



Test Report issued under the responsibility of:



**TEST REPORT
IEC 62368-1**

**Audio/video, information and communication technology equipment
Part 1: Safety requirements**

Report Number..... : CN229OG0 001

Date of issue : Sep. 08, 2022

Total number of pages : 74

**Name of Testing Laboratory
preparing the Report :** TÜV Rheinland (Shenzhen) Co., Ltd.

Applicant's name : Shen Zhen MTC Co., Ltd.

Address : MTC Industry Park, 1st Lilang Road Xialilang community, Nanwan street, Longgang District Shenzhen Guangdong P.R. China

Test specification:

Standard : IEC 62368-1:2018

Test procedure..... : CB Scheme

Non-standard test method..... : N/A

TRF template used : IECEE OD-2020-F1:2021, Ed.1.4

Test Report Form No..... : IEC62368_1E

Test Report Form(s) Originator.... : UL(US)

Master TRF : Dated 2022-04-14

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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.

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Test item description	LCD Monitor	
Trade Mark(s)		
Manufacturer	Sharp NEC Display Solutions, Ltd. 4-28, Mita 1-chome, Minato-ku, Tokyo, 108-0073 Japan	
Model/Type reference	E224F, E224F-BK, AS224F, AS224F-BK, E224F-**, AS224F-** (* can be A-Z, 0-9 or "-" or blank. For marketing purpose, no safety affected)	
Ratings	Input: 100-240V~, 50/60Hz, 0.4-0.25A (1.3A for Mexico)	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ CB Testing Laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.	
Testing location/ address	1601-1604, 17-18F, Tower A Building 2, Shenzhen International Innovation Valley, Dashi 1st Road, Xili Street, Xili Community, Nanshan District, Shenzhen 518052, China	
Tested by (name, function, signature)	Jammy Zhang / Project Handler	
Approved by (name, function, signature) ..	Julia Yan / Reviewer	
Testing procedure: CTF Stage 1:		
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		
Testing procedure: CTF Stage 2:		
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) .		
Approved by (name, function, signature) ..		
Testing procedure: CTF Stage 3:		
Testing procedure: CTF Stage 4:		
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) .		
Approved by (name, function, signature) ..		
Supervised by (name, function, signature) :		

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

Attachment 1: National differences (39 pages)
Attachment 2: Measurement Section (5 pages)
Attachment 3: Photo documentation (13 pages)

Summary of testing:
Tests performed (name of test and test clause):

Clause(s)	Test(s)
5.2	Electrical energy source classifications
5.3.2	Accessibility to electrical energy sources and safeguards (Accessibility test)
5.4.1.4, 6.3.2, 9.3, B.2.6	Temperature measurements
5.4.1.8	Determination of working voltage
5.4.1.10.3	Ball pressure test
5.4.2 & 5.4.3	Minimum Clearances/Creepage distance
5.4.8	Humidity conditioning
5.4.9	Electric strength test
5.5.2.2	Safeguards against capacitance discharge test
5.6.6	Resistance of the protective bonding system
5.7.4	Unearthed accessible parts test
5.7.2.2, 5.7.5	Earthed accessible conductive parts test
6.2.2	Electrical power sources (PS) measurements for classification
8.7	Equipment mounted to wall or ceiling
B.2.5	Input tests
B.3	Simulated Abnormal operating condition tests
B.4	Simulated single fault conditions
F.3.9	Durability, legibility and permanence of markings
P.4	Adhesives securing test
T.2	Steady force test, 10N
T.3	Steady force test, 30 N
T.5	Steady force test, 250N
T.6	Enclosure impact test
T.8	Stress relief test

If not otherwise specified, tests were performed on models E224F-BK as to represent other similar models.

The EUTs passed the tests.

Testing location:

All tests as described in Test Case and Measurement Sections were performed at the laboratory described on page 2

Summary of compliance with National Differences:

EU Group Differences, EU Special National Conditions, CA, US, SG

Explanation of used codes: CA=Canada, US=United State of America, SG=Singapore

For National Differences see attachment 1 of this test report.

☒ The product fulfils the requirements of EN IEC 62368-1:2020+A11:2020.

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

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

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

Information on uncertainty of measurement:

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

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

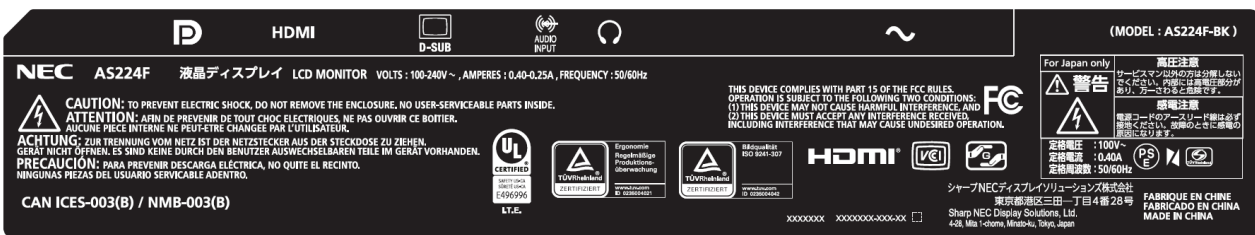
Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

Copy of marking plate:

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.



For model E224F-BK



For model AS224F-BK

Notes: Since similar label used, only label for models above listed to represent other similar ones.

Test item particulars:			
Product group	☒ end product	☐ built-in component	
Classification of use by	☒ Ordinary person	☒ Children likely present	
	☐ Instructed person		
	☐ Skilled person		
Supply connection	☒ AC mains	☐ DC mains	
	☐ 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		
	☐ pluggable equipment type B -		
	☐ non-detachable supply cord		
	☐ appliance coupler		
	☐ permanent connection		
	☐ mating connector	☐ other:	
Considered current rating of protective device	☒ 16A (EU except UK and FR), 13A (UK) or 20A (FR, CA and US);		
	Location: ☒ building ☐ equipment		
	☐ N/A		
Equipment mobility	☒ movable	☐ hand-held	☐ transportable
	☐ direct plug-in	☐ stationary	☐ for building-in
	☒ wall/ceiling-mounted	☐ SRME/rack-mounted	
	☐ other:		
Overvoltage category (OVC)	☐ OVC I	☒ OVC II	☐ OVC III
	☐ OVC IV	☐ other:	
Class of equipment	☒ Class I	☐ Class II	☐ Class III
	☐ Not classified	☐	
Special installation location	☒ N/A	☐ restricted access area	
	☐ outdoor location	☐	
Pollution degree (PD)	☐ PD 1	☒ PD 2	☐ PD 3
Manufacturer's specified T_{ma}	40 °C	☐ Outdoor: minimum	°C
IP protection class	☒ IPX0	☐ IP__	
Power systems	☒ TN	☐ TT	☐ IT - V _{L-L}
	☐ not AC mains		
Altitude during operation (m)	☐ 2000 m or less	☒ 5000 m	
Altitude of test laboratory (m)	☒ 2000 m or less	☐ m	
Mass of equipment (kg)	☒ Weight: 4.95Kg (with Base stand), 2.9Kg (without Base stand)		

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 : Jul. 18, 2022 Date (s) of performance of tests : Jul. 18, 2022 to Aug. 08, 2022	
General remarks: "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☐ comma / ☒ point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 62368-1:	
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)..... : Shen Zhen MTC Co., Ltd. MTC Industry Park, 1st Lilang Road Xialilang community, Nanwan street, Longgang District Shenzhen Guangdong P.R. China	
General product information and other remarks: The product covered in this report is a 22 inch Monitor intended to use for Information technology equipment or Audio and Video equipment. All models are identical to each other except model name. The unit has the following features: 1. LCD panel type: LED backlight, 22 inch; 2. The user manual specified the relevant information for installation instruction. 3. Main board includes one HDMI, one DP in, one VGA, one Audio in port and one Headphone. 4. Max. ambient temperature 40°C declared by the client; 5. The equipment is operated up to 5000m above sea level as declared by manufacturer. Clearances have been evaluated according to IEC 62368-1: table 16 with a multiplication factor of 1.48 throughout this report. 6. For AU National Differences, see attachment 1 of this test report. Explanation of used codes: AU= Australia	
Other Comments: This report is based on previous CB report CN22P5UE 001, after evaluation no additional test needed except for standard upgrading from IEC 62368-1:2014 (Second Edition) to IEC 62368-1: 2018.	

OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	Possible Hazard			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES3: primary circuit	Ordinary	N/A	N/A	Enclosure, See 5.4.2 , 5.4.3, 5.5.3 and 5.5.4
ES3: X2 capacitor	Ordinary	N/A	N/A	See 5.5.2.2
ES1: Accessible connectors and parts	Ordinary	N/A	N/A	N/A
ES1: Power board output (for main board)	Ordinary	N/A	N/A	N/A
ES1: LED driver output (for LED backlight)	Ordinary	N/A	N/A	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS3: > 100 Watt circuit (Primary circuits)	Combustible materials within equipment fire enclosure	No ignition occurs see sub- clause 6.3	see sub- clause 6.4.5, 6.4.6 for detail	N/A
PS3: > 100 Watt circuit (Primary circuits)	Plastic enclosure	No ignition occurs see sub- clause 6.3	see sub- clause 6.4.5, 6.4.6, 6.4.8 for detail	N/A
PS3: > 100 Watt circuit (Primary circuits)	Internal wiring material	No ignition occurs see sub- clause 6.3	see sub- clause 6.5. for detail	N/A
PS2: ≤ 100 Watt circuit (Secondary circuits)	Combustible materials within equipment fire enclosure	No ignition occurs see sub- clause 6.3	see sub- clause 6.4.5 for detail	N/A
PS2: ≤ 100 Watt circuit (Secondary circuits)	Plastic enclosure	No ignition occurs see sub- clause 6.3	see sub- clause 6.4.5 for detail	N/A
PS2: ≤ 100 Watt circuit (Secondary circuits)	Internal wiring material	No ignition occurs see sub- clause 6.3	see sub- clause 6.5. for detail	N/A
PS1: ≤15 Watt circuit (accessible secondary terminals)	Accessible connectors and parts	N/A	N/A	N/A

7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Sharp edges and corners	Ordinary	N/A	N/A	N/A
MS1: Equipment mass	Ordinary	N/A	N/A	N/A
MS3: Wall mount unit	Ordinary	N/A	N/A	See 8.7
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: All accessible parts	Ordinary	N/A	N/A	N/A
TS3: All Internal parts	Ordinary	N/A	N/A	External enclosure
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
Less than RS1: Indicating lights	Ordinary	N/A	N/A	N/A
Less than RS1 LED backlight of LCD panel	Ordinary	N/A	N/A	N/A
Supplementary Information:				
“B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced Safeguard				

ENERGY SOURCE DIAGRAM

Optional. Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems.

Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings

■ ES ■ PS ■ MS ■ TS ■ RS

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2.	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
4.1.3	Equipment design and construction	No accessible part which could cause injury. Also see sub-clause B.2, B.3 and B.4	P
4.1.4	Specified ambient temperature for outdoor use (°C) :	Not for outdoor use	N/A
4.1.5	Constructions and components not specifically covered	No such consideration	N/A
4.1.8	Liquids and liquid filled components (LFC)	Not such equipment	N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness		P
4.4.3.1	General	For adhesives securing parts serving as safeguards, see Annex P.4. Others see below.	P
4.4.3.2	Steady force tests	(See Clause T.3, T.5)	P
4.4.3.3	Drop tests		N/A
4.4.3.4	Impact tests	(See Clause T.6)	P
4.4.3.5	Internal accessible safeguard tests	No such part	N/A
4.4.3.6	Glass impact tests	Laminated glass used.	N/A
4.4.3.7	Glass fixation tests	Laminated glass not used as a safeguard for class 3 energy source other than PS3	N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	Phenolic material used. See table T.8 for details	P
4.4.3.9	Air comprising a safeguard	See Annex T for details	P
4.4.3.10	Accessibility, glass, safeguard effectiveness	No damaged. The class 3/2 energy sources could not	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
		become accessible to an ordinary person, and all other safeguards remain effective during and after above tests.	
4.4.4	Displacement of a safeguard by an insulating liquid	No such construction used	N/A
4.4.5	Safety interlocks	No such construction	N/A
4.5	Explosion		P
4.5.1	General	No explosion occurs during normal/abnormal operation and single fault conditions.	P
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3, B.4)	P
	No harm by explosion during single fault conditions	(See Clause B.3, B.4)	P
4.6	Fixing of conductors		P
	Fix conductors not to defeat a safeguard	Compliance checked.	P
	Compliance is checked by test :	(See Clause T.2)	P
4.7	Equipment for direct insertion into mains socket-outlets		N/A
4.7.2	Mains plug part complies with relevant standard .. :	The equipment is not for direct insertion into mains socket-outlets.	N/A
4.7.3	Torque (Nm) :		N/A
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General	No lithium coin/button batteries are used.	N/A
4.8.2	Instructional safeguard :		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	Likelihood of fire or shock due to entry of conductive object		P
4.10	Component requirements		P
4.10.1	Disconnect Device	(See Annex L)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.10.2	Switches and relays	No switch and relay used	N/A
5	ELECTRICALLY-CAUSED INJURY		P
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1, ES2 and ES3 limits	See below	P
5.2.2.2	Steady-state voltage and current limits	(See appended table 5.2)	P
5.2.2.3	Capacitance limits	(See appended table 5.2)	P
5.2.2.4	Single pulse limits		N/A
5.2.2.5	Limits for repetitive pulses		N/A
5.2.2.6	Ringling signals	No such signals	N/A
5.2.2.7	Audio signals		P
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	See "OVERVIEW OF EMPLOYED SAFEGUARDS" table.	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits	See clause 5.3.2.1	P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards	ES2 or ES3 source cannot access by ordinary persons and ES3 source cannot accessed by instructed persons. Double or reinforced safeguard is provided between ES2 or ES3 and ordinary persons or instructed persons.	P
	Accessibility to outdoor equipment bare parts	Not for outdoor use	N/A
5.3.2.2	Contact requirements		P
	Test with test probe from Annex V	No bare parts at ES2 or ES3 or ES3 basic safeguard could be accessed by operator.	—
5.3.2.2 a)	Air gap – electric strength test potential (V)		N/A
5.3.2.2 b)	Air gap – distance (mm)	Complied with the minimum distance requirement.	P
5.3.2.3	Compliance	Compliance checked by clause T.3	P
5.3.2.4	Terminals for connecting stripped wire	No such terminal	N/A
5.4	Insulation materials and requirements		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.2	Properties of insulating material	Hygroscopic materials are not used for insulating material. Also see sub-clause 5.4.8 and 5.4.9.1	P
5.4.1.3	Material is non-hygroscopic	See above	P
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degrees	2	P
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	No such part	N/A
5.4.1.5.3	Thermal cycling test		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	(See appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces	Considered	P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	(See appended table 5.4.1.10)	P
5.4.1.10.2	Vicat test		N/A
5.4.1.10.3	Ball pressure test	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		P
5.4.2.1	General requirements		P
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance	Using procedure 2 to determine the clearance according to 5.4.2.3.	N/A
	Temporary overvoltage		—
5.4.2.3	Procedure 2 for determining clearance	(See appended table 5.4.2, 5.4.3)	P
5.4.2.3.2.2	a.c. mains transient voltage	2500 Vpk considered for Overvoltage Cat. II	—
5.4.2.3.2.3	d.c. mains transient voltage	No such transient	—
5.4.2.3.2.4	External circuit transient voltage	No such transient	—
5.4.2.3.2.5	Transient voltage determined by measurement		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	Not applicable	N/A
5.4.2.5	Multiplication factors for clearances and test voltages	Multiplication factor is 1.48 for altitude up to 5000m.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.6	Clearance measurement	(See appended table 5.4.2, 5.4.3)	P
5.4.3	Creepage distances	(See appended table 5.4.2, 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material group	Material group IIIb assumed.	—
5.4.3.4	Creepage distances measurement	(See appended table 5.4.2, 5.4.3)	P
5.4.4	Solid insulation		P
5.4.4.1	General requirements		P
5.4.4.2	Minimum distance through insulation	(See appended table 5.4.4.2)	P
5.4.4.3	Insulating compound forming solid insulation	Alternative requirement for semiconductor device are given in 5.4.4.4.	N/A
5.4.4.4	Solid insulation in semiconductor devices	See clause G.12 for details	P
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material		P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material		P
	Number of layers (pcs)	At least 2 layers insulation tape used in transformers for reinforced insulation.	P
5.4.4.6.3	Non-separable thin sheet material		N/A
	Number of layers (pcs)		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	See clause G.5	P
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P , K_R , d , V_{PW} (V)		N/A
	Alternative by electric strength test, tested voltage (V), K_R	(See appended Table 5.4.4.9) and (See appended Table 5.4.9)	P
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance (M Ω)		N/A
	Electric strength test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.6	Insulation of internal wire as part of supplementary safeguard		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning	Complied.	P
	Relative humidity (%), temperature (°C), duration (h) :	95%, 40°C, 120h	—
5.4.9	Electric strength test		P
5.4.9.1	Test procedure for type test of solid insulation..... :	(See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine test		N/A
5.4.10	Safeguards against transient voltages from external circuits		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
5.4.10.3	Verification for insulation breakdown for impulse test :		N/A
5.4.11	Separation between external circuits and earth		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V) :		—
	Nominal voltage U_{peak} (V) :		—
	Max increase due to variation ΔU_{sp} :		—
	Max increase due to ageing ΔU_{sa} :		—
5.4.11.3	Test method and compliance :		N/A
5.4.12	Insulating liquid	No such liquid	N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid :		N/A
5.4.12.3	Compatibility of an insulating liquid :		N/A
5.4.12.4	Container for insulating liquid :		N/A
5.5	Components as safeguards		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.1	General		P
5.5.2	Capacitors and RC units		P
5.5.2.1	General requirement	X-Cap. and Y-Cap. are IEC 60384-14 approval components and complied with Annex G.11.	P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector :	(See appended table 5.5.2.2)	P
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See sub-clause 5.4 or Clause G.12)	P
5.5.5	Relays	No such component	N/A
5.5.6	Resistors	No such resistor used	N/A
5.5.7	SPDs	No such component	N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable :	No such construction	N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment	Not for outdoor used	N/A
	RCD rated residual operating current (mA) :		—
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors	Protective conductor served as a supplementary safeguard to prevent accessible conductive parts from exceeding ES2 limits.	P
5.6.2.1	General requirements	No switch or overcurrent protective device in protective conductor.	P
5.6.2.2	Colour of insulation	Green /yellow color wire used.	P
5.6.3	Requirement for protective earthing conductors	Appliance inlet used	P
	Protective earthing conductor size (mm ²) :	(See table 4.1.2)	—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors		P
5.6.4.1	Protective bonding conductors	Complied with 5.6.6 and conductor sizes in Table 31. Required min. conductor size in Table 31.	P
	Protective bonding conductor size (mm ²). :	(See table 4.1.2)	—

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.2	Protective current rating (A)..... :	Rated current of the equipment considered	P
5.6.5	Terminals for protective conductors		P
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :	Approved appliance inlet used. Others complied with Table 32	P
	Terminal size for connecting protective bonding conductors (mm) :	The screw connection with terminal and washer as in 5.6.5.2 to metal parts, as the protective bonding terminal, star washer screw type used for the connection which nominal thread diameter is 3.8 mm min.	P
5.6.5.2	Corrosion	Complied	P
5.6.6	Resistance of the protective bonding system		P
5.6.6.1	Requirements	See below	P
5.6.6.2	Test Method..... :	(See appended table 5.6.6)	P
5.6.6.3	Resistance (Ω) or voltage drop..... :	(See appended table 5.6.6)	P
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm ²)..... :		N/A
	Class II with functional earthing marking :		N/A
	Appliance inlet cl & cr (mm)..... :		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	(See appended table 5.2, 5.7.4, 5.7.5)	P
5.7.2.2	Measurement of voltage	(See appended table 5.2)	P
5.7.3	Equipment set-up, supply connections and earth connections	Clause 4, 5.3 and 5.4 of IEC 60990: 2016 applied.	P
5.7.4	Unearthed accessible parts :	(See appended table 5.2, 5.7.4)	P
5.7.5	Earthed accessible conductive parts :	(See appended table 5.7.5)	P
5.7.6	Requirements when touch current exceeds ES2 limits	Not exceed ES2 limits	N/A
	Protective conductor current (mA)..... :		N/A
	Instructional Safeguard..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.7	Prospective touch voltage and touch current associated with external circuits		N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment connected to earthed external circuits, current (mA)		N/A
	b) Equipment connected to unearthed external circuits, current (mA)		N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES		N/A
	Air gap (mm).....		N/A

6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of PS and PIS		P
6.2.2	Power source circuit classifications	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials	(See appended table B.1.5 and table B.3, B.4)	P
	Combustible materials outside fire enclosure	5VB plastic enclosure used (see appended table 4.1.2 for detail)	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method	Method by control of fire spread applied, detail see sub-clauses 6.4.4, 6.4.5 and 6.4.6	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	Supplementary safeguards		N/A
6.4.3.2	Single Fault Conditions		N/A
	Special conditions for temperature limited by fuse		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits	See below	P
6.4.5.2	Supplementary safeguards	Compliance detailed as follows: - <u>All printed board</u> : rated min. V-1 - <u>All other components or parts</u> : at least V-2 except for parts mounted on V-1 material or small parts of combustible material (with mass less than 4g) or components complying to relevant IEC standard. - <u>Separated from PIS by the requirements of 6.4.7</u> - <u>Isolating transformer</u> : complying with G.5.3.	P
6.4.6	Control of fire spread in PS3 circuits	In addition to the compliance of sub-clause 6.4.5, a fire enclosure according to sub-clause 6.4.8 is provided with the equipment.	P
6.4.7	Separation of combustible materials from a PIS		P
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.2	Fire enclosure and fire barrier material properties	Internal metal enclosure provided is to impede the spread of fire	P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	Internal metal enclosure used	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	See below	P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions	Construction can prevent ignition of the edges of the barrier. See attachment 2 Measurement Section table.	P
6.4.8.3.3	Top openings and properties		P
	Openings dimensions (mm)..... :	See attachment 2 Measurement Section table.	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3.4	Bottom openings and properties		P
	Openings dimensions (mm)..... :	See attachment 2 Measurement Section table.	P
	Flammability tests for the bottom of a fire enclosure		N/A
	Instructional Safeguard..... :		N/A
6.4.8.3.5	Side openings and properties		P
	Openings dimensions (mm)..... :	See attachment 2 Measurement Section table.	P
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)..... :	No such construction	N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating :	Internal metal enclosure used	P
6.4.9	Flammability of insulating liquid..... :	No such liquid used	N/A
6.5	Internal and external wiring		P
6.5.1	General requirements	The material of VW-1 on internal or external wiring were considered compliance equivalent to IEC/TS 60695-11-21 relevant standards.	P
6.5.2	Requirements for interconnection to building wiring :	No such interconnection to building wiring.	N/A
6.5.3	Internal wiring size (mm ²) for socket-outlets..... :	No such construction	N/A
6.6	Safeguards against fire due to the connection to additional equipment		N/A

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards or personal protective equipment (PPE)		N/A
	Personal safeguards and instructions :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010)..... :		—
7.6	Batteries and their protection circuits		N/A

8	MECHANICALLY-CAUSED INJURY		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

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Clause	Requirement + Test	Result - Remark	Verdict
8.4.1	Safeguards		N/A
	Instructional Safeguard.....:		
8.4.2	Sharp edges or corners	No sharp edges and corners in accessible area.	P
8.5	Safeguards against moving parts		N/A
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts		N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard.....:		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m).....:		N/A
	Space between end point and nearest fixed mechanical part (mm)		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N).....:		N/A
8.5.4.3.5	Compliance		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.5	High pressure lamps		N/A
	Explosion test		N/A
8.5.5.3	Glass particles dimensions (mm)		N/A
8.6	Stability of equipment		N/A
8.6.1	General	Classification MS1 according to table 3, line 5 and no stability requirements.	N/A
	Instructional safeguard.....		N/A
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm)		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test		N/A
8.7	Equipment mounted to wall, ceiling or other structure		P
8.7.1	Mount means type	The unit withstood the load test without damage or breakage from the VESA adaptor kit. VESA compatible wall bracket: 4 holes, M4x12(L)mm	P
8.7.2	Test methods		P
	Test 1, additional downwards force (N).....		N/A
	Test 2, number of attachment points and test force (N).....	28.5N applied for each point (four directions plus inward and outward).	P
	Test 3 Nominal diameter (mm) and applied torque (Nm).....	1.2Nm applied for each point	P
8.8	Handles strength		N/A
8.8.1	General		N/A
8.8.2	Handle strength test		N/A
	Number of handles.....		—
	Force applied (N)		—
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test		N/A
8.10	Carts, stands and similar carriers		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.10.1	General		N/A
8.10.2	Marking and instructions.....:		N/A
8.10.3	Cart, stand or carrier loading test		N/A
	Loading force applied (N)		N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Force applied (N)		—
8.10.6	Thermoplastic temperature stability		N/A
8.11	Mounting means for slide-rail mounted equipment (SRME)		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	Telescoping or rod antennas		N/A
	Button/ball diameter (mm)		—

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications		P
9.3	Touch temperature limits		P
9.3.1	Touch temperatures of accessible parts	(See appended table 9.3)	P
9.3.2	Test method and compliance	(See appended table 9.3)	P
9.4	Safeguards against thermal energy sources		P
9.5	Requirements for safeguards		P
9.5.1	Equipment safeguard	Enclosure provided to limit the transfer of thermal energy of internal parts under normal operating conditions and abnormal operating conditions.	P
9.5.2	Instructional safeguard.....:		N/A
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance		N/A

10	RADIATION		P
10.2	Radiation energy source classification		P
10.2.1	General classification	See below	P
	Lasers	No such radiation	—
	Lamps and lamp systems	The following parts are considered as less than RG1 without tests: - Indicating lights; - backlight of LCD panel (brightness $\leq 10000 \text{cd/m}^2$)	—
	Image projectors	No such radiation	—
	X-Ray	No such radiation	—
	Personal music player	No such radiation	—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply		N/A
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		P
10.4.1	General requirements	Indicating light and panel considered as less than RG1 according to IEC 62471 series	P
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure		N/A
10.4.3	Instructional safeguard		N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements		N/A
	Instructional safeguard for skilled persons		—
10.5.3	Maximum radiation (pA/kg)		—
10.6	Safeguards against acoustic energy sources		N/A
10.6.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A).....:		N/A
	Unweighted RMS output voltage (mV).....:		N/A
	Digital output signal (dBFS).....:		N/A
10.6.3	Requirements for dose-based systems		N/A
10.6.3.1	General requirements		N/A
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30).....:		N/A
	Warning for MEL ≥ 100 dB(A).....:		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards.....:		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV).....:		N/A
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A).....:		N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A).....:		N/A

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.1	General		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	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.....:	(See appended table B.2.5)	P
B.2.3	Supply voltage and tolerances	Considered	P
B.2.5	Input test.....:	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General	(See appended table B.3, B.4)	P
B.3.2	Covering of ventilation openings	(See appended table B.3, B.4)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructional safeguard		N/A
B.3.3	DC mains polarity test		N/A
B.3.4	Setting of voltage selector		N/A
B.3.5	Maximum load at output terminals	(See appended table B.3, B.4)	P
B.3.6	Reverse battery polarity		N/A
B.3.7	Audio amplifier abnormal operating conditions	(See appended table B.3)	P
B.3.8	Safeguards functional during and after abnormal operating conditions	(See appended table B.3, B.4)	P
B.4	Simulated single fault conditions		P
B.4.1	General		P
B.4.2	Temperature controlling device		N/A
B.4.3	Blocked motor test		N/A
B.4.4	Functional insulation	For traces before fuse, comply with the clearance/creepage for basic insulation, others are considered to perform short-circuited during the tests.	P
B.4.4.1	Short circuit of clearances for functional insulation	See above.	P
B.4.4.2	Short circuit of creepage distances for functional insulation	See above.	P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnection of passive components		P
B.4.7	Continuous operation of components		N/A
B.4.8	Compliance during and after single fault conditions	(See appended table B.3, B.4)	P
B.4.9	Battery charging and discharging 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

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Clause	Requirement + Test	Result - Remark	Verdict
C.2.3	Carbon-arc light-exposure test		N/A
C.2.4	Xenon-arc light-exposure test		N/A
D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		P
E.1	Electrical energy source classification for audio signals		P
	Maximum non-clipped output power (W)..... :	(See appended table 4.1.2)	—
	Rated load impedance (Ω) :	(See appended table 4.1.2)	—
	Open-circuit output voltage (V)..... :	See table B.2.5	—
	Instructional safeguard :		—
E.2	Audio amplifier normal operating conditions		P
	Audio signal source type :	(See appended table 4.1.2)	—
	Audio output power (W)..... :		—
	Audio output voltage (V) :		—
	Rated load impedance (Ω) :		—
	Requirements for temperature measurement		P
E.3	Audio amplifier abnormal operating conditions		P
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language :	English. The other languages will be provided during the national approval.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010. -  (IEC 60417-5019) for the wiring terminal of protective earthing - The product also marked with  (IEC 60417-5009) for the stand-by condition.	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Equipment marking is located on the exterior surface and is easily visible.	P
F.3.2	Equipment identification markings	See the following details.	P
F.3.2.1	Manufacturer identification	See copy of marking plate.	P
F.3.2.2	Model identification	See copy of marking plate.	P
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains	The equipment is connected to AC mains supply.	P
F.3.3.2	Equipment without direct connection to mains	See above.	N/A
F.3.3.3	Nature of the supply voltage	~	P
F.3.3.4	Rated voltage.....	See copy of marking plate.	P
F.3.3.5	Rated frequency	See copy of marking plate	P
F.3.3.6	Rated current or rated power.....	See copy of marking plate.	P
F.3.3.7	Equipment with multiple supply connections	Only one supply connection.	N/A
F.3.4	Voltage setting device	No such devices within the equipment.	N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings	No such devices within the equipment.	N/A
F.3.5.2	Switch position identification marking.....		N/A
F.3.5.3	Replacement fuse identification and rating markings	The fuse is located within the equipment and not replaceable by an ordinary person or an instructed person. The fuse marking is marked on PCB near fuse : F1 T3.15AL 250Vac	P
	Instructional safeguards for neutral fuse	No such fuse used	N/A
F.3.5.4	Replacement battery identification marking	No such battery within the equipment.	N/A
F.3.5.5	Neutral conductor terminal	Not permanently connected equipment	N/A
F.3.5.6	Terminal marking location	See markings specified in F.3.6.1 and F.3.6.3 is not placed on removable parts such as screws.	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I equipment	See the following details.	P
F.3.6.1.1	Protective earthing conductor terminal :	Appliance inlet is provided. The symbol IEC 60417-5019 was located on appliance inlet.	P
F.3.6.1.2	Protective bonding conductor terminals :		N/A
F.3.6.2	Equipment class marking :	Not Class II equipment	N/A
F.3.6.3	Functional earthing terminal marking :		N/A
F.3.7	Equipment IP rating marking :	This equipment is classified as IPX0.	N/A
F.3.8	External power supply output marking :	Not external power supply	N/A
F.3.9	Durability, legibility and permanence of marking	See the following details.	P
F.3.10	Test for permanence of markings	The marking plate was subjected to the permanence of marking test. The marking plate was rubbed with cloth soaked with water for 15 s and then again for 15 s with the cloth soaked with petroleum spirit. After each test, there was no damage to the marking plate. The marking on the label did not fade. There was no curling of the marking plate and removed by hand.	P
F.4	Instructions		P
	l) Information prior to installation and initial use	Provided in user's manual.	P
	m) Equipment for use in locations where children not likely to be present		N/A
	n) Instructions for installation and interconnection	Provided in user's manual.	P
	o) Equipment intended for use only in restricted access area		N/A
	p) Equipment intended to be fastened in place	Provided in user's manual.	P
	q) Instructions for audio equipment terminals		N/A
	r) Protective earthing used as a safeguard	The instruction is provided in the user's manual.	P
	s) Protective conductor current exceeding ES2 limits	Not exceed the ES2 limits.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	t) Graphic symbols used on equipment	Graphical symbols not used as an instructional safeguard.	N/A
	u) Permanently connected equipment not provided with all-pole mains switch	Not such equipment	N/A
	v) Replaceable components or modules providing safeguard function		N/A
	w) Equipment containing insulating liquid		N/A
	x) Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
G.2	Relays		N/A
G.2.1	Requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supplying power to other equipment		N/A
G.2.4	Test method and compliance		N/A
G.3	Protective devices		P
G.3.1	Thermal cut-offs		N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links		N/A
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A
G.3.2.2	Test method and compliance		N/A
G.3.3	PTC thermistors		N/A
G.3.4	Overcurrent protection devices	Approved overcurrent protection device used, see table 4.1.2 for details.	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions	(See appended table B.4)	P
G.4	Connectors		P
G.4.1	Spacings	The appliance inlet complied with IEC 60320-1.	P
G.4.2	Mains connector configuration.....	The appliance inlet complied with IEC 60320-1.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	No misconnection likely.	P
G.5	Wound components		P
G.5.1	Wire insulation in wound components	Complied with 5.4.4.1	P
G.5.1.2	Protection against mechanical stress	See attachment Transformer table G.5.3.	P
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Test time (days per cycle)		—
	Test temperature (°C)		—
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	No insulation breakdown		N/A
G.5.3	Transformers		P
G.5.3.1	Compliance method.....	Meet the requirements in G.5.3.2 and G.5.3.3.	P
	Position	T1	P
	Method of protection	Overcurrent protection.	P
G.5.3.2	Insulation	See attached measurement section table G.5.3	P
	Protection from displacement of windings	Displacement of windings is unlikely.	—
G.5.3.3	Transformer overload tests	(See appended table B.3, B.4)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment.	P
G.5.3.3.2	Winding temperatures	(See appended table B.3, B.4)	P
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	FIW wire nominal diameter :		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation :		N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.3.4.7	Routine test		N/A
G.5.4	Motors		N/A
G.5.4.1	General requirements		N/A
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4.2	Locked-rotor overload test		N/A
	Test duration (days) :		—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
G.5.4.5.3	Alternative method		N/A
G.5.4.6	Locked-rotor overload test for DC motors		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature :		N/A
G.5.4.6.3	Alternative method		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	See G.5 for insulation in wound component.	P
G.6.2	Enamelled winding wire insulation		N/A
G.7	Mains supply cords		P
G.7.1	General requirements	Certified detachable power supply cord used	P
	Type :	(See appended table 4.1.2)	—
G.7.2	Cross sectional area (mm ² or AWG) :	(See appended table 4.1.2)	P

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Clause	Requirement + Test	Result - Remark	Verdict
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)..... :		N/A
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm) :		N/A
G.7.3.2.4	Strain relief and cord anchorage 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	Test method and compliance		N/A
	Overall diameter or minor overall dimension, <i>D</i> (mm) :		—
	Radius of curvature after test (mm) :		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	Varistors		P
G.8.1	General requirements	The varistors complied with IEC 61051-2.	P
G.8.2	Safeguards against fire	The varistors complied with IEC 61051-2.	P
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test	The enclosure is made of combustible material and located more than 13 mm from the varistor.	N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	Integrated circuit (IC) current limiters		N/A
G.9.1	Requirements		N/A
	IC limiter output current (max. 5A)..... :		—
	Manufacturers' defined drift :		—
G.9.2	Test Program		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.9.3	Compliance		N/A
G.10	Resistors		N/A
G.10.1	General		N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
G.11	Capacitors and RC units		P
G.11.1	General requirements	The X-Capacitor and the Y-Capacitor are used as safeguard and complied with IEC/EN 60384-14 (See appended table 4.1.2).	P
G.11.2	Conditioning of capacitors and RC units	At least 21 days at 40 ± 2 °C and 93 ± 3 % RH.	P
G.11.3	Rules for selecting capacitors	The selection followed with table G.12.	P
G.12	Optocouplers		P
	Optocouplers comply with IEC 60747-5-5 with specifics		P
	Type test voltage $V_{ini,a}$:	Complied	—
	Routine test voltage, $V_{ini, b}$	Complied	—
G.13	Printed boards		P
G.13.1	General requirements	See below.	P
G.13.2	Uncoated printed boards	(see appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
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.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.14.1	Requirements		N/A
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
G.16.1	Condition for fault tested is not required		N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test.....		—
	Mains voltage that impulses to be superimposed on		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test		—
G.16.3	Capacitor discharge test		N/A
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	Ringling 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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)		N/A
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
J.1	General		P
	Winding wire insulation	Approved TIW used	—
	Solid round winding wire, diameter (mm)		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²)		N/A
J.2/J.3	Tests and Manufacturing		—
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard		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
K.5.1	Under single fault condition		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm)		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm)		N/A
	Electric strength test before and after the test of K.7.2		N/A
K.7.2	Overload test, Current (A)		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		P
L.1	General requirements	Appliance Inlet as disconnect device.	P
L.2	Permanently connected equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
L.3	Parts that remain energized	When the power cord is removed from the inlet no remaining parts with hazardous voltage in the equipment.	P
L.4	Single-phase equipment	The disconnect device disconnects both poles simultaneously.	P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
	Instructional safeguard :		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	Batteries and their cells comply with relevant IEC standards :		N/A
M.3	Protection circuits for batteries provided within the equipment		N/A
M.3.1	Requirements		N/A
M.3.2	Test method		N/A
	Overcharging of a rechargeable battery		N/A
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery		N/A
	Reverse charging of a rechargeable battery		N/A
M.3.3	Compliance		N/A
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance :		N/A
M.4.3	Fire enclosure :		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): :		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		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
	Calculated hydrogen generation rate :		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m ³ /h) :		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%) :		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate :		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%) :		N/A
M.7.4	Marking :		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s)..... :		—
M.8.2.3	Correction factors :		—
M.8.2.4	Calculation of distance d (mm) :		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse		N/A
	Instructional safeguard :		N/A
N	ELECTROCHEMICAL POTENTIALS		P
	Material(s) used :	Complied.	—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Value of X (mm)..... :	1.0	—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		P
P.1	General		P
P.2	Safeguards against entry or consequences of entry of a foreign object		P
P.2.1	General		P
P.2.2	Safeguards against entry of a foreign object		P
	Location and Dimensions (mm) :	See attachment 2 measurements table.	—
P.2.3	Safeguards against the consequences of entry of a foreign object	See above.	P
P.2.3.1	Safeguard requirements	See above.	P
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		P
	Transportable equipment with metalized plastic parts..... :		N/A
P.2.3.2	Consequence of entry test..... :		P
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts		P
P.4.1	General		P
P.4.2	Tests		P
	Conditioning, T _c (°C) :	100°C	—
	Duration (weeks)..... :	1 weeks	—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		N/A
Q.1	Limited power sources		N/A
Q.1.1	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output		N/A
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9		N/A
Q.1.2	Test method and compliance		N/A
	Current rating of overcurrent protective device (A)		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A)		N/A
	Current limiting method		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General		N/A
R.2	Test setup		N/A
	Overcurrent protective device for test.....		—
R.3	Test method		N/A
	Cord/cable used for test		—
R.4	Compliance		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)		—
S.3	Flammability test for the bottom of a fire enclosure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
S.3.1	Mounting of samples		N/A
S.3.2	Test method and compliance		N/A
	Mounting of samples		—
	Wall thickness (mm)		—
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosure materials of equipment with a steady state power exceeding 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
T	MECHANICAL STRENGTH TESTS		P
T.1	General		P
T.2	Steady force test, 10 N	(See appended table T.2)	P
T.3	Steady force test, 30 N	(See appended table T.3)	P
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	(See appended table T.6)	P
	Fall test	A 500 g steel sphere ball fell freely from rest through a vertical distance of 1300 mm onto the sample.	P
	Swing test	A 500 g steel sphere ball suspended by a cord dropping through a vertical distance of 1300 mm onto the sample	P
T.7	Drop test		N/A
T.8	Stress relief test.....	(See appended table T.8)	P
T.9	Glass Impact Test		N/A
T.10	Glass fragmentation test		N/A
	Number of particles counted.....		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)		N/A
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General		N/A
	Instructional safeguard :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
U.2	Test method and compliance for non-intrinsically protected CRTs		N/A
U.3	Protective screen		N/A
V	DETERMINATION OF ACCESSIBLE PARTS		P
V.1	Accessible parts of equipment		P
V.1.1	General		P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		P
V.1.4	Plugs, jacks, connectors tested with blunt probe		P
V.1.5	Slot openings tested with wedge probe		P
V.1.6	Terminals tested with rigid test wire		P
V.2	Accessible part criterion		P
X	ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)		N/A
	Clearance		N/A
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General		N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		N/A
Y.3	Resistance to corrosion		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure		N/A
Y.3.5	Compliance		N/A
Y.4	Gaskets		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A
	Alternative test methods		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means		N/A
Y.5	Protection of equipment within an outdoor enclosure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Y.5.1	General		N/A
Y.5.2	Protection from moisture		N/A
	Relevant tests of IEC 60529 or Y.5.3 :		N/A
Y.5.3	Water spray test		N/A
Y.5.4	Protection from plants and vermin		N/A
Y.5.5	Protection from excessive dust		N/A
Y.5.5.1	General		N/A
Y.5.5.2	IP5X equipment		N/A
Y.5.5.3	IP6X equipment		N/A
Y.6	Mechanical strength of enclosures		N/A
Y.6.1	General		N/A
Y.6.2	Impact test :		N/A

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
5.2	TABLE: Classification of electrical energy sources						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾	
264Vac, 60Hz	Primary circuits supplied by a.c. mains supply	Normal	264Vrms	--	SS	60Hz	ES3
		Abnormal	--	--	--	--	ES3
		Single fault	--	--	--	--	ES3
264Vac, 60Hz	Power board output (CON2) “+ ” to “-”	Normal	12.3Vdc	--	SS	DC	ES1
		Abnormal (for all conditions in Table B.3)	See Table B.3	--	SS	DC	ES1
		Single fault (for all conditions in Table B.4)	See Table B.4	--	SS	DC	ES1
264Vac, 60Hz	LED driver output (for LED backlight) “+” to “-”	Normal	41.0Vdc	--	SS	DC	ES1
		Abnormal (for all conditions in table B.3, B.4)	See Table B.3	--	SS	DC	ES1
		Single fault (for all conditions in table B.3, B.4)	See Table B.4	--	SS	DC	ES1
264Vac, 60Hz	Display screen surface with metal foil to earth	Normal	--	0.01mA	SS	60Hz	ES1
		Abnormal (for all conditions in Table B.3)	--	See Table B.3	SS	60Hz	ES1
		Single fault (for all conditions in Table B.4)	--	See Table B.4	SS	60Hz	ES1
264Vac, 60Hz	Plastic enclosure to earth (with metal foil)	Normal	--	0.01mA	SS	60Hz	ES1
		Abnormal (for all conditions in Table B.3)	--	See Table B.3	SS	60Hz	ES1
		Single fault (for all conditions in Table B.4)	--	See Table B.4	SS	60Hz	ES1

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Clause	Requirement + Test			Result - Remark			Verdict
264Vac, 60Hz	Accessible output terminal to earth	Normal	--	0.12mA	SS	60Hz	ES1
		Abnormal (for all conditions in Table B.3)	--	See Table B.3	SS	60Hz	ES1
		Single fault (for all conditions in Table B.4)	--	See Table B.4	SS	60Hz	ES1
Supplementary information:							
1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc.							
2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.							
Note: Overall capacity: CX1= 0.33μF (20% tolerance);							

5.4.1.8	TABLE: Working voltage measurement				P
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
T1 pin9/10-Pin1	190	322	51.9K	--	
T1 pin9/10-Pin3	210	419	51.9K	--	
T1 pin9/10-Pin5	144	287	51.9K	--	
T1 pin9/10-Pin6	144	283	60	--	
T1 pin7/8-Pin1	135	284	60	--	
T1 pin7/8-Pin3	212	442	51.9K	Max. Vpeak Max. Vrms	
T1 pin7/8-Pin5	144	287	60	--	
T1 pin7/8-Pin6	141	319	51.9K	--	
CY3	200	286	60	--	
CY5	140	269	60	--	
U2 pin1-3	145	278	60	--	
U2 pin1-4	149	277	60	--	
U2 pin2-3	148	277	60	--	
U2 pin2-4	149	279	60	--	
Supplementary information: Supplied by 240Vac/60Hz					

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics			N/A
Method	ISO 306 / B50			—
Object/ Part No./Material	Manufacturer/trademark	Thickness (mm)	T softening (°C)	

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Clause	Requirement + Test	Result - Remark	Verdict
--	--	--	--
--	--	--	--
Supplementary information:			

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics				P
Allowed impression diameter (mm).....:			≤ 2 mm		—
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)	
T1 Bobbin	See table 4.1.2	See table 4.1.2	125	0.9	
LF1 Bobbin	See table 4.1.2	See table 4.1.2	125	0.8	
Supplementary information:					

5.4.2, 5.4.3	TABLE: Minimum Clearances/Creepage distance							P
Clearance (cl) and creepage distance (cr) at/of/between:	U _p (V)	U _{rms} (V)	Freq ¹⁾ (Hz)	Required cl (mm)	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)
Functional:								
L to N before fuse F1	420	250	--	2.3	4.5	--	2.5	4.5
Different polarity of fuse F1	420	250	--	2.3	2.7	--	2.5	2.7
Basic/supplementary:								
Line trace to earthed trace	420	250	--	2.3	3.1	--	2.5	3.1
Neutral trace to earthed trace	420	250	--	2.3	3.1	--	2.5	3.1
Primary traces to earthed (metal chassis)	420	250	--	2.3	6.1	--	2.5	6.1
Reinforced:								
CY3 primary to secondary	420	250	--	4.5	7.1	--	5.0	7.1
CY4 primary to secondary	420	250	--	4.5	7.5	--	5.0	7.5
CY5 primary to secondary	420	250	--	4.5	7.1	--	5.0	7.1
U2 primary to secondary	420	250	--	4.5	7.5	--	5.0	7.5

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Clause	Requirement + Test				Result - Remark			Verdict
T1 pri. to sec.	442	250	--	4.5	7.5	--	5.0	7.5
T1 core to sec.	442	250	--	4.5	8.1	--	5.0	8.1
Under transformer T1	442	250	--	4.5	6.4	--	5.0	6.4
Supplementary information:								
1) Only for frequency above 30 kHz 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied) a) There are two cut slots (width 1.0mm min.) between Line/Neutral trace and earthed trace under AC inlet (CON1). b) Core of transformer T1 considered as primary live part, the metal plate of panel connected to metal chassis considered as earthed. c) Glued components (safety relevant): EC1. Consider the altitude up to 5000m, multiplication factor (according to Table 16) is 1.48.								

5.4.4.2	TABLE: Minimum distance through insulation					P
Distance through insulation (DTI) at/of		Peak voltage (V)	Insulation	Required DTI (mm)	Measured DT (mm)	
Plastic enclosure		420	Reinforced	0.4	1)	
Supplementary information:						
1) For details refer to appended table 4.1.2.						

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz						N/A
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)	
Insulation tape of transformer T1	--	1)	0.46	--	Reinforced	442	
Supplementary information:							
Supplementary information: 1) Frequency higher than 30kHz is considered, the reduction factor value in the next column in Table 22 apply. 2) For Insulation tape alternate method is used: 1.2*2*442/0.46=2307Vpeak							

5.4.9	TABLE: Electric strength tests				P
Test voltage applied between:		Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No	
Basic/supplementary:					
L to N (Fuse F1 disconnected)		DC	2500	No	
L/N pins to earthed metal part		DC	2500	No	

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Clause	Requirement + Test	Result - Remark	Verdict
Reinforced:			
Unit: Primary to secondary terminals	DC	4000	No
Unit: Primary to plastic enclosure	DC	4000	No
Unit primary to LCD panel	DC	4000	No
T1: Primary winding to secondary winding	DC	4000	No
T1: Core to secondary winding	DC	4000	No
Each layer of insulation tape covered the transformer T1	DC	4000	No
Supplementary information:			
Core of T1 considered as primary part.			

5.5.2.2	TABLE: Stored discharge on capacitors					P
Location	Supply voltage (V)	Operating and fault condition ¹⁾	Switch position	Measured voltage (Vpk)	ES Class	
Phase to Neutral	264 Vac, 60 Hz	N	--	12	ES1	
Phase to Neutral	264 Vac, 60 Hz	S (R1 opened)	--	16	ES1	
Supplementary information:						
X-capacitors installed for testing are: refer to table 4.1.2 ☐ bleeding resistor rating: ☐ Additional test for ICX: approved ICX used. Considered power board type A and power board B. Notes: A. Test Location: Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth. B. Operating condition abbreviations: N – Normal operating condition (e.g., normal operation, or open fuse); S – Single fault condition. SC= short circuit; OC= open circuit						

5.6.6	TABLE: Resistance of protective conductors and terminations				P
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
AC inlet PE pin to Metal enclosure	32	2	0.41	0.013	
AC inlet PE pin to Metal enclosure	40	2	0.40	0.010	
Supplementary information:					

5.7.4	TABLE: Unearthed accessible parts	P
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IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V _{rms} or V _{pk})	Current (A _{rms} or A _{pk})	Freq. (Hz)	
--	--	264Vac	--	--	--	ES1
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						
See table 5.2 for details.						

5.7.5	TABLE: Earthed accessible conductive part			P
Supply voltage (V)	See below			—
Phase(s)	[x] Single Phase; [] Three Phase: [] Delta [] Wye			
Power Distribution System	☒ TN ☐ TT ☐ IT			
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	
L/N to accessible metal enclosure	1	0.467mA _{peak}	with supply voltage 264Vac, 50Hz	
Supplementary information:				

5.8	TABLE: Backfeed safeguard in battery backed up supplies					N/A
Location	Supply voltage (V)	Operating and fault condition	Time (s)	Open-circuit voltage (V)	Touch current (A)	ES Class
--	--	--	--	--	--	--
Supplementary information:						
Abbreviation: SC= short circuit, OC= open circuit						

6.2.2	TABLE: Power source circuit classifications					P
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power (W)	Time (S)	PS class
Power board (CON2) Output “+” to “-”	Normal	12.2	3.4	41.4	5	PS2
Power board (CON2) Output “+” to “-”	R33 S-C	0	0	0	3	PS1
Supplementary information:						
SC= short circuit						

IEC 62368-1				
Clause	Requirement + Test		Result - Remark	Verdict
6.2.3.1	TABLE: Determination of Arcing PIS			P
Location	Open circuit voltage after 3 s (Vpk)	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No
2)	2)	2)	2)	Yes
Supplementary information:				
2) All components located within the EUT are considered as arcing PIS.				

6.2.3.2	TABLE: Determination of resistive PIS			P
Location		Operating and fault condition	Dissipate power (W)	Arcing PIS? Yes / No
3)		3)	3)	3)
Supplementary information:				
Abbreviation: SC= short circuit; OC= open circuit				
3) All components located within the EUT are considered as resistive PIS.				

8.5.5	TABLE: High pressure lamp				N/A
Lamp manufacturer	Lamp type	Explosion method	Longest axis of glass particle (mm)	Particle found beyond 1 m Yes / No	
--	--	--	--	--	
Supplementary information:					

9.6	TABLE: Temperature measurements for wireless power transmitters							N/A
Supply voltage (V)..... :				—				
Max. transmit power of transmitter (W)..... :				—				
Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm	
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)
--	--	--	--	--	--	--	--	--
Supplementary information:								

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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)		Test A: 90V, 60Hz (Horizontal) Test B: 264V, 60Hz (Horizontal) Test C: 264V, 60Hz (Vertical, turn left) Test D: 264V, 60Hz (Vertical, turn right)			—	
Ambient temperature during test T_{amb} (°C)		See below			—	
Maximum measured temperature T of part/at:		T (°C)			Allowed T_{max} (°C)	
DP mode						
Test condition		A	B	C	D	--

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Clause	Requirement + Test				Result - Remark		Verdict
CON1 body	49.4	50.4	49.3	49.0	70		
RV1 body	53.8	53.0	52.7	52.6	105		
RT1 body	66.2	57.2	56.9	56.7	105		
CX1 body	52.3	52.8	51.8	53.2	110		
LF1 coil	53.1	52.9	51.5	54.1	130		
CY3 body	58.2	56.8	54.4	58.2	125		
CY5 body	51.5	52.2	51.7	52.7	125		
PCB near D1	56.8	55.5	54.0	56.4	130		
EC1 body	52.0	52.9	52.9	53.9	105		
PCB near U1	58.3	61.4	63.4	59.9	130		
EC2 body	57.7	60.7	61.8	58.1	105		
PCB near Q1	66.1	74.0	72.8	73.9	130		
U2 body	55.7	58.0	60.6	54.8	110		
T1 coil	68.5	73.4	67.4	71.8	110		
T1 core	68.4	72.8	67.0	71.5	110		
EC3 body	61.9	66.1	60.9	61.1	105		
L1 coil	57.4	60.1	58.6	55.4	130		
PCB near U4 (Main Board)	65.0	66.3	68.0	63.8	130		
Plastic enclosure rear inside	43.8	43.4	41.7	42.7	60		
Ambient	40.0	40.0	40.0	40.0	--		
Accessible parts							
Panel	30.2	30.6	29	29.5	71*		
Metal Enclosure	31.9	32.6	30	32.4	60*		
Plastic enclosure rear outside	25.9	26.4	26.4	26.3	77*		
Ambient	25.0	25.0	25.0	25.0	--		
Supplementary information:							
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
--	--	--	--	--	--	--	B

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Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information: * Temperature limit for TS1 of accessible enclosure according to Table 38 to be measured at normal ambient temperature. Note 1: The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (Tma) of 40°C. Note 2: Temperature limits are calculated as follows: Winding components providing safety isolation: Class B → Tmax = 120 – 10 = 110 °C # Measurement uncertainty considered.			

B.2.5		TABLE: Input test							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
HDMI Mode									
90	50	0.27	--	14.6	--	F1	0.27	Maximun normal load	
90	60	0.27	--	14.7	--	F1	0.27		
100	50	0.24	0.40	14.5	--	F1	0.24		
100	60	0.25	0.40	14.5	--	F1	0.25		
240	50	0,11	0.25	14.6	--	F1	0,11		
240	60	0.12	0.25	14.6	--	F1	0.12		
264	50	0.11	--	14.7	--	F1	0.11		
264	60	0.11	--	14.8	--	F1	0.11		
VGA mode									
90	50	0.29	--	14.4	--	F1	0.29	Maximun normal load	
90	60	0.29	--	14.5	--	F1	0.29		
100	50	0.25	0.40	14.4	--	F1	0.25		
100	60	0.26	0.40	14.3	--	F1	0.26		
240	50	0.12	0.25	14.5	--	F1	0.12		
240	60	0.13	0.25	14.4	--	F1	0.13		
264	50	0.12	--	14.6	--	F1	0.12		
264	60	0.12	--	14.7	--	F1	0.12		
DP Mode									
90	50	0.29	--	14.9	--	F1	0.29	Maximun normal load	
90	60	0.29	--	15.0	--	F1	0.29		
100	50	0.25	0.40	14.8	--	F1	0.25		
100	60	0.26	0.40	14.8	--	F1	0.26		
240	50	0.12	0.25	14.8	--	F1	0.12		

IEC 62368-1								
Clause		Requirement + Test				Result - Remark		Verdict
240	60	0.13	0.25	14.9	--	F1	0.13	
264	50	0.12	--	15.0	--	F1	0.12	
264	60	0.12	--	15.1	--	F1	0.12	
Supplementary information:								
The measured input current at rated voltage shall be less than or equal to 110 % of rated current. Maximun normal load: Full white screen, Brightness: 100%, Contrast: 100%, 1920*1080@60Hz, 1KHz sinusoidal signal and turned to 1/8 non-clipped output power to speakers: 0.51V								

B.3, B.4		TABLE: Abnormal operating and fault condition tests					P
Ambient temperature T _{amb} (°C)					25 °C, if not specified		—
Power source for EUT: Manufacturer, model/type, outputrating....					--		—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation	
D1	s-c	264Vac	1s	F1	--	Fuse open immediately, no hazard.	
D3	s-c	264Vac	1s	F1	--	Fuse open immediately, no hazard.	
EC1	s-c	264Vac	1s	F1	--	Fuse open immediately, no hazard.	
EC2	s-c	264Vac	10mins	F1	0.03	Unit shut down immediately. No hazards, no damage	
U1 pin 1-5	s-c	264Vac	10mins	F1	0.03	Unit shut down immediately. No hazards, no damage	
U1 pin 2-5	s-c	264Vac	10mins	F1	0.03	Unit shut down immediately. No hazards, no damage	
R33	s-c	264Vac	1s	F1	--	Fuse open immediately, no hazard.	
Q1 D-S	s-c	264Vac	1s	F1	--	Fuse open immediately, no hazard.	
Q1 D-G	s-c	264Vac	1s	F1	--	Fuse open immediately, no hazard.	
Q1 S-G	s-c	264Vac	10mins	F1	0.03	Unit shut down immediately. No hazards, no damage	
D9	s-c	264Vac	10mins	F1	0.03	Unit shut down immediately. No hazards, no damage.	
EC3	s-c	264Vac	10mins	F1	0.03	Unit shut down immediately. No hazards, no damage	
U2 pin 1-2	s-c	264Vac	10mins	F1	0.03	Unit shut down immediately. No hazards, no damage.	

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Clause	Requirement + Test				Result - Remark	Verdict
U2 pin 3-4	s-c	264Vac	10mins	F1	0.03	Unit shut down immediately. No hazards, no damage
U2 pin 1	o-c	264Vac	10mins	F1	0.03	Unit shut down immediately. No hazards, no damage.
U2 pin 3	o-c	264Vac	10mins	F1	0.03	Unit shut down immediately. No hazards, no damage
T1 pin 1-3	s-c	264Vac	10mins	F1	0.03	Unit shut down immediately. No hazards, no damage
T1 pin 5-6	s-c	264Vac	10mins	F1	0.03	Unit shut down immediately. No hazards, no damage.
T1 pin 10-7	s-c	264Vac	10mins	F1	0.03	Unit shut down immediately. No hazards, no damage
Ventilation openings	Blocked	264Vac	2h25mins	F1	0.12	Unit operated normally, no damaged, no hazards. Power board output terminal (CON2“+” to “-”):12.3V Display screen surface with metal foil to earth: 0.01mArms Plastic enclosure to earth (with metal foil): 0.01mArms Accessible output terminal to earth : 0.12mArms The max. Temp. of U2 body:44.6°C T1 coil: 60.6°C, T1 core: 60.0°C, Panel: 31.7°C Plastic enclosure rear inside: 29.5°C Metal enclosure: 33.8°C Plastic enclosure rear outside: 27.4°C Ambient=25.0°C
T1 pin 9/10 to earth (After D9)	o-l	264Vac	6h30mins	F1	0.12- >0.28- >0.37- >0.03	Overload to 3.5A then unit shut down. Temp, was stabled at 3.4A, No damage, No hazard. Power board output terminal (CON2“+” to “-”):12.3V

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Clause	Requirement + Test			Result - Remark		Verdict
						Display screen surface with metal foil to earth: 0.01mArms Plastic enclosure to earth (with metal foil): 0.01mArms Accessible output terminal to earth : 0.12mArms The max. Temp. of U2 body:52.5°C T1 coil: 123.8°C, T1 core: 123.5°C, Panel: 29.6°C Plastic enclosure rear inside: 27.7°C Metal enclosure: 38.2°C Plastic enclosure rear outside: 25.7°C Ambient=25.0°C
Speaker	s-c	264Vac	1h5mins	F1	0.13	Unit operated normally except no output of speaker, no damage, no hazards. Power board output terminal (CON2“+” to “-”):12.3V Display screen surface with metal foil to earth: 0.01mArms Plastic enclosure to earth (with metal foil): 0.01mArms Accessible output terminal to earth : 0.12mArms The max. Temp. of U2 body: 45.0°C T1 coil: 61.5°C, T1 core: 61.0°C, Panel: 30.5°C Plastic enclosure rear inside: 26.4°C Metal enclosure: 33.3°C Plastic enclosure rear outside: 26.2°C

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Clause	Requirement + Test			Result - Remark		Verdict
						Ambient=25.0°C
Speaker	max. non-clipped	264Vac	2h5mins	F1	0.14	Unit operated normally except no output of speaker, no damage, no hazards. Power board output terminal (CON2“+” to “-”):12.3V Display screen surface with metal foil to earth: 0.01mArms Plastic enclosure to earth (with metal foil): 0.01mArms Accessible output terminal to earth : 0.12mArms The max. Temp. of U2 body: 45.1°C T1 coil: 64.2°C, T1 core: 63.5°C, Panel: 30.0°C Plastic enclosure rear inside: 28.2°C Metal enclosure: 34.0°C Plastic enclosure rear outside: 27.4°C Ambient=25.0°C
Supplementary information: s-c means short circuit, o-c means open circuit, o-l means overload 1) The test result shown no Class 1 or 2 energy source become Class 3 level during and after single fault condition. 2) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; besides, all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions. 3) Winding Limit for transformer: 150°C = (175-10-(40-25)) °C; Enclosure outside: TS2=87°C; TS2=81°C (panel surface). For fuse open condition: output voltage: Power board output terminal (CON2“+” to “-”): 0Vdc Touch current: Display screen surface with metal foil to earth: 0.01mArms Plastic enclosure to earth: 0.01mArms Accessible output terminal to earth (with metal foil): 0.01mArms For unit shutdown condition:						

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Clause	Requirement + Test	Result - Remark	Verdict
output voltage: Power board output terminal (CN501 "+" to "-"): 0Vdc Touch current: Display screen surface with metal foil to earth: 0.01mA Plastic enclosure to earth: 0.01mA Accessible output terminal to earth (with metal foil): 0.12mA			

M.3	TABLE: Protection circuits for batteries provided within the equipment						N/A
Is it possible to install the battery in a reverse polarity position? :						—	
Equipment Specification	Charging						
	Voltage (V)			Current (A)			
Manufacturer/type	Battery specification						
	Non-rechargeable batteries		Rechargeable batteries				
	Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)	
			Voltage (V)	Current (A)			
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°C) :							
Component No.	Fault condition	Charge/ discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
Supplementary information:							
Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal.							

M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery					N/A
Maximum specified charging voltage (V)						—
Maximum specified charging current (A)						—
Highest specified charging temperature (°C)						
Lowest specified charging temperature (°C)						
Battery manufacturer/type	Operating and fault condition	Measurement			Observation	
		Charging voltage (V)	Charging current (A)	Temp. (°C)		

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Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information:			
Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature			

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						N/A
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
Supplementary Information:							
SC = Short-circuited.							

T.2, T.3, T.4, T.5	TABLE: Steady force test						P
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation	
Internal component (T.2)	--	--	--	10	5	The clearance and creepage distances do not be reduced below the required values.	
Internal metal enclosure (T.3)	Metal	See table 4.1.2	Figure V.1	30	5	All safeguards remained effective.	
External enclosure (Top rear and sides) (T.5)	plastic	See table 4.1.2	--	250	5	All safeguards remained effective.	
Supplementary information:							
1). See appended table 4.1.2.							
* Test were performed on product with each source listed in table 4.1.2							

T.6, T.9	TABLE: Impact tests				P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
External plastic enclosure (Top rear and sides) (T.6)	Plastics*	1)	1300	All safeguards remained effective.	
Supplementary information:					

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

1). See appended table 4.1.2.

* Test were performed on product with each source listed in table 4.1.2

T.7	TABLE: Drop tests				N/A
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
--	--	--	--	--	
Supplementary information:					

T.8	TABLE: Stress relief test					P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Plastic enclosure	Plastics*	1)	70	7	All safeguards remained effective.	
Supplementary information:						
1). See appended table 4.1.2.						
* Test were performed on product with each source listed in table 4.1.2						

X	TABLE: Alternative method for determining minimum clearances distances			N/A
Clearance distanced between:	Peak of working voltage (V)	Required cl (mm)	Measured cl (mm)	
--	--	--	--	
Supplementary information:				

IEC 62368-1						
Clause	Requirement + Test		Result - Remark		Verdict	
4.1.2	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹)	
LCD panel	Shenzhen China Star Optoelectronics Technology Co., Ltd.	SG215XXXX-XX ("X" MAY BE 0-9,A- Z or blank) (Test model: SG2151B05-2) Variable X will not affect safety	22 inch TFT LCD panel without LED backlight	--	Tested within apparatus	
Backlight bar	Interchangeable	Interchangeable	Max.300mA, Max.48Vdc	--	Tested within apparatus	
Plastic Enclosure	QINGDAO HAIER NEW MATERIAL R & D CO LTD	NH-9022	5VB, thickness 1.5mm min. 60°C	UL 94	UL E230779	
Metal Enclosure	Interchangeable	Interchangeable	Metallic. Thickness min. 1mm	--	Tested within apparatus	
Base Stand (Optional)	Interchangeable	Interchangeable	Plastic material HB min. weight 2.05 Kg	--	Tested within apparatus	
Speaker (2 pcs)	Interchangeable	Interchangeable	4Ω, 2.5W	--	Tested within apparatus	
PCB	Interchangeable	Interchangeable	V-1 or better, Min. 130°C	UL 796	UL	
Heat-shrinkable tube	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-HFT	600V,125°C, VW-1, min 0.4mm	UL 224	UL E180908	
(Alternative)	PENGYUAN ELECTRONICS MATERIAL CO LTD	RHF(600)	600V,125°C, VW-1, min 0.4mm	UL 224	UL E515092	
Protective earth wire	GONGGUAN XUHE WIRE AND CABLE CO LTD	3385	green- yellow color Min.22 AWG,min.300V AC, min.105 °C	UL 758	UL E468731	

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	WONDERFUL HI-TECH CO LTD	3385	green- yellow color Min.22 AWG,min.300V AC, min.105 °C	UL 758	UL E77981
(Alternative)	DONGGUAN YUAN TAI ELECTRONICS CO LTD	3385	green- yellow color Min.22 AWG,min.300V AC, min.105 °C	UL 758	UL E236360
(Alternative)	Interchangeable	Interchangeable	green- yellow color Min.22 AWG,min.300V AC, min.105 °C	UL 758	UL
Secondary lead wire	Interchangeable	Interchangeable	Min.28 AWG, min.300VAC, min.105 °C	UL 758	UL
For Power Supply board					
AC inlet	ZHE JIANG BEI ER JIA ELECTRONIC CO LTD	ST-A01-002LTC	AC250V, 10A	IEC/EN/UL 60320-1	ENEC:ENE C-03639-M1 UL E225980
(Alternative)	SHENZHEN KANGYONGDA ELECTRONICS CO LTD	DE-14	AC250V, 10A	IEC/EN/UL 60320-1	VDE 40036820 UL E363692
(Alternative)	Interchangeable	Interchangeable	AC250V, 10A	IEC/EN/UL 60320-1	VDE, UL
Fuse (F1)	XC Electronics (Shen zhen) Corp. Ltd.	5TE	AC250V, T3.15AL	IEC/EN 60127-1, IEC/EN 60127-3, UL 248	VDE 40029550 UL E249609
(Alternative)	Sunny East Enterprise Co. LTD.	TSP	AC250V, T3.15AL	IEC/EN 60127-1, IEC/EN 60127-3, UL 248	VDE 40027173 UL E133774
(Alternative)	Conquer Electronics Co., Ltd.	MST	AC250V, T3.15AL	IEC/EN 60127-1, IEC/EN 60127-3, UL 248	VDE 40017118 UL E82636
(Alternative)	Dongguan Better Electronic Technology Co., Ltd.	932	AC250V, T3.15AL	IEC/EN 60127-1, IEC/EN 60127-3, UL 248	VDE 40033369 UL E300003

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Dongguan Reomax Electronics Co., Ltd.	MTS	AC250V, T3.15AL	IEC/EN 60127-1, IEC/EN 60127-3, UL 248	VDE 40039420 UL E340427
(Alternative)	SUZHOU WALTER ELECTRONIC CO LTD	2010	AC250V, T3.15AL	IEC/EN 60127-1, IEC/EN 60127-3	VDE 40018781
(Alternative)	SUZHOU WALTER ELECTRONIC CO LTD	2010, 2000	AC250V, T3.15AL	UL 248	UL E56092
(Alternative)	ZHONG SHAN LANBAO ELECTRICAL APPLIANCES CO LTD	TB, TR	AC250V, T3.15AL	IEC/EN 60127-1, IEC/EN 60127-3, UL 248	TUV J50420445 UL E213695
X-Capacitor (CX1) (X2 type)	Shenzhen Weidy Industrial Development Co., Ltd.	MKP	AC310V, 0.33μF, 110°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40041066 UL E334332
(Alternative)	Shenzhen Jinghao Capacitor Co., Ltd.	CBB62B	AC280V, 0.33μF, 110°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40018690 UL E252286
(Alternative)	Shenzhen Sincerity Technology Co., Ltd.	MPX/MKP	AC320V, 0.33μF, 110°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40028812 UL E319615
(Alternative)	Xiamen Wanming Electronics Co., Ltd.	MPX	AC275V, 0.33μF, 110°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40023119 UL E320206
(Alternative)	Shenzhen Shenfeng Electronics Co., Ltd.	CBB62	AC275V, 0.33μF, 105°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40031777 UL E345591
(Alternative)	Dongguan Champion Electronic Technology Co., Ltd	MPX	AC350V, 0.33μF, 110°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40044148 UL E477525
(Alternative)	ShenZhen Shanrui Electronics Co., Ltd	MPX	AC310V, 0.33μF, 110°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40039043 UL E364138

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Fuxin Pan Ocean Electronic Ltd.	MPX-X2	AC275V, 0.33μF, 110°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40015756 UL E352735
(Alternative)	Hongzhi Enterprises Ltd.	MPX	AC310V, 0.33μF, 110°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40023936 UL E192572
Y-Capacitor (CY3, CY4) (Y1 type)	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	AC250V, 470pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40036393 UL E154899
(Alternative)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd	CD	AC400V, 470pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40025754 UL E208107
(Alternative)	Shenzhen Weidy Industrial Development Co., Ltd.	WYD	AC250V, 470pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40051104 UL E334332
(Alternative)	Dongguan City Dafu Electronics Co. Ltd.	CT7 Y1	AC250V, 470pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40041523 UL E465278
(Alternative)	JUSUN (TAISHAN) ELECTRONICS LTD	JB	AC400V, 470pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	ENEC: ENEC-01320-A1 UL E253194
(Alternative)	Xiamen Sino Faith Electronic Technology Co. Ltd.	HCY	AC400V, 470pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40034792 UL E328673
(Alternative)	Anshan Kei Fat Electronic Ceramic Technical Co., Ltd.	CT7	AC250V, 470pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40011817 UL E232980
(Alternative)	Zonkas Electronic Co., Ltd.	ZD	AC400V, 470pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40017350 UL E258931

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Walsin Technology Corp.	AH	AC400V, 470pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40001804 UL E146544
(Alternative)	Sichuan Teruixiang Technology International Co Ltd	TY	AC400V, 470pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40031733 UL E315719
(Alternative)	Xiamen Wanming Electronics Co., Ltd.	HJ	AC250V, 470pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40034438 UL E221839
Y-Capacitor (CY5) (Y1 type)	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	AC250V, 2200pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40036393 UL E154899
(Alternative)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd	CD	AC400V, 2200pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40025754 UL E300003
(Alternative)	Shenzhen Weidy Industrial Development Co., Ltd.	WYD	AC250V, 2200pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40051104 UL E334332
(Alternative)	Dongguan City Dafu Electronics Co. Ltd.	CT7 Y1	AC250V, 2200pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40041523 UL E465278
(Alternative)	JUSUN (TAISHAN) ELECTRONICS LTD	JB	AC400V, 2200pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	ENEC: ENEC-01320-A1 UL E253194
(Alternative)	Xiamen Sino Faith Electronic Technology Co. Ltd.	HCY	AC400V, 2200pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40034792 UL E328673
(Alternative)	Anshan Kei Fat Electronic Ceramic Technical Co., Ltd.	CT7	AC250V, 2200pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40011817 UL E232980

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Zonkas Electronic Co., Ltd.	ZD	AC250V, 2200pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40017350 UL E258931
(Alternative)	Walsin Technology Corp.	AH	AC400V, 2200pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40001804 UL E146544
(Alternative)	Sichuan Teruixiang Technology International Co Ltd	TY	AC400V, 2200pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40031733 UL E315719
(Alternative)	Xiamen Wanming Electronics Co., Ltd.	HJ	AC250V, 2200pF, 125°C	IEC/EN 60384-14: 2013 UL 60384-14	VDE 40034438 UL E221839
Varistor (RV1)	BRIGHTKING (SHENZHEN) CO LTD	10D681K, 681KD10	420VAC, 105°C	IEC/EN61051-1 IEC/EN61051-2 IEC/EN61051-2-2 UL 1449	VDE 40027827 UL E327997
(Alternative)	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	ZVR10D681	420VAC, 85°C	IEC/EN61051-1 IEC/EN61051-2 IEC/EN61051-2-2 UL 1449	VDE 40027789 UL E321851
(Alternative)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	10D681K	420VAC, 125°C	IEC/EN61051-1 IEC/EN61051-2 IEC/EN61051-2-2 UL 1449	VDE 40023049 UL E330837

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	SHENZHEN WEIDY INDUSTRIAL DEVELOPMENT CO LTD	WZV10D681KT, WZV10D681KTJ	420VAC, 125°C	IEC/EN61051-1 IEC/EN61051-2 IEC/EN61051-2-2 UL 1449	VDE 40052040 UL E490998
(Alternative)	Guizhou Kaili Economic Zone Zhonghao Electronics Co.,LTD.	WLR-10D681KHS	420VAC, 125°C	IEC/EN61051-1 IEC/EN61051-2 IEC/EN61051-2-2 UL 1449	TUV B170697643 001 UL E488935
(Alternative)	XIAMEN WANMING ELECTRONICS CO LTD	WMR10D681K	420VAC, 85°C	UL 1449	UL E333988
(Alternative)	CENTRA SCIENCE CORP	CNR-10D681K	420VAC, 105°C	IEC/EN61051-1 IEC/EN61051-2 IEC/EN61051-2-2 UL 1449	VDE 40008220 UL E316325
(Alternative)	SHAANXI HUAXING ELECTRONIC GROUP CO LTD	MYG20G10K681	420VAC, 85°C	IEC/EN61051-1 IEC/EN61051-2 IEC/EN61051-2-2 UL 1449	VDE 40018747 UL E329651
(Alternative)	Dongguan City Dafu Electronics Co Ltd	NDF10D681K	420VAC, 125°C	IEC/EN61051-1 IEC/EN61051-2 IEC/EN61051-2-2 UL 1449	VDE 40050909 UL E502211

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Huizhou Derui Electrical Appliance Co., Ltd	COV-10D681K@	420VAC, 85°C	IEC/EN61051-1 IEC/EN61051-2 IEC/EN61051-2-2	VDE 40047358
(Alternative)	Huizhou Derui Electrical Appliance Co., Ltd	COV10D681K@, COV10D681K	420VAC, 85°C	UL 1449	UL E485395
(Alternative)	Cerglass MFG Inc	10D681K	420VAC, 125°C	IEC/EN61051-1 IEC/EN61051-2 IEC/EN61051-2-2 UL 1449	VDE 40028836 UL E317616
(Alternative)	Guangxi New Future Information Industry Co., Ltd.	10D681K	420VAC, 125°C	IEC/EN61051-1 IEC/EN61051-2 IEC/EN61051-2-2 UL 1449	VDE 40030322 UL E323753
(Alternative)	THINKING ELECTRONIC INDUSTRIAL CO LTD	TVR10681	420VAC, 105°C	IEC/EN61051-1 IEC/EN61051-2 IEC/EN61051-2-2	UL E314979
Transformer (T1)	Huizhou MVT New Power Technology CO., LTD	ZY-T0185	130°C, Class B	Applicable parts in IEC 60950-1 and according to IEC 60085	Tested with appliance
- Bobbin	CHANGCHUN PLASTICS CO., LTD	T200HF, T220NA	150°C, V-0	UL 94 UL 746	UL E59481
- Insulation Tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (b)(g)	130°C	UL 510	UL E165111

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-19-02-15b, LY- 19-02-18b	130°C	UL 510	UL E246820
(Alternative)	DONGGUAN SHIN YAHUA ELECTRONIC MATERIAL CO LTD	CT* (b)(g) , CT* (c)(g)	130°C	UL 510	UL E324093
- Magnet Wire	HOI LUEN ELECTRICAL MFR CO LTD	xUEW, xUEW-F	130°C	UL 1446	UL E164409
(Alternative)	ZHEJIANG HONGBO TECHNOLOGY CO LTD	xUEW/130, xUEW/155	130°C	UL 1446	UL E221719
- Triple Insulated wire	HUIZHOU DONGJU FLUO TECH PLASTIC CO LTD	TIW-FXX	155°C	UL 2353	UL E488352
(Alternative)	FURUKAWA ELECTRIC CO., LTD.	TEX-E, TEX-EA	130°C	UL 2353	UL E206440
(Alternative)	TOTOKU ELECTRIC CO LTD	TIW- 3LZX@@@%\$, TIW-3X\$	155°C	UL 2353	UL E166483
- Tube	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-T	200°C, VW-1	UL 224	UL E180908
(Alternative)	HUIZHOU DONGJU FLUO TECH PLASTIC CO LTD	TFL	200°C, VW-1	UL 224	UL E478618
(Alternative)	GREAT HOLDING INDUSTRIAL CO LTD	TFL	200°C, VW-1	UL 224	UL E156256
- varnish	ZHUHAI CHANGXIAN NEW MATERIALS TECHNOLOGY CO LTD	E962	130°C	UL 1446	UL E335405

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	130°C	UL 1446	UL E228349
Line filter (LF1)	Huizhou MVT New Power Technology Co., LTD	SYUC15-L10.5MA	130°C	IEC/EN 60950-1	Tested with appliance
- Bobbin	Changchun Plastics Co., Ltd.	T200HF, T220NA	150°C, V-0	UL 94 UL 746	UL E59481
- Magnet Wire	HOI LUEN ELECTRICAL MFR CO LTD	xUEW, xUEW-F	130°C	UL 1446	UL E164409
(Alternative)	ZHEJIANG HONGBO TECHNOLOGY CO LTD	xUEW/130, xUEW/155	130°C	UL 1446	UL E221719
Optocoupler (U2)	China Resources Semiconductor (ShenZhen) Ltd.	PC817C, PC817x (x=A-Z)	External:CI,Cr≥ 7.62mm, 110°C	DIN EN 60747-5-5 UL 1577	VDE 40042139 UL E465130
(Alternative)	Changzhou Galaxy Century Micro-electronics Co., Ltd.	BL817 (A,B,C,D,L), BL817M (A,B,C,D,L), BL817S (A,B,C,D,L)	External:CI,Cr≥ 7.5mm, 100°C	DIN EN 60747-5-5 UL 1577	VDE 40034140 UL E340048
(Alternative)	Shenzhen Orient Components Co. Ltd.	ORPC817 x , ORPC817M x (x can from 0 to 9, A to Z or blank)	External:CI,Cr≥ 7.6mm, 110°C	DIN EN 60747-5-5 UL 1577	VDE 40029733 UL E323844
(Alternative)	CRM ICBG (Wuxi) Co., Ltd.	PC817x (x=A-Z)	External:CI,Cr≥ 7.62mm, 110°C	DIN EN 60747-5-5 UL 1577	VDE 40042139 UL E465130
(Alternative)	Everlight Electronics Co., Ltd.	EL817 (May be followed by any letters or numbers)	External:CI,Cr≥ 7.6mm, 110°C	DIN EN 60747-5-5 UL 1577	VDE 132249 UL E214129
(Alternative)	Bright Led Electronics Corp	BPC-817 (A,B,C,D,L), BPC-817 M, BPC-817 S	External:CI,Cr≥ 7.6mm, 110°C	DIN EN 60747-5-5 UL 1577	VDE 40007240 UL E236324

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Lite-On Technology Corporation	LTV-817	External:Cl,Cr≥ 7.0mm, 115°C	DIN EN 60747-5-5 UL 1577	VDE 40015248 UL E113898
(Alternative)	COSMO Electronics Corporation	K1010	External:Cl,Cr≥ 6.5mm, 115°C	DIN EN 60747-5-5 UL 1577	VDE 101347 UL E169586
Current sense resistor (R33)	Interchangeable	Interchangeable	0.47Ω min, 2W	--	Tested within apparatus
Thermistor (RT1)	Interchangeable	Interchangeable	5Ω at 25°C, 5A	--	Tested within apparatus
Bridge Diodes (D1,D2,D3, D4)	Interchangeable	Interchangeable	800V min, 2A min.	--	Tested within apparatus
Switching Transistor (Q1)	Interchangeable	Interchangeable	650V min, 7A min.	--	Tested within apparatus
Electrolytic capacitor (EC1)	Interchangeable	Interchangeable	68uF, 450V min, 105°C	--	Tested within apparatus
Detachable power cord set					
Power Plug (SASO)	SHENZHEN G-CINDA POWER SOLUTION CO LTD	GXD-018	Plug: 3A, 6A, 10A, 13A, AC250V Plug fuse: 10A, 250VAC	SASO 2203	SASO KSA R310565
(Alternative)	I-Sheng	SP-65	AC250V, 3A/6A/10A/13A Plug fuse: 10A, 250VAC	SASO 2203	SASO RZKSA2112 91601
(Alternative)	Interchangeable	Interchangeable	AC250V, 3A/6A/10A/13A Plug fuse: 10A, 250VAC	SASO 2203	KSA or other SASO cert. marks
(Alternative)	I-Sheng	SP-62	AC250V, 3A/5A/10A/13A Plug fuse: 10A, 250VAC	SASO 2203:2018	CVC
(Alternative)	I-Sheng	SP-65	AC250V, 3A/5A/10A Plug fuse: 10A,	SASO 2203:2018	CVC

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
			250VAC		
(Alternative)	Interchangeable	Interchangeable	AC250V, 3A/6A/10A/13A Plug fuse: 10A, 250VAC	SASO 2203:2018	CVC or other SASO cert. marks
Power Connector (SASO)	SHENZHEN G- CINDA POWER SOLUTION CO LTD	DRF-005	AC250V, 10A	IEC/EN 60320- 1:2015	VDE 40034483
(Alternative)	I-Sheng	IS-14N	AC250V, 16A	IEC/EN 60320- 1:2015	ENEC16/FI/ 22/01023
(Alternative)	Interchangeable	Interchangeable	AC250V, 10A	IEC/EN 60320- 1:2015	S & other EU certification marks
(Alternative)	I-Sheng	IS-14	AC250V, 10A	IEC/EN 60320- 1:2015	ENEC
(Alternative)	Interchangeable	Interchangeable	AC250V, 10A	IEC/EN 60320- 1:2015	ENEC or other EU certification marks
Power cord (SASO)	SHENZHEN G- CINDA POWER SOLUTION CO LTD	H05VVH2-F	3x0.75mm ²	EN 50525-2- 11	VDE 40040170
(Alternative)	I-Sheng	H05VVH2-F	3x0.75mm ²	EN 50525-2- 11	VDE 40006070
(Alternative)	Interchangeable	H05VVH2-F	3x0.75mm ²	EN 50525-2- 11:2011	S & other EU certification marks
(Alternative)	I-Sheng	H05VV-F	3x0.75mm ² 3x1.0mm ² 3x1.5mm ²	IEC 60227- 5:2011 EN 50525-2- 11:2011	VDE
(Alternative)	I-Sheng	H03VV-F	3x0.75mm ²	IEC 60227- 5:2011 EN 50525-2- 11:2011	VDE
(Alternative)	I-Sheng	H05RR-F	3x0.75mm ²	IEC 60245- 4:2011	VDE
(Alternative)	Interchangeable	Interchangeable	3x0.75mm ² 3x1.0mm ²	EN 50525-2- 11:2011	VDE or other EU certification

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
			3x1.5mm ²	IEC 60245-4:2011 IEC 60227-5:2011	marks

IEC62368_1E - 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 IEC 62368-1:2020+A11:2020		
Attachment Form No. : EU_GD_IEC62368_1E		
Attachment Originator : UL(Demko)		
Master Attachment : 2021-02-04		
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	CENELEC COMMON MODIFICATIONS (EN)	P
	Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2020+A11:2020. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2018. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed "Z".	P
	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
1	Modification to Clause 3 .	
3.3.19	Sound exposure <i>Replace 3.3.19 of IEC 62368-1 with the following definitions:</i>	P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.19.1	momentary exposure level, MEL metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both channels, based on EN 50332-1:2013, 4.2. Note 1 to entry: MEL is measured as A-weighted levels in dB. Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.		N/A
3.3.19.3	sound exposure, E A-weighted sound pressure (p) squared and integrated over a stated period of time, T Note 1 to entry: The SI unit is $\text{Pa}^2 \text{s}$. $E = \int_0^T p(t)^2 dt$		N/A
3.3.19.4	sound exposure level, SEL logarithmic measure of sound exposure relative to a reference value, E_0 , typically the 1 kHz threshold of hearing in humans. Note 1 to entry: SEL is measured as A-weighted levels in dB. $SEL = 10 \lg \left(\frac{E}{E_0} \right) \text{ dB}$ Note 2 to entry: See B.4 of EN 50332-3:2017 for additional information.		N/A
3.3.19.5	digital signal level relative to full scale, dBFS levels reported in dBFS are always r.m.s. Full scale level, 0 dBFS, is the level of a dc-free 997-Hz sine wave whose undithered positive peak value is positive digital full scale, leaving the code corresponding to negative digital full scale unused Note 1 to entry: It is invalid to use dBFS for non-r.m.s. levels. Because the definition of full scale is based on a sine wave, the level of signals with a crest factor lower than that of a sine wave may exceed 0 dBFS. In particular, square wave signals may reach +3,01 dBFS.		N/A
2	Modification to Clause 10		N/A
10.6	Safeguards against acoustic energy sources Replace 10.6 of IEC 62368-1 with the following:		N/A
10.6.1.1	Introduction Safeguard requirements for protection against long-term exposure to excessive sound pressure levels from personal music players closely coupled to the ear are specified below. Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	for earphones and headphones intended for use with personal music players are also covered. A personal music player is a portable equipment intended for use by an ordinary person, that: – is designed to allow the user to listen to audio or audiovisual content / material; and – uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and – has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.). EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment. Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3. NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360. NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible. Listening devices sold separately shall comply with the requirements of 10.6.6. These requirements are valid for music or video mode only. The requirements do not apply to: – professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. – hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music players: • long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and • cassette player/recorder; NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. – a player while connected to an external amplifier that does not allow the user to walk around while in use.		

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Clause	Requirement + Test	Result - Remark	Verdict
	For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply. The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		
10.6.1.2	Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body mounted devices, attention is drawn to EN 50360 and EN 50566.		N/A
10.6.2	Classification of devices without the capacity to estimate sound dose		N/A
10.6.2.1	General This standard is transitioning from short-term based (30 s) requirements to long-term based (40 hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3. For classifying the acoustic output $L_{Aeq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period. For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete song. In this case, T becomes the duration of the song. NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song does not exceed the required limit. For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB.		N/A
10.6.2.2	RS1 limits (to be superseded, see 10.6.3.2) RS1 is a class 1 acoustic energy source that does not exceed the following:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	– for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 85 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1. – The RS1 limits will be updated for all devices as per 10.6.3.2.		
10.6.2.3	RS2 limits (to be superseded, see 10.6.3.3) RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic 130 detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 100 dB(A) when playing the fixed “programme simulation noise” as described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed “programme simulation noise” as described in EN 50332-1.		N/A
10.6.2.4	RS3 limits RS3 is a class 3 acoustic energy source that exceeds RS2 limits.		N/A
10.6.3	Classification of devices (new)		N/A
10.6.3.1	General Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given below.		N/A
10.6.3.2	RS1 limits (new) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1.		
10.6.3.3	RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1.		N/A
10.6.4	Requirements for maximum sound exposure		N/A
10.6.4.1	Measurement methods All volume controls shall be turned to maximum during tests. Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.		N/A
10.6.4.2	Protection of persons Except as given below, protection requirements for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3. NOTE 1 Volume control is not considered a safeguard. Between RS2 and an ordinary person, the basic safeguard may be replaced by an instructional safeguard in accordance with Clause F.5, except		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	that the instructional safeguard shall be placed on the equipment, or on the packaging, or in the instruction manual. Alternatively, the instructional safeguard may be given through the equipment display during use. The elements of the instructional safeguard shall be as follows:  – element 1a: the symbol , IEC 60417-6044 (2011-01) – element 2: “High sound pressure” or equivalent wording – element 3: “Hearing damage risk” or equivalent wording – element 4: “Do not listen at high volume levels for long periods.” or equivalent wording An equipment safeguard shall prevent exposure of an ordinary person to an RS2 source without intentional physical action from the ordinary person and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off. The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time. NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed. NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off. A skilled person shall not be unintentionally exposed to RS3.		
10.6.5	Requirements for dose-based systems		N/A
10.6.5.1	General requirements Personal music players shall give the warnings as provided below when tested according to EN 50332-3, using the limits from this clause. The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration. The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.		
10.6.5.2	Dose-based warning and requirements When a dose of 100 % <i>CSD</i> is reached, and at least at every 100 % further increase of <i>CSD</i>, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1. The warning shall at least clearly indicate that listening above 100 % <i>CSD</i> leads to the risk of hearing damage or loss.		N/A
10.6.5.3	Exposure-based requirements With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at. The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3. The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster. Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface. NOTE In case the source is known not to be music (or test signal), the EL may be disabled.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input With 94 dB L_{Aeq} acoustic pressure output of the listening device, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the input voltage of the listening device when playing the fixed “programme simulation noise” as described in EN 50332-1 shall be ≥ 75 mV. NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.		N/A
10.6.6.2	Corded listening devices with digital input With any playing device playing the fixed “programme simulation noise” described in EN 50332-1, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.3	Cordless listening devices In cordless mode, – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.4	Measurement method <i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i>		N/A
3	Modification to the whole document		

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Clause	Requirement + Test			Result - Remark		Verdict
	Delete all the “country” notes in the reference document according to the following list:					N/A
	0.2.1	Note 1 and 2	1	Note 4 and 5	3.3.8.1	Note 2
	3.3.8.3	Note 1	4.1.15	Note	4.7.3	Note 1 and 2
	5.2.2.2	Note	5.4.2.3.2.2 Table 12	Note c	5.4.2.3.2.4	Note 1 and 3
	5.4.2.3.2.4 Table 13	Note 2	5.4.2.5	Note 2	5.4.5.1	Note
	5.4.10.2.1	Note	5.4.10.2.2	Note	5.4.10.2.3	Note
	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3 and 4
	5.6.8	Note 2	5.7.6	Note	5.7.7.1	Note 1 and Note 2
	8.5.4.2.3	Note	10.2.1 Table 39	Note 3 and 4 and 5	10.5.3	Note 2
	10.6.1	Note 3	F.3.3.6	Note 3	Y.4.1	Note
	Y.4.5	Note				
4	Modification to Clause 1					N/A
1	Add the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.					N/A
5	Modification to 4.Z1					P

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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.		P
6	Modification to 5.4.2.3.2.4		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.	No external circuits.	N/A
7	Modification to 10.2.1		N/A
10.2.1	Add the following to ^{c)} and ^{d)} in table 39: For additional requirements, see 10.5.1.	No such radiation from the equipment.	N/A
8	Modification to 10.5.1		N/A

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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 pre-sets 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
9	Modification to G.7.1		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.		P
10	Modification to Bibliography		P

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Clause	Requirement + Test	Result - Remark	Verdict
	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.		
11	ADDITION OF ANNEXES		P
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		P
4.1.15	Denmark, Finland, Norway and Sweden To the end of the subclause the following is added: Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Denmark : "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord." In Finland : "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway : "Apparatet må tilkoples jordet stikkontakt" In Sweden : "Apparaten skall anslutas till jordat uttag"		P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	United Kingdom To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex		N/A
5.2.2.2	Denmark After the 2nd paragraph add the following: A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high touch current.	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 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.	No TNV circuits.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		
5.5.2.1	Norway After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
5.5.6	Finland, Norway and Sweden To the end of the subclause the following is added: Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.	No such resistors.	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. <i>Justification:</i> 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

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.2.1	France After the indent for pluggable equipment type A , the following is added: – in certain cases, the protective current rating of the circuit supplied from the mains is taken as 20 A instead of 16 A.		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
5.6.8	Norway To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as class I equipment . See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.		N/A
5.7.6	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.	Not such system.	N/A

5.7.6.2	Denmark To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .	No external circuits.	N/A
5.7.7.1	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:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	“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.”		
8.5.4.2.3	United Kingdom Add the following after the 2nd dash bullet in 3rd paragraph: An emergency stop system complying with the requirements of IEC 60204-1 and ISO 13850 is required where there is a risk of personal injury.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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 polyphase 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 <i>Justification:</i> Heavy Current Regulations, Section 6c		N/A

IEC62368_1E - 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 mm² is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A

IEC62368_1E - 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. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de	No CRT within the equipment.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)		N/A					
	<table><tr><th rowspan="2">Type of flexible cord</th><th colspan="2">Code designations</th></tr><tr><th>IEC</th><th>CENELEC</th></tr></table>		Type of flexible cord	Code designations		IEC	CENELEC	N/A
	Type of flexible cord	Code designations						
		IEC	CENELEC					
	PVC insulated cords							
	Flat twin tinsel cord	60227 IEC 41	H03VH-Y					
	Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F					
	Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F H05VVH2-F					
	Rubber insulated cords							
	Braided cord	60245 IEC 51	H03RT-F					
	Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F					
	Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F					
	Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F					
	Cords having high flexibility							
	Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H					
	Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H					
	Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H					
	Cords insulated and sheathed with halogen-free thermoplastic compounds							
Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F						
Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F						

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 U.S.A. AND CANADA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to : CSA/UL 62368-1:2019			
TRF template used: : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : US_CA_ND_IEC62368_1E			
Attachment Originator : UL(US)			
Master Attachment : Dated 2022-03-04			
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IEC 62368-1 - US and Canadian National Differences Special National Conditions based on Regulations and Other National Differences			
1 (1DV.1) (1.3)	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part 1, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.	In accordance with the National Electrical Code (NEC) and the Canadian Electrical Code (CEC) part 1 CAN/CSA C22.1, ANSI/NFPA 70, and unless marked or otherwise identified, the Standard for Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	P
1 (1DV.2.1)	This standard includes additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities. See Annex DVB.		N/A
1 (1DV.2.2)	This standard includes additional requirements for equipment intended for mounting under cabinets. See Annex DVC.		N/A
1 (1DV.2.3)	IEC 62368-3 clause 5 for DC power transfer at ES1 or ES2 voltage levels is considered informative. IEC 62368-3 clause 6 for remote power feeding telecommunication (RFT) circuits is considered normative (see ITU K.50). Alternatively, equipment with RFT circuits are given in either UL 2391 or CSA/UL 60950-21. RFT-C circuits are not permitted unless the RFT-C circuit complies with RFT-V limits ($\leq 200V$ per conductor to earth).		N/A
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72 for additional requirements.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1 (DV.5)	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A
4.1 (4.1.17)	For lengths exceeding 3.05 m, external interconnecting cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.		N/A
	For lengths 3.05 m or less, external interconnecting cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.	No lead wire	N/A
4.6 (4.6.2)	Wire-wrap terminals have special construction and performance requirements.		N/A
4.8 (4.8.3, 4.8.4.5, 4.8.5)	Coin / button cell batteries have modified special construction and performance requirements.		N/A
5.4.2.3.2 (5.4.2.3.2.1)	Surge Arrestors and Transient Voltage Surge Suppressors installed external to the equipment are required to comply with the appropriate NEC and CEC requirements.		N/A
5.5.9	Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons are required to be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices are required to comply with UL 943, and CAN/CSA C22.2 No.144.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.7, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment.		N/A
5.7.8 (5.7.8.1)	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure is required to comply with single fault testing in B.4, or be current limited per one of the permitted methods.	No such parts.	N/A
Annex F (F.3.3.9)	Output terminals provided for supply of other equipment, except mains supply, are required to be marked with a maximum rating or reference to equipment permitted to be connected.		N/A
Annex F (F.3.7)	Outdoor Enclosures are required to be classified and marked in accordance with UL 50 or 50E, or CAN/CSA C22.2 No. 94.1 or 94.2.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex G (G.7)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	The equipment is not permanent connection equipment.	N/A
	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
	Power supply cords for outdoor equipment are required to be suitable outdoor use type as required by Section 400.4 of the NEC and Rule 4-012 of the CEC, i.e., marked "W."		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV circuits within the equipment.	N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuits within the equipment.	N/A
Annex Q (Q.3)	Equipment with paired conductor and/or coax communications cables/wiring connected to building wiring are required to have special voltage, current, power and marking requirements.		N/A
Annex DVA (1)	Equipment that is designed such that it may be powered from a separate electrical service, is required to meet applicable requirements for service equipment for control and protection of services and their installation and complies with Article 230 of the National Electrical Code (NEC), NFPA 70 and Section 6 of the Canadian Electrical Code, Part I, CSA C22.1.		N/A
	Equipment intended for use in spaces used for environmental air (plenums) are subjected to special flammability requirements for heat and visible smoke release.	The equipment not intended to be used within such environments.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	Not such equipment.	N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. and Canadian Regulations.	The equipment is not for children used.	N/A
	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.	Not a baby monitors.	N/A
	Storage batteries and battery management equipment, other than associated with lead-acid batteries, and including battery backup systems that are not an integral part of stationary AV and ICT equipment, such as provided in separate cabinets, are required to be certified (listed) to the appropriate standard(s) for such storage batteries and equipment.	No such application.	N/A
Annex DVA (5.6)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		N/A
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquids within the equipment.	N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a minimum flammability classification of V-1.	No such application.	N/A
Annex DVA (10.3)	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No such parts.	N/A
Annex DVA (10.5)	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No such parts.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (F.3.3.4)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or that are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."	Single phase only.	N/A
Annex DVA (F.3.3.6)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.	Not such application.	N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.	No such parts.	N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No standard supply outlets, receptacles, medium-base or smaller lampholders provided.	N/A
	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.	No such parts.	N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-400 and 10-612.	No such parts.	N/A
Annex DVA (G.4.3)	Interconnection of units by conductors supplied by a limited power source, or a Class 2 circuit defined in the NEC/CEC may have field wiring connections other than specified in DVH.3, such as wire-wrap and crimp-on types, if the limited power source and Class 2 circuits are separated from all other circuits by barriers, routing or fixing.	No such parts.	N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	No such parts.	N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).	No such parts.	N/A
Annex DVA (G.7)	Flexible cords used outdoors are required to have the suffix "W" marked on the flexible cord.	No such parts.	N/A
Annex DVA (M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (Q)	If applicable per NEC 725.121(C), some limited power sources supplied from AV/ICT equipment are required to have a label indicating the maximum voltage and rated current output for per conductor for each connection point. Where multiple connection points have the same rating, a single label is permitted to be used.		N/A
	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1 are required to be marked with the voltage rating and "Class 2" or equivalent. The marking is located adjacent to the terminals and visible during wiring.		N/A
	Applicable parts of Chapter 8 of the NEC, and Rules 54 and 60 of the CEC, may be applicable to ITE installed outdoors with connections to communication systems.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.	Not such application.	N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.	Not such application.	N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These equipment and components include: appliance couplers, attachment plugs, battery backup systems, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, modular data centres, power supply cords, some power distribution equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	UL approved components used. Refer to table 4.1.2 of IEC 62368-1 test report for details.	P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.	The equipment is not permanently connected equipment.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are required to be in accordance with the NEC/CEC.		N/A
Annex DVH (DVH.2.1)	For safe and reliable connection to a mains, permanently connected equipment is to be provided.		N/A
Annex DVH (DVH.2.2)	Additional considerations for D.C. mains.		N/A
Annex DVH (DVH.3.2.1)	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified.	No terminals for permanent wiring.	N/A
Annex DVH (DVH.3.2.3)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).	No wire binding screws.	N/A
Annex DVH (DVH.3.2.4)	All associated mains supply terminals are located in proximity to each other and to the main protective earthing terminal, if any.		N/A
Annex DVH (DVH.3.2.5)	Terminals are located, guarded or insulated so that, should a strand of a conductor escape when the conductor is fitted, there is no likelihood of accidental contact between such a strand and accessible conductive parts or unearthed conductive parts separated from accessible conductive parts by supplementary insulation only.		N/A
Annex DVH (DVH.3.3)	When field connection to an external circuit is via wires (example, free conductors), the wires are not smaller than 18 AWG (0.82 mm ²) and the free length of the wire inside an outlet box or wiring compartment is 150 mm or more.		N/A
Annex DVH (DVH.3.4)	Size of protective earthing conductors and terminals	(See sub-clause 5.6.5)	
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	The equipment is not permanently connected equipment.	N/A
Annex DVH (DVH.4.1)	Wire bending space		N/A
Annex DVH (DVH.4.2)	Volume of wiring compartment		N/A
Annex DVH (DVH.4.3)	Separation of circuits		N/A
Annex DVH (DVH.5)	Equipment markings and instructional safeguards		N/A
Annex DVH (DVH.5.1)	Identification of protective earthing terminal		N/A
Annex DVH (DVH.5.2)	Identification of terminal for earthed conductor (neutral)		N/A
Annex DVH (DVH.5.3)	Identification of terminals for aluminium conductors		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.5.4)	Wire temperature ratings		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.	The equipment not connected to a centralized d.c. power system.	N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.	No TNV circuits within the equipment.	N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.	No TNV circuits within the equipment.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 SINGAPORE NATIONAL DIFFERENCES Audio/video, information and communication technology equipment - Part 1: Safety requirements			
Differences according to : Special National Conditions			
TRF template used: : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : SG_ND_IEC62368_1E			
Attachment Originator : Intertek Testing Services (Singapore) Pte Ltd			
Master Attachment : 2022-07-08			
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	National Differences		P
	Not Applicable		--
Chapter 4.2	Special national conditions (if any) Controlled goods under the Consumer Protection (Safety Requirements) Registration Scheme (CPS) are required to be tested to additional requirements stipulated by the Consumer Product Safety Office (CPSO) of Enterprise Singapore in Chapter 7 of the CPS information booklet. The CPS information booklet is updated on an ongoing basis. At the point of testing, refer to the latest copy of the CPS information booklet for the minimum edition of standard to apply for testing of products under the CPS scheme and any new requirements. Link to CPS information booklet: https://www.consumerproductsafety.gov.sg/files/cps-info-booklet.pdf		P
<u>Clause</u> 1	All appliances must be tested to 230 VAC, 50 Hz.	Class III equipment.	N/A
4	Appliance fitted with voltage selector shall be tested as follows: Connect appliance to 230 VAC mains with voltage selector switch to settings not suitable for operation at 230 VAC.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5	All appliances (with tropical test requirements in applicable Standards) shall comply with the tropical condition test as stated in the relevant IEC Standards.	Complied.	P
7	All Class I appliances must be fitted with 3-pin mains plugs that are registered with the CPSO.		N/A
8	a) All Class II appliances must be fitted with 2-pin mains plug complying with EN 50075. b) Class II appliances that are fitted with 3-pin mains plugs must use plugs that are registered with the CPSO.		N/A
9	Detachable power cord set must be listed in the test report critical component list.		N/A
14	AC Adaptor incorporated with 13A socket-outlet to be tested to additional tests clauses 13, 17 and 18 of SS 145 Part 3: 2020.		N/A
15	Supplier who is supplying AC adaptors with detachable interchangeable plug pins must include with its products, written instructions to inform customer on the type of detachable interchangeable plug pins that are approved and suitable to use in Singapore. These instructions are to be submitted to the Conformity Assessment Body for verification when applying for Certificate of Conformity.		N/A
16	For AC Adaptors supplied together with Personal Mobility Devices: 1. Registered Supplier to declare the model of the AC adaptor that is to be used with/ bundled together with the PMDs; 2. Registered Supplier to provide valid IEC 60950-1 or IEC 62368-1 test reports for certification and registration of the declared AC adaptor under the CPS scheme; and 3. Registered Supplier to provide the UL 2272 test report as supporting document, showing that the listed AC adaptor in the UL 2272 test report is the model declared to be used with/ bundled together with the PMDs.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
18	CD/ DVD ROMs (used in personal computers) to have test certificate showing that CD/DVD ROM drive has complied with IEC 60825- 1.		N/A
19	Modem card incorporated in the personal computer must be tested at set level (sub-clauses 5.1 & 6 of IEC 60950) or at component level.		N/A
20	Powerline Ethernet Adaptor incorporated with 13A socket-outlet, to be tested to additional test clauses 13, 17 & 18 of SS 145 Part 3: 2020.		N/A
	Other additional requirements which may be included in Chapter 7 of the information booklet in ongoing basis at the time of testing.		N/A

IEC62368_1E - 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 62368.1:2022			
TRF template used: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. AU_NZ_ND_IEC62368_1E			
Attachment Originator JAS-ANZ			
Master Attachment 2022-07-01			
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	National Differences		P
Appendix ZZ	Variations to IEC 62368-1:2018 (ED. 3.0) for Australia and New Zealand		P
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2018 (ED. 3.0)		P
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		P
2	After the first paragraph, <i>add</i> the following: The Australian or Australian/New Zealand Standards listed below are modified adoptions of, or not equivalent to, the IEC normative references and are required for the application of this Standard. All references in the source text to those IEC normative references shall be replaced by references to the corresponding Australian or Australian/New Zealand Standards. Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably -AS/NZS 3112, <i>Approval and test specification—Plugs and socket-outlets</i> -AS/NZS 3123, <i>Approval and test specification—Plugs, socket-outlets and couplers for general industrial application</i> -AS/NZS 3191, <i>Electric flexible cords</i> -AS/NZS 60884.1, <i>Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i> -IEC 60086-2 <i>Primary batteries — Part 2: Physical and electrical specifications</i> -AS/NZS 60065, <i>Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)</i>		P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	-AS/NZS 60320.1, <i>Appliance couplers for household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)</i> -AS/NZS 60320.2.2, <i>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)</i> -AS/NZS 60695.2.11, <i>Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products</i> -AS/NZS 60695.11.5, <i>Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance</i> -AS/NZS 60695.11.10, <i>Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods</i> -AS/NZS 60884.1, <i>Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i> -AS/NZS 60950.1, <i>Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)</i> IEC 61032:1997, <i>Protection of persons and equipment by enclosures—Probes for verification</i> -AS/NZS 61558.1, <i>Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 3, MOD)</i> -AS/NZS 61558.2.16, <i>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.</i>		
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 conforming to AS/NZS 3112, shall conform to the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets. Conformity is checked by inspection and, if necessary, by the tests in AS/NZS 3112. NOTE: Equipment with plug portions for use in countries other than Australia and New Zealand will need to conform to other countries' requirements Note Additional AS/NZS 3112 Appendix J, TRF is appended to end of this TRF.	Not such equipment.	N/A

Attachment 1

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IEC62368_1E - ATTACHMENT					
Clause	Requirement + Test		Result - Remark		Verdict
4.7.3	Compliance Criteria <i>Delete</i> this clause				N/A
4.8.1	General After second list, <i>add</i> the following: NOTE: Refer to the Consumer Goods (Products Containing Button/Coin Batteries) Safety Standard 2020 and Consumer Goods (Products Containing Button/Coin Batteries) Information Standard 2020 for more information on button cell batteries in Australia..				N/A
5.4.10.2.1	General <i>Delete</i> the first paragraph and <i>replace</i> with the following: In Australia, the separation is checked by the test given in both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test given in either 5.4.10.2.2 or 5.4.10.2.3..				N/A
Table 28	<i>Delete</i> Table 28 and <i>replace</i> 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	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment.	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) ^b		1.5 kV ^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.					
5.4.10.2.2	Delete "NOTE" and <i>replace</i> with "NOTE 1". After NOTE 1, <i>add</i> the following: NOTE 2: For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 3: 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	Delete "NOTE" and <i>replace</i> with "NOTE 1". After NOTE 1, <i>add</i> the following: NOTE 2: For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 3: 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				N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.6	After Clause 6.6, <i>add</i> the new Clauses 6.201 as follows: 6.201 External power supplies, docking stations and other similar devices (see special national conditions)		N/A
8.6	Stability of equipment		N/A
Table 36	Footnote ^a , after first sentence, <i>add</i> the following: Equipment having displays with moving images shall include "television sets and display devices".		N/A
8.6.1	After Clause 8.6.1 <i>add</i> the following new clauses: 8.6.201 Restraining Device fixing point (see special national conditions) 8.6.202 Restraining device (see special national conditions)		N/A
Annex F Paragraph F.3.3.4	Rated Voltage <i>Delete "NOTE" and replace with NOTE1"</i> After NOTE 1, <i>add</i> the following Equipment that is intended for connection to the supply mains in Australia and New Zealand shall be marked with: (a) A rated voltage of: • 230 V for single phase equipment • 400 V for poly phase equipment Or (b) A rated voltage range that includes: • 230 V for single phase equipment • 400 V for poly phase equipment NOTE 2: equipment that is not rated as above is not suitable for direct connection to the supply mains in Australia or new Zealand.		N/A
Annex F.3.3.5	After the list, <i>add</i> the following Equipment that is intended for connection to supply mains in Australia or New Zealand shall be marked with a rated frequency of 50 Hz or a rated frequency range or nominal value which includes 50Hz		N/A
Annex F.3.8	After "The DC output of an external power supply", insert "or docking stations and other similar external devices"		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex G Paragraph G.4.2	Mains connectors 1 After "IEC 60320", insert "or AS/NZS 60320 series". 2 After "IEC 60906-1", insert "or AS/NZS 3123" 3 After first paragraph <i>add</i> the following: 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 Third dashed point <i>replace</i> '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 Fourth dashed point <i>replace</i> 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.		N/A
Annex G.7.1	Mains supply cords, General Fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A
Table G.7	Sizes of conductors 1 First column, second row, <i>delete</i> "6" and <i>replace</i> with "7.5" 2 Second column, second row, <i>delete</i> '0,75' and <i>replace</i> with '0.75' ^b 3 <i>Delete</i> NOTE 1. 4 <i>Replace</i> 'NOTE 2' with 'NOTE:'. 5 <i>Delete</i> 'Footnote b' and <i>replace</i> 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 mm ² three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 Footnote c <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1' 7 Footnote d <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A
Annex M M 2.1	<i>Add</i> "IEC 60086-2" to the list		N/A
Annex M Paragraph M.3.2	Test method <i>Delete</i> "NOTE" and <i>replace</i> with "NOTE 1" After NOTE 1 <i>add</i> the following: NOTE 2: 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 ES1 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.		P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Special national conditions (if any)		N/A
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— (a) at all ES1 outlets or connectors shall not increase by more than 10 % of the output rated voltage under normal operating conditions, measured after 3 s of introducing a single fault condition and after 3 s of introducing abnormal operating conditions; and (b) of a USB outlet or connector shall not increase by more than 3 V or 10 % of the output rated voltage under normal operating conditions, whichever is higher, measured after 3 seconds of introducing a single fault condition and after 3 s of introducing abnormal operating conditions For equipment with multiple rated voltages at the output, the requirements apply with the equipment configured for each output rated 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. The 3 s measurement delay is based on IEC document 108/742/INF, <i>TC 108, Standards Interpretation Panel Question 15 — Output voltage</i>, in relation to similar requirements in IEC 62368-3:2017. Conformity 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

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.201	Restraining device fixing point Freestanding-capable MS2 and MS3 television sets and display devices shall be provided with a fixing point to facilitate the anchoring of the equipment from toppling The fixing point shall conform to Clause 8.7 where the fixing point uses a wall, ceiling or other structure mount. Alternatively, the fixing point shall be capable of withstanding a pull equal to the mass of the equipment in all directions without damage Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point		N/A
8.6.202	Restraining device MS2 and MS3 television sets and display devices shall be provided with a restraining device and associated hardware to attach to the television set or display device. The restraining device shall be capable of withstanding a pull equal to the mass of the equipment in all directions. Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point		N/A

Measurement Section			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3.3, 6.4.8.3.4, P.2.2, P.2.3	TABLE: Enclosure opening measurements		P
Location		Size (mm)	Comments
Horizontal position			
Metal enclosure			
Top		Max. Ø1.8mm	Numerous circle openings provided.
Left		No openings.	--
Right		No openings.	--
Rear	Max. Ø1.8mm		Numerous circle openings provided.
	Width 0.85mm		Numerous rectangle openings provided.
Bottom		Max. Ø1.8mm Centre to Centre: 3.5mm	Numerous circle openings provided.
Vertical used(turn left)			
Top		No openings.	--
Left		Max. Ø1.8mm	Numerous circle openings provided.
Right		Max. Ø1.8mm	Numerous circle openings provided.
Rear	Max. Ø1.8mm		Numerous circle openings provided.
	Width 0.85mm		Numerous rectangle openings provided.
Bottom		No openings.	--
Vertical used(turn right)			
Top		No openings.	--
Left		Max. Ø1.8mm	Numerous circle openings provided.
Right		Max. Ø1.8mm	Numerous circle openings provided.
Rear	Max. Ø1.8mm		Numerous circle openings provided.
	Width 0.85mm		Numerous rectangle openings provided.
Bottom		No openings.	--
Supplementary information:			

[illegible]

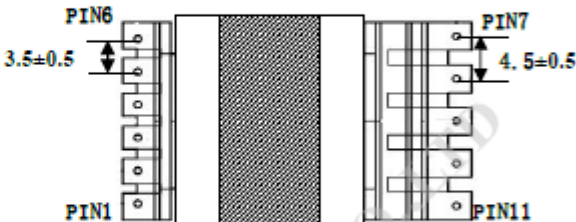
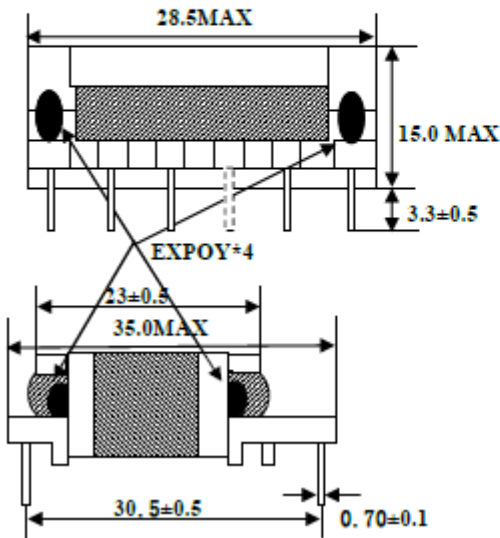
Measurement Section			
Clause	Requirement + Test	Result - Remark	Verdict

G.5.3	TABLE: Transformers	P	
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1. IDENTIFICATION

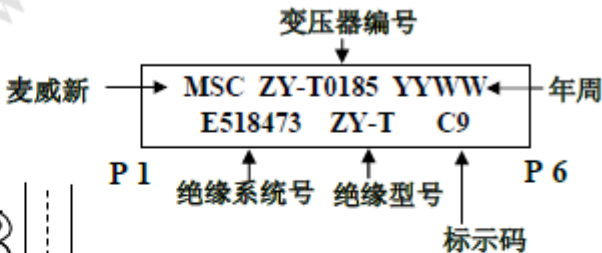
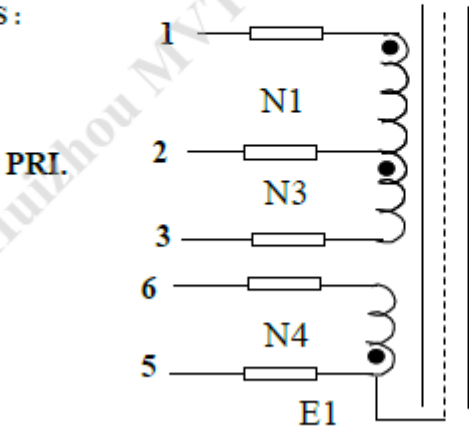
PART TYPE:EQ27 变压器
PART NAME:ZY-T0185 C9
MANUFACTURER : Huizhou MVT New Power Technology CO.,LTD

2. MECHANICAL DIMENSION(UNIT:mm)



- NOTES:
- 1>骨架缺4脚，成品PIN2挡板以下部分剪除。
 - 2>磁芯开气隙并装于底部。
 - 3>磁芯外包0.025*11mm蓝色胶带2TS。
 - 4>在产品磁芯结合处点4点黑胶固定（如图所示）。
 - 5>磁芯中柱点气隙胶处理。
 - 6>标签6*20（透明底黑字），贴于产品顶部。

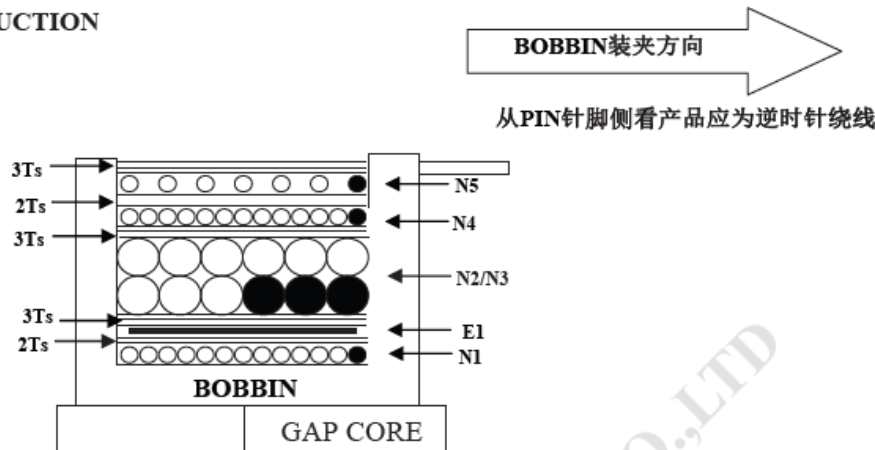
3. SCHEMATICS :



SAME PHASE ●
TEFLON TUBE: □

Measurement Section			
Clause	Requirement + Test	Result - Remark	Verdict

4. WINDING CONSTRUCTION



5. WINDING	TERMINAL	WIRE SIZE	TURNS	TAPE LAYERS 0.025*6.2mm蓝色
N1	1—2	2UEWΦ0.30mm*2	14Ts	2TS
E1	5—	0.025*5mm*45mm背胶铜箔	0.95Ts	3TS
N2	7/8—9/10	TRW(B)Φ0.40mm*3	4Ts	3TS
N3	2—3	2UEWΦ0.30mm*2	14Ts	2TS
N4	5—6	2UEWΦ0.20mm*1	5Ts	3TS

4.WINDING INFORMATION TABLE/绕制明细表

绕组 WINDING	起始胶带 MARGIN TAPE		起始-收尾 S - F	线材 WIRE	圈数 TURNS	绝缘胶带 TAPE	备注 REMARK
	TOP SIDE	PIN SIDE					
N1	/	/	9--8	TIW-B Ø0.30*1P	15Ts	1Ts	密绕/CLOSE
N2	/	/	12-- 11	TIW-B Ø0.20*2P	4Ts	2Ts	密绕/CLOSE
N3	/	/	4--2	USTC 2UEW Ø0.10*30P	16Ts	/	密绕/CLOSE
N4	/	/	5--1	USTC 2UEW Ø0.10*25P	5Ts	2Ts	密绕/CLOSE
N5	/	/	7--8	TIW-B Ø0.40*1P	9Ts	2Ts	密绕/CLOSE (绕线方向相反)

Measurement Section			
Clause	Requirement + Test	Result - Remark	Verdict

10. MATERIAL INFORMATION			
ITEM	MATERIAL	SUPPLIER OR MANUFACTURER	TEMP.RATING
CORE	EQ27 (TD4a) Bs(100°C)=400mT; Ae=93 mm ²	ZHEJIANG TONGDA MACANETIC PRODUCTS CO., LTD	
	EQ27(JF44) Bs(100°C)=400mT; Ae=93 mm ²	WUXI SPINEL MAGNETIC CO.,LTD OR EQUAL	
WIRE	xUEW/MW 75-C xUEW-F/MW 79-C UL NO. E164409	HOI LUEN ELECTRICAL MFR CO LTD	130°C/155°C
	xUEW/130/MW 75-C xUEW/155/MW 79-C UL NO. E221719	ZHEJIANG HONGBO TECHNOLOGY CO LTD	130°C/155°C
BOBBIN	T200HF/T220NA UL NO.E59481 94V-0	CHANGCHUN PLASTICS CO., LTD	150°C
	PM9820 PM9825 UL NO.E41429 94V-0	SUMIDUREZ SINGAPORE PTE LTD	150°C
INSULATION VARNISH	E 962 UL NO.E335405 MW 28-C	ZHUHAI CHANGXIAN NEW MATERIALS TECHNOLOGY CO LTD	130°C
	T-4260(a) UL NO.E228349 MW 28-C	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	130°C
TAPE	CT *(b)(g) UL NO .E165111	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	130°C
	CT*(b)(g) CT*(c)(g) UL NO.E324093	DONGGUAN SHIN YAHUA ELECTRONIC MATERIAL CO LTD	130°C
	LY-19-02-15b LY-19-02-18b UL NO.E246820	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	130°C
TUBE	CB-TT-L. E180908	CHANGYUAN ELECTRONICS GROUP CO LTD	200°C
	TFL.E478618	HUIZHOU DONGJU FLUO TECH PLASTIC CO LTD	200°C
	TFL. E156256	GREAT HOLDING INDUSTRIAL CO LTD	200°C
supplemental insulation	TEX-E,TEX-EA UL.E206440	FURUKAWA ELECTRIC CO., LTD.	130°C
	TIW-FXX ULNO;E488352 VDE40047395	HUIZHOU DONGJU FLUO TECH PLASTIC CO LTD	155°C
	TIW-3LZX@@@%\$ TIW-3X\$ UL.E166483	TOTOKU ELECTRIC CO LTD	155°C

Product: LCD Monitor

Type Designation: See test report

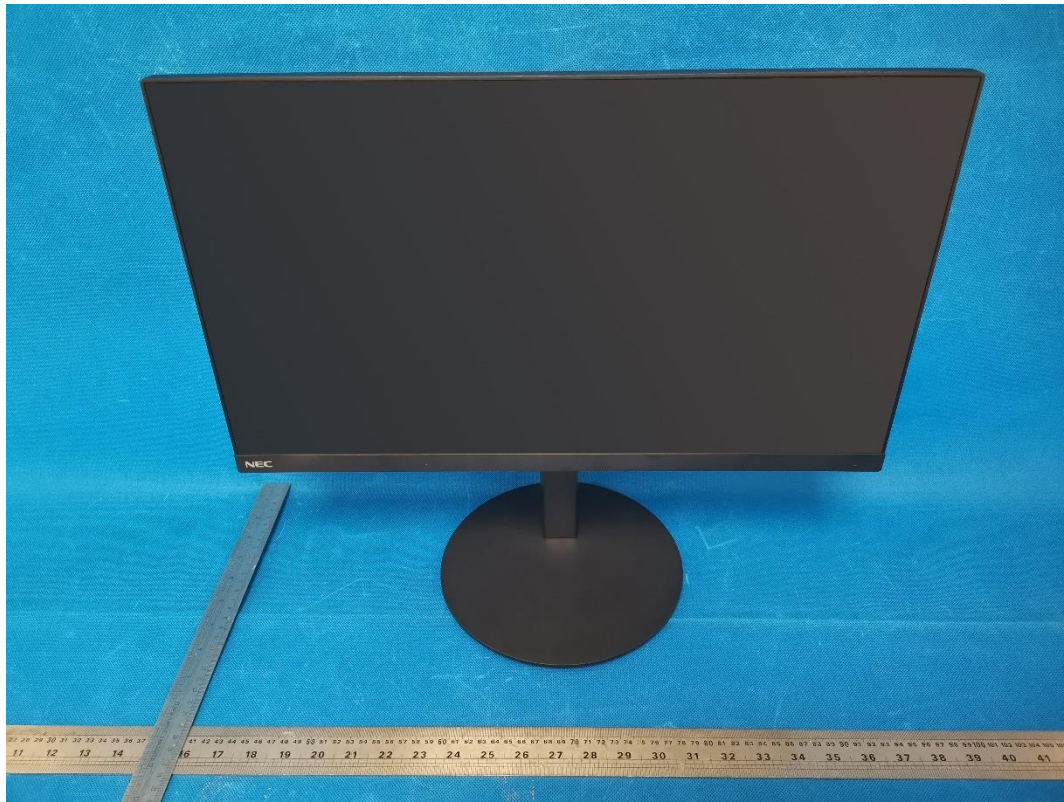


Figure 1. Front view for horizontal used



Figure 2. Rear view for horizontal used

Product: LCD Monitor

Type Designation: See test report

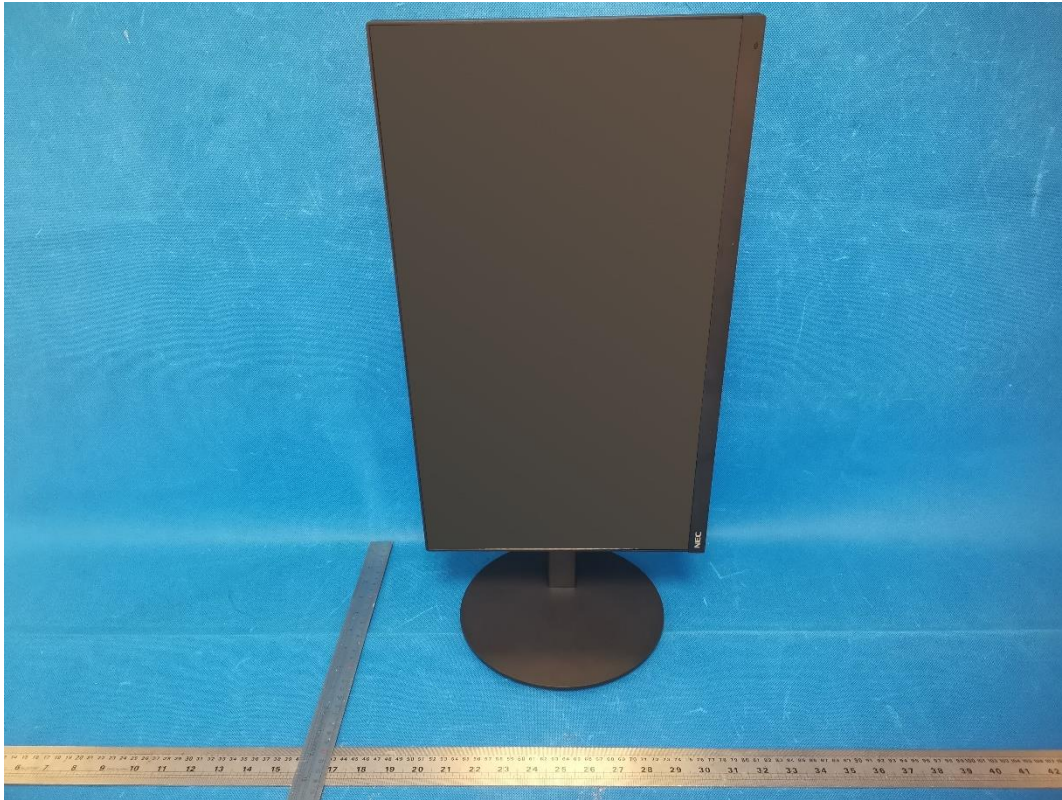


Figure 3. Front view for vertical used turn left



Figure 4. Rear view for vertical used turn left

Product: LCD Monitor

Type Designation: See test report

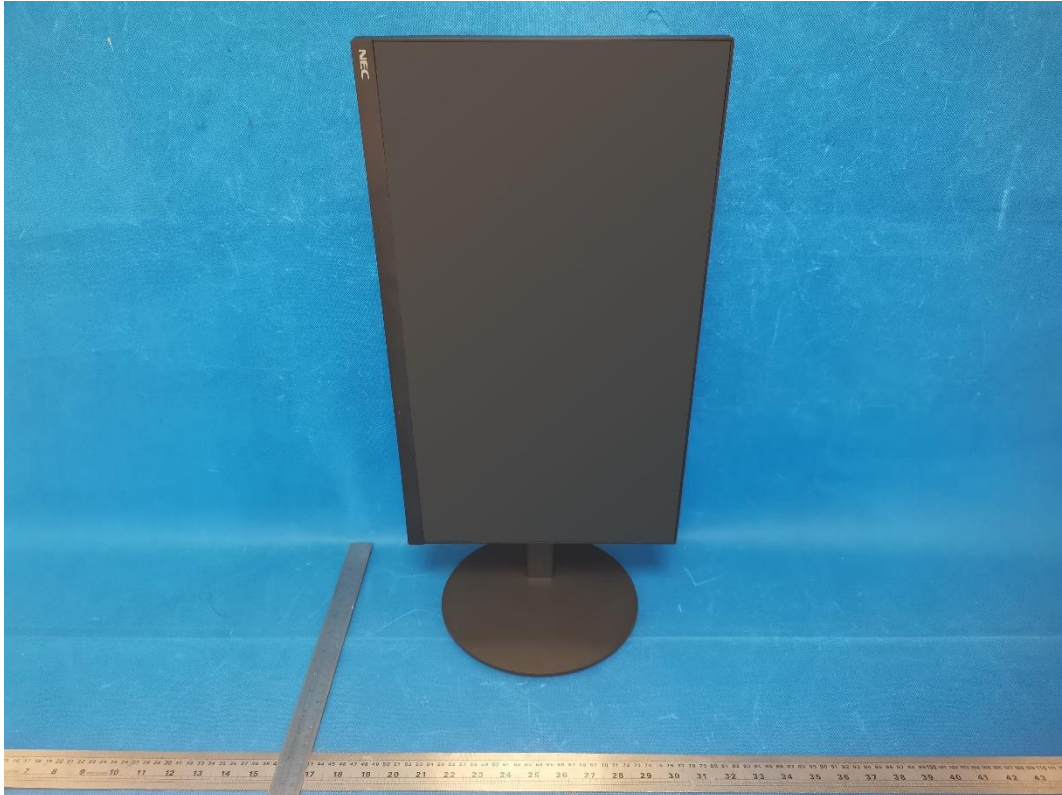


Figure 5. Front view for vertical used turn right



Figure 6. Rear view for vertical used turn right

Product: LCD Monitor

Type Designation: See test report



Figure 7. Terminal view



Figure 8. Terminal view

Product: LCD Monitor

Type Designation: See test report

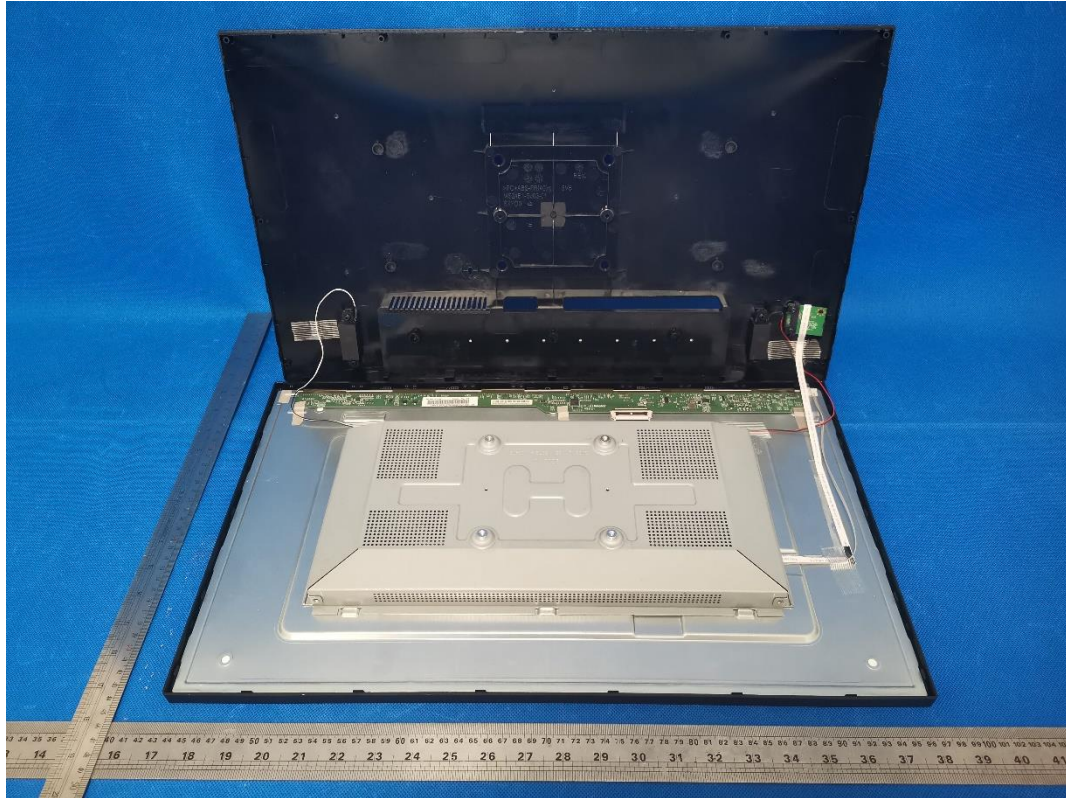


Figure 9. Internal view

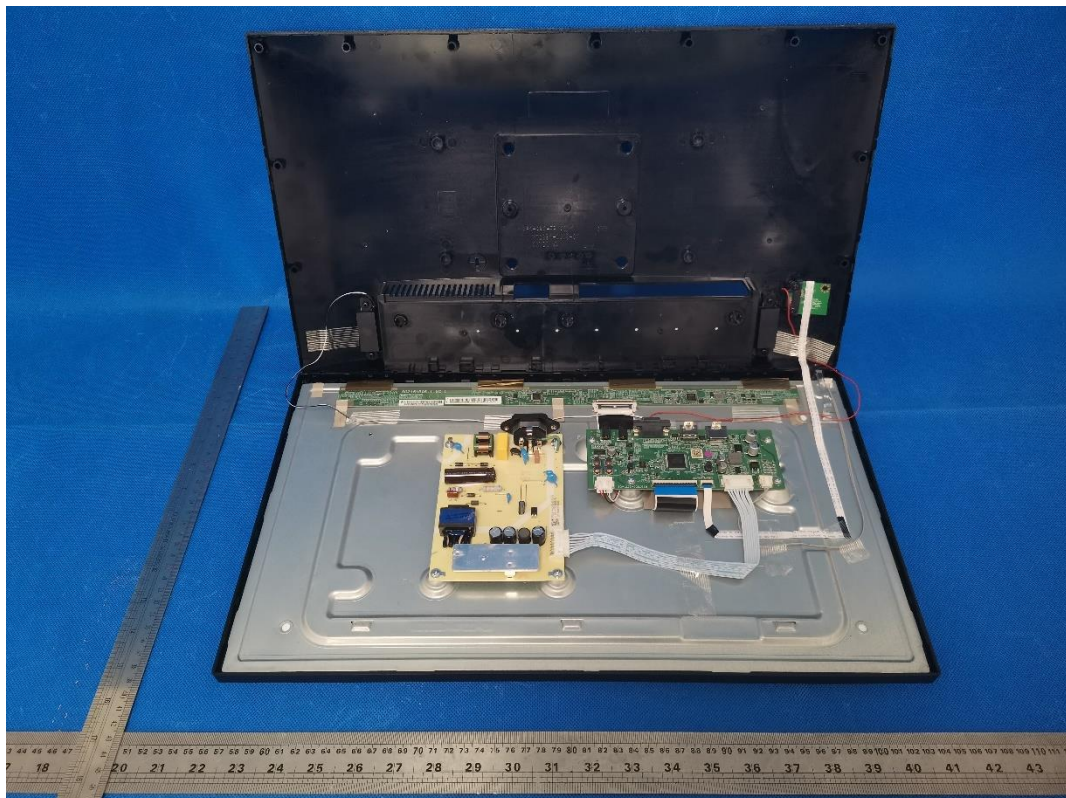


Figure 10. Internal view

Product: LCD Monitor

Type Designation: See test report

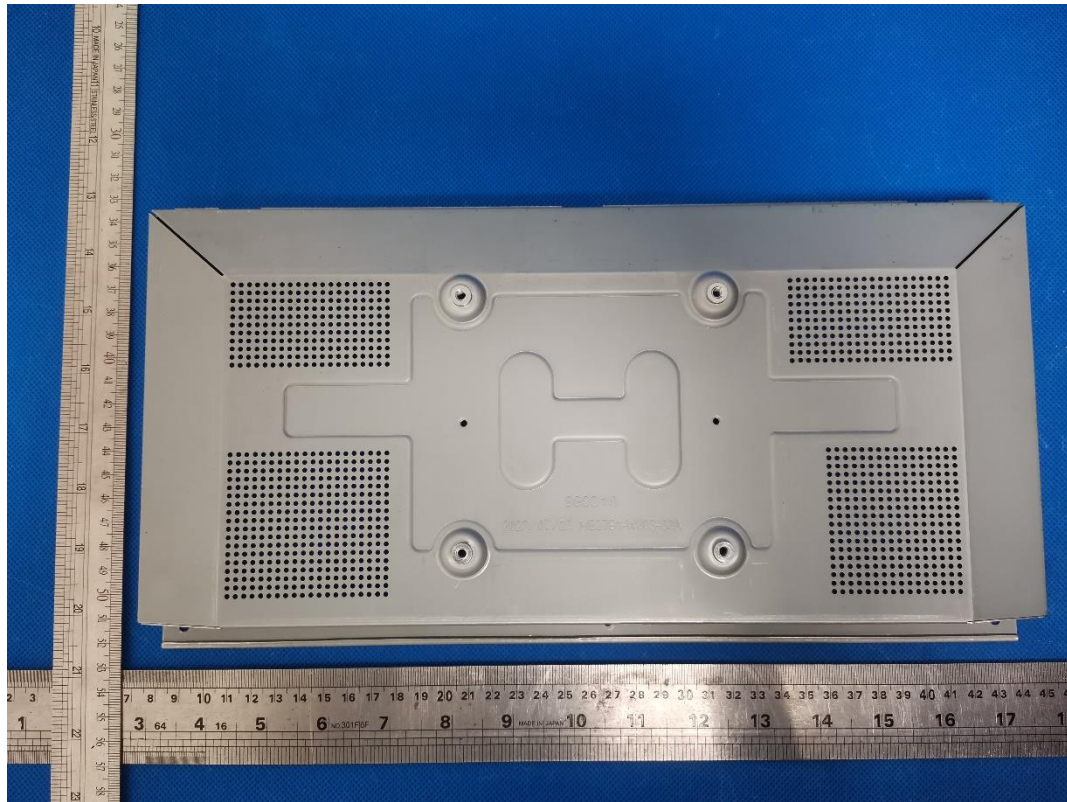


Figure 11. Internal view

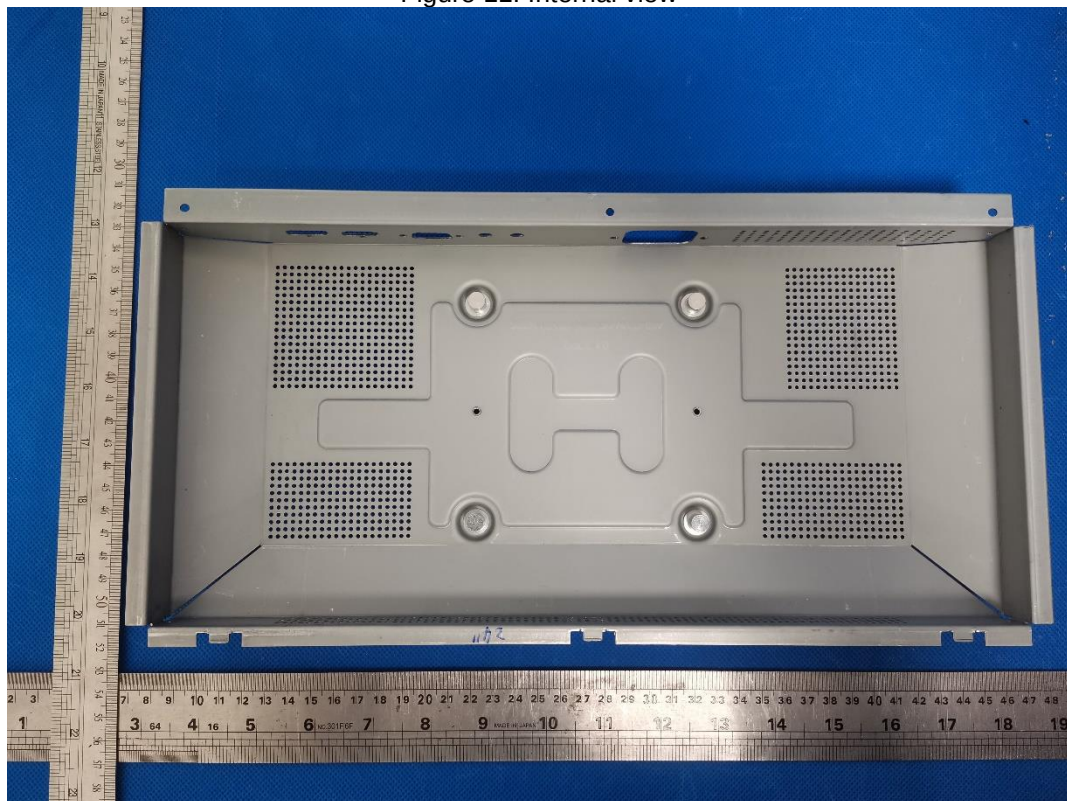


Figure 12. Internal view

Product: LCD Monitor

Type Designation: See test report

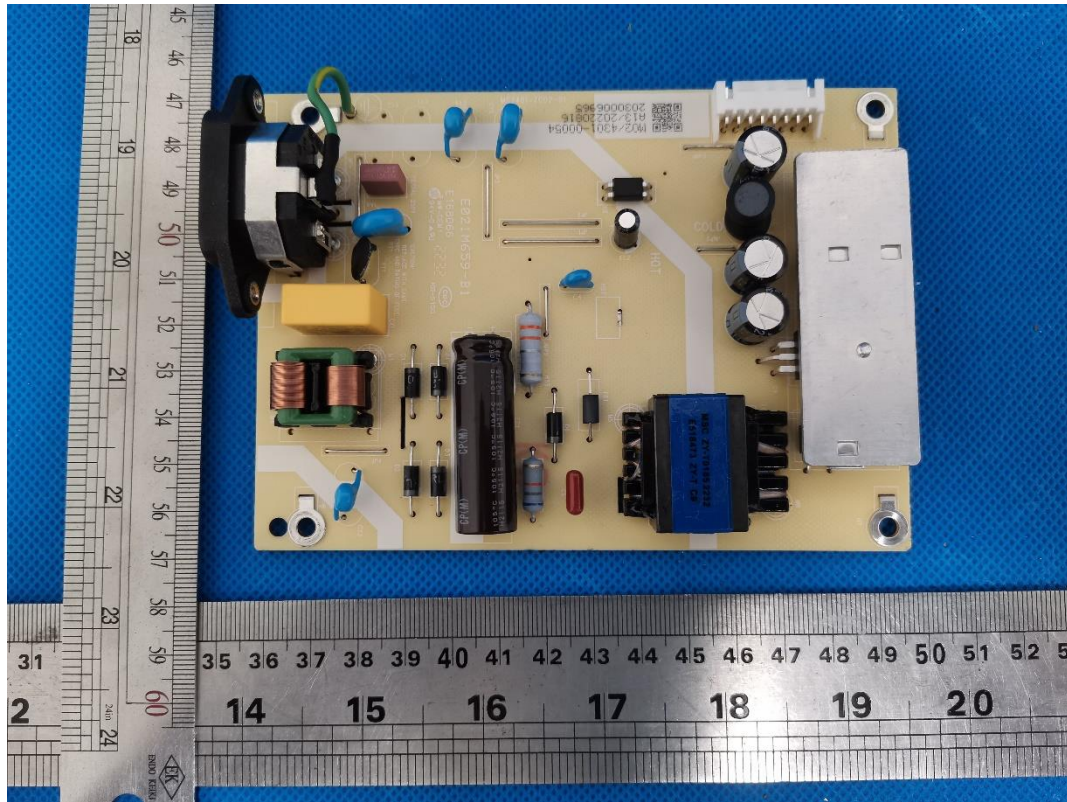


Figure 13. Component side of power board

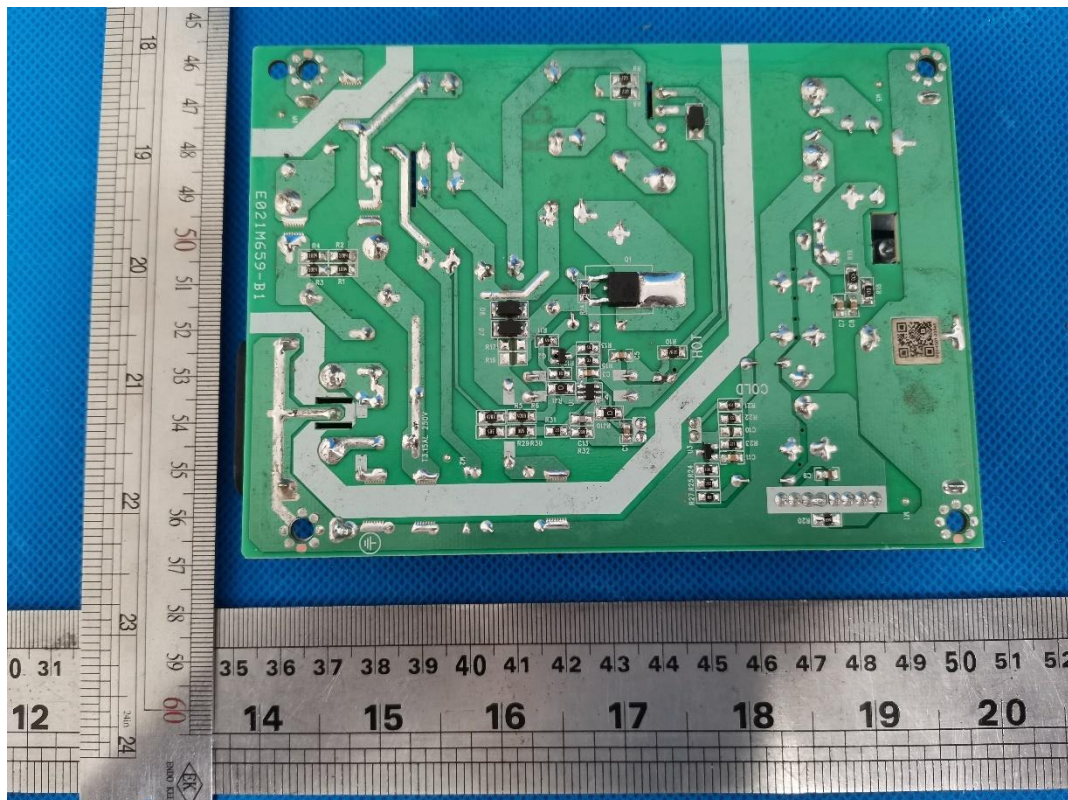


Figure 14. Trace side of power board

Product: LCD Monitor

Type Designation: See test report

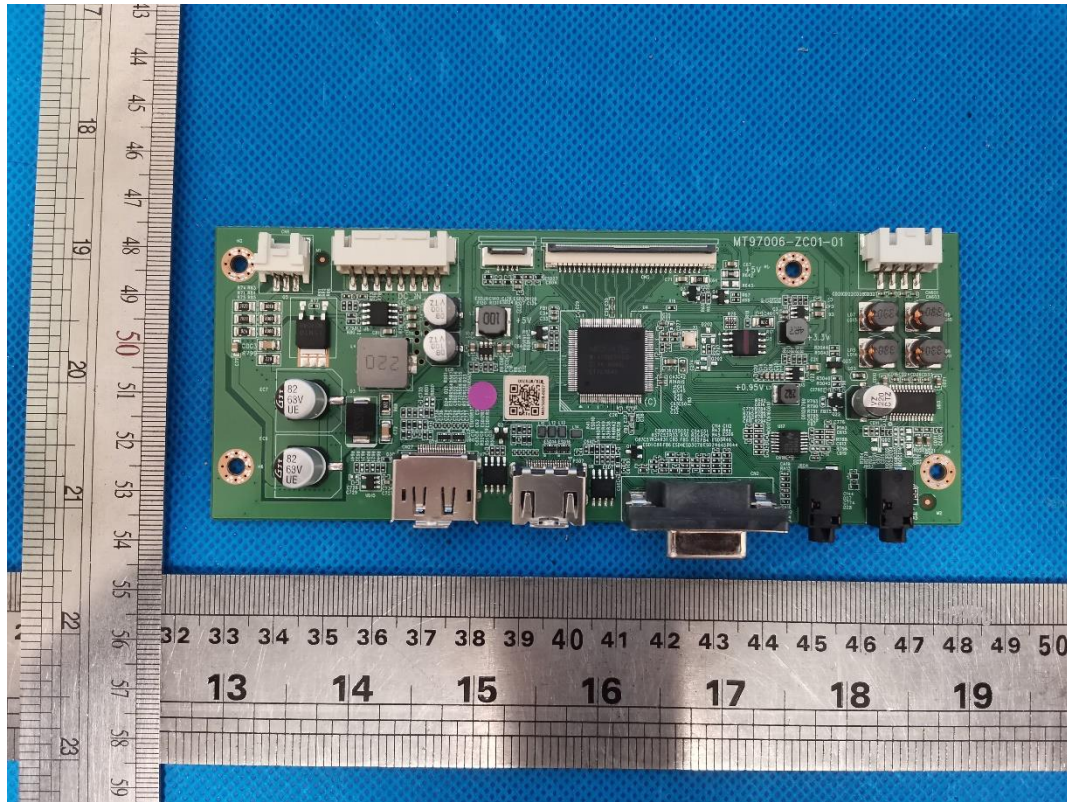


Figure 15. Component side of main board

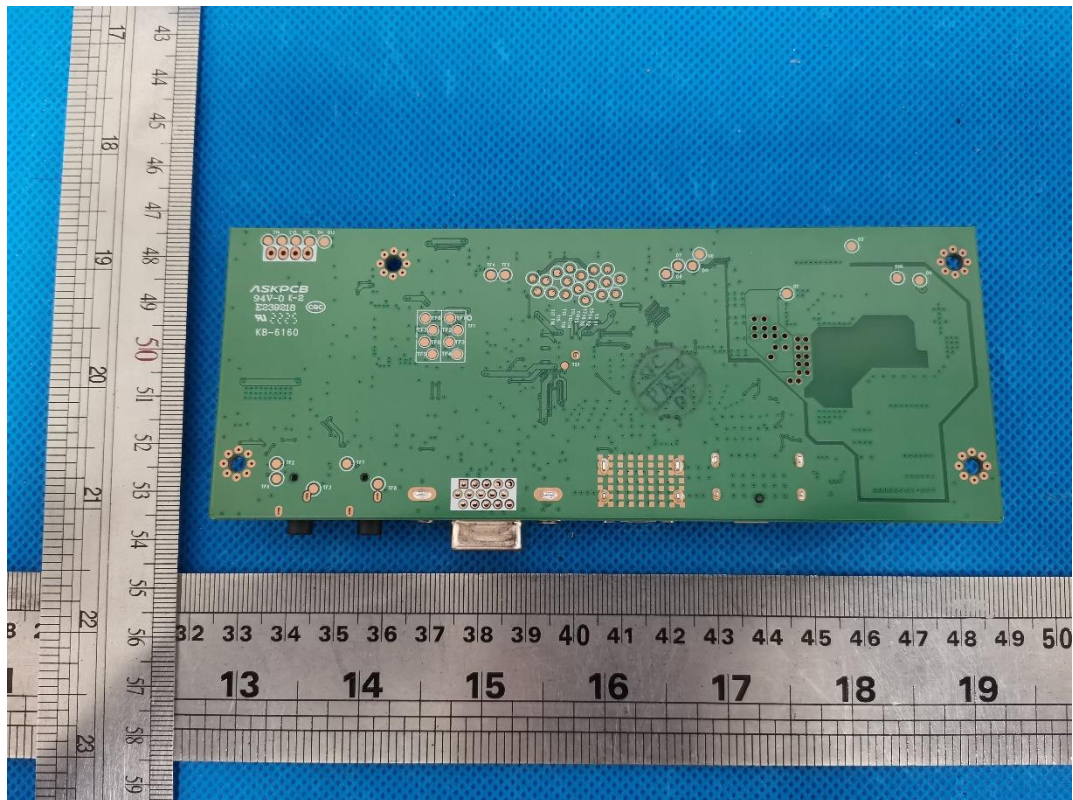


Figure 16. Trace side of main board

Product: LCD Monitor

Type Designation: See test report

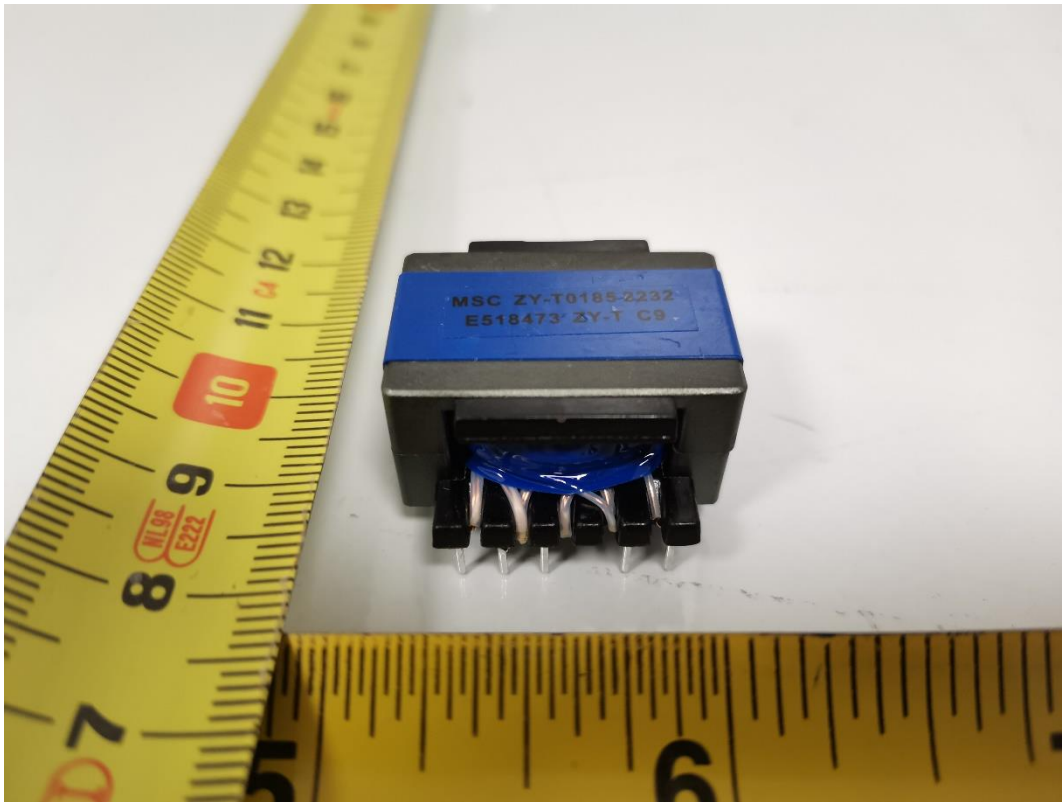


Figure 17. Transformer T1 view

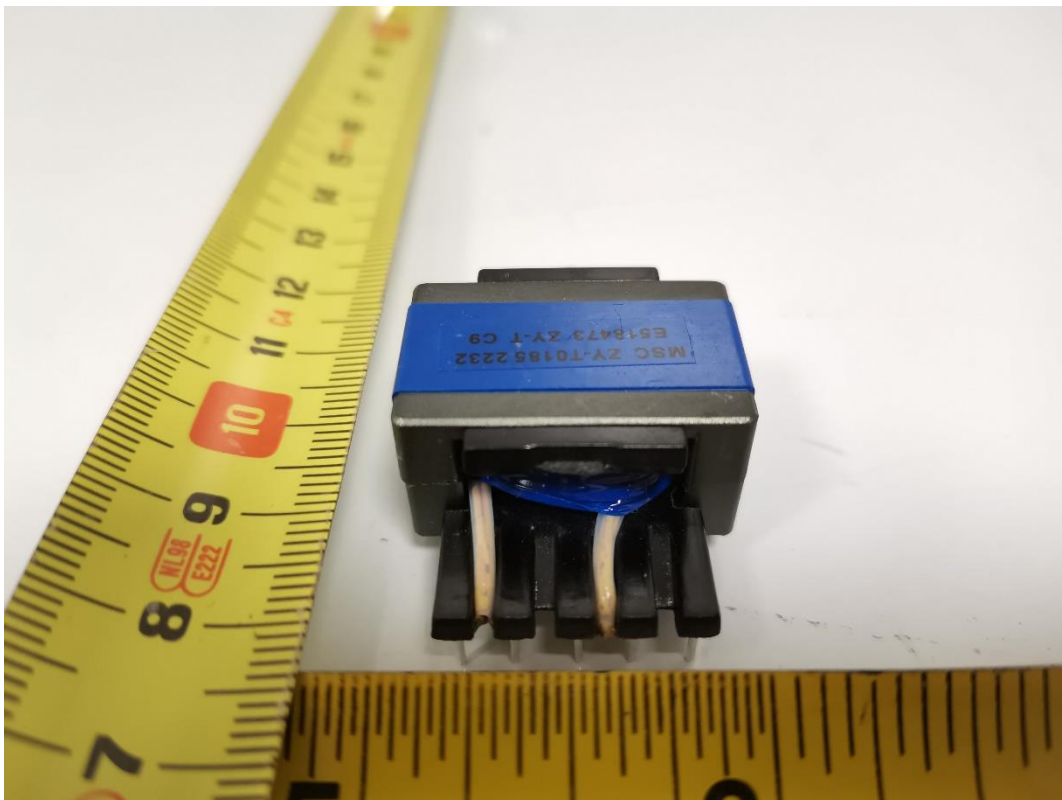


Figure 18. Transformer T1 view

Product: LCD Monitor

Type Designation: See test report

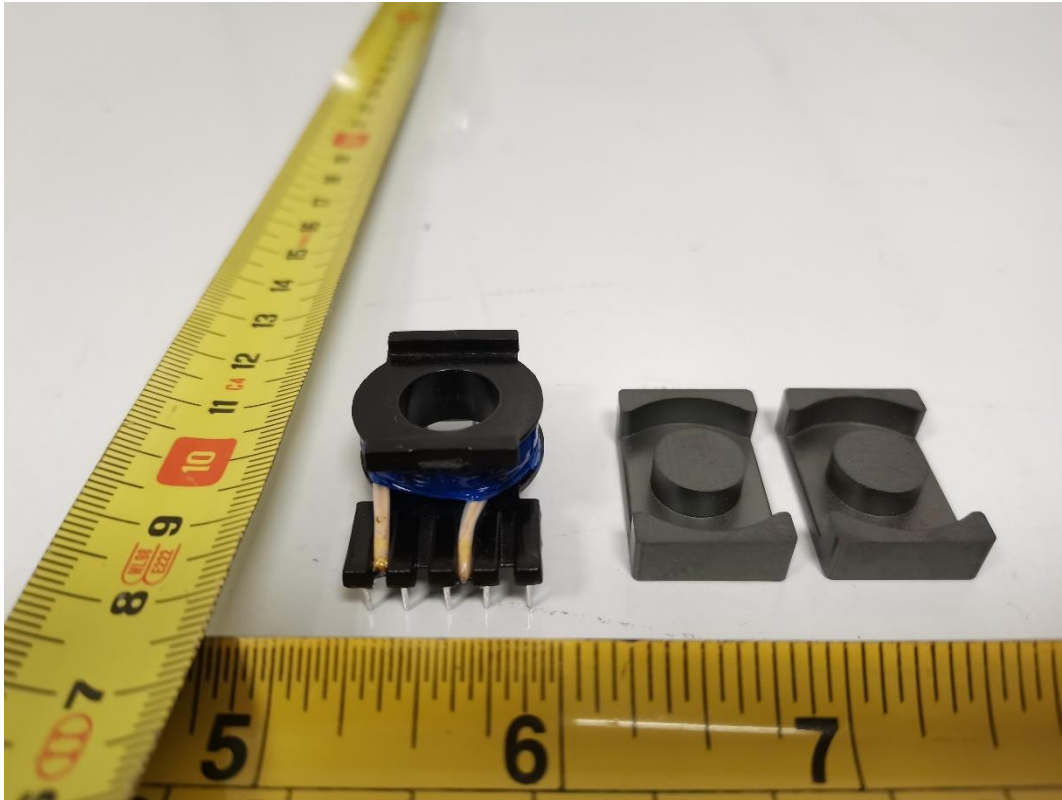


Figure 19. Transformer T1 view

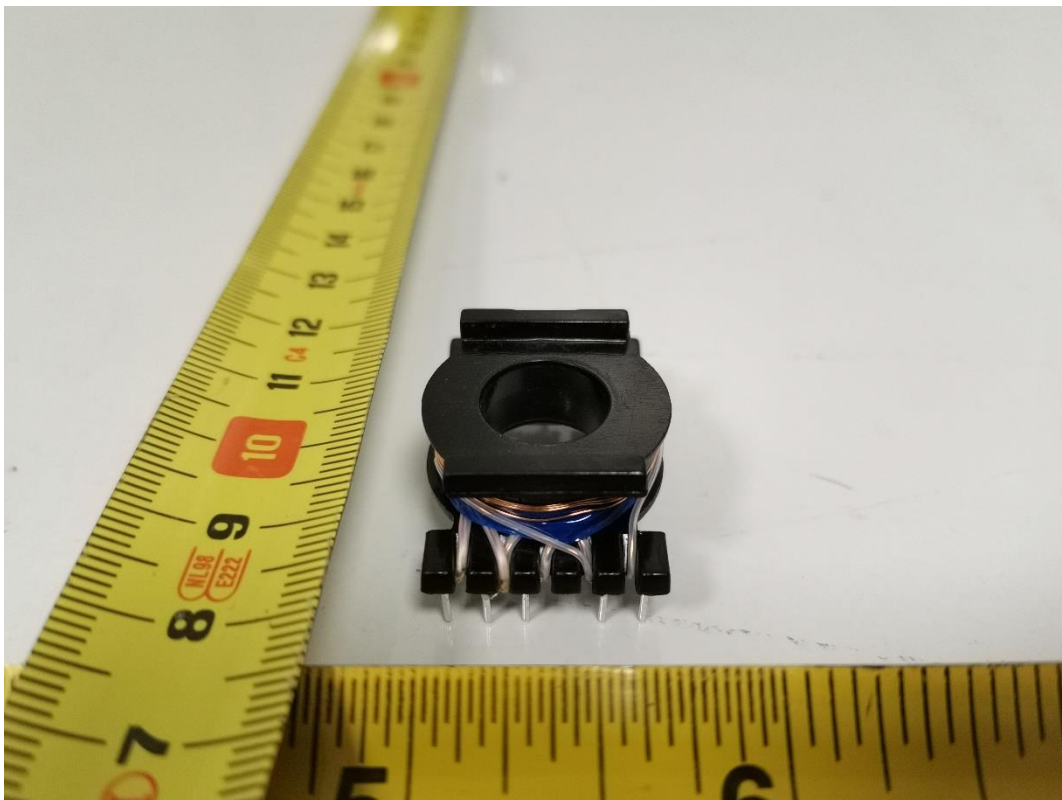


Figure 20. Transformer T1 view

Product: LCD Monitor

Type Designation: See test report

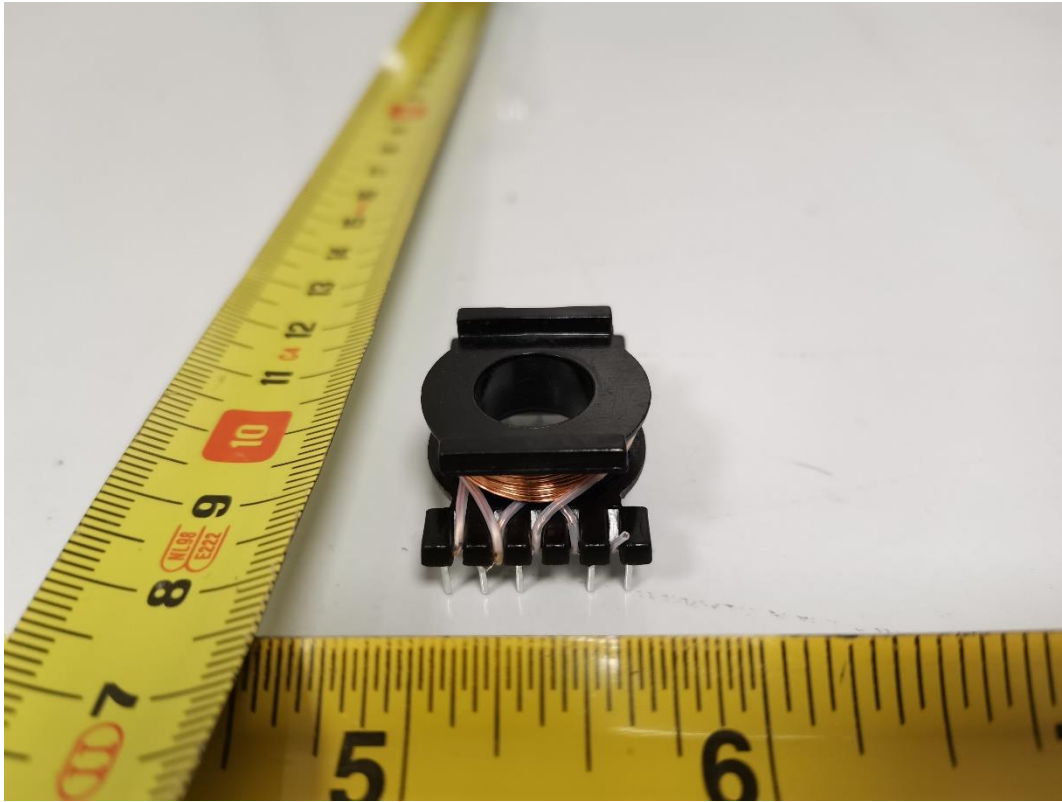


Figure 21. Transformer T1 view



Figure 22. Transformer T1 view

Product: LCD Monitor

Type Designation: See test report

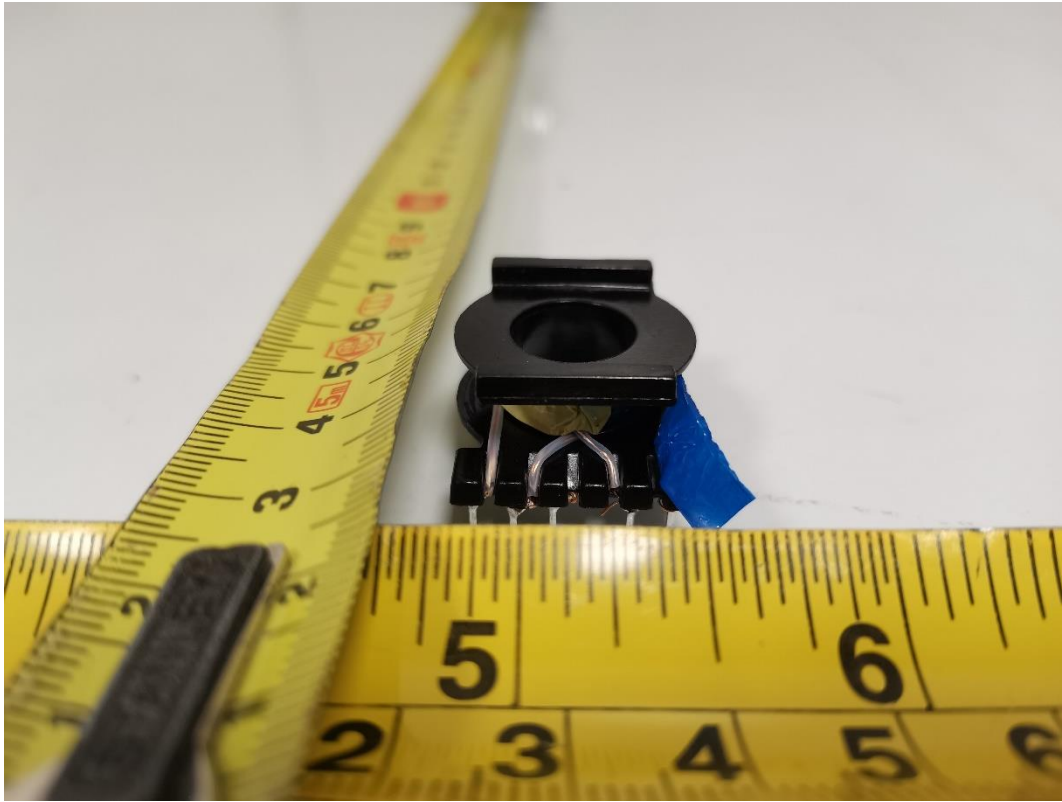


Figure 23. Transformer T1 view



Figure 24. Transformer T1 view

Product: LCD Monitor

Type Designation: See test report



Figure 25. Transformer T1 view