

	Test Report issued under the responsibility of: NCB TÜV SÜD PSB Pte Ltd. 1 Science Park Drive, 118221 Singapore Singapore	
TEST REPORT IEC 62368-1 Audio/video, information and communication technology equipment Part 1: Safety requirements		
Report Number. : 211-21200844-000 Date of issue : 2021-01-20 Total number of pages : 81		
Name of Testing Laboratory preparing the Report : TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch		
Applicant's name : MUSIC TRIBE COMMERCIAL MY SDN. BHD. Address : 1-17-02, SUNTECH @ PENANG CYBERCITY, LINTANG MAYANG PASIR 3, 11950 BAYAN BARU, PULAU PINANG, MALAYSIA		
Test specification: Standard : IEC 62368-1: 2018 Test procedure : CB Scheme Non-standard test method : N/A		
Test Report Form No. : IEC62368_1C Test Report Form(s) Originator : UL(US) Master TRF : Dated 2019-01-17		
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Test item description	Live Audio System	
Trade Mark		
Manufacturer	Same as applicant	
Model/Type reference	PRO 3, PRO 6, PRO 9, PRO X	
Ratings	100-240VAC, 50-60Hz, 500W (x3)	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	CB Testing Laboratory:	TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Testing location/ address		Building 12&13, Zhiheng Wisdomland Business Park, Nantou Checkpoint Road 2, Nanshan District, 518052 Shenzhen, CHINA
Tested by (name, function, signature)		Damon Yan, Project Handler 
Approved by (name, function, signature) ..		Eason Wan, Designated 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 + signature)		
Witnessed by (name, function, signature) .		
Approved by (name, function, signature) ..		
Testing procedure: CTF Stage 3:		
Testing procedure: CTF Stage 4:		
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) .		
Approved by (name, function, signature) ..		
Supervised by (name, function, signature) :		

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

Attachment No. 1: 21 pages of EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES for EN 62368-1:2020+A11:2020.

Attachment No. 2: 34 pages of National and Group Differences for IEC 62368-1:2018 (Third Edition) as per CB Bulletin

Attachment No. 3: 17 pages of photos.

Summary of testing:

Tests performed (name of test and test clause):

The submitted samples were found to comply with the requirements of:

- IEC 62368-1:2018

Testing location:

TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch

Building 12&13, Zhiheng Wisdomland Business Park, Nantou Checkpoint Road 2, Nanshan District, 518052 Shenzhen, CHINA

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

List of countries addressed: See the attachment No. 1 and No. 2 of National and Group Differences for details.

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

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.



Copy of marking plate (cont'd):



MIDAS

For representative model PRO X

Warning for Demark:

Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.

Remarks:

1. The CE symbol height is at least 5 mm and the WEEE symbol height is at least 7 mm.
2. The marking is located on top and rear of the product.
3. These are representative labels; the other models are identical to them except for the model No.

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 (Not directly connected to mains)		
Supply connection – type	☒ pluggable equipment type A - ☐ non-detachable supply cord ☒ appliance coupler ☐ direct plug-in ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☐ other:		
Considered current rating of protective device	☒ 16A (20A for US and Canada) ; 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}	45 °C ☐ Outdoor: minimum °C		
IP protection class	☐ IPX0 ☒ IP20		
Power systems	☒ TN ☒ TT ☐ IT - V _{L-L} ☐ not AC mains		
Altitude during operation (m)	☒ 2000 m or less ☐ m		
Altitude of test laboratory (m)	☒ 2000 m or less ☐ m		
Mass of equipment (kg)	For models PRO 3, PRO 6, PRO 9: Approx. 94.4kg; For model PRO X: 97.0kg		

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: 2020-08-10 Date (s) of performance of tests: 2020-08-10 to 2021-01-20	
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. According to the EU directives which have been aligned with EU NLF (new legislative framework), both of manufacturer and importer's name and address shall be affixed on the product or, where that is not possible, on its packaging or in a document accompanying the product before the product is placed on the EU market.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60950-1:	
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. Zhongshan Eurotec Electronics Ltd. NO. 10 Wanmei Road, South China Modern Chinese Medicine Park, Nanlang Town, 528451 Zhongshan City, Guangdong Province, PEOPLE'S REPUBLIC OF CHINA 2. Music Tribe Hi-Tech Electronics Sdn. Bhd. Factory 6, Jalan Hi-Tech 2/6, Kulim Hi-Tech Park, 09090 Kulim Kedah, MALAYSIA	
General product information and other remarks: 1. Live Audio System, Models PRO 3, PRO 6, PRO 9, PRO X, manufactured by MUSIC TRIBE COMMERCIAL MY SDN. BHD. 2. The maximum operating temperature is 45°C. 3. The product was classified as professional apparatus. 4. The products have three power supply modules (MKT-PSU-2), and minimum of two power supply modules shall be connected to AC mains for normal operation.	

General product information and other remarks: (cont'd)

5. Model difference:

The same power supply modules were used for all models, the differences between these models are model No., overall dimension and main functions.

- Model PRO 3 is an entry-level system. It has 56 input channels with remote controlled mic preamps, 27 buses and six stereo effects. It utilises the fixed format, 5U I/O rack of the DL251 Audio System I/O;
- Model PRO 6 is a mid-range system. It has 64 simultaneous input processing channels with up to 35 discrete mixes in monitor mode. It is expandable to 288 inputs and 294 outputs, all of which can be patched/routed on a scene-by-scene basis by the powerful snapshot automation system.
- Model PRO 9 is the top of the range system. It has 88 channel input count with 35 buses, and has dual stage boxes to give the flexibility of up to 200m apart and 500m from front of house (FOH).
- Model PRO X is live Digital Console Control Center, it has 168 Input Channels, 99 Mix Buses, 96 kHz Sample Rate and Touring Grade Road Case. PRO X using different control module and different supplier for motherboard and screen.

Unless otherwise specified, the model PRO 9 was chosen as representative model to perform all the tests.

OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	Possible Hazard			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES3: AC inlet	Ordinary; Instructed	Bleeder resistors provided (R1, R15 in parallel for each power supply module)	Accessible voltage didn't exceed ES1 limits of Table 5 under normal condition (2s after disconnection of the application coupler)	N/A
ES3: All primary circuits of built-in power supply module (to metal enclosure)	Ordinary; Instructed	Creepage and Clearance	Protective earthed metal enclosure provided	N/A
ES3: All primary circuits of built-in power supply module (to secondary circuits)	Ordinary; Instructed	N/A	N/A	Transformer, Y1-capacitor, optocoupler
ES3: All primary circuits of power supply module	Skilled	N/A (unintentional contact with parts during service condition is unlikely)	N/A	N/A (Skill safeguard)
ES1: All secondary circuits; ES1: All output of built-in power supply module; ES1 All output of DC-DC convertor; ES1: All accessible secondary terminal	Ordinary; Instructed; Skilled	N/A	N/A	N/A

6		Electrically-caused fire		
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS3: AC inlet; PS3: All internal circuits except for DC fans of built-in power supply modules; PS3: all DC fans except for DC fans of power supply modules; PS2: DC fans of power supply modules	All combustible materials within equipment and enclosure	For Normal Condition and Abnormal Conditions: 1. No ignition occurred. 2. No parts exceeding 90% of its spontaneous ignition temperature.	For control fire spread under Single Fault Condition: 1. PCB is complied with V-0 material. 2. All other components: at least V-2 except for mounted on min. V-1 material or small parts of combustible material. 3. Metal enclosure provided.	N/A
PS1: All accessible secondary signal terminals; PS1: All USB port	All combustible materials within equipment and enclosure	For Normal Condition and Abnormal Conditions: 1. No ignition occurred. 2. No parts exceeding 90% of its spontaneous ignition temperature.	N/A	N/A
7		Injury caused by hazardous substances		
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
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 of accessible parts	Ordinary; Instructed; Skilled	N/A	N/A	N/A

MS3: Equipment mass	Ordinary; Instructed; Skilled	Means to stabilize the equipment (complied with clause 8.6); Robust handles used (complied with clause 8.8)	Instructional safeguards provided	N/A
MS1: All plastic fan blades of internal DC fan	Skilled	N/A	N/A	N/A
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: Accessible parts	Ordinary; Instructed; Skilled	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: LEDs (for indicating lights display only)	Ordinary; Instructed; Skilled	N/A	N/A	N/A
Supplementary Information: “B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced Safeguard.				

ENERGY SOURCE DIAGRAM

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

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

☐ ES ☐ PS ☐ MS ☐ TS ☐ RS

Remark: see above table “**OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS**” for details.

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components	(See appended table 4.1.2)	P
4.1.3	Equipment design and construction		P
4.1.4	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)	(See G.15)	N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness		P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Clause T.3, T.5)	P
4.4.3.3	Drop tests		N/A
4.4.3.4	Impact tests	(See Clause T.6)	P
4.4.3.5	Internal accessible safeguard tests	(See Clause T.3)	N/A
4.4.3.6	Glass impact tests	(See Clause T.9, Annex U)	N/A
4.4.3.7	Glass fixation tests		N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	(See Clause T.8)	N/A
4.4.3.9	Air comprising a safeguard	(See Annex T)	P
4.4.3.10	Accessibility, glass, safeguard effectiveness	All safeguards remain effective	P
4.4.4	Displacement of a safeguard by an insulating liquid		N/A
4.4.5	Safety interlocks	(See Annex K)	N/A
4.5	Explosion		P
4.5.1	General		P
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3)	P
	No harm by explosion during single fault conditions	(See Clause B.4)	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	No coin/ button cell batteries	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	(See Annex G)	P

5	ELECTRICALLY-CAUSED INJURY		P
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current limits :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits :	(See appended table 5.2)	N/A
5.2.2.4	Single pulse limits :	(See appended table 5.2)	N/A
5.2.2.5	Limits for repetitive pulses :	(See appended table 5.2)	N/A
5.2.2.6	Ringing signals	(See Annex H)	N/A
5.2.2.7	Audio signals	(See Clause E.1)	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits		P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements	No access with test probe to any ES3 circuit or parts or unearthed parts separated by basic safeguard only from ES3 via openings on enclosure.	P
	Test with test probe from Annex V	No contact to any ES3 parts with test probe of Figure V.1 and V.2, and its air gap distance more than 0.26mm.	-
5.3.2.2 a)	Air gap – electric strength test potential (V)	(See appended table 5.4.9)	N/A
5.3.2.2 b)	Air gap – distance (mm)	>0.26mm	P
5.3.2.3	Compliance		P
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Material is non-hygroscopic	No hygroscopic insulating material used	N/A
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degrees	Pollution degree 2	P
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage	(See appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A
5.4.1.10.2	Vicat test.....	(See appended table 5.4.1.10.2)	N/A
5.4.1.10.3	Ball pressure test	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		P
5.4.2.1	General requirements		P
	Clearances in circuits connected to AC Mains, Alternative method	(See Annex X)	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.2	Procedure 1 for determining clearance	(See appended table 5.4.2)	P
	Temporary overvoltage	2000V _{peak}	—
5.4.2.3	Procedure 2 for determining clearance	(See appended table 5.4.2)	P
5.4.2.3.2.2	a.c. mains transient voltage	2500V _{peak}	—
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	(See appended table 5.4.2)	N/A
5.4.2.5	Multiplication factors for clearances and test voltages		N/A
5.4.2.6	Clearance measurement	(See appended table 5.4.2)	P
5.4.3	Creepage distances		P
5.4.3.1	General		P
5.4.3.3	Material group	Assume to group IIIb	—
5.4.3.4	Creepage distances measurement	(See appended table 5.4.3)	P
5.4.4	Solid insulation		P
5.4.4.1	General requirements		P
5.4.4.2	Minimum distance through insulation	(See appended table 5.4.4.2)	P
5.4.4.3	Insulating compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices	Approved optocoupler used (see appended table 4.1.2)	P
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material		P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material		P
	Number of layers (pcs)	Min. 2 layer used on transformers	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	(See appended table 5.4.9)	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		P
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P , K_R , d , V_{PW} (V)	(See appended Table 5.4.4.9)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Alternative by electric strength test, tested voltage (V), K_R		N/A
5.4.5	Antenna terminal insulation	(See appended Tables 5.4.9)	P
5.4.5.1	General		P
5.4.5.2	Voltage surge test		P
5.4.5.3	Insulation resistance ($M\Omega$).....	>100	P
	Electric strength test	(See appended table 5.4.9)	P
5.4.6	Insulation of internal wire as part of supplementary safeguard	(See appended table 5.4.4.2)	N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%), temperature ($^{\circ}C$), duration (h)	93% RH, 40 $^{\circ}C$, 120h	—
5.4.9	Electric strength test		P
5.4.9.1	Test procedure for type test of solid insulation.....	(See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine test		N/A
5.4.10	Safeguards against transient voltages from external circuits	No external circuits	N/A
5.4.10.1	Parts and circuits separated from external circuits	(See appended table 5.4.9)	N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test	(See appended table 5.4.9)	N/A
5.4.10.2.3	Steady-state test.....	(See appended table 5.4.9)	N/A
5.4.10.3	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	(See appended table 5.4.9)	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 :	(See appended table 5.4.9)	N/A
5.4.12.3	Compatibility of an insulating liquid :	(See appended table 5.4.9)	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		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector :	(See appended table 5.5.2.2)	P
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See sub-clause 5.4 or Clause G.12)	P
5.5.5	Relays		N/A
5.5.6	Resistors	(See Clause G.10)	N/A
5.5.7	SPDs	(See Clause G.8)	P
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable :	(See Annex G.10.3)	N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA) :		—
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors		P
5.6.2.1	General requirements		P
5.6.2.2	Colour of insulation	Green/Yellow colour used in power supply modules	P
5.6.3	Requirement for protective earthing conductors		P
	Protective earthing conductor size (mm ²) :	Min. 18AWG	—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors		P
5.6.4.1	Protective bonding conductors		P
	Protective bonding conductor size (mm ²). :	Min. 18AWG	—
5.6.4.2	Protective current rating (A) :	16A (20A for US and Canada)	P
5.6.5	Terminals for protective conductors		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :	Approved AC inlets used	P
	Terminal size for connecting protective bonding conductors (mm) :	Min. 18AWG; min. 3.0mm	P
5.6.5.2	Corrosion		P
5.6.6	Resistance of the protective bonding system		P
5.6.6.1	Requirements		P
5.6.6.2	Test Method..... :	(See appended table 5.6.6)	P
5.6.6.3	Resistance (Ω) or voltage drop..... :	(See appended table 5.6.6)	P
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm ²)..... :		N/A
	Class II with functional earthing marking :	Class I	N/A
	Appliance inlet cl & cr (mm)..... :		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current	(See appended table 5.2.2.2 or 5.7.4)	P
5.7.2.2	Measurement of voltage		P
5.7.3	Equipment set-up, supply connections and earth connections		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	Not exceed 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	No such 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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES	(See appended table 5.8)	N/A
	Air gap (mm).....		N/A

6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of PS and PIS		P
6.2.2	Power source circuit classifications	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials	(See appended table B.1.5, B2.6 and B.3)	P
	Combustible materials outside fire enclosure		N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method		P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		P
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		P
6.4.3.1	Supplementary safeguards		P
6.4.3.2	Single Fault Conditions	(See appended table B.4)	P
	Special conditions for temperature limited by fuse		P
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards	(See appended tables 4.1.2 and Clause G)	P
6.4.6	Control of fire spread in PS3 circuits		P
6.4.7	Separation of combustible materials from a PIS	Metal enclosure used	N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.2	Fire enclosure and fire barrier material properties	Metal enclosure used	P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties		N/A
	Openings dimensions (mm)..... :	No openings	N/A
6.4.8.3.4	Bottom openings and properties	No openings below a PIS and within 30mm cylinder extending indefinitely below the PIS.	N/A
	Openings dimensions (mm)..... :		N/A
	Flammability tests for the bottom of a fire enclosure	(See Clause S.3)	N/A
	Instructional Safeguard..... :		N/A
6.4.8.3.5	Side openings and properties		P
	Openings dimensions (mm)..... :	Not exceed 2 mm in width	P
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c) :		N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating :	Metal enclosure used	P
6.4.9	Flammability of insulating liquid..... :		N/A
6.5	Internal and external wiring		P
6.5.1	General requirements	(See appended table 4.1.2)	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
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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	MS1 classification for sharp edges and corners	P
	Instructional Safeguard.....:		N/A
8.4.2	Sharp edges or corners		N/A
8.5	Safeguards against moving parts		P
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	All plastic fan blades of DC fans classified as MS1	N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard.....:		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m).....:		N/A
	Space between end point and nearest fixed mechanical part (mm)		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts		N/A
8.5.4.3.3	Disconnection from the supply		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	MS3 classification for equipment mass	P
	Instructional safeguard.....:		N/A
8.6.2	Static stability		P
8.6.2.2	Static stability test		P
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm)	No wheels used	—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test		N/A
8.7	Equipment mounted to wall, ceiling or other structure		N/A
8.7.1	Mount means type		N/A
8.7.2	Test methods		N/A
	Test 1, additional downwards force (N).....:		N/A
	Test 2, number of attachment points and test force (N).....:		N/A
	Test 3 Nominal diameter (mm) and applied torque (Nm).....:		N/A
8.8	Handles strength		P
8.8.1	General		P
8.8.2	Handle strength test		P
	Number of handles.....:	4	—
	Force applied (N)	Max. 981	—
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test	No wheels or casters attachment	N/A
8.10	Carts, stands and similar carriers		N/A
8.10.1	General	No carts, stands or similar carriers	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.10.2	Marking and instructions.....:		N/A
8.10.3	Cart, stand or carrier loading test		N/A
	Loading force applied (N)		N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Force applied (N)		—
8.10.6	Thermoplastic temperature stability		N/A
8.11	Mounting means for slide-rail mounted equipment (SRME)		N/A
8.11.1	General	No such equipment	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)	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	No safeguard required	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	(See appended table 9.6)	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		P
	Lasers		—
	Lamps and lamp systems	RS1: LEDs (only used for indicating light display)	—
	Image projectors		—
	X-Ray		—
	Personal music player		—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply	No laser radiation	N/A
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		P
10.4.1	General requirements	RS1	P
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure	(See Annex C)	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)	(See appended tables B.3 & B.4)	—
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
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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
B.2.3	Supply voltage and tolerances		P
B.2.5	Input test	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General		P
B.3.2	Covering of ventilation openings	(See appended table B.3)	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	(See appended table B.3)	P
B.3.6	Reverse battery polarity		N/A
B.3.7	Audio amplifier abnormal operating conditions	(See appended table B.3)	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	(See appended table B.3)	P
B.4	Simulated single fault conditions		P
B.4.1	General		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.4.2	Temperature controlling device		N/A
B.4.3	Blocked motor test	(See appended table B.4)	P
B.4.4	Functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.4)	P
B.4.6	Short circuit or disconnection of passive components	(See appended table B.4)	P
B.4.7	Continuous operation of components	Not intermittent or short-time operation equipment	N/A
B.4.8	Compliance during and after single fault conditions :	(See appended table B.4)	P
B.4.9	Battery charging and discharging under single fault conditions	(See Annex M)	N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements	No UV radiation in the equipment	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
D	TEST GENERATORS		P
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		P
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Electrical energy source classification for audio signals		N/A
	Maximum non-clipped output power (W)..... :		—
	Rated load impedance (Ω) :		—
	Open-circuit output voltage (V)..... :		—
	Instructional safeguard :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	(See Table B.1.5)	N/A
E.3	Audio amplifier abnormal operating conditions	(See Table B.3, B.4)	N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language	English version checked	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Located on top and rear enclosure of equipment	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification		P
F.3.2.2	Model identification	PRO 3, PRO 6, PRO 9, PRO X	P
F.3.3	Equipment rating markings	Provided	P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of the supply voltage	~ used for AC	P
F.3.3.4	Rated voltage.....	100-240V	P
F.3.3.5	Rated frequency	50/60Hz	P
F.3.3.6	Rated current or rated power.....	500W (x3)	P
F.3.3.7	Equipment with multiple supply connections		P
F.3.4	Voltage setting device	No voltage setting device	N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings	No mains appliance outlet and socket-outlet	N/A
F.3.5.2	Switch position identification marking.....		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.3	Replacement fuse identification and rating markings :	"F1 T8AH 250V" marked on PCB near fuse inside power supply modules, it is replaced by the skilled person.	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		P
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I equipment		P
F.3.6.1.1	Protective earthing conductor terminal :	Approved AC inlets used	P
F.3.6.1.2	Protective bonding conductor terminals :	 used in power supply modules	P
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 :	IP20, no marking is needed	N/A
F.3.8	External power supply output marking :		N/A
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings		P
F.4	Instructions		P
	a) Information prior to installation and initial use		P
	b) Equipment for use in locations where children not likely to be present		N/A
	c) Instructions for installation and interconnection		P
	d) Equipment intended for use only in restricted access area		N/A
	e) Equipment intended to be fastened in place		N/A
	f) Instructions for audio equipment terminals		N/A
	g) Protective earthing used as a safeguard		P
	h) Protective conductor current exceeding ES2 limits		N/A
	i) Graphic symbols used on equipment		P
	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.5	Instructional safeguards		P
G	COMPONENTS		P
G.1	Switches		P
G.1.1	General		P
G.1.2	Ratings, endurance, spacing, maximum load	Approved DC switch used	P
G.1.3	Test method and compliance		N/A
G.2	Relays		N/A
G.2.1	Requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supplying power to other equipment		N/A
G.2.4	Test method and compliance		N/A
G.3	Protective devices		P
G.3.1	Thermal cut-offs		N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links		N/A
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A
G.3.2.2	Test method and compliance		N/A
G.3.3	PTC thermistors		N/A
G.3.4	Overcurrent protection devices	Approved fuse provided in power supply modules	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..... :	(See appended table B.4)	N/A
G.4	Connectors		P
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration..... :	Approved AC inlets used.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	Connectors for other functions with a shape that insertion into a mains connector or socket is unlikely to occur.	P
G.5	Wound components		P
G.5.1	Wire insulation in wound components		N/A
G.5.1.2	Protection against mechanical stress		N/A
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.....	The isolation transformers meets the requirements given in G.5.3.2 and G.5.3.3	P
	Position	TR1, TR3	P
	Method of protection	Electronic protection	P
G.5.3.2	Insulation		P
	Protection from displacement of windings.....	By bobbin	—
G.5.3.3	Transformer overload tests	(See appended table B.3)	P
G.5.3.3.1	Test conditions		P
G.5.3.3.2	Winding temperatures	Maximum temperatures of windings did not exceed the limits given in Table G.3. During the test, the transformer did not emit flames or molten metal.	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	Approved DC fans used	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 :	(See appended Table B.3)	N/A
G.5.4.6.3	Alternative method		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage :		—
G.6	Wire Insulation		P
G.6.1	General	Secondary wires of DC fans and LED indicator inside power supply module were wrapped by min. 0.4mm heat-shrinkable tube. Fly wires of transformers (TR1, TR3) inside power supply module were wrapped by min. 0.4mm insulation tube.	P
G.6.2	Enamelled winding wire insulation		N/A
G.7	Mains supply cords		P
G.7.1	General requirements		P
	Type :	(See appended table 4.1.2)	—
G.7.2	Cross sectional area (mm ² or AWG) :	Min. 18AWG or 0.75mm ²	P
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords	Detachable power supply cord used	N/A
G.7.3.2	Cord strain relief		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		P
G.8.2	Safeguards against fire		P
G.8.2.1	General	Metal enclosure used	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	No such component	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	No such resistors	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.10.6	Overload test		N/A
G.11	Capacitors and RC units		P
G.11.1	General requirements	Approved X-cap. and Y-cap. used (See appended table 4.1.2)	P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	Optocouplers		P
	Optocouplers comply with IEC 60747-5-5 with specifics	(See appended table 4.1.2)	P
	Type test voltage $V_{ini,a}$	Equal to the appropriate test voltage in 5.4.9.1	—
	Routine test voltage, $V_{ini,b}$	Equal to the appropriate test voltage in 5.4.9.2	—
G.13	Printed boards		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
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	(See Clause G.13)	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.15.3	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
G.16.1	Condition for fault tested is not required		N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... :		—
	Mains voltage that impulses to be superimposed on :		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test :		—
G.16.3	Capacitor discharge test..... :		N/A
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling signal		N/A
H.3.1.1	Frequency (Hz) :		—
H.3.1.2	Voltage (V) :		—
H.3.1.3	Cadence; time (s) and voltage (V) :		—
H.3.1.4	Single fault current (mA):..... :		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
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		N/A
J.1	General		N/A
	Winding wire insulation :		—
	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	(See separate test report)	—
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Instructional safeguard		N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
K.5.1	Under single fault condition		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm).....		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm).....		N/A
	Electric strength test before and after the test of K.7.2	(See appended table 5.4.9)	N/A
K.7.2	Overload test, Current (A)		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		P
L.1	General requirements		P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single-phase equipment		P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		P
L.8	Multiple power sources		P
	Instructional safeguard	Provided	P
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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	(See appended table M.3)	N/A
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance :	(See appended table M.4.2)	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%) :		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate :		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%) :		N/A
M.7.4	Marking :		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s)..... :		—
M.8.2.3	Correction factors :		—
M.8.2.4	Calculation of distance d (mm) :		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
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 :	Both zinc on iron used	—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Value of X (mm)..... :	Considered	—
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) :	Complied IP3X	—
P.2.3	Safeguards against the consequences of entry of a foreign object		N/A
P.2.3.1	Safeguard requirements		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment	No ES3/PS3 circuits located within the area by a 5° vertical projection	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	No such liquids	N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts		N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T _c (°C)		—
	Duration (weeks)..... :		—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		N/A
Q.1	Limited power sources		N/A
Q.1.1	Requirements		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output		N/A
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9		N/A
Q.1.2	Test method and compliance	(See appended table Q.1)	N/A
	Current rating of overcurrent protective device (A)		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A)		N/A
	Current limiting method		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General		N/A
R.2	Test setup		N/A
	Overcurrent protective device for test..... :		—
R.3	Test method		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Cord/cable used for test		—
R.4	Compliance		N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
S.3	Flammability test for the bottom of a fire enclosure		N/A
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 enclosures and fire barrier materials of equipment where the steady state power exceeding 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
T	MECHANICAL STRENGTH TESTS		P
T.1	General		P
T.2	Steady force test, 10 N	(See appended table T.2)	P
T.3	Steady force test, 30 N	(See appended table T.3)	N/A
T.4	Steady force test, 100 N	(See appended table T.4)	N/A
T.5	Steady force test, 250 N	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Fall test		P
	Swing test		P
T.7	Drop test :	(See appended table T.7)	N/A
T.8	Stress relief test..... :	(See appended table T.8)	N/A
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)	No telescoping or rod antennas	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		P
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
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	(See appended table X)	N/A
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General	For indoor use only	N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		N/A
Y.3	Resistance to corrosion		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	(See Annex P.4)	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
Y.6.2	Impact test :	(See Table T.6)	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) ³⁾	Type ¹⁾	Additional Info ²⁾	
264VAC	All primary circuits of power supply module	Normal	--	--	--	--	ES3 (Declared)
		Abnormal: Over load	--	--	--	--	
		Single fault – SC: D1	--	--	--	--	
264VAC	*TR1 secondary pin FA to pin FB after D38 of power supply module (+3.3V output)	Normal	3.5Vrms	--	SS	DC	ES1
		Abnormal: Over load	Max. 3.5Vrms	--	SS	DC	
		Single fault – SC: D38	0V	--	--	--	
264VAC	*TR1 secondary pin 13/14 to pin 15/16 after D40 of power supply module (+5V output)	Normal	5.1Vrms	--	SS	DC	ES1
		Abnormal: Over load	Max. 5.1Vrms	--	SS	DC	
		Single fault – SC: D40	0V	--	--	--	
264VAC	*TR1 secondary pin 9/10 to pin 11/12 after D32 of power supply module (+12V output)	Normal	12.2Vrms	--	SS	DC	ES1
		Abnormal: Over load	Max. 12.2Vrms	--	SS	DC	
		Single fault – SC: D32	0V	--	--	--	
264VAC	*TR3 secondary pin 2 pin 4 after D11 of power supply module (V6: +5VSB output)	Normal	5.3Vrms	--	SS	DC	ES1
		Abnormal: Over load	Max. 5.3Vrms	--	SS	DC	
		Single fault – SC: D11	0V	--	--	--	
264VAC	DC-DC convert CON2 output	Normal	48.1Vrms	--	SS	DC	ES1
		Abnormal: Over load	Max. 48.1Vrms	--	SS	DC	
		Single fault – SC: D4	0V	--	--	--	
264VAC	DC-DC convert CON3 pin 4-2	Normal	18.0Vrms	--	SS	DC	ES1
		Abnormal --	Max. 18.0Vrms	--	SS	DC	
		Single fault – SC: D1	0V	--	--	--	
264VAC	DC-DC convert	Normal	18.0Vrms	--	SS	DC	ES1

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
	CON3 pin 1-2	Abnormal --	Max. 18.0Vrms	--	SS	DC	
		Single fault – SC: D3	0V	--	--	--	
264VAC	Accessible parts to earth	Normal	--	0.38 mApk	SS	60Hz	ES1
		Abnormal --	--	--	--	--	
		Single fault – earth fault	--	*2.04 mApk	SS	60Hz	
Supplementary information: SC=Short Circuit, OC=Open Circuit							
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.							
3) Test combined in AC switch ON/OFF condition, normal and reverse polarity are also considered.							
4) * means the three power supply modules were connected to the same AC power source during test.							

5.4.1.8	TABLE: Working voltage measurement				P
Location		RMS voltage (V)	Peak voltage (V)	Frequency (kHz)	Comments
Primary to secondary of transformer TR1 (max.)		423	850	112	--
Primary to secondary of transformer TR3 (max.)		324	592	100	--
Primary to secondary of Optocoupler OP1, OP2 (max.)		240	388	0.06	--
Primary to secondary of Y-Cap C10, C2, C3, C15, C23, C63		240	384	0.06	--
Supplementary information:					

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			P
Allowed impression diameter (mm)	≤ 2 mm			—
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)
Output terminal of power supply module	TORAY INDUSTRIES INC	Min.0.4	125	0.8

IEC 62368-1				
Clause	Requirement + Test		Result - Remark	Verdict
Bobbin of inductor L15	--	Min.0.7	125	1.1
Supplementary information: TR1, TR3 bobbin is phenolic material, no test required.				

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⁾ (kHz)	Required cl (mm)	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)
L to N before fuse (BI)	340	240	<30	1.5	4.0	--	2.4	4.0
Across fuse F1 terminals (BI)	340	240	<30	1.5	2.5	--	2.4	4.0
Live parts of power supply board to metal enclosure (BI)	340	240	<30	1.5	5.0	--	2.4	5.0
Primary components to secondary lead wires (RI)	340	240	<30	1.5	8.0	--	2.4	8.0
Y-Cap. C2, C3, C15, C23 primary to metal screw (BI)	340	240	<30	1.5	2.0	--	2.4	3.0
Optocoupler OP1, OP2 primary to secondary (RI)	388	240	<30	3.0	5.7	--	2.4	5.7
Y-Cap. C10 primary to secondary (RI)	384	240	<30	3.0	7.0	--	2.4	7.0
TR1 primary to secondary under PCB trace (RI)	850	423	*	3.0	10.0	--	8.6	10.0
TR1 primary to secondary (RI)	850	423	*	3.0	10.0	--	8.6	10.0
TR1 primary to core (BI)	850	423	*	1.5	4.5	--	4.3	4.5
TR1 secondary to core (SI)	850	423	*	1.5	4.5	--	4.3	4.5
TR3 primary to secondary under PCB trace (RI)	592	324	*	3.0	9.2	--	6.6	9.2
TR3 primary to secondary (RI)	592	324	*	3.0	7.5	--	6.6	7.5
TR3 primary to core (BI)	592	324	*	1.5	3.5	--	3.3	3.5
TR3 secondary to core (SI)	592	324	*	1.5	4.0	--	3.3	4.0
Primary supplementary insulated fly wires of TR3 to secondary components/circuits (BI)	340	240	<30	1.5	2.7	--	2.4	3.0
Secondary supplementary insulated fly wires of TR1 to primary components/circuits (BI)	340	240	<30	1.5	5.0	--	2.4	5.0

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
Primary components to accessible parts (earthed) (BI)	340	240	<30	1.5	3.0	--	2.4	3.0
Supplementary information: 1) Only for frequency above 30 kHz; 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied); 3) Provide Material Group IIIa/IIIb; 4) BI: basic insulation; SI: supplementary insulation; DI: double insulation; RI: reinforced insulation; 5) Unit was evaluated for altitude up to 2000m above sea level; 6) * means that the frequencies above and below 30 kHz. Limit from Table 14 based on the required withstand voltage (2500V _{peak}), which is higher than Table 10 and Table 11; 7) TR1, TR3 ferrite core was considered as middle part. 8) Y-cap. C10, C2, C3, 15 and C23 were reliable fixed in position by glue. 9) Secondary wires of DC fans and LED indicator inside power supply module were wrapped by min. 0.4mm heat-shrinkable tube. 10) Fly wires of transformers (TR1, TR3) inside power supply module were wrapped by min. 0.4mm insulation tube.								

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)	
Optocoupler (OP1, OP2)	388	Reinforced insulation	0.4	Min. 0.4	
Heat shrinkable tube wrapped on secondary wire of DC fans and LED indicator of power supply modules	340	Supplementary insulation	0.4	Min. 0.4	
Insulation tube wrapped on Fly wires of transformers (TR1, TR3) inside power supply modules	Max. 850	Supplementary insulation	0.4	Min. 0.4	
Mylar sheet under/above PCB of power supply module	340	Supplementary insulation	0.4	Min. 0.4	
Supplementary information:					

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz					P
Insulation material	E _P	Frequency (kHz)	K _R	Thickness d (mm)	Insulation	V _{PW} (V _{pk})
Transformer TR1 bobbin (Phenolic)	17	112	0.53	0.75	Reinforced insulation	850
Transformer TR3 bobbin (Phenolic)	17	100	0.71	0.75	Reinforced insulation	592

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

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
Functional:				
--	--	--	--	--
Basic/supplementary:				
L to N (Fuse disconnected)	DC	2500	No	
L/N to metal enclosure	DC	2500	No	
Mylar sheet around of power supply board	DC	2500	No	
Heat shrinkable tube wrapped on secondary wire of DC fans and LED indictor of power supply modules	DC	2500	No	
Insulation tube wrapped on fly wires of transformers (TR3) inside power supply modules	DC	2500	No	
Insulation tube wrapped on Fly wires of transformers (TR1) inside power supply modules	DC	2500	No	
TR1 primary to core	DC	2500	No	
TR1 secondary to core	DC	2500	No	
TR3 primary to core	DC	2500	No	
TR3 secondary to core	DC	2500	No	
Reinforced:				
L/N to secondary terminals	DC	4000	No	
Transformer TR1: primary to secondary	DC	4000	No	
Transformer TR3: primary to secondary	DC	4000	No	
One layer insulation tape used on transformer TR1, TR3	DC	4000	No	
Routine Tests:				
--	--	--	--	--
Supplementary information:				
All alternative sources of insulation tube of TR1 and TR3 were considered.				

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

5.5.2.2	TABLE: Stored discharge on capacitors					P
Location	Supply voltage (V)	Operating and fault condition ¹⁾	Switch position	Measured voltage (Vpk)	ES Class	
Phase to Neutral	264	Normal	--	26	ES1	
Phase to Neutral	264	OC: R1	--	38	ES1	
Phase to Earth	264	Normal	--	42	ES1	
Neutral to Earth	264	Normal	--	36	ES1	
Supplementary information:						
X-capacitors installed for testing: C1=1uF, C5=0.47uF (for each power supply module)						
☒ bleeding resistor rating: R1=R15= 470kΩ (in parallel, for each power supply module)						
☐ ICX:						
1) Normal operating condition (e.g., normal operation, or open fuse); SC= short circuit, OC= open circuit						
2) Test Location: Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth						

5.6.6	TABLE: Resistance of protective conductors and terminations				P
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
AC inlet (E pin) to the furthest metal enclosure	40	2	--	0.025	
AC inlet (E pin) to the furthest metal enclosure	32	2	--	0.023	
Supplementary information: The protective current rating does not exceed 25A.					

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 (mA _{rms} or mA _{pk})	Freq. (Hz)	
Output terminal*	Normal Condition	264	--	0.38 mA _{pk}	60	ES1
	Abnormal Condition: overload	264	--	0.38 mA _{pk}	60	ES1
	Fault Condition: SC: C7 (fuse opened)	264	--	0.41 mA _{pk}	60	ES1
	Fault Condition: earth fault	264	--	2.04 mA _{pk}	60	ES1
Supplementary information:						

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

- 1) Abbreviation: SC= short circuit; OC= open circuit
2) * means the three power supply modules were connected to the same AC power source during test.

5.7.5	TABLE: Earthed accessible conductive part			P
Supply voltage (V)	264V			—
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	
Measured to earthed metal enclosure*	1	2.04mA _{pk}	--	
	2*	--	--	
	3	--	--	
	4	--	--	
	5	--	--	
	6	--	--	
	8	--	--	

Supplementary Information:

- [1] Supply voltage is the anticipated maximum Touch Voltage.
[2] Earthed neutral conductor [Voltage differences less than 1% or more].
[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3.
[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.
[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.
[6] * means the three power supply modules were connected to the same AC power source during test.

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

6.2.2	TABLE: Power source circuit classifications					P
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power ¹⁾ (W)	Time (S)	PS class

IEC 62368-1						
Clause	Requirement + Test	Result - Remark				Verdict
All primary circuits and +12VDC output of power supply module	Normal, abnormal, fault condition	--	--	--	--	PS3 (Declared)
Output of power supply module (+3.3VDC output)	Normal	3.03	11.3	34.2	>5s	PS2
Output of power supply module (+3.3VDC output)	Single fault – SC: D38	0	0	0	>3s	PS1
Output of power supply module (+5VDC output)	Normal	3.81	11.5	43.8	>5s	PS2
Output of power supply module (+5VDC output)	Single fault – SC: D40	0	0	0	>3s	PS1
Output of power supply module (V6: +5VSB output)	Normal	4.5	4.2	18.9	>5s	PS2
Output of power supply module (V6: +5VSB output)	Single fault – SC: D11	0	0	0	>3s	PS1
Output of power supply module (-12VDC output)	Normal	11.8	1.2	14.2	>3s	PS1
Output of power supply module (-12VDC output)	Single fault – SC: D34	0	0	0	>3s	PS1
Output of DC-DC convert (CON2 output)	Normal	45.8	0.6	27.5	>5s	PS2
Output of DC-DC convert (CON2 output)	Single fault – SC: D4	0	0	0	>3s	PS1
Output of DC-DC convert (CON3 output pin 4-2)	Normal	17.2	2.1	36.1	>5s	PS2
Output of DC-DC convert (CON3 output pin 4-2)	Single fault – SC: D1	0	0	0	>3s	PS1

IEC 62368-1						
Clause	Requirement + Test	Result - Remark				Verdict
Output of DC-DC convert (CON3 output pin 1-2)	Normal	17.2	2.1	36.1	>5s	PS2
Output of DC-DC convert (CON3 output pin 1-2)	Single fault – SC: D3	0	0	0	>3s	PS1
USB port for model PRO 9	Normal	3.2	1.0	3.2	>3s	PS1
USB port for model PRO 9	Single fault – SC: U120 pin 7-8	5.0	0.5	2.5	>3s	PS1
USB port for model PRO X	Normal	2.5	1.5	3.8	>3s	PS1
USB port for model PRO X	Single fault – SC: U120 pin 7-8	5.0	0.5	2.5	>3s	PS1
DC fan supply terminal of power supply module	Normal	11.65	3.0	34.5	>5s	PS2
DC fan supply terminal of power supply module	Single fault – SC: D48	12.1	0.12	1.45	>3s	PS1
DC fan supply terminal of power supply module	Single fault – SC: Q53 pin C-E	12.2	0.1	1.22	>3s	PS1
Supplementary information: Abbreviation: SC= short circuit; OC= open 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
All circuits of power supply board		> 50Vpk	--	> 15VA	Yes
Supplementary information:					
An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15.					

6.2.3.2	TABLE: Determination of resistive PIS			P
Location	Operating and fault condition	Dissipate power (W)	Arcing PIS?	

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
			Yes / No
All internal circuits	--	--	Yes
Supplementary information: Abbreviation: SC= short circuit; OC= open circuit			

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)..... :		# 90V /60Hz	# 264V /50Hz	--	--	—
Ambient temperature during test T_{amb} (°C) :		See below	See below	--	--	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
Appliances inlet (the middle one)		68	65	--	--	70
Input wire		77	72	--	--	105
Transformer TR1 winding		77	75	--	--	110
Transformer TR1 core		83	82	--	--	110
Transformer TR3 winding		73	72	--	--	110
Transformer TR3 core		71	69	--	--	110
Filter L15 coil		84	75	--	--	130

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Filter L16 coil	76	73	--	--	130
Filter L3 coil	94	85	--	--	130
E-cap. C11 Body	74	71	--	--	105
Y-Cap. C10 Body	76	75	--	--	125
Opto-coupler OP1 body (on the small board)	70	68	--	--	100
Opto-coupler OP1 body (on the mains power board)	76	75	--	--	100
X-Cap. C1 Body	77	73	--	--	100
Filter L5 coil near C35	73	72	--	--	130
Heatsink Connect D43 (near Fan wire)	67	66	--	--	Ref.
PWB near T1	81	73	--	--	130
PWB near T3	77	72	--	--	130
PWB near D11	74	73	--	--	130
PWB near D40	72	70	--	--	130
PWB near D32	70	69	--	--	130
TR2 coil	74	72	--	--	130
VDR VT1 Body	81	75	--	--	85
X-Cap. C5	76	72	--	--	100
Y-Cap. C3	73	72	--	--	125
Filter L8 coil	80	79	--	--	130
Filter L12 coil	73	71	--	--	130
DC Fan	75	70	--	--	Ref.
T1 winding (on DC-DC converter)	70	70	--	--	130
T1 core (on DC-DC converter)	69	69	--	--	130
L1 winding (on DC-DC converter)	78	77	--	--	130
L1 core (on DC-DC converter)	74	74	--	--	130
T3 coil (on DC-DC converter)	57	57	--	--	130
PWB near CPU	60	60	--	--	130
PWB near graphic card	75	75	--	--	130
PWB near U1	55	55	--	--	130
Ambient	45	45	--	--	--
Accessible parts:					
Metal handle (>10s and <1min)	29	30	--	--	51
LCD panel surface (>1s and <10s)	36	35	--	--	71
Metal enclosure near PSU (>1s and <10s)	32	31	--	--	60

IEC 62368-1							
Clause	Requirement + Test				Result - Remark		Verdict
Metal enclosure near inlet (>1s and <10s)		47	43	--	--	60	
mbient		25	25	--	--	--	
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. “#” means test for model: PRO 9, EUT supplied by 3 pcs power supply modules. The four USB ports with the most unfavourable loading 5VDC, 4.0A total.							

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V)..... :	# 90V /60Hz	# 264V /50Hz	--	--	—
	Ambient temperature during test T _{amb} (°C) :	See below	See below	--	--	—
	Maximum measured temperature T of part/at:	T (°C)				Allowed T _{max} (°C)
	Appliances inlet (the middle one)	67	63	--	--	70
	Input wire	80	73	--	--	105
	Transformer TR1 winding	80	79	--	--	110
	Transformer TR1 core	84	84	--	--	110
	Transformer TR3 winding	71	71	--	--	110
	Transformer TR3 core	69	70	--	--	110
	Filter L15 coil	97	78	--	--	130
	Filter L16 coil	77	73	--	--	130
	Filter L3 coil	97	89	--	--	130
	E-cap. C11 Body	73	71	--	--	105
	Y-Cap. C10 Body	77	78	--	--	125
	Opto-coupler OP1 body (on the small board)	67	67	--	--	100
	Opto-coupler OP1 body (on the mains power board)	76	76	--	--	100
	X-Cap. C1 Body	82	75	--	--	100
	Filter L5 coil near C35	74	74	--	--	130
	Heatsink Connect D43 (near Fan wire)	66	66	--	--	Ref.
	PWB near T1	77	71	--	--	130
	PWB near T3	72	69	--	--	130
	PWB near D11	72	73	--	--	130

IEC 62368-1							
Clause	Requirement + Test				Result - Remark		Verdict
PWB near D40	69	70	--	--			130
PWB near D32	72	72	--	--			130
TR2 coil	76	76	--	--			130
VDR VT1 Body	83	78	--	--			85
X-Cap. C5	77	72	--	--			100
Y-Cap. C3	72	71	--	--			125
Filter L8 coil	81	81	--	--			130
Filter L12 coil	71	71	--	--			130
DC Fan	73	70	--	--			Ref.
T1 winding (on DC-DC converter)	62	64	--	--			130
T1 core (on DC-DC converter)	60	61	--	--			130
L1 winding (on DC-DC converter)	68	69	--	--			130
L1 core (on DC-DC converter)	65	66	--	--			130
T3 coil (on DC-DC converter)	53	53	--	--			130
PWB near CPU	56	56	--	--			130
PWB near graphic card	66	66	--	--			130
PWB near U1	52	51	--	--			130
Ambient	45	45	--	--			--
Accessible parts:							
Metal handle (>10s and <1min)	32	31	--	--			51
LCD panel surface (>1s and <10s)	33	33	--	--			71
Metal enclosure near PSU (>1s and <10s)	30	29	--	--			60
Metal enclosure near Inlet (>1s and <10s)	46	42	--	--			60
Ambient	25	25	--	--			--
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. “#” means test for model: PRO 9, EUT supplied by 2 pcs power supply modules. The four USB ports with the most unfavourable loading 5VDC, 4.0A total.							

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

B.2.5		TABLE: Input test						P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
90	50	3.902	--	350.5	--	F1	3.902	Model: PRO 9 EUT supplied by 2 power supply modules. The four USB ports with the most unfavourable loading 5VDC, 4.0A total.
90	60	3.869	--	349.9	--	F1	3.869	
100	50	3.460	--	341.3	500 (x3)	F1	3.460	
100	60	3.476	--	342.3	500 (x3)	F1	3.476	
240	50	1.480	--	331.0	500 (x3)	F1	1.480	
240	60	1.492	--	331.5	500 (x3)	F1	1.492	
264	50	1.379	--	331.2	--	F1	1.379	
264	60	1.380	--	331.7	--	F1	1.380	
90	50	3.819	--	341.2	--	F1	3.819	Model: PRO 6 EUT operated with 2 power supply unit. The four USB ports with the most unfavourable loading 5VDC, 4.0A total.
90	60	3.823	--	341.0	--	F1	3.823	
100	50	3.433	--	337.3	500 (x3)	F1	3.433	
100	60	3.423	--	336.3	500 (x3)	F1	3.423	
240	50	1.462	--	328.7	500 (x3)	F1	1.462	
240	60	1.484	--	329.2	500 (x3)	F1	1.484	
264	50	1.372	--	327.0	--	F1	1.372	
264	60	1.392	--	330.0	--	F1	1.392	
90	50	3.731	--	331.8	--	F1	3.731	Model: PRO 3 EUT operated with 2 power supply unit. The four USB ports with the most unfavourable loading 5VDC, 4.0A total.
90	60	3.753	--	333.5	--	F1	3.753	
100	50	3.370	--	330.6	500 (x3)	F1	3.370	
100	60	3.370	--	332.7	500 (x3)	F1	3.370	
240	50	1.398	--	312.6	500 (x3)	F1	1.398	
240	60	1.413	--	312.7	500 (x3)	F1	1.413	
264	50	1.309	--	312.5	--	F1	1.309	
264	60	1.330	--	312.8	--	F1	1.330	
90	50	3.723	--	341.5	--	F1	3.723	Model: PRO X EUT operated with 2 power supply unit. The four USB ports with the most unfavourable loading 5VDC, 4.0A total.
90	60	3.749	--	341.1	--	F1	3.749	
100	50	3.355	--	337.9	500 (x3)	F1	3.355	
100	60	3.365	--	337.9	500 (x3)	F1	3.365	
240	50	1.484	--	334.2	500 (x3)	F1	1.484	
240	60	1.502	--	333.5	500 (x3)	F1	1.502	
264	50	1.391	--	330.9	--	F1	1.391	
264	60	1.415	--	330.8	--	F1	1.415	
90	50	4.043	--	356.1	--	F1	4.043	Model: PRO 9 EUT operated with 3 power supply unit. The four USB ports
90	60	4.029	--	356.2	--	F1	4.029	
100	50	3.604	--	351.0	500 (x3)	F1	3.604	
100	60	3.604	--	350.5	500 (x3)	F1	3.604	

IEC 62368-1								
Clause		Requirement + Test				Result - Remark		Verdict
240	50	1.566	--	340.9	500 (x3)	F1	1.566	with the most unfavourable loading 5VDC, 4.0A total.
240	60	1.563	--	340.7	500 (x3)	F1	1.563	
264	50	1.475	--	336.8	--	F1	1.475	
264	60	1.457	--	335.9	--	F1	1.457	
90	50	3.913	--	347.8	--	F1	3.913	Model: PRO 6 EUT operated with 3 power supply unit. The four USB ports with the most unfavourable loading 5VDC, 4.0A total.
90	60	3.961	--	348.6	--	F1	3.961	
100	50	3.522	--	343.6	500 (x3)	F1	3.522	
100	60	3.535	--	343.9	500 (x3)	F1	3.535	
240	50	1.550	--	341.0	500 (x3)	F1	1.550	
240	60	1.574	--	339.9	500 (x3)	F1	1.574	
264	50	1.460	--	339.2	--	F1	1.460	
264	60	1.494	--	342.3	--	F1	1.494	
90	50	3.845	--	345.4	--	F1	3.845	Model: PRO 3 EUT operated with 3 power supply unit. The four USB ports with the most unfavourable loading 5VDC, 4.0A total.
90	60	3.872	--	346.8	--	F1	3.872	
100	50	3.416	--	334.2	500 (x3)	F1	3.416	
100	60	3.461	--	336.9	500 (x3)	F1	3.461	
240	50	1.384	--	330.7	500 (x3)	F1	1.384	
240	60	1.402	--	333.0	500 (x3)	F1	1.402	
264	50	1.314	--	325.2	--	F1	1.314	
264	60	1.326	--	328.6	--	F1	1.326	
90	50	3.857	--	352.0	--	F1	3.857	Model: PRO X EUT operated with 3 power supply unit. The four USB ports with the most unfavourable loading 5VDC, 4.0A total.
90	60	3.879	--	351.6	--	F1	3.879	
100	50	3.437	--	349.3	500 (x3)	F1	3.437	
100	60	3.451	--	349.0	500 (x3)	F1	3.451	
240	50	1.588	--	342.0	500 (x3)	F1	1.588	
240	60	1.620	--	342.3	500 (x3)	F1	1.620	
264	50	1.481	--	338.2	--	F1	1.481	
264	60	1.528	--	339.2	--	F1	1.528	
Supplementary information: minimum of two power supply modules shall be connected to AC mains for normal operation.								

B.3, B.4 TABLE: Abnormal operating and fault condition tests						P
Ambient temperature T _{amb} (°C)..... :					25 (except specified)	—
Power source for EUT: Manufacturer, model/type, outputrating .. :					--	—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
For power supply module						

IEC 62368-1						
Clause	Requirement + Test				Result - Remark	Verdict
Output (+3.3V)	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 5.1W to 118W; input current bouncing from 0.30 to 1.18A. No hazard, No damage.
Output (+5V)	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 5.0W to 116W; input current bouncing from 0.30 to 1.16A. No hazard, No damage.
Output (+12V)	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 5.0W to 116W; input current bouncing from 0.30 to 1.17A. No hazard, No damage.
Output (-12V)	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 5.5W to 117W; input current bouncing from 0.31 to 1.18A. No hazard, No damage.
Output (+5.3VSB)	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 4.9W to 113W; input current bouncing from 0.29 to 1.12A. No hazard, No damage.
D38	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.
D32	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.
D40	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.

IEC 62368-1						
Clause	Requirement + Test				Result - Remark	Verdict
D34	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.
D11	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.
IC1 pin 1-3	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.
OP1 pin (1-2) on the small board	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.
OP1 pin (3-4) on the small board	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.
OP1 pin (1) on the small board	OC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.
OP2 pin (1-2) on the small board	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.
OP2 pin (3-4) on the small board	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.
OP2 pin (1) on the small board	OC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.
OP1 pin (1-2) on the mains power board	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.
OP1 pin (3-4) on the mains power board	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.

IEC 62368-1						
Clause	Requirement + Test				Result - Remark	
OP1 pin (1) on the mains power board	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.
R19	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.
* IC2 pin (D-C)	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit damaged (F1 opened immediately, IC2 damaged), the others still working normal. No hazard.
* IC2 pin (D-S)	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit damaged (F1 opened immediately, IC2 damaged), the others still working normal. No hazard.
IC2 pin (C-S)	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit shutdown, the others still working normal. No hazard, No damage.
* T4 pin (D-G)	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit damaged (F1 opened immediately, T4 damaged), the others still working normal. No hazard.
* T3 pin (D-G)	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit damaged (F1 opened immediately, T3 damaged), the others still working normal. No hazard.
* C11	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit damaged (F1 opened immediately, D1 damaged), the others still working normal. No hazard.
* D51	SC	264VAC	10mins	F1	--	After short circuit, one power supply unit damaged (F1 opened immediately), the others still working normal. No hazard.

IEC 62368-1						
Clause	Requirement + Test				Result - Remark	Verdict
DC fan of internal power supply unit	Locked	264VAC	6 hrs	F1	--	Unit worked as normal, no damaged, no hazard, input current: 1.38A TR1: 64°C; TR3: 55°C; Enclosure: Max. 38°C; Ambient: 25°C
All DC fan of unit except DC fan in power supply module	Locked	264VAC	5 hrs 30 mins	F1	--	Unit worked as normal, no damaged, no hazard, input current: 1.38A TR1: 44°C; TR3: 33°C; Enclosure: Max. 27°C
Ventilation openings	Blocked	264VAC	4 hrs 40 min.	F1	--	Unit worked as normal, no damaged, no hazard, input current: 1.38A TR1: 50°C; TR3: 41°C; Enclosure: 38°C; Ambient: 25°C
USB port	SC	264VAC	10mins	F1	--	The USB port output shut down. The power supply unit working normal. No hazard, No damage.
TR1 pin 9-12 after D32	OL	264VAC	3hrs 59mins	F1	--	When Max. additional current Output is 9.0A, the temperature was stable, unit shutdown immediately when additional output current was over 9.0A, D32 damaged, no hazard. TR1: 70.5°C, TR3: 48.2°C, PCB near T1: 50.3°C, Metal enclosure: 27.1°C, Power switch body: 24.5°C Ambient: 23.3°C Input current: 0.713A max.

IEC 62368-1						
Clause	Requirement + Test				Result - Remark	Verdict
TR1 pin 13-15 after D40	OL	264VAC	1hrs 57mins	F1	--	When Max. additional current Output is 11.0A, the temperature was stable, unit shutdown immediately when additional output current was over 11.0A, D40 damaged, no hazard. TR1: 65.9°C, TR3: 54.7°C, PCB near T1: 48.5°C, Metal enclosure: 29.7°C, Power switch body: 28.3°C Ambient: 26.8°C Input current: 0.712A max.
TR1 pin FA to FB after D38	OL	264VAC	3hrs 10mins	F1	--	When Max. additional current Output is 11.3A, the temperature was stable, unit shutdown immediately when additional output current was over 11.3A, D38 damaged, no hazard. TR1: 66.8°C, TR3: 49.8°C, PCB near T1: 48.8°C, Metal enclosure: 29.8°C, Power switch body: 28.8°C Ambient: 24.8°C
TR3 pin 4 to pin 2 after D11	OL	264VAC	2hrs	F1	--	When Max. additional current Output is 4.0A, the temperature was stable, unit shutdown immediately when additional output current was over 4.0A, D11 damaged, no hazard. TR1: 53.7°C, TR3: 77.8°C, PCB near T1: 45.9°C, Metal enclosure: 27.6°C, Power switch body: 26.7°C Ambient: 25.3°C Input current: 0.716A max.
For internal DC-DC convertor						

IEC 62368-1						
Clause	Requirement + Test				Result - Remark	Verdict
T1 Pin 2- 5	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 4.0W to 114W; input current bouncing from 0.24 to 1.10A. No hazard, No damage.
T1 Pin 3-4	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 4.5W to 113W; input current bouncing from 0.27 to 1.12A. No hazard, No damage.
T1 Pin 9-10	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 5.6W to 118W; input current bouncing from 0.26 to 1.18A. No hazard, No damage.
T1 Pin 9-11	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 4.8W to 115W; input current bouncing from 0.28 to 1.15A. No hazard, No damage.
T1 Pin 12-14	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 4.5W to 113W; input current bouncing from 0.27 to 1.13A. No hazard, No damage. Duration: 10 min.
T1 Pin 13-14	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 4.7W to 114W; the input current bouncing from 0.26 to 1.14A. No hazard, No damage.

IEC 62368-1						
Clause	Requirement + Test				Result - Remark	Verdict
T1 Pin 4-9	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 5.0W to 116W; input current bouncing from 0.29 to 1.16A. No hazard, No damage.
T2 Pin 1-3	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 6.1W to 119W; input current bouncing from 0.30 to 1.19A. No hazard, No damage.
T2 Pin 4-6	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 4.4W to 112W; input current bouncing from 0.23 to 1.12A. No hazard, No damage. Duration: 10 min.
C34	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 4.3W to 114W; input current bouncing from 0.22 to 1.15A. No hazard, No damage.
D1 Pin 2-3	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 5.9W to 118W; input current bouncing from 0.30 to 1.19A. No hazard, No damage.
C17	SC	264VAC	10mins	F1	--	After short circuit, The product oscillated. The input power bouncing from 5.1W to 118W; input current bouncing from 0.27 to 1.17A. No hazard, No damage.
Supplementary information: 1) OL: overload. SC: short circuit. OC: open circuit. 2) The Electric strength test conducted successfully after the completion of fault condition test.						

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
3) Transformer winding limited: 165°C, Metal enclosure limited: 70°C, Power button limited: 87°C.			
4) NB - No indication of dielectric breakdown; NH - No hazard.			

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						

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						N/A
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--	--
Supplementary Information:							

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Part/Location	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation
Top enclosure	Metal	Min. 0.9	Circular plane surface 30 mm in diameter	250	5	No damaged, no hazard
Bottom enclosure	Metal	Min. 0.9	Circular plane surface 30 mm in diameter	250	5	No damaged, no hazard
Sides enclosure	Metal	Min. 0.9	Circular plane surface 30 mm in diameter	250	5	No damaged, no hazard
All internal components/ wires	--	--	--	10	5	Clearance and creepage distances were not reduced below their required values
Supplementary information:						

T.6, T.9	TABLE: Impact test				P
Location/part	Material	Thickness (mm)	Height (mm)	Observation	
Top enclosure	Metal	Min. 0.9	1300	No damaged, no hazard	
Front enclosure	Metal	Min. 0.9	1300	No damaged, no hazard	
Sides enclosure	Metal	Min. 0.9	1300	No damaged, no hazard	
Supplementary information:					

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

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
T.8	TABLE: Stress relief test				N/A
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
--	--	--	--	--	--
Supplementary information:					

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⁾
Power supply system	MUSIC Group Macao Commercial Offshore Limited	MKT-PSU-3 (3 x MKT-PSU-2)	--	IEC/EN 62368-1	Tested within appliance
- Power supply module (3 pcs provided)	MUSIC Group Macao Commercial Offshore Limited	MKT-PSU-2	Input: 100-240VAC, 50-60Hz, Max. 7.8A; V1 output: +3.3VDC, 20A; V2 output: +5VDC, 20A; V3 output: +12VDC, 20A; V5 output: -12VDC, 1.0A; V6 output: +5VDC, 3.0A	IEC/EN 62368-1	Tested within appliance
Components used in power supply module					
Appliance inlet	Schurter AG	1061	AC 250V, min. 10A; 125VAC, min. 15A, C14	IEC/EN 60320-1, UL 498 CSA-C22.2 No. 42	VDE, UL
(Alternative)	Interchangeable	Interchangeable	AC 250V, min. 10A; 125VAC, min. 15A, C14	IEC/EN 60320-1, UL 498 CSA-C22.2 No. 42	VDE, UL
Mains fuse-link (F1)	Cooper Bussmann LLC	S505	AC250V, T8AH	IEC/EN 60127, UL 248-1, UL 248-14, CSA-C22.2 No. 248.1 CSA-C22.2 No. 248.14	VDE, UL
(Alternative)	Littelfuse Inc	215	AC250V, T8AH	IEC/EN 60127, UL 248-1, UL 248-14, CSA-C22.2 No. 248.1 CSA-C22.2 No. 248.14	VDE, UL
X2 capacitor (C1)	Shenzhen Jinghao Capacitor Co., Ltd.	CBB62B	Min. AC 250V, max. 1µF, X2, 110°C, 40/110/56	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL

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⁾
(Alternative)	Xiamen Wanming Electronics Co., Ltd.	MPX	Min. AC 275V, max. 1µF, X2, min. 100°C, 40/100/56	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
(Alternative)	Carli Electronics Co Ltd	MPX	Min. AC 275V, max. 1µF, X2, min. 100°C, 40/100/21	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
(Alternative)	Interchangeable	Interchangeable	Min. AC 250V, max. 1µF, min. 100°C, X2	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
X2 capacitor (C5)	Shenzhen Jinghao Capacitor Co., Ltd.	CBB62B	Min. AC 250V, max. 0.47µF, X2, 110°C, 40/110/56	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
(Alternative)	Xiamen Wanming Electronics Co., Ltd.	MPX	Min. AC 275V, max. 0.47µF, X2, min. 100°C, 40/100/56	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
(Alternative)	Carli Electronics Co Ltd	MPX	Min. AC 275V, max. 0.47µF, X2, min. 100°C, 40/100/21	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
(Alternative)	Interchangeable	Interchangeable	Min. AC 250V, max. 0.47µF, min. 100°C, X2	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
Y capacitor (C2, C3, C15, C23)	Xiamen Wanming Electronics Co., Ltd.	HM	Y2, min. AC 250V, 125°C, max. 2200 pF, 25/125/21 or 40/125/21	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
(Alternative)	Vishay Electronic GmbH	WYO	Y2, min. AC 250V, 125°C, max. 2200 pF, 40/125/21	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL

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⁾
(Alternative)	Dongguan Easy-gather Electronic Co., Ltd.	DCF	Y2, min. AC 250V, 125°C, max. 2200 pF, 40/125/56	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
(Alternative)	Welson Industrial Co., Ltd.	KL	Y2, min. AC 250V, 125°C, max. 2200 pF, 55/125/21	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
(Alternative)	Interchangeable	Interchangeable	Y2, min. AC 250V, min. 125°C, max. 2200 pF	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
Y capacitor (C63)	Xiamen Wanming Electronics Co., Ltd.	HM	Y2, min. AC 250V, 125°C, max. 1000 pF, 25/125/21 or 40/125/21	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
(Alternative)	Vishay Electronic GmbH	WYO	Y2, min. AC 250V, 125°C, max. 1000 pF, 40/125/21	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
(Alternative)	Dongguan Easy-gather Electronic Co., Ltd.	DCF	Y2, min. AC 250V, 125°C, max. 1000 pF, 40/125/56	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
(Alternative)	Welson Industrial Co., Ltd.	KL	Y2, min. AC 250V, 125°C, max. 1000 pF, 55/125/21	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
(Alternative)	Interchangeable	Interchangeable	Y2, min. AC 250V, min. 125°C, max. 1000 pF	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
Y capacitor (C10)	Xiamen Wanming Electronics Co., Ltd.	HM	Y2, min. AC 250V, 125°C, max. 1000 pF, 25/125/21 or 40/125/21	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL

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⁾
(Alternative)	Vishay Electronic GmbH	WYO	Y2, min. AC 250V, 125°C, max. 1000 pF, 40/125/21	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
(Alternative)	Dongguan Easy-gather Electronic Co., Ltd.	DCF	Y2, min. AC 250V, 125°C, max. 1000 pF, 40/125/56	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
(Alternative)	Welson Industrial Co., Ltd.	KL	Y2, min. AC 250V, 125°C, max. 1000 pF, 55/125/21	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
(Alternative)	Interchangeable	Interchangeable	Y2, min. AC 250V, min. 125°C, max. 1000 pF	IEC/EN 60384-14, UL 60384-14, CAN/CSA-E60384-1	VDE, UL
PCB	Interchangeable	Interchangeable	Min. V-0, 130°C	UL 796, UL 94	UL
Transformer (TR1)	GCLALLIANCE ELECTRONICS CO LIMITED	BL4000042	Class B, insulation system: GCL-130	IEC/EN 62368-1	Tested in appliance
- Bobbin	Chang Chun Plastics Co., Ltd	T375HF	V-0, 150°C	UL 94	UL
- Magnet wire	DONG GUAN YIDA INDUSTRIAL CO LTD	xUEW/155	155°C	UL 1446	UL
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Insulation tape	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX*	130°C	UL 510A	UL

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⁾
- Margin tape	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-19-02-40 (c)(d)	130°C	UL 510A	UL
- Tube	Great Holding Industrial Co Ltd	TFT	200°C, 300V, Min. thickness 0.4mm	UL 224	UL
- Varnish	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	130°C	UL 1446	UL
Transformer (TR1) (Alternative)	Hui Zhou Show- Grand Electronics Co., Ltd.	SG-0864	Class B, insulation system: SBI5.1	IEC/EN 62368-1	Tested in appliance
- Bobbin	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C	UL 94	UL
- Magnet wire	HUIZHOU CITY DENGGAODA ELECTROTECH CO LTD	X UEWF	130°C	UL 1446	UL
(Alternative)	SHENZHEN CHENGWEI INDUSTRY CO LTD	(x)UEW-F-(&)-(*)	155°C	UL 1446	UL
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Insulation tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 (b)	130°C	UL 510A	UL
- Margin tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	44-T (a)	130°C	UL 510A	UL
- Tube	Great Holding Industrial Co Ltd	TFT	200°C, 300V, Min. thickness 0.4mm	UL 224	UL

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⁾
(Alternative)	SHENZHEN WOER HEAT- SHRINKABLE MATERIAL CO LTD	WST-600	150°C, 600V, Min. thickness 0.4mm	UL 224	UL
- Varnish	JOHN C DOLPH CO	BC-346A	Min. 130°C	UL 1446	UL
Filter (TR2)	GCLALLIANCE ELECTRONICS CO LIMITED	LC1400024	130°C	IEC/EN 62368-1	Tested in appliance
- Magnet wire	DONG GUAN YIDA INDUSTRIAL CO LTD	xUEW/130	130°C	UL 1446	UL
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Varnish	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	130°C	UL 1446	UL
Filter (TR2) (Alternative)	Hui Zhou Show- Grand Electronics Co., Ltd.	SG-0872	130°C	IEC/EN 62368-1	Tested in appliance
- Magnet wire	HUIZHOU CITY DENGGAODA ELECTROTECH CO LTD	X UEWF	130°C	UL 1446	UL
(Alternative)	SHENZHEN CHENGWEI INDUSTRY CO LTD	(x)UEW-F-(&)-(*)	130°C	UL 1446	UL
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Varnish	JOHN C DOLPH CO	BC-346A	Min. 130°C	UL 1446	UL

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⁾
Transformer (TR3)	GCLALLIANCE ELECTRONICS CO LIMITED	BL1600100	Class B, insulation system: GCL- 130	IEC/EN 62368-1	Tested in appliance
- Bobbin	Chang Chun Plastics Co., Ltd	T375HF	V-0, 150°C	UL 94	UL
- Magnet wire	DONG GUAN YIDA INDUSTRIAL CO LTD	xUEW/155	155°C	UL 1446	UL
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Insulation tape	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX*	130°C	UL 510A	UL
- Margin tape	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-19-02-40 (c)(d)	130°C	UL 510A	UL
- Tube	Great Holding Industrial Co Ltd	TFT	200°C, 300V, Min. thickness 0.4mm	UL 224	UL
- Varnish	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	130°C	UL 1446	UL
Transformer (TR3) (Alternative)	Hui Zhou Show- Grand Electronics Co., Ltd.	SG-0865	Class B, insulation system: SBI5.1	IEC/EN 62368-1	Tested in appliance
- Bobbin	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C	UL 94	UL
- Magnet wire	HUIZHOU CITY DENGGAODA ELECTROTECH CO LTD	X UEWF	130°C	UL 1446	UL

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⁾
(Alternative)	SHENZHEN CHENGWEI INDUSTRY CO LTD	(x)UEW-F-(&)-(*)	155°C	UL 1446	UL
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Insulation tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 (b)	130°C	UL 510A	UL
- Margin tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	44-T (a)	130°C	UL 510A	UL
- Tube	Great Holding Industrial Co Ltd	TFT	200°C, 300V, Min. thickness 0.4mm	UL 224	UL
(Alternative)	SHENZHEN WOER HEAT- SHRINKABLE MATERIAL CO LTD	WST-600	150°C, 600V, Min. thickness 0.4mm	UL 224	UL
- Varnish	JOHN C DOLPH CO	BC-346A	Min. 130°C	UL 1446	UL
Filter (L15)	Hui Zhou Show- Grand Electronics Co., Ltd.	SG-0876	130°C	IEC/EN 62368-1	Tested in appliance
- Bobbin	TORAY INDUSTRIES INC	1494	V-0, 110°C	UL 94	UL
- Magnet wire	HUIZHOU CITY DENGGAODA ELECTROTECH CO LTD	X UEWF	130°C	UL 1446	UL
(Alternative)	SHENZHEN CHENGWEI INDUSTRY CO LTD	(x)UEW-F-(&)-(*)	155°C	UL 1446	UL

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⁾
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Insulation tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 (b)	130°C	UL 510A	UL
- Varnish	JOHN C DOLPH CO	BC-346A	Min. 130°C	UL 1446	UL
Filter (L15) (Alternative)	GCLALLIANCE ELECTRONICS CO LIMITED	LC2500062	130°C	IEC/EN 62368-1	Tested in appliance
- Bobbin	Changchun Plastics Co., Ltd	4130	V-0, 140°C	UL 94	UL
- Magnet wire	DONG GUAN YIDA INDUSTRIAL CO LTD	xUEW/155	155°C	UL 1446	UL
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Insulation tape	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX*	130°C	UL 510A	UL
- Varnish	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	130°C	UL 1446	UL
Filter (L16)	Hui Zhou Show- Grand Electronics Co., Ltd.	SG-0877	130°C	IEC/EN 62368-1	Tested in appliance
- Magnet wire	HUIZHOU CITY DENGGAODA ELECTROTECH CO LTD	X UEWF	155°C	UL 1446	UL

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⁾
(Alternative)	SHENZHEN CHENGWEI INDUSTRY CO LTD	(x)UEW-F-(&)-(*)	155°C	UL 1446	UL
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Varnish	JOHN C DOLPH CO	BC-346A	Min. 130°C	UL 1446	UL
- Base board	Interchangeable	Interchangeable	Min.V-2, min. 130°C	UL 94	UL
Filter (L16) (Alternative)	GCLALLIANCE ELECTRONICS CO LIMITED	LC2500063	130°C	IEC/EN 62368-1	Tested in appliance
- Magnet wire	DONG GUAN YIDA INDUSTRIAL CO LTD	xUEW/155	155°C	UL 1446	UL
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Base board	Interchangeable	Interchangeable	Min.V-2, min. 130°C	UL 94	UL
- Varnish	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	130°C	UL 1446	UL
Filter (L3)	Hui Zhou Show- Grand Electronics Co., Ltd.	SG-0866	130°C	IEC/EN 62368-1	Tested in appliance
- Magnet wire	TAI-I ELECTRIC WIRE & CABLE CO LTD	UEW, PEW	Min. 130°C	UL 1446	UL
(Alternative)	HUIZHOU CITY DENGGAODA ELECTROTECH CO LTD	X UEW	Min. 130°C	UL 1446	UL

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⁾
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Varnish	JOHN C DOLPH CO	BC-346A	Min. 130°C	UL 1446	UL
Filter (L3) (Alternative)	GCLALLIANCE ELECTRONICS CO LIMITED	LC2700059	130°C	IEC/EN 62368-1	Tested in appliance
- Magnet wire	DONG GUAN YIDA INDUSTRIAL CO LTD	xUEW/155	155°C	UL 1446	UL
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Varnish	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	130°C	UL 1446	UL
Opto-coupler OP1 (on the mains power board), OP1, OP2 (on the small board)	Everlight Electronics Co., Ltd.	EL817	Reinforced insulation, 5000 Vrms, Dti≥ 0.4 mm, 100°C	IEC/ EN60747-5- 5, UL 1577	VDE, UL
(Alternative)	Avago Technologies Pte Ltd.	CNY17-3	Reinforced insulation, 5000 Vrms, Dti≥ 0.4 mm, 110°C	IEC/ EN60747-5- 5, UL 1577	VDE, UL
(Alternative)	Fairchild Semiconductor Corp.	CNY17-3, 4N35	Reinforced insulation, 5000 Vrms, Dti≥ 0.4 mm, 100°C	IEC/ EN60747-5- 5, UL 1577	VDE, UL
(Alternative)	Vishay Semiconductor Gmbh	CNY17-3	Reinforced insulation, 5000 Vrms, Dti≥ 0.4 mm, 100°C	IEC/ EN60747-5- 5, UL 1577	VDE, UL
NTC (R18, R19)	Thinking Electronic Industrial Co., Ltd	SCK	10 ohm, 3.6W at 25°C	UL 1434	UL

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⁾	
(Alternative)	Interchangeable	Interchangeable	10 ohm, 3.6W at 25°C	UL 1434	UL	
Varistor (VT1)	Joyin Co., Ltd.	14N471K	Min. 300VAC, 85°C, coating: V-0, comply with annex Q of IEC 60950-1	IEC 61051-1, IEC 61051-2, UL 1449	VDE, UL	
(Alternative)	Thinking Electronic Industrial Co Ltd	TVR14471	Min. 300VAC, 85°C, coating: V-0, comply with annex Q of IEC 60950-1	IEC 61051-1, IEC 61051-2, UL 1449	VDE, UL	
DC Fan (2 pcs provided)	Nidec Servo Corp	V40S12BMA5	DC12V, 0.121A, min 5.71CFM	UL 507 EN 60950-1	UL, TUV RH	
(Alternative)	Sanyo Denki Co., Ltd.	109P0412M	DC12V, 0.045A, min 4.64CFM	UL 507 EN 60950-1	UL, TUV RH	
Insulation sheet (Between PCB and metal enclosure)	Mianyang Longhua Film Co Ltd	PP-WT17	V-0, 80°C, thickness 0.5mm	UL 94 IEC/EN 62368-1	UL & Tested within appliance	
(Alternative)	Suzhou Omay Optical Materials Co Ltd	SE11	V-0, 80°C, thickness 0.5mm, min.	UL 94 IEC/EN 62368-1	UL & Tested within appliance	
(Alternative)	Skc Co., Ltd	SR53	V-0, min. 80°C, min. thickness 0.5mm	UL 94 IEC/EN 62368-1	UL & Tested within appliance	
Insulation sheet (Between PCB and metal enclosure)	Shenzhen Nuode Site Technology Co Ltd	NDST Series	V-0, 150°C, Dimission: 84mm*22mm	UL94	UL	
Insulation sheet (near TR3 and TR1)	Mianyang Longhua Film Co Ltd	PC-870	V-0, 150°C, Thickness: 0.4mm.	UL 94	UL	

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⁾
Heat-shrinkable tube (wrapped on fan wire of power supply module)	SHENZHEN WOER HEAT- SHRINKABLE MATERIAL CO LTD	RSFR-H	Min. 300V, VW- 1, Min. 125°C, min. thickness 0.4mm	UL 224 IEC/EN 62368-1	UL & Tested within appliance
DC fan lead wire	Interchangeable	1007	VW-1, min. 105°C, min. 300Vac, min. 24AWG	UL 758	UL
Input wire	Interchangeable	1672	VW-1, min. 105°C, min. 300Vac, min. 18AWG	UL 758	UL
Earthing wire	Interchangeable	1015	VW-1, min. 105°C, min. 600Vac, min. 18AWG	UL 758	UL
Internal lead wire through TR2	Interchangeable	1007	VW-1, min. 105°C, min. 600Vac, min. 18AWG	UL 758	UL
Bleed resistor (R1, R15)	Interchangeable	Interchangeable	470Kohm, ¼W	IEC/EN 62368-1	Tested in appliance
Storage Capacitor (C11)	Interchangeable	Interchangeable	Max. 270 µF, min. 400 V, min. 105°C	IEC/EN 62368-1	Tested in appliance
Thermal cut-out (R77)	Foshan Jihui Electrical Appliances Co Ltd	BW series	5A, 250V	UL 1434 EN 60730-1 EN 60730-2-2	UL, VDE
- Lead wire	Interchangeable	1007	VW-1, min. 105°C, min. 600Vac, min. 22AWG	UL 758	UL
Plastic material for output connector	TORAY INDUSTRIES INC	3004	V-0, min. 100°C, min. thickness 0.75mm	UL 94	UL
Components used in DC-DC converter					
Fuse (FS4)	Sun Electric Co	4F	15A, 125V	UL 248	UL
(Alternative)	Interchangeable	Interchangeable	15A, 125V	UL 248	UL

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⁾
T1	Hui Zhou Show-Grand Electronics Co., Ltd.	SG-0901	130°C	IEC/EN 62368-1	Test in appliance
(Alternative)	Shenzhen Click Technology Co., Ltd	BCK4201-1032	130°C	IEC/EN 62368-1	Test in appliance
T2	Hui Zhou Show-Grand Electronics Co., Ltd.	SG-0899	130°C	IEC/EN 62368-1	Test in appliance
(Alternative)	Shenzhen Click Technology Co., Ltd	BCK1601-1366	130°C	IEC/EN 62368-1	Test in appliance
Componentes use for EUT					
Fan of CPU	Delta Electronics. INC	EFB0512HHA	12Vdc, 0.28A	UL 507 EN 60950-1	UL, TUV RH
Fan for system Ventilation (4 pcs used)	Nidec Servo Corporation	D1225C12B5AZ	12Vdc, 0.083A	UL 507 EN 60950-1	UL, TUV RH
LCD panel	Nlt Technologies Ltd	NL10276BC30-18C	15.0 inch	IEC/EN 62368-1	Tested with appliance
DC switch	CHILY PRECISION INDUSTRIAL CO LTD	3072	250Vac, 6A	UL 1054 IEC/UL 61058-1	UL
Internal lead wire	Interchangeable	Interchangeable	Min.30 AWG, min. 80°C, min. 300V, VW-1	UL 758	UL
Power Cord Set (for USA, Canada)	Interchangeable	Interchangeable	Type NISPT-2, SPT-2, SVT, SJT or better Min. 18AWG x 3C, Min. length 1.5m, VW-1, with 3-wires power cord and attachment plug configuration 5-15P, Other end with polarized type appliance coupler	UL 817, CSA C22.2 No.21	UL, CSA or other NRTL marks

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⁾
Supplementary information: ¹⁾ Provided evidence ensures the agreed level of compliance. See OD-2039. License available upon request.					

Attachment No. 1

IEC62368_1C- 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_1C			
Attachment Originator..... : UL(Demko)			
Master Attachment : 2020-03-10			
Copyright © 2020 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	CENELEC COMMON MODIFICATIONS (EN)		--
	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

Attachment No. 1

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

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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 audio visual content / material; and – uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and – has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.). EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment. Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3. NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360. NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible. Listening devices sold separately shall comply with the requirements of 10.6.6. These requirements are valid for music or video mode only. The requirements do not apply to: – professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. – hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music players: • long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and • cassette player/recorder; NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. – a player while connected to an external amplifier that does not allow the user to walk around		

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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 effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3. For classifying the acoustic output $L_{Aeq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period. For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete song. In this case, T becomes the duration of the song. NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song does not exceed the required limit. For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB.		N/A

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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. – The RS1 limits will be updated for all devices as per 10.6.3.2.		N/A
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		N/A

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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 ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.		
10.6.3.3	RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3, shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.		N/A
10.6.4	Requirements for maximum sound exposure		N/A
10.6.4.1	Measurement methods All volume controls shall be turned to maximum during tests. Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.		N/A
10.6.4.2	Protection of persons Except as given below, protection requirements for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3. NOTE 1 Volume control is not considered a safeguard. Between RS2 and an ordinary person, the basic safeguard may be replaced by an instructional		N/A

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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 time, independent of how often and how long the personal music player has been switched off. A skilled person shall not be unintentionally exposed to RS3.		
10.6.5	Requirements for dose-based systems		N/A
10.6.5.1	General requirements Personal music players shall give the warnings as provided below when tested according to EN 50332-3, using the limits from this clause. The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical		N/A

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration. The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.		
10.6.5.2	Dose-based warning and requirements When a dose of 100 % <i>CSD</i> is reached, and at least at every 100 % further increase of <i>CSD</i> , the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1. The warning shall at least clearly indicate that listening above 100 % <i>CSD</i> leads to the risk of hearing damage or loss.		N/A
10.6.5.3	Exposure-based requirements With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at. The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3. The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster. Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface. NOTE In case the source is known not to be music (or test signal), the EL may be disabled.		N/A
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 <i>L_{Aeq}</i> acoustic pressure output of the		N/A

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		
10.6.6.2	Corded listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.3	Cordless listening devices In cordless mode, – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.4	Measurement method <i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i>		N/A
3	Modification to the whole document		--

Attachment No. 1

IEC 62368-1							
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: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.					N/A	
5	Modification to 4.Z1					--	

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	Add the following new subclause after 4.9: To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. mains, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for pluggable equipment type B or permanently connected equipment, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		P
6	Modification to 5.4.2.3.2.4		--
5.4.2.3.2.4	Add the following to the end of this subclause: The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.		N/A
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.		N/A
8	Modification to 10.5.1		--

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	Add the following after the first paragraph: For RS 1 compliance is checked by measurement under the following conditions: In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made. NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus. Moreover, the measurement shall be made under fault conditions causing an increase of the high voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made. For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level. NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.		N/A
9	Modification to G.7.1		--
G.7.1	Add the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		N/A

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
10	Modification to Bibliography		--
	Add the following notes for the standards indicated: IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		N/A
11	ADDITION OF ANNEXES		--
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		P
4.1.15	Denmark, Finland, Norway and Sweden To the end of the subclause the following is added: Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord." In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"	Shown on the product	P

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	United Kingdom To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex		N/A
5.2.2.2	Denmark After the 2nd paragraph add the following: A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A
5.4.11.1 and Annex G	Finland and Sweden To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a		N/A

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		
5.5.2.1	Norway After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
5.5.6	Finland, Norway and Sweden To the end of the subclause the following is added: Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	Denmark Add to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		N/A

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.2.1	Ireland and United Kingdom After the indent for pluggable equipment type A , the following is added: – the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.		N/A
5.6.4.2.1	France After the indent for pluggable equipment type A , the following is added: – in certain cases, the protective current rating of the circuit supplied from the mains is taken as 20 A instead of 16 A.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm ² to 1,5 mm ² in cross-sectional area.		N/A
5.6.8	Norway To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as class I equipment . See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.		N/A
5.7.6	Denmark To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		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
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		N/A

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.” Translation to Swedish: ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.		
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

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.3.1 and B.4	Ireland and United Kingdom The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of direct plug-in equipment, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the direct plug-in equipment, until the requirements of Annexes B.3.1 and B.4 are met		N/A
G.4.2	Denmark To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a polyphase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a <i>Justification:</i> Heavy Current Regulations, Section 6c		N/A

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	United Kingdom To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
G.7.1	United Kingdom To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc. (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	Ireland To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	Ireland and United Kingdom To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm² is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A

Attachment No. 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A
10.5.2	Germany The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de		N/A

Attachment No. 1

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

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

Note: Before placing the products in the different countries, the manufacturer must ensure that:

1. Operating Instructions, Ratings Labels and Warnings Labels written in an Accepted or Official Language of the county in question.
2. The equipment complies with the National Standards and/or Electrical Codes of the country in question.
3. Mains plugs and internal wirings should be assessed to the national standard.

---END---



Attachment No. 2

National and Group Differences for IEC 62368-1:2018 (Third Edition) as per CB Bulletin

National Differences covered by this report					
Country	CENELEC Group differ. (see separate attachment)	National differ.	Base standard	National standard	Tested
AR Argentina	-	Yes	IEC 62368-1 ed2	-	Yes
AU Australia	-	Yes	IEC 62368-1 ed2	AS/NZS 62368.1:2018	Yes
AT Austria	Yes	-	IEC 62368-1 ed3	-	Yes
BY Belarus	-	-	IEC 62368-1 ed2	-	Yes
BE Belgium	Yes	-	IEC 62368-1 ed3	-	Yes
CA Canada	-	Yes	IEC 62368-1 ed3	CSA C22.2 No. 62368-1:19, CSA/UL 62368-1:2019	Yes
CH Switzerland	Yes	-	IEC 62368-1 ed3	-	Yes
CN China	-	-	IEC 62368-1 ed2	-	Yes
DE Germany	Yes	Yes	IEC 62368-1 ed3	EN IEC 62368-1:2020+A11:2020	Yes
DK Denmark	Yes	Yes	IEC 62368-1 ed3	DS/EN IEC 62368-1:2020+A11:2020	Yes
FI Finland	Yes	Yes	IEC 62368-1 ed3	-	Yes
FR France	Yes	Yes	IEC 62368-1 ed3	-	Yes
GB United Kingdom	Yes	Yes	IEC 62368-1 ed3	-	Yes
HU Hungary	Yes	-	IEC 62368-1 ed3	-	Yes
IT Italy	Yes	-	IEC 62368-1 ed3	-	Yes
IL Israel	-	-	IEC 62368-1 ed3	-	Yes
JP Japan	-	-	IEC 62368-1 ed2	J62368-1(H30), J3000(H25)	Yes
KR Korea	-	-	IEC 62368-1 ed2	-	Yes
MY Malaysia	-	-	IEC 62368-1 ed2	-	Yes
NO Norway	Yes	Yes	IEC 62368-1 ed3	-	Yes
NL Netherlands	Yes	-	IEC 62368-1 ed3	-	Yes
SA Saudi Arabia	-	Yes	IEC 62368-1 ed3	SASO-IEC-62368-1	Yes
SE Sweden	Yes	Yes	IEC 62368-1 ed3	-	Yes
CH Switzerland	-	-	IEC 62368-1 ed3	-	Yes
SG Singapore	-	-	IEC 62368-1 ed3	-	Yes
SI Slovenia	Yes	-	IEC 62368-1 ed2	-	Yes
UA Ukraine	-	Yes	IEC 62368-1 ed3	-	Yes
US United States of America	-	Yes	IEC 62368-1 ed2	CSA/UL 62368-1:2019	Yes



Attachment No. 2

General remarks:

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

Throughout this report a point is used as the decimal separator.

See attachment 1 for European Group Differences and National Differences.

Note: Before placing the products in the different countries, the manufacturer must ensure that:

1. Operating Instructions, Ratings Labels and Warnings Labels written in an Accepted or Official Language of the county in question.
2. The equipment complies with the National Standards and/or Electrical Codes of the country in question.
3. Mains plugs and internal wirings should be assessed to the national standard. (if necessary)

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)



Attachment No. 2

IEC 62368_1C ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
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AR Argentina			AR
	Ratings shall cover 220 Vac - 50 Hz		P
	Class 0 and Class 0I appliances are not allowed		N/A
	Safety instructions and manuals shall be written in Spanish language (Resolution 92/98)	Should be evaluated during the national approval.	N/A
	Country of origin shall be shown on the marking plate or, if not possible, in the primary packaging (Resolution 92/98)	Should be evaluated during the national approval.	N/A
	Address of the importer in Argentina shall be shown on the product or on the primary packaging (Resolution 92/98)	Should be evaluated during the national approval.	N/A
	Class I appliances provided with plugs shall be provided with the label specified in sheet "Class I" (Disposition 731/87)	Should be evaluated during the national approval.	N/A
	Class II appliances provided with plugs shall be provided with the label specified in sheet "Class II" (Disposition 731/87)		N/A
	Plugs shall be in conformity with IRAM 2063 Standard for Class II appliances and IRAM 2073 Standard for Class I appliances (Resolution 524/98)		N/A
	Adaptors/Transformers provided with integrated plugs shall be provided with blades which shall meet the geometry of IRAM 2063 standard for Class II appliances or IRAM 2073 standard for Class I appliances (Resolution 524/98)		N/A
	Appliances certified under System N° 4 (Type Certification scheme) shall be marked with the symbol specified in sheet "St Mark" (Resolution 197/04)		N/A
	Appliances certified under System N°5 (Mark of Conformity Certification scheme) shall be marked with the symbols specified in sheet "S Mark" (Resolution 799/99)		N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment)			
Differences according to : AS/NZS 62368.1:2018			
Attachment Form No : AU_NZ_ND_IEC62368_1B			
Attachment Originator : JAS-ANZ			
Master Attachment : 2019-02-04			
Copyright © 2019 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		--
Appendix ZZ	Variations to IEC 62368-1:2014 (ED. 2.0) for Australia and New Zealand		P
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2014 (ED. 2.0)		P
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		N/A
2	Add the following to the list of normative references: The following normative documents are referenced in Appendix ZZ: -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 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</i>	Should be evaluated during the national approval.	N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<i>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 60950.1:2015, <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 61558.1:2008 (including Amendment 2:2015), <i>Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 2.1, 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>		
4.1.1	Application of requirements and acceptance of materials, components and subassemblies 1 <i>Replace the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'.</i> 2 <i>Replace the text 'IEC 60065' with 'AS/NZS 60065'.</i>		N/A
4.7	Equipment for direct insertion into mains socket-outlets		N/A
4.7.2	Requirements <i>Delete the text of the second paragraph and replace with the following:</i> Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.		N/A
4.7.3	Compliance Criteria <i>Delete the first paragraph and Note 1 and Note 2 and replace with the following:</i> <i>Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.</i>		N/A
4.8	<i>Delete existing clause title and replace with the following:</i> 4.8 Products containing coin/button cell batteries		N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT					
Clause	Requirement + Test		Result - Remark		Verdict
4.8.1	General 1 Second dashed point, <i>delete</i> the text and <i>replace</i> with the following: – include coin/button cell batteries with a diameter of 32 mm or less. 2 After the second dashed point, <i>insert</i> the following Note: NOTE 1: Batteries are specified in IEC 60086-2. 3 After the third dashed point, <i>renumber</i> the existing Note as 'NOTE 2'. 4 Fifth dashed point, <i>delete</i> the word 'lithium'.				N/A
4.8.2	Instructional Safeguard First line, <i>delete</i> the word 'lithium'.				N/A
4.8.3	Construction First line, after the word 'Equipment' <i>insert</i> the words 'containing one or more coin/button batteries and'				N/A
4.8.5	Compliance criteria <i>Delete the first paragraph and replace with the following: Compliance is checked by applying a force of 30 N +/-1 N for 10 s to the battery compartment door/cover by a rigid test finger according to test probe 11 of IEC 61032:1997 at the most unfavourable place and in the most unfavourable direction. The force shall be applied in one direction at a time.</i>				N/A
5.4.10.2	Test methods				N/A
5.4.10.2.1	General <i>Delete the first paragraph and replace with the following: In Australia only, the separation is checked by the test of both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test of either Clause 5.4.10.2.2 or Clause 5.4.10.2.3.</i>				N/A
Table 29	Replace the table with the following:				N/A
Parts		Impulse test		Steady state test	
		New Zealand	Australia	New Zealand	Australia
Parts indicated in Clause 5.4.10.1 a) ^a		2.5 kV 10/700 µs	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment. 10/700 µs	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) ^b		1.5 kV 10/700 µs ^c		1.0 kV	1.5 kV
^a Surge suppressors shall not be removed. ^b Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment. ^c During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.					

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.2.2	After the first paragraph, <i>insert</i> new Notes 201 and 202 as follows: NOTE 201 For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A
5.4.10.2.3	After the first paragraph, <i>insert</i> new Notes 201 and 202 as follows: NOTE 201 For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
6	Electrically-caused fire		N/A
6.1	General After the first paragraph, <i>insert</i> the following new paragraph: Alternatively, the requirements of Clauses 6.2 to 6.5.2 are considered to be fulfilled if the equipment complies with the requirements of Clause 6.202		N/A
6.6	After Clause 6.6, <i>add</i> the new Clauses 6.201 and 6.202 as follows: 6.201 External power supplies, docking stations and other similar devices and 6.202 Resistance to fire—Alternative tests (see special national conditions)		N/A
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment In the first dashed row and the second dashed rows <i>replace</i> 'IEC 60950-1:2005' with 'AS/NZS 60950.1:2015'.		N/A
8.6	Stability of equipment		N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.1 and Table 36	Requirements 1. Table 36, <i>insert</i> Footnote c at the end of the 'Glass slide' heading, and <i>add</i> a new Footnote c after the text of Footnote b in the last row of Table 36 as follows: ^c The glass slide test is not applicable to floor standing equipment, even though the equipment may have controls or a display. 2. Table 36, fifth row, <i>insert</i> '201' at the end of 'No stability requirements' 3. Table 36, ninth row, <i>insert</i> '201' at the end of 'No stability requirements' 4. Table 36, <i>add</i> the following new footnote: 201 MS2 and MS3 television sets and display devices, designed only for fixing to a wall, ceiling or equipment rack, are not subjected to stability requirements only if the instructional safeguard of Clause 8.6.1.201 is provided. Otherwise, the glass slide requirements of Clause 8.6.4 and horizontal force requirements of Clause 8.6.5 apply. 5. Second paragraph beneath Table 36, <i>delete</i> the words 'MS2 and MS3 television sets' and <i>replace</i> with 'MS2 and MS3 television sets and display devices'		N/A
8.6.1	After Clause 8.6.1 <i>add</i> the following new clauses: 8.6.1.201 Instructional safeguard for fixed-mount television sets (see special national conditions)		N/A
Annex F Paragraph F.3.5.1	Mains appliance outlet and socket-outlet markings <i>Replace</i> 'IEC 60320-2-2' with 'AS/NZS 60320.2.2'.		N/A
Annex G Paragraph G.4.2	Mains connectors 1 In the second line <i>insert</i> 'or AS/NZS 3123' after 'IEC 60906-1'. 2 In the second line <i>insert</i> 'or AS/NZS 60320 series' after 'IEC 60320 series' 3 <i>Add</i> the following new paragraph: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.	Should be evaluated during the national approval.	N/A
Paragraph G.5.3.1	Transformers, General 1 In the third dashed point <i>replace</i> 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 In the fourth dashed point <i>replace</i> 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.		N/A
Paragraph G.7.1	Mains supply cords, General In the fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'	Should be evaluated during the national approval.	N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Table G.5	Sizes of conductors 1 In the second row, first column, <i>delete</i> '6' and <i>replace</i> with '7.5' 2 In the second row, second column, <i>delete</i> '0,75' and <i>replace</i> with '0.75 ^b 3 <i>Delete</i> Note 1. 4 <i>Replace</i> 'NOTE 2' with 'NOTE:'. 5 <i>Delete</i> the text of 'Footnote b' and <i>replace</i> with the following: ^b This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm ² three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 In Footnote c <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1' 7 In Footnote d <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'	Should be evaluated during the national approval.	N/A
Annex M Paragraph M.3.2	Protection circuits for batteries provided within the equipment, Test method After the first dashed point <i>add</i> the following Note: NOTE 201: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of SELV may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.		N/A
	Special national conditions (if any)		N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.201	External power supplies, docking stations and other similar devices For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage— – at all ES1 outlets or connectors shall not increase by more than 10% of its rated output voltage under normal operating condition; and – of a USB outlet or connector shall not increase by more than 3 V or 10% of its rated output voltage under normal operating conditions, whichever is higher. For equipment with multiple rated output voltages, the requirements apply with the equipment configured for each rated output voltage in turn. NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. <i>Compliance shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single-fault conditions of Annex B.4</i>		P
6.202	Resistance to fire—Alternative tests		N/A
6.202.1	General Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the equipment, or the following: a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length. b) The following parts which would contribute negligible fuel to a fire: – small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; – small electrical components, such as capacitors with a volume not exceeding 1 750 mm³, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10. NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other		N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT											
Clause	Requirement + Test	Result - Remark	Verdict								
	for the possible effect of propagating the fire from one part to another.										
	<i>Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4.</i> For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5. The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.		N/A								
6.202.2	Testing of non-metallic materials Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.		N/A								
6.202.3	Testing of insulating materials Parts of insulating material supporting Potential Ignition Sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE: Contacts in components such as switch contacts are considered to be connections		N/A								
	For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test need not be tested		N/A								
	<table><tr><td colspan="2">The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:</td></tr><tr><td>Clause of AS/NZS 60695.11.5</td><td>Change</td></tr><tr><td>9 Test procedure</td><td></td></tr><tr><td>9.2 Application of</td><td>Delete the first and second paragraphs</td></tr></table>	The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:		Clause of AS/NZS 60695.11.5	Change	9 Test procedure		9.2 Application of	Delete the first and second paragraphs		N/A
The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:											
Clause of AS/NZS 60695.11.5	Change										
9 Test procedure											
9.2 Application of	Delete the first and second paragraphs										

Attachment No. 2

IEC 62368_1C ATTACHMENT				
Clause	Requirement + Test		Result - Remark	Verdict
	needle-flame	and <i>replace</i> with the following: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner. The duration of application of the test flame shall be 30 s ± 1 s.		
	9.3 Number of test specimens	<i>Replace</i> with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.		
	11 Evaluation of test results	<i>Replace</i> with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.		
	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the relevant part is not thinner than the sample tested.			
6.202.4	Testing in the event of non-extinguishing material If parts, other than enclosures, do not withstand the glow wire tests of Clause 6.202.3, by failure to extinguish within 30 s after the removal of the glowwire tip, the needle-flame test detailed in Clause 6.202.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of Clause 6.202.3. Parts shielded by a separate barrier which meets the			N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	needle-flame test need not be tested. NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing. NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing. NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.		
6.202.5	Testing of printed boards The base material of printed boards shall be subjected to the needle-flame test of Clause 6.202.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a potential ignition source. The test is not carried out if— – the printed board does not carry any potential ignition source; – the base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or – the base material of printed boards, on which the available equipment power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. <i>Conformance shall be determined using the smallest thickness of the material.</i> NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the apparent power for more than 2 min when the circuit supplied is disconnected.		N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.202.6	For open circuit voltages greater than 4 kV Potential ignition sources with open circuit voltages exceeding 4 kV (peak) a.c. or d.c. under normal operating conditions shall be contained in a FIRE ENCLOSURE which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.		N/A
8.6.1.201	8.6.1.201 Instructional safeguard for fixed-mount television sets MS2 and MS3 television sets and display devices designed only for fixed mounting to a wall or ceiling or equipment rack shall, where required in Table 36, footnote 201, have an instructional safeguard in accordance with Clause F.5 which may be on the equipment or included in the installation instructions or equivalent document accompanying the equipment. The elements of the instructional safeguard shall be as follows: – element 1a: not available; – element 2: 'Stability Hazard' or equivalent wording; – element 3: 'The television set may fall, causing serious personal injury or death' or equivalent text; – element 4: the following or equivalent text: To prevent injury, this television set must be securely attached to the floor/wall in accordance with the installation instructions		N/A
8.6.1.202	Restraining device MS2 and MS3 television sets and display devices that are not solely fixed-mounted should be provided with a restraining device such as a fixing point to facilitate restraining the equipment from toppling forward. The restraining device shall be capable of withstanding a pull of 100 N in all directions without damage. Where a restraining device is provided, instructions shall be provided in the instructions for installation or instructions for use to ensure correct and safe installation.		N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1:2018 CANADA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to : CSA C22.2 No. 62368-1:19			
Attachment Form No : CA_ND_IEC62368_1C			
Attachment Originator : CSA Group			
Master Attachment : 2019-12-23			
Copyright © 2017 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		--
1 (1DV.1)	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.		P
1 (1DV.2.1)	This standard includes additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities. See Annex DVB.		N/A
1 (1DV.2.2)	This standard includes additional requirements for equipment intended for mounting under cabinets. See Annex DVC.		N/A
1 (1DV.2.3)	IEC 62368-3 clause 5 for DC power transfer at ES1 or ES2 voltage levels is considered informative. IEC 62368-3 clause 6 for remote power feeding telecommunication (RFT) circuits is considered normative (see ITU K.50). Alternatively, equipment with RFT circuits are given in either UL 2391 or CSA/UL 60950-21. RFT-C circuits are not permitted unless the RFT-C circuit complies with RFT-V limits ($\leq 200V$ per conductor to earth).		N/A
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72 for additional requirements.		N/A
1 (1DV.5)	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A
4.1 (4.1.17)	For lengths exceeding 3.05 m, external interconnecting cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.		N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		N/A
4.6 (4.6.2)	Wire-wrap terminals have special construction and performance requirements.		N/A
4.8 (4.8.3, 4.8.4.5, 4.8.5)	Coin / button cell batteries have modified special construction and performance requirements.		N/A
5.4.2.3.2 (5.4.2.3.2.1)	Surge Arrestors and Transient Voltage Surge Suppressors installed external to the equipment are required to comply with the appropriate NEC and CEC requirements.		N/A
5.5.9	Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons are required to be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices are required to comply with UL 943, and CAN/CSA C22.2 No.144.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.7, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment.		P
5.7.8 (5.7.8.1)	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure is required to comply with single fault testing in B.4, or be current limited per one of the permitted methods.		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.		P
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.		N/A
	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		P
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		P
	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.		P

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		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.		N/A
Annex Q (Q.3)	Equipment with paired conductor and/or coax communications cables/wiring connected to building wiring shall be marked or labeled to identify the Maximum Rated Voltage and Maximum Rated Current per conductor that the external circuit port(s) is intended to source into the cabling and load equipment during normal use. If the equipment has outputs that have different ratings, the equipment shall clearly identify the ratings for the different outputs in a manner the user will know each circuits rating. The equipment shall also be provided with a marking or readily available information regarding how many conductors from each type of external circuit port(s) are used to carry current.		N/A
Annex DVA (1)	Equipment that is designed such that it may be powered from a separate electrical service, is required to meet applicable requirements for service equipment for control and protection of services and their installation and shall comply 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 ft ³) 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

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a minimum flammability classification of V-1.		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).		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).		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."		N/A
Annex DVA (F.3.3.6)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.		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.		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
	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.		N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.		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).		N/A
Annex DVA (G.7)	Flexible cords used outdoors are required to have the suffix "W" marked on the flexible cord.		N/A
Annex DVA (M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
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 maximum current, or maximum voltage and nominal current output for each connection point. Where multiple connection points have the same rating, a single label shall be permitted to be used.		N/A
	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1 are required to be marked with the voltage rating and "Class 2" or equivalent. The marking shall be located adjacent to the terminals and shall be visible during wiring.		N/A
	Applicable parts of Chapter 8 of the NEC, and Rules 54 and 60 of the CEC, may be applicable to ITE installed outdoors with connections to communication systems.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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 centers, 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.		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.3.2)	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
	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		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 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

Attachment No. 2

IEC62368_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 (JAPAN) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to : J62368-1 (H30)			
Attachment Form No : JP_ND_IEC62368_1B			
Attachment Originator : UL (JP)			
Master Attachment : Date 2018-11-22			
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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 standard 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.		P
5.6.1	Mains socket-outlet and appliance outlet shall comply with Clause G.4.2A if they are incorporated as part of the equipment.		N/A
5.6.2.1	Mains connection of class 0I equipment: Instructional safeguard in accordance with Clause F.3.6.1A; Mains plug having a lead wire for protective earthing connection of class 0I equipment; Independent main protective earthing terminal installed by ordinary person.		N/A
5.6.2.2	This requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A
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 mm ² or more cross-sectional area		N/A

Attachment No. 2

IEC62368_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series or JIS C 8303, or otherwise being considered to comply with relevant regulations, or that is provided with mains appliance outlet as specified in JIS C 8283-2-2 for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.		N/A
5.7.4	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.		N/A
6.4.3.3	A fuse complying with JIS C 6575 series or a fuse having equivalent characteristics shall open within 1 s. For 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". A fuse not complying with JIS C 6575 series shall be tested with the breaking capacity taken into account.	Should be evaluated during the national approval.	N/A
8.5.4.2.1	Only three-phase stationary equipment rated more than 200 V ac 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
8.5.4.2.2	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.		N/A
8.5.4.2.4	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
8.5.4.2.5	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
9.2.6, Table 38	Handles, Knobs, grips, etc. and external surfaces either held, touched or worn against the body in normal use (> 1 min) ^{b,c}		N/A
F.3.5.1	Instructional safeguard of class 0I equipment in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8303 or relevant regulation 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

Attachment No. 2

IEC62368_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.		N/A
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.3 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions and instructional safeguard shall be provided regarding the earthing connection.		N/A
F.3.6.2.1	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		N/A
F.4	Instruction 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. Installation instruction for the protective earthing connection for class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment.		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 relevant part of JIS C 6575 (corresponding to IEC60127) or shall have equivalent characteristics. If there are no applicable IEC standards, overcurrent protective devices used as a safeguard shall comply with their applicable IEC standards.		P
G.4.1	This requirement is not applicable to Clauses G.4.2 and G.4.2A.		N/A
G.4.2	Mains connector shall comply with JIS C 8282 series, JIS C 8283 series, JIS C 8285, JIS C 8303 or IEC 60309 series. Mains plugs and socket-outlets shall comply with JIS C 8282 series, JIS C 8303, IEC 60309 series, or have equivalent or better performance. 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 preventing mechanical stress not to transmit to the soldering part of inlet terminal. Consideration for an equipment rated not more than 125 V provided with Type C14 and C18 appliance coupler complying with JIS C 8283 series.	Should be evaluated during the national approval.	N/A

Attachment No. 2

IEC62368_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.		N/A
G.8.3.3	Withstand $1,71 \times 1.1 \times U_0$ for 5 s.		N/A

Attachment No. 2

IEC62368_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
APPENDIX	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.		P
2	Requirement for equipment		N/A
2.1	Electric heater, and the matches that are connected in parallel to power regulation diode, and that there is no abnormality in a state of being opened diode 1. Compliance is checked by the following.		N/A
	- Diode 1 has a rated capacity of more than the current of the main circuit, a diode which are connected in parallel, that this is the same specifications.		N/A
	- When subjected to a temperature rise test as specified in 11 JIS C 9335-2-30 (2006) and uncoupled one of the diode connected in parallel, to conform thereto. "		N/A
	In and an electric heating device, it can be in one that is connected in parallel rectifier connected to the power supply to adjust the power consumption, and that there is no abnormality in a state where the rectifier 1 is opened. Compliance is checked by the following.		N/A
	- Rectifier 1 has a rated capacity of more than the current of the main circuit, rectifiers connected in parallel, that this is the same specifications.		N/A
	- The Addition 11. JIS C 9335-1 (2003), when subjected to temperature rise test specified in the individual requirements of the application, can be adapted to this in uncoupled one of the rectifier connected in parallel. "		N/A
2.2	Electronic heater with glowing heating elements		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		N/A

Attachment No. 2

IEC62368_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3	Components used in equipment		N/A
3.1	To be used for electric freezer Electric Cooling machines, electric washing machine, or electric refrigerator "		N/A
	To be used for electricity Freezer hood, electric fan, electric cooling machines, electric washing machine, or electric refrigerator		N/A
	Due to malfunction of the capacitor, which are housed to prevent the spread of flame or melt, the outer shell of metal or ceramic. However, the shell, there may be openings for connecting wires to the motor capacitor.		N/A
	Due to malfunction of the capacitor, which are housed to prevent nucleic acid melt or flame, the outer metal or ceramic. However, the shell, there may be openings for connecting wires to the motor capacitor.		N/A
	In this case, the expression "are housed in a ceramic shell or metal" is housed case ceramic (inner shell) metal or prevent the diffusion of the melt flame or means of the shell except the capacitor touches the test finger even if there to within 50mm of the capacitor is non-metallic section that refers to, housed along with capacitor not specified JIS C 4908 (2007) in the case of metal or ceramic thereof, and the melt or flame shall be deemed to prevent it from spreading.		N/A
	No non-metallic materials within 50 mm from capacitor surface		N/A
	Non-metallic material with 50 mm from capacitor surface comply with needle frame test of JIS 9335-1(2003), Annex E		N/A
	Non-metallic material with 50 mm from capacitor surface comply with V-1 test of JIS C 60965-11-10(2006)		N/A

Attachment No. 2

IEC62368_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 SASO NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to : SASO-IEC-62368-1			
National standards website : https://wasif.saso.gov.sa/			
Important for products that have plug			
Plug National Differences	SASO-2203		N/A

Attachment No. 2

IEC 62368_1C 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			
Attachment Form No : US_CA_ND_IEC62368_1C			
Attachment Originator : UL(US)			
Master Attachment : Date 2020-04-17			
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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.		P
1 (1DV.2.1)	This standard includes additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities. See Annex DVB.		N/A
1 (1DV.2.2)	This standard includes additional requirements for equipment intended for mounting under cabinets. See Annex DVC.		N/A
1 (1DV.2.3)	IEC 62368-3 clause 5 for DC power transfer at ES1 or ES2 voltage levels is considered informative. IEC 62368-3 clause 6 for remote power feeding telecommunication (RFT) circuits is considered normative (see ITU K.50). Alternatively, equipment with RFT circuits are given in either UL 2391 or CSA/UL 60950-21. RFT-C circuits are not permitted unless the RFT-C circuit complies with RFT-V limits ($\leq 200V$ per conductor to earth).		N/A
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72 for additional requirements.		N/A
1 (DV.5)	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.1 (4.1.17)	For lengths exceeding 3.05 m, external interconnecting cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.		N/A
	For lengths 3.05 m or less, external interconnecting cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.6 (4.6.2)	Wire-wrap terminals have special construction and performance requirements.		N/A
4.8 (4.8.3, 4.8.4.5, 4.8.5)	Coin / button cell batteries have modified special construction and performance requirements.		N/A
5.4.2.3.2 (5.4.2.3.2.1)	Surge Arrestors and Transient Voltage Surge Suppressors installed external to the equipment are required to comply with the appropriate NEC and CEC requirements.		N/A
5.5.9	Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons are required to be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices are required to comply with UL 943, and CAN/CSA C22.2 No.144.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.7, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment.		P
5.7.8 (5.7.8.1)	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure is required to comply with single fault testing in B.4, or be current limited per one of the permitted methods.		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.		P
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.		N/A
	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		P

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		P
	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.		P
	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.		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.		N/A
Annex Q (Q.3)	Equipment with paired conductor and/or coax communications cables/wiring connected to building wiring are required to have special voltage, current, power and marking requirements.		N/A
Annex DVA (1)	Equipment that is designed such that it may be powered from a separate electrical service, is required to meet applicable requirements for service equipment for control and protection of services and their installation and complies with Article 230 of the National Electrical Code (NEC), NFPA 70 and Section 6 of the Canadian Electrical Code, Part I, CSA C22.1.		N/A
	Equipment intended for use in spaces used for environmental air (plenums) are subjected to special flammability requirements for heat and visible smoke release.		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

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a minimum flammability classification of V-1.		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).		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).		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."		N/A
Annex DVA (F.3.3.6)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.		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.		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
	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.		N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.		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).		N/A
Annex DVA (G.7)	Flexible cords used outdoors are required to have the suffix "W" marked on the flexible cord.		N/A
Annex DVA (M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
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 maximum current, or maximum voltage and nominal current output for each connection point. Where multiple connection points have the same rating, a single label is permitted to be used.		N/A
	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1 are required to be marked with the voltage rating and "Class 2" or equivalent. The marking is located adjacent to the terminals and visible during wiring.		N/A
	Applicable parts of Chapter 8 of the NEC, and Rules 54 and 60 of the CEC, may be applicable to ITE installed outdoors with connections to communication systems.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A

Attachment No. 2

IEC 62368_1C ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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 centers, 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.		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.3.2)	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
	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		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 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

Attachment No. 3

Details of: Overall view 1 for model PRO 9



Details of: Overall view 2 for model PRO 9

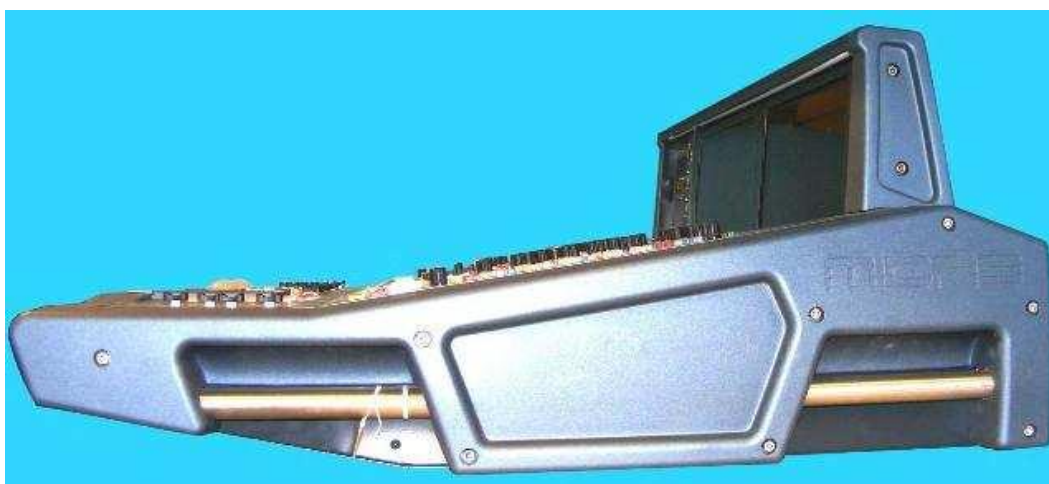


Attachment No. 3

Details of: Overall view 3 for model PRO 9



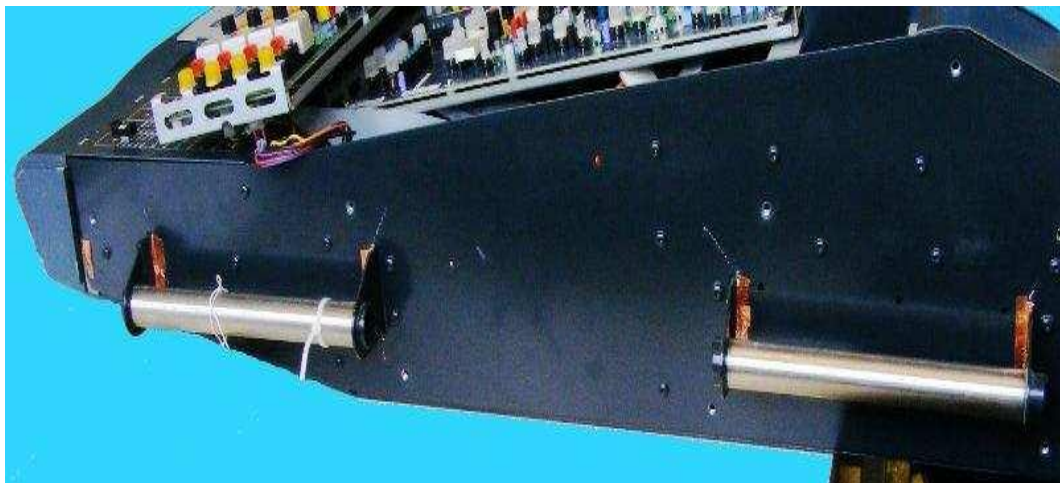
Details of: Overall view 4 for model PRO 9



Details of: Overall view 5 for model PRO 9



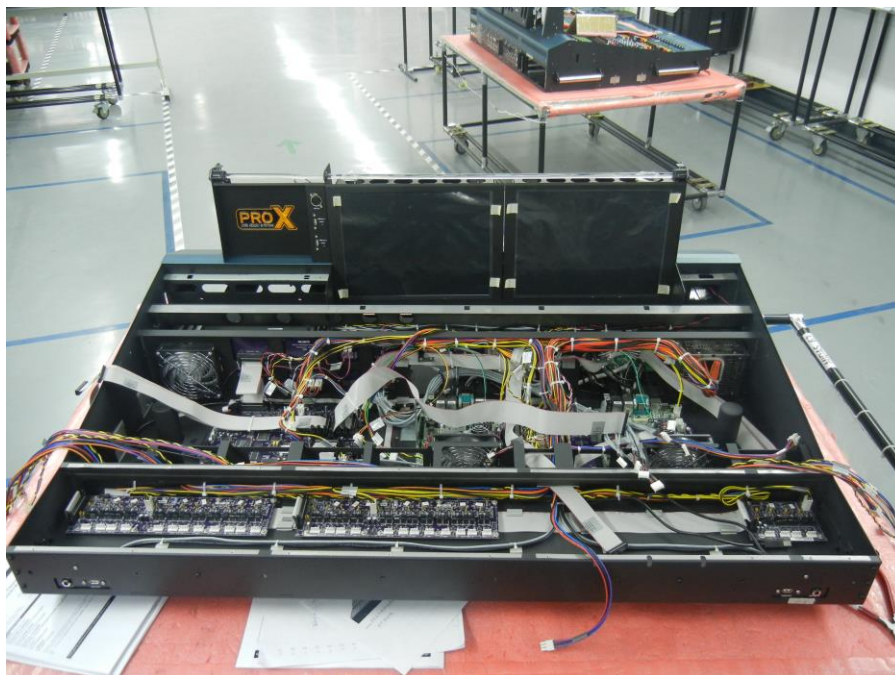
Details of: Internal view 1 for model PRO 9



Details of: Internal view 2 for model PRO X



Details of: Internal view 3 for model PRO X

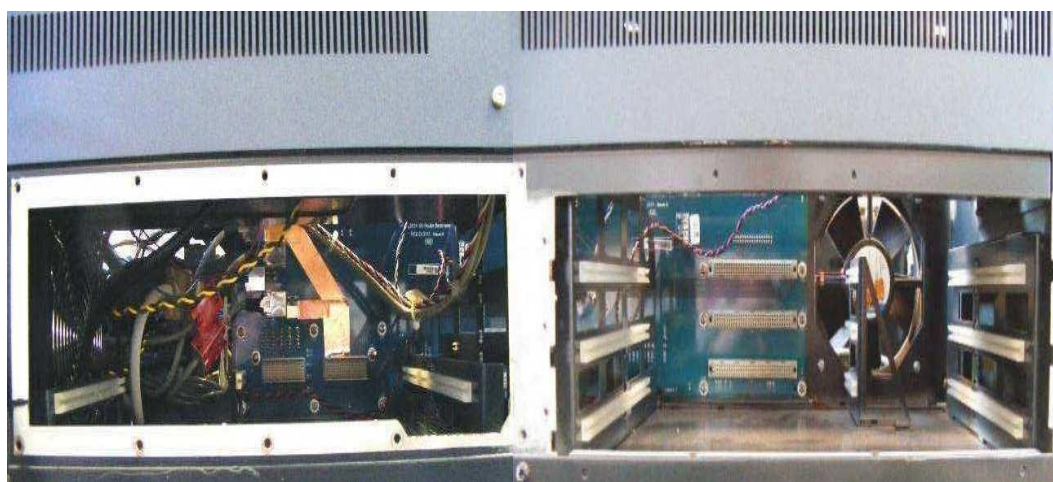


Attachment No. 3

Details of: Internal view 4



Details of: Internal View 5



Details of: Internal View 6

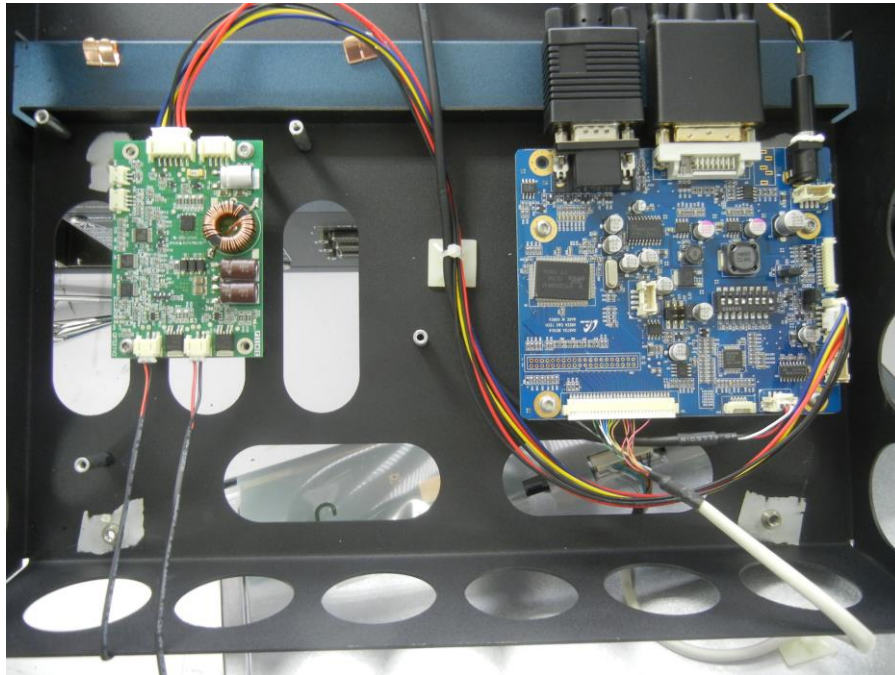


Details of: Internal View 7



Attachment No. 3

Details of: Internal View 8



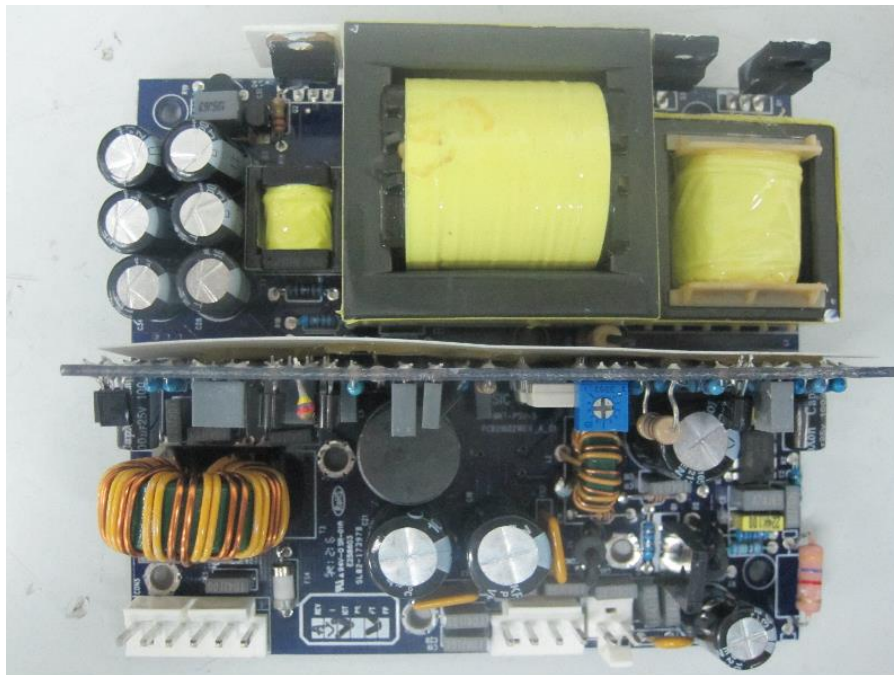
Details of: Internal View 9 – CPU Panel



Details of: Internal View 10 – DC-DC Converter



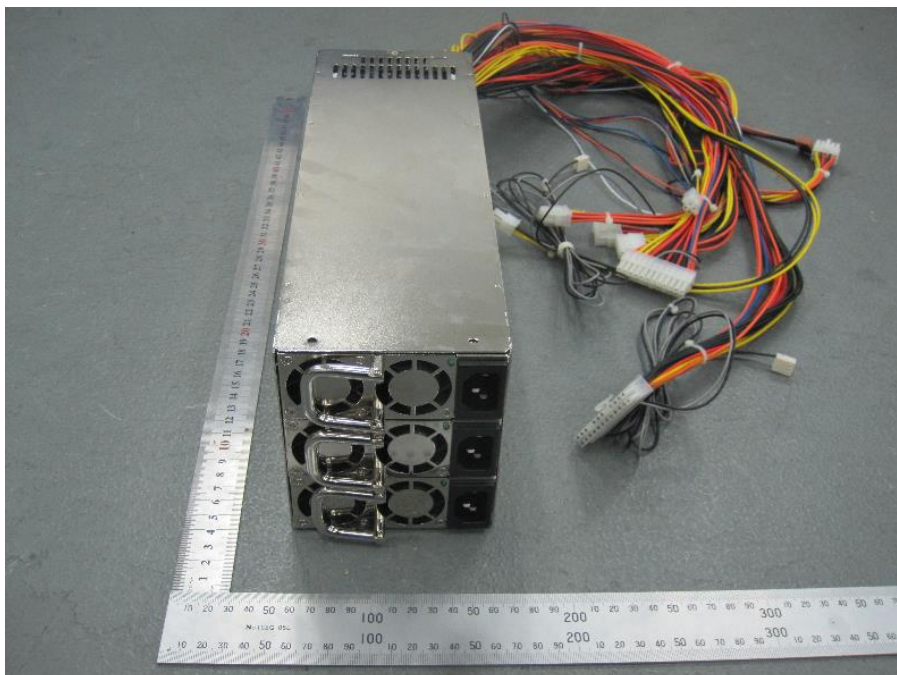
Details of: Internal View 11 -- DC-DC Converter



Details of: Internal View 12 – LED driver board

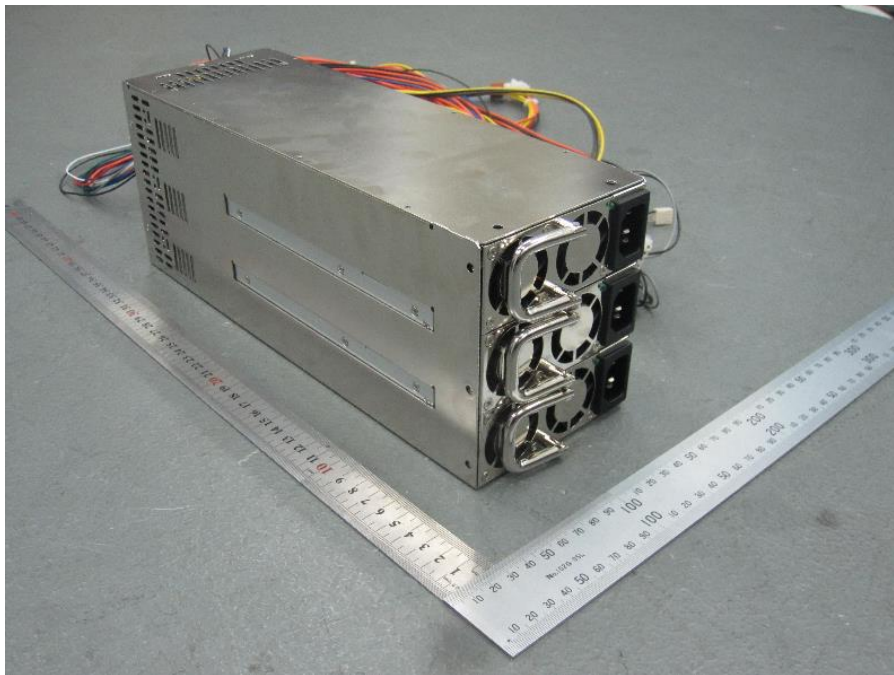


Details of: Internal View 13 – Power supply system overview 1 (MKT-PSU-3)

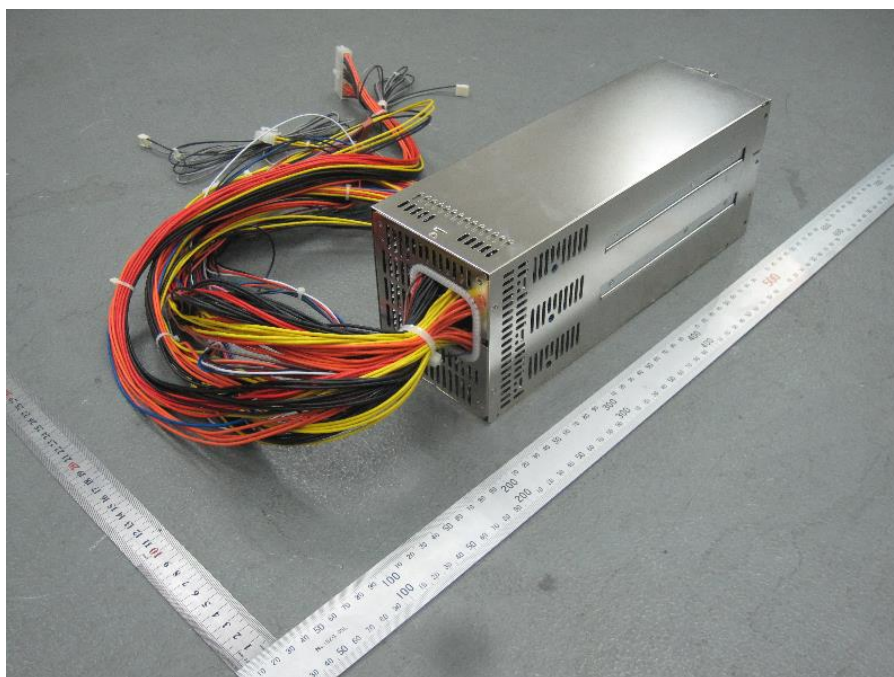


Attachment No. 3

Details of: Internal View 14 – Power supply system overview 2 (MKT-PSU-3)

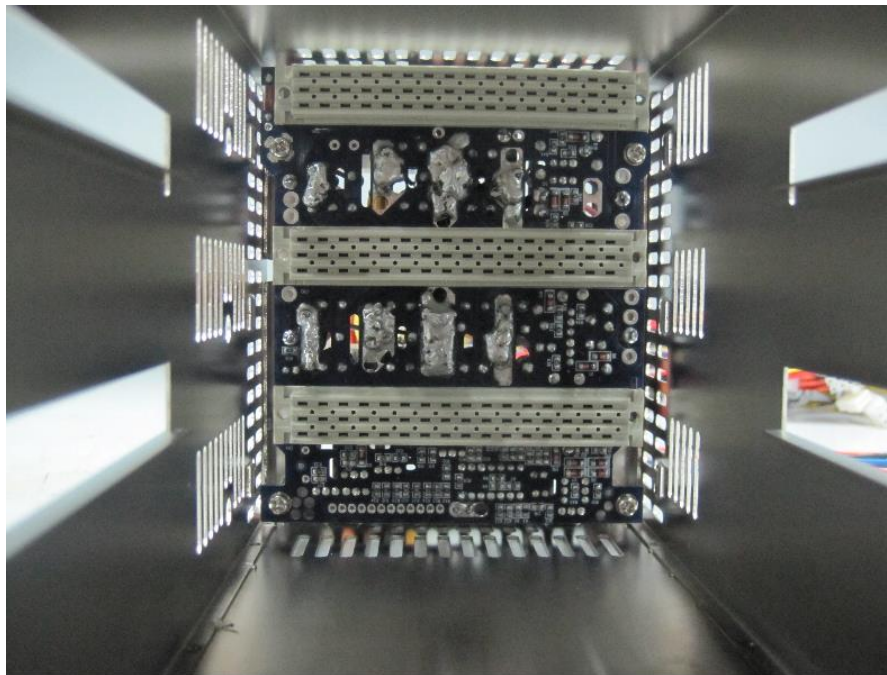


Details of: Internal View 15 – Power supply system overview 3 (MKT-PSU-3)

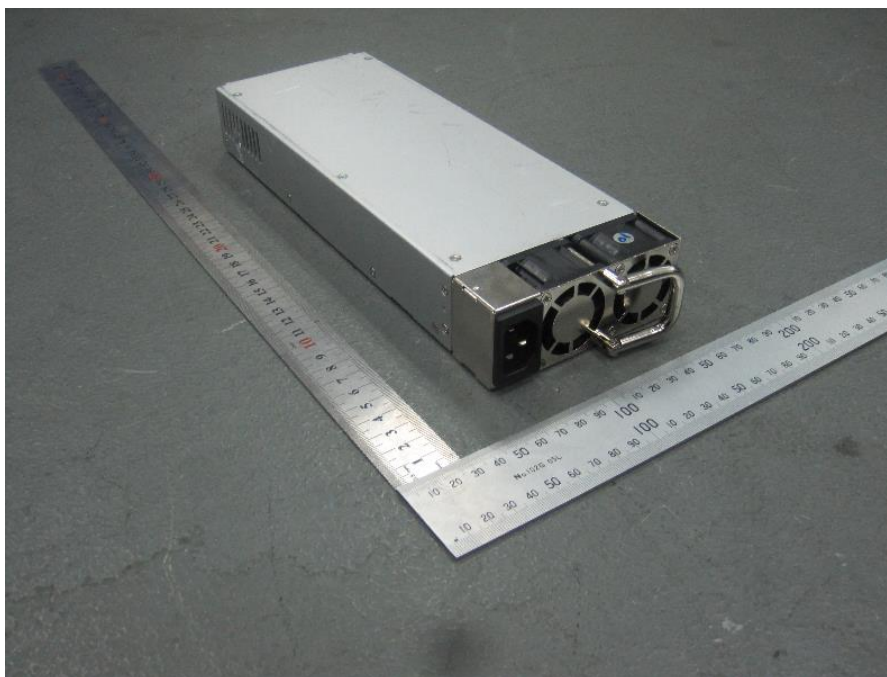


Attachment No. 3

Details of: Internal View 16 – Power supply system overview 4

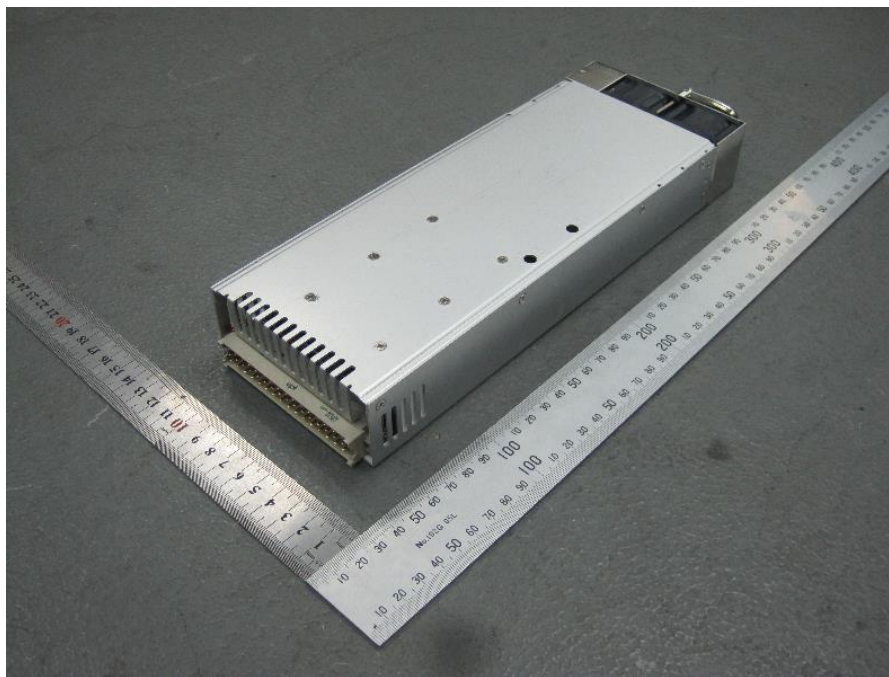


Details of: External view 1 of power supply module

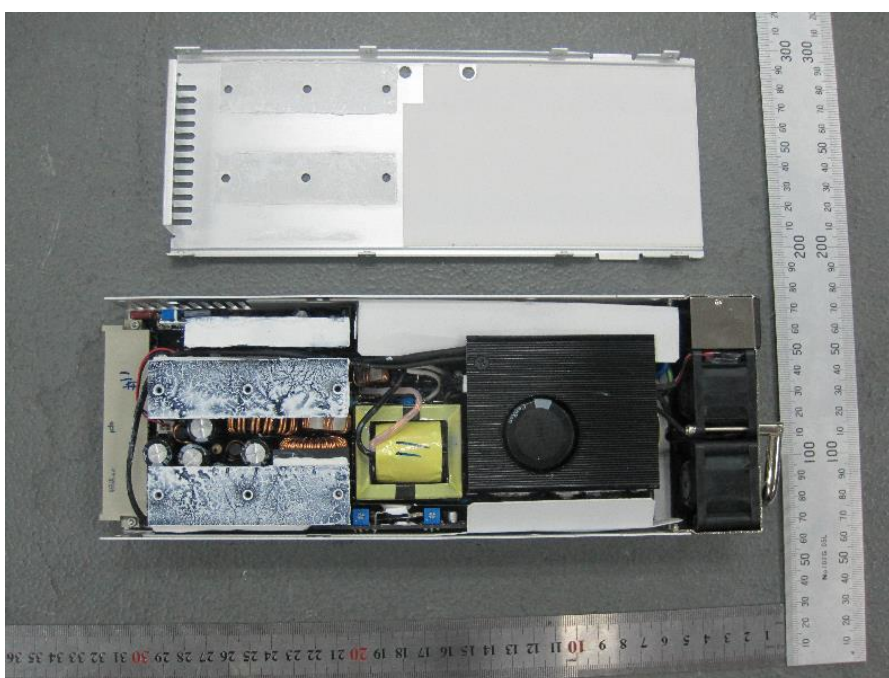


Attachment No. 3

Details of: External view 2 of power supply module

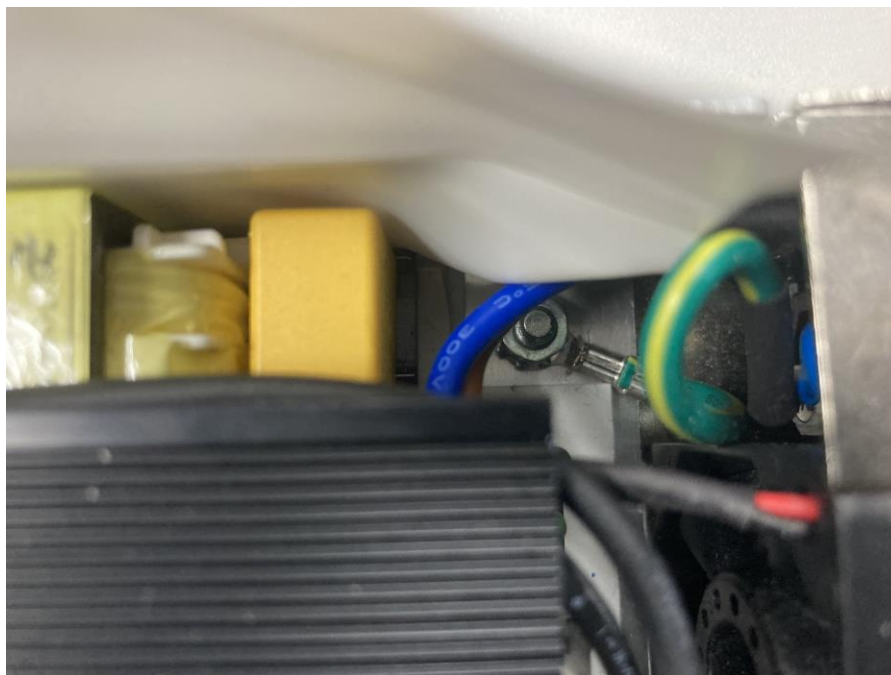


Details of: Internal view 1 of power supply module

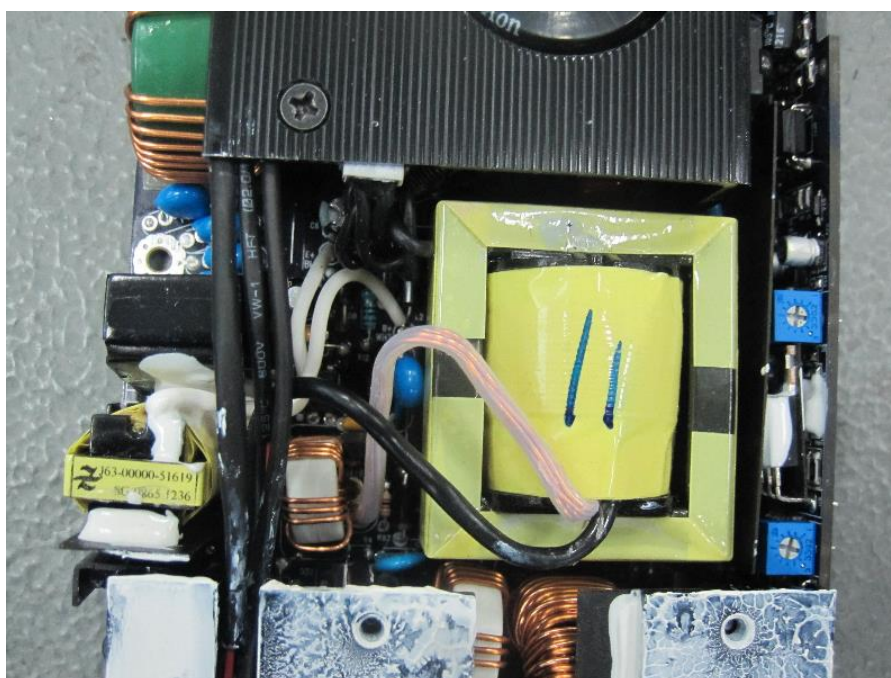


Attachment No. 3

Details of: Internal view 2 of power supply module

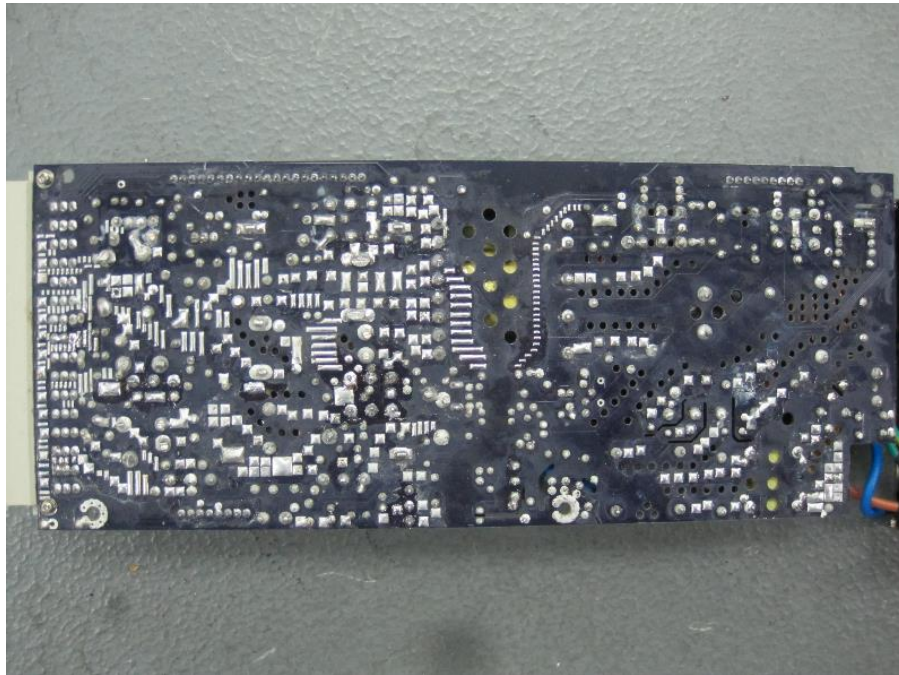


Details of: Internal view 3 of power supply module

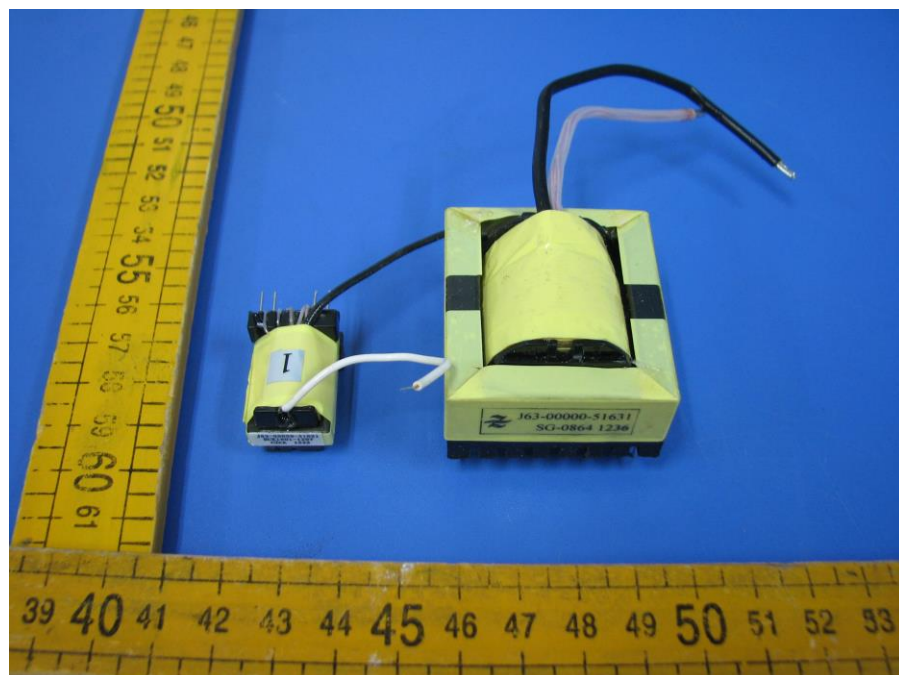


Attachment No. 3

Details of: Soldering side view of power supply module

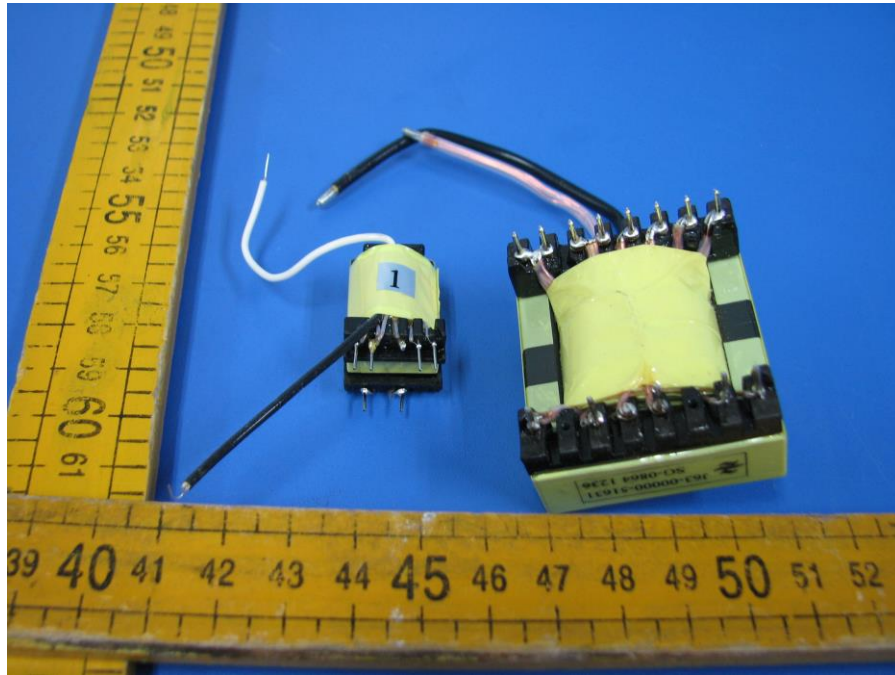


Details of: External view of transformers (TR1 And TR3)

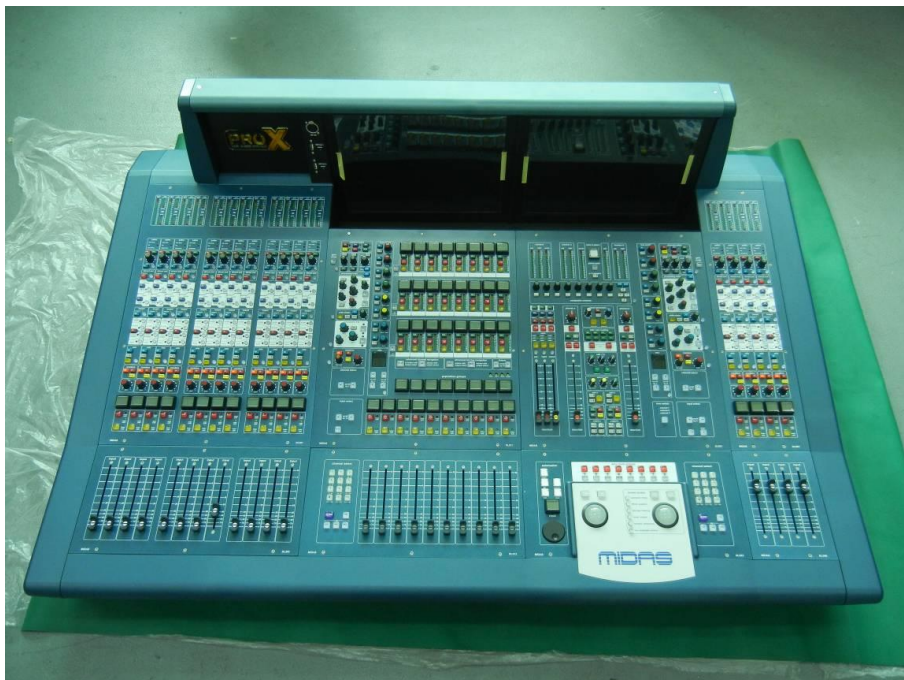


Attachment No. 3

Details of: External view of transformers (TR1 And TR3)



Details of: PRO X View 1



Attachment No. 3

Details of: Overall view 1 for model PRO X



Details of: Overall view 2 for model PRO X



Details of: Overall view 3 for model PRO X



Details of: Overall view 4 for model PRO X

