



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..... : CN25N2K7 001

Date of issue : 2025-04-25

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Name of Testing Laboratory preparing the Report : TÜV Rheinland Taiwan Ltd. Taoyuan Testing Laboratories

Applicant's name : Top Victory Electronics (Taiwan) Co., Ltd.

Address : 10F., No. 230, Liancheng Rd., Zhonghe Dist., New Taipei City, 23553 Taiwan

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)	SHARP
Manufacturer	SHARP CORPORATION 1 Takumi-cho, Sakai-ku, Sakai-City, Osaka, 590-8522 Japan
Model/Type reference	1) DD-EA271F, DD-EA271FW; 2) DD-EA241W, DD-EA241WW
Ratings	1) 100-240V~, 50/60Hz, 0.85-0.45A (1.6A for Mexico); 2) 100-240V~, 50/60Hz, 0.90-0.50A

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	CB Testing Laboratory:	TÜV Rheinland Taiwan Ltd., Taoyuan Testing Laboratories
Testing location/ address		4F-1, No. 38, Huaya 1st Road, Guishan District, Taoyuan City 333, Taiwan
Tested by (name, function, signature)		Alex Cheng Project handler 
Approved by (name, function, signature) ..		Nai-Shiuan Yin Technical 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):

- Measurement Section (included in this test report)
- National Differences (77 pages)
- Other National Requirements (2 pages)
- Photo documentation (15 pages)

Total number of pages in each attachment is indicated in each individual attachment; except for Attachment Measurement Section is combining with this main test report in the last 5 page(s).

Summary of testing:

This re-issue test report is based on the previous IEC 62368-1:2018 test report issued by NCB TUV Rheinland Japan, except applicant, manufacturer and factory change for this re-issue test report, no other difference from the original investigation, details as below:

CB Test report number	CB Certificate number	Testing procedure	Date (s) of performance of tests
CN21ZMBZ 001	JPTUV-125840	CBTL	2021-07-08 to 2021-07-15

Except for re-check construction, all other tests were carried out under the original investigation.

Tests performed (name of test and test clause):

- The test samples are pre-production without serial numbers.
- Max. normal load condition:
The equipment operated under maximum brightness, maximum contrast of LED backlight circuit and the volume with 1kHz sinusoidal waveform of unit adjusted to maximum attainable output and dummy load of 5V/0.9A for each USB 3.0 port (total three provided) and 3.3V/0.5A for Display port.
- The equipment provided wall mounting function and complied with loading test mentioned at sub-clause 8.7.
- The equipment has been evaluated according to the specified by the manufacturer maximum operating altitude of 5000m (correction factor for clearances according to IEC 60664-1:2007 of 1.48 is considered).
- The manufacturer specified the maximum ambient temperature as +40°C.
- The LCD MONITOR can be adjustment monitor's height and operated in landscape mode to portrait mode with power board downward and upward.
- Operated in landscape 180° to portrait mode. (when used the wall mounted).

Testing location:

All tests as described in Test Case and Measurement Sections were performed at the laboratory described on page 3.

Summary of compliance with National Differences (List of countries addressed):

EU Group Differences, EU Special National Conditions, AU, CA, JP, KR, NZ, SA, US

Explanation of used codes: AU = Australia, CA = Canada, JP = Japan, KR = Korea, NZ = New Zealand, SA = Saudi Arabia, US = United States of America

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

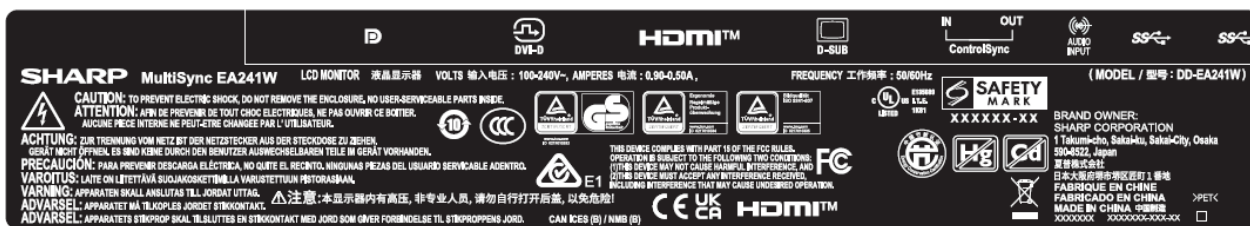
The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

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 Germany

Contact address for EU
Sharp NEC Display Solutions Europe GmbH
Landshuter Allee 12-14
80637 Munich, Germany
www.sharpnecdisplays.eu

Above labels are as representative for other model names.

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	☒ 20 A;		
	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 - 230 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)	Approx. 7.34kg for 27 inch models (unit with base stand); Approx. 6.70kg for 24 inch models (unit with base stand); Base stand 2.44kg		

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: N/A Date (s) of performance of tests: N/A	
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 IEC62368-1:	
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) : 1) TPV Electronics (Fujian) Co., Ltd. Shangzheng, Yuan Hong Road Fuqing City Fujian P.R. China 2) L&T Display Technology (Fujian) Ltd. Optoelectronic Park, Rongqiao Economic and Technological Development Zone Fuqing, 350301 Fujian, P.R. China 3) TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone Fuqing City Fujian, P.R. China 4) TPV Electronics (Fujian) Co., Ltd. Optoelectronic Park, Rongqiao Economic and Technological Development Zone, Fuqing City, 350301 Fujian, P.R. China	

General product information and other remarks:

This equipment models shown on page 2 are LCD MONITOR for using in the scope of this standard.

The equipment consists of the following critical components:

- LCD panel
- Building-in type non-approved switching power supply board (P/N: 715G8085) with LED driver circuit
- Mainboard (P/N: 715G9385) with I/O port (with HDMI port, DisplayPort, DVI port, VGA port, ControlSync IN/OUT, Audio in and Audio out port, USB 3.0 upstream port, USB 3.0 type A port)
- Key control board
- Plastic Enclosure
- Metal Enclosure
- Speaker
- Base stand (optional).

Model Differences –

Model DD-EA271F, DD-EA271FW is similar to DD-EA241W, DD-EA241WW except for input rating, LCD panel size, plastic enclosure, metal enclosure and model designation see below table for details.

Model name	DD-EA271F, DD-EA271FW	DD-EA241W, DD-EA241WW
Main board	715G9385	715G9385
Power board	715G8085	715G8085
Plastic enclosure	type A	type B
Metal enclosure	type A	type B
Panel size	27.0 inch	24.0 inch

1. Metal enclosure type B is identical to type A except for cancelling one opening on right side.
2. Plastic enclosure type B is identical with type A in shape, but smaller and with additional openings. The opening fulfils the requirement of electrical enclosure.

Additional application considerations:

1. All data ports are optional to use.
2. All test are under 27.0 inch models.

Additional Information

- The power supply unit used in the product is not a certified product. Therefore, compliance has been evaluated in this report.
- The Label in Copy of marking plate is a draft of an artwork pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.
- The product is to be operated at 5000 m above sea level, the minimum clearances were multiplied by the factor given in Table A.2 of IEC 60664-1: 1.48.
- The suitable power supply cord will be provided and evaluated during national approval.

MARKINGS AND INSTRUCTIONS

- Fuse Identification: F901 T4AL/250V

-  (IEC 60417-5019) for the wiring terminal of protective earthing conductor.
-  (IEC 60417-5009) for the stand-by condition.

The USB ports provide DC power supply to other equipment, which also comply with IEC 62368-3 requirement, details see following tables.

5.1	Table: Power transfer using ES1 or ES2 voltages. General requirements					P
Output Connector	Components	Output voltage V dc)				
		No load	Normal load	Max. load	Limits	
USB downstream (USB type A) (CN7703) Pin1 to earth	Normal condition	5.12	Less than U_{oc}	Less than U_{oc}	5.25	
USB downstream (USB type A) (CN7703) Pin10 to earth	Normal condition	5.12	Less than U_{oc}	Less than U_{oc}	5.25	
USB downstream (USB type A) (CN7705) Pin1 to earth	Normal condition	5.12	Less than U_{oc}	Less than U_{oc}	5.25	
Supplementary Information: For USB ports, applied normal load equal to max. rated load.						

5.3.2, 5.4.1	TABLE: DC power transfer interconnection to other equipment					P
Note: Measured each port with maximum attainable current:						
Output Circuit	Components	Output voltage (Uoc)	Any circumstance (A)		More than 5 s (A)	
			Meas.	Limit	Meas.	Limit
USB downstream port (CN7703) Pin1 to earth	Abnormal condition (OL)	5.12	1.3	8	1.3	6.5 (5.0x1.3)
USB downstream port (CN7703) Pin1 to earth	Single fault condition (U7742 pin 5 to 1 SC)	5.12	5.6	8	5.6	6.5 (5.0x1.3)
USB downstream port (CN7703) Pin10 to earth	Abnormal condition (OL)	5.12	1.3	8	1.3	6.5 (5.0x1.3)

USB downstream port (CN7703) Pin10 to earth	Single fault condition (U7741 pin 5 to 1 SC)	5.12	5.6	8	5.6	6.5 (5.0x1.3)
USB downstream port (CN7705) Pin1 to earth	Abnormal condition (OL)	5.12	1.3	8	1.3	6.5 (5.0x1.3)
USB downstream port (CN7705) Pin1 to earth	Single fault condition (U7743 pin 5 to 1 SC)	5.12	5.6	8	5.6	6.5 (5.0x1.3)
Supplementary Information: Fault current rating: > 2 A, limit 130%, ≤ 2 A, limit 150%						
Fault conditions tested: SC=Short circuit, OC=Open circuit, OL=Over load						

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
ES1: All outputs of SPS	Ordinary	N/A	N/A	N/A
ES1: All output connector	Ordinary	N/A	N/A	N/A
ES3: L/N pin of appliance inlet	Ordinary	N/A	N/A	Bleeder Resistor Discharge IC
ES3: All primary circuit	Ordinary	Clearance and creepage distances	Protective earth	N/A
ES3: Other circuits	Ordinary	N/A	N/A	Plastic/Metal enclosure Transformer Photo Coupler
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
PS2: <100W (All circuits)	Combustible materials outside of fire enclosure (include plastic enclosure)	See 6.3.1	See 6.4.5	N/A
PS3: > 100W (All circuits)	Combustible materials within fire enclosure	See 6.3.1	See 6.4	N/A
PS2 or PS3	Internal wiring insulation	See 6.3.1	See 6.5	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
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
MS2: Equipment mass (for 27.0 inch model)	Ordinary	N/A	N/A	See 8.6
MS1: Equipment mass (for 24.0 inch model)	Ordinary	N/A	N/A	N/A

MS3: Wall mount	Ordinary	See 8.7	Installation instruction	N/A
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
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
RS1: Photo coupler and indicating lights, and LCD Panel with LED backlight	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

See above

☒ 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.	P
4.1.4	Specified ambient temperature for outdoor use (°C) :		N/A
4.1.5	Constructions and components not specifically covered		N/A
4.1.8	Liquids and liquid filled components (LFC)		N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness	For adhesives securing parts serving as safeguards, see Annex P.4. Others see below.	P
4.4.3.1	General	See below.	P
4.4.3.2	Steady force tests	(See Annex T.5)	P
4.4.3.3	Drop tests		N/A
4.4.3.4	Impact tests	(See Annex T.6)	P
4.4.3.5	Internal accessible safeguard tests		N/A
4.4.3.6	Glass impact tests		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	(See Annex T.8)	P
4.4.3.9	Air comprising a safeguard		P
4.4.3.10	Accessibility, glass, safeguard effectiveness	Compliance checked.	P
4.4.4	Displacement of a safeguard by an insulating liquid		N/A
4.4.5	Safety interlocks		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 above	P
	No harm by explosion during single fault conditions	See above	P
4.6	Fixing of conductors		P
	Fix conductors not to defeat a safeguard		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 .. :		N/A
4.7.3	Torque (Nm) :		N/A
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General		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
4.10.2	Switches and relays		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 :	ES3	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		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		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	ES3 source cannot access by ordinary persons. Double or reinforced safeguard is provided between ES3 and ordinary persons.	P
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements	See above.	P
	Test with test probe from Annex V	Test probe V.1, V.2 applied.	—
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. (See appended table 5.4.2, 5.4.3.)	P
5.3.2.3	Compliance	See above.	P
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	The choice and application have taken into account as specified in this Clause 5 and Annex T except natural rubber, hygroscopic materials or asbestos are not used as insulation.	P
5.4.1.3	Material is non-hygroscopic	(See sub-clause 5.4.8)	P
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	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	Certified sources of optical isolators used.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.5.3	Thermal cycling test	Certified sources of optical isolators used.	P
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	Phenolic materials are acceptable without test.	P
5.4.1.10.2	Vicat test.....		N/A
5.4.1.10.3	Ball pressure test		N/A
5.4.2	Clearances		P
5.4.2.1	General requirements	See below.	P
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance	See below.	P
	Temporary overvoltage	2000 V	—
5.4.2.3	Procedure 2 for determining clearance	See below.	P
5.4.2.3.2.2	a.c. mains transient voltage	2500 V	—
5.4.2.3.2.3	d.c. mains transient voltage		—
5.4.2.3.2.4	External circuit transient voltage.....		—
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		N/A
5.4.2.5	Multiplication factors for clearances and test voltages	Multiplication factor is 1.48 for altitude up to 5000m.	P
5.4.2.6	Clearance measurement	(See appended table 5.4.2, 5.4.3)	P
5.4.3	Creepage distances	See below.	P
5.4.3.1	General	See below.	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	See below.	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 by 5.4.4.4.	N/A
5.4.4.4	Solid insulation in semiconductor devices	Complies with Clause G.12.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.5	Insulating compound forming cemented joints	Photocouplers complied with IEC 60747-5-5.	N/A
5.4.4.6	Thin sheet material	See below.	P
5.4.4.6.1	General requirements	See below.	P
5.4.4.6.2	Separable thin sheet material	(See appended Table 5.4.9)	P
	Number of layers (pcs) :	3 or 2	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		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 :	Alternative by 5.4.9.1.	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
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	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for type test of solid insulation..... :	Method 1 is chosen.	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		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
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 Annex G.12)	P
5.5.5	Relays		N/A
5.5.6	Resistors		P
5.5.7	SPDs	(See Annex G.8)	P
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable..... :		N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	RCD rated residual operating current (mA) :		—
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors		P
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		N/A
5.6.3	Requirement for protective earthing conductors	An appliance inlet provided that is connected by an approved appliance coupler serves as main protective earthing conductor terminal.	P
	Protective earthing conductor size (mm 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	See below	P
5.6.4.1	Protective bonding conductors	Protective bonding traces complied with 5.6.6 and Annex R.	P
	Protective bonding conductor size (mm ²). :	See above.	—
5.6.4.2	Protective current rating (A)..... :	20A	P
5.6.5	Terminals for protective conductors	See below.	P
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :	Screws fixing earthed PCB trace to metal chassis for protective bonding. Size of screws is according with Table 32.	P
	Terminal size for connecting protective bonding conductors (mm) :	Screw diameter: 3.7mm	P
5.6.5.2	Corrosion	Complied.	P
5.6.6	Resistance of the protective bonding system	See below.	P
5.6.6.1	Requirements	See below.	P
5.6.6.2	Test Method..... :	(See appended table 5.6.6)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 tables 5.7.4 and 5.7.5)	P
5.7.2.2	Measurement of voltage		N/A
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 5.7.4)	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		N/A
	Protective conductor current (mA)..... :		N/A
	Instructional Safeguard..... :		N/A
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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 5.4.1.4, 9.3, B.1.5, B.2.6)	P
	Combustible materials outside fire enclosure	HB min.	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method	Control of fire spread.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	Supplementary safeguards		N/A
6.4.3.2	Single Fault Conditions		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits	See below.	P
6.4.5.2	Supplementary safeguards	Complied. - Printed boards made of V-1 class material - Wire insulation is complying with Clause 6.5 - All other components: Min. V-2 mounted on V-1 PCB - Isolating transformer: complying with G.5.3. - not ignite during single fault - have a mass of combustible material less than 4g - have a size less than 1750 mm³ (See appended tables 4.1.2 and Annex G)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.6	Control of fire spread in PS3 circuits	In additional of the compliance of sub-clause 6.4.5, a fire enclosure according to sub-clause 6.4.8 is provided with the equipment. Within the fire enclosure, combustible materials except small parts are flammability class V-2, VTM-2, HF-2 or better.	P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	External Plastic enclosure and considered as fire enclosure. Internal metal chassis considered as fire barrier. Rubber stand rated min. V-1 for speaker provided to fill the opening of the fire enclosure.	P
6.4.8.2	Fire enclosure and fire barrier material properties	See below.	P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	See appended table 4.1.2.	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	See below.	P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties		P
	Openings dimensions (mm)..... :	See attachment enclosure opening measurements table.	P
6.4.8.3.4	Bottom openings and properties		P
	Openings dimensions (mm)..... :	See attachment enclosure opening measurements 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 enclosure opening measurements table.	P
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)..... :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating		P
6.4.9	Flammability of insulating liquid.....		N/A
6.5	Internal and external wiring		P
6.5.1	General requirements	Suitable UL recognized wiring which is PVC insulated and rated VW-1/FT-1 used used.	P
6.5.2	Requirements for interconnection to building wiring		N/A
6.5.3	Internal wiring size (mm ²) for socket-outlets.....		N/A
6.6	Safeguards against fire due to the connection to additional equipment		P

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
8.4.1	Safeguards		N/A
	Instructional Safeguard.....		N/A
8.4.2	Sharp edges or corners	No sharp edges and corners.	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
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		P
8.6.1	General	See ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE.	P
	Instructional safeguard.....:		P
8.6.2	Static stability	See below.	P
8.6.2.2	Static stability test	Tilt 10°. The equipment does not tip over.	P
8.6.2.3	Downward force test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.3	Relocation stability		N/A
	Wheels diameter (mm)		—
	Tilt test		N/A
8.6.4	Glass slide test		P
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 relevant information provided in user's manual.	P
8.7.2	Test methods	Test 2 and Test 3 test considered and performed after stress relief test. The each threaded part not become dislodged and remain mechanically intact and secure during the test.	P
	Test 1, additional downwards force (N).....		N/A
	Test 2, number of attachment points and test force (N)	27.0 inch model: Each point (total four attachment points) in the mounting system subject to force 4.9kg for six directions also including push/pull force. 24.0 inch model: Each point (total four attachment points) in the mounting system subject to force 4.3kg for six directions also including push/pull force.	P
	Test 3 Nominal diameter (mm) and applied torque (Nm).....	Each threaded part subjected to 1.2 Nm.	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
8.10.1	General		N/A
8.10.2	Marking and instructions.....		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 5.4.1.4, 9.3, B.1.5, B.2.6)	P
9.3.2	Test method and compliance		P
9.4	Safeguards against thermal energy sources		N/A
9.5	Requirements for safeguards		N/A
9.5.1	Equipment safeguard		N/A
9.5.2	Instructional safeguard		N/A
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General		N/A
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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.2.1	General classification	The following parts are considered as RS1 without tests: - Indicating lights. - Photo coupler. - backlight of LCD panel	P
	Lasers		—
	Lamps and lamp systems		—
	Image projectors		—
	X-Ray		—
	Personal music player		—
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)		N/A
10.4.1	General requirements		N/A
	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
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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 Annex E)	P
B.2.3	Supply voltage and tolerances		P
B.2.5	Input test.....	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General	(See appended table B.3, B.4)	P
B.3.2	Covering of ventilation openings	(See appended table B.3, B.4)	P
	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		P
B.3.6	Reverse battery polarity		N/A
B.3.7	Audio amplifier abnormal operating conditions		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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; For trace under 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
C.2.3	Carbon-arc light-exposure test		N/A
C.2.4	Xenon-arc light-exposure test		N/A

IEC 62368-1			
Clause	Requirement + Test		Verdict
D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		P
E.1	Electrical energy source classification for audio signals		P
	Maximum non-clipped output power (W)..... :	Speakers adjust to max. volume as worst condition per client's request.	—
	Rated load impedance (Ω)	See table 4.1.2.	—
	Open-circuit output voltage (V)..... :	Not exceed 71V.	—
	Instructional safeguard	No safeguard required.	—
E.2	Audio amplifier normal operating conditions		N/A
	Audio signal source type		—
	Audio output power (W)..... :		—
	Audio output voltage (V)		—
	Rated load impedance (Ω)		—
	Requirements for temperature measurement		N/A
E.3	Audio amplifier abnormal operating conditions	Speakers adjust to max. volume as worst condition. No hazards for component fault of audio circuit.	P
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language	English. Versions in other languages will be provided when national certificate approval.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		N/A
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	The equipment marking is provided and is readily visible in operator access area.	P
F.3.2	Equipment identification markings	See below.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	See below.	P
F.3.3.1	Equipment with direct connection to mains	See below.	P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of the supply voltage	See copy of marking plate.	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		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings		N/A
F.3.5.2	Switch position identification marking		N/A
F.3.5.3	Replacement fuse identification and rating markings	See GENERAL PRODUCT INFORMATION - Markings and Instructions.	P
	Instructional safeguards for neutral fuse		N/A
F.3.5.4	Replacement battery identification marking		N/A
F.3.5.5	Neutral conductor terminal		N/A
F.3.5.6	Terminal marking location	These markings are not placed on removable parts such as screws.	P
F.3.6	Equipment markings related to equipment classification	See below.	P
F.3.6.1	Class I equipment	See below.	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		N/A
F.3.6.3	Functional earthing terminal marking		N/A
F.3.7	Equipment IP rating marking	IPX0	N/A
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking	See below.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.10	Test for permanence of markings	Marking is durable and legible. The marking plate has no curling and is not able to be removed easily.	P
F.4	Instructions		P
	a) Information prior to installation and initial use	Provided in user's manual.	P
	b) Equipment for use in locations where children not likely to be present		N/A
	c) Instructions for installation and interconnection	Provided in user's manual.	P
	d) Equipment intended for use only in restricted access area		N/A
	e) Equipment intended to be fastened in place	Provided in user's manual.	P
	f) Instructions for audio equipment terminals		N/A
	g) Protective earthing used as a safeguard	Provided in user's manual.	P
	h) Protective conductor current exceeding ES2 limits	Not exceed the ES2 limits.	N/A
	i) Graphic symbols used on equipment	Graphical symbols not used as an instructional safeguard.	N/A
	j) Permanently connected equipment not provided with all-pole mains switch		N/A
	k) Replaceable components or modules providing safeguard function		N/A
	l) Equipment containing insulating liquid		N/A
	m) Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		N/A
G	COMPONENTS		P
G.1	Switches		P
G.1.1	General	Not located in PS3 circuit	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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		P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions..... :		N/A
G.4	Connectors		P
G.4.1	Spacings	The appliance inlet complied with IEC 60320-1.	P
G.4.2	Mains connector configuration :	The appliance inlet complied with IEC 60320-1.	N/A
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	Reinforced insulation.	P
G.5.1.2	Protection against mechanical stress	Insulating sheet material provided.	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Position	(See appended table 4.1.2)	P
	Method of protection.....	Overcurrent protection.	P
G.5.3.2	Insulation	See attachment Transformer table.	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
	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 attachment Transformer table, for test result see table 5.4.9.	P
G.6.2	Enamelled winding wire insulation		N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements	Approved appliance inlet is used.	N/A
	Type.....		—
G.7.2	Cross sectional area (mm ² or AWG)		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N).....		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	Approved component used.	P
G.8.2	Safeguards against fire		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test		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
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	X-Capacitors, Y-Capacitors and Bridging-Capacitor 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 $40 \pm 2^{\circ}\text{C}$ and $93 \pm 3\%$ 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	The optocouplers used in the equipment are complied with the requirements of IEC 60747-5-5. (see appended table 4.1.2)	P
	Type test voltage $V_{\text{ini},a}$	See above.	—
	Routine test voltage, $V_{\text{ini},b}$	See above.	—
G.13	Printed boards		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
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)		P
G.16.1	Condition for fault tested is not required	Approved component used.	P
	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
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 component used. (See appended table 4.1.2)	—
	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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 or plug as disconnect device.	P
L.2	Permanently connected equipment		N/A
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		P
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

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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
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 :	The internal metal enclosure is made of mild steel, screw spring washer are made of Ni on steel, the combined electrochemical potential is below 0.6V according to Annex N.	—
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 enclosure opening measurements table.	—
P.2.3	Safeguards against the consequences of entry of a foreign object		P
P.2.3.1	Safeguard requirements		P
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		N/A
	Transportable equipment with metalized plastic parts..... :		N/A
P.2.3.2	Consequence of entry test..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	See below.	P
P.4.2	Tests	Adhesive used for Mylar which is considered as safeguard.	P
	Conditioning, T _c (°C)	100	—
	Duration (weeks)	1	—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources		P
Q.1.1	Requirements		P
	a) Inherently limited output	(See appended table Annex Q.1)	P
	b) Impedance limited output		N/A
	c) Regulating network limited output	All outputs of power board and all data ports of main board applied. (See appended table Annex Q.1)	P
	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	(See appended table Annex Q.1)	P
	Current rating of overcurrent protective device (A)	See Table 4.1.2	P
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		P
R.1	General	See below.	P
R.2	Test setup	See below.	P
	Overcurrent protective device for test	20A circuit breaker is used.	—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
R.3	Test method	1500A applied. Tested between: - AC inlet GND trace and primary Y cap earthed trace; - AC inlet GND trace and primary earthed screw hole trace.	P
	Cord/cable used for test		—
R.4	Compliance	-	P
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
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)		—

IEC 62368-1			
Clause	Requirement + Test		Verdict
T	MECHANICAL STRENGTH TESTS		P
T.1	General		P
T.2	Steady force test, 10 N	(See appended table T.2, T.3, T.4, T.5)	P
T.3	Steady force test, 30 N		P
T.4	Steady force test, 100 N		N/A
T.5	Steady force test, 250 N	(See appended table T.2, T.3, T.4, T.5)	P
T.6	Enclosure impact test	(See appended table T.6, T.9)	P
	Fall test		P
	Swing test		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
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		N/A
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		N/A
V.2	Accessible part criterion		P

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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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⁾	
264V, 60Hz	+19 V output (CN902) (Power output)	Normal	18.56Vdc	--	SS	--	ES1
		Abnormal – (see table B.3 for details, maximum result recorded)	18.56Vdc	--	SS	--	
		Single fault – (see table B.4 for details, maximum result recorded)	18.56Vdc	--	SS	--	
264V, 60Hz	+VLED output (Power output)	Normal	49.78Vdc	--	SS	--	ES1
		Abnormal – (see table B.3 for details, maximum result recorded)	49.78Vdc	--	SS	--	
		Single fault – (see table B.4 for details, maximum result recorded)	49.78Vdc	--	SS	--	
264V, 60Hz	L/N to all secondary ports	Normal	--	0.02mA _{pk}	SS	--	ES1
		Abnormal – (see table B.3 for details, maximum result recorded)	--	0.02mA _{pk}	SS	--	
		Single fault – (see table B.4 for details, maximum result recorded)	--	0.02mA _{pk}	SS	--	
264V, 60Hz	L/N to button of key board	Normal	--	0.01mA _{pk}	SS	--	ES1
		Abnormal – (see table B.3 for details, maximum result recorded)	--	0.01mA _{pk}	SS	--	
		Single fault – (see table B.4 for details, maximum result recorded)	--	0.01mA _{pk}	SS	--	
264V, 60Hz	L&N pin of AC inlet	Normal	373	--	CP	Total 0.47μF (C903)	ES3
		Abnormal	--	--	--	--	

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
		Single fault – SC/OC	--	--	--	--	
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.							

5.4.1.8	TABLE: Working voltage measurement				P
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
T901 pin 2 to pin 8	206	340	--	--	
T901 pin 2 to pin 11	200	364	--	--	
T901 pin 3 to pin 8	207	390	--	--	
T901 pin 3 to pin 11	198	342	--	--	
T901 pin 4 to pin 8	200	348	--	--	
T901 pin 4 to pin 11	202	404	--	--	
T901 pin 6 to pin 8	247	500	Above 30K	Max. Vpeak & Max. Vrms	
T901 pin 6 to pin 11	232	478	--	--	
C901 primary to secondary	2.42	8.00	--	--	
C902 primary to secondary	241	350	--	--	
C918 primary to secondary	201	340	--	--	
U903 pin1 to 3	219	360	--	--	
U903 pin1 to 4	212	358	--	--	
U903 pin2 to 3	218	358	--	--	
U903 pin2 to 4	215	356	--	--	
Supplementary information: Input Voltage is 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)	
Supplementary information:				

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics		N/A
Allowed impression diameter (mm)		≤ 2 mm	—

IEC 62368-1				
Clause	Requirement + Test		Result - Remark	Verdict
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)
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)
Basic/supplementary:								
Under fuse (F901) ^{1.}	420	250	--	2.3	3.2	--	2.5	3.2
Before fuse (between L-N)	420	250	--	2.3	4.7	--	2.5	4.7
Line-GND ^{1.}	420	250	--	2.3	3.0	--	2.5	3.0
Neutral-GND ^{1.}	420	250	--	2.3	3.0	--	2.5	3.0
Different pin of C901 ^{1.}	420	250	--	2.3	7.6	--	2.5	7.6
Different pin of C902 ^{1.}	420	250	--	2.3	7.6	--	2.5	7.6
T901 core to C922	500	250	--	2.3	5.4	--	2.5	5.4
Primary trace to metal chassis	420	240	--	2.3	10.1	--	2.5	10.1
Reinforced:								
Under C918	420	250	--	4.5	7.7	--	5.0	7.7
Under U903	420	250	--	4.5	8.2	--	5.0	8.2
Under T901	500	250	Above 30K	4.5	7.8	--	5.0	7.8

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information: Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test Note 3: Provide Material Group Other - There is one slot measured 1mm width. - Core of main transformer T901 consider as floating part. - One mylar sheet is fixed between power board and panel to fulfil the requirement for reinforced insulation. See table 4.1.2 for the details. And see table 5.4.9 for electric strength test for mylar. - One mylar sheet is fixed between power board and metal enclosure to fulfil the requirement for reinforced insulation. See table 4.1.2 for the details. And see table 5.4.9 for electric strength test for mylar. - Glued component: C905. - Considered altitude correction factor 1.48 for clearances for an altitude of 5000m. - For clearance and creepage that did not describe above are far larger than limit above.			

5.4.4.2	TABLE: Minimum distance through insulation				P
Distance through insulation (DTI) at/of	Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)	
Mylar sheet	420	RI	0.4	Min. 0.4	
Plastic Enclosure (reinforced insulation)	420	RI	0.4	1)	
Optocoupler	420	RI	0.4	1)	
Bobbin of transformer	420	RI	0.4	Min. 0.45	
Supplementary information:					
1) See 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)	
Supplementary information:							

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:					

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Unit primary to earthed metal part	DC	2500	No
T901 ¹⁾ : core to primary	DC	2500	No
T901 ¹⁾ : core to secondary	DC	2500	No
Reinforced:			
L/N to accessible plastic enclosure with metal foil	DC	4000	No
Unit primary to secondary (output)	DC	4000	No
T901 ¹⁾ : primary to secondary	DC	4000	No
T901 ¹⁾ : each layer of insulation tape	DC	4000	No
Bobbin	DC	4000	No
Insulation tape	DC	4000	No
Mylar sheet ²⁾	DC	4000	No
Supplementary information:			
1. For all sources of transformer; 2. For all source of mylar sheet; 3. The tests mentioned above were performed after humidity test and heating test.			

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
L-N	264 Vac, 60 Hz	N	Fuse in	26	ES1
L-N	90 Vac, 60 Hz	N	Fuse in	16	ES1
Supplementary information:					
X-capacitors installed for testing: See appended table 4.1.2					
[x] bleeding resistor rating: See appended table 4.1.2					
[x] ICX: See appended table 4.1.2					
1) Normal operating condition (e.g., normal operation, or open fuse), 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 (mΩ)	
PE terminal of AC inlet to internal metal enclosure	40	2	0.58	14.5	
PE terminal of AC inlet to C901 trace	40	2	0.32	8	
PE terminal of AC inlet to C902 trace	40	2	0.32	8	

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information:			

5.7.4	TABLE: Unearthed accessible parts					P
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)	
L/N to All secondary port	Normal	264V, 60Hz	--	0.02mA _{pk} max.	--	ES1
L/N to All secondary port	Abnormal – see table B.3 for detail	264V, 60Hz	--	0.02mA _{pk} max.	--	ES1
L/N to All secondary port	Single fault – see table B.4 for detail	264V, 60Hz	--	0.02mA _{pk} max.	--	ES1
L/N to button of key board	Normal	264V, 60Hz	--	0.01mA _{pk} max.	--	ES1
L/N to button of key board	Abnormal – see table B.3 for detail	264V, 60Hz	--	0.01mA _{pk} max.	--	ES1
L/N to button of key board	Single fault – see table B.4 for detail	264V, 60Hz	--	0.01mA _{pk} max.	--	ES1
Supplementary information:						

5.7.5	TABLE: Earthed accessible conductive part			P
Supply voltage (V)		264Vac		—
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
Line/ Neutral to earthed metal part		1	0.35mA peak max.	--
Supplementary Information:				
Overall capacitance: See table 4.1.2.				

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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 ¹⁾ (W)	Time (S)	PS class
All outputs of power board	--	--	--	--	--	PS2 (See Table Annex Q.1)
All output connectors	--	--	--	--	--	PS2 (See Table Annex Q.1)
Supplementary information:						
Abbreviation: s-c= short circuit						
1) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.						

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:					
1) An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15.					
2) Except for appliance inlet complied with IEC 60320-1, other components located within the equipment are not 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)	Yes
Supplementary information:				
Abbreviation: SC= short circuit; OC= open circuit				
1) A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter. If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
2)	A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.		
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:								

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements					P
Supply voltage (V)..... :		See below	See below	See below	See below	—
Ambient temperature during test T_{amb} (°C) :		See below	See below	See below	See below	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
Orientation		Horizontal		Vertical (power board up)	Vertical (power board down)	--
Supply voltage		90V/ 60Hz	264V/ 60Hz	90V/ 60Hz	90V/ 60Hz	--
AC inlet near L pin		57.2	55.4	61.7	56.2	70

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
VR901 body	60.0	55.2	67.1	62.1	85
PCB near TH902	78.0	61.9	81.3	73.5	105
C903 body	61.9	56.6	68.5	64.8	100
L901 coil	66.5	57.5	73.7	66.6	105
L902 coil	69.6	59.7	76.7	69.6	105
PCB near BD901	70.4	61.5	74.6	74.0	105
C905 body	65.9	60.7	69.0	61.8	105
PCB near Q901	74.2	76.5	75.6	75.2	105
T901 coil	79.4	81.2	78.7	76.1	110
T901 core	71.3	72.1	70.8	68.4	110
C918 body	66.7	63.6	69.6	60.7	85
U903 body	72.6	73.6	65.9	72.2	100
PCB near D905	82.4	84.0	83.1	78.9	105
L801 coil	83.7	83.9	85.7	74.5	105
L903 coil	72.1	72.7	64.8	66.5	105
Mylar (Between trace side and metal chassis)	59.6	56.7	62.3	56.5	85
Mylar (Between power supply component side and metal chassis)	60.2	57.5	63.4	57.6	85
PCB near U401 (main board)	67.1	66.7	67.0	69.7	105
Plastic enclosure inside near T901	57.8	57.0	57.1	55.0	Ref.
Tma (actual temp.)	40.0 (21.9)	40.0 (23.2)	40.0 (21.7)	40.0 (21.6)	--
Touch temperature for accessible part under normal condition					
Plastic enclosure outside near Transformer	36.1	35.7	34.8	33.9	94
Panel surface	33.3	33.7	35.2	32.5	94
Button	31.6	32.0	32.0	32.2	77
Ambient (actual temp.)	25.0 (21.9)	25.0 (23.2)	25.0 (21.7)	25.0 (21.6)	--
Orientation	Horizontal (Panel turn 180°)		--	--	--
Supply voltage	90V/ 60Hz	264V/ 60Hz	--	--	--
AC inlet near L pin	58.7	55.4	--	--	70
VR901 body	66.9	60.4	--	--	85
PCB near TH902	76.4	64.9	--	--	105
C903 body	67.2	61.6	--	--	100
L901 coil	74.6	64.0	--	--	105

IEC 62368-1							
Clause	Requirement + Test				Result - Remark		Verdict
L902 coil	77.3	66.8	--	--			105
PCB near BD901	81.4	70.7	--	--			105
C905 body	69.1	66.5	--	--			105
PCB near Q901	81.6	86.2	--	--			105
T901 coil	81.9	86.2	--	--			110
T901 core	80.9	85.3	--	--			110
C918 body	73.9	75.2	--	--			85
U903 body	68.2	70.6	--	--			100
PCB near D905	80.9	84.8	--	--			105
L801 coil	82.8	83.8	--	--			105
L903 coil	61.8	62.7	--	--			105
Mylar (Between trace side and metal chassis)	61.5	60.1	--	--			85
Mylar (Between power supply component side and metal chassis)	62.0	61.8	--	--			85
PCB near U401 (main board)	68.8	68.9	--	--			105
Plastic enclosure inside near T901	54.7	54.9	--	--			Ref.
Tma (actual temp.)	40.0 (23.1)	40.0 (22.6)	--	--			--
Touch temperature for accessible part under normal condition							
Plastic enclosure outside near Transformer	34.1	34.2	--	--			94
Panel surface	35.5	35.4	--	--			94
Button	37.1	37.4	--	--			77
Ambient (actual temp.)	25.0 (23.1)	25.0 (22.6)	--	--			--
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information: 1. Tma should be considered as directed by applicable requirement 2. Tma is not included in assessment of Touch Temperatures (Clause 9) 3. With a specified ambient temperature of 40°C. All recorded temperature have been calculated to ambient temperature 40°C. Temperature limits are calculated as follows: <u>Winding components (with safety isolation):</u> Class 130 material (B) → Tmax = 120 – 10 = 110 °C for normal condition.							

B.2.5	TABLE: Input test	P
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IEC 62368-1								
Clause		Requirement + Test				Result - Remark		Verdict
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
HDMI mode								
90	50	0.84	--	47.1	--	F901	0.84	Maximum normal load ^{1.}
90	60	0.84	--	47.1	--	F901	0.84	Maximum normal load ^{1.}
100	50	0.78	0.85/ 0.90	46.4	--	F901	0.78	Maximum normal load ^{1.}
100	60	0.78	0.85/ 0.90	46.4	--	F901	0.78	Maximum normal load ^{1.}
240	50	0.40	0.45/ 0.50	45.3	--	F901	0.40	Maximum normal load ^{1.}
240	60	0.40	0.45/ 0.50	45.3	--	F901	0.40	Maximum normal load ^{1.}
264	50	0.37	--	45.1	--	F901	0.37	Maximum normal load ^{1.}
264	60	0.37	--	45.2	--	F901	0.37	Maximum normal load ^{1.}
DP mode								
90	50	0.85	--	47.5	--	F901	0.85	Maximum normal load ^{1.}
90	60	0.85	--	47.5	--	F901	0.85	Maximum normal load ^{1.}
100	50	0.78	0.85/ 0.90	46.7	--	F901	0.78	Maximum normal load ^{1.}
100	60	0.78	0.85/ 0.90	46.7	--	F901	0.78	Maximum normal load ^{1.}
240	50	0.40	0.45/ 0.50	45.6	--	F901	0.40	Maximum normal load ^{1.}
240	60	0.40	0.45/ 0.50	45.7	--	F901	0.40	Maximum normal load ^{1.}
264	50	0.37	--	45.9	--	F901	0.37	Maximum normal load ^{1.}
264	60	0.37	--	45.9	--	F901	0.37	Maximum normal load ^{1.}
DVI mode								
90	50	0.85	--	47.1	--	F901	0.85	Maximum normal load ^{1.}
90	60	0.85	--	47.1	--	F901	0.85	Maximum normal load ^{1.}
100	50	0.78	0.85/ 0.90	46.4	--	F901	0.78	Maximum normal load ^{1.}
100	60	0.78	0.85/ 0.90	46.4	--	F901	0.78	Maximum normal load ^{1.}
240	50	0.40	0.45/ 0.50	45.3	--	F901	0.40	Maximum normal load ^{1.}
240	60	0.40	0.45/ 0.50	45.3	--	F901	0.40	Maximum normal load ^{1.}
264	50	0.37	--	45.5	--	F901	0.37	Maximum normal load ^{1.}
264	60	0.37	--	45.5	--	F901	0.37	Maximum normal load ^{1.}
VGA mode								
90	50	0.83	--	46.3	--	F901	0.83	Maximum normal load ^{1.}
90	60	0.83	--	46.3	--	F901	0.83	Maximum normal load ^{1.}
100	50	0.76	0.85/ 0.90	45.9	--	F901	0.76	Maximum normal load ^{1.}
100	60	0.76	0.85/ 0.90	45.9	--	F901	0.76	Maximum normal load ^{1.}
240	50	0.39	0.45/ 0.50	44.6	--	F901	0.39	Maximum normal load ^{1.}

IEC 62368-1								
Clause		Requirement + Test				Result - Remark		Verdict
240	60	0.39	0.45/ 0.50	44.6	--	F901	0.39	Maximum normal load ¹ .
264	50	0.36	--	42.9	--	F901	0.36	Maximum normal load ¹ .
264	60	0.36	--	42.9	--	F901	0.36	Maximum normal load ¹ .
Supplementary information:								

B.3, B.4		TABLE: Abnormal operating and fault condition tests					P
Ambient temperature T _{amb} (°C)..... :						See below	—
Power source for EUT: Manufacturer, model/type, outputrating .. :						See appended table 4.1.2	—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation	
Ventilation openings	blocked	264	2.0hrs	F901	0.37	Unit operated normally, no damaged, no hazards. Max. measured temp. in T901 coil =81.4°C, T901 core=72.2°C, Ambient=40°C, Plastic enclosure outside near T901=35.7°C, Control board surface=31.3°C, Panel=32.8°C, Ambient=25.0°C	
+19Vdc output	Overload	240V	3hr 11min	F901	0.60	Unit shut down when load increase to 2.3A, no damaged, no hazards. Max. measured temp. in T901 coil =105.1°C, T901 core=91.5°C, Ambient=40°C, Plastic enclosure outside near T901=40.7°C, Control board surface=31.9°C, Panel=33.0°C, Ambient=25.0°C	
USB 3.0 port	overload	264	2.0hrs	F901	0.39	USB shut down when load increase to 1.4A, no damaged, no hazards. Max. measured temp. in T901 coil =81.5°C, T901 core=72.7°C, Ambient=40°C, Plastic enclosure outside near T901=34.0°C, Control board surface: 32.6°C,	

IEC 62368-1						
Clause	Requirement + Test				Result - Remark	
						Panel=34.1°C, Ambient=25.0°C
BD901 Pin1-4	Short	240	1sec	F901	--	Fuse open immediately No hazards.
C905	Short	240	1sec	F901	--	Fuse open immediately No hazards.
Q901 PinG-S	Short	240	10mins	F901	0.04	Unit shutdown, no damage, no hazards.
Q901 PinD-S	Short	240	1sec	F901	--	Fuse open immediately No hazards.
Q901 PinG-D	Short	240	1sec	F901	--	Fuse open immediately No hazards.
U901 Pin5-2	Short	240	10mins	F901	0.04	Unit shutdown, no damage, no hazards.
T901 Pin2-3	Short	240	10mins	F901	0.04	Unit shutdown, no damage, no hazards.
T901 Pin4-6	Short	240	10mins	F901	0.04	Unit shutdown, no damage, no hazards.
T901 Pin8-11	Short	240	10mins	F901	0.04	Unit shutdown, no damage, no hazards.
D905 pin 1-2	Short	240	10mins	F901	0.04	Unit shutdown, no damage, no hazards.
U903 Pin1-2	Short	240	10mins	F901	0.04	Unit shutdown, no damage, no hazards.
U903 Pin3-4	Short	240	10mins	F901	0.04	Unit shutdown, no damage, no hazards.
U903 Pin1	Open	240	10mins	F901	0.04	Unit shutdown, no damage, no hazards.
+19V - GND	Short	240	10mins	F901	0.04	Unit shutdown, no damage, no hazards.
+VLED - GND	Short	240	10mins	F901	0.04	Unit shutdown, no damage, no hazards.
Speaker	Short	240	10mins	F901	0.41	Normal operation, no hazards, no damage.
Supplementary information:						
- The unit passed 4000V hi-pot test between primary and accessible output connector after single fault test above. - In fault column, where s-c=short-circuited, o-c=open-circuited. - For fuse opened conditions were tested with each source of fuse. - For component damaged conditions have been repeated twice (three tests total) with same result. - Temp. limit of transformer according to table G.3 is 175°C-10-(40°C-Tamb) (worst case) for Class B.						

IEC 62368-1							
Clause	Requirement + Test				Result - Remark		Verdict
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)			
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)						P
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
Circuit output tested: Test on +19V output of power board							
See above	Normal operation	18.66	5	3.4	8	58.92	100
See above	Single fault condition (D905 Pin1-2 SC)	0 (unit shut down)	5	0 (unit shut down)	8	0 (unit shut down)	100
See above	Single fault condition (R922 SC)	0 (unit shut down)	5	0 (unit shut down)	8	0 (unit shut down)	100
See above	Single fault condition: (R917 SC)	0 (unit shut down)	5	0 (unit shut down)	8	0 (unit shut down)	100
See above	Single fault condition: (U903 Pin1-2 SC)	0 (unit shut down)	5	0 (unit shut down)	8	0 (unit shut down)	100
See above	Single fault condition: (U903 Pin3-4 SC)	0 (unit shut down)	5	0 (unit shut down)	8	0 (unit shut down)	100
See above	Single fault condition: (U903 Pin 1 OC)	0 (unit shut down)	5	0 (unit shut down)	8	0 (unit shut down)	100
Test on main board 715G9385							
Display connector (CN500) Pin 18 to RTN	Normal	3.35	5	0 (unit shut down)	8	0 (unit shut down)	100
Display connector (CN500) Pin 20 to RTN	Normal	3.30	5	0.8	8	2.32	100
Display connector (CN500) Pin 20 to RTN	Single fault condition (U155 pin 1 to 5 SC)	3.30	5	1.3	8	3.03	100
Display connector (CN500) Pin 20 to RTN	Single fault condition (U704 pin 2 to 3 SC)	4.77	5	0.8	8	2.72	100
Display connector (CN500) all other pins to RTN	Normal	0	5	--	8	--	100

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
DVI-D connector (CN103) pin 6, 7 to RTN	Normal	4.63	5	0 (unit shut down)	8	0 (unit shut down)	100
DVI-D connector (CN103) pin 23, 24 to RTN	Normal	3.40	5	0 (unit shut down)	8	0 (unit shut down)	100
DVI-D connector (CN103) all other pins to RTN	Normal	0	5	0 (unit shut down)	8	0 (unit shut down)	100
USB upstream (USB type B) connector (CN7701) all pins to GND	Normal	0	5	0 (unit shut down)	8	0 (unit shut down)	100
USB downstream (USB type A) (CN7703) Pin1 to earth	Normal	5.12	5	1.3	8	5.56	100
USB downstream (USB type A) (CN7703) Pin1 to earth	Single fault condition (U7742 pin 5 to 1 SC)	5.12	5	5.6	8	8.82	100
USB downstream (USB type A) (CN7703) Pin10 to earth	Normal	5.12	5	1.3	8	5.50	100

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
USB downstream (USB type A) (CN7703) Pin10 to earth	Single fault condition (U7741 pin 5 to 1 SC)	5.12	5	5.6	8	8.74	100
USB downstream (USB type A) (CN7705) Pin1 to earth	Normal	5.12	5	1.3	8	5.52	100
USB downstream (USB type A) (CN7705) Pin1 to earth	Single fault condition (U7743 pin 5 to 1 SC)	5.12	5	5.6	8	8.74	100
VGA connector (CN100) pin 12, 15 to RTN	Normal	4.88	5	0 (unit shut down)	8	0 (unit shut down)	100
VGA connector (CN100) all other pins to RTN	Normal	0	5	--	8	--	100
HDMI connector (CN102) Pin 1,3,4,6,7,9 to RTN	Normal	0	5	0 (unit shut down)	8	0 (unit shut down)	100
HDMI connector (CN102) pin 10 to RTN	Normal	3.40	5	0 (unit shut down)	8	0 (unit shut down)	100
HDMI connector (CN102) pin 11, 12 to RTN	Normal	0	5	0 (unit shut down)	8	0 (unit shut down)	100

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
HDMI connector (CN102) pin 13 to RTN	Normal	0	5	0 (unit shut down)	8	0 (unit shut down)	100
HDMI connector (CN102) pin 15, 16 to RTN	Normal	3.35	5	0 (unit shut down)	8	0 (unit shut down)	100
HDMI connector (CN102) all other pins to RTN	Normal	0	5	--	8	--	100
Control Sync In connector (CN411) all pins to RTN	Normal	0	5	--	8	--	100
Control Sync Out connector (CN410) all pins to RTN	Normal	0	5	--	8	--	100
Audio in connector (CN604) all pins to RTN	Normal	0	5	--	8	--	100
Audio out connector (CN605) all pins to RTN	Normal	0	5	--	8	--	100
Supplementary Information:							
1) Input Voltage is 264Vac, 60Hz, SC=short circuit, OC=open circuit.							

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	

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
Internal component	--	--	V.1	10	5	The clearance and creepage distances does not reduced below the required values.
Internal metal enclosure (Top, rear, sides and bottom)	See table 4.1.2	See table 4.1.2	V.1, V.2	30	5	All safeguards remained effective.
External plastic enclosure (Top, rear, sides and bottom)	See table 4.1.2	See table 4.1.2	Circular plane Ø30mm	250	5	All safeguards remained effective.
Supplementary information:						

T.6, T.9	TABLE: Impact test				P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
External plastic enclosure (Top, rear, sides and bottom)	See table 4.1.2	See table 4.1.2	1300	All safeguards remained effective.	
Supplementary information:					

T.7	TABLE: Drop test				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	See table 4.1.2	See table 4.1.2	70.0	7	All safeguards remain effective.
Supplementary information:					

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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: Critical components information				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity 1)
LCD Panel for 27 inch models	LG Display	LM270WF7***** (*=A-Z, a-z, 0-9, - or blank)	27.0 inch TFT type, with LED backlight.	--	--
LCD Panel for 24 inch models	LG Display	LM240WUA***** (*=A-Z, a-z, 0-9, - or blank)	24.0 inch TFT type, with LED backlight.	--	--
External Plastic Enclosure (except for rear)	LOTTE CHEMICAL CORPORATION	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC- 0700(+++)(RR28), GC-0700A(RR), GC- 0750(+)(RR70), GC- 1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 1.5mm thickness	UL 94	UL E115797
	GRAND PACIFIC PETROCHEMIC AL CORP	D-150, D-1000, D-1000A	HB or better, min. 1.5mm thickness	UL 94	UL E88637
	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 1.5mm thickness	UL 94	UL E56070
	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 1.5mm thickness	UL 94	UL E80168
	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, min. 1.5mm thickness	UL 94	UL E41613

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, min. 1.5mm thickness	UL 94	UL E67171

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 1.5mm thickness	UL 94	UL E171666
	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 1.5mm thickness	UL 94	UL E230779
	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 1.5mm thickness	UL 94	UL E345434
	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 1.5mm thickness	UL 94	UL E328304

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 1.5mm thickness	UL 94	UL E359575
	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 1.5mm thickness	UL 94	UL E135175
	GUO HENG (DONGGUAN)	YOUHO(#####)(Y)	HB or better, min. 1.5mm thickness	UL 94	UL E471190
	HUIZHOU WOTE	2100	HB or better, min. 1.5mm thickness	UL 94	UL E310240
	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 1.5mm thickness	UL 94	UL E98529
	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, min. 1.5mm thickness	UL 94	UL E108538
	STYRON	STYRON A-TECH 1200	HB or better, min. 1.5mm thickness	UL 94	UL E162447
	TOTAL PETROCHEMIC ALS SOUTH EAST ASIA PTE LTD	3441, 260-XX	HB or better, min. 1.5mm thickness	UL 94	UL E314268
	DOOSAN CORPORATION ELECTRO- MATERIALS BG	DS-1107A, DS-1202G, DS-7106	HB or better, min. 1.5mm thickness	UL 94	UL E103670
	SABIC JAPAN L L C	C6600(GG)(X)(VS) , C6600E (VS)(X)	HB or better, min. 1.5mm thickness	UL 94	UL E207780
	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 1.5mm thickness	UL 94	UL E205938
	CHI LIN TECHNOLOGY CO LTD	GA-1(aaa), GA-1535	HB or better, min. 1.5mm thickness	UL 94	UL E177071
External Plastic Enclosure (Rear)	Kingfa Sci & Tech Co., Ltd.	FRHIPS-960	V-0 or better, thickness 2.0mm min.	UL 94	UL E171666

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	LG CHEM Ltd.	AF312T1, AF342T1, LUPOY GN 5001RF(T), LUPOY GN- 5001RF(T), LUPOY GN- 5007F(#), LUPOY GN- 5008HF(#)	V-0 or better, thickness 2.0mm min.	UL 94	UL E67171
	Kingfa Sci & Tech Co., Ltd.	HF-606	V-0 or better, thickness 2.0mm min.	UL 94	UL E171666
	LOTTE CHEMICAL CORPORATION	VH-0810(+), VE-1890(+), VE-0812(+), VH-0819F, EN-1052(+), VH-0815(+), HM-1100(+), VH-0819(+), NH-1017(P), NH-1000T(+)(&), NE-1030(+), LS-1159(r), LS-1159F, LS-1159SF, GC-1017	Min. V-0, thickness min. 2.0mm	UL 94	UL E115797
	Grand Pacific Petrochemical Corp	D-1000A	Min. V-0, thickness min. 2.0mm	UL 94	UL E88637
	GUOHENG	YOUHE26(##)	Min. V-0, thickness min. 2.0mm	UL 94	UL E471190
	Kingfa Sci & Tech Co., Ltd.	HF-606, CK-572(M1)(##), HF-626, FRABS-518, FRABS-518C	Min. V-0, thickness min. 2.0mm	UL 94	UL E171666
	Kingfa Sci & Tech Co., Ltd.	JH960 6(M), JH960 6(M) (ccc) (###), JH960-6(M) (ccc) (##)	Min. V-0, thickness min. 2.0mm	UL 94	UL E171666
	Kingfa Sci & Tech Co., Ltd.	FRHIPS-960, CK-680(M1)(##), FRHIPS-960M, FRHIPS-960MB	Min. V-0, thickness min. 2.0mm	UL 94	UL E171666
	Teijin	TN-7500(C), MN-3600H(#)	Min. V-0, thickness min. 2.0mm	UL 94	UL E98528

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	SAMYANG	210NHF(@), 210NHF	Min. V-0, thickness min. 2.0mm	UL 94	UL E121254
Mylar sheet (between power board and panel plate, between power board components side and metal part)	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	min. 0.4mm thickness, min. V- 0, 80°C	UL 94	UL E249605
	SICHUAN LONGHUA FILM CO LTD	PC-770F, PC-770F-A, PC-770	min. 0.4mm thickness, min. V- 0, 80°C	UL 94	UL E254551
	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117, DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B	min. 0.4mm thickness, min. V- 0, 80°C	UL 94	UL E199019
	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1860B, KLX FRPC-1870B	min. 0.4mm thickness, min. V- 0, 80°C	UL 94	UL E315185
	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-83	min. 0.4mm thickness, min. V- 0, 80°C	UL 94	UL E315185
	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECOC, DFR117ECOB, DFR117EOA	min. 0.4mm thickness, min. V- 0, 80°C	UL 94	UL E199019
	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFPET 6023	min. 0.4mm thickness, min. V- 0, 80°C	UL 94	UL E199019
	JINGMEN GORUN TECHNOLOGY CO LTD	HF70	min. 0.4mm thickness, min. V- 0, 80°C	UL 94	UL E305163
	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	min. 0.4mm thickness, min. V- 0, 80°C	UL 94	UL E199019

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	SHENZHEN TEESUN TECHNOLOGY CO LTD	FR370, FR370F, FE383	min. 0.4mm thickness, min. V- 0, 80°C	UL 94	UL E329660
	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10	min. 0.4mm thickness, min. V- 0, 80°C	UL 94	UL E315185
	KUNSHAN DOBESTY OPTOELECTR ONIC MATERIALS CO LTD	PC9842B, PC9821B, PC9832B, PC9821BK1, PC9832BK1, PC9821W1, PC98MNB1	min. 0.4mm thickness, min. V- 0, 80°C	UL 94	UL E339070
	Interchangeable	Interchangeable	min. 0.4mm thickness, min. V- 0, 80°C	UL 94	UL
Adhesive for Mylar sheet	XIAMEN LABAO OPTICS & ELECTRONICS CO LTD	TD-10	100°C, 0.05mm Thickness	UL 969	Tested in equipment
	SYMBIO INC	DS50-A, DS50L	100°C, 0.05mm Thickness	UL 969	Tested in equipment
	Dexerials	G4000	100°C, 0.05mm Thickness	UL 969	Tested in equipment
	3M	55236, 9448A	100°C, 0.05mm Thickness	UL 969	Tested in equipment
Switching mode power supply board: 715GA8085 by TPV					
AC-Inlet (CN901)	Yueqing Hongchang	DB-14, DB-14-05, DB-14-23, DB-14-11-L, DB-14-14-L, DB-14-14-R, DB-14, DB-14 series	10A,250Vac	IEC 60320-1, UL498	VDE 40028645, UL E327347
	Solteam	ST-01	10A,250Vac	IEC 60320-1, UL498	VDE 40015691, UL E200241
	Zhang Jia Gang- Hua Jie	SA-4S, SA-4S 7, SA-4S 9, SA-4S 12	10A,250Vac	IEC 60320-1, UL498	TUV: R 50293856, VDE 40003610, UL E154342

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	Rong Feng Industrial Co Ltd	SS-120, SS-7B	10A,250Vac	IEC 60320-1, UL498	VDE 40028101, UL E102641
	DELIKANG/Douling	CDJ-3, CDJ-3-1	10A,250Vac	IEC 60320-1, UL498	VDE 40015913, UL E217394
	DELIKANG/Douling	CDJ-7, CDJ-7 1, CDJ-3E5-1	10A,250Vac	IEC 60320-1, UL498	UL E217394 ENEC: SE-ENEC-2001967
	Inalways	0707-1; 0711-2; 0714	10A,250Vac	IEC 60320-1, UL498	Nemko P03100418, UL E94191
	TECX	TU-301-A; TU-301-AP; TU-301-S; TU-301-SP	10A,250Vac	IEC 60320-1, UL498	VDE 40025582 UL E220004
Fuse (F901 on primary)	Littelfuse Inc	382 series, 392 series	T4AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 ANSI/UL 248-1 ANSI/UL 248-14	VDE 40018249, 126983, UL E67006
	Littelfuse Inc	TE5 808	T4AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 ANSI/UL 248-1 ANSI/UL 248-14	VDE 40018249, 126983, UL E67006
	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 ANSI/UL 248-1 ANSI/UL 248-14	VDE 40017155, 40017118, 40001462 UL E82636
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 ANSI/UL 248-1 ANSI/UL 248-14	VDE 40020046, 40015513 UL E19180
	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 ANSI/UL 248-1 ANSI/UL 248-14	VDE 40018790, 40018781 UL E220181

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	Littelfuse Inc	877	T4AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 ANSI/UL 248-1 ANSI/UL 248-14	VDE 0023242, UL E10480
	Better	932	T4AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 ANSI/UL 248-1 ANSI/UL 248-14	VDE 40033369, UL E300003
Y- Capacitor (C901, C902) Y1 or Y2 type (optional)	Walsin	AH, AC	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
	TDK	CD, CS	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
	Murata	KX, KH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
	JYA-NAY	JN, JY	Max. 680pF, 250Vac, 85°C	UL 60384-14	UL E201384
	Kunshan Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40012143, UL E249006
	YINAN DON'S ELECTRONI C COMPONENT CO., LTD	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 135256, UL E145038
	SUCCESS	SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40037218, UL E114280
	SUCCESS	SB	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40037221, UL E114280
	SUCCESS	SL	Max. 82pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40019465, UL E114280
	Interchangeable	Interchangeable	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C918) Y1 type (optional)	Walsin	AH	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	TDK	CD	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
	Murata	KX	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
	JYA-NAY	JN	Max. 2200pF, 250Vac, 85°C	UL 60384-14	UL E201384
	Kunshan Wansheng	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40012143, UL E249006
	YINAN DON'S ELECTRONIC COMPONENT CO., LTD	CT81	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 135256, UL E145038
	SUCCESS	SE	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40037218, UL E114280
	SUCCESS	SB	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40037221, UL E114280
	SUCCESS	SL	Max. 82pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40019465, UL E114280
	Interchangeable	Interchangeable	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C903) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47μF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40024534, UL E183780
	Europtronic	MPX	Max. 0.47μF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40018238, UL E211347
	Europtronic	MPX2	Max. 0.47μF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40025981, UL E211347
	Liow Gu	GS-L	Max. 0.47μF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40023391, UL E186321

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	Arcotronics (KEMET)	R.46	Max. 0.47 μ F, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC DAT97000 141, UL E97797
	TDK	B3292#	Max. 0.47 μ F, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40010694, UL E97863
	Nanjing Tengen Rongguangda	MKP	Max. 0.47 μ F, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40028680, UL E200596
	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47 μ F, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40026078, UL E327138
	NANJING TENGGEN RONG GUANG DA ELECTRONICS (GROUP) CO LTD	MKP	Max. 0.47 μ F, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE 40028680, UL E200596
	FARAD	PXK	Max. 0.47 μ F, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	UL E247953, ENEC-02823
	Jianghao	CBB62B	Max. 0.47 μ F, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	UL E252286, VDE 40018690, CQC0600 1018427
	Interchangeable	Interchangeable	Max. 0.47pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U903)	Sharp	PC123	Di=0.7mm, ext. cr $\geq$ 8.0mm, 5000Vac, 110°C	IEC 60747-5-5: 2007 IEC 60747-5-5: 2007/AMD1: 2013 DIN EN 60747-5-5, UL1577	VDE 40008087, UL E64380

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, 5000Vac, 100°C	IEC 60747-5-5: 2007 IEC 60747-5-5: 2007/AMD1: 2013 DIN EN 60747-5-5, UL1577	VDE 40028080, UL E76222
	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, 5000Vac, 100°C	IEC 60747-5-5: 2007 IEC 60747-5-5: 2007/AMD1: 2013 DIN EN 60747-5-5, UL1577	VDE 132249, UL E214129
	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, 5000Vac, 100°C	IEC 60747-5-5: 2007 IEC 60747-5-5: 2007/AMD1: 2013 DIN EN 60747-5-5, UL1577	VDE 40015248, UL E113898
	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, int. cr=thermal cycling 3. ext. cr=8.0mm, 4000Vac, 100°C	UL1577	UL E214129
	Renesas	PS2561-1 PS2561L-1 PS2561L1-1 PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, 5000Vac, 100°C	IEC 60747-5-5: 2007 IEC 60747-5-5: 2007/AMD1: 2013 DIN EN 60747-5-5, UL1577	VDE 40008862, UL E72422
	TOSHIBA	TLP781F TLP781	Di=0.4mm, ext. cr=8.0mm, 5000Vac, 100°C	IEC 60747-5-5: 2007 IEC 60747-5-5: 2007/AMD1: 2013 DIN EN 60747-5-5, UL1577	VDE 40021173, UL E67349

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Discharge IC (U902)	POWER INTEGRATIONS	CAP004DG	825V	IEC/EN 62368-1:2014, IEC/EN 62368-1:2018	CB by UL (DK-70248-UL) CB by Nemko (NO11224 5)
	POWER INTEGRATIONS	CAP200DG	1000V	IEC/EN 62368-1:2014, IEC/EN 62368-1:2018	CB by UL (DK-70248-UL) CB by Nemko (NO11224 5)
Varistor (VAR901)	Thinking Electronic Industrial Co., Ltd.	TVR14561	Rated 350 Vac, 450Vdc, 40/85/56, 6KV/3KA, pluse test passed, V-0 coating	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd	VDE 40021243, UL E314979
	Centra Science corp.	CNR-14D681K	Rated 420Vac, 560Vdc, 40/85/56, 6KV/3KA, pulse test passed, V-0 coating.	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd	VDE 40021243, UL E314979
	Thinking Electronic Industrial Co., Ltd.	TVR14681	Rated 420 Vac, 560Vdc, 40/85/56, 6KV/3KA, pluse test passed V-0 coating	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd	VDE 40021243, UL E314979
	Panasonic	V14681U	Rated 420 Vac, 560Vdc, 40/85/56, 6KV/3KA, pluse test passed V-0 coating	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd	VDE 40018677, UL E321499
	TDK	S14KV681, SNF14K420	Rated 420 Vac, 560Vdc, 40/85/56, 6KV/3KA, pluse test passed V-0 coating	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd	VDE 40027582, UL E321126
Line Choke (L902) (Optional)	Channelon / Dadon	73G174-76-H	105 °C	--	--
	TPV	73G174-76-V	105 °C	--	--

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	LITAI	73G174-76-L	105 °C	--	--
Line Choke (L901) (Optional)	ASET	373G0174290X	105 °C	--	--
	Channelon / Dadon	373G0174290H	105 °C	--	--
	ChenPing	373G0174290CP	105 °C	--	--
	LFDJ	373G0174290J	105 °C	--	--
Transformer (T901)	LFDJ	380GL19P546J	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TUV Rheinland
-Bobbin	SUMITOMO	PM-9820	V-0, phenolic, 150°C	UL 94	UL
-Insulation tape	Jingjiang Yahua Pressure Sensitive Co Ltd	CT	130°C	UL 510	UL
-Margin Tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	WF	130°C	UL 510	UL
Transformer (T901) (Alternate)	TAICHANG	380GL19P546S	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TUV Rheinland
-Bobbin	SUMITOMO	PM-9820	V-0, phenolic, 150°C	UL 94	UL
-Insulation tape	Jingjiang Yahua Pressure Sensitive Co Ltd	CT	130°C	UL 510	UL
-Margin Tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	WF	130°C	UL 510	UL
Transformer (T901) (Alternate)	LITAI	380GL19P546L	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TUV Rheinland
-Bobbin	SUMITOMO	PM-9820	V-0, phenolic, 150°C	UL 94	UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
-Insulation tape	Jingjiang Yahua Pressure Sensitive Co Ltd	CT	130°C	UL 510	UL
	Symbio Inc.	35660Y	130°C	UL 510	UL
-Margin Tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	WF	130°C	UL 510	UL
	Symbio Inc.	35661	130°C	UL 510	UL
Transformer (T901) (Alternate)	TPV	S80GL19P546V	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TUV Rheinland
-Bobbin	SUMITOMO	PM-9820	V-0, phenolic, 150°C	UL 94	UL
	SUMITOMO	PM-8375	V-0, phenolic, 150°C	UL 94	UL
-Insulation Tape	Jingjiang Yahua Pressure Sensitive Co., Ltd.	CT	130°C	UL 510	UL
	Symbio Inc.	35660Y	130°C	UL 510	UL
-Margin Tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	WF	130°C	UL 510	UL
	Symbio Inc.	35661	130°C	UL 510	UL
Rating information of components which are not critical components:					
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2A, min. 800Vac	--	--
Ripple Capacitor (C905)	Interchangeable	Interchangeable	180 µF, min. 450 V, min. 105 °C	--	--
Transistors (Q901)	Interchangeable	Interchangeable	Min. 600-700V, min. 3.8A	--	--
Thermistor (TH901, TH902) (Optional)	Interchangeable	Interchangeable	Min. 2 Ω, min. 2A at 25 °C	--	--

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Bleeder Resistors (R901, R903, R925, R926)	Interchangeable	Interchangeable	470KΩ, min. 1/4W (Four provided, located after fuse)	--	--
Current sensor resistor (R920)	Interchangeable	Interchangeable	Min. 0.3Ω, 2W	--	--
Stand base (Optional)	Interchangeable	Interchangeable	HB or batter	UL 94	UL
Internal speaker (Optional)	Interchangeable	Interchangeable	Each rated 4ohm, max., Max. 4.0W.	--	--
P.C.B	Interchangeable	Interchangeable	V-1 or better Min. 105°C	UL 796	UL
Power cord set listed below by client's request					
Mains cord set (Saudi Arabia) (Optional)					
Plug	I-Sheng	SP-62	3A/5A/10A/13A, 250V~	BS 1363 SASO 2203:2018	CVC
	I-Sheng	SP-65	3A/5A/10A, 250V~	BS 1363 SASO 2203:2018	CVC
Cable	I-Sheng	H05VV-F	3 x 0.75mm ² 3 x 1.0mm ² 3 x 1.5mm ²	EN 50525-2-11 IEC 60227-5	VDE
	I-Sheng	H05RR-F	3 x 0.75mm ²	IEC 60245-4	VDE
	I-Sheng	H03VV-F	3 x 0.75mm ²	EN 50525-2-11 IEC 60227-5	VDE
Connector	I-Sheng	IS-14	250V~, 10A	IEC 60320-1	ENEC
Mains cord set (Japan) (Optional)					
Power cord set	I-SHENG ELECTRONICS (KUNSHAN) CO., LTD	Power plug: SP-18C	AC125V, 7A	Description of the technical requirements by the METI Ordinance Appendix 4 Section 1, Section 6 and Appendix 10 chapter 5	PSE JET2090-43001-1003
		Power cord: VCTF	3x 0.75mm ²	Description of the technical requirements by the METI Ordinance Appendix 1 Section 1 (1), (6) and (9)	PSE JET2090-12009-1001

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
		Appliance connector: IS-14	AC250V, 10A	Description of the technical requirements by the METI Ordinance Appendix 12 J60320-1	PSE JET2090-43004-2001
	I-SHENG ELECTRONICS (KUNSHAN) CO., LTD	Power plug: SP-18C	AC125V, 7A	Description of the technical requirements by the METI Ordinance Appendix 4 Section 1, Section 6 and Appendix 10 chapter 5	PSE JET2090-43001-1003
		Power cord: VCTF	3x 0.75mm ²	Description of the technical requirements by the METI Ordinance Appendix 1 Section 1 (1), (6) and (9)	PSE JET2090-12009-1001
		Appliance connector: IS-14	AC125V, 7A (For PSE) AC250V, 10A (For VDE) Actual marking on connector is 125V, 7A	Description of the technical requirements by the METI Ordinance Appendix 4 Section 1, Section 6 and Appendix 10 chapter 5 IEC 60320-1	PSE JET2090-43004-1002 VDE 40037879
	LONGWELL SONG GANG FACTORY	Power plug: LP-78	AC250V, 12A	Testing Article 1 of The Technical Requirements of the METI Ordinance Appendix 4 Section 1 and Section 6 and appendix 10 chapter 5	PSE JET1358-43001-1008

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
		Power cord: HVCTF	3x 1.25mm ²	Description of the technical requirements by the METI Ordinance Appendix 1 Section 1 (1), (6) and (9)	PSE JET1358-12009-1003
		Appliance connector: LS-60J	AC 250V, 10A	Description of the technical requirements by the METI Ordinance Appendix 12 J60320-1	PSE JET1358-43004-2002
	LONGWELL SONG GANG FACTORY	Power plug: LP-78	AC250V, 12A	Description of the technical requirements by the METI Ordinance Appendix 4 Section 1, Section 6 and Appendix 10 chapter 5	PSE JET1358-43001-1008
		Power cord: HVCTF	3x 1.25mm ²	Description of the technical requirements by the METI Ordinance Appendix 1 Section 1 (1), (6) and (9)	PSE JET1358-12009-1003
		Appliance connector: LS-60J/LS-60	AC250V, 12A (For PSE) AC250V, 10A (For VDE) Actual marking on connector is 250V, 12A	Description of the technical requirements by the METI Ordinance Appendix 4 Section 1, Section 6 and Appendix 10 chapter 5 IEC 60320-1	PSE JET1358-43004-1006 VDE 40029578
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. 2) In Optocoupler technical data column, where "Dti" means distance through insulation, "ext dcr." Means external distance, "int dcr." means internal distance.					

List of test equipment used:

A completed list of used test equipment shall be provided in the Test Reports when a Customer's Testing Facility according to CTF stage 1 or CTF stage 2 procedure has been used.

Note: This page may be removed when CTF stage 1 or CTF stage 2 are not used. See also clause 4.8 in OD 2020 for more details.

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date

ATTACHMENT MEASUREMENT SECTION

Page 88 of 92

Report No. CN25N2K7 001

IEC 62368-1				
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	
External plastic enclosure (type A)				
Top,		Max. 1.67mm x 18.24mm	Numerous rectangular openings provided.	
Rear		No opening.	No opening.	
Left		No opening.	No opening.	
Right Side		No opening.	No opening.	
Bottom		No opening.	No opening.	
External plastic enclosure (type B)				
Top,		Max. 1.67mm x 18.24mm	Numerous rectangular openings provided.	
Rear		Max. 1.67mm x 18.24mm	Numerous rectangular openings provided.	
Left		Max. 1.67mm x 18.24mm	Numerous rectangular openings provided.	
Right Side		No opening.	No opening.	
Bottom		No opening.	No opening.	
Internal metal chassis (type A)				
Top (could be bottom when rotate)		Max. Ø 1.9mm (center to center min. 5 mm), thickness: min.0.81	Openings do not exceed 3mm.	
Left (near Power board) (can be bottom or top when rotated):		No opening.	No opening.	
Right (near main board) (can be bottom or top when rotated):		Ø 1.8mm (center to center min. 5 mm), thickness: min.0.85	Openings do not exceed 3mm.	
Rear		1) Two circle openings near main board: Ø 5.44mm max. 2) Two circle openings: Ø 3.95 mm max. 3) Two circle openings near main board: Ø 2.43 mm max. 4) One rectangular opening: 39.23mm x 52.14mm 5) One rectangular openings: 2.7mm x 17.53mm	1-4) Covered by V-0 plastic enclosure.	

ATTACHMENT MEASUREMENT SECTION

Page 89 of 92

Report No. CN25N2K7 001

IEC 62368-1			
Clause	Requirement + Test		Verdict
Bottom	Ø 1.8mm (center to center min. 5 mm), thickness: min.0.85	Openings do not exceed 3mm.	
Internal metal chassis (type B)			
Top (could be bottom when rotate)	Max. Ø 1.9mm (center to center min. 5 mm), thickness: min.0.81	Openings do not exceed 3mm.	
Left (near Power board) (can be bottom or top when rotated):	Ø 1.8mm (center to center min. 5 mm), thickness: min.0.85	Openings do not exceed 3mm.	
Right (near main board) (can be bottom or top when rotated):	Ø 1.8mm (center to center min. 5 mm), thickness: min.0.85	Openings do not exceed 3mm.	
Rear	1) Two circle openings near main board: Ø 5.44mm max. 2) Two circle openings: Ø 3.95 mm max. 3) Two circle openings near main board: Ø 2.43 mm max. 4) One rectangular opening: 39.23mm x 52.14mm 5) One rectangular openings: 2.7mm x 17.53mm	1-4) Covered by V-0 plastic enclosure.	
Bottom	Ø 1.8mm (center to center min. 5 mm), thickness: min.0.85	Openings do not exceed 3mm.	
Supplementary information:			

G.5.3.2		TABLE: transformers (T901)					P
Loc.	Tested insulation	Working voltage peak / V	Working voltage rms / V	Required electric strength	Required clearance / mm	Required creepage distance / mm	Required distance thr. insul.
T901	Primary/input winding and core (internal) (BI)	500	250	AC 2500V	2.3	2.5	Min. two layers or 0.4mm thickness
T901	Secondary/output winding and core (internal) (SI)	500	250	AC 2500V	2.3	2.5	Min. two layers or 0.4mm thickness

ATTACHMENT MEASUREMENT SECTION

Page 90 of 92

Report No. CN25N2K7 001

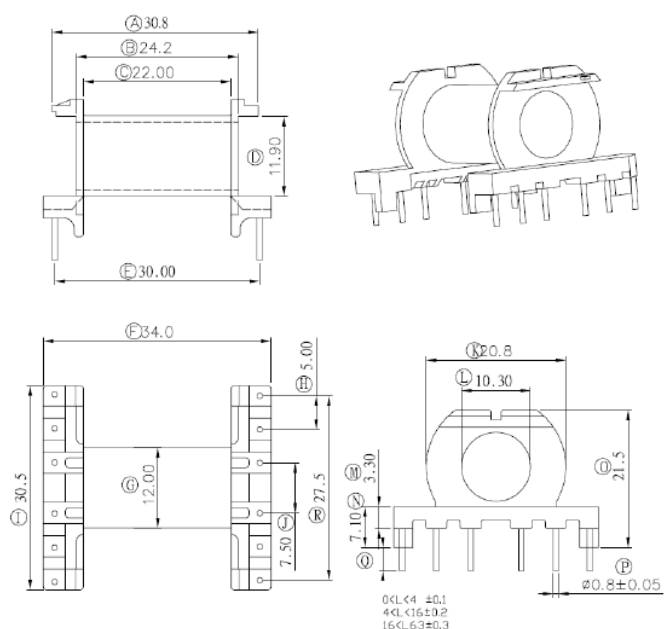
IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
T901	Primary /input winding and secondary/output winding (internal) (DI)	500	250	AC 4000V	4.5	5.0	Min. two layers or 0.4mm thickness
T901	Primary/input part and core (external) (BI)	500	250	AC 2500V	2.3	2.5	Min. two layers or 0.4mm thickness
T901	Secondary/output part and core (external) (SI)	500	250	AC 2500V	2.3	2.5	Min. two layers or 0.4mm thickness
T901	Primary/input part and secondary/output part (external) (DI)	500	250	AC 4000V	4.5	5.0	Min. two layers or 0.4mm thickness
T901	Primary/input part and secondary/output winding (external) (DI)	500	250	AC 4000V	4.5	5.0	Min. two layers or 0.4mm thickness
T901	Secondary/output part and primary/input winding (external) (DI)	500	250	AC 4000V	4.5	5.0	Min. two layers or 0.4mm thickness
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T901	Primary/input winding and core (internal) (BI)			AC 2500V	7.5	7.5	See supplementary information
T901	Secondary/output winding and core (internal) (SI)			AC 2500V	7.5	7.5	See supplementary information
T901	Primary /input winding and secondary/output winding (internal) (DI)			AC 4000V	10.0	10.0	See supplementary information
T901	Primary/input part and core (external) (BI)			AC 2500V	3.5	3.5	See supplementary information
T901	Secondary/output part and core (external) (SI)			AC 2500V	3.5	3.5	See supplementary information

ATTACHMENT MEASUREMENT SECTION

Page 91 of 92

Report No. CN25N2K7 001

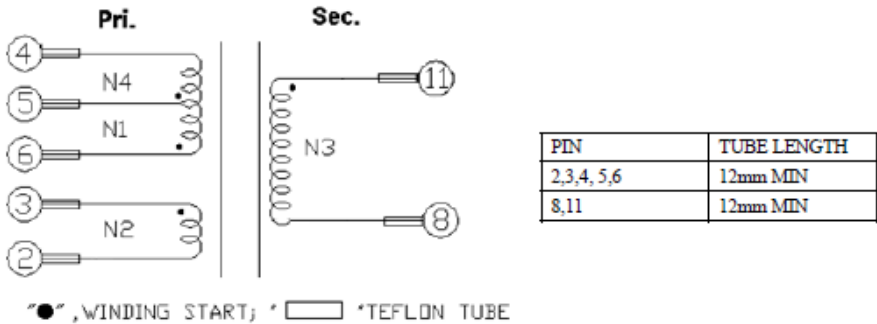
IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
T901	Primary/input part and secondary/output part (external) (DI)	AC 4000V	29.6	29.6	See supplementary information
T901	Primary/input part and secondary/output winding (external) (DI)	AC 4000V	8.0	8.0	See supplementary information
T901	Secondary/output part and primary/input winding (external) (DI)	AC 4000V	8.0	8.0	See supplementary information
supplementary information:					

G.5.3.2	TABLE: transformers (T901)	P
Transformer: T901 Concentric windings on bobbin (horizontal type core). Triple insulated wire used for secondary. The core is considered as floating part. 		

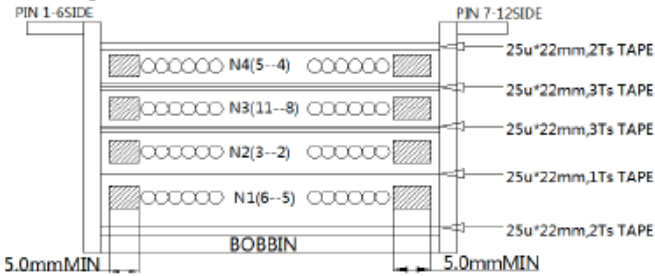
ATTACHMENT MEASUREMENT SECTION

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

4 Schematic



3.5 Winding construction



1:ALL PIN ADD TUBE.THE TUBE MUST BE OVER MARGING TAPE.

No.	TERMINAL	WIRE	TURNS	REMARK	TAPE	MARGIN	
					2	PIN1-6)	PIN(7-12)
1	6-5	UEW, Φ 0.50*1	20	CLOSE	1	5.0mm	5.0mm
2	3-2	UEW, Φ 0.45*3	7	CLOSE	3	5.0mm	5.0mm
3	11-8	UEW, Φ 0.70*2	7	CLOSE	3	5.0mm	5.0mm
4	5-4	UEW, Φ 0.50*1	20	CLOSE	2	5.0mm	5.0mm

Description of design:

(a) Bobbin

Primary/input pins.....:	See above
Secondary/output pins.....:	See above
Material (manufacturer, type, ratings)	See table 4.1.2
Thickness (mm).....:	0.45 min.

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			
Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	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>		N/A
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		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	A-weighted sound pressure (p) squared and integrated over a stated period of time, T Note 1 to entry: The SI unit is $\text{Pa}^2 \text{ s}$. $E = \int_0^T p(t)^2 dt$		
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		
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		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	levels from personal music players closely coupled to the ear are specified below. Requirements 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.		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	– 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. 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		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		
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: – 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.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	– 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 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		N/A

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IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		N/A

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IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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 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		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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 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.		N/A
10.6.5.2	Dose-based warning and requirements When a dose of 100 % CSD is reached, and at least at every 100 % further increase of CSD, 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 % CSD leads to the risk of hearing damage or loss.		N/A
10.6.5.3	Exposure-based requirements		N/A

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IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		
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		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		
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		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	Delete all the “country” notes in the reference document according to the following list:						P
	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	
	10.6.4	Note 3	F.3.3.6	Note 3	Y.4.1	Note	
	Y.4.5	Note					
4	Modification to Clause 1						
1	Add the following note: <i>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.</i>						P
5	Modification to 4.Z1						

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	Add the following new subclause after 4.9: To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. mains, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for pluggable equipment type B or permanently connected equipment, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.	Added.	P
6	Modification to 5.4.2.3.2.4		
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.	Added.	N/A
7	Modification to 10.2.1		
10.2.1	Add the following to ^{c)} and ^{d)} in table 39: For additional requirements, see 10.5.1.	Added.	N/A
8	Modification to 10.5.1		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	Add the following after the first paragraph: For RS 1 compliance is checked by measurement under the following conditions: In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or 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.	Added.	N/A
9	Modification to G.7.1		
G.7.1	Add the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.	Added.	N/A
10	Modification to Bibliography		

IEC62368_1E - ATTACHMENT			
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.		P
11	ADDITION OF ANNEXES		
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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"	See copy of marking plate.	P
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	The equipment is not direct plug-in equipment.	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	Finland and Sweden	No TNV circuits.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex G	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. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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).	Considered.	P
5.5.6	Finland, Norway and Sweden To the end of the subclause the following is added: Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	Denmark Add to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.	Considered.	P
5.6.4.2.1	Ireland and United Kingdom	Considered.	P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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 .		
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.	Considered.	P
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.	Considered.	P
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.		N/A
5.7.6.2	Denmark To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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: “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		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	utstyr – og er tilkople 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
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-		N/A

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IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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		

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

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.2	Ireland and United Kingdom To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm² is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A
10.5.2	Germany The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de		N/A
ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	Type of flexible cord	Code designations		N/A
		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

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IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72 for additional requirements.		N/A
1 (DV.5)	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.	Considered.	P
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.	Not exceeding 3.05 m.	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.	Overall acceptance has to be evaluated during the national approval process.	N/A
4.6 (4.6.2)	Wire-wrap terminals have special construction and performance requirements.	No such parts.	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.	No such parts.	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.	No such parts.	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.	No such parts.	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.	An appliance inlet provided that is connected by an approved appliance coupler serves as main protective earthing terminal. No power supply cord provided.	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.	No TNV circuits within the equipment.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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
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.	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.	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

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.		N/A
	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.		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.		N/A
	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for 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.		N/A
Annex DVA (5.6)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Considered.	P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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
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, where mounted in an enclosure, vertically mounted disconnect switches and circuit breakers with vertical operating means extending outside the enclosure are required to indicate in a location visible when accessing the external operating means whether the switch or circuit breaker is in the open (off) or closed (on) 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.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		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.		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.	No such parts.	N/A
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.	No such parts.	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.	No such parts.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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.	No such parts.	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.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		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.		N/A
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

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.		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).		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		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		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
Annex DVH (DVH.5.4)	Wire temperature ratings		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.		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.		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.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1:2018 SAUDI ARABIA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment Part 1: Safety requirements)			
Differences according to.....: National standard SASO-IEC 62368-1:2020			
TRF template used:: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No.....: SA_ND_IEC62368_1E			
Attachment Originator: SASO			
Master Attachment: 2022-12-22			
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	National Differences		
	Plugs used for pluggable equipment comply with standard SASO-2203.		P
--	Frequency (Hz)		P
	60 Hz	50/60Hz	P
--	Rated voltage (V)		P
	Single phase 230 V Three phase 400 V	100V-240V	P

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		
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>	Added.	P

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IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	-AS/NZS 60065, <i>Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)</i> -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	The equipment is not direct	N/A

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Clause	Requirement + Test		Result - Remark	Verdict
	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.		plug-in equipment.	
4.7.3	Compliance Criteria Delete this clause			N/A
4.8.1	General After second list, add 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 Delete the first paragraph and replace 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	Delete Table 28 and replace 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

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
^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	<i>Delete "NOTE" and replace with "NOTE 1".</i> 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	<i>Delete "NOTE" and replace with "NOTE 1".</i> 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		P
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		P
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".	Added	P
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)	Added	P
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:	Deleted and Replaced.	P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	(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.		
Annex F.3.3.5	After the list, add 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	Added.	P
Annex F.3.8	After "The DC output of an external power supply", insert "or docking stations and other similar external devices"		N/A
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 add 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 replace 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 Fourth dashed point replace 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.	Complied.	P
Annex G.7.1	Mains supply cords, General Fourth dashed paragraph, replace 'IEC 60320-1'		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	with 'AS/NZS 60320.1'		
Table G.7	Sizes of conductors 1 First column, second row, delete "6" and replace with "7.5" 2 Second column, second row, delete '0,75' and replace with '0.75b' 3 Delete NOTE 1. 4 Replace 'NOTE 2' with 'NOTE:'. 5 Delete 'Footnote b' and replace with the following: b This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm ² three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 Footnote c replace 'IEC 60320-1' with 'AS/NZS 60320.1' 7 Footnote d replace 'IEC 60320-1' with 'AS/NZS 60320.1'	No power supply cord provided.	N/A
Annex M M 2.1	Add "IEC 60086-2" to the list		N/A
Annex M Paragraph M.3.2	Test method Delete "NOTE" and replace with "NOTE 1" After NOTE 1 add 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.	No Battery provided.	N/A
	Special national conditions (if any)		P
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—	The output voltage not increase by more than 10% after abnormal operating conditions and during single fault conditions.	P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	(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, TC 108, Standards Interpretation Panel Question 15 — Output voltage, 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.		
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	The restraining device is provided with a fixing point via Kinston lock hole to facilitate the anchoring of the equipment from toppling and is capable of withstanding a pull equal to 100N in all directions without damage Installation will be done by local representative with trained personnel and such information provided in user's	P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point	instruction.	
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 .		P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

AS/NZS 3112:2017 Appendix J			
ATTACHMENT TO TEST REPORT AS_NZS_3112:2017 +A1:2021 Appendix J AUSTRALIAN / NEW ZEALAND NATIONAL DIFFERENCES (Approval and test specification—Plugs and socket-outlets)			
Differences according to: AS_NZS_3112:2017_Amendment 1:2021_Appendix J			
TRF template used:: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No.: AS_NZS_3112:2017_Appendix J			
Attachment Originator: JAS-ANZ			
Master Attachment: 2022-06			
Copyright © 2020 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	Note: AS/NZS 3112 is NOT covered by IECEE Accreditation for Testing / Reporting Please State Laboratory Accreditation for this Standard		N/A
	Accreditation		N/A
	Accreditation Stamp		N/A

J1 SCOPE	General: This Appendix specifies additional dimensional and constructional requirements for detachable plug portions, or equipment incorporating integral supply pins or equipment incorporating detachable plug portions. This Appendix shall be read in conjunction with Section 2 of this Standard. For the purposes of this Appendix, where the term 'plug' is used in Section 2 it shall be taken to mean the plug portion of equipment or the detachable plug portion. The equipment shall comply with the relevant product Standard. The tests and requirements specified in this Appendix are in addition to any test and requirements of the relevant product Standard for the equipment. (AS/NZS 3112:2017/A1:2021)	N/A
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J2	DEFINITION	N/A
J2.1	Detachable plug portion A plug portion that is detachable from the equipment and with connections	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	including the following standardized outputs and other contacts (a) Type A (see Figure J1): A detachable plug portion with a connection intended for plugging directly into equipment. The connection being via the equipment group 1 appliance inlet within the scope of AS/NZS 60320.1. (b) Type B (see Figure J2): A detachable plug portion with a non-standardized connection intended for plugging directly into equipment (c) Type C (see Figure J3): A detachable plug portion with a connection intended for use with an adaptor connected to a flexible cord so as to replicate a supply plug and flexible cord configuration. The connection being via a group 1 appliance outlet within scope of AS/NZS 60320.2.2, which is integral with the plug portion (AS/NZS 3112:2017)		
J2.2	Integral plug portion A plug portion that is integral to the equipment enclosure and is not detachable (AS/NZS 3112:2017)		N/A
J2.3	Plug portion A plug portion is that portion of equipment with pins for insertion into a socket-outlet, including the plug pins, terminals of the plug pins, external dimensions of the 'maximum projection' and any connections of a detachable plug portion. (AS/NZS 3112:2017/A1:2021)		N/A

J3	REQUIREMENTS FOR THE PLUG PORTION	N/A
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J3.1	General The following provisions apply to the dimensional and constructional requirements of plug portions of equipment and any detachable connection between the plug portion and the equipment:	N/A
(a)	For detachable plug portions intended for connection to the equipment in multiple orientations, the relevant tests are performed in the most onerous orientation.	N/A
(b)	For Type A detachable plug portion, the relevant requirements of AS/NZS 3105:2014 are applicable, in addition to conformance with relevant clauses of this Appendix	N/A
(c)	For Type B detachable plug portions, the conformance is shown by the relevant clauses of this Appendix.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
(d)	For Type C detachable plug portions, conformance is shown by assessment to Section 2 of this Standard (plugs) and relevant clauses of this Appendix (AS/NZS 3112:2017)		N/A
J3.2	Plug pins of plug portions The requirements of Clause 2.2 are applicable for plug pins.		N/A
2.2	PLUG PINS		N/A
2.2.1	Current carrying parts of plug pins of metal having sufficient mechanical strength, electrical conductivity and resistance to corrosion adequate for the intended use		N/A
	Plug pin material?		
2.2.3	Plug pins adequately proportioned throughout and portion adjacent to the connection designed to not introduce a stress concentration which may lead to a fracture of the pin, and suitably shaped to prevent abrasion or cutting of conductor strands due to flexure in normal use		N/A
	Exposed ends of plug pins have a lead-in, bevel or radius to facilitate entry into socket-outlets and to operate shutters		N/A
	Flat-pins with the following profile are deemed to comply:		
(a)	Flat-pins with a radius on the end with side bevels may have a width and thickness profile as specified in Figure 2.1(h)		N/A
(b)	Flat-pins square on the end with corner and side bevels may have a width and thickness profile as specified in Figure 2.1(i)		N/A
(c)	Flat-pins square on the end with corner bevels and a radius on the sides may have a width and thickness profile as specified in Figure 2.1(j)		N/A
	Contact portion of the pins smooth and free from openings or indentations		N/A
	Flat pin plugs having a longitudinal seam or opening in the contact portion of one face; width not exceeding 0.3 mm and		N/A

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IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	Thickness not exceeding 1.58 mm		N/A
	Exposed portion of earthing pins and pins other than insulated pins free from any non-metallic coverings or coatings (AS/NZS 3112:2017)		N/A
2.2.4	Live parts of insulated pin plugs not exposed when plug is partially or fully engaged with associated socket		N/A
	Compliance by measurement to Figure 2.4		N/A
	Lacquer, enamel or sprayed insulating coating not considered to be insulation material		N/A
	All live pins on low voltage plugs except for those shown in Figure 2.1 (a2), (b) and (g) of the insulated pin type		N/A
	Colour green or green / yellow not used for insulation of insulated pins (AS/NZS 3112:2017)		N/A

J3.3	Ratings and dimensions for low-voltage plug portions Requirements of clauses 2.8.1 and 2.8.4 apply for rating and dimensions		N/A
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2.8	Ratings and Dimensions of Low Voltage Plugs		
2.8.1	Plugs with ratings up to and including 20A; shall conform to the appropriate dimensions shown in Figure 2.1		N/A
	Rating of plug		
	Nominal dimensions covering disposition of pins checked by gauge of Appendix A		N/A
	Distance between live pin and edge of moulding to not less than 9 mm		N/A
	Measured distance		
	No point on plug face protrudes more than 0.5 mm		N/A
	Measured protrusion		
	Dimensional requirements of Figure 2.1(e2) did not applied to plugs with greater than three pins (AS/NZS 3112:2017)		N/A
2.8.4	Low voltage plugs comply with dimensions of		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Figure 2.1		
	Disposition of pins checked by gauge complying with Appendix A, B or F as appropriate		N/A
	Low voltage plug having rating up to 15A and of the Figure 2.1 (a1), (c), (d), (f) or (g) type; comply with dimensional requirements of Figure 2.1 (e1 and e2)		N/A
	20A plug of Figure 2.1 (a2) type complies with dimensional requirements of Figure 2.1 (e2)		N/A
	Plugs with insulated pins need not comply with dimension $R20.0 \pm 1$ mm requirement of Figure 2.1 (e3) provided there is at least 9mm from the edge of the live pins to the edge of the plug face Figure 2.1(e3). (AS/NZS 3112:2017)		N/A

J3.4	Internal connections for plug portions Requirements of clause 2.9 apply for internal connections, unless requirements contained in the relevant product standard (AS/NZS 3112:2017)		N/A
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2.9	INTERNAL CONNECTIONS		N/A
	Plug provided with earthing connections designed and constructed so that when plug is correctly wired and assembled:		N/A
(a)	Loose terminal screw or conductive material cannot bridge any live or earthed parts		N/A
(b)	Earthing parts effectively isolated from contact with live conductor which may become detached		N/A
(c)	Live parts effectively isolated from contact with any earthing conductor which may become detached		N/A
	Any connections for auxiliary devices comply with above requirements (AS/NZS 3112:2017)		N/A

J3.5	Arrangement of earthing connections for plug portions Requirements of clause 2.10 apply for arrangement of earthing connections		N/A
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2.10	Arrangement of earthing connections		N/A
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Clause	Requirement + Test	Result - Remark	Verdict
	Earthing pin radial to the circle embracing the pins (AS/NZS 3112:2017)		N/A
J3.6	Configuration of plug portions Requirements of clause 2.12.6 apply for configuration of the plug portion (AS/NZS 3112:2017)		N/A
2.12	Marking		
2.12.6	Configuration of plugs		N/A
	Pins disposed so that configuration, as viewed from the pins, is earth, neutral and active in a clockwise direction		N/A
	Where there is no earthing pin; live pins conform to this configuration (AS/NZS 3112:2017)		N/A
J4	Tests		N/A
J4.1	General Plug portions of equipment shall be subjected to the following tests and unless stated otherwise, shall comply with the requirements specified in Section 2 for each test. The number of test samples shall be in accordance with Table J1 For equipment with a detachable plug portion, the assessment(s) of Table J1 tests 2, 3, 5, 10 and 11 shall be conducted on the— (a) assembled equipment with the detachable plug portion connected; and (b) the detachable plug portion after it has been separated from the equipment (AS/NZS 3112:2017/A1:2021)		N/A
J4.2	High voltage test The requirements of Clause 2.13.3 are applicable unless requirements are contained in the relevant product standard (AS/NZS 3112:2017)		N/A
2.13.3	Test No.1 - High voltage test		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Plug withstands without failure electric strength test as specified (AS/NZS 3112:2017)		N/A
J4.3	Mechanical strength		N/A
J4.3.1	Tumbling barrel test The tumbling barrel test is applied to determine the mechanical strength of the plug portions and equipment having integral or detachable plug portions. For equipment with a detachable plug portion, the detachable plug portion may become detached during the test. If this occurs the detachable plug portion shall be reassembled with the equipment when the pins are straightened as per (a) and (b) below. Three samples (Samples BCD in Table J1) that have not been subjected to any previous test are tested as specified in Clause 2.13.7.1 , however the test is modified as follows:		N/A
	They are tested in a tumbling barrel as described in AS 60068.2.32 or test Free fall repeated – Procedure 2 in IEC 60068-2.31. The samples shall be dropped from a height of 500 mm onto a steel plate, 3 mm thick. The barrel shall be turned at a rate of 5 r/min, to yield 10 falls per minute. Only one sample shall be tested at a time. A sample is dropped— (a) 500 times if the mass of the specimen does not exceed 250 g. The pins being straightened after each 100 drops and at the completion of the test to pass through the appropriate gauge of Figure A1 , Figure B1 or Figure F1 ; and (b) 250 times if the mass of the specimen exceeds 250 g. The pins being straightened after each 25 drops and at the completion of the test to pass through the appropriate gauge of Figures A1 , Figure B1 or Figure F1 . (AS/NZS 3112:2017/A1:2021)		N/A
	Mass of sample		N/A
	Number of drops		N/A
	Compliance shall be checked by Paragraph J4.3.3		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

J4.3	Mechanical strength		N/A
J4.3.1	Tumbling barrel test The tumbling barrel test is applied to determine the mechanical strength of the plug portions and equipment having integral or detachable plug portions. For equipment with a detachable plug portion, the detachable plug portion may become detached during the test. If this occurs the detachable plug portion shall be reassembled with the equipment when the pins are straightened as per (a) and (b) below. Three samples (Samples BCD in Table J1) that have not been subjected to any previous test are tested as specified in Clause 2.13.7.1 , however the test is modified as follows:		N/A
	They are tested in a tumbling barrel as described in AS 60068.2.32 or test Free fall repeated – Procedure 2 in IEC 60068-2.31. The samples shall be dropped from a height of 500 mm onto a steel plate, 3 mm thick. The barrel shall be turned at a rate of 5 r/min, to yield 10 falls per minute. Only one sample shall be tested at a time. A sample is dropped— (a) 500 times if the mass of the specimen does not exceed 250 g. The pins being straightened after each 100 drops and at the completion of the test to pass through the appropriate gauge of Figure A1 , Figure B1 or Figure F1 ; and (b) 250 times if the mass of the specimen exceeds 250 g. The pins being straightened after each 25 drops and at the completion of the test to pass through the appropriate gauge of Figures A1 , Figure B1 or Figure F1 . (AS/NZS 3112:2017/A1:2021)		N/A
	Mass of sample		N/A
	Number of drops		N/A
	Compliance shall be checked by Paragraph J4.3.3		N/A
2.13.7.2	Test No.4 – Pin bending test		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	All flat-pin plugs rated up to and including 15 A shall be subjected to the pin bending test		N/A
	Three samples are subjected by clamping the plug in a rigid holding block and applying the bending force as specified		N/A
	After the test the pins shall not be broken off. (AS/NZS 3112:2017)		N/A

J4.8.3	Test No.5 Plug portion detachment requirements		N/A
	For all Type B or C devices and for Type A devices where the outlet of the detachable plug portion is parallel to the plug supply pins, disengagement of the detachable plug portion from the equipment shall require at least two simultaneous independent actions or the use of a tool.		N/A
	The plug portion and the equipment/adaptor shall be connected and disconnected 50 times (100 strokes).		N/A
	Compliance is verified by the plugging test, a force which, over a period of 10 s, shall be increased steadily to 60 ± 0.6 N and held at this value for a further 10 s, shall be applied evenly at the connecting equipment in a direction parallel to the pins. This procedure shall be conducted three times on the same plug portion, at intervals of 5 min, without disturbing the plug portions between tests		N/A
	During the test the plug portion shall not separate		N/A
	The test of AS/NZS 3112 'temperature rise test' for plugs shall be conducted immediately after the above test without disturbing the sample. Test No 6 Temperature Rise test J4.4 (AS/NZS 3112:2017/A1:2021)		N/A

J4.4	Temperature rise test		N/A
	The relevant requirements of Clause 2.13.8 are applicable for the temperature rise test, except that the test current shall be that specified in the relevant product standard		
	The temperature rise of the pins shall not exceed 45 K irrespective of the temperature rise of parts		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	specified in end-product standards.		
	For detachable plug portions the temperature rise of terminals and contacts shall not exceed 45 K. (AS/NZS 3112:2017)		N/A

2.13.8	Test No.6 – Temperature rise test		N/A
	Plug tested in draught free environment as specified using clamping units as specified in Figure 2.10		N/A
	Test Current Relevant Product Standard		N/A
	Temperature of terminals and contacts of detachable plug portion not exceeding 45 K (AS/NZS 3112:2017)		N/A

J4.5	Securement of pins of the plug portion The requirements of Clause 2.13.9 are applicable for the securement of pins. (AS/NZS 3112:2017)		N/A
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2.13.9	Test No.7. Securement of pins		N/A
2.13.9.1	Movement of pins		N/A
	Plug pins clamped 5 ± 0.5 mm from pin face; test equipment and sample pre-conditioning for 1 h at $40 \pm 1^\circ\text{C}$		N/A
	Force of 18 ± 1 N applied to pin 14 ± 0.5 mm from plug face; applied gradually over 10 s and maintained for 10 s; applied in four directions		N/A
	Maximum deflection during test not exceeding 2.0 mm		N/A
	Any distortion 5 minutes after test does not prevent insertion of plug into standard gauge(s) (AS/NZS 3112:2017 + A1:2021)		N/A
2.13.9.2	Fixing of pins		N/A
	Plug heated to $50 \pm 2^\circ\text{C}$ for 1h		N/A
	Force of 60 ± 0.6 N applied to each pin over 10 s and maintained for 10 minutes; applied in two directions along length of pin		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	Maximum displacement during test not exceeding 2.4 mm		N/A
	Maximum measured displacement		
	Pin returns to within 0.8 mm of nominal length within 5 minutes of removal of test force (AS/NZS 3112:2017)		N/A

J4.6	Tests on the insulation material of insulated pin-plug portions The requirements of Clause 2.13.13 are applicable for insulating material of insulated plug pins. (AS/NZS 3112:2017)		N/A
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2.13.13	Test No.8 Tests for insulation material of insulated pin plugs		N/A
2.13.13.1	Material of pin-insulation resistant to stresses at temperature likely to occur		N/A
2.13.13.2	Pressure test at high temperature		N/A
	Specimen tested as per Figure 2.5 with force of 2.5 N applied as specified; maintained for 2 h at $160 \pm 5^{\circ}\text{C}$; removed and cooled by immersion in water within 10 s		N/A
	Thickness of insulation at point of impression not reduced by more than 50%		N/A
	Initial thickness		
	Thickness after test		
	No visible cracks on insulation material		N/A
	Dimension of insulating material not below minimum size in Figure 2.4 (AS/NZS 3112:2017)		N/A

2.13.13.3	Static damp heat test		N/A
	Specimen subjected to two damp heat cycles in accordance with IEC 60068-2-30; Db (12 + 12h), 95% RH, $25 \pm 3^{\circ}\text{C}$; 40°C		N/A
	After this treatment and recovery to room temperature; specimen subjected to:		N/A
(a)	Insulation resistance test in accordance with clause 2.13.2 (e)		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

(b)	High voltage test in accordance with clause 2.13.3		N/A
(c)	Abrasion test in accordance with clause 2.13.13.6		N/A
2.13.13.4	Low temperature test		N/A
	Plug maintained at $-15 \pm 2^{\circ}\text{C}$ for minimum of 24 h and returned to room temperature; after which specimen subjected to:		N/A
(a)	Insulation resistance test in accordance with clause 2.13.2 (e)		N/A
(b)	High voltage test in accordance with clause 2.13.3		N/A
(c)	Abrasion test in accordance with clause 2.13.13.6		N/A
2.13.13.5	Impact test at low temperature		N/A
	Specimen maintained at $-15 \pm 2^{\circ}\text{C}$ for 24 h		N/A
	Specimen placed in position and subjected to impact test as per Figure 2.6; mass of 100 ± 1 g falling through 100 mm		N/A
	Four impacts applied; specimen rotated through 90° between impacts		N/A
	After return to room temperature; no visible cracks of insulating material		N/A
2.13.13.6	Abrasion test		N/A
	Plug held in clamp and tested as per Figure 2.7; pin loaded at 4 N; 20 000 movements		N/A
	After test; pins show no damage affecting safety or impairing further use of the plug		N/A
	Insulating sleeve not punctured or rucked up (AS/NZS 3112:2017)		N/A

J4.7	Test no.9 Equipment with a plug portion intended to be supported by the contacts of a socket-outlet		N/A
	Equipment with pins intended to be introduced into fixed socket-outlets not imposing undue strain on socket-outlet		N/A
	Applied torque not exceeding 0.25 Nm		N/A
	Measured torque (AS/NZS 3112:2017)		

J4.8	Additional requirements for detachable plug portions		N/A
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IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

J4.8.1	Test no.10 Access to live parts		N/A
	Small test finger of Figure 13 of IEC 61032 was not possible to contact live parts with the force of 20N		N/A
	incorrectly assemble the plug portion was not possible (AS/NZS 3112:2017)		N/A

J4.8.2	Test No.11 Construction of detachable contacts where the input current of the equipment exceeds 0.2 A		N/A
	Contacts of the equipment shall be such that they make and maintain, under normal service conditions, satisfactory electrical and mechanical contact with the corresponding contact of the detachable plug portion.		N/A
	For connections intended to accommodate pins, contact shall be made on two surfaces diametrically opposite, except if a single spring-assisted contact is used. (AS/NZS 3112:2017/A1:2021)		N/A
	Contacts shall not rely exclusively on the resilience of the contact material and shall have an opposite face of material other than thermoplastic or resilient insulating material. (AS/NZS 3112:2017/ A1:2021)		N/A
	The alignment and contact-making properties of contacts shall be independent of terminal screws		N/A
	The effectiveness of the contacts shall be independent of pressure from any thermoplastic or resilient moulding.		N/A
	A visual inspection is conducted to determine the existence of interference between the metal contacts and the thermoplastic or resilient moulding to provide supplementary contact pressure to the metal contacts.		N/A
	Conformance of the effectiveness of the contacts is checked by inspection and by the inspection and tests in J4.8.3 (AS/NZS 3112:2017)		N/A

J4.8.4	Resistance of insulating material to heat and fire		N/A
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IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

J4.8.4.1	Test no.12 Resistance to heat For Type B detachable plug portions parts of non-metallic material, parts of insulating material supporting live parts including connections, and parts of thermoplastic material providing supplementary insulation or reinforced insulation, shall be sufficiently resistant to heat if their deterioration could cause the appliance to fail to comply with this Standard.		N/A
	Ball pressure test conducted in accordance with IEC 60695-10-2		N/A
(a)	75°C ± 2°C, for external parts;		N/A
(b)	125°C ± 2°C, for parts supporting live parts.		N/A

J4.8.4.2	Test no.13 Resistance to fire		N/A
	Plug portions comply with resistance to fire requirements of AS/NZS 3100 Annex A as follows:		N/A
	The glow wire test temperature 'T' for 'retaining parts' of fixed socket outlets shall be 750 C (AS/NZS 3112:2017)		N/A

TABLES OF RESULTS

2.2.4	TABLE: Dimensions of insulation on insulated pin plugs		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase pin			8.7 ± 0.5
Neutral pin			8.7 ± 0.5

2.8.1	TABLE: Dimensions of plugs- 10A (a1)		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase and neutral pin width (A)			6.35 ± 0.15
Earth pin width (B)			6.35 ± 0.15
Pin thickness (C)			1.63 + 0.15, -0.05
Pin disposition (D)			checked by test gauge
Pin disposition (E)			checked by test gauge
Phase and neutral pin length (F)			17.06 ± 0.4
Earth pin length (G)			19.94 ± 0.8

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IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Pin boss radius - maximum		21.0 max
	Pin boss height		8.6 min

2.8.1	TABLE: Dimensions of plugs- 15A (a1)		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase and neutral pin width (A)			6.35 ± 0.15
Earth pin width (B)			9.08 ± 0.15
Pin thickness (C)			$1.63 + 0.15, -0.05$
Pin disposition (D)			checked by test gauge
Pin disposition (E)			checked by test gauge
Phase and neutral pin length (F)			17.06 ± 0.4
Earth pin length (G)			19.94 ± 0.8
Pin boss radius - maximum			21.0 max
Pin boss height			8.6 min

2.8.1	TABLE: Dimensions of plugs-20A (a2)		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase and neutral pin width (A)			9.08 ± 0.15
Earth pin width (B)			9.08 ± 0.15
Pin thickness (C)			$1.63 + 0.15, -0.05$
Pin disposition (D)			checked by test gauge
Pin disposition (E)			checked by test gauge
Phase and neutral pin length (F)			17.06 ± 0.4
Earth pin length (G)			19.94 ± 0.8
Pin boss radius - maximum			21.0 max
Pin boss height			8.6 min

2.8.1	TABLE: Projection from plug face centroid		N/A
Direction of projection		Measured (mm)	Allowed (mm)
Left			≤ 21.9 or ≥ 27.0
Right			≤ 21.9 or ≥ 27.0

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Up			≤ 21.9 or ≥ 27.0
Down			≤ 21.9 or ≥ 27.0

2.13.3	TABLE: Test No. 1 – High voltage test		N/A
Test voltage applied between:		Test voltage (V)	Breakdown
All poles of the plug; taken in pairs		1000	Yes / No
Live poles of the plug and any external metal		3500	Yes / No
Live poles of the plug and the earthing terminal		1000	Yes / No
Live poles of the plug and a flexible electrode		3500	Yes / No
Live poles and metal foil applied around insulation on pins		1250	Yes / No

2.13.7.1	Test No.2 – Tumbling barrel test		N/A
	Following the test, the samples shall comply with Clause 2.13.7.1(a..e)		N/A
	(a) Live parts shall not have become exposed to the standard test finger		N/A
	(b) For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with Clause 3.14.7 is maintained. AS/NZS 3100 CI 8.5 The resistance shall not exceed 0.1 Ω		N/A
	(c) Any other function affecting safety shall not be impaired		N/A
	(d) No live part shall have become detached or loosened, to the extent that a hazardous situation is created (see Clause 2.9)		N/A
	(e) The pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking		N/A

	Test No.3 Impact test for assembled equipment with the detachable plug portion connected and for equipment with an integral plug portion.		N/A
	Following the test, the samples shall comply with Clause 2.13.7.1 (a..e) as follows:		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	(a) Live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	(b) For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with Clause 3.14.7 is maintained so that the resistance between the earthing terminal of any socket-outlet provided with an earthing contact and the earthing terminal of the plug used for testing shall be of a low resistance. Compliance is by the test of earthing connection in AS/NZS 3100 Clause 8.5. The resistance shall not exceed 0.1 Ω		N/A
	(c) Any other function affecting safety shall not be impaired		N/A
	(d) No live part shall have become detached or loosened, to the extent that a hazardous situation is created		N/A
	(e) The pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking.		N/A
	Following the test, the samples shall conform to the 'Guarding of live parts' requirements of AS/NZS 3100:2015 cl 5.1 as follows:		N/A
	Except for equipment intended for use only in a position not accessible to unauthorized persons, all equipment shall be so designed and constructed that, when the equipment is standing, supported, or fixed, in a normal manner, no person can inadvertently come into contact with any live part		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	If a hole giving access to preset controls is marked as such on the enclosure or reference made to it in the instructions and the setting of this control requires a screwdriver or other tool, the adjustment of the control shall not allow contact with any live parts. A metal test pin having a diameter of 2 mm and a length of 100 mm shall not become live when it is inserted through the hole in every position with a force of 10 N.		N/A
	In addition, the opening or removal of any cover or component, with or without tools, where such opening or removal is necessary as a normal operation of the equipment as distinct from maintenance, repairs, or adjustment, shall not expose live parts to inadvertent personal contact.		N/A
	Any metal cover or casing enclosing live parts shall be of a strength sufficient to ensure that it cannot be deformed readily so as to come into contact with live parts.		N/A
	Compliance is checked by inspection, test and checking that live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Class II equipment and class II constructions shall be constructed and enclosed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only.		N/A
	It shall only be possible to touch parts which are separated from live parts by double insulation or reinforced insulation.		N/A
	Compliance is checked by application of the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Following the test, the samples shall conform to the 'Separation of live parts from non-current-carrying conductive parts' requirements of AS/NZS 3100.CI 5.2.2 as follows:		N/A
	The support and insulation of every live part shall be such as will ensure that no live part can make contact with any non-current-carrying conductive part exposed to personal contact.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	In respect of terminals of components such as switches, adequate clearances shall be maintained or insulation shall be provided to prevent contact of the terminals, or loose strands of flexible cords intended to be terminated therein, with exposed conductive parts. Where necessary, provision shall be made to ensure that conductors protruding through terminals, when normally connected, will not contact exposed conductive parts.		N/A
	Compliance is checked by inspection.		N/A

	Test No.3 Impact test for the detachable plug portion after it has been separated from the equipment		N/A
	Following the test, the samples shall comply with Clause 2.13.7.1 (a..e)		N/A
	(a) Live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	(b) For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with Clause 3.14.7 is maintained so that the resistance between the earthing terminal of any socket-outlet provided with an earthing contact and the earthing terminal of the plug used for testing shall be of a low resistance. Compliance is by the test of earthing connection in AS/NZS 3100 Clause 8.5. The resistance shall not exceed 0.1 Ω		N/A
	(c) Any other function affecting safety shall not be impaired		N/A
	(d) No live part shall have become detached or loosened, to the extent that a hazardous situation is created		N/A
	(e) The pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Following the test, the samples shall conform to the 'Guarding of live parts' requirements of AS/NZS 3100:2015 cl 5.1 as follows:		N/A
	Except for equipment intended for use only in a position not accessible to unauthorized persons, all equipment shall be so designed and constructed that, when the equipment is standing, supported, or fixed, in a normal manner, no person can inadvertently come into contact with any live part		N/A
	If a hole giving access to preset controls is marked as such on the enclosure or reference made to it in the instructions and the setting of this control requires a screwdriver or other tool, the adjustment of the control shall not allow contact with any live parts. A metal test pin having a diameter of 2 mm and a length of 100 mm shall not become live when it is inserted through the hole in every position with a force of 10 N.		N/A
	In addition, the opening or removal of any cover or component, with or without tools, where such opening or removal is necessary as a normal operation of the equipment as distinct from maintenance, repairs, or adjustment, shall not expose live parts to inadvertent personal contact.		N/A
	Any metal cover or casing enclosing live parts shall be of a strength sufficient to ensure that it cannot be deformed readily so as to come into contact with live parts.		N/A
	Compliance is checked by inspection, test and checking that live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Class II equipment and class II constructions shall be constructed and enclosed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only.		N/A
	It shall only be possible to touch parts which are separated from live parts by double insulation or reinforced insulation.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Compliance is checked by application of the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Following the test, the samples shall conform to the 'Separation of live parts from non-current-carrying conductive parts' requirements of AS/NZS 3100.CI 5.2.2 as follows:		N/A
	The support and insulation of every live part shall be such as will ensure that no live part can make contact with any non-current-carrying conductive part exposed to personal contact.		N/A
	In respect of terminals of components such as switches, adequate clearances shall be maintained or insulation shall be provided to prevent contact of the terminals, or loose strands of flexible cords intended to be terminated therein, with exposed conductive parts. Where necessary, provision shall be made to ensure that conductors protruding through terminals, when normally connected, will not contact exposed conductive parts.		N/A
	Compliance is checked by inspection.		N/A

2.13.8	TABLE: Test No. 6 - Temperature rise test		N/A
	Ambient temperature	°C	
	Test current	A	
Measured part		dT measured (K)	dT allowed (K)
Active (phase) terminal			45
Neutral terminal			45
Earthing terminal			45

2.13.9.1	TABLE: Movement of pins		N/A
	Earth and neutral pins clamped – phase pin loaded		
Force direction		Measured deflection (mm)	Allowed deflection (mm)
Force towards neutral plane parallel to pin plane			2.0
Force from neutral plane parallel to pin plane			2.0
Force outwards at 90° to pin plane			2.0

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Clause	Requirement + Test	Result - Remark	Verdict
	Force inwards at 90° to pin plane		2.0

2.13.9.1	TABLE: Movement of pins		N/A
	Phase and neutral pins clamped – earth pin loaded		
	Force direction	Measured deflection (mm)	Allowed deflection (mm)
	Force inwards parallel to pin plane		2.0
	Force outwards parallel to pin plane		2.0
	Force towards neutral		2.0
	Force towards phase		2.0

2.13.9.1	TABLE: Movement of pins		N/A
	Phase and earth pins clamped – neutral pin loaded		
	Force direction	Measured deflection (mm)	Allowed deflection (mm)
	Force towards phase plane parallel to pin plane		2.0
	Force from phase plane parallel to pin plane		2.0
	Force outwards at 90° to pin plane		2.0
	Force inwards at 90° to pin plane		2.0

2.13.13.3	TABLE: Test No.13(b) – Insulation resistance test after static damp heat test		N/A
	Applied between:	Insulation resistance (MΩ)	Minimum required (MΩ)
	Live poles and metal foil applied around insulation on pins		5

2.13.13.3	TABLE: Test No.1 – High voltage test after static damp heat test		N/A
	Test voltage applied between:	Test voltage (V)	Breakdown
	Live poles and metal foil applied around insulation on pins	1250	Yes / No

2.13.13.4	TABLE: Test No.1 – Insulation resistance test after low temperature test		N/A
	Applied between:	Insulation resistance (MΩ)	Minimum required (MΩ)

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Live poles and metal foil applied around insulation on pins		5
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2.13.13.4	TABLE: Test No.1 – High voltage test after low temperature test		N/A
Test voltage applied between:		Test voltage (V)	Breakdown
Live poles and metal foil applied around insulation on pins		1250	Yes / No

J4.8.4.1	TABLE: Test no.12 Resistance to heat		N/A
Component tested		Temperature (°C)	Diameter of impression (mm)

Conformance is checked by subjecting the relevant part to the ball pressure test of IEC 60695-10-2.

J4.8.4.2	TABLE: Test no.13 Resistance to Fire		N/A
	Plug portions shall comply with the requirements for resistance to fire in accordance with AS/NZS 3100:2017 Annex A. The glow-wire test temperature 'T' shall be 750°C.		

Glow-wire testing was conducted in accordance with IEC 60695-2-11.

Test specimens arranged so that the surface in contact with the tip of the glow-wire was vertical and glow wire tip applied to surface of the specimen likely to be subjected to thermal stresses in normal use.

A layer of white pine board and wrapping tissue was placed beneath the sample at 200mm ± 5mm distance.

SPECIMEN NUMBER	1	2	3	4	5	6	7	8
SPECIMEN DESCRIPTION								
Material								
Colour								
Test specimen								
Glow wire tip temperature (°C)	750	750	750	750	750	750	750	750
Duration of glow wire application (t _a) (s)	30	30	30	30	30	30	30	30
OBSERVATIONS								
Duration from beginning of glow-wire tip application to ignition of specimen or layer (t _i) (s)								
Duration from beginning of glow-wire tip application to when flames extinguish (t _e) (s)								
Maximum height of flames after initial 1s (to nearest 5 mm) (mm)								
Flame impingement on other parts								
Degree of tip penetration								
Degree of specimen distortion								
Scorching of pinewood board								

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EVALUATION CRITERIA								
Visible flame or sustained glowing								
Visible Flame Duration in Seconds during test.								
Duration of flaming or glowing after tip removal (max. allowable 30 s) (s)								
Surrounding parts burned away completely (not permitted)								
Ignition of wrapping tissue layer (not permitted)								
RESULTS If parts tested withstand the glow-wire test, but during the test produce a flame that persists for longer than 2 s, then the consequential needle flame test of AS/NZS 3100:2017 Annex A 6.1.5 applies.								

LEGEND:	CE Complete Equipment	SA Sub Assembly	SE Self Extinguished
	EBD Emitted Burning Droplets	SBD Specimen Burned and Distorted	SMD Specimen Melted and Distorted
	ME Manually Extinguished	SC Separate Component	SS Specimen Scorched
	NA Not Applicable	SCC Specimen Completely Consumed	WPNI Wall Penetrated but no Ignition
	NI No Ignition	X Flame Appeared for an Instant	

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Report No. CN25N2K7 001

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE: Needle- flame test (NFT)					N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Supplementary information:					
- NFT not relevant (or applicable) for Parts of material classified as V-0 or V-1					
- NFT not relevant (or applicable) for Base material of PCBs classified as V-0 or if relevant VTM-0					

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	PHOTOGRAPHS	
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ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1:2018 JAPAN NATIONAL DIFFERENCES Audio/video, information and communication technology equipment – Part 1: Safety requirements			
Differences according to: J62368-1(2023)			
TRF template used:: IECEE OD-2020-F3:2022, Ed. 1.2			
Attachment Form No.: JP_ND_IEC62368_1E			
Attachment Originator: UL Solutions (JP)			
Master Attachment: Dated 2023-05-12			
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	National Differences		
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this document or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.	Replaced.	P
5.6.1	Mains socket-outlet and interconnection coupler shall comply with Clause G.4.2A if they are incorporated as part of the equipment.		N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2.1	Connection for protective conductor of class 0I equipment provided with instructional safeguard in accordance with Clause F.3.6.1A is considered to make earlier and break later than supply connection. Mains plug having a lead wire for protective earthing connection of class 0I equipment shall comply with all of the following: – Not to be used for equipment having a rated voltage of 150 V or more – Clip is not used for the earthing connection of the lead wire. – The lead wire for earthing is at least 10 cm long If class 0I equipment provides an independent main protective earthing terminal and is intended to be installed by ordinary person, earthing wire shall be provided in the package of the equipment.	Approved class I power cord used.	N/A
5.6.2.2	Internal earthing conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector need not be green-and-yellow.	Complied.	P
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cable with 1.25 mm² or more cross-sectional area	Approved class I power cord used.	N/A
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series, JIS C 8300 or JIS C 8303, or that is provided with mains appliance outlet as specified in JIS C 8283 series for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.	No mains socket-outlet provided	N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.5	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990:2016.		N/A
6.4.3.2	A fuse complying with JIS C 6575 series or a fuse having equivalent characteristics shall open within 1 s. A fuse having time/current characteristics other than those specified in IEC 60127 shall be tested with the characteristics taken into account. In case of Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”.		N/A
8.5.4.3.1	Only three-phase stationary equipment rated more than AC 200 V can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.		N/A
8.5.4.3.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.	No moving parts.	N/A
8.5.4.3.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.		N/A
8.5.4.3.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.		N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.1	When the mains socket-outlet is configured in accordance with JIS C 8282 series, JIS C 8300 or JIS C 8303, the assigned current or power shall be marked. If the voltage of the socket-outlet is the same as the mains voltage, the voltage need not be marked. Instructional safeguard of Class 0I equipment shall be provided with an instructional safeguard in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8300 or JIS C 8303 to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.		N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic shall be included.		P
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.2 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions shall be provided regarding the earthing connection. In addition to the above, for class 0I equipment, an instruction to connect earthing before and disconnect earthing after the connection of supply conductors shall be marked on the visible place of the main body or shall be in the text of an accompanying document.	Approved class I power cord used.	N/A
F.3.6.2	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.	Not used.	N/A
F.3.8A	Attention marking for aging deterioration of CRT television Year of manufacture, standard usage period by design according to JIS C 9921-5 and cautionary statement for possible risks of aging deterioration when used beyond the specified period shall be marked on CRT television except for industrial use CRT television.		N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
F.4	For audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A, the instructions shall require that the external wiring connected to these terminals shall be installed by a skilled person, or shall be connected by means of ready-made leads or cords that are constructed in a way that would prevent contact with any ES3 circuit. For class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided in the package of the equipment, if the protective earthing connection is made by instructed person or skilled person, the suitable installation instruction for the protective earthing connection shall be provided.		N/A
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.		N/A
G.3.4	Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the applicable JIS or IEC standard in accordance with 4.1.2 or shall have equivalent or better properties. Such a protective device shall have adequate breaking (rupturing) capacity to interrupt the maximum fault current (including short-circuit current) that can flow.		P
G.4.1	This requirement does not apply to connectors covered in Clauses G.4.2 and G.4.2A.		P

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Mains connectors, mains plugs and socket-outlets shall comply with JIS C 8283 series, JIS C 8285, IEC 60309 series, JIS C 8282 series, JIS C 8300, JIS C 8303, or have equivalent or better properties. A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286. Construction shall prevent mechanical stress not to transmit to the soldering part of appliance inlet terminal. When an equipment is rated not more than 125 V and all of the following are met, Type C14 and C18 appliance inlet complying with JIS C 8283-3 can be considered as rated 15 A. – The temperature of appliance inlet does not exceed the value specified in JIS C 8283-1 under the most unfavourable normal operating condition as specified in Clause B.2.1. – "Use only designated cord set attached in this equipment" or equivalent text is described in the operating instruction. If the cord set is not provided in the package of the equipment, suitable information regarding to the cord set is described in the operating instruction.		P
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively		N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.	Approved class I power cord used.	N/A
G.7.2 Table G.7	Cross-sectional area of equipment rated up to and including 3 A shall be 0.75 mm ² .	Complied.	P
G.7.6.1 Table G.9	The cross-sectional area of mains cords according to JIS C 3010 may comply with relevant Japanese wiring regulation. For cables other than those complying with JIS C 3662 series or JIS C 3663 series, the terminals shall be suitable for the size of the intended cables.	Complied.	P

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1:2018 Republic of Korea NATIONAL DIFFERENCES Audio/video, information and communication technology equipment - Part 1: Safety requirements			
Differences according to.....: KC 62368-1(2021-08)			
TRF template used:: IECEE OD-2020-F3, Ed. 1.2			
Attachment Form No.....: KR_ND_IEC62368_1E			
Attachment Originator: KTL			
Master Attachment: 2024-09-02			
Copyright © 2024 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
National Differences			
4.1.1	As of January 1, 2023, internal and external components and subassemblies that comply with IEC 60950-1 or IEC 60065 are not acceptable if those components and subassemblies mandates KC certification.		P
G.4.2	Plugs for the connection of the apparatus to the supply main shall comply with the Korean requirement (KS C 8305 or KC 60884-1 or KC 60799).		N/A
Special national conditions (if any)			
Voltage	The marking of rated voltage or rated voltage range, for appliances intended to be connected to the supply mains, shall include 110 V, 220 V or 380 V.		P
Frequency	Only appliances having supply frequency of 60 Hz or a frequency range including 60 Hz are accepted.		P
Instruction	Instruction manuals and appliance marking related safety, including nameplate shall be in Korean		N/A

ATTACHMENT Other National Requirements

Page 1 of 2

Report No.: CN25N2K7 001

Clause	Requirement + Test	Result - Remark	Verdict
Appendix	Appendix 12 J3000 (H25) Special National conditions, National deviation and other information according to MITI Ordinance No. 85.		—
1	General requirement When equipment provides with appliance inlet complying with JIS C 8283-1(2008), soldered parts of appliance inlet is not applied by force during insert or removal of connector. This is not applied when inlet body is fixed itself and not fixed by solder.	Inlet is fixed by adequate mechanical construction, not rely on soldering.	P
2	Requirement for equipment		—
2.1	Heater Appliances When diode is used in parallel at the power sources for adjustment of power consumption, the equipment shall remain safe for operation under open condition of one diode.		N/A
	The current rating of one diode shall be more than main current. The diodes connected in parallel are same type.		N/A
	The heating test specified by clause 11 of JIS C 9335-1(2003) and a specified in applicable individual requirements under open condition of one diode of parallel shall comply with the requirements.		N/A
2.2	Electric heater with glowing heating elements	Not electric stove.	N/A
	Surface treatment by paint or adhesive on protective frame or protective mesh shall not be used.		N/A
	Caution marking like below shall be on - easily visible place of the equipment or - Instruction manual 「注意 当該機器から、使用初期段階で揮発性有機化合物及びカルボニル化合物が最も放散するおそれがあるため、その際には十分換気を行うこと。」		N/A
3	Components used in equipment	No relevant equipment or component.	N/A

ATTACHMENT Other National Requirements

Page 2 of 2

Report No.: CN25N2K7 001

Clause	Requirement + Test	Result - Remark	Verdict
3.1	Motor capacitors used in ventilating fan, electric fan, air conditioner, electric washing machine, refrigerator or electric freezer shall be comply with - capacitors with protective elements or protective mechanism complying with JIS C 4908(2007) - P2 capacitor complying with IEC 60252-1(2001) Capacitor complying with below is acceptable		N/A
	Enclosed by metal or ceramic		N/A
	No non-metallic materials within 50 mm from capacitor surface		N/A
	Non-metallic material within 50mm from capacitor surface comply with needle frame test of JIS C 9335-1(2003), Annex E		N/A
	Non-metallic material within 50 mm from capacitor surface comply with V-1 test of JIS C 60965-11-10(2006).		N/A
3.2	Plug directly inserted to outlet used refrigerator or electric freezer. Shall comply with - Face contact with outlet shall have CTI with more than 400 according to JIS C 2134(2007) or - Supporting material of blades shall comply with glow wire test by temperature of 750°C according to JIS C 60695-2-11(2004) or JIS C 60695-2-12(2004). Materials having glow wire frame temperature of 775 °C are acceptable.		N/A

Product: LCD Monitor

Type Designation: 1) DD-EA271F, DD-EA271FW; 2) DD-EA241W, DD-EA241WW

DD-EA271F, DD-EA271FW



Product: LCD Monitor

Type Designation: 1) DD-EA271F, DD-EA271FW; 2) DD-EA241W, DD-EA241WW



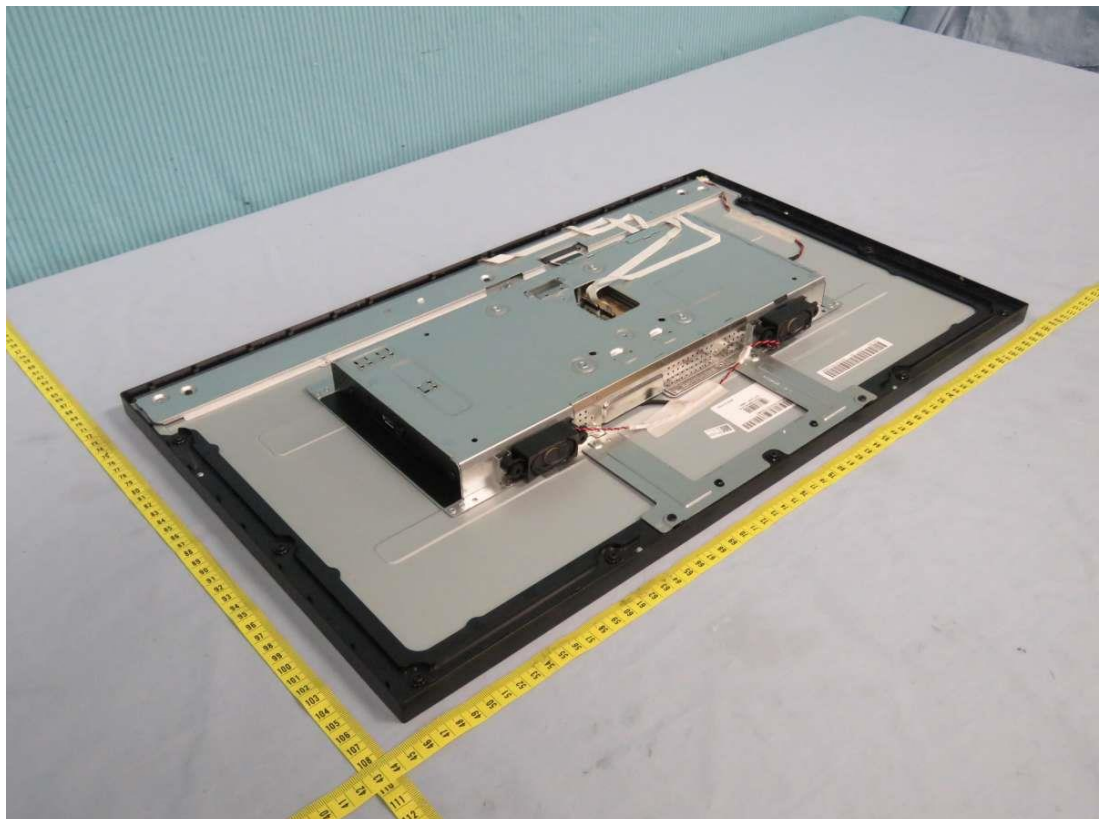
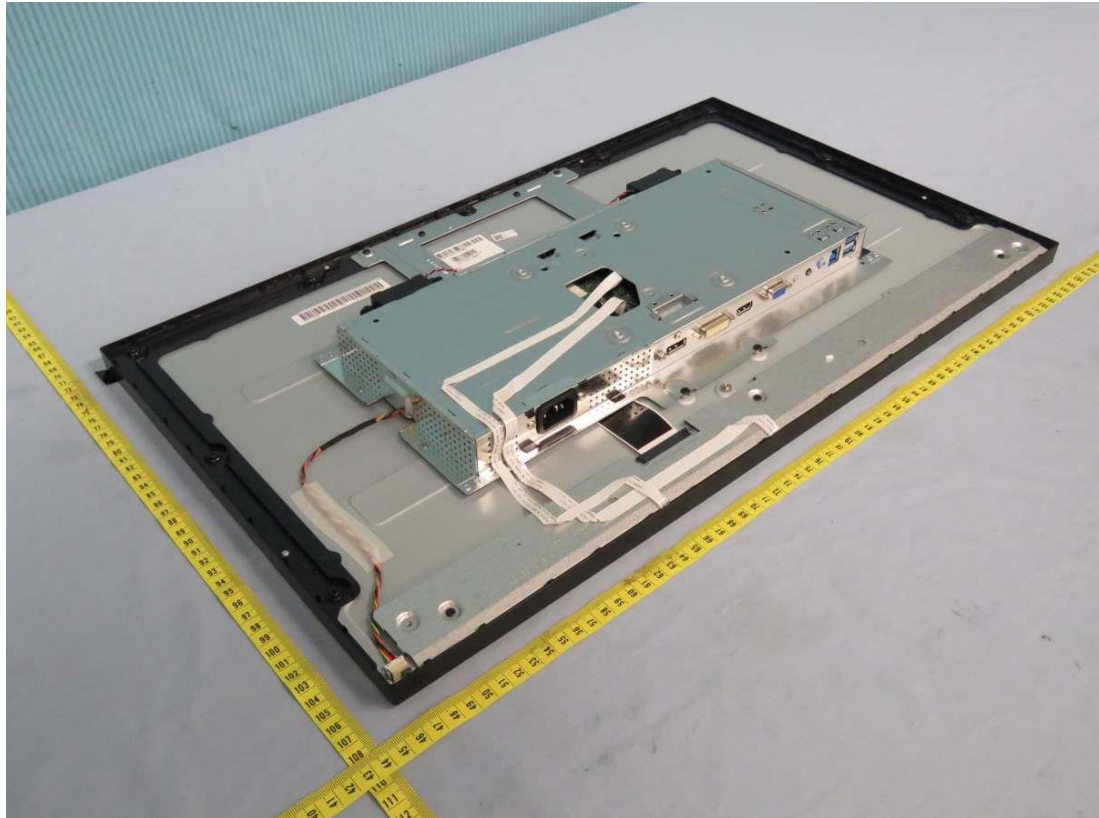
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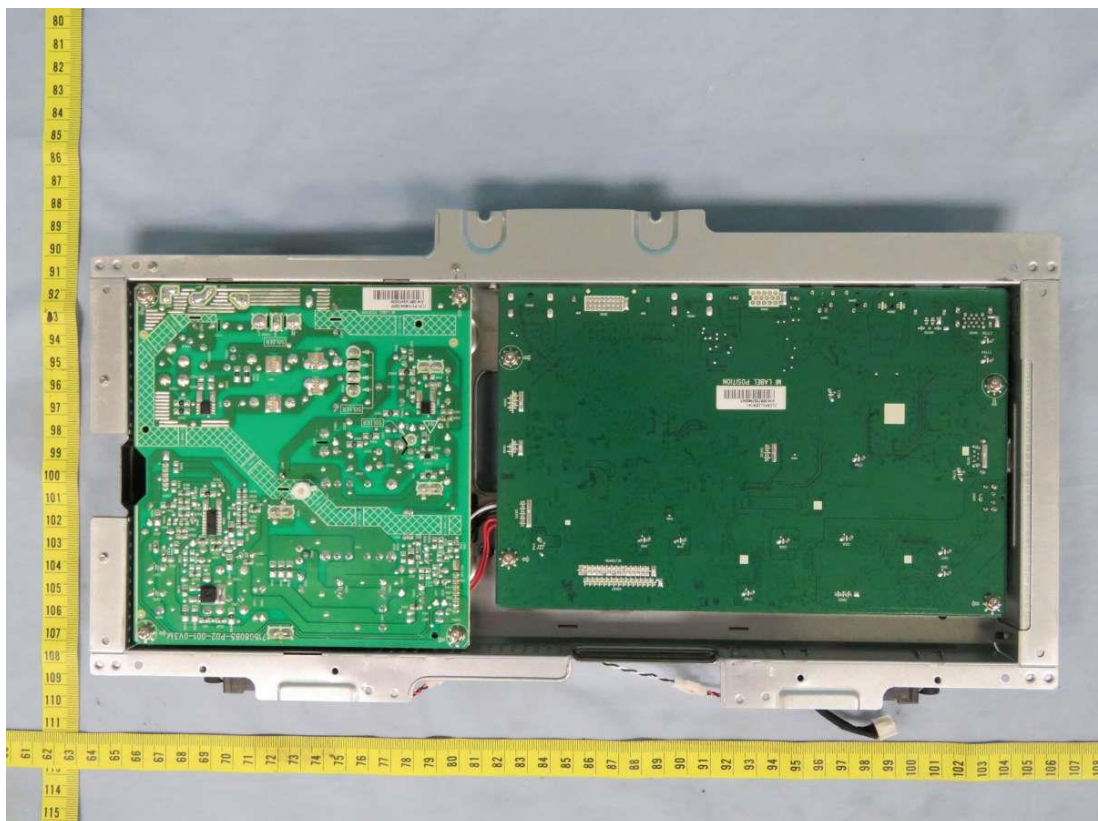
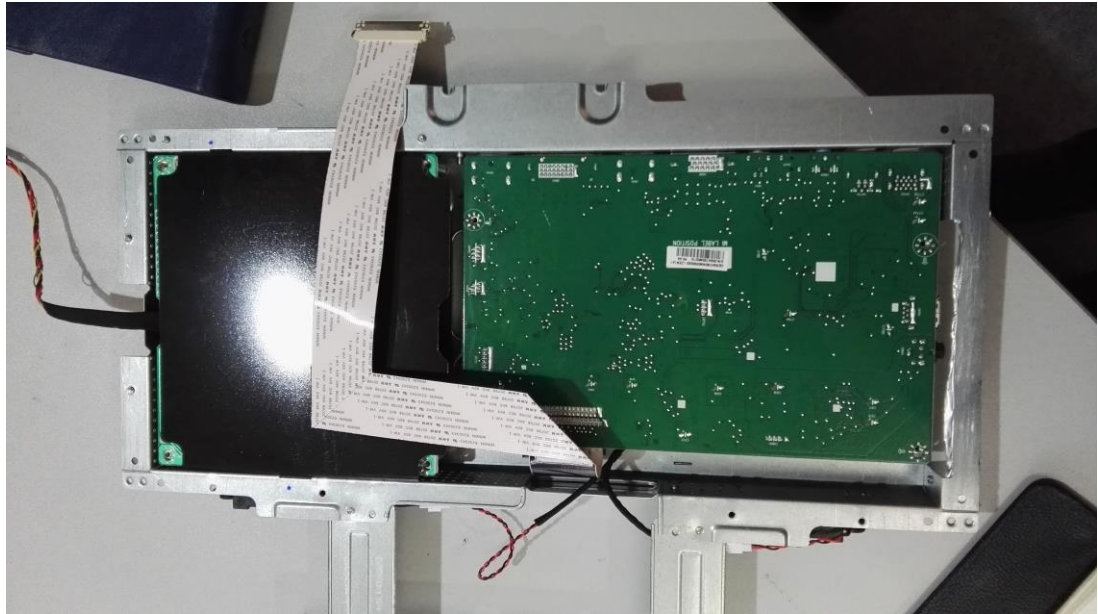
Product: LCD Monitor

Type Designation: 1) DD-EA271F, DD-EA271FW; 2) DD-EA241W, DD-EA241WW



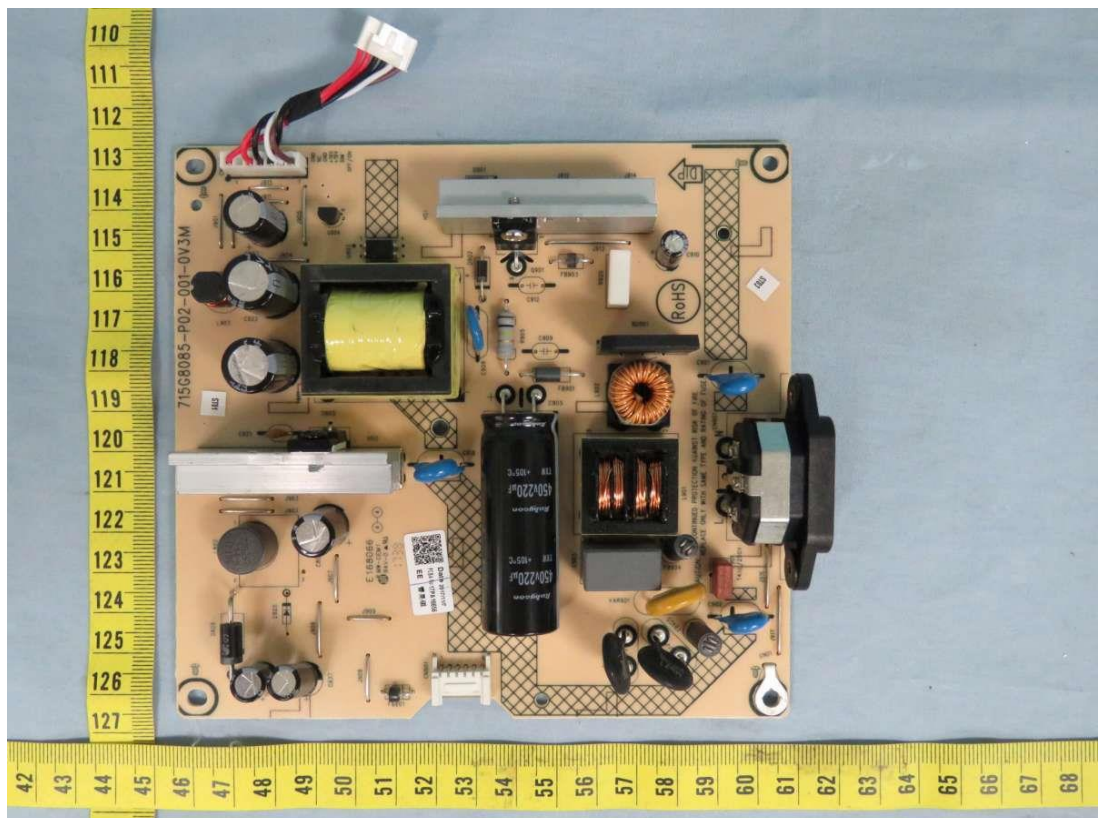
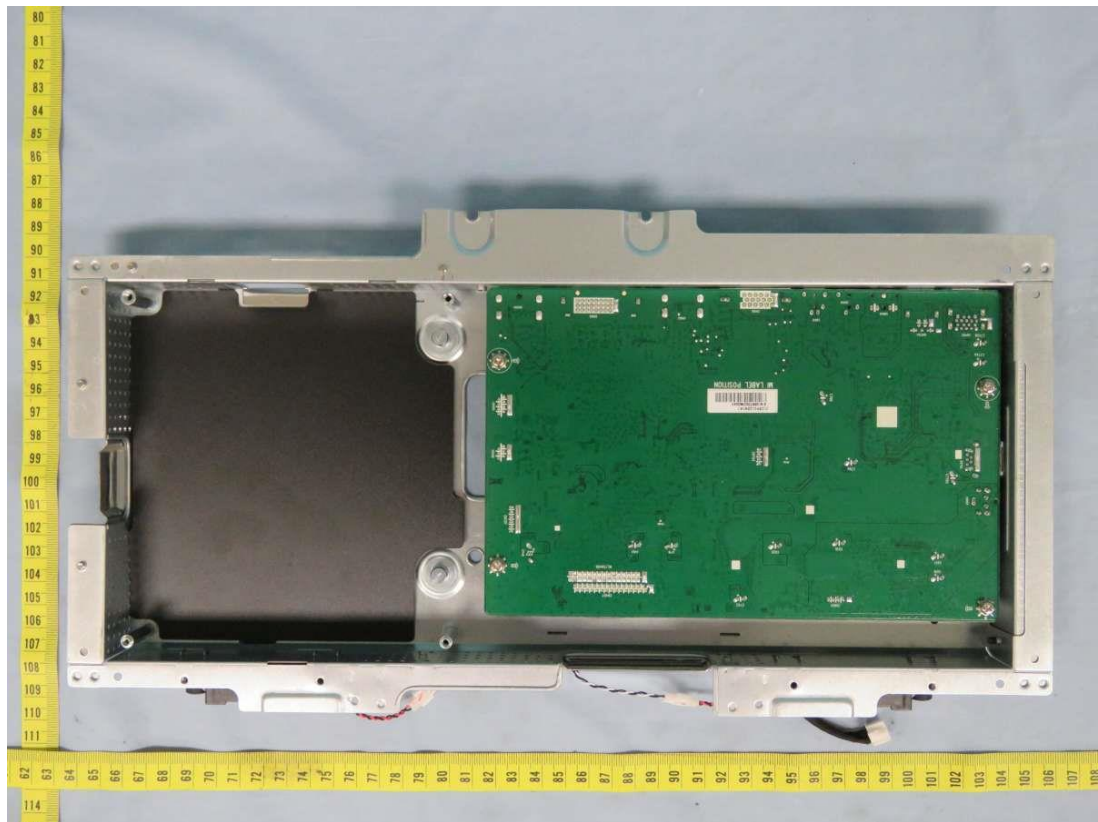
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Type Designation: 1) DD-EA271F, DD-EA271FW; 2) DD-EA241W, DD-EA241WW



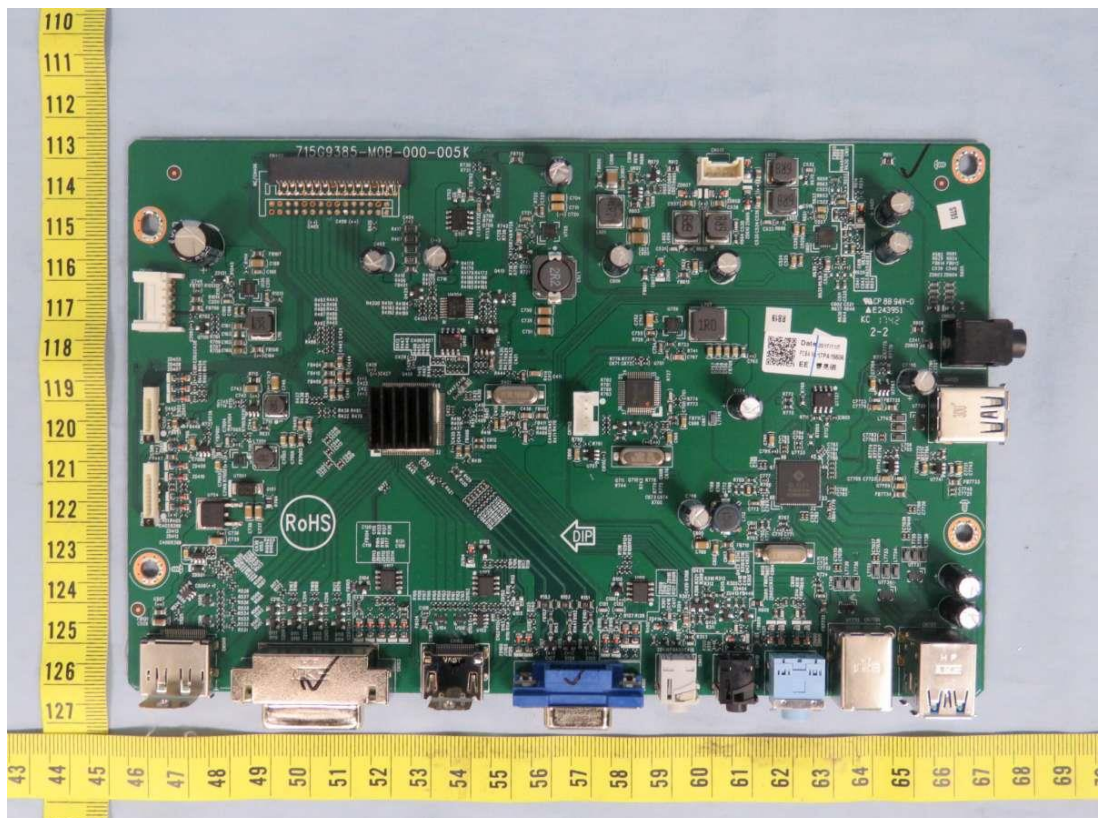
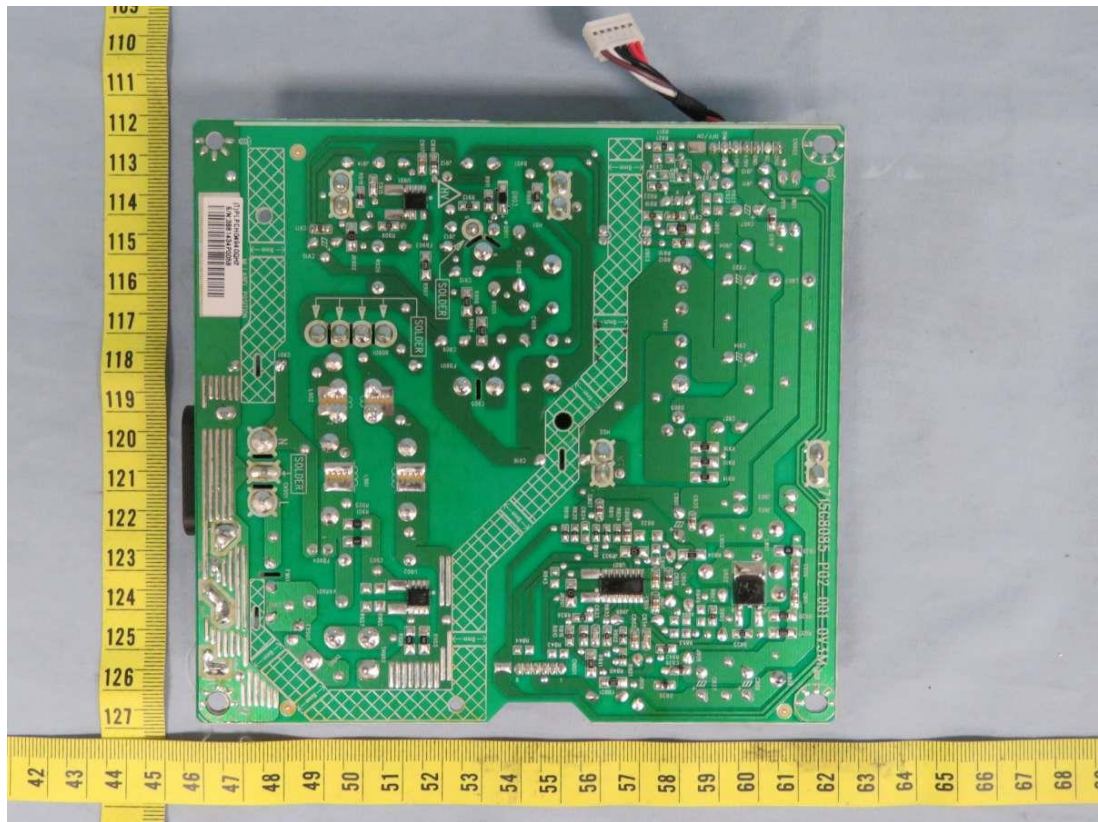
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Type Designation: 1) DD-EA271F, DD-EA271FW; 2) DD-EA241W, DD-EA241WW



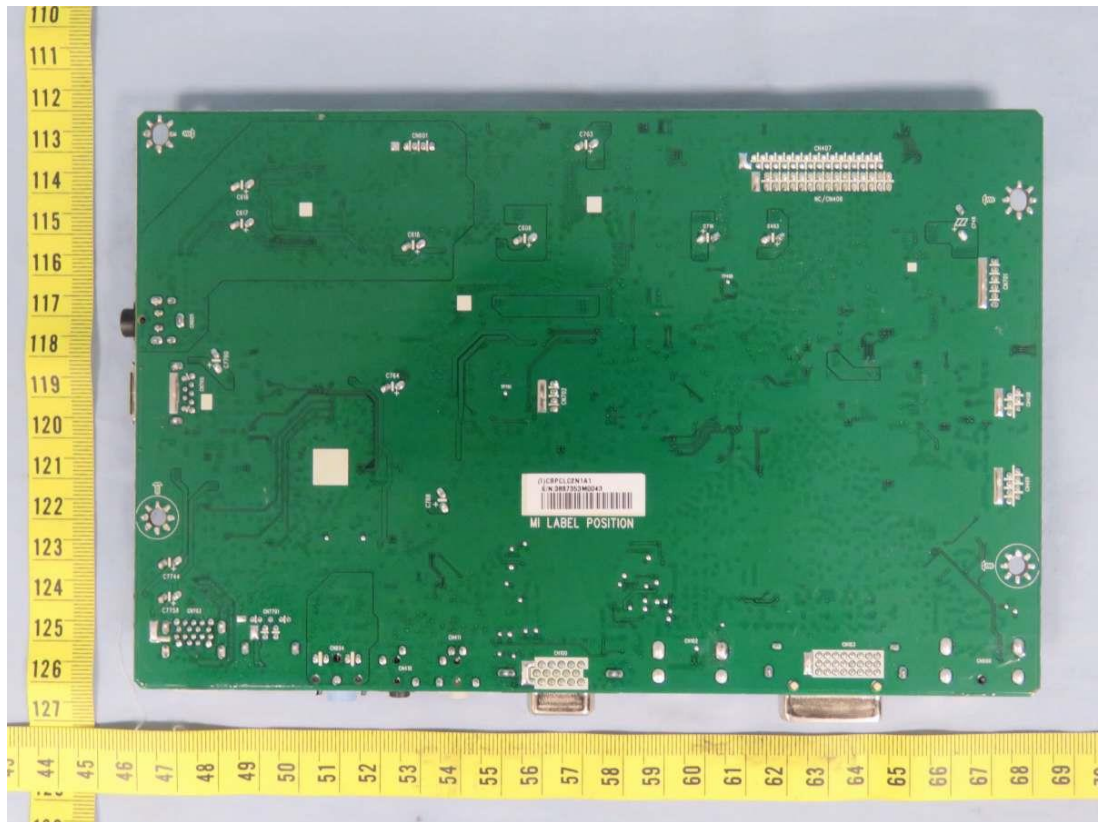
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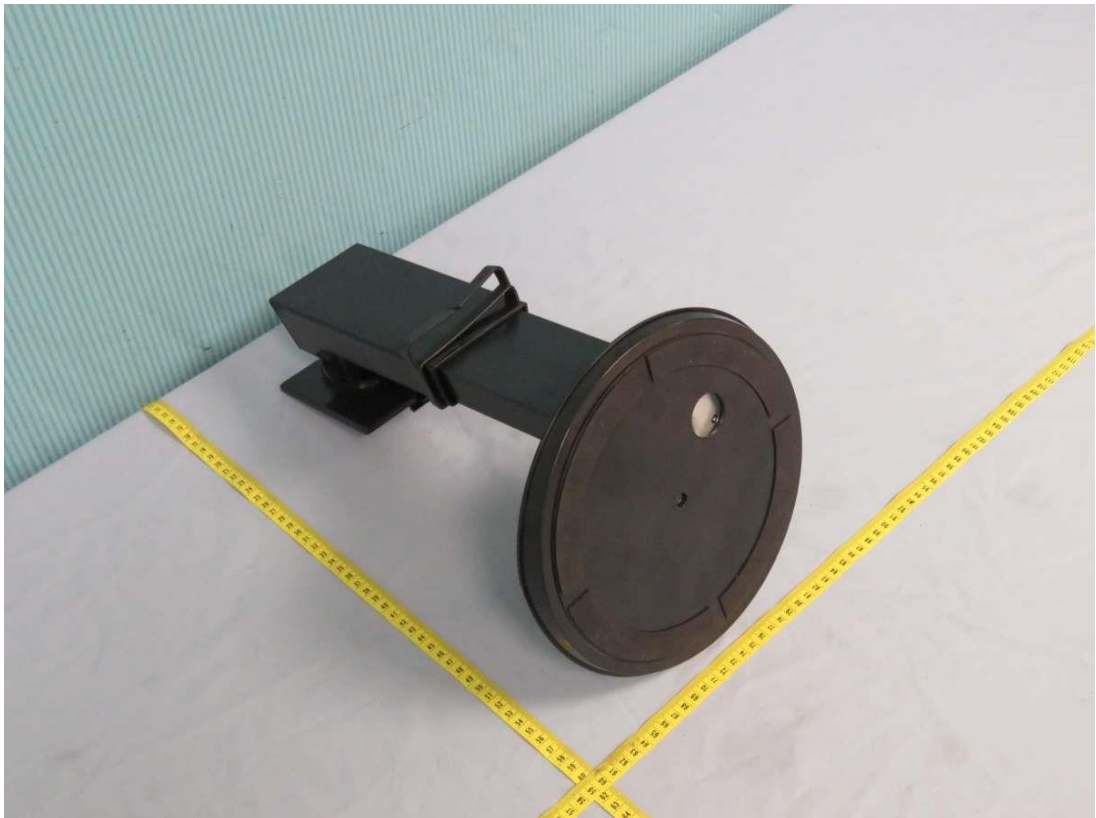
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DD-EA241W, DD-EA241WW



Product: LCD Monitor

Type Designation: 1) DD-EA271F, DD-EA271FW; 2) DD-EA241W, DD-EA241WW



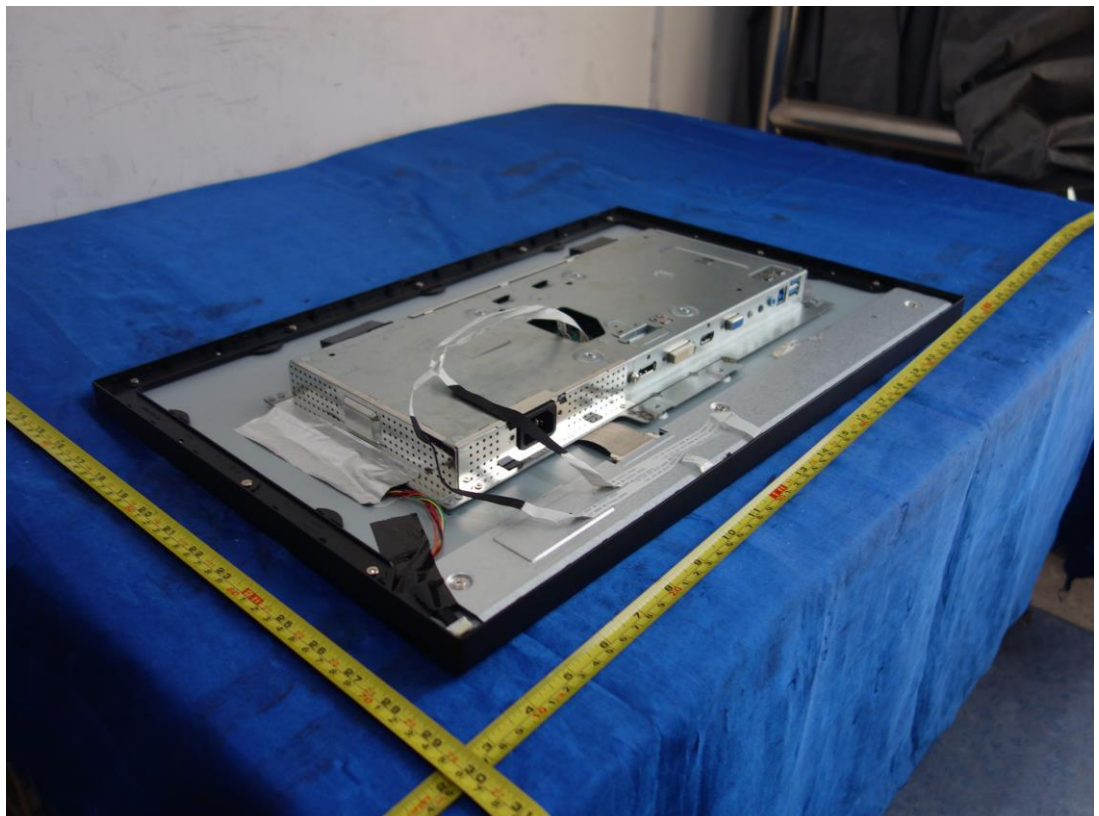
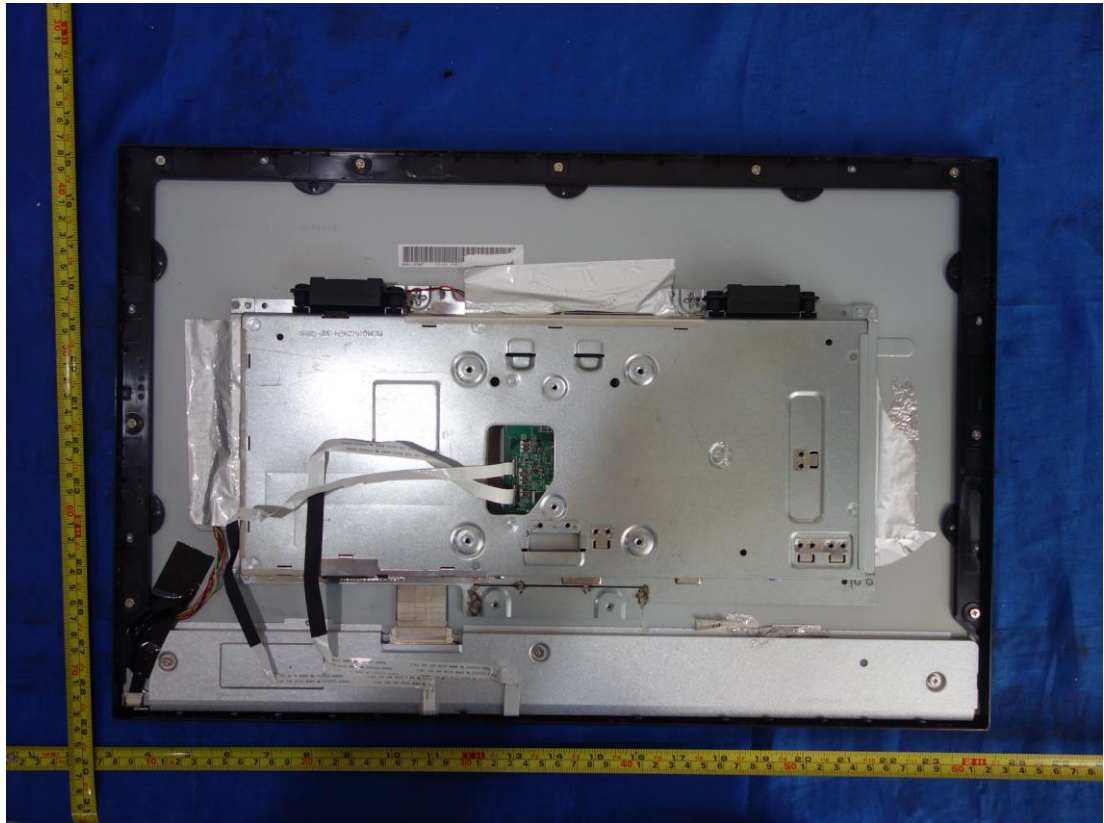
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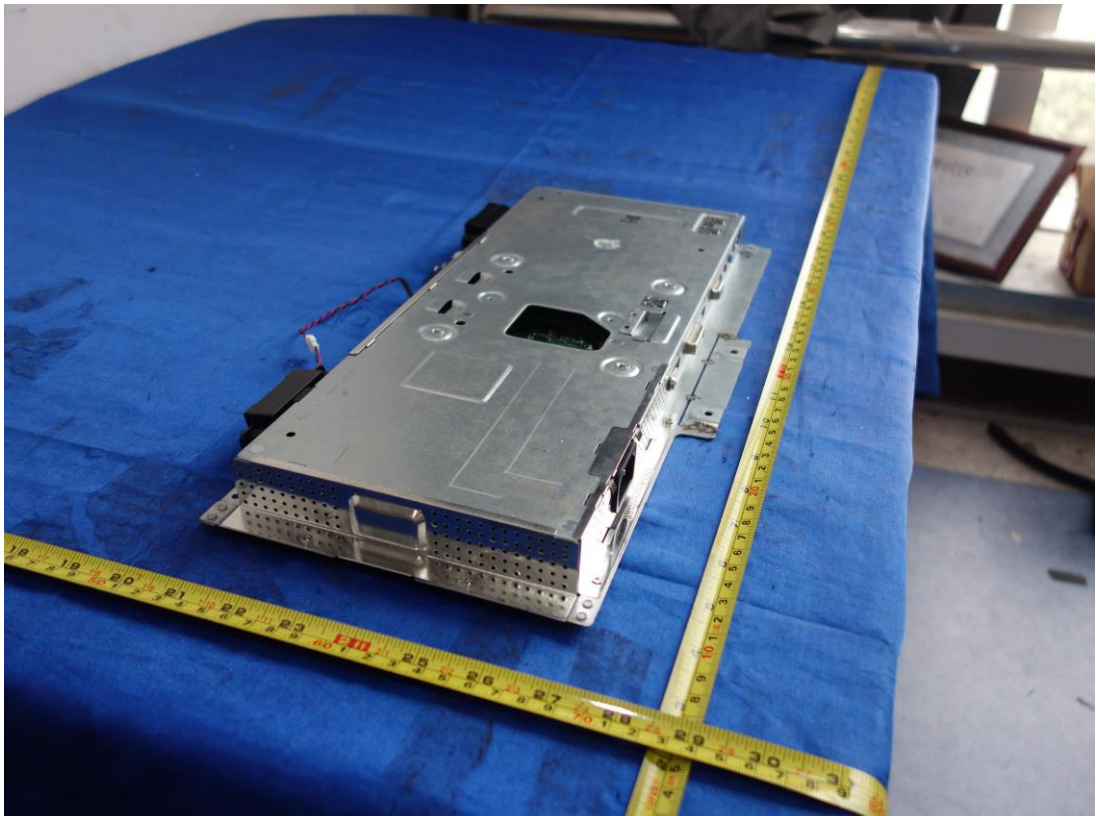
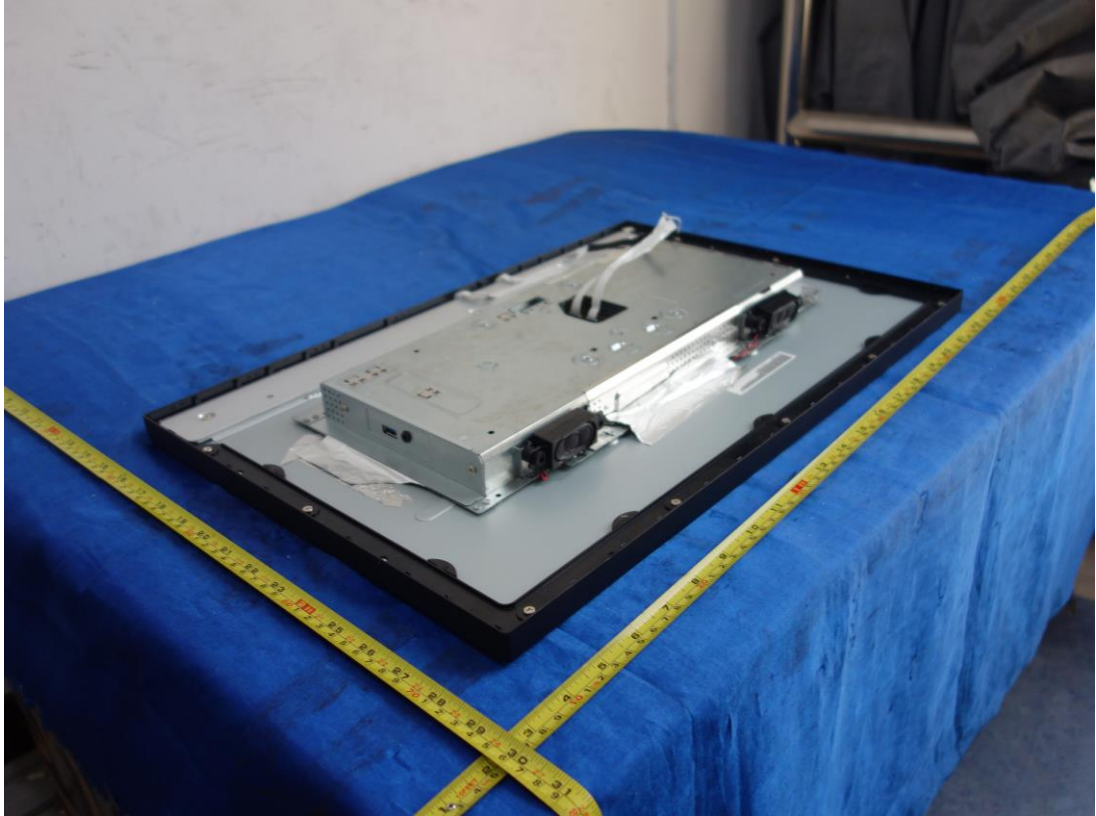
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