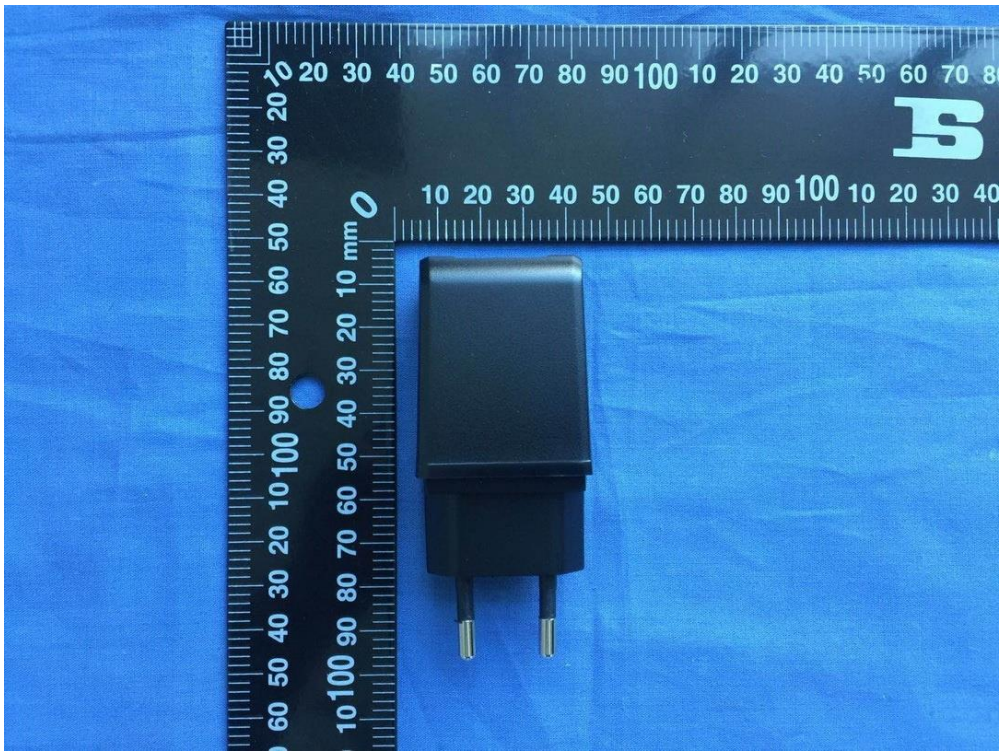
Clause	Requirement + Test	Result - Remark	Verdict

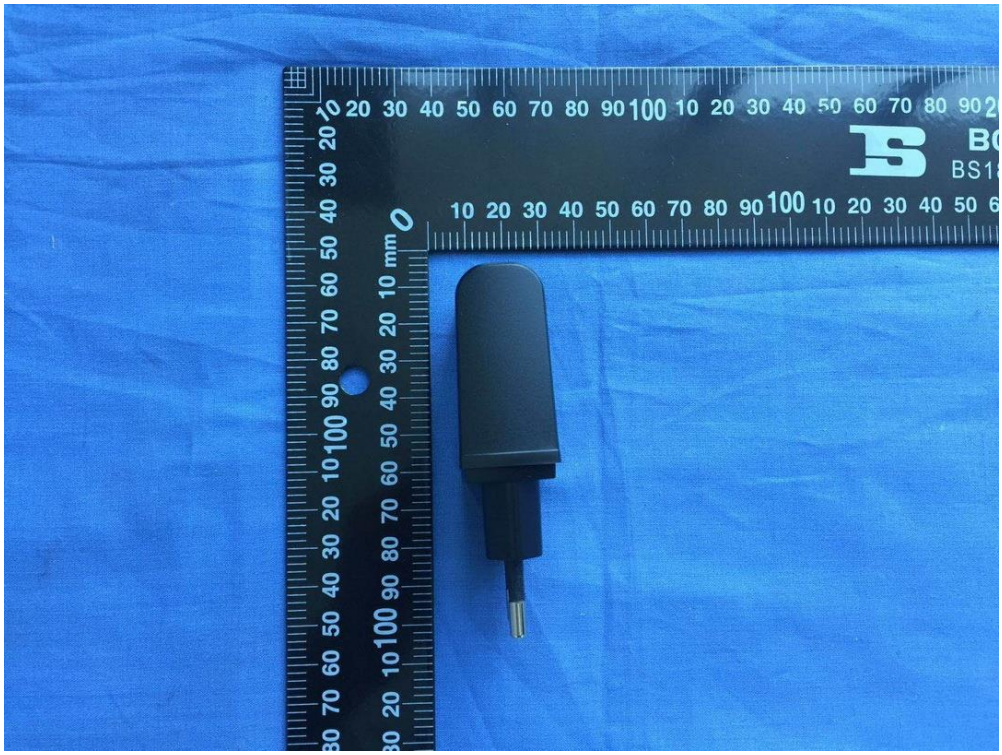
	flammability category V-1 or better according to AS/NZS 60695.11.10.		
8.6.1.201	**8.6.1.201 Instructional safeguard for fixed-mount television sets** MS2 and MS3 television sets and display devices designed only for fixed mounting to a wall of ceiling or equipment rack shall, where required in Table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

Appendix I Photograph of the Equipment under test (EUT)

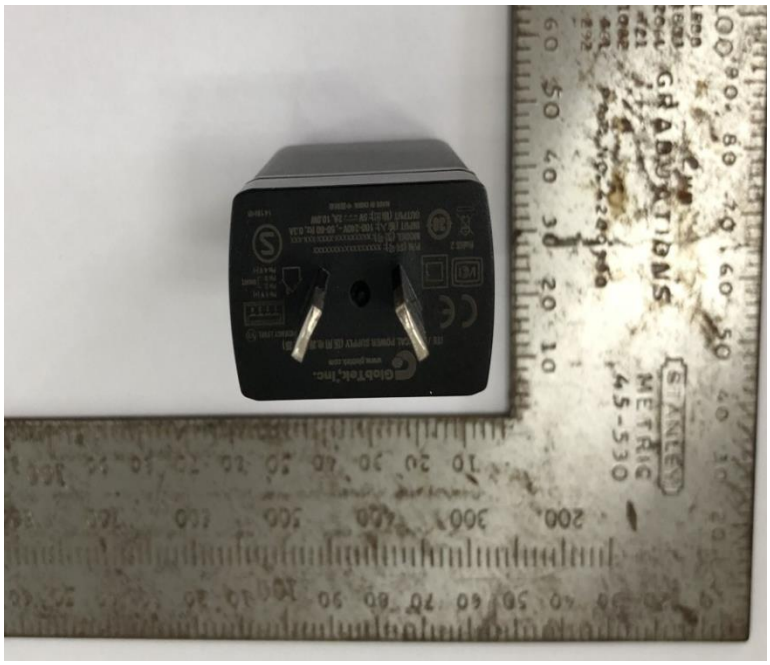
GTM86100-1005-W2E-USB External view



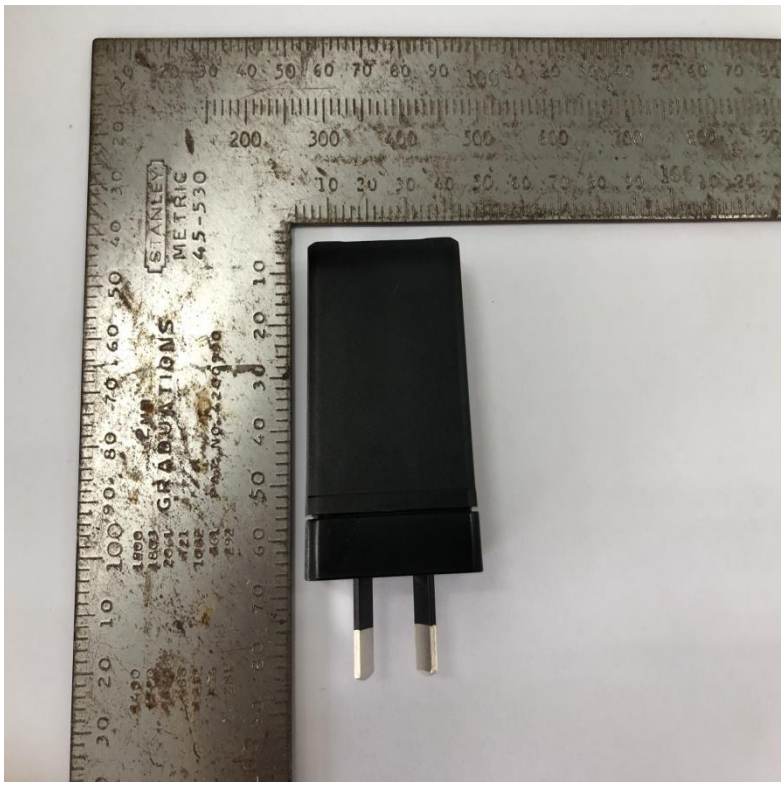
GTM86100-1005-W2E-USB External view



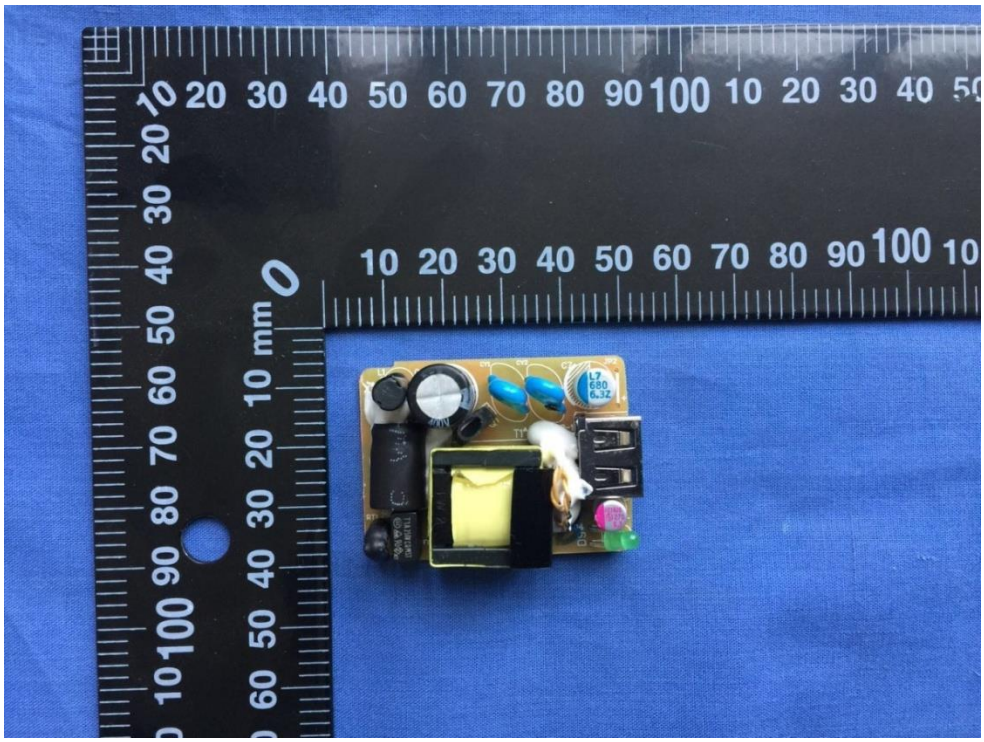
GTM86100-1005-W2A-USB External view



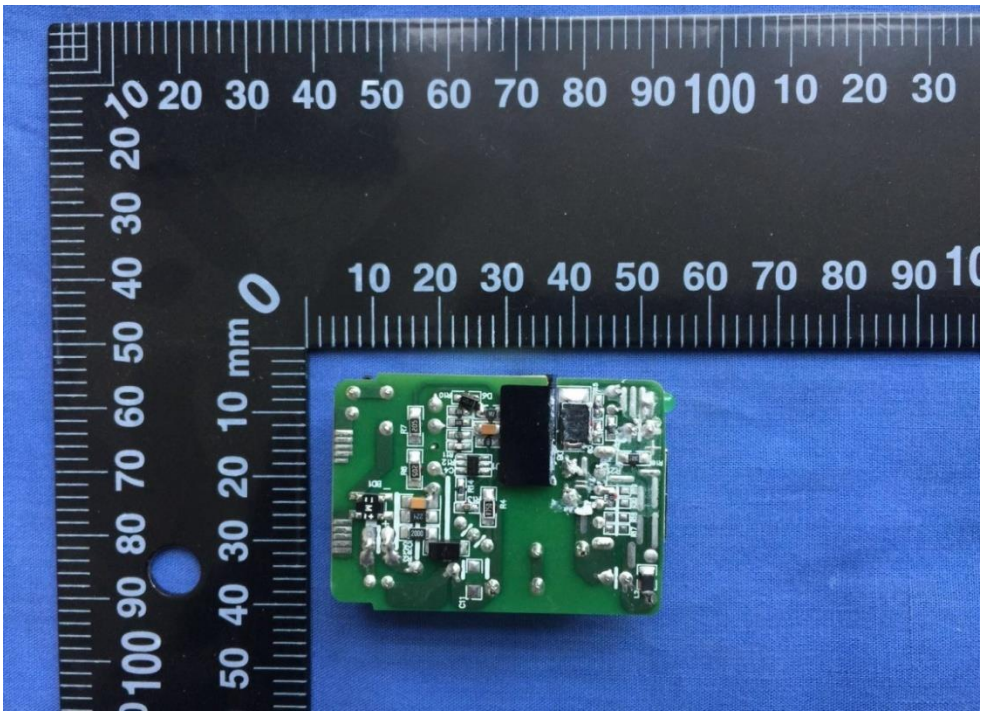
GTM86100-1005-W2A-USB External view



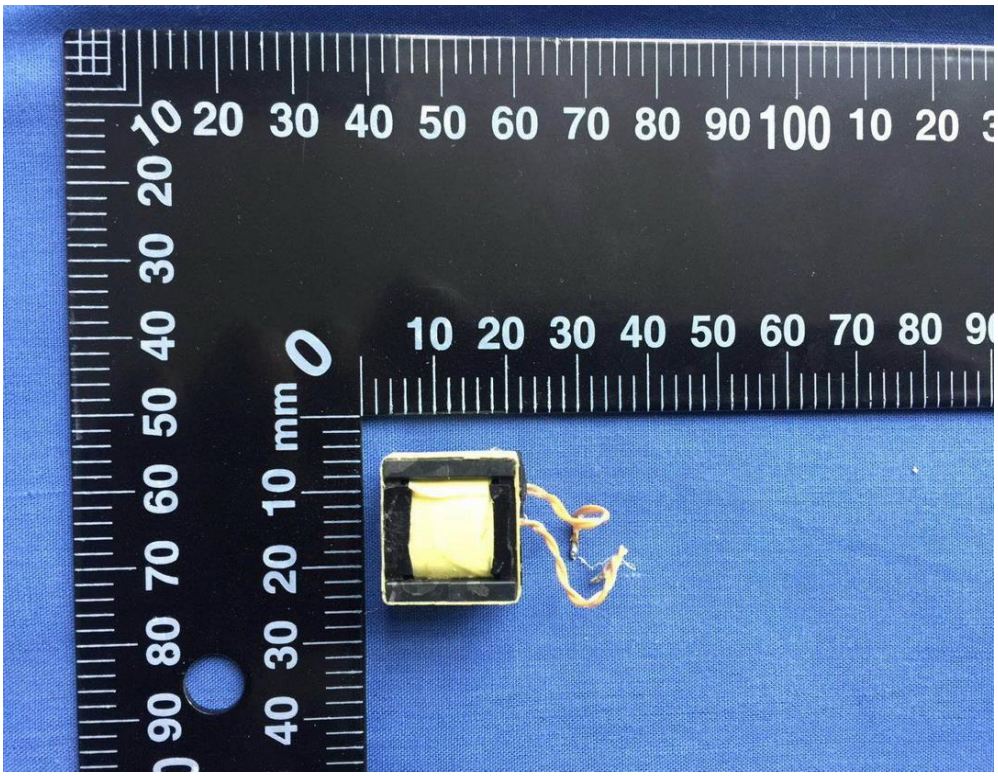
GTM86100-1005-W2E-USB Internal view – Component side view of PCB



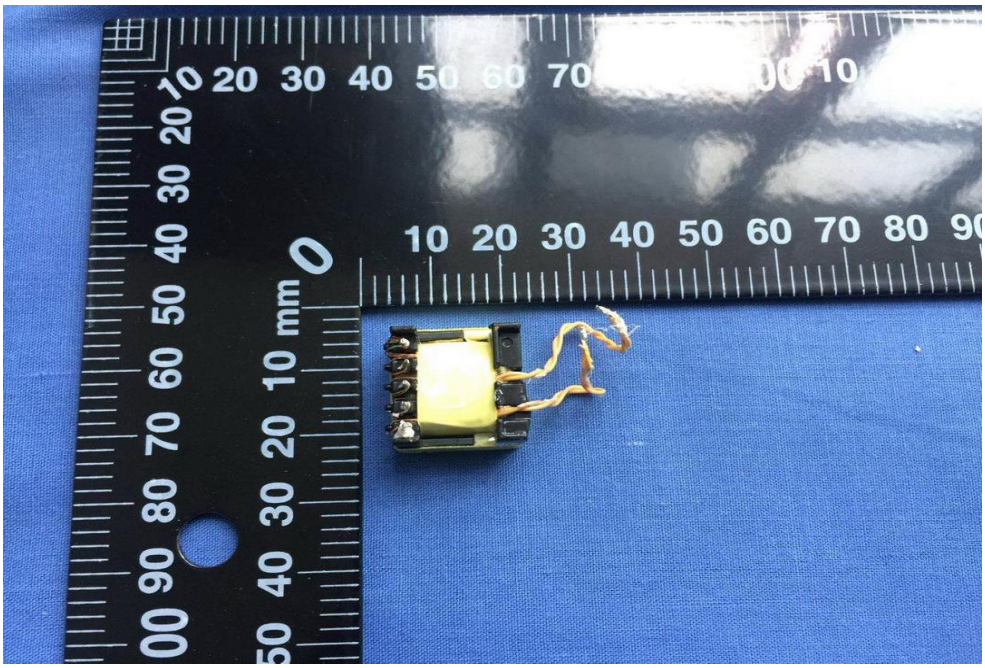
GTM86100-1005-W2E-USB Internal view – Soldering side view of PCB



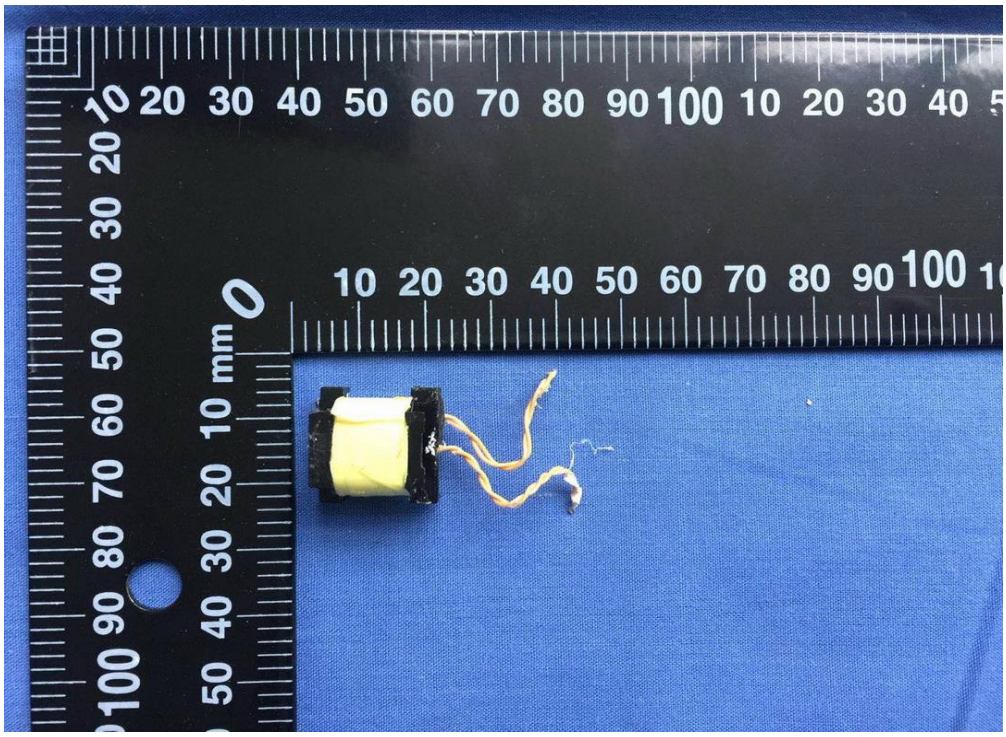
External view of transformer



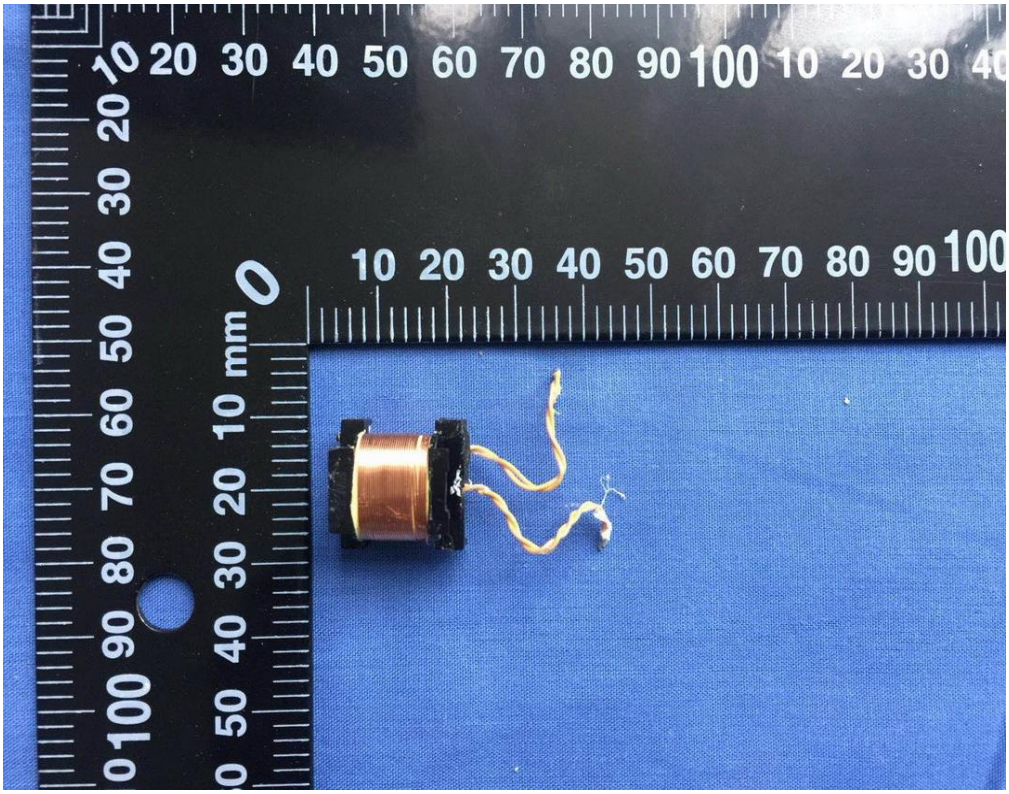
External view of transformer



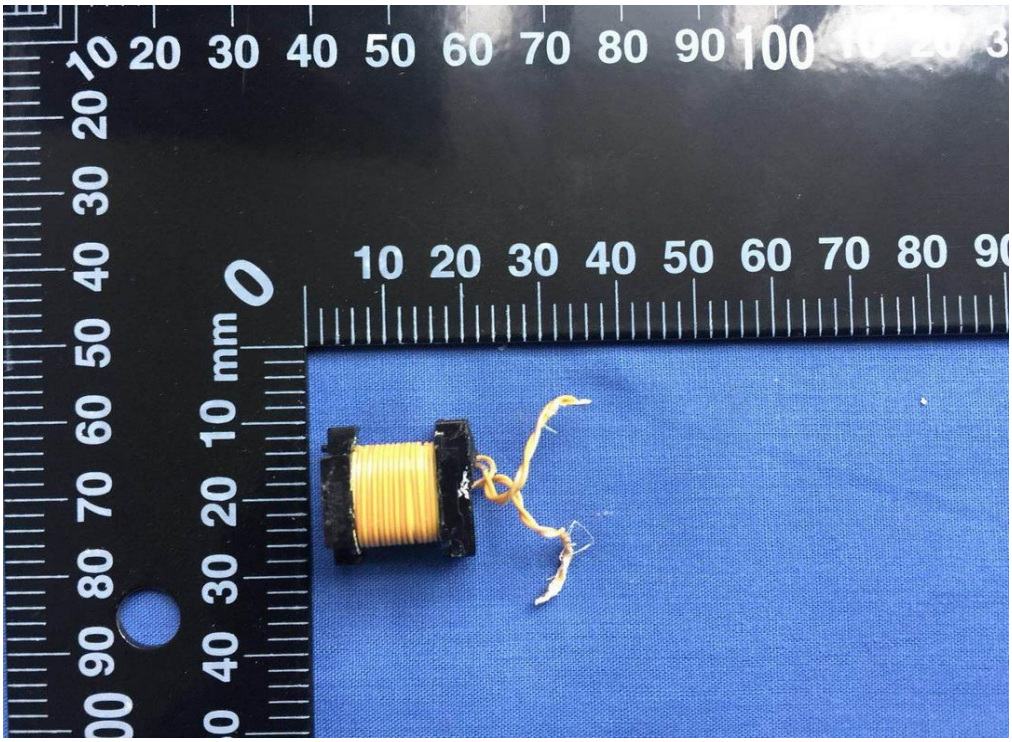
Transformer



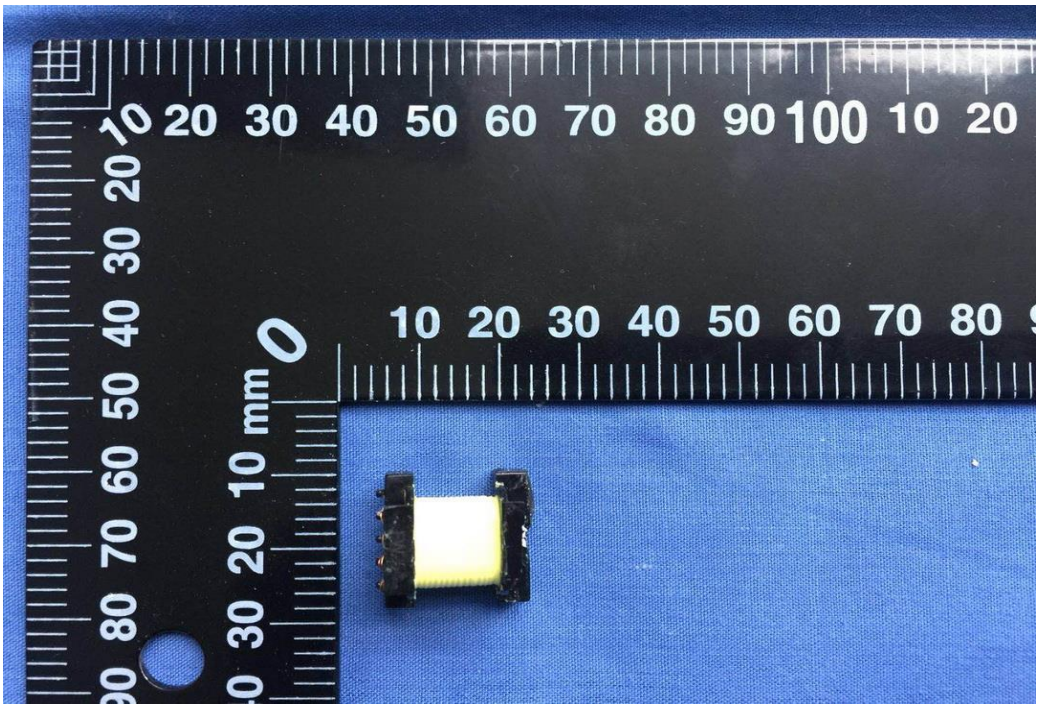
Primary winding view of mains transformer



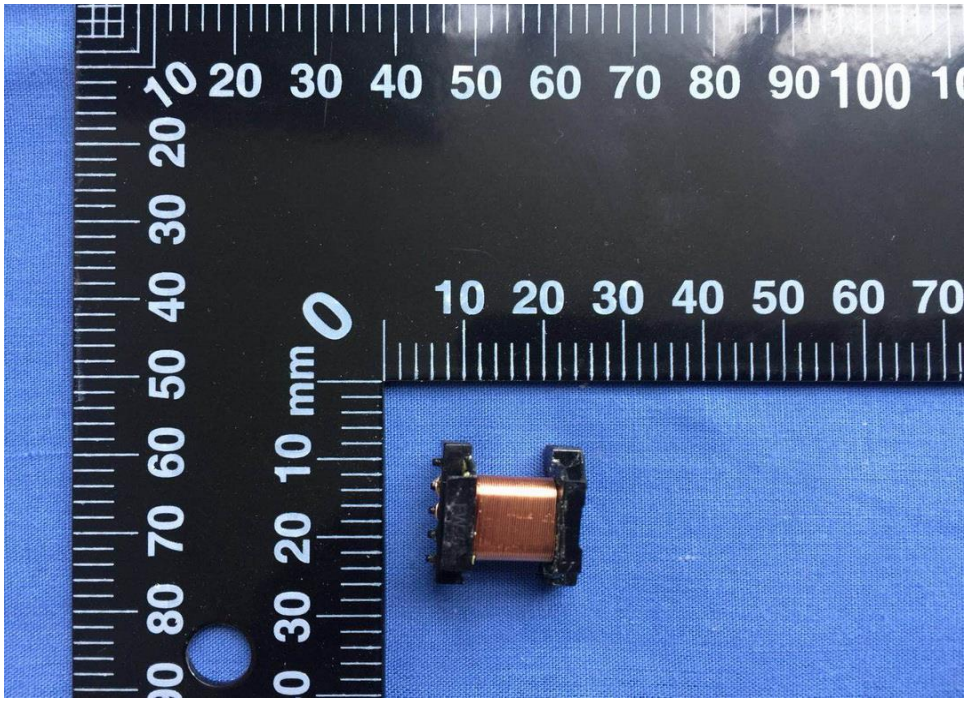
Secondary winding view of mains transformer (TIW)



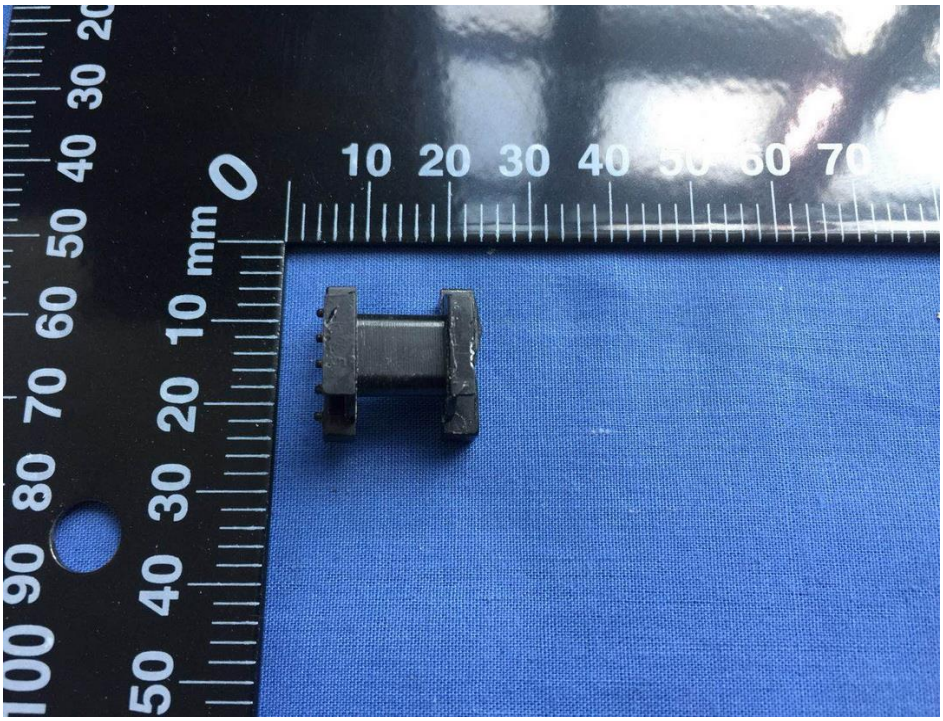
Transformer



Transformer



Bobbin view of transformer



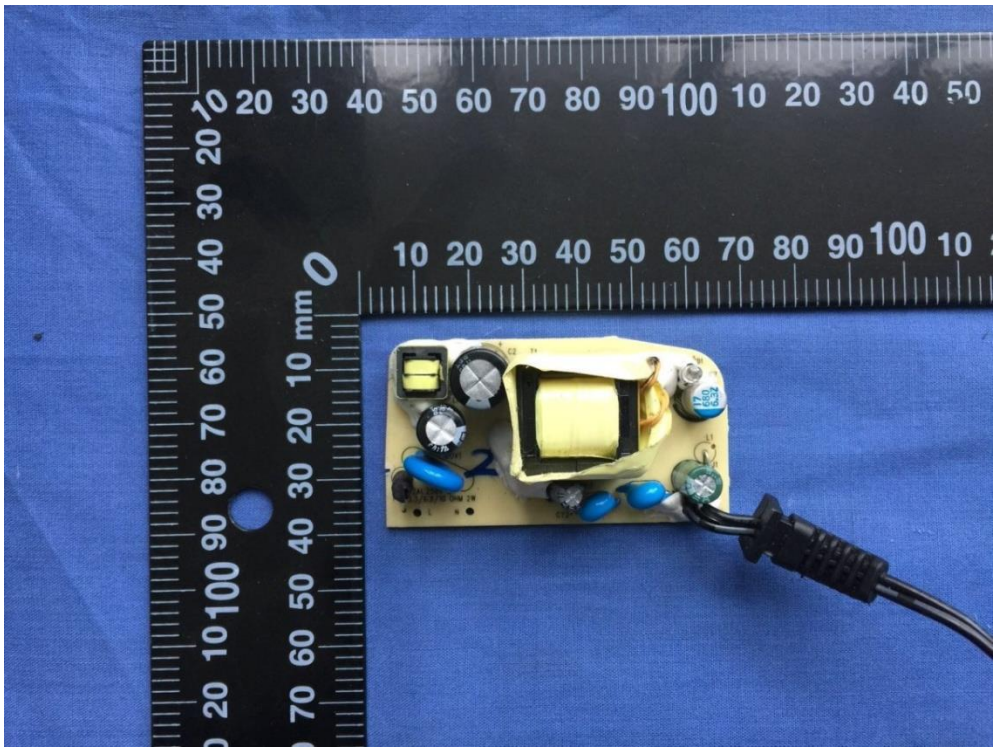
GTM86100-1005-W2E External view

GTM86100-1005-W2E External view

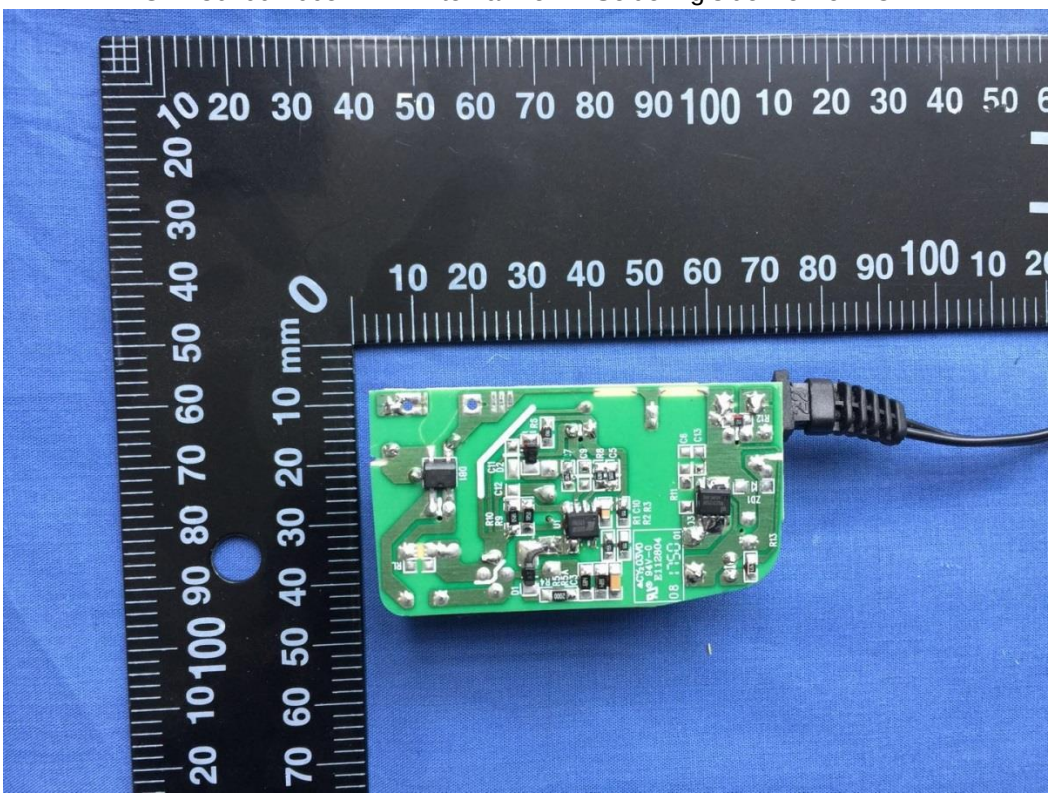
GTM86100-1005-W2A External view

GTM86100-1005-W2A External view

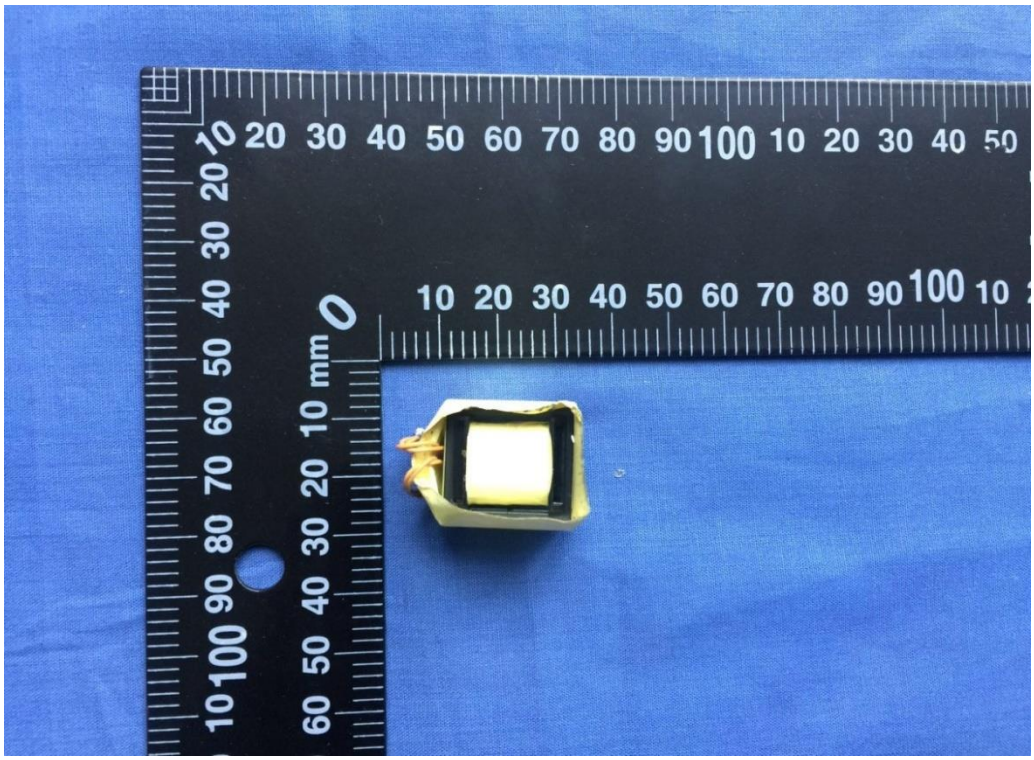
GTM86100-1005-W2E Internal view – Component side view of PCB



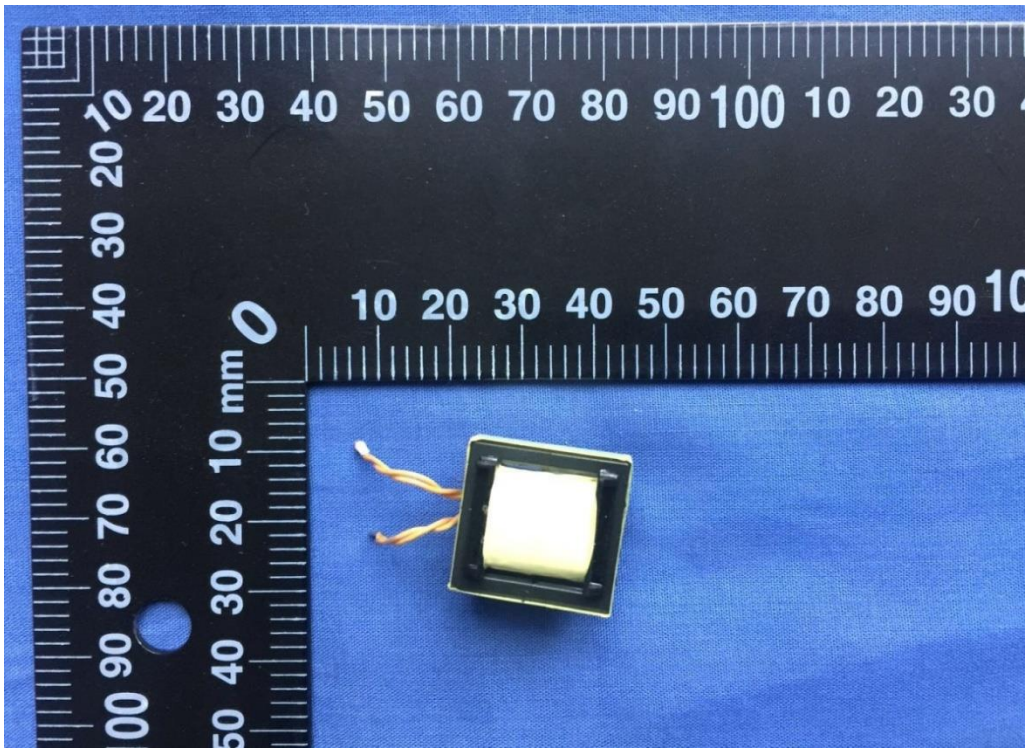
GTM86100-1005-W2E Internal view – Soldering side view of PCB



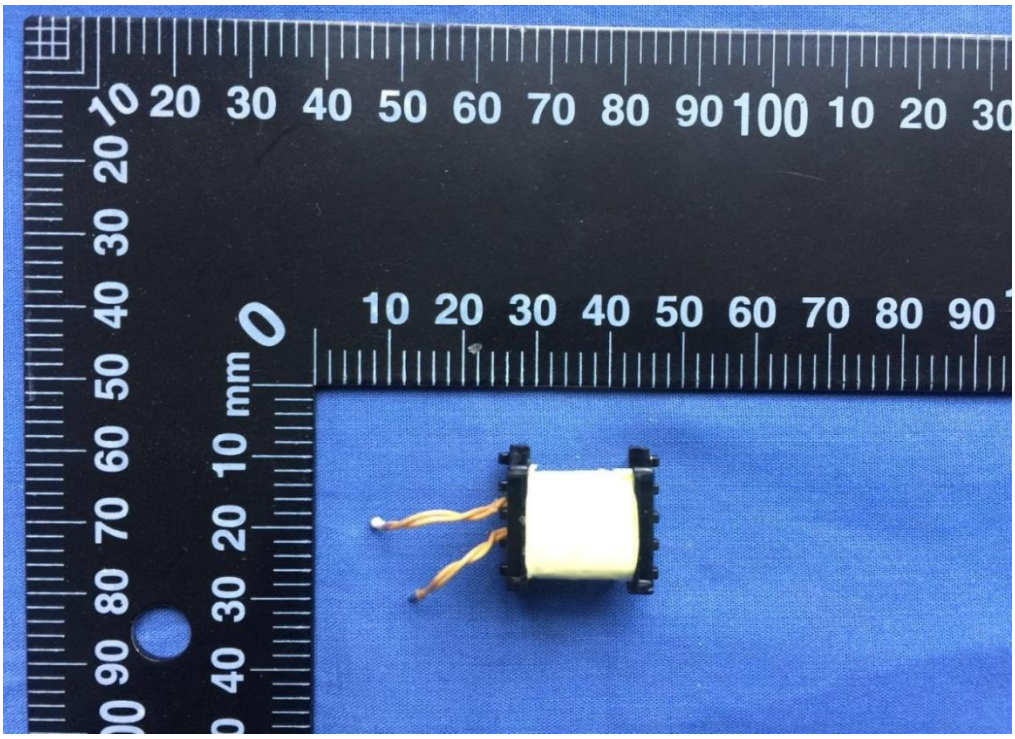
External view of transformer



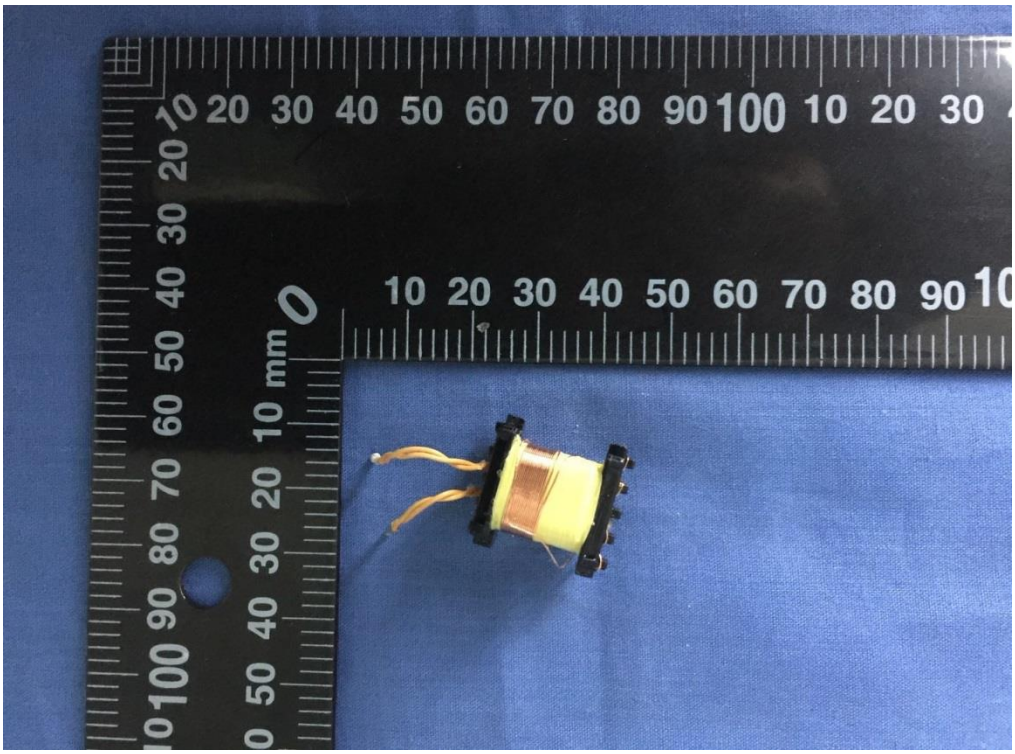
Transformer



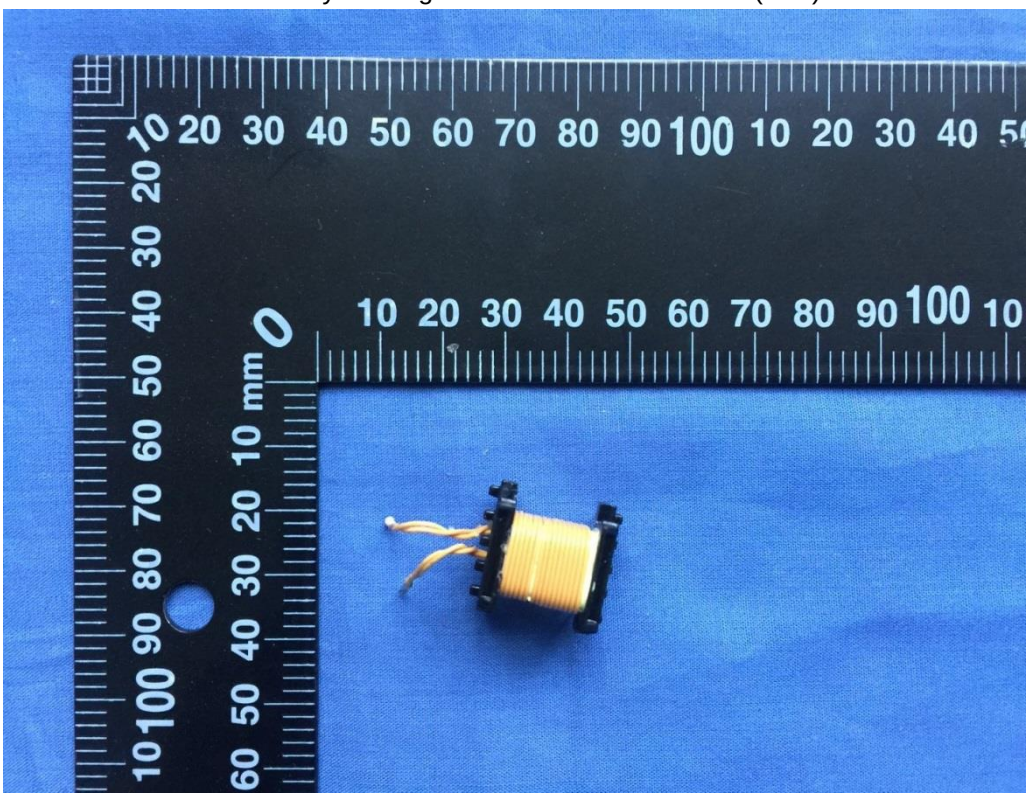
Transformer



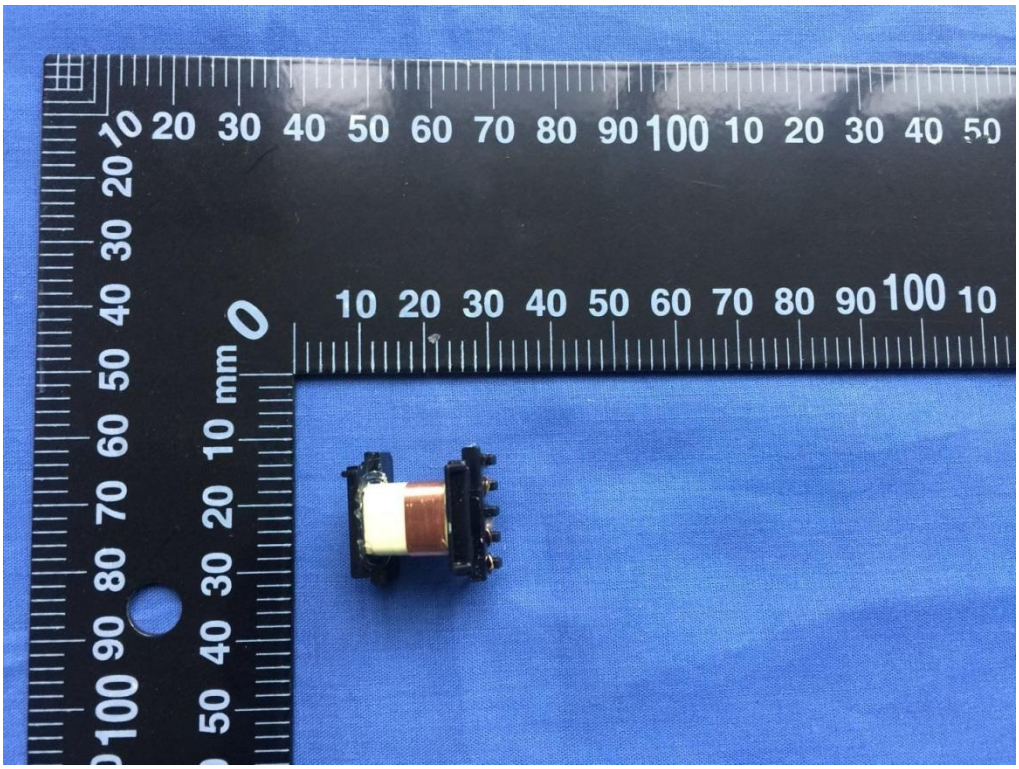
Transformer



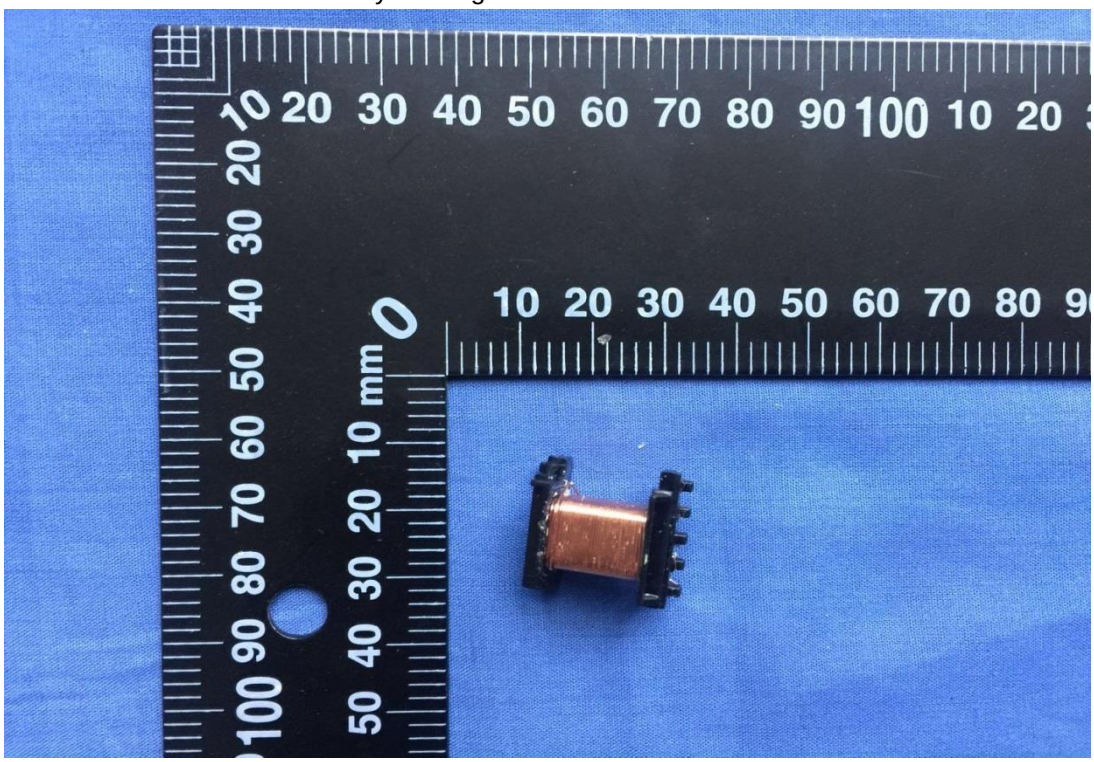
Secondary winding view of mains transformer (TIW)



Transformer



Primary winding view of mains transformer



Bobbin view of transformer