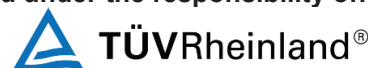




Test Report issued under the responsibility of:



TEST REPORT

IEC 62368-1

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

Report Number..... : CN24LVZ3 001

Date of issue : Nov.19, 2024

Total number of pages : 97

Name of Testing Laboratory

preparing the Report : TÜV Rheinland (Shenzhen) Co., Ltd.

Applicant's name : TPV Electronics (Fujian) Co., Ltd.

Address : Rongqiao Economic and Technological Development Zone,
Fuqing City, Fujian, P.R. China

Test specification:

Standard : IEC 62368-1:2018

Test procedure..... : CB Scheme

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

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

Test Report Form No..... : IEC62368_1E

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

Master TRF : Dated 2022-04-14

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

General disclaimer:

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

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

Test item description	LCD MONITOR	
Trade Mark(s)	SHARP	
Manufacturer	Sharp Corporation 1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan	
Model/Type reference	1) PN-M502, 2) PN-P506	
Ratings	1) 100-240V~, 50/60Hz, 3.4-1.4A 2) 100-240V~, 50/60Hz, 3.9-1.6A	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ CB Testing Laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.	
Testing location/ address	1601-1604, 17-18F, Tower A Building 2, Shenzhen International Innovation Valley, Dashi 1st Road, Xili Street, Xili Community, Shenzhen 518052 Nanshan District, China	
Tested by (name, function, signature)	Crystal Xu Project Handler	<i>Crystal Xu</i>
Approved by (name, function, signature) ..	Solina Zhao Technical Reviewer	<i>Solina Zhao</i>
Testing procedure: CTF Stage 1:		
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		
Testing procedure: CTF Stage 2:		
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) ..		
Testing procedure: CTF Stage 3:		
Testing procedure: CTF Stage 4:		
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) ..		
Supervised by (name, function, signature) :		

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

- Measurement Section (10 Pages)
- National Differences (68 Pages)
- Other National Requirements (2 pages)
- Photo documentation (9 Pages)

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

name of test	test clause number
Classification of electrical energy sources	5.2
Accessibility to electrical energy sources and safeguards (Accessibility test)	5.3.2
Maximum operating temperature test (Heating test)	5.4.1.4, 9.3, B.1.5, B.2.6
Determination of working voltage	5.4.1.8
Ball pressure test	5.4.1.10.3
Minimum Clearances/Creepage distance	5.4.2, 5.4.3
Humidity test	5.4.8
Electric strength test	5.4.9
Safeguards against capacitance discharge test	5.5.2.2
Resistance of the protective bonding system (Ground continuity test)	5.6.6
Unearthed accessible parts	5.7.4
Earthed accessible conductive part test	5.7.5
Electrical Power Source (PS) measurements for classification	6.2.2
Top Openings in Fire Enclosure	6.4.8.3.3
Bottom Openings in Fire Enclosure	6.4.8.3.4
Stability	8.6
Wall or ceiling mount loading test	8.7
Handle strength	8.8
Input test	Annex B.2.5
Abnormal operating and fault condition tests	Annex B.3, B.4
Test for permanence of markings	Annex F.3.10
Transformer insulation	Annex G.5.3.2
Transformer overload	Annex G.5.3.3
Safeguards against entry of foreign object	Annex P.2.2
Adhesive test	Annex P.4
Limited power source test (LPS)	Annex Q.1
Steady force test, 10N, 250N	Annex T.2, T.5
Enclosure impact test	Annex T.6

Testing location:

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

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

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

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

- ☒ The product fulfils the requirements of EN IEC 62368-1:2020+ A11:2020;
- ☒ The product fulfils the requirements of BS EN IEC 62368-1: 2020 + A11: 2020;
- ☒ The product fulfils the requirements of CSA/UL 62368-1:2019;
- ☒ The product fulfils the requirements of National standard SASO-IEC 62368-1:2020;
- ☒ The product fulfils the requirements of J62368-1(2023);
- ☒ The product fulfils the requirements of KC 62368-1(2021-08);
- ☒ The product fulfils the requirements of AS/NZS 62368.1:2022

For National Differences see corresponding Attachment.

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

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

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

Information on uncertainty of measurement:

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

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

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

Copy of marking plate:

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

SHARP MultiSync M502

LCD MONITOR
ЖК-монитор
液晶显示器 彩色显示器
모니터 (50 인치 LCD 모니터)
(MODEL / Модель / 型号 / 모델명: PN-M502)

VOLTS Вольт 输入电压 輸入電壓: 100-240V~
AMPERES Ампер 电流 電流: 3.4-1.4A
FREQUENCY Частота 工作频率 工作頻率: 50/60Hz

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE THE ENCLOSURE.
NO USER-SERVICEABLE PARTS INSIDE.

ATTENTION: AFIN DE PREVENIR DE TOUT CHOC ELECTRIQUES, NE PAS OUVRIR CE BOITIER.
AUCUNE PIECE INTERNE NE PEUT-ETRE CHANGEES PAR L'UTILISATEUR.

ACHTUNG: ZUR TRENNUNG VOM NETZ IST DER NETZSTECKER AUS DER STECKDOOSE ZU ZIEHEN.
GERÄT NICHT ÖFFNEN. ES SIND KEINE DURCH DEN BENUTZER AUSWECHSELBAREN TEILE IM GERÄT VORHANDEN.

PRECAUCIÓN: PARA PREVENIR DESCARGA ELÉCTRICA, NO QUITE EL RECINTO.
NINGUNAS PIEZAS DEL USUARIO SERVICABLE ADENTRO.

VAROITUS: LAITE ON LITETTÄVÄ SUOJAKOSKETTIMILLA VARUSTETTUUN PISTORASIAAN.

VARNING: APPARATEN SKALL ANSLUTAS TILL JORDAT UTGÅTT.

ADVARSEL: APPARATET MÅ TILKOPLES JORDET STIKKONTAKT.

ADVARSEL: APPARATETS STIKPROP SKAL TILSLUTTES EN STIKKONTAKT
MED JORD SOM GIVER FORBENDELSE TIL STIKPROPPENS JORD.

△注意: 请勿打开后盖, 小心高压电击, 机内并无用户配件。
△注意: 請勿打開後蓋, 小心高壓電擊, 機內並無用戶配件。
△警告: 使用過度恐傷害視力。

사용상 주의사항 감전의 위험 및 제품의 손상이 발생할 수 있으므로 제품의 커버를 열지 마십시오.
인증 서비스 센터 전화 번호: 080-022-1155 (효성ITX주식회사)
* 본 라벨과 전화번호는 국내 규정 내에서 적절한 목적으로만 사용되어야 합니다.

تنبيه
تجنب فتح الغطاء العلوي للجهاز منعا للتعرض لصدمة كهربائية.
لا يحتوي الجهاز على أجزاء داخلية قابلة للصيانة من قبل المستخدم.

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.
OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED,
INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

CAN ICES (B) / NMB (B)

UL LISTED E135689
US I.T.E. 1K81

CE UKCA

777777
RoHS

VCCI

RECYCLED SYMBOL

SAFETY MARK
XXXXXX-XX

CRESTRON CONNECTED

HDMI™

BRAND OWNER:
SHARP CORPORATION
シャープ株式会社
大阪府堺市堺区匠町1番地
日本国大阪府堺市堺区匠町1番地
1 Takumi-cho, Sakai-ku, Sakai-City, Osaka 590-8522, Japan
Contact address for EU
Sharp NEC Display Solutions Europe GmbH
Landshuter Allee 12-14, 80637 Munich, Germany
Contact address for UK
Sharp Electronics (Europe) Limited
4 Furzeground Way, Stockley Park, Uxbridge, Middlesex, UB11 1EZ, United Kingdom
www.sharpedisplays.eu

生產廠: 冠捷電子科技(福建)有限公司 生产厂: 冠捷電子科技(福建)有限公司
生产地址: 福建省融侨经济技术开发区光电园区
제조/국가: TPV Electronics (Fujian) Co., Ltd. / 중국

FOR JAPAN ONLY

警告

高圧注意
サービスマン以外の方は分解しないでください。内部には高圧部分があり、万が一さわると危険です。

感電注意
電源コードのアースリード線は必ず接地ください。故障のときに感電の原因になります。

定格電圧: 100-240V~
定格電流: 3.4-1.4A
定格周波数: 50/60Hz

SHARP

IP30

Recent geprüft
Stabilität
Regel mit Edge
Prüfung
www.tuv Rheinland
CERTIFIZIERT

www.tuv.com
01 9000000000

www.tuv.com
CERTIFICADO

www.tuv.com
01 9000100000

Mounting Interface
300mm x 300mm
4-M6 Depth 12mm Max

Portrait
Landscape
TOP

中国製造 中國製造
MADE IN CHINA FABRIQUE EN CHINE
FABRICADO EN CHINA Сделано в Китае

SHARP MultiSync P506

LCD MONITOR ЖК-монитор
液晶显示器 彩色显示器
모니터 (50 인치 LCD 모니터)
(MODEL / Модель / 型号 / 型號 / 모델명 : PN-P506)

VOLTS Вольт 输入电压 輸入電壓 : 100-240V-
AMPERES Ампер 电流 電流 : 3.9-1.6A
FREQUENCY Частота 工作频率 工作頻率 : 50/60Hz

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE THE ENCLOSURE.
NO USER-SERVICEABLE PARTS INSIDE.
ATTENTION: AFIN DE PREVENIR DE TOUT CHOC ELECTRIQUE, NE PAS OUVRIR CE BOITIER.
AUCUNE PIECE INTERNE NE PEUT-ETRE CHANGEES PAR L'UTILISATEUR.
ACHTUNG: ZUR TRENNUNG VOM NETZ IST DER NETZSTECKER AUS DER STECKDOSE ZU ZIEHEN.
GERÄT NICHT ÖFFNEN. ES SIND KEINE DURCH DEN BENUTZER AUSWECHSELBAREN TEILE IM GERÄT VORHANDEN.
PRECAUCIÓN: PARA PREVENIR DESCARGA ELÉCTRICA, NO QUITAR EL RECINTO.
NINGUNAS PIEZAS DEL USUARIO SERVICABLES ADENTRO.
VAROITUS: LAITE ON LITETTÄVÄ SUOJAKOSKETTIMILLA VARUSTETTUUN PISTORASMAAN.
WARNING: APPARATEN SKALL ANSLUTAS TILL JORDAT UTTAG.
ADVARSEL: APPARATET MÅ TILKOPLES JORDET STIKKONTAKT.
ADVARSEL: APPARATETS STIKKPROP SKAL TILSLUTTES EN STIKKONTAKT
MED JORD SOM GIVER FORBØDELSE TIL STIKKPROPPENS JORD.
△注意: 请勿打开后盖, 小心高压电击, 机内并无用户配件。
△注意: 請勿打開後蓋, 小心高壓電擊, 機內並無用戶配件。
△警告: 使用過度恐傷害視力。
사용상 주의사항 감전의 위험 및 제품의 손상이 발생할 수 있으므로 제품의 커버를 열지 마십시오.
인종 서비스 센터 전화 번호: 080-022-1155 (호성ITX주식회사)
* 본 라벨과 전화번호는 국내 규정 내에서 적절한 목적으로만 사용되어야 합니다.

FOR JAPAN ONLY

警告

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サービスマン以外の方は分解しないでください。内部には高電圧部分があり、万一さわると危険です。

感電注意
電源コードのアースリード線は必ず抜かないでください。故障のときに感電の原因となります。

定格電圧 : 100-240V-
定格電流 : 3.9-1.6A
定格周波数 : 50/60Hz

SHARP

IP30

YÜTHERM

SAFETY MARK
XXXXXX-XX

CRESTRON CONNECTED **HDMI™**

BRAND OWNER:
SHARP CORPORATION
シャープ株式会社
大阪府堺市堺区匠町 1 番地
日本国大阪府堺市堺区匠町 1 番地
1 Takumi-cho, Sakai-ku, Sakai-City, Osaka 590-8522, Japan
Contact address for EU
Sharp NEC Display Solutions Europe GmbH
Landshuter Allee 13-14, 80637 Munich, Germany
Contact address for UK
Sharp Electronics (Europe) Limited
4 Furze Ground Way, Stockley Park, Uxbridge, Middlesex, UB11 1EZ, United Kingdom
www.sharpedisplays.eu
生産廠: 冠捷電子科技(福建)有限公司 生产厂: 冠捷電子科技(福建)有限公司
生产地址: 福建省融侨经济技术开发区光电园区
제조/국가: TPV Electronics (Fujian) Co., Ltd. / 중국

Mounting Interface
300mm x 300mm
4-M6 Depth 12mm Max

Landscape

Portrait

中国製造 中國製造
MADE IN CHINA FABRIQUE EN CHINE
FABRICADO EN CHINA Сделано в Китае

Note: All models rating label are similar except for type designation. Above labels are representing the other models.

Test item particulars:			
Product group	☒ end product	☐ built-in component	
Classification of use by	☒ Ordinary person	☒ Children likely present	
	☐ Instructed person		
	☐ Skilled person		
Supply connection	☒ AC mains	☐ DC mains	
	☐ not mains connected:		
	☐ ES1	☐ ES2	☐ ES3
Supply tolerance	☒ +10%/-10%		
	☐ +20%/-15%		
	☐ + %/ - %		
	☐ None		
Supply connection – type	☒ pluggable equipment type A -		
	☐ non-detachable supply cord		
	☒ appliance coupler		
	☐ direct plug-in		
	☐ pluggable equipment type B -		
	☐ non-detachable supply cord		
	☐ appliance coupler		
	☐ permanent connection		
	☐ mating connector	☐ other:	
Considered current rating of protective device	☒ 20 A;		
	Location:	☒ building	☐ equipment
	☐ N/A		
Equipment mobility	☐ movable	☐ hand-held	☐ transportable
	☐ direct plug-in	☒ stationary	☐ for building-in
	☒ wall/ceiling-mounted	☐ SRME/rack-mounted	
	☐ other:		
Overvoltage category (OVC)	☐ OVC I	☒ OVC II	☐ OVC III
	☐ OVC IV	☐ other:	
Class of equipment	☒ Class I	☐ Class II	☐ Class III
	☐ Not classified	☐	
Special installation location	☒ N/A	☐ restricted access area	
	☐ outdoor location	☐	
Pollution degree (PD)	☐ PD 1	☒ PD 2	☐ PD 3
Manufacturer's specified T_{ma}	40 °C	☐ Outdoor: minimum	°C
IP protection class	☐ IPX0	☒ IP30	
Power systems	☒ TN	☐ TT	☒ IT - 230 V _{L-L}
	☐ not AC mains		
Altitude during operation (m)	☐ 2000 m or less	☒ 5000 m	
Altitude of test laboratory (m)	☒ 2000 m or less	☐ m	
Mass of equipment (kg)	Max. 18.9kg with base stand Max. 1.85kg (Base stand)		

Possible test case verdicts: - test case does not apply to the test object.....: N/A - test object does meet the requirement.....: P (Pass) - test object does not meet the requirement.....: F (Fail)	
Testing: Date of receipt of test item: Aug.19.2024 Date (s) of performance of tests: Aug.20.2024 - Sep.20.2024	
General remarks: "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☐ comma / ☒ point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IECCE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided:	☒ Yes ☐ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) :	1 TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian, P.R. China 2 TPV Electronics (Fujian) Co., Ltd. Shangzheng, Yuan Hong Road, Fuqing City, Fujian, P.R. China 3 TPV Electronics (Fujian) Co., Ltd. Optoelectronic Park, Rongqiao Economic and Technological Development Zone, Fuqing City, 350301, Fujian, P.R. China 4 L&T Display Technology (Fujian) Ltd. Optoelectronic Park, Rongqiao Economic and Technological Development Zone, Fuqing, 350301, Fujian, P.R. China 5 Sharp Corporation 492 Minosho-cho, Yamato-Koriyama-shi, Nara, 639-1186 Japan 6 Sharp Office Equipments (Changshu) Co., Ltd. Huanghe Road, Yanjiang Economic Development Zone Changshu 215500 Jiangsu P.R. China 7 Sharp Manufacturing France SA Route de Bollwiller 68360 Soultz France

	8 SHARP MANUFACTURING (THAILAND) CO.,LTD 58 MOO 3 TAMBOL SAMPATUAN AMPHUR NAKORNCHAI SRI NAKORNPATHOM 73120 Thailand 9 Nanjing Sharp Electronics Co.,Ltd. 318 Yaixin Rd. E.T.D.Z. Nanjing 210038 Jiangsu P.R. China
General product information and other remarks: Product Description – The equipment models which shown as Page 2 are LCD MONITOR intended for information technology equipment scope of this standard use. The equipment consists of the following critical components: LCD panel (LED backlight type) 1. Building-in type switching power supply board with DC/DC converter circuit; 2. Main board with ports of Service port x1, Audio output x1, LAN x2, Remote IN x1, HDMI IN x2, HDMI output x1, Display IN x1, Display output x1, USB type C x2, USB type A with fast charging x1 and RS-232 (secondary circuit) 3. Converter board, which is supplied by VLED output of power board mentioned above (secondary circuit) 4. Internal speaker x2 (secondary circuit) (optional) 5. Key control board (secondary circuit) 6. IR board (secondary circuit) 7. System DC fan x3 (optional) 8. Metal enclosure for rear and front side 9. Metal cover for AC inlet, I/O port and Key control board 10. Plastic cover for IR board and OPS board 11. Base stand (optional) Model Differences: All models are identical except for type designation and rating. Additional application considerations: 1. Other Country Differences Special national conditions for J3000 (H25) Per client's request, supplement the special national conditions for J3000 (H25) to present test report. 2. All data ports on main board and speakers are optional use. 3. Unless other specified, all test have been performed under condition of DC fans blocking. 4. The following items were also considered 1) The equipment was evaluated in landscape (horizontal) and portrait (vertical) orientations, viewed from the front. 2) The equipment tilt angle was evaluated at $\pm 30^\circ$ for both landscape and portrait orientations. 3) Relevant information on installation procedures can be found in the user manual. 4) The equipment is operated up to 5000m above sea level as declared by manufacturer. Clearances have been evaluated according to IEC 62368-1: table 16 with a multiplication factor of 1.48 throughout this report. 5) The power consumed by the KT-RC3 and PN-ZR03 connected to the REMOTE port is very small, so it does not affect the test results.	

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: L/N pin of appliance inlet	Ordinary	--	--	Discharge IC, Bleeder Resistors
ES3: All power board circuit except for output	Ordinary	Air gap	Metal enclosure (protective earthing)	Transformers, Photo Couplers, Y1 capacitor
ES1: Output for backlight of LCD panel	Ordinary	N/A	N/A	N/A
ES1: All output of power board	Ordinary	N/A	N/A	N/A
ES1: External accessible part	Ordinary	N/A	N/A	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS3: >100 watt circuit	Combustible materials inside fire enclosure except for key control board, IR board and external data ports.	Ignition not occur	Fire enclosure	--
PS2: <100 Watt circuit	Combustible materials of external data ports, key control board and IR board.	Ignition not occur	Mounted on V-1 min. PCB	--
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
MS3: Wall mount	Ordinary	--	--	Compliance with test 8.7.2
MS3: DC fans (for monitor and SDM card)	Ordinary	--	--	Covered by metal enclosure which is complied with Annex T, no accessible parts.

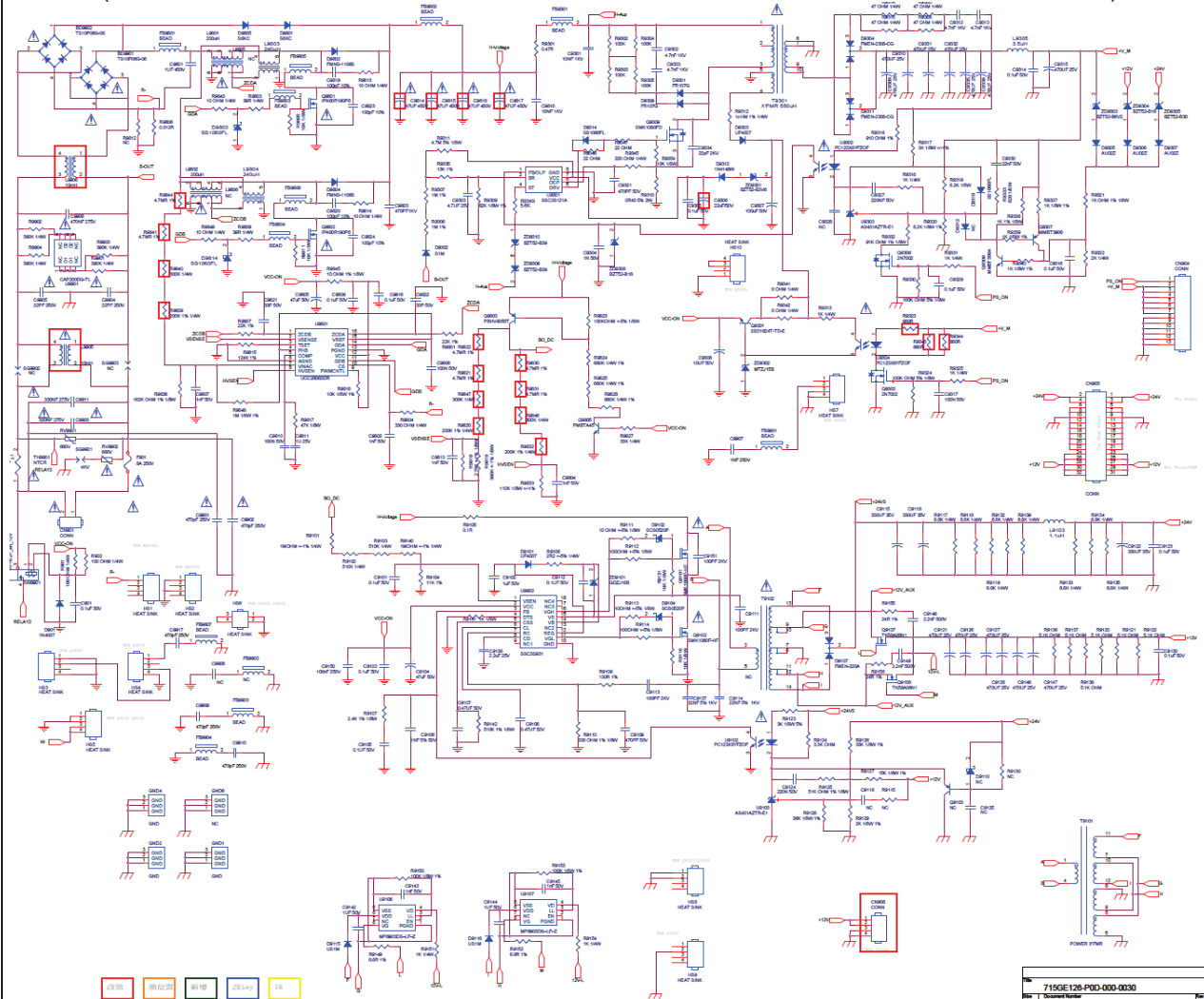
MS2: Equipment mass	Ordinary	--	--	Compliance with test 8.6
MS2: Handle of unit	Ordinary	--	--	Compliance with test 8.8
MS1: Edges and corners	Ordinary	N/A	N/A	N/A
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: Accessible parts	Ordinary	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: Indicating lights	Ordinary	N/A	N/A	N/A
RS1: LED backlight of LCD panel	Ordinary	N/A	N/A	N/A
Supplementary Information:				
“B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced Safeguard				

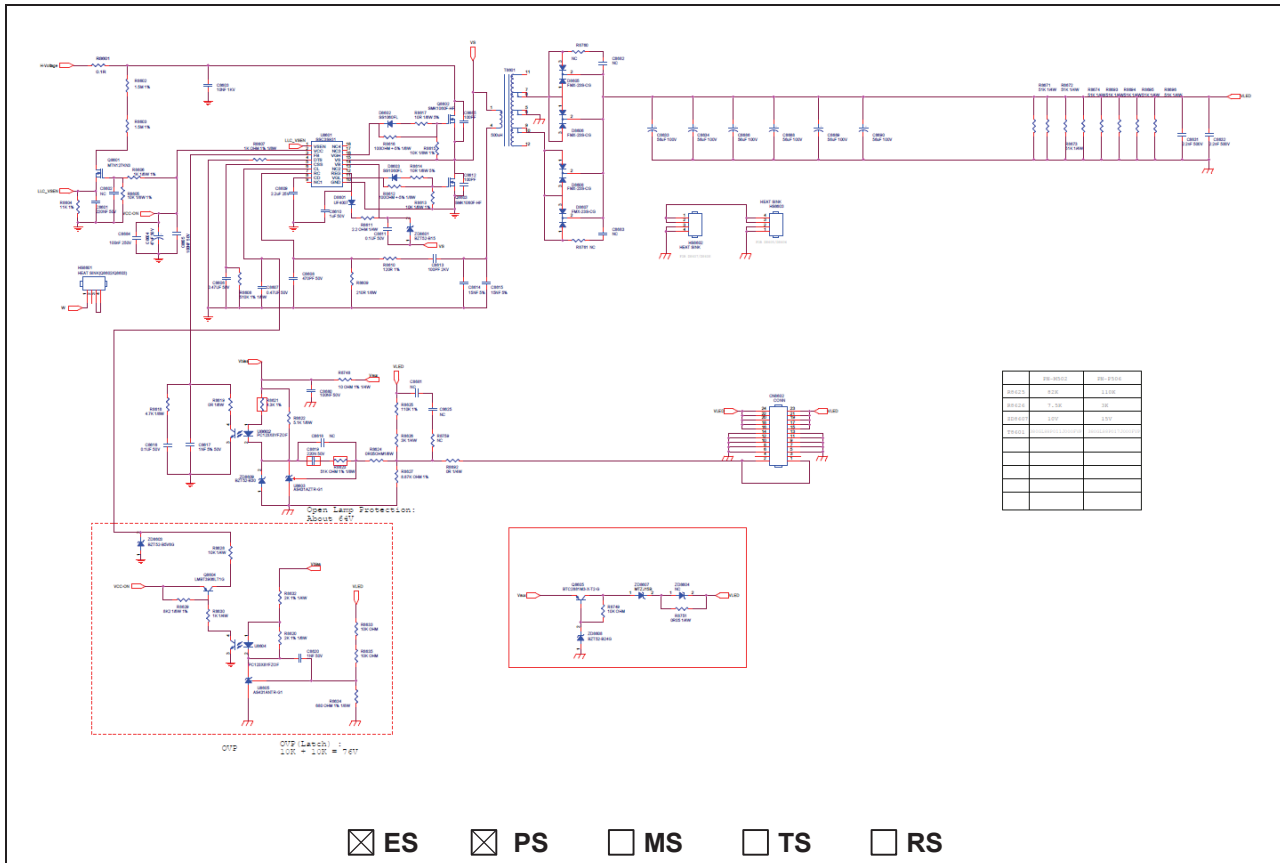
ENERGY SOURCE DIAGRAM

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

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

ES1, ES3, PS2, PS3
(See **ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE** for the details)





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Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2.	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
4.1.3	Equipment design and construction	No accessible part which could cause injury.	P
4.1.4	Specified ambient temperature for outdoor use (°C) :		N/A
4.1.5	Constructions and components not specifically covered		N/A
4.1.8	Liquids and liquid filled components (LFC)	(See G.15)	N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness	For adhesives securing parts serving as safeguards, see Annex P.4. Others see below.	P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Annex T.5)	P
4.4.3.3	Drop tests		N/A
4.4.3.4	Impact tests	See Annex T.	P
4.4.3.5	Internal accessible safeguard tests	See Annex T.	P
4.4.3.6	Glass impact tests	Used with glass that is laminated or has a construction such that glass particles do not separate from each other if the glass is broken.	N/A
4.4.3.7	Glass fixation tests	No such construction.	N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	Thermoplastic material used and described in Annex T.8, no deformation on all sources of plastic enclosure.	P
4.4.3.9	Air comprising a safeguard		P
4.4.3.10	Accessibility, glass, safeguard effectiveness	Compliance checked.	P
4.4.4	Displacement of a safeguard by an insulating liquid	No such component.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.4.5	Safety interlocks		N/A
4.5	Explosion		P
4.5.1	General	No explosion occurs during normal/abnormal operation and single fault conditions.	P
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3)	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	Screws with toothed washer fixing earthed PCB trace to metal chassis for protective bonding conductor.	P
	Compliance is checked by test :	(See Clause T.2)	P
4.7	Equipment for direct insertion into mains socket-outlets		N/A
4.7.2	Mains plug part complies with relevant standard .. :		N/A
4.7.3	Torque (Nm) :		N/A
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General	No lithium coin/button batteries used.	N/A
4.8.2	Instructional safeguard :		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	Likelihood of fire or shock due to entry of conductive object		P
4.10	Component requirements		P
4.10.1	Disconnect Device	(See Annex L)	P
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

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Clause	Requirement + Test	Result - Remark	Verdict
5.2.2	ES1, ES2 and ES3 limits	See below.	P
5.2.2.2	Steady-state voltage and current limits	(See appended table 5.2)	P
5.2.2.3	Capacitance limits	ES3.	N/A
5.2.2.4	Single pulse limits		N/A
5.2.2.5	Limits for repetitive pulses		N/A
5.2.2.6	Ringing signals		N/A
5.2.2.7	Audio signals	(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	See "OVERVIEW OF EMPLOYED SAFEGUARDS" table.	P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors	See above.	P
5.3.2.1	Accessibility to electrical energy sources and safeguards	ES2 or ES3 source cannot accessed by ordinary persons and ES3 source cannot accessed by instructed persons. Double or reinforced safeguard is provided between ES2 or ES3 and ordinary persons or instructed persons.	P
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements	See below.	P
	Test with test probe from Annex V	Test probe V.1, V.2 applied.	-
5.3.2.2 a)	Air gap – electric strength test potential (V)	(See appended table 5.4.9).	P
5.3.2.2 b)	Air gap – distance (mm)	Complied with the minimum distance requirement. (See appended table 5.4.2, 5.4.3.)	P
5.3.2.3	Compliance		P
5.3.2.4	Terminals for connecting stripped wire	No such terminals.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	Hygroscopic materials are not used for insulating material.	P
5.4.1.3	Material is non-hygroscopic	(See sub-clause 5.4.8)	P
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degrees	Pollution degree 2	P

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Clause	Requirement + Test	Result - Remark	Verdict
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	Bobbin materials of transformer and line chock are phenolic that is accepted without further tests. Others see appended table 5.4.1.10.3.	P
5.4.1.10.2	Vicat test..... :		N/A
5.4.1.10.3	Ball pressure test :	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		P
5.4.2.1	General requirements	See above.	P
	Clearances in circuits connected to AC Mains, Alternative method	See below.	P
5.4.2.2	Procedure 1 for determining clearance	(See appended table 5.4.2, 5.4.3.)	P
	Temporary overvoltage :	2000V	—
5.4.2.3	Procedure 2 for determining clearance	(See appended table 5.4.2, 5.4.3.)	P
5.4.2.3.2.2	a.c. mains transient voltage..... :	2500V	—
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 :	Multiplication factor is 1.48 for altitude up to 5000m.	P
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 :	Material group IIIb assumed.	—
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

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Clause	Requirement + Test	Result - Remark	Verdict
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	See Clause Annex G.12.	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	Reinforced insulation.	P
	Number of layers (pcs)	Min.2.	P
5.4.4.6.3	Non-separable thin sheet material	Not used.	N/A
	Number of layers (pcs)		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		P
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P , K_R , d , V_{PW} (V)	(See appended Table 5.4.4.9) or (See appended Table 5.4.9)	P
	Alternative by electric strength test, tested voltage (V), K_R		N/A
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance ($M\Omega$)		N/A
	Electric strength test		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%), temperature ($^{\circ}C$), duration (h)	Performed at 40 $^{\circ}C$, 95% R.H. for 120h.	—
5.4.9	Electric strength test		P
5.4.9.1	Test procedure for type test of solid insulation	(See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine test		N/A
5.4.10	Safeguards against transient voltages from external circuits		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.2.2	Impulse test		N/A
5.4.10.2.3	Steady-state test		N/A
5.4.10.3	Verification for insulation breakdown for impulse test.....		N/A
5.4.11	Separation between external circuits and earth		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V)		—
	Nominal voltage U_{peak} (V)		—
	Max increase due to variation ΔU_{sp}		—
	Max increase due to ageing ΔU_{sa}		—
5.4.11.3	Test method and compliance		N/A
5.4.12	Insulating liquid		N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid		N/A
5.4.12.3	Compatibility of an insulating liquid		N/A
5.4.12.4	Container for insulating liquid		N/A
5.5	Components as safeguards		P
5.5.1	General		P
5.5.2	Capacitors and RC units		P
5.5.2.1	General requirement	X-Cap. and Y-Cap. are IEC 60384-14 approval components and complied with Annex G.11.	P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....	(See appended table 5.5.2.2)	P
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See Annex G.12)	P
5.5.5	Relays	(See Annex G.2)	P
5.5.6	Resistors	Bleeder resistors R9901, R9902, R9903 and R9904 used in parallel. Approved Discharge IC (U9901) used.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.7	SPDs	(See Annex G.8) (See appended table 5.4.9) (See appended table 5.4.2 and 5.4.3)	P
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable		N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA).....		—
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors		P
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors	Protective conductor served as a supplementary safeguard to prevent accessible conductive parts from exceeding ES2 limits.	P
5.6.2.1	General requirements	No switch or overcurrent protective device in protective conductor.	P
5.6.2.2	Colour of insulation	Green-and-yellow wire used.	P
5.6.3	Requirement for protective earthing conductors	Not used with power cord.	N/A
	Protective earthing conductor size (mm ²)		—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors	See below.	P
5.6.4.1	Protective bonding conductors	Cross-sectional area of protective bonding wire complied with requirement of clause 5.6.6 and the minimum sizes in table 31.	P
	Protective bonding conductor size (mm ²).....	Min. 0.75mm ² , 18AWG	—
5.6.4.2	Protective current rating (A)	20A	P
5.6.5	Terminals for protective conductors	Screws fixing earthed PCB trace to metal chassis for protective bonding. Size of screws is according with Table 32.	P
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)	Appliance inlet used.	P
	Terminal size for connecting protective bonding conductors (mm).....	3.5 mm	P
5.6.5.2	Corrosion	Complied.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.6	Resistance of the protective bonding system	See below.	P
5.6.6.1	Requirements	See below.	P
5.6.6.2	Test Method.....:	(See appended table 5.6.6)	P
5.6.6.3	Resistance (Ω) or voltage drop	(See appended table 5.6.6)	P
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm^2)		N/A
	Class II with functional earthing marking		N/A
	Appliance inlet cl & cr (mm).....:		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current	Figure 4 of IEC 60990 was used in determining of the limit of ES1; Figure 5 of IEC 60990 was used in determining of the limit of ES2.	P
5.7.2.2	Measurement of voltage	See above.	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		N/A
	Protective conductor current (mA)		N/A
	Instructional Safeguard		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits		N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment connected to earthed external circuits, current (mA)		N/A
	b) Equipment connected to unearthed external circuits, current (mA)		N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES.....:		N/A
	Air gap (mm)		N/A

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Clause	Requirement + Test		Verdict
6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of PS and PIS		P
6.2.2	Power source circuit classifications..... :	See ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE.	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS :	All components located within power board are considered as arcing PIS.	P
6.2.3.2	Resistive PIS :	All components located within the equipment are considered as resistive PIS.	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials :	(See appended table B.1.5 and B.3)	P
	Combustible materials outside fire enclosure :	Min. HB	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method	The method "Control fire spread" is selected.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	Supplementary safeguards		N/A
6.4.3.2	Single Fault Conditions :	(See appended table B.4)	N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.5.2	Supplementary safeguards	Compliance detailed as follows: – <u>Printed board</u>: rated min. V-1 – <u>Wire insulation and tubing</u>: complying with Clause 6.5 – <u>All other components</u>: at least V-2 except for mounted on min. V-1 material or small parts of combustible material or components complying to relevant IEC standard; have a mass of combustible material of less than 4g – <u>Isolating transformer</u>: complying with G.5.3. (See appended tables 4.1.2 and Annex G)	P
6.4.6	Control of fire spread in PS3 circuits	Providing fire enclosure for PS3 circuit.	P
6.4.7	Separation of combustible materials from a PIS	Providing fire enclosure for PS3 circuit.	P
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.2	Fire enclosure and fire barrier material properties	See below	P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	External metal enclosure served as fire enclosure.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties		P
	Openings dimensions (mm)	See attachment: Measurement Section for the details.	P
6.4.8.3.4	Bottom openings and properties		P
	Openings dimensions (mm)	See attachment: Measurement Section for the details.	P
	Flammability tests for the bottom of a fire enclosure		N/A
	Instructional Safeguard..... :		N/A
6.4.8.3.5	Side openings and properties		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Openings dimensions (mm)	See attachment: Measurement Section for the details.	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	External metal enclosure served as fire enclosure.	P
6.4.9	Flammability of insulating liquid		N/A
6.5	Internal and external wiring		P
6.5.1	General requirements	Internal or external wiring materials are compliant with IEC 60950-1 according to Sub-clause 4.1.1. Furthermore, the test method described in IEC 60695-11-21 is considered equivalent to that test wiring materials for VW-1. All internal wiring are using VW-1 material.	P
6.5.2	Requirements for interconnection to building wiring		N/A
6.5.3	Internal wiring size (mm ²) for socket-outlets		N/A
6.6	Safeguards against fire due to the connection to additional equipment		P

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

8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners		P
8.4.1	Safeguards	No sharp edges and corners in accessible area.	P
	Instructional Safeguard		N/A
8.4.2	Sharp edges or corners		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5	Safeguards against moving parts		P
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	Metal enclosure acts as equipment safeguard to preventing contact of moving fan blades.	P
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m)		N/A
	Space between end point and nearest fixed mechanical part (mm)		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N)		N/A
8.5.4.3.5	Compliance		N/A
8.5.5	High pressure lamps	Not that equipment.	N/A
	Explosion test		N/A
8.5.5.3	Glass particles dimensions (mm).....		N/A
8.6	Stability of equipment		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.1	General	With skid proof pad and remove skid proof pad to test.	P
	Instructional safeguard	No such MS2 or MS3 television set.	N/A
8.6.2	Static stability	MS2 equipment.	P
8.6.2.2	Static stability test	Unit did not fall over when tilted to an angle of 10° from its normal upright position.	P
8.6.2.3	Downward force test	Not floor standing equipment.	N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm)		—
	Tilt test		N/A
8.6.4	Glass slide test	The equipment does not tip over during the test.	P
8.6.5	Horizontal force test		N/A
8.7	Equipment mounted to wall, ceiling or other structure		P
8.7.1	Mount means type	No wall mounting system provided. Only four M6 x 10mm (Min. length of threaded fit) screws evaluated.	P
8.7.2	Test methods		P
	Test 1, additional downwards force (N)		N/A
	Test 2, number of attachment points and test force (N)	17.05kg applied for each point (four directions plus inward and outward).	P
	Test 3 Nominal diameter (mm) and applied torque (Nm)	2.5Nm applied.	P
8.8	Handles strength		P
8.8.1	General	See below.	P
8.8.2	Handle strength test		P
	Number of handles	2	—
	Force applied (N)	37.8kg applied to each handle in turn	—
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test		N/A
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
8.10.3	Cart, stand or carrier loading test		N/A

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

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications		P
9.3	Touch temperature limits		P
9.3.1	Touch temperatures of accessible parts	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	P
9.3.2	Test method and compliance	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	P
9.4	Safeguards against thermal energy sources		N/A
9.5	Requirements for safeguards		N/A
9.5.1	Equipment safeguard	TS1 considered.	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
10.2.1	General classification	The following parts are	P

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Clause	Requirement + Test	Result - Remark	Verdict
		considered as RS1 without tests: - Indicating lights - LED backlight of LCD panel For LED backlight, the luminance is far less than 10000 cd/m ² . With reference to sub clause 4.1 of IEC 62471:2006 no further test is necessary.	
	Lasers		—
	Lamps and lamp systems		—
	Image projectors		—
	X-Ray		—
	Personal music player		—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply		N/A
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		N/A
10.4.1	General requirements		N/A
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure	(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

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

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.1	General		P
B.1.5	Temperature measurement conditions	(See appended table B.2.5)	P
B.2	Normal operating conditions		P
B.2.1	General requirements	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers	(See Annex E)	P
B.2.3	Supply voltage and tolerances	$\pm 10\%$	P
B.2.5	Input test	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General	(See appended table B.3)	P
B.3.2	Covering of ventilation openings	Normal heating tested with ventilation blocked.	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

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Clause	Requirement + Test	Result - Remark	Verdict
B.3.7	Audio amplifier abnormal operating conditions	(See appended table B.3)	P
B.3.8	Safeguards functional during and after abnormal operating conditions	Abnormal operating condition does not lead to a single fault condition, all safeguards remain effective. After restoration of normal operating conditions, all safeguards comply with applicable requirements.	P
B.4	Simulated single fault conditions		P
B.4.1	General	See below.	P
B.4.2	Temperature controlling device		N/A
B.4.3	Blocked motor test		N/A
B.4.4	Functional insulation	For traces before fuse, comply with the clearance/creepage for basic insulation, others are considered to perform short-circuited during the tests.	P
B.4.4.1	Short circuit of clearances for functional insulation	See above.	P
B.4.4.2	Short circuit of creepage distances for functional insulation	See above.	P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnection of passive components		P
B.4.7	Continuous operation of components		N/A
B.4.8	Compliance during and after single fault conditions	(See appended table B.4)	P
B.4.9	Battery charging and discharging under single fault conditions	See annex M	P
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus.....		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
C.2.4	Xenon-arc light-exposure test		N/A
D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Electrical energy source classification for audio signals		N/A
	Maximum non-clipped output power (W)..... :	Internal speaker and its supply circuit cannot be accessible by ordinary person.	—
	Rated load impedance (Ω)		—
	Open-circuit output voltage (V)..... :		—
	Instructional safeguard		—
E.2	Audio amplifier normal operating conditions		N/A
	Audio signal source type		—
	Audio output power (W)..... :		—
	Audio output voltage (V)		—
	Rated load impedance (Ω)		—
	Requirements for temperature measurement		N/A
E.3	Audio amplifier abnormal operating conditions		N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language	English. Versions in other languages will be provided when national certificate approval.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010. -  (IEC 60417-5019) for the wiring terminal of protective earthing - The product also marked with  (IEC 60417-5009) for the stand-by condition.	P
F.3	Equipment markings		P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.1	Equipment marking locations	The equipment marking is provided and is readily visible in operator access area.	P
F.3.2	Equipment identification markings	See below.	P
F.3.2.1	Manufacturer identification	See copy of marking plate.	P
F.3.2.2	Model identification	See copy of marking plate.	P
F.3.3	Equipment rating markings	See below.	P
F.3.3.1	Equipment with direct connection to mains	See below.	P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of the supply voltage	See copy of marking plate.	P
F.3.3.4	Rated voltage	See copy of marking plate.	P
F.3.3.5	Rated frequency	See copy of marking plate.	P
F.3.3.6	Rated current or rated power	See copy of marking plate.	P
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings		N/A
F.3.5.2	Switch position identification marking		N/A
F.3.5.3	Replacement fuse identification and rating markings	Fuses are not replaceable by ordinary person. The marking is adjacent to the fuse. F901 (on primary): T8AH/250Vac Not located in operator access areas.	P
	Instructional safeguards for neutral fuse	No such fuse used.	N/A
F.3.5.4	Replacement battery identification marking		P
F.3.5.5	Neutral conductor terminal		P
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	Appliance inlet is provided. The symbol IEC 60417-5019 was located on appliance inlet.	P
F.3.6.1.2	Protective bonding conductor terminals	Terminals was not identified.	P
F.3.6.2	Equipment class marking		N/A
F.3.6.3	Functional earthing terminal marking		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.7	Equipment IP rating marking	IP30. See copy of marking plate.	P
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking	See below.	P
F.3.10	Test for permanence of markings	Marking is durable and legible. The marking plate has no curling and is not able to be removed easily.	P
F.4	Instructions		P
	a) Information prior to installation and initial use	Provided in user's manual.	P
	b) Equipment for use in locations where children not likely to be present	Figure V.1 considered for test.	N/A
	c) Instructions for installation and interconnection	Provided in user's manual.	P
	d) Equipment intended for use only in restricted access area		N/A
	e) Equipment intended to be fastened in place	For wall mounted function, provided in user's manual.	P
	f) Instructions for audio equipment terminals		N/A
	g) Protective earthing used as a safeguard	The instruction is provided in the user's manual.	P
	h) Protective conductor current exceeding ES2 limits		N/A
	i) Graphic symbols used on equipment	Graphical symbols not used as an instructional safeguard.	N/A
	j) Permanently connected equipment not provided with all-pole mains switch		N/A
	k) Replaceable components or modules providing safeguard function		N/A
	l) Equipment containing insulating liquid		N/A
	m) Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		N/A
G	COMPONENTS		P
G.1	Switches		P
G.1.1	General	Approved source used. (See appended table 4.1.2 for the details.)	P
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
G.2	Relays		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.2.1	Requirements	Approved source used. (See appended table 4.1.2 for the details.)	P
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	Current fuse complying with IEC 60127 as overcurrent protection device.	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	The appliance inlet complied with IEC 60320-1.	P
G.4.2	Mains connector configuration :	The appliance inlet complied with IEC 60320-1.	N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	No misconnection likely.	P
G.5	Wound components		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.1	Wire insulation in wound components	Triple insulated wire of T9301 used on secondary windings as separation for insulation between primary windings and secondary windings. Bobbin of T9101, T8601 used as separation for insulation between primary windings and secondary windings.	P
G.5.1.2	Protection against mechanical stress	Physical separation provided by insulation tape or tube to relieve mechanical stress at the crossover point.	P
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Test time (days per cycle)		—
	Test temperature (°C).....		—
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	No insulation breakdown		N/A
G.5.3	Transformers		P
G.5.3.1	Compliance method.....	Meet the requirements in G.5.3.2 and G.5.3.3.	P
	Position	All transformers on power board	P
	Method of protection.....	Overcurrent protection.	P
G.5.3.2	Insulation	See attachment of Transformer table.	P
	Protection from displacement of windings	Displacement of windings is unlikely.	—
G.5.3.3	Transformer overload tests	(See appended table B.3 & B.4)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment.	P
G.5.3.3.2	Winding temperatures	(See appended table B.3 & B.4)	P
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation.....	See attachment Transformer table.	P

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.3.4.7	Routine test		N/A
G.5.4	Motors	Motors are used with DC fans only. The DC fan was already blocked during normal condition test.	P
G.5.4.1	General requirements		N/A
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4.2	Locked-rotor overload test	See above.	P
	Test duration (days)	During normal condition test, DC fans have been reach constant temperature.	—
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	No emit flames or molten metal. The cheesecloth do not char or catch fire. After the test, the motor voltage not exceed ES1.	P
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature		N/A
G.5.4.6.3	Alternative method		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage		—
G.6	Wire Insulation		P
G.6.1	General		P
G.6.2	Enamelled winding wire insulation		N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements	No mains supply cord provided.	N/A
	Type.....		—
G.7.2	Cross sectional area (mm ² or AWG)		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N)..... :		N/A
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm) :		N/A
G.7.3.2.4	Strain relief and cord anchorage material		N/A
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Test method and compliance		N/A
	Overall diameter or minor overall dimension, D (mm) :		—
	Radius of curvature after test (mm) :		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	Varistors		P
G.8.1	General requirements	The varistor is located after fuse and protected by fuse. (See appended table 4.1.2)	P
G.8.2	Safeguards against fire	Metal enclosure used as fire enclosure.	P
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test		N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	Integrated circuit (IC) current limiters		P
G.9.1	Requirements	Approved source used. See Table 4.1.2 for details.	P
	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

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Clause	Requirement + Test	Result - Remark	Verdict
G.10.1	General	Bleeder resistors R9901, R9902, R9903 and R9904 used in parallel.	N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
G.11	Capacitors and RC units		P
G.11.1	General requirements	X-Capacitors and Y-Capacitors used as safeguard and complied with IEC/EN 60384-14. (See appended table 4.1.2)	P
G.11.2	Conditioning of capacitors and RC units	At least 21 days at $40 \pm 2^{\circ}\text{C}$ and $93 \pm 3\%$ RH.	P
G.11.3	Rules for selecting capacitors	The selection followed with tables G.9 and G.12.	P
G.12	Optocouplers		P
	Optocouplers comply with IEC 60747-5-5 with specifics	The optocouplers used in the equipment are complied with the requirements of IEC 60747-5-5. (see appended table 4.1.2)	P
	Type test voltage $V_{\text{ini},a}$		—
	Routine test voltage, $V_{\text{ini},b}$		—
G.13	Printed boards		P
G.13.1	General requirements	See below.	P
G.13.2	Uncoated printed boards	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		P
G.16.1	Condition for fault tested is not required	Approved ICX and corresponding discharge circuit used. (See Tabel 4.1.2 for the details.)	P
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... :		—
	Mains voltage that impulses to be superimposed on :		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test :		—
G.16.3	Capacitor discharge test..... :		N/A
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling signal		N/A
H.3.1.1	Frequency (Hz) :		—
H.3.1.2	Voltage (V) :		—
H.3.1.3	Cadence; time (s) and voltage (V) :		—
H.3.1.4	Single fault current (mA): :		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)		N/A
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
J.1	General		P
	Winding wire insulation	Triple insulated wire used in transformer (T9301) was separately approved. See appended table 4.1.2.	—
	Solid round winding wire, diameter (mm)		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²)		N/A
J.2/J.3	Tests and Manufacturing		—
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard		N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
K.5.1	Under single fault condition		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm)		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm)		N/A
	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	Appliance Inlet as disconnect device.	P

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Clause	Requirement + Test	Result - Remark	Verdict
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized	When the power cord is removed from the inlet no remaining parts with hazardous voltage in the equipment.	P
L.4	Single-phase equipment	The disconnect device disconnects both poles simultaneously.	P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
	Instructional safeguard :		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		P
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Batteries and their cells comply with relevant IEC standards :		N/A
M.3	Protection circuits for batteries provided within the equipment	Test for Super Capacitors (CE1900).	P
M.3.1	Requirements		P
M.3.2	Test method		P
	Overcharging of a rechargeable battery	See appended table annex M for details.	P
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery		N/A
	Reverse charging of a rechargeable battery	(see appended table B.4 and Annex M)	P
M.3.3	Compliance	No explosion and leakage, no hazards.	P
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

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Clause	Requirement + Test	Result - Remark	Verdict
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%) :		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
	Calculated hydrogen generation rate :		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m ³ /h)..... :		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%)..... :		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate..... :		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%)..... :		N/A
M.7.4	Marking :		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s) :		—
M.8.2.3	Correction factors :		—
M.8.2.4	Calculation of distance d (mm) :		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse		P
	Instructional safeguard :	For Battery for remote Controller used, provided in user manual.	P
N	ELECTROCHEMICAL POTENTIALS		P
	Material(s) used :	The internal metal enclosure is made of mild steel, screw spring washer are made of Ni on steel, the combined electrochemical potential is below 0.6V according to Annex N.	—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Value of X (mm)..... :	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	See below.	P
P.2.2	Safeguards against entry of a foreign object	External metal enclosure used.	P
	Location and Dimensions (mm) :	See attachment: Measurement Section for the details.	—
P.2.3	Safeguards against the consequences of entry of a foreign object	See above.	P
P.2.3.1	Safeguard requirements	Complied.	P
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		N/A
	Transportable equipment with metalized plastic parts..... :		N/A
P.2.3.2	Consequence of entry test..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts		P

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Clause	Requirement + Test	Result - Remark	Verdict
P.4.1	General	Adhesive for Ripple Capacitors is considered as safeguard; Tape for internal wire is considered as safeguard; Adhesive for non-slip pad under base is considered as safeguard; Adhesive for Mylar sheet is considered as safeguard; Adhesive for thermal silicone is considered as safeguard	P
P.4.2	Tests	After test mentioned above, all safeguards remain effective.	P
	Conditioning, T _c (°C)	107.2 for Ripple Capacitors; 100.0 for adhesive for tape for internal wire; 100.0 for adhesive for non-slip pad; 118.4 for adhesive for Mylar sheet; 129.7 for adhesive for thermal silicone	—
	Duration (weeks)	1	—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources		P
Q.1.1	Requirements		P
	a) Inherently limited output	(See appended table Q.1)	P
	b) Impedance limited output		N/A
	c) Regulating network limited output	(See appended table Q.1)	P
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9	(See appended table Annex Q.1)	P
Q.1.2	Test method and compliance	(See appended table Annex Q.1)	P
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	Overcurrent protective device for test		—
R.3	Test method		N/A
	Cord/cable used for test		—
R.4	Compliance		N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		P
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	See table 4.1.2 for detail	P
S.5	Flammability test for fire enclosure materials of equipment with a steady state power exceeding 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
T	MECHANICAL STRENGTH TESTS		P
T.1	General		P
T.2	Steady force test, 10 N	(See appended table T.2)	P
T.3	Steady force test, 30 N		N/A
T.4	Steady force test, 100 N		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
T.5	Steady force test, 250 N :	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test	A 500g steel sphere ball fell freely from rest through a vertical distance of 1300 mm onto the sample.	P
	Swing test	A 500g steel sphere ball suspended by a cord dropping through a vertical distance of 1300 mm onto the sample	P
T.7	Drop test :		N/A
T.8	Stress relief test..... :		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)		N/A
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General		N/A
	Instructional safeguard :		N/A
U.2	Test method and compliance for non-intrinsically protected CRTs		N/A
U.3	Protective screen		N/A
V	DETERMINATION OF ACCESSIBLE PARTS		P
V.1	Accessible parts of equipment		P
V.1.1	General		P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		P
V.1.4	Plugs, jacks, connectors tested with blunt probe		N/A
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		N/A
V.2	Accessible part criterion		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General		N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		N/A
Y.3	Resistance to corrosion		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by :		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure :		N/A
Y.3.5	Compliance		N/A
Y.4	Gaskets		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A
	Alternative test methods :		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means	(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 :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.2	TABLE: Classification of electrical energy sources						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾	
264V, 60Hz	+VM output of power board (CN9104 Pin 2-7 to “-/GND)	Normal	5.2Vdc	--	SS	--	ES1
		Abnormal – (see table B.3 for details, maximum result recorded)	5.2Vdc	--	SS	--	
		Single fault – (see table B.4 for details, maximum result recorded)	5.2Vdc	--	SS	--	
264V, 60Hz	+12V output of power board (CN9103 Pin 23-32 to “-/GND)	Normal	12.0Vdc	--	SS	--	ES1
		Abnormal – (see table B.3 for details, maximum result recorded)	12.0Vdc	--	SS	--	
		Single fault – (see table B.4 for details, maximum result recorded)	12.0Vdc	--	SS	--	
264V, 60Hz	+24V output of power board (CN9103 Pin 1-4 to “-/GND)	Normal	23.8Vdc	--	SS	--	ES1
		Abnormal – (see table B.3 for details, maximum result recorded)	23.8Vdc	--	SS	--	
		Single fault – (see table B.4 for details, maximum result recorded)	23.8Vdc	--	SS	--	
264V, 60Hz	VLED output of power board (CN8602 Pin 15-24 to “-/GND)	Normal	43.8Vdc	--	SS	--	ES1
		Abnormal – (see table B.3 for details, maximum result recorded)	43.8Vdc	--	SS	--	
		Single fault – (see table B.4 for details, maximum result recorded)	43.8Vdc	--	SS	--	

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Clause	Requirement + Test	Result - Remark	Verdict

264V, 60Hz	LED backlight output of converter board to “-” /GND	Normal	45.1Vdc	--	SS	--	ES1
		Abnormal – (see table B.3 for details, maximum result recorded)	45.1Vdc	--	SS	--	
		Single fault – (see table B.4 for details, maximum result recorded)	45.1Vdc	--	SS	--	

Supplementary information:

1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc.

2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.

5.4.1.8	TABLE: Working voltage measurement				P
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
T9101: Pin 2 to pin 5,6	262	456	--	--	
T9101: Pin 2 to pin 7,8	250	456	--	--	
T9101: Pin 2 to pin 9,10	272	464	--	--	
T9101: Pin 2 to pin 11	240	456	--	--	
T9101: Pin 2 to pin 12	283	480	78.7K	Max. Vrms & Vpeak	
T9101: Pin 4 to pin 5,6	165	288	--	--	
T9101: Pin 4 to pin 7,8	169	304	--	--	
T9101: Pin 4 to pin 9,10	163	284	--	--	
T9101: Pin 4 to pin 11	173	316	--	--	
T9101: Pin 4 to pin 12	161	292	--	--	
T8601: Pin 2 to pin 5,6	261	448	--	--	
T8601: Pin 2 to pin 7,8	222	448	--	--	
T8601: Pin 2 to pin 9,10	304	502	91.2K	Max. Vrms & Vpeak	
T8601: Pin 4 to pin 5,6	166	300	--	--	
T8601: Pin 4 to pin 7,8	180	352	--	--	
T8601: Pin 4 to pin 9,10	162	324	--	--	
T9301: Pin 1 to pin 6,7	309	412	--	--	
T9301: Pin 1 to pin 9,10	307	440	--	--	

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Clause	Requirement + Test	Result - Remark	Verdict

T9301: Pin 3 to pin 6,7	317	528	66.7K	Max. Vrms & Vpeak
T9301: Pin 3 to pin 9,10	175	428		
T9301: Pin 4 to pin 6,7	175	428	--	--
T9301: Pin 4 to pin 9,10	176	404	--	--
T9301: Pin 5 to pin 6,7	173	352	--	--
T9301: Pin 5 to pin 9,10	174	356	--	--
U9102: Pin 1 to pin 3	188	408	--	--
U9102: Pin 1 to pin 4	188	400	--	--
U9102: Pin 2 to pin 3	187	372	--	--
U9102: Pin 2 to pin 4	187	372	--	--
U9302: Pin 1 to pin 3	178	356	--	--
U9302: Pin 1 to pin 4	177	360	--	--
U9302: Pin 2 to pin 3	177	356	--	--
U9302: Pin 2 to pin 4	178	356	--	--
U9304: Pin 1 to pin 3	165	336	--	--
U9304: Pin 1 to pin 4	167	336	--	--
U9304: Pin 2 to pin 3	166	336	--	--
U9304: Pin 2 to pin 4	166	336	--	--
U8602: Pin 1 to pin 3	178	356	--	--
U8602: Pin 1 to pin 4	178	356	--	--
U8602: Pin 2 to pin 3	180	360	--	--
U8602: Pin 2 to pin 4	179	360	--	--
U8604: Pin 1 to pin 3	176	356	--	--
U8604: Pin 1 to pin 4	167	344	--	--
U8604: Pin 2 to pin 3	175	352	--	--
U8604: Pin 2 to pin 4	165	336	--	--
C9901 pri to sec	0	0	--	--
C9902 pri to sec	243	368	--	--

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Clause	Requirement + Test		Result - Remark	Verdict
C9904 pri to sec	243	368	--	--
C9905 pri to sec	0	0	--	--
C9907 pri to sec	173	352	--	--
C9909 pri to sec	137	292	--	--
C9910 pri to sec	175	352	--	--
C9917 pri to sec	137	292	--	--
Supplementary information:				
Input Voltage is 100Vac, 60Hz and 240Vac, 60Hz, and max. test value was recorded in this table.				

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)	
Primary Connector / VH series	J.S.T	2.5	125	0.5	
Primary Connector / VT series	J.S.T	2.5	125	0.6	
Primary Connector / M3962 series	Xinya	2.5	125	1.1	
Primary Connector / W7913 series	Xinya	2.5	125	1.1	
Primary Connector / WE011 series	Xinya	2.5	125	1.1	
Primary Connector / 3962 series	Pontronics	2.5	125	1.1	
Primary Connector / A3963 series	Jowle	2.5	125	1.0	
Supplementary information:					

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.2, 5.4.3 TABLE: Minimum Clearances/Creepage distance								P
Clearance (cl) and creepage distance (cr) at/of/between:	U _p (V)	U _{rms} (V)	Freq ¹⁾ (Hz)	Required cl (mm)	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)
Basic/supplementary:								
Line trace to Neutral trace before fuse	420	250	--	2.3	3.1	--	2.5	3.1
Traces under fuse (F901)	420	250	--	2.3	3.1	--	2.5	3.1
Under SG9901	420	250	--	2.3	8.1	--	2.5	8.1
Primary component C9301 to metal enclosure	420	250	--	2.3	6.0	--	2.5	6.0
Reinforced:								
Under C9901	420	250	--	4.5	7.4	--	5.0	7.4
Under C9902	420	250	--	4.5	7.5	--	5.0	7.5
Under C9904	420	250	--	4.5	7.5	--	5.0	7.5
Under C9905	420	250	--	4.5	7.5	--	5.0	7.5
Under C9917	420	250	--	4.5	7.5	--	5.0	7.5
Under C9907	420	250	--	4.5	7.5	--	5.0	7.5
Under C9909	420	250	--	4.5	7.3	--	5.0	7.3
Under C9910	420	250	--	4.5	7.0	--	5.0	7.0
Under U8602	420	250	--	4.5	6.2	--	5.0	6.2
Under U8604	420	250	--	4.5	6.2	--	5.0	6.2
Under U9102	420	250	--	4.5	6.0	--	5.0	6.0
Under U9302	420	250	--	4.5	6.0	--	5.0	6.0
Under U9304	420	250	--	4.5	6.0	--	5.0	6.0
Under T8601	502	304	91.2K	4.5	14.3	--	6.1	14.3
Under T9101	480	283	78.7K	4.5	10.2	--	5.7	10.2
Under T9301	528	317	66.7K	4.5	8.2	--	6.4	8.2
Primary winding of T9301 to secondary component HS7	528	317	66.7K	4.5	16.0	--	6.4	16.0
Secondary winding of T9101 to primary component C9113	480	283	78.7K	4.5	9.3	--	5.7	9.3
Primary pin of U8602 to core of T8601	502	304	91.2K	4.5	10.3	--	6.1	10.3

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Clause	Requirement + Test				Result - Remark			Verdict

Primary component C8614 to secondary winding of T8601	502	304	91.2K	4.5	14.1	--	6.1	14.1
Supplementary information:								
Note 1: Only for frequency above 30 kHz								
Note 2: Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied)								
1. Core of main transformer T9301 consider as primary part; Core of main transformer T9101 and T8601 consider as secondary part. 2. One Mylar sheet is fixed between primary component trace and panel to fulfill the requirement for reinforced insulation. See table 5.4.9 for the electric strength test for Mylar sheet. 3. Glued component: C9814, C9815, C9816 and C9817. 4. Considered altitude correction factor 1.48 for clearances for an altitude of 5000m. 5. All internal wires are located by mechanical fixings to keep distance.								

5.4.4.2	TABLE: Minimum distance through insulation				P
Distance through insulation (DTI) at/of	Peak voltage (V)	Insulation	Required DTI (mm)	Measured DT (mm)	
Optocoupler	420	Reinforced	0.4	See table 4.1.2	
Bobbin of transformer	See Table 5.4.2.2, 5.4.2.4 and 5.4.3	Reinforced	0.4	See table 4.1.2	
Mylar sheet	See Table 5.4.2.2, 5.4.2.4 and 5.4.3	Reinforced	0.4	See table 4.1.2	
Insulation Tape of transformer	See Table 5.4.2.2, 5.4.2.4 and 5.4.3	Reinforced	0.4	See table 4.1.2	
Gas discharge tube	420	Basic	--	See table 4.1.2	
Supplementary information:					

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz						N/A
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)	
Supplementary information:							
Electric strength test according to Clause 5.4.9 will be applied due to test voltage value of clause 5.4.9 is much higher than that of Clause 5.4.4.9.							

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No
Basic/supplementary:				
Unit primary to earthed metal part		AC	2500	No
Gas discharge tube ¹⁾		AC	2500	No
Mylar sheet ²⁾		AC	2500	No
Reinforced:				
L/N to accessible plastic button with metal foil		AC	4000	No
Unit primary to secondary (output)		DC	4000	No
Transformer T9301 ³⁾ : primary to secondary		AC	4000	No
Transformer T9301 ³⁾ : secondary to core		AC	4000	No
Transformer T9301 ³⁾ : each layer of insulation tape		AC	4000	No
Transformer T9101 ³⁾ : primary to secondary		AC	4000	No
Transformer T9101 ³⁾ : primary to core		AC	4000	No
Transformer T9101 ³⁾ : each layer of insulation tape		AC	4000	No
Transformer T8601 ³⁾ : primary to secondary		AC	4000	No
Transformer T8601 ³⁾ : primary to core		AC	4000	No
Transformer T8601 ³⁾ : each layer of insulation tape		AC	4000	No
Supplementary information:				
1. For all sources of Gas discharge tube; 2. For all sources of Mylar sheet; 3. For all sources of transformer; 4. The tests mentioned above were performed after humidity test and heating test.				

5.5.2.2	TABLE: Stored discharge on capacitors				P
Location	Supply voltage (V)	Operating and fault condition ¹⁾	Switch position	Measured voltage (Vpk)	ES Class
L-N	264V, 60Hz	N	N/A	24V	ES1
L-N	264V, 60Hz	S (R9901 OC)	N/A	26V	ES1
Supplementary information:					

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Clause	Requirement + Test	Result - Remark	Verdict

X-capacitors installed for testing: See Table 4.1.2 for the details.

[X] bleeding resistor rating:

[X] ICX: Table 4.1.2 for the details.

1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit

5.6.6	TABLE: Resistance of protective conductors and terminations				P
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
Earth pin of AC inlet to metal enclosure	40	2	0.20	0.005	
PE terminal of AC inlet to SG9901 trace	40	2	0.40	0.010	
Supplementary information:					

5.7.4	TABLE: Unearthed accessible parts					P
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V _{rms} or V _{pk})	Current (A _{rms} or A _{pk})	Freq. (Hz)	
L/N to All secondary port	Normal	264V, 60Hz	--	0.01mA _{pk}	--	ES1
	Abnormal		--	0.01mA _{pk}	--	
	Single fault		--	0.01mA _{pk}	--	
L/N to button of key board	Normal	264V, 60Hz	--	0.01mA _{pk}	--	ES1
	Abnormal		--	0.01mA _{pk}	--	
	Single fault		--	0.01mA _{pk}	--	
L/N to All secondary port	Normal	110V, 60Hz	--	0.01mA _{pk}	--	ES1
	Abnormal		--	0.01mA _{pk}	--	
	Single fault		--	0.01mA _{pk}	--	
L/N to button of key board	Normal	110V, 60Hz	--	0.01mA _{pk}	--	ES1
	Abnormal		--	0.01mA _{pk}	--	
	Single fault		--	0.01mA _{pk}	--	
Supplementary information:						
See Table B.3 and B.4 for condition of Abnormal and Single fault, and also tested with fault condition as mentioned in IEC 60990:2016 Clause 6.2.2.2, and maximum test result was recorded in this table.						

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5.7.5	TABLE: Earthed accessible conductive part			P
Supply voltage (V)	110Vac and 264Vac			—
Phase(s)	[X] Single Phase; [] Three Phase: [] Delta [] Wye			
Power Distribution System	[x] TN [] TT [x] IT			
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	
L – metal enclosure	1	Max. 0.62	Switch “e” open	
N – metal enclosure	1	Max. 0.62	Switch “e” open	
Supplementary Information:				
Tested with fault condition as mentioned in IEC 60990:2016 Clause 6.2.2.2, and maximum test result was recorded in this table.				

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
All circuits of power board and main board within unit except data ports	--	--	--	--	--	PS3
IR board, key control board, SDM board and all data ports on main board	--	--	--	--	--	PS2 (See Table Annex Q.1)
Abbreviation: SC= short circuit; OC= open circuit						
1) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.						

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6.2.3.1	TABLE: Determination of Arcing PIS			P
Location	Open circuit voltage after 3 s (V _{pk})	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No
2)	2)	2)	2)	Yes
Supplementary information:				
1) An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V _p) and normal operating condition rms current (I _{rms}) is greater than 15. 2) All components located within the power board are considered as arcing PIS.				

6.2.3.2	TABLE: Determination of resistive PIS			P
Location		Operating and fault condition	Dissipate power (W)	Arcing PIS? Yes / No
3)		3)	3)	Yes
Supplementary information:				
1) A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter. If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.				
2) A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.				
3) All components located within the EUT are considered as resistive PIS.				

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

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Clause	Requirement + Test	Result - Remark	Verdict

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	110V/ 60Hz	264V/ 60Hz	90V/ 60Hz	—
Ambient temperature during test T_{amb} (°C)		See below	See below	See below	See below	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
DP mode		Horizontal			Vertical (Power board upward)	--
AC inlet near "L" (on power board)		49.2	48.5	45.6	57.7	70
Primary wire		51.0	50.2	46.4	59.5	105
Primary connector CN901		62.4	61.2	56.3	68.2	Ref.
Relay SW9901		69.9	68.4	63.5	73.8	85
X-cap C9903&C9911 (on power board)		68.5	67.0	58.5	71.1	100
X-cap C9906 (on power board)		75.8	74.0	61.3	74.4	100
Y-cap C9902 (on power board)		63.5	62.2	57.2	66.5	125
Y-cap C9904 (on power board)		70.5	68.9	60.2	68.9	125
Y-cap C9905 (on power board)		66.2	64.8	58.7	68.1	125
Y-cap C9907 (on power board)		76.8	75.0	63.5	69.2	125
Y-cap C9909 (on power board)		70.7	69.1	63.6	84.9	125
Y-cap C9910 (on power board)		76.4	74.6	70.8	84.0	125
Y-cap C9917 (on power board)		60.6	59.4	56.6	76.3	125
E-cap C9815 (on power board)		74.1	72.4	67.4	79.2	105

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Clause	Requirement + Test		Result - Remark		Verdict
L9905 Coil (on power board)	84.8	82.7	62.2	82.0	130
L9906 Coil (on power board)	87.4	85.2	63.4	88.6	130
L9801 Coil (on power board)	83.4	81.3	67.9	93.5	120
L9801 Core (on power board)	82.7	80.7	67.2	92.2	120
L9802 Coil (on power board)	77.0	75.2	63.5	90.4	120
L9802 Core (on power board)	76.7	74.9	62.9	89.6	120
T9101 Coil (on power board)	97.9	95.3	93.6	89.1	110
T9101 Core (on power board)	93.0	90.6	89.0	92.0	110
T8601 Coil (on power board)	86.2	84.0	82.4	88.6	110
T8601 Core (on power board)	89.6	87.3	85.8	84.8	110
T9301 Coil (on power board)	83.8	81.7	75.1	80.8	110
T9301 Core (on power board)	83.1	81.1	74.4	78.7	110
Optical coupler U8602 body (on power board)	81.4	79.4	77.7	77.8	100
Optical coupler U9304 body (on power board)	84.7	82.6	71.9	78.2	100
PCB near BD9901 (on power board)	88.1	85.8	67.7	85.5	105
PCB near BD9902 (on power board)	84.6	82.5	66.1	89.9	105
PCB near TH9901&RV9901 (on power board)	71.0	69.4	60.8	75.6	105
PCB near RV9902 (on power board)	70.4	68.8	60.0	73.4	105
PCB near Q9801 (on power board)	83.2	81.1	70.6	93.9	105
PCB near Q9802 (on power board)	86.7	84.5	74.5	95.3	105
PCB near D9802&D9804 (on power board)	85.2	83.1	74.5	94.1	105
PCB near Q9309 (on power board)	84.3	82.2	81.5	83.4	105
PCB near Q9101&Q9102 (on power board)	86.7	84.5	83.2	90.7	105
PCB near Q8602&Q8603 (on power board)	83.1	81.1	80.1	80.5	105
PCB near D9304&D9311 (on power board)	82.7	80.7	75.6	77.0	105
PCB near Q9107&Q9108 (on power board)	101.7	98.9	97.0	88.0	105
PCB near D8107 (on power board)	94.2	91.7	89.8	81.7	105
PCB near D8605&D8608 (on power board)	86.8	84.6	83.4	74.5	105
PCB near D8606&D8607 (on power board)	85.7	83.6	82.4	73.6	105
PCB near main IC (on main board)	66.4	65.0	65.6	68.0	105
Super capacitor CE1900 (on main board)	67.0	65.6	66.2	56.6	70
PCB near IC (on converter board)	73.8	72.1	72.4	72.4	105
Mylar between panel & power board	89.2	86.9	84.6	90.4	100

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Metal enclosure inside near T8601			61.2	60.0	58.3	59.9	Ref.
Ambient			40.0	40.0	40.0	40.0	--
Touch temperature for accessible part under normal condition							
Metal enclosure outside near transformer			46.2	45.6	43.3	44.9	70
Panel surface			40.4	40.0	39.2	39.8	94
Power switch			30.4	30.3	30.0	28.8	77
Ambient			25.0	25.0	25.0	25.0	--
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. The temperatures were measured under worst case normal mode defined in B.2.5 and at voltages as described above. 2. The instruction installation manual defines the Tma at 40 °C. <u>Winding components (providing safety isolation):</u> - Class 130 material (B) Tmax = 120 °C – 10 °C = 110 °C <u>Components with maximum absolute temperature of others:</u> Tmax = Tmax of component 3. All values for T (°C) are re-calculated from actual ambient. 4. Test condition of input of 90V/60Hz and Vertical position is chose as representative for others temperature test.							

B.2.5		TABLE: Input test						P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
HDMI mode								
90	50	3.712	--	336.1	--	F901	3.712	Maximum normal load ^{1.}
90	60	3.743	--	336.1	--	F901	3.743	Maximum normal load ^{1.}
100	50	3.300	3.4	330.1	--	F901	3.300	Maximum normal load ^{1.}
100	60	3.321	3.4	330.1	--	F901	3.321	Maximum normal load ^{1.}
110	50	3.102	--	325.2	--	F901	3.102	Maximum normal load ^{1.}
110	60	3.121	--	325.1	--	F901	3.121	Maximum normal load ^{1.}
240	50	1.481	1.4	321.4	--	F901	1.481	Maximum normal load ^{1.}
240	60	1.433	1.4	321.4	--	F901	1.433	Maximum normal load ^{1.}
264	50	1.383	--	319.2	--	F901	1.383	Maximum normal load ^{1.}
264	60	1.351	--	319.2	--	F901	1.351	Maximum normal load ^{1.}

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Clause	Requirement + Test	Result - Remark	Verdict

Display mode								
90	50	3.762	--	342.4	--	F901	3.762	Maximum normal load ^{1.}
90	60	3.784	--	342.4	--	F901	3.784	Maximum normal load ^{1.}
100	50	3.383	3.4	337.1	--	F901	3.383	Maximum normal load ^{1.}
100	60	3.392	3.4	337.1	--	F901	3.392	Maximum normal load ^{1.}
110	50	3.182	--	332.1	--	F901	3.182	Maximum normal load ^{1.}
110	60	3.191	--	332.1	--	F901	3.191	Maximum normal load ^{1.}
240	50	1.510	1.4	327.4	--	F901	1.510	Maximum normal load ^{1.}
240	60	1.463	1.4	327.4	--	F901	1.463	Maximum normal load ^{1.}
264	50	1.412	--	326.5	--	F901	1.412	Maximum normal load ^{1.}
264	60	1.381	--	326.5	--	F901	1.381	Maximum normal load ^{1.}
Supplementary information:								
- Maximum normal load: maximum brightness, maximum contrast, full white screen, one USB 3.0 port loaded with 5V/0.9A, one USB 2.0 loaded with 5V/0.5A, one USB Type C loaded with 5V/1.5A, SDM board loaded with dummy loading of 12V/5.5A (by client's request), one USB Type C loaded with 20V/3.25A, speakers (two sets) loaded with 1KHz sinusoidal signal and turned to maximum volume; - PN-M502 (Rating: 3.4-1.4A), which has a lower current rating than PN-P506 (Rating: 3.9-1.6A), was evaluated as a representative. - Test have been performed with all LCD panel, and worst test result was recorded in this table.								

B.3, B.4 TABLE: Abnormal operating and fault condition tests						P
Ambient temperature T _{amb} (°C)..... :						—
Power source for EUT: Manufacturer, model/type, outputrating .. :						—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
Ventilation openings	blocked	90	3hr 26mins	F901	3.784	Unit operated normally, no hazards, no damage. Max. measured temperature: T9101 coil = 95.5°C, T9101 core = 88.1°C, T8601 coil = 83.6°C, T8601 core = 81.3°C, T9301 coil = 76.9°C, T9301 core = 75.2°C, AC inlet = 54.1°C, Metal enclosure = 61.8°C, Metal enclosure outside near T8601 = 58.5°C, Panel = 50.8°C, Button = 34.2°C,

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						Ambient = 28.6°C
USB 2.0 (5V/0.5A)	overload	90	1hr 50mins	F901	3.878	Before shutdown port is loaded to 1.5A, no damage, no hazards. Max. measured temperature: T9101 coil = 87.0°C, T9101 core = 79.3°C, T8601 coil = 73.6°C, T8601 core = 71.7°C, T9301 coil = 67.7°C, T9301 core = 65.5°C, AC inlet = 44.4°C, Metal enclosure = 46.6°C, Metal enclosure outside near T8601 = 42.1°C, Panel = 41.8°C, Button = 30.4°C, Ambient = 26.7°C
USB 3.0 (5V/0.9A)	overload	90	1hr 48mins	F901	3.850	Before shutdown port is loaded to 1.3A, no damage, no hazards. Max. measured temperature: T9101 coil = 86.4°C, T9101 core = 79.0°C, T8601 coil = 76.3°C, T8601 core = 71.8°C, T9301 coil = 67.5°C, T9301 core = 65.4°C, AC inlet = 43.7°C, Metal enclosure = 46.4°C, Metal enclosure outside near T8601 = 42.0°C, Panel = 41.5°C, Button = 30.3°C, Ambient = 26.4°C

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Clause	Requirement + Test			Result - Remark		Verdict
USB Type C (5V/1.5A)	overload	90	1hr 55mins	F901	3.832	Before shutdown port is loaded to 1.6A, no damage, no hazards. Max. measured temperature: T9101 coil = 85.4°C, T9101 core = 78.1°C, T8601 coil = 72.5°C, T8601 core = 70.9101.9°C,, T9301 coil = 67.0°C, T9301 core = 64.9°C, AC inlet = 44.7°C, Metal enclosure = 45.9°C, Metal enclosure outside near T8601 = 41.4°C, Panel = 40.8°C, Button = 29.9°C, Ambient = 26.0°C
USB Type C (20V/3.25A)	overload	90	1hr 56mins	F901	4.128	Before shutdown port is loaded to 4.1A, no damage, no hazards. Max. measured temperature: T9101 coil = 91.7°C, T9101 core = 82.4°C, T8601 coil = 75.6°C, T8601 core = 73.1°C, T9301 coil = 69.1°C, T9301 core = 66.9°C, AC inlet = 44.4°C, Metal enclosure = 46.9°C, Metal enclosure outside near T8601 = 42.1°C, Panel = 40.3°C, Button = 30.3°C, Ambient = 26.0°C

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Clause	Requirement + Test			Result - Remark		Verdict
+SDM (12V/5.5A)	overload	90	2hr 42mins	F901	4.268	Before shutdown port is loaded to 7.1A, no damage, no hazards. Max. measured temperature: T9101 coil = 78.7°C, T9101 core = 77.5°C, T8601 coil = 72.9°C, T8601 core = 70.9°C, T9301 coil = 66.9°C, T9301 core = 65.1°C, AC inlet = 43.5°C, Metal enclosure = 45.9°C, Metal enclosure outside near T8601 = 41.2°C, Panel = 39.7°C, Button = 29.0°C, Ambient = 25.3°C
+VM output	overload	90	3hr 18mins	F901	4.672	Before shutdown winding is loaded to 10.0A additional, no damage, no hazards. Max. measured temperature: T9101 coil = 106.6°C, T9101 core = 95.0°C, T8601 coil = 79.6°C, T8601 core = 77.3°C, T9301 coil = 119.0°C, T9301 core = 116.4°C, AC inlet = 46.2°C, Metal enclosure = 50.4°C, Metal enclosure outside near T8601 = 44.7°C, Panel = 41.6°C, Button = 31.1°C, Ambient = 27.4°C
+12V output	overload	90	2hr 55mins	F901	6.158	Before shutdown winding is loaded to 12.0 A additional, no damage, no hazards. Max. measured temperature: T9101 coil = 133.5°C, T9101 core = 127.7°C, T8601 coil = 98.9°C, T8601 core = 95.6°C, T9301 coil = 88.4°C, T9301 core = 85.9°C, AC inlet = 49.2°C, Metal enclosure = 59.5°C, Metal enclosure outside near T8601 = 50.5°C, Panel = 43.5°C, Button = 28.5°C,

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Clause	Requirement + Test			Result - Remark		Verdict
						Ambient = 25.1°C
+24V output	overload	90	2hr 45mins	F901	6.362	Before shutdown winding is loaded to 6.8A additional, no damage, no hazards. Max. measured temperature: T9101 coil = 129.0°C, T9101 core = 107.7°C, T8601 coil = 86.9°C, T8601 core = 83.9°C, T9301 coil = 79.5°C, T9301 core = 76.8°C, AC inlet = 50.1°C, Metal enclosure = 55.0°C, Metal enclosure outside near T8601 = 47.5°C, Panel = 42.4°C, Button = 29.0°C, Ambient = 25.3°C
+VLED output	overload	90	3hr 00mins	F901	6.281	Before shutdown winding is loaded to 3.9A additional, no damage, no hazards. Max. measured temperature: T9101 coil = 87.5°C, T9101 core = 87.2°C, T8601 coil = 92.3°C, T8601 core = 89.9°C, T9301 coil = 74.6°C, T9301 core = 72.4°C, AC inlet = 53.6°C, Metal enclosure = 52.3°C, Metal enclosure outside near T8601 = 45.8°C, Panel = 41.9°C, Button = 29.0°C, Ambient = 25.2°C
BD9901 Pin1-4	s-c	264	1 sec	F901	--	Fuse open immediately, no hazards.
C9815	s-c	264	1 sec	F901	--	Fuse open immediately, no hazards.
T9101 Pin 1-4 ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, R8601 damaged. No hazards.
T9101 Pin 5,6 -7,8	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
T9101 Pin 5,6-9,10	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
T9101 Pin 7,8-11	s-c	264	10 mins	F901	1.32	Unit operated normally, no damage, no hazards.

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Clause	Requirement + Test			Result - Remark		Verdict
T9101 Pin 9,10-12	s-c	264	10 mins	F901	1.32	Unit operated normally, no damage, no hazards.
T8601 Pin 1-4 ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, R8601 damaged. No hazards.
T8601 Pin 5,6-7,8	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
T8601 Pin 5,6-9,10	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
T8601 Pin 7,8-11	s-c	264	10 mins	F901	1.32	Unit operated normally, no damage, no hazards.
T8601 Pin 9,10-12	s-c	264	10 mins	F901	1.32	Unit operated normally, no damage, no hazards.
T9301 Pin 1-3	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
T9301 Pin 4-5	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
T9301 Pin 6,7-9,10	s-c	264	10 mins	F901	1.32	Unit operated normally, no damage, no hazards.
U9102 pin 1-2	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U9102 pin 3-4	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U9102 pin 1	o-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U9302 pin 1-2	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U9302 pin 3-4	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U9302 pin 1	o-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U9304 pin 1-2	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U9304 pin 3-4	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U9304 pin 1	o-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U8602 pin 1-2	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U8602 pin 3-4	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U8602 pin 1	o-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U8604 pin 1-2	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage,

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Clause	Requirement + Test			Result - Remark		Verdict
						no hazards.
U8604 pin 3-4	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U8604 pin 1	o-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
D9802 ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, D9802 damaged. No hazards.
D9804 ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, D9804 damaged. No hazards.
Q9801 pin G-S	s-c	264	10 mins	F901	1.41	Unit operated normally, no damage, no hazards.
Q9801 pin D-G	s-c	264	<1 sec	F901	--	Fuse open immediately, Q9801 damaged. No hazards.
Q9801 pin D-S	s-c	264	<1 sec	F901	--	Fuse open immediately, Q9801 damaged. No hazards.
Q9802 pin G-S	s-c	264	10 mins	F901	1.41	Unit operated normally, no damage, no hazards.
Q9802 pin D-G	s-c	264	<1 sec	F901	--	Fuse open immediately, Q9801 damaged. No hazards.
Q9802 pin D-S	s-c	264	<1 sec	F901	--	Fuse open immediately, Q9801 damaged. No hazards.
Q9101 pin G-S	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
Q9101 pin D-G ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, Q9101 damaged. No hazards.
Q9101 pin D-S ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, Q9101 damaged. No hazards.
Q9102 pin G-S	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
Q9102 pin D-G ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, Q9102 damaged. No hazards.
Q9102 pin D-S ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, Q9102 damaged. No hazards.
Q9309 pin G-S	s-c	264	10 mins	F901	1.41	Unit operated normally, no damage, no hazards.
Q9309 pin D-G ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, R9310 damaged. No hazards.
Q9309 pin D-S ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, R9310 damaged. No hazards.
Q8602 pin G-S	s-c	264	10 mins	F901	1.41	Unit operated normally, no

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Clause	Requirement + Test			Result - Remark		Verdict
						damage, no hazards.
Q8602 pin D-G	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
Q8602 pin D-S	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
Q8603 pin G-S	s-c	264	10 mins	F901	1.41	Unit operated normally, no damage, no hazards.
Q8603 pin D-G	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
Q8603 pin D-S	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
Q9107 pin G-S	s-c	264	10 mins	F901	1.41	Unit operated normally, no damage, no hazards.
Q9107 pin D-G ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, Q9107 damaged. No hazards.
Q9107 pin D-S ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, Q9107 damaged. No hazards.
Q9108 pin G-S	s-c	264	10 mins	F901	1.41	Unit operated normally, no damage, no hazards.
Q9108 pin D-G ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, Q9108 damaged. No hazards.
Q9108 pin D-S ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, Q9108 damaged. No hazards.
D9304	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
D9311	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
D9107	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
D8605	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
D8606	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
D8607	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
D8608	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U9801 pin 16-1	s-c	264	10 mins	F901	1.41	Unit operated normally, no damage, no hazards.
U9801 pin 16-12	s-c	264	10 mins	F901	1.41	Unit operated normally, no damage, no hazards.
U9902 pin 3-1	s-c	264	10 mins	F901	1.41	Unit operated normally, no damage, no hazards.

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Clause	Requirement + Test			Result - Remark		Verdict
U9902 pin 3-2	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U9902 pin 3-15 ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, U9902 damaged. No hazards.
U9902 pin 2-1	s-c	264	10 mins	F901	0.13	Unit shutdown, no damage, no hazards.
U9902 pin 2-15 ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, U9902 damaged. No hazards.
U9301 pin 1-2	s-c	264	10 mins	F901	1.41	Unit operated normally, no damage, no hazards.
U9301 pin 1-7 ⁴⁾	s-c	264	<1 sec	F901	0.13	Unit shutdown, U9902 damaged. No hazards.
Speaker	s-c	264	10 mins	F901	1.40	Unit operated normally except for speakers, no hazards.
Supplementary information:						
- The unit passed 4000V hi-pot test between primary and accessible output connector after single fault test above. - In fault column, where s-c=short-circuited, o-c=open-circuited, o-l = overload. - For fuse opened conditions were tested with each source of fuse. - For component damaged conditions have been repeated twice (three tests total) with same result. - Temp. limit of transformer according to table G.3 is 175°C - 10 - (40°C - Tamb) (worst case) for Class B.						

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Clause	Requirement + Test	Result - Remark	Verdict

M.3	TABLE: Protection circuits for batteries provided within the equipment						P
Is it possible to install the battery in a reverse polarity position? :				Build-in type		—	
Equipment Specification	Charging						
	Voltage (V)			Current (A)			
	N/A			N/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)			
(See Table 4.1.2)	--	--	--	0mA	0mA	--	
(See Table 4.1.2)	--	--	--	0mA (R1911 SC) 0mA (C1905 SC) 0mA (Q1902 pin E-C SC)	0mA (R1911 SC) 0mA (C1905 SC) 0mA (Q1902 pin E-C SC)	--	
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°C) :				70			
Component No.	Fault condition	Charge/discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
See above	--	--	--	--	--	--	NL, NS, NE, NF
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:						

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

Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						P
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
Circuit output tested: Accessible output connectors on main board							
Note: Measured Uoc (V) with all load circuits disconnected:							
DP (CN1100) pin 20 to GND	Normal operation	3.3	5	0 (Can't loaded)	8	0 (Can't loaded)	100
DP (CN1100) other pins to GND	Normal operation	0	5	--	8	--	100
DP (CN1101) pin 20 to GND	Normal operation	3.3	5	0 (Can't loaded)	8	0 (Can't loaded)	100
DP (CN1101) other pins to GND	Normal operation	0	5	--	8	--	100
HDMI (CN1000) pin 15,16 to GND	Normal operation	4.8	5	0 (Can't loaded)	8	0 (Can't loaded)	100
HDMI (CN1000) pin 10,11, 13,14 to GND	Normal operation	3.3	5	0 (Can't loaded)	8	0 (Can't loaded)	100
HDMI (CN1000) other pins to GND	Normal operation	0	5	--	8	--	100
HDMI (CN1001) pin 15,16 to GND	Normal operation	4.8	5	0 (Can't loaded)	8	0 (Can't loaded)	100

IEC 62368-1							
Clause	Requirement + Test	Result - Remark					Verdict
HDMI (CN1001) pin 10,11, 13,14 to GND	Normal operation	3.3	5	0 (Can't loaded)	8	0 (Can't loaded)	100
HDMI (CN1001) other pins to GND	Normal operation	0	5	--	8	--	100
HDMI (CN1002) pin 15,16 to GND	Normal operation	4.8	5	0 (Can't loaded)	8	0 (Can't loaded)	100
HDMI (CN1002) pin 10,11, 13,14 to GND	Normal operation	3.3	5	0 (Can't loaded)	8	0 (Can't loaded)	100
HDMI (CN1002) other pins to GND	Normal operation	0	5	--	8	--	100
USB (CN400) pin 1 to GND	Normal operation	5.2	5	1.5	8	6.3	100
USB (CN400) pin 1 to GND	Single fault condition (IC401 pin 6-1 SC)	5.2	5	1.7	8	6.9	100
USB (CN400) other pins to GND	Normal operation	0	5	--	8	--	100
USB (CN1201) pin 1 to GND	Normal operation	5.2	5	1.3	8	6.1	100
USB (CN1201) pin 1 to GND	Single fault condition (IC1300 pin 6-1 SC)	5.2	5	1.4	8	6.2	100
USB (CN1201) other pins to GND	Normal operation	0	5	--	8	--	100

IEC 62368-1							
Clause	Requirement + Test	Result - Remark				Verdict	
USB Type C (CN1301) pin A4,A9, B4,B9 to GND	Normal operation	5.2	5	1.6	8	7.1	100
USB Type C (CN1301) pin A4,A9, B4,B9 to GND	Single fault condition (IC1308 pin 5-1 SC)	5.2	5	1.7	8	7.8	100
USB Type C (CN1301) others pins to GND	Normal operation	0	5	--	8	--	100
USB Type C (CN1400) pin A4,A9, B4,B9 to GND ³⁾	Normal operation	20.1	5	4.2	8	81.3	100
USB Type C (CN1400) others pins to GND ³⁾	Normal operation	0	5	--	8	--	100
SDM output (CN1600) pin A1,A2, A3,B1,B2 to GND	Normal operation	12.2	5	7.2	8	74.6	100
SDM output (CN1600) pin A1, A2, A3,B1,B2 to GND	Single fault condition (IC1602 pin 1-17 SC)	12.2	5	7.2	8	73.9	100
SDM output (CN1600) others pins to GND	Normal operation	0	5	--	8	--	100
SDM output (CN1700) pin A1, A2, A3,B1,B2 to GND	Normal operation	12.2	5	7.2	8	74.6	100

IEC 62368-1							
Clause	Requirement + Test	Result - Remark					Verdict
SDM output (CN1700) pin A1, A2, A3,B1,B2 to GND	Single fault condition (IC1602 pin 1-17 SC	12.2	5	7.2	8	73.9	100
SDM output (CN1700) others pins to GND	Normal operation	0	5	--	8	--	100
RJ45 (CN2300) all pins to GND	Normal operation	0	5	--	8	--	100
RS-232C (CN418) all pins to GND	Normal condition	--	5	--	8	--	100
Audio out (CN2200) all pins to GND	Normal condition	--	5	--	8	--	100
RS232 (CN2400) all pins to GND	Normal operation	0	5	--	8	--	100
Output for IR board (CN1800) pin 2 to GND	Normal operation	3.3	5	0 (Can't loaded)	8	0 (Can't loaded)	100
Output for IR board (CN1800) others pins to GND	Normal operation	0	5	--	8	--	100
Output for keyboard (CN1801) pin 9 to GND	Normal operation	4.9	5	0 (Can't loaded)	8	0 (Can't loaded)	100

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

Output for keyboard (CN1801) others pins to GND	Normal operation	0	5	--	8	--	100
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Supplementary Information:

- 1) Input Voltage is 264Vac, 60Hz. SC=short circuit, OC=open circuit.
- 2) Unit shut down.
- 3) Output on main board for USB type C is protected by approved IC current limiter (IC1500 on main board) to meet L.P.S requirement. See Table 4.1.2 for the details.

T.2, T.3, T.4, T.5	TABLE: Steady force test						P
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation	
Internal components	--	--	Figure V.1	10	5	The clearance and creepage distances do not be reduced below the required values.	
Metal enclosure (Top, rear, bottom and sides)	See table 4.1.2	See table 4.1.2	Figure V.1	250	5	All safeguards remained effective.	
Supplementary information:							

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

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

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

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: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹	
LCD Panel with LED backlight	TPV	TPP500***** *** (* can be 0-9, A-Z, dot, - or blank for marketing purpose)	50.0 inch TFT LCD with LED backlight	--	Tested in equipment	
System DC Fan (three sets) (optional)	SUNONWEALT HELECTRIC MACHINE INDUSTRY CO LTD	MF60101V1-1	12Vdc, max. 125mA, 16.3 CFM.	IEC/EN 62368-1: 2014; UL507 Edition Number 10	Test in equipment	
Alt.)	SUNONWEALT H ELECTRIC MACHINE INDUSTRY CO LTD	MB60101V1	12Vdc, max. 138mA, 16.0 CFM	IEC/EN 62368-1: 2014; UL507 Edition Number 10	Test in equipment	
Internal fire barrier on top of main board	LG CHEM LTD	LUPOY GN5001RF(T), LUPOY GN- 5001RF(T), LUPOY GN5001TF(#), LUPOY GN- 5001TF(#), LUPOY GN- 5008HF(#), AF342(#), AF312T1,	Min. V-1.	UL 94 Edition Number 7	UL E67171	
Alt.)	LOTTE CHEMICAL CORPORATIO N	VH-0810(+), VE-1890(+), VE-0812(+), VE-0819F, EN-1052(+), VH-0815(+), HM-1100(+), VH-0819(+), NH-1017(p), NH- 1000T(+)(&), NE-1030(+), LS-1159(r), LS-1159F, LS-1159SF, GC-1017	Min. V-1.	UL 94 Edition Number 7	UL E115797	

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.)	GRAND PACIFIC PETROCHEMICAL CORP	D-1000A	Min. V-0.	UL 94 Edition Number 7	UL E88637
Alt.)	KINGFA SCI & TECH CO LTD	HF-606, HF-626, FRABS-518, JH9606(M), FRHIPS-960	Min. V-0.	UL 94 Edition Number 7	UL E171666
Alt.)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H(#), TN-7500(c), TN-7500F(#), TN-7500M(#)	Min. V-0.	UL 94 Edition Number 7	UL E244324
Alt.)	SAMYANG CORPORATION	210NHF(@), 210NHF	Min. V-0.	UL 94 Edition Number 7	UL E366374
Alt.)	CHI MEI CORPORATION	PC-540(Y)(a)	Min. V-0.	UL 94 Edition Number 7	UL E56070
Alt.)	GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHE26(##)	Min. V-0.	UL 94 Edition Number 7	UL E471190
Mylar sheet (between power board and panel plate)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	min. 0.4mm thickness, min. V-0, 100°C	UL 94	UL E199019 and tested with appliance
Alt.)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	min. 0.4mm thickness, min. V-0, 110°C	UL 94	UL E199019 and tested with appliance
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10	min. 0.4mm thickness, min. V-0, 110°C	UL 94	UL E315185 and tested with appliance
Non-slip pad under base	SHIN-ETSU CHEMICAL CO LTD	KE-951K@	Size: Min. Ø15mm, thickness: 2.0 mm, Made of Silicone Rubber	--	Tested with appliance

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Adhesive for Mylar sheet, thermal silicone and non-slip pad under base mentioned above	SYMBIO	DS50-A, DS50L	100°C, 0.05mm Thickness	--	Tested with appliance
Alt.)	3M CHINA CO LTD	55236, 9448A, 55230, 9495MP	100°C, 0.05mm Thickness	--	Tested with appliance
Alt.)	XIAMEN LABAO OPTICS & ELECTRONICS CO LTD	TD-10, LA9120	100°C, 0.05mm Thickness	--	Tested with appliance
Alt.)	NITTO DENKO CORP	GA835	100°C, 0.05mm Thickness	--	Tested with appliance
Alt.)	TESA SE	68646	100°C, 0.05mm Thickness	--	Tested with appliance
Alt.)	DEXERIALS CORP	G4000	100°C, 0.05mm Thickness	--	Tested with appliance
Alt.)	Youyi	YS310	100°C, 0.05mm Thickness	IEC 62368-1: 2018: Annex P.4	AUDIX test report No. ACSST22100 77
AC-Inlet	Solteam	ST-01, SC04	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC16/FI/2 0/10036, UL E200241
Alt.)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S 1	10A, 250Vac, 15A, 250Vac, 70°C	IEC/EN 60320-1, ANSI/UL498	VDE 40003610, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac, 15A, 250Vac, 70°C	IEC/EN 60320-1, ANSI/UL498	VDE 40028101, UL E102641
Alt.)	Shenzhen Delikang / Douling	CDJ-3	10A, 250Vac, 70°C	IEC/EN 60320-1, ANSI/UL498	VDE 40010513, UL E217394
Alt.)	Shenzhen Delikang / Douling	CDJ-3-1	10A, 250Vac, 70°C	IEC/EN 60320-1, ANSI/UL498	VDE 40015913, UL E217394
Alt.)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac, 70°C	IEC/ EN 60320-1 UL60320-1	Nemko (P03100418), UL (E94191)

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.)	TECX	TU-301 series	10A, 250Vac, 70°C	IEC/ EN 60320-1	VDE (40025582), UL (E220004)
Alt.)	Yueqing Hongchang	DB-14	10A/250Vac, 15A, 250Vac, 70°C	IEC/EN 60320-1, ANSI/UL498	VDE 40028645, UL E327347
Alt.)	Solteam	SC04	10A/250Vac, UL: 10A / 250Vac, 12A / 250Vac, 70°C	IEC/EN 60320-1, ANSI/UL498	VDE 40033517, UL E200241
Alt.)	Zhang Jia Gang- Hua Jie	SA-4D	10A, 250Vac, 15A, 250Vac, 70°C	IEC/EN 60320-1, UL498	TUV R 50274698 UL E154342
Power switch	Chily	3024 series	ENEC: 16(4)A, 250Vac, UL: 15A, 125/250V ac 8A, 277Vac	IEC/EN 61058-1, ANSI/UL 1054	ENEC (FI: 2015056) UL (E68037)
Alt.)	Rong Feng	RF-1003	250 Vac, 10 A	IEC/EN 61058-1, ANSI/UL 1054	TUV (HB 69248433) UL (E94138)
Alt.)	Solteam	MR-21 series	250 Vac, 10 A	IEC/EN 61058-1, ANSI/UL 1054	ENEC (FI: 2016031) UL E148157
Alt.)	Solteam	MR-21S	ENEC:6A, 250Vac, UL: 10A, 125/250Vac	IEC/EN 61058-1, ANSI/UL 1054	ENEC (ENEC16/FI/1 9/10048) UL (E148157)
Alt.)	Solteam	MR-22 series	ENEC:12(4)A, 250V UL: 12A, 125/250Vac, 8A, 125/250Vac	IEC/EN 61058-1, ANSI/UL 1054	TUV test report (No. CN213OGX0 01) UL E148157
Alt.)	Solteam	OR-L, OR-P	6A, 250Vac; 10A, 125Vac	IEC/EN 61058-1, ANSI/UL 1054	ENEC (ENEC16/FI/1 9/10075) UL (E148157)
Alt.)	Zhangjiagang Huajie	PS8-338 series	8 A, 250 Vac; 5A, 120 Vac	IEC/EN 61058-1, ANSI/UL 1054	TUV (R 50181231) UL (E151790)
Alt.)	Hongchang	RS-011, RT-011-2, RS Series, RT Series	10A, 125Vac; 6A, 250Vac	IEC/EN 61058-1, ANSI/UL 1054	ENEC (ENEC- 02699) UL (E486986)

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Tape for internal wire	JIANGSU YONGJIA ELECTRONIC MATERIAL CO LTD	YJC-810H(B)-2	For securing secondary internal wirings. Overall measured minimum 50 by 18 mm.	UL 510A Edition Number 2	UL E350712
-Alt.	TAE HWA INDUSTRIAL CO LTD	6701	For securing secondary internal wirings. Overall measured minimum 50 by 18 mm.	UL 510A Edition Number 2	UL E92677
-Alt.	DUCK SUNG HITECH CO LTD	231	105 degree C min. For securing secondary internal wirings. Overall measured minimum 50 by 18 mm.	UL 510A Edition Number 2	UL E105147
-Alt.	GUANGDONG NEW ERA NEW MATERIALS TECHNOLOGY CO.,LTD	FGB-0011-200PP1	80 degree C min. For securing secondary internal wirings. Overall measured minimum 50 by 18 mm.	UL 510A Edition Number 2	UL E216378
-Alt.	TAEYOUNG CHEMICAL IND CO LTD	TY301A	105 degree C min. For securing secondary internal wirings. Overall measured minimum 50 by 18 mm.	UL 510A Edition Number 2	UL E176089
-Alt.	IDEAL TAPE CO INC	IT-720 (b)	130 degree C min. For securing secondary internal wirings. Overall measured minimum 50 by 18 mm.	UL 510A Edition Number 2	UL E82910
Primary wiring	Interchangable	1617, 1015	20AWG, VW-1, 105°C, 600V	UL 758 3rd	UL
Super Capacitor (CE1900 on main board)	DHENMA TECHNOLOGY CO., LTD	DCLT SERIES	1.0F, Min 5.5Vdc, Min. 85°C	--	Tested in equipment
IC current limiter (IC1500 on main board)	RICHTEK	RT6190GQW	20Vdc, 5.0A (Protective Current)	IEC 62368-12018	UL CB (Certi. No.DK-122332-UL)

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

Switching mode power supply board: 715GE126 by TPV					
Primary connector (CN901)	J.S.T	VH series	7 A, 250 Vac	--	Tested with appliance
Alt.)	J.S.T	VT series	7 A, 250 Vac	--	Tested with appliance
Alt.)	Xinya	M3962 series	7 A, 250 Vac	--	Tested with appliance
Alt.)	Xinya	W7913 series	7 A, 250 Vac	--	Tested with appliance
Alt.)	Xinya	WE011	7 A, 250 Vac	--	Tested with appliance
Alt.)	Pontronics	3962 series	7 A, 250 Vac	--	Tested with appliance
Alt.)	Jowle	A3963 series	7 A, 250 Vac	--	Tested with appliance
Fuse (F901 in primary)	Littelfuse	618-Serie(s) (VDE), 618* (UL)	T8AH, 250 Vac	IEC/ EN 60127-1 IEC/ EN 60127-2 UL 248-1	VDE 40014776, UL E10480
Alt.)	Littelfuse	215+*	T8AH, 250 Vac	IEC/ EN 60127-1 IEC/ EN 60127-2 UL 248-1	VDE 40016610 UL E10480
Alt.)	Conquer	UDA, UDA-A	T8AH, 250 Vac	IEC/ EN 60127-1 IEC/ EN 60127-2 UL 248-1	VDE 40008022, UL E82636
Alt.)	Cooper Bussmann	S505-xxx-R, S505-V-xxx-R	T8AH, 250 Vac	IEC/ EN 60127-1 IEC/ EN 60127-2 UL 248-1	VDE 40014091, UL E19180
Alt.)	Walter Electronic Co., Ltd.	TSC	T8AH, 250 Vac	IEC/ EN 60127-1 IEC/ EN 60127-2 UL 248-1	VDE 40001370, UL E56092
Varistor (RV9901, RV9902)	Thinking Electronic Industrial Co., Ltd.	TVR14561-D (VDE), TVR14561 (UL)	Rated 350 Vac, 450Vdc, 40/85/56, 6KV/3KA, pulse test passed V-0 coating	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3 rd , IEC 62368-1: 2018 Annex G.8	VDE 40021243, UL E314979
Alt.)	Centra Science corp.	CNR-14D681K	Rated 420Vac, 560Vdc, 40/85/56, 6KV/3KA, pulse test passed V-0 coating.	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3 rd , IEC 62368-1: 2018 Annex G.8	VDE 40008220, UL E316325

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.)	Thinking Electronic Industrial Co., Ltd.	TVR14681-D (VDE), TVR14681 (UL)	Rated 420 Vac, 560Vdc, 40/85/56, 6KV/3KA, pluse test passed V-0 coating	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3 rd , IEC 62368-1: 2018 Annex G.8	VDE 40021243, UL E314979
Alt.)	Panasonic	V14681U (VDE), V14751U(#ac) (UL)	Rated 420 Vac, 560Vdc, 40/85/56, 6KV/3KA, pluse test passed V-0 coating	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3 rd , IEC 62368-1: 2018 Annex G.8	VDE 40018677, UL E321499
Alt.)	TDK	S14KV681, SNF14K420	Rated 420 Vac, 560Vdc, 40/85/56, 6KV/3KA, pluse test passed V-0 coating	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3 rd , IEC 62368-1: 2018 Annex G.8	VDE 40027582, UL E321126
Relay (SW9901)	HONGFA	HF140FF	VDE: 8A / 250Vac UL: 8A / 277Vac, 10A/125Vac, 105°C	IEC/EN 61810-1, UL 60947-1	VDE (40039387), UL (E134517)
Alt.)	HONGFA	HF162F	VDE: 8A / 250Vac UL: 8A / 277Vac, 10A/125Vac, 105°C	IEC/EN 61810-1, UL 60947-1	VDE (40032669), UL (E133481)
Alt.)	HONGFA	HF115F Serie(s)	8A, 250 Vac	IEC/EN 61810-1, UL 60947-1	VDE (116934), UL (E134517)
Alt.)	Panasonic	LKP1aF-12V	VDE: 8A / 250Vac UL: 8A / 277Vac, 10A/125Vac, 105°C	IEC/EN 61810-1, UL 60947-1	TUV SUD (BO1346103 79), UL (E43149)
Alt.)	Song Chuan	834	VDE: 8A / 250Vac UL: 8A / 277Vac, 10A/125Vac, 105°C	IEC/EN 61810-1, UL 60947-1	TUV R (09552452), UL (88991)
Alt.)	TYCO	SDT-S-112DMR	10A, 250 Vac	IEC/EN 61810, UL 508	Semko 0207069/01, UL E58304
Gas tube (SG9901)	Mitsubishi	DA38-362MBy (y=0 to 9 or A to X), DA38-452MTy (y=0 to 9 or A to X)	250Vac, basic insulation	IEC/EN 60950-1 cl.1.5, 2.9, 2.10, 5.2 and Annex G, UL 1414	TUV (J 09950875) UL (E318314)

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.)	Mitsubishi	FA55-302, FA55-362, FA55-402	250Vac, basic insulation	IEC/EN 60950-1 cl.1.5, 2.9, 2.10, 5.2 and Annex G, UL 1414	TUV (J 50189760) UL (E318314)
Alt.)	SIN NAGATA ELECTRONICS CO LTD	LSE-451LX2P, LSE-420M	250Vac, basic insulation	IEC 60950-1 cl.1.5, 2.9, 2.10, 5.2 and Annex G, UL 1414	UL (E205458)
Alt.)	SIN NAGATA ELECTRONICS CO LTD	LSE-402M	220Vac, basic insulation	IEC 60950-1 cl.1.5, 2.9, 2.10, 5.2 and Annex G, UL 1414	UL (E316354)
Y- Capacitor (C9901, C9902, C9909, C9910, C9917) Y1 type (optional)	Walsin	AH	Max. 470pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 470pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 470pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 470pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 470pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 470pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 470pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 470pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 470pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40037218, UL E114280

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.)	Success	SB	Max. 470pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 470pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 470pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE UL
Y- Capacitor (C9904, C9905) Y1 type (optional)	Walsin	AH	Max. 22pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 22pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 22pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 22pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 22pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 22pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 22pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 22pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 22pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 22pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 22pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 135256, UL E145038

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.)	Interchangeable	Interchangeable	Max. 22pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE UL
Y- Capacitor (C9907) Y1 type (optional)	Walsin	AH	Max. 1000pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 1000pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 1000pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 1000pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 1000pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 1000pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE UL
X-Capacitor (X1 or X2 type) (C9903, C9911) (optional)	Ultra Tech Xiphi	HQX	Max. 0.33μF, Min. 250Vac, 110°C	IEC/EN 60384-14 UL 60384-14	VDE 40024534, UL E183780

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.)	Faratronic	MKP62	Max. 0.33 μ F, Min. 250Vac, 110°C	IEC/EN 60384-14 UL 60384-14	VDE, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.33 μ F, Min. 250Vac, 110°C	IEC/EN 60384-14 UL 60384-14	ENEC (Semko), UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.33 μ F, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX, MPX2	Max. 0.33 μ F, Min. 250Vac, 110°C	IEC/EN 60384-14 UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.33 μ F, Min. 250Vac, 110°C	IEC/EN 60384-14 UL 60384-14	VDE 40023391, UL E186321
Alt.)	Arcotronics (KEMET)	R.46	Max. 0.33 μ F, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	ENEC DAT9700014 1, UL E97797
Alt.)	EPCOS	B3292#	Max. 0.33 μ F, Min. 250Vac, 110°C	IEC/EN 60384-14 UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.33 μ F, Min. 250Vac, 110°C	IEC/EN 60384-14 UL 60384-14	VDE 40026078, UL E327138
Alt.)	Interchangeable	Interchangeable	Max. 0.33 μ F, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE UL
X-Capacitor (X1 or X2 type) (C9906) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47 μ F, Min. 250Vac, 110°C	IEC/EN 60384-14 UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.47 μ F, Min. 250Vac, 110°C	IEC/EN 60384-14 UL 60384-14	VDE, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.47 μ F, Min. 250Vac, 110°C	IEC/EN 60384-14 UL 60384-14	ENEC (Semko), UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.47 μ F, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX, MPX2	Max. 0.47 μ F, Min. 250Vac, 110°C	IEC/EN 60384-14 UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.47 μ F, Min. 250Vac, 110°C	IEC/EN 60384-14 UL 60384-14	VDE 40023391, UL E186321

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

Alt.)	Arcotronics (KEMET)	R.46	Max. 0.47 μ F, Min. 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	ENEC DAT9700014 1, UL E97797
Alt.)	EPCOS	B3292#	Max. 0.47 μ F, Min. 250Vac, 110°C	IEC/EN 60384-14 UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47 μ F, Min. 250Vac, 110°C	IEC/EN 60384-14 UL 60384-14	VDE 40026078, UL E327138
Alt.)	Interchangeable	Interchangeable	Max. 0.47 μ F, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE UL
Photo Coupler (U9102, U9302, U9304, U8602, U8604)	Sharp	PC123 (UL), PC123 Option Y (VDE)	Di=0.7mm, ext. cr $\geq$ 8.0mm, 5000Vac, 110°C	IEC 60747-5-5:2007 IEC 60747-5-5:2007/AMD1: 2013 DIN EN 60747-5-5, UL1577	VDE 40008087, UL E64380
Alt.)	Vishay Semiconductor	TCET1103-3034	Di=0.6mm, ext. cr=8.4mm, 5000Vac, 100°C	IEC 60747-5-5:2007 IEC 60747-5-5:2007/AMD1: 2013 DIN EN 60747-5-5, UL1577	VDE 40028080, UL E76222
Alt.)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, 5000Vac, 100°C	IEC 60747-5-5:2007 IEC 60747-5-5:2007/AMD1: 2013 DIN EN 60747-5-5, UL1577	VDE 132249, UL E214129
Alt.)	Lite-on	LTV-817	Di=0.4mm, ext. cr $\geq$ 7.0mm, 5000Vac, 100°C	IEC 60747-5-5:2007 IEC 60747-5-5:2007/AMD1: 2013 DIN EN 60747-5-5, UL1577	VDE 40015248, UL E113898

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.)	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Di=0.4mm, int. cr=thermal cycling ³ , ext. cr=8.0mm, 4000Vac, 100°C	IEC 60747-5-5:2007 IEC 60747-5-5:2007/AMD1: 2013 DIN EN 60747-5-5, UL1577	VDE 40028391, UL E214129
Alt.)	Renesas	PS2561-1 PS2561L-1 PS2561L1-1 PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, 5000Vac, 100°C	IEC 60747-5-5:2007 IEC 60747-5-5:2007/AMD1: 2013 DIN EN 60747-5-5, UL1577	VDE 40008862, UL E72422
Alt.)	TOSHIBA	TLP781F TLP781	Di=0.4mm, ext. cr=8.0mm, 5000Vac, 100°C	IEC 60747-5-5:2007 IEC 60747-5-5:2007/AMD1: 2013 DIN EN 60747-5-5, UL1577	VDE 40021173, UL E67349
Alt.)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, 5000Vac, 100°C	IEC 60747-5-5:2007 IEC 60747-5-5:2007/AMD1: 2013 DIN EN 60747-5-5, UL1577	VDE 40010944, UL E67349
Alt.)	Interchangeable	Interchangeable	Di=0.4mm, ext. cr=8.0mm, 5000Vac, 100°C	IEC 60747-5-5:2007 IEC 60747-5-5:2007/AMD1: 2013 DIN EN 60747-5-5, UL1577	VDE UL
Discharge IC (U9901)	POWER INTEGRATIONS	CAP200DG	1000V, 100nF - 6μF, 7.5MΩ - 142kΩ.	IEC/EN 62368-1:2014	CB by UL (DK-70248-UL)
Line Choke (L9905, L9906) (Optional)	CHANNELON	373G0174413H	130°C	--	--
Alt.)	LIANFENG DONGJIN	373G0174413J	130°C	--	--
Alt.)	ASET	373G0174413X	130°C	--	--

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
PFC Choke (L9805, L9806) (Optional)	JIANGSU CHANNELON	373G0174450H	130°C	--	--
Alt.)	LFDJ	373G0174450J	130°C	--	--
Transformer (T9101) Alt.)	JIANGSU CHANNELON	380GL88P058H / CLT-153021	Class 130, material (B).	Applicable parts of IEC 62368-1 and according to IEC 60085 UL 1446	Test with appliance
-Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HF	V-0, 150°C, min. 0.45mm thick	UL 94	UL E59481
-Insulation tape	YAHUA	CT	130°C	UL 510	UL E165111
Alt.)	YAHUA	PF*(d)(g)	180°C	UL 510	UL E165111
Transformer (T9101) Alt.)	PHOENIX	380GL88P058P / PH- 001530004	Class 130, material (B).	Applicable parts of IEC 62368-1 and according to IEC 60085 UL 1446	Test with appliance
-Bobbin	SUMITOMO	PM-9750 PM-9823	V-0, 150°C, min. 0.45mm thick	UL 94	UL E41429
-Insulation tape	YAHUA	CT	130°C	UL 510	UL E165111
Alt.)	YAHUA	PF*(d)(g)	180°C	UL 510	UL E165111
Transformer (T9101) Alt.)	LFDJ	380GL88P058J/ BCK-160- L053AD	Class 130, material (B).	Applicable parts of IEC 62368-1 and according to IEC 60085 UL 1446	Test with appliance
-Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HF	V-0, 150°C, min. 0.45mm thick	UL 94	UL E59481
-Insulation tape	YAHUA	CT	130°C	UL 510	UL E165111
Alt.)	3M COMPANY ELECTRICAL MARKETS DIV	92	180°C	UL 510	UL E17385
Transformer (T9101) Alt.)	ASET	380GL88P058X / 3101254653	Class 130, material (B).	Applicable parts of IEC 62368-1 and according to IEC 60085 UL 1446	Test with appliance
-Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HF	V-0, 150°C, min. 0.45mm thick	UL 94	UL E59481
-Insulation tape	YAHUA	CT	130°C	UL 510	UL E165111

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.)	YAHUA	PF*(d)(g)	180°C	UL 510	UL E165111
Transformer (T8601) Alt.)	LFDJ	380GL88P017J/ BCK-160-L050DF	Class 130, material (B).	Applicable parts of IEC 62368-1 and according to IEC 60085 UL 1446	Test with appliance
-Bobbin	SUMITOMO	PM-9750 PM-9823	V-0, 150°C, min. 0.45mm thick	UL 94	UL E41429
-Insulation tape	YAHUA	CT	130°C	UL 510	UL E165111
Alt.)	3M COMPANY ELECTRICAL MARKETS DIV	92	180°C	UL 510	UL E17385
Transformer (T8601) Alt.)	ASET	380GL88P017X / 3101234450	Class 130, material (B).	Applicable parts of IEC 62368-1 and according to IEC 60085 UL 1446	Test with appliance
-Bobbin	SUMITOMO	PM-9750	V-0, 150°C, min. 0.45mm thick	UL 94	UL E41429
-Insulation tape	YAHUA	CT	130°C	UL 510	UL E165111
Alt.)	YAHUA	PF*(d)(g)	180°C	UL 510	UL E165111
Transformer (T9301) Alt.)	PHOENIX	380GL88P053P / PH-001310001	Class 130, material (B).	Applicable parts of IEC 62368-1 and according to IEC 60085 UL 1446	Test with appliance
- Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9750, PM-9823	V-0, 150°C, min. 0.45mm thick	UL94	UL (E41429)
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B* (UL) TIW-B (VDE)	Max. 130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E332529), VDE (40033527)
- Tube	GREAT HOLDING	TFL	200°C	UL 224	UL (E156256)
Alt.)	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L	200°C	UL 224	UL (E180908)
- Insulation tape	JINGJIANG YAHUA	CT* (b)(g)	130°C	UL510	UL (E165111)

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Transformer (T9301) Alt.)	CHANNELON	380GL88P053H /CLT-131002	Class 130, material (B).	Applicable parts of IEC 62368-1 and according to IEC 60085 UL 1446	Test with appliance
- Bobbin	CHANG CHUN	T200NA	Phenolic, V-0, 150°C	UL 94	UL (E59481)
- Triple insulation wire	COSMOLINK CO.,LTD	TIW-M(XX) (for UL), TIW-M (for VDE)	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL (E213764) VDE (138053)
- Tube	GREAT HOLDING	TFL	200°C, VW-1	ANSI/UL 224	UL (E156256)
- Insulation tape	JINGJIANG YAHUA	CT* (b)(g)	130°C	UL510	UL (E165111)
Transformer (T9301) Alt.)	ASET	380GL88P053X /3101253031	Class 130, material (B).	Applicable parts of IEC 62368-1 and according to IEC 60085 UL 1446	Test with appliance
- Bobbin	CHANG CHUN	T200NA	Phenolic, V-0, 150°C	UL 94	UL (E59481)
- Triple insulation wire	COSMOLINK CO.,LTD	TIW-M(XX) (for UL), TIW-M (for VDE)	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL (E213764) VDE (138053)
- Tube	GREAT HOLDING	TFL	200°C, VW-1	ANSI/UL 224	UL (E156256)
- Insulation tape	JINGJIANG YAHUA	CT* (c)(g)	130°C	UL510	UL (E165111)
Alt.)	SYMBIO	35660Y*(%)	130°C	UL 510	UL (E50292)
Components listed below are not regarded critical components:					
P.C.B	Interchangeable	Interchangeable	V-1 or better Min. 105°C.	UL 796	UL
Base stand (Optional)	Interchangeable	Interchangeable	metal	--	--
Internal Wirings (Secondary Circuits)	Interchangeable	Interchangeable	VW-1, min. 30 V, min. 60 degree C, routed away from primary un-insulated live parts and primary circuit wiring.	UL758	UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Metal Enclosure and Metal Cover	Interchangeable	Interchangeable	SGCC, thickness 0.6mm min.	--	--
Plastic enclosure of System DC Fan (Three sets)	Interchangeable	Interchangeable	V-1 or better	UL 94 Edition Number 7	UL
Battery for remote controller used (Optional)	Interchangeable	Interchangeable	1.5Vdc, Two AA or AAA consumer type batteries provide.	--	--
Speaker (two provided) (Optional)	Interchangeable	Interchangeable	Each rated 8ohm, max. 12W.	--	--
IR board plastic cover and Key control board plastic cover	Interchangeable	Interchangeable	HB or batter.	UL 94 Edition Number 7	UL
Bleeder Resistors (R9901, R9902, R9903, R9904)	Interchangeable	Interchangeable	390KΩ, min. 1/4W. (four provided, located after fuse, SMD type)	--	--
Thermistors (TH9901)	Interchangeable	Interchangeable	Min.2A, Min.3Ω at 25°C	--	--
Transistors (Q9801, Q9802, Q9309)	Interchangeable	Interchangeable	Min. 600V, min. 2A	--	--
Bridge Diodes (BD9901, BD9902)	Interchangeable	Interchangeable	Min. 2.0A, min. 600V	--	--
Ripple Capacitors (C9814, C9815, C9816, C9817)	Interchangeable	Interchangeable	47-180μF, min. 400V, 105°C	--	--
Current sense resistor (R9310)	Interchangeable	Interchangeable	Min 0.43ohm, 2W.	--	--
Heat sink silica gel	Interchangeable	Interchangeable	V-2 or better	UL 796	UL
Power cord set listed below by client's request					
Mains cord set (Saudi Arabia) (Optional)					
Plug	I-Sheng	SP-62	3A/5A/10A/13A, 250V~	BS 1363 SASO 2203:2018	CVC

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.)	I-Sheng	SP-65	3A/5A/10A, 250V~	BS 1363 SASO 2203:2018	CVC
Cable	I-Sheng	H05VV-F	3 x 0.75mm ² 3 x 1.0mm ² 3 x 1.5mm ²	EN 50525-2-11 IEC 60227-5	VDE
Alt.)	I-Sheng	H05RR-F	3 x 0.75mm ²	IEC 60245-4	VDE
Alt.)	I-Sheng	H03VV-F	3 x 0.75mm ²	EN 50525-2-11 IEC 60227-5	VDE
Connector	I-Sheng	IS-14	250V~, 10A	IEC 60320-1	ENEC
Mains cord set (Japan) (Optional)					
Plug	LONGWELL	LP-01	AC 125V, 15A	DENAN	PSE (JET1358- 43001- 1001)
Alt.)	LONGWELL	LP-53	AV 125V, 7A	DENAN	PSE (JET1358- 43007- 1001)
Alt.)	I-SHENG	SP-18C	AC 125V, 7A	DENAN	PSE(JET09 85-43001- 1005)
Alt.)	I-SHENG	SP-18C	AC 125V, 7A	DENAN	PSE(JET20 90-43001- 1003)
Alt.)	HONGLIN	HL-020	AV 125V, 7A	DENAN	PSE(JET295 8-43001- 1001)
Alt.)	HONG CHANG	DTI-2P-05	AV 125V, 7A	DENAN	PSE(JET189 8-43001- 1002)
Cord	LONGWELL	VCTF	3C, 0.75mm ²	DENAN	PSE (JET1358- 12009-1001)
Alt.)	LONGWELL	VSF	2C, 1.25mm ²	DENAN	PSE (JET1358- 12005-1001)
Alt.)	I-SHENG	VCTF	3C, 0.75mm ²	DENAN	PSE (JET0985- 12009- 1003,JET 2090-12009- 1001))

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt.)	HONGLIN	VCTF	3C, 0.75mm ²	DENAN	PSE(JET295 8-12009-1001)
Alt.)	HONG CHANG	VCTF	3C, 0.75mm ²	DENAN	PSE(JET189 8-12009-1001)
Connector	LONGWELL	LS-13J	AC 125V, 7A	DENAN	PSE (JET1358-43004-1001)
Alt.)	I-SHENG	IS-14	AC 125V, 7A	DENAN	PSE(JET098 5-43004-1002)
Alt.)	I-SHENG	IS-14	AC 125V, 7A	DENAN	PSE(JET209 0-43004-1002)
Alt.)	HONGLIN	HL-026	AC 125V, 7A	DENAN	PSE(JET295 8-43004-1001)
Alt.)	HONG CHANG	DTI-3P-04	AC 125V, 7A	DENAN	PSE(JET189 8-43004-1001)
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. 2) In the technical data column of optocoupler, where "Dti" means distance through insulation, "Int. cr" means internal creepage distance, and "Ext. cr" means external creepage distance.					

List of test equipment used:

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

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

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

Statement of Measurement Uncertainty

The Test Report shall include a statement concerning the uncertainty of the measurement systems used for the tests conducted when it is required by the standard, client or other authorities.
In such cases, the table below is to be used for reporting U of M.

This page may be removed from the final Test Report when not required. See also clause 4.8 in OD 2020 for more details.

Clause #	Parameter/ Measurement / test method	Requirement % or k	Calculated U of M*

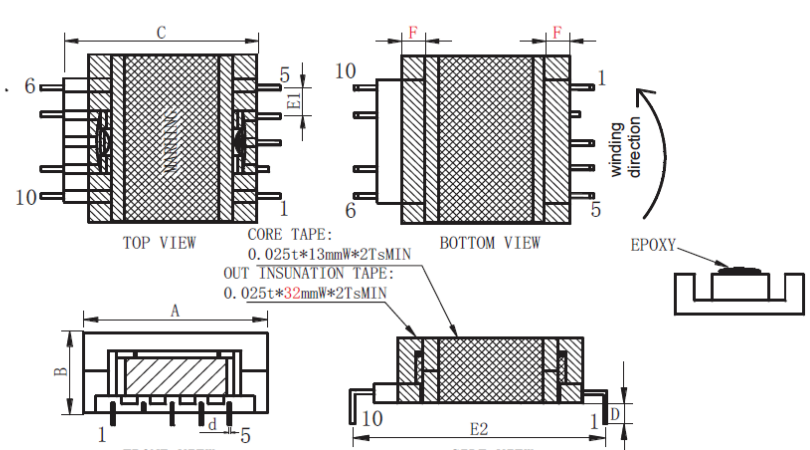
*Note: Calculations leading to the reported value are on file with the NCB

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

6.4.8.3.3, 6.4.8.3.4 & P.2.2	Table: enclosure openings		P
Location		Size (mm)	Comments
Internal metal chassis, a) at horizontal orientation, b) at vertical orientation (power board on top)			
a) Top b) Left		No openings	--
a) b) Rear		Numerous circle openings: Ø2.4mm	Openings do not exceed 3mm in any dimension. No hazards.
a) Left b) Bottom		No openings	--
a) Right b) Top		No openings	--
a) Bottom b) Right		No openings	--

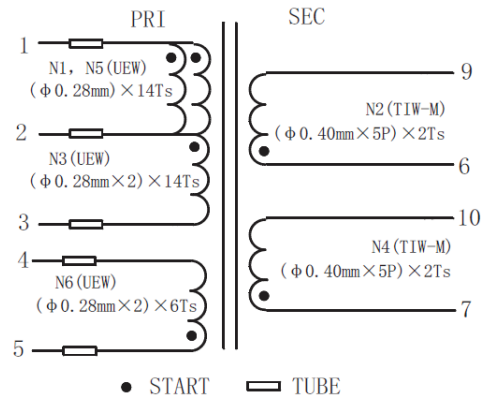
G.5.3.2	TABLE: transformers on power board						P
Loc.	Tested insulation	Working voltage peak / V	Working voltage rms / V	Required electric strength	Required clearance / mm	Required creepage distance / mm	Required distance thr. insul.
T9301	Input terminal to output winding (RI)	528	317	AC 4000V	4.5	6.4	Min. 2 layers tape
T9301	Input terminal to output terminal (RI)	528	317	AC 4000V	4.5	6.4	Min. 2 layers tape
T9301	Input winding to output winding (RI)	528	317	AC 4000V	4.5	6.4	Min. 2 layers tape
T9301	Input winding to output terminal (RI)	528	317	AC 4000V	4.5	6.4	Min. 2 layers tape
T9301	Output winding to Core (RI)	528	317	AC 4000V	4.5	6.4	Min. 2 layers tape
T9301	Output terminal to Core (RI)	528	317	AC 4000V	4.5	6.4	Min. 2 layers tape

IEC 62368-1					
Clause	Requirement + Test	Result - Remark		Verdict	
Loc.	Tested insulation	Test voltage / V	Measured clearance / mm	Measured creepage dist. / mm	Measured distance thr. insul. / mm; number of layers
T9301	Input terminal to output winding (RI)	AC 4000V	Triple insulated wire used	Triple insulated wire used	--
T9301	Input terminal to output terminal (RI)	AC 4000V	37.5	37.5	--
T9301	Input winding to output winding (RI)	AC 4000V	Triple insulated wire used	Triple insulated wire used	--
T9301	Input winding to output terminal (RI)	AC 4000V	8.0	8.0	--
T9301	Output terminal to Core (RI)	AC 4000V	9.2	9.2	--
T9301	Output winding to Core (RI)	AC 4000V	Triple insulated wire used	Triple insulated wire used	--
Supplementary information: All sources of transformer were checked with same construction.					

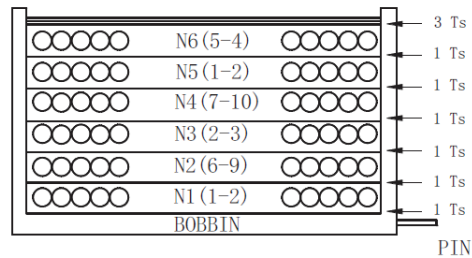
G.5.3.2	TABLE: transformers on power board	P
Construction: 3. APPEARANCE & MECHANICAL CHARACTERISTICS 3.1. DIMENSIONS  $A = 32.0 \pm 2.0$ mm $B = 14.5 + 0 / - 2.0$ mm $C = 37.5 \pm 1.5$ mm $D = 3.8 \pm 0.3$ mm $E1 = 5.0 \pm 0.3$ mm $E2 = 42.5 \pm 0.5$ mm $F = 4.5$ mm MIN $d = 0.64 * 0.64 \pm 0.1$ mm CORE TAPE: 0.025t*13mmW*2TsMIN OUT INSULATION TAPE: 0.025t*32mmW*2TsMIN EPOXY		

IEC 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
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3.4. SCHEMATIC:

PIN	Tube length
1, 2, 3, 4, 5	8mm MIN

3.5. WINDING CONSTRUCTION:

Mylar tape: t 0.025mm*5.3mmW

- 1.) PIN1,2,3,4,5 ADDED TUBE,
- 2.) TUBE over winding 2.5mm min

3.6. WINDING MODE:

No.	COIL	TERMINAL	WIRE GAUGE	WIRE TYPE	TUNS	WINDING METHOD	TAPE 1Ts
1	N1	1--2	ϕ 0.28 mm	UEW	14	CLOSED	1Ts
2	N2	6--9	ϕ 0.40mm $\times$ 5	TIW-M	2	CLOSED	1Ts
3	N3	2--3	ϕ 0.28 mm $\times$ 2	UEW	14	CLOSED	1Ts
4	N4	7--10	ϕ 0.40 mm $\times$ 5	TIW-M	2	CLOSED	1Ts
5	N5	1--2	ϕ 0.28 mm	UEW	14	CLOSED	1Ts
6	N6	5--4	ϕ 0.28 mm $\times$ 2	UEW	6	CLOSED	3Ts

Concentric windings on phenolic bobbin. Min. one layer of insulation tape are provided between the primary windings and secondary windings. Triple insulated wire used for secondary winding, and the core is considered as primary part. All primary winding leads are covered by tube.

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

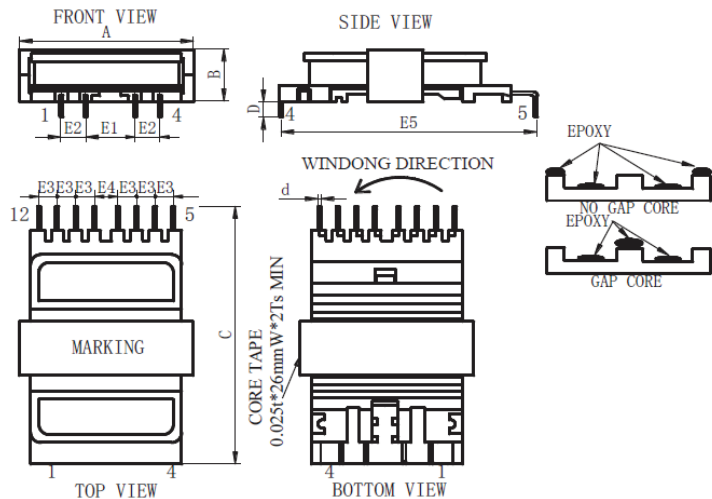
G.5.3.2	TABLE: transformers						P
Loc.	Tested insulation	Working voltage peak / V	Working voltage rms / V	Required electric strength	Required clearance / mm	Required creepage distance / mm	Required distance thr. insul.
T9101	Input terminal to output winding (RI)	480	284	AC 4000V	4.5	5.7	Min. 2 layers tape
T9101	Input terminal to output terminal (RI)	480	284	AC 4000V	4.5	5.7	Min. 2 layers tape
T9101	Input winding to output winding (RI)	480	284	AC 4000V	4.5	5.7	Min. 2 layers tape
T9101	Input winding to output terminal (RI)	480	284	AC 4000V	4.5	5.7	Min. 2 layers tape
T9101	Input terminal to Core (RI)	480	284	AC 4000V	4.5	5.7	Min. 2 layers tape
T9101	Input winding to Core (RI)	480	284	AC 4000V	4.5	5.7	Min. 2 layers tape
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T9101	Input terminal to output winding (RI)			AC 4000V	10.2	10.2	--
T9101	Input terminal to output terminal (RI)			AC 4000V	62.5	62.5	--
T9101	Input winding to output winding (RI)			AC 4000V	7.9	7.9	--
T9101	Input winding to output terminal (RI)			AC 4000V	13.8	13.8	--
T9101	Input terminal to Core (RI)			AC 4000V	15.9	15.9	--
T9101	Input winding to Core (RI)			AC 4000V	6.7	6.7	--
supplementary information:							
1. The required clearances multiplied by 1.48 considering that EUT operates up to 5000m. 2. Core is considered as secondary.							

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

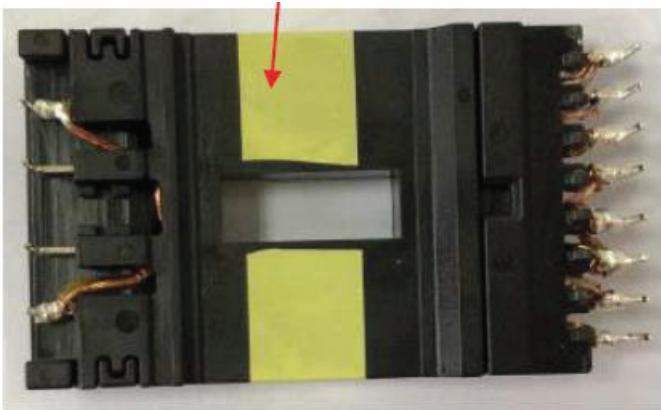
G.5.3.2	TABLE: transformers	P
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3. APPEARANCE & MECHANICAL CHARACTERISTICS

3.1. DIMENSIONS

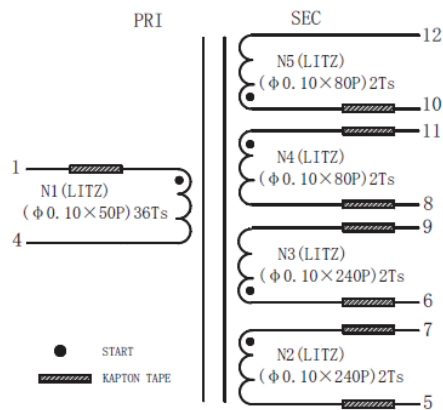


A=53.0±2.0 mm
B=16.0+0/-2.0 mm
C=75.5±2.0 mm
D=3.8±0.3 mm
E1=10.0±0.3 mm
E2=7.5±0.3 mm
E3=5.0±0.3 mm
E4=6.0±0.3 mm
E5=74.4±0.5 mm
d=0.8*0.8±0.1 mm



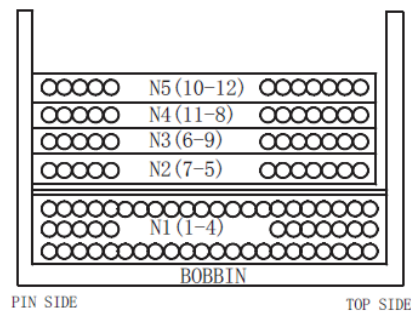
IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

3.4. SCHEMATIC:



PIN	Tube length
1, 5, 6, 7, 8, 9, 10, 11	15mm MIN

3.5. WINDING CONSTRUCTION:



Mylar tape: t 0.025mm*6.0mmW
1.) PIN1,5,6,7,8,9,10,11 ADDED TUBE/TAPE,
2.) TUBE/TAPE over winding 2.5mm min

3.6. WINDING MODE:

No.	COIL	TERMINAL	WIRE GAUGE	WIRE TYPE	TUNS	WINDING METHOD	TAPE
1	N1	1-4	φ 0.10mm×50	LITZ	36	CLOSE	/
2	N2	7-5	φ 0.10mm×240	LITZ	2	CLOSE	/
3	N3	6-9	φ 0.10mm×240	LITZ	2	CLOSE	/
4	N4	11-8	φ 0.10mm×80	LITZ	2	CLOSE	/
5	N5	10-12	φ 0.10mm×80	LITZ	2	CLOSE	/

Concentric windings on bobbin (horizontal type core). Coil N1 is for primary, and coils N2, N3, N4 and N5 are for secondary. The core is close to secondary windings, so the core is considered as secondary part.

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

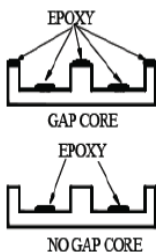
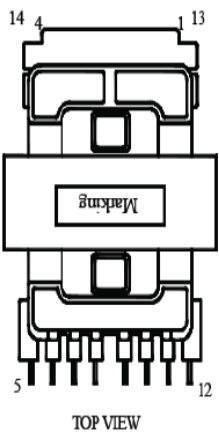
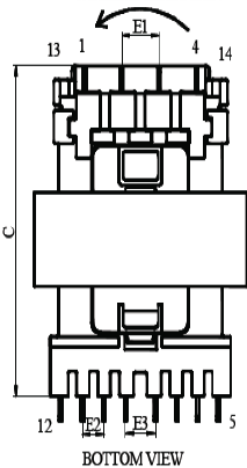
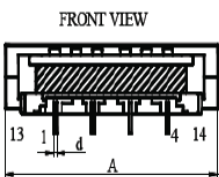
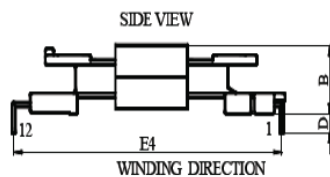
G.5.3.2	TABLE: transformer						P
Loc.	Tested insulation	Working voltage peak / V	Working voltage rms / V	Required electric strength	Required clearance / mm	Required creepage distance / mm	Required distance thr. insul.
T8601	Input terminal to output winding (RI)	502	304	AC 4000V	4.5	6.1	Min. 2 layers tape
T8601	Input terminal to output terminal (RI)	502	304	AC 4000V	4.5	6.1	Min. 2 layers tape
T8601	Input winding to output winding (RI)	502	304	AC 4000V	4.5	6.1	Min. 2 layers tape
T8601	Input winding to output terminal (RI)	502	304	AC 4000V	4.5	6.1	Min. 2 layers tape
T8601	Input winding to Core (RI)	502	304	AC 4000V	4.5	6.1	Min. 2 layers tape
T8601	Input terminal to Core (RI)	502	304	AC 4000V	4.5	6.1	Min. 2 layers tape
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T8601	Input terminal to output winding (RI)			AC 4000V	11.1	11.1	--
T8601	Input terminal to output terminal (RI)			AC 4000V	64.6	64.6	--
T8601	Input winding to output winding (RI)			AC 4000V	6.8	6.8	--
T8601	Input winding to output terminal (RI)			AC 4000V	15.1	15.1	--
T8601	Input winding to Core (RI)			AC 4000V	9.2	9.2	--
T8601	Input terminal to Core (RI)			AC 4000V	10.8	10.8	--
supplementary information:							
1. The required clearances multiplied by 1.48 considering that EUT operates up to 5000m.							

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

G.5.3.2	TABLE: transformers	P
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Construction:

3. Mechanical Characteristics
3.1 Dimensions



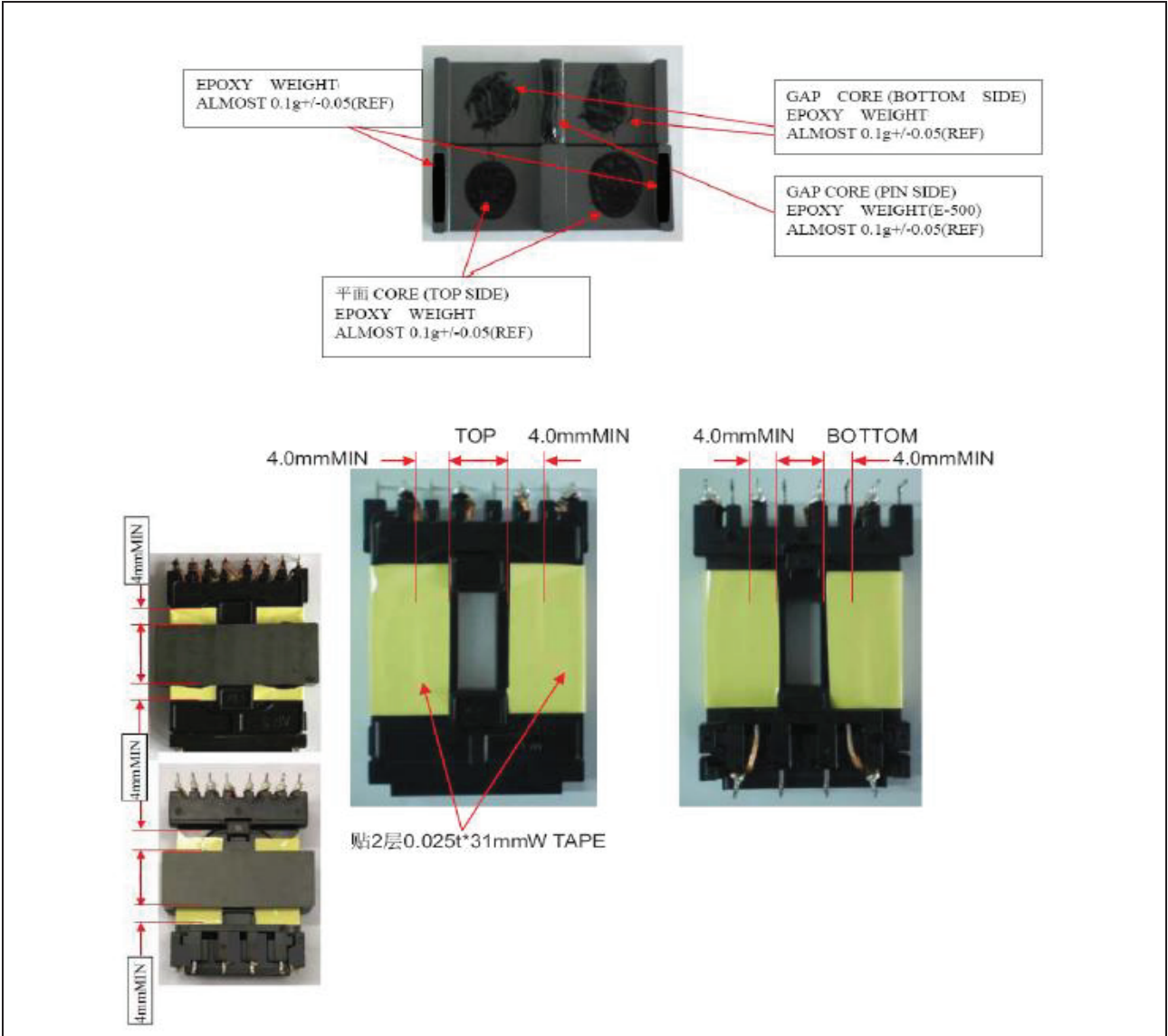
- A=50.0±2.0 mm
- B=14.0+0/-1.5 mm
- C=65.0±2.0 mm
- D=3.5±0.5 mm
- E1=9.5±0.3 mm
- E2=5.5±0.3 mm
- E3=7.5±0.3mm
- E4=68.5±0.5mm
- d=0.8*0.8±0.1 mm

Lead wire composition

- Steel 78%
- Cu 22%
- Sn99.99%(Thickness:12 μ)
- Lead free solder (Sn99.3%.Cu0.7%)



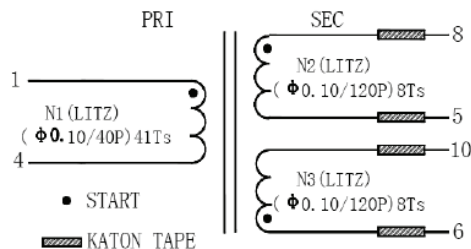
IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict



IEC 62368-1

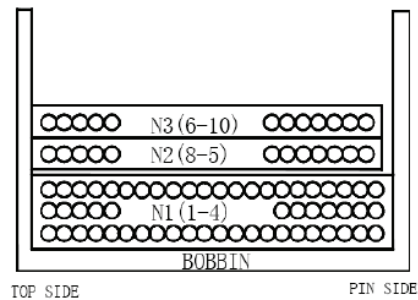
Clause	Requirement + Test	Result - Remark	Verdict
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3.5 Schematic :



PIN	Tape length
5,6,8,10	12mm MIN

3.6 Winding construction :



Mylar tape:

- 1.) PIN5,6,8,10 ADDEDTUBE/TAPE,
- 2.) TUBE over winding 2.5mm min

3.7 Winding mode:

NO.	WINDING	TERMINAL	WIRE	TURNS	REMARK	TAPE
1	N1	1-4	LITZ φ 0.10*40P	41	CLOSED	/
2	N2	8-5	LITZ φ 0.10*120P	8	CLOSED	1TS
3	N3	6-10	LITZ φ 0.10*120P	8	CLOSED	2TS

Concentric windings on bobbin (horizontal type core). Coil N1 is for primary, and coils N2 and N3 are for secondary. The core is close to secondary windings, so the core is considered as secondary part.

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT		
IEC 62368-1		
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES		
(Audio/video, information and communication technology equipment - Part 1: Safety requirements)		
Differences according to : EN IEC 62368-1:2020+A11:2020		
Attachment Form No. : EU_GD_IEC62368_1E		
Attachment Originator..... : UL(Demko)		
Master Attachment : 2021-02-04		
Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.		
	CENELEC COMMON MODIFICATIONS (EN)	
	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 Replace 3.3.19 of IEC 62368-1 with the following definitions:	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.19.1	momentary exposure level, MEL metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both channels, based on EN 50332-1:2013, 4.2. Note 1 to entry: MEL is measured as A-weighted levels in dB. Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.	Considered.	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

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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 with personal music players are also covered. A personal music player is a portable equipment intended for use by an ordinary person, that: – is designed to allow the user to listen to audio or audiovisual content / material; and – uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and – has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.). EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment. Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3. NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360. NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible. Listening devices sold separately shall comply with the requirements of 10.6.6. These requirements are valid for music or video mode only. The requirements do not apply to: – professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. – hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music	No such consideration for the purpose of personal music players.	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	players: • long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and • cassette player/recorder; NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. – a player while connected to an external amplifier that does not allow the user to walk around while in use. For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply. The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		
10.6.1.2	Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body mounted devices, attention is drawn to EN 50360 and EN 50566.		N/A
10.6.2	Classification of devices without the capacity to estimate sound dose		N/A
10.6.2.1	General This standard is transitioning from short-term based (30 s) requirements to long-term based (40 hour) requirements. These clauses remain in 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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete song. In this case, T becomes the duration of the song. NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song does not exceed the required limit. For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB.		
10.6.2.2	RS1 limits (to be superseded, see 10.6.3.2) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 85 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1. – 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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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.		
10.6.2.4	RS3 limits RS3 is a class 3 acoustic energy source that exceeds RS2 limits.		N/A
10.6.3	Classification of devices (new)		N/A
10.6.3.1	General Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given below.		N/A
10.6.3.2	RS1 limits (new) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic 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.		N/A
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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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.		
10.6.4	Requirements for maximum sound exposure		N/A
10.6.4.1	Measurement methods All volume controls shall be turned to maximum during tests. Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.		N/A
10.6.4.2	Protection of persons Except as given below, protection requirements for parts accessible to ordinary persons , instructed persons and skilled persons are given in 4.3. NOTE 1 Volume control is not considered a safeguard . Between RS2 and an ordinary person , the basic safeguard may be replaced by an instructional safeguard in accordance with Clause F.5, except 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.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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 capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration. The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.		N/A
10.6.5.2	Dose-based warning and requirements When a dose of 100 % <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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1. The warning shall at least clearly indicate that listening above 100 % CSD leads to the risk of hearing damage or loss.		
10.6.5.3	Exposure-based requirements With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at. The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3. The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster. Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface. NOTE In case the source is known not to be music (or test signal), the EL may be disabled.		N/A

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

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

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Clause	Requirement + Test	Result - Remark	Verdict
5	Modification to 4.Z1		
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.	Replaced.	P
6	Modification to 5.4.2.3.2.4		
5.4.2.3.2.4	Add the following to the end of this subclause: The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.	Added.	N/A
7	Modification to 10.2.1		
10.2.1	Add the following to ^{c)} and ^{d)} in table 39: For additional requirements, see 10.5.1.	No such radiation from the equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8	Modification to 10.5.1		
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.	LED indicator used.	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.		P

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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.		P
11	ADDITION OF ANNEXES		
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		
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"	The equipment is Class I equipment. The marking text must be provided when marketed in applicable countries.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	United Kingdom To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex	The equipment is not direct plug-in equipment.	N/A
5.2.2.2	Denmark After the 2nd paragraph add the following: A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high touch current.	N/A
5.4.11.1 and 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	No TNV circuits.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		
5.5.2.1	Norway After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Considered.	P
5.5.6	Finland, Norway and Sweden To the end of the subclause the following is added: Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.	No such resistors.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.1	Denmark Add to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.	Considered.	P
5.6.4.2.1	Ireland and United Kingdom 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.	Considered.	P
5.6.4.2.1	France After the indent for pluggable equipment type A, the following is added: – in certain cases, the protective current rating of the circuit supplied from the mains is taken as 20 A instead of 16 A.	Considered.	P
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm² to 1,5 mm² in cross-sectional area.	See above.	N/A
5.6.8	Norway To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as class I equipment. See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.	Considered.	P
5.7.6	Denmark To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high protective conductor current.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	Denmark To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .	No external circuits.	N/A
5.7.7.1	Norway and Sweden To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “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.	Not such system.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.” Translation to Swedish: ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.		
8.5.4.2.3	United Kingdom Add the following after the 2nd dash bullet in 3rd paragraph: An emergency stop system complying with the requirements of IEC 60204-1 and ISO 13850 is required where there is a risk of personal injury.		N/A
B.3.1 and B.4	Ireland and United Kingdom The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of direct plug-in equipment, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the direct plug-in equipment, until the requirements of Annexes B.3.1 and B.4 are met	The equipment is not direct plug-in equipment.	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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	No power supply cord is provided.	N/A
G.4.2	United Kingdom To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.	The equipment is not direct plug-in equipment.	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.	No power supply cord is provided.	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	No power supply cord is provided.	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.	No power supply cord is provided.	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		
10.5.2	Germany The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de	No CRT within the equipment.	N/A

IEC62368_1E ATTACHMENT

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

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 U.S.A. AND CANADA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to: CSA/UL 62368-1:2019			
TRF template used:: IECCE OD-2020-F3, Ed. 1.1			
Attachment Form No.: US_CA_ND_IEC62368_1E			
Attachment Originator: UL(US)			
Master Attachment: Dated 2022-03-04			
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IEC 62368-1 - US and Canadian National Differences Special National Conditions based on Regulations and Other National Differences			
1 (1DV.1) (1.3)	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part 1, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.	In accordance with the National Electrical Code (NEC) and the Canadian Electrical Code (CEC) part 1 CAN/CSA C22.1, ANSI/NFPA 70, and unless marked or otherwise identified, the Standard for Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	P
1 (1DV.2.1)	This standard includes additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities. See Annex DVB.	Not such application.	N/A
1 (1DV.2.2)	This standard includes additional requirements for equipment intended for mounting under cabinets. See Annex DVC.	Not such application.	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).	Not such application.	N/A
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72 for additional requirements.	Not such application.	N/A

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

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

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

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (F.3.3.4)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or that are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."	Single phase only.	N/A
Annex DVA (F.3.3.6)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.	Not such application.	N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position, where mounted in an enclosure, vertically mounted disconnect switches and circuit breakers with vertical operating means extending outside the enclosure are required to indicate in a location visible when accessing the external operating means whether the switch or circuit breaker is in the open (off) or closed (on) position.	No such parts.	N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No standard supply outlets, receptacles, medium-base or smaller lampholders are provided.	N/A
	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.	No such parts.	N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-400 and 10-612.	No such parts.	N/A
Annex DVA (G.4.3)	Interconnection of units by conductors supplied by a limited power source, or a Class 2 circuit defined in the NEC/CEC may have field wiring connections other than specified in DVH.3, such as wire-wrap and crimp-on types, if the limited power source and Class 2 circuits are separated from all other circuits by barriers, routing or fixing.	No such parts.	N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	No such parts.	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).	No such parts.	N/A
Annex DVA (G.7)	Flexible cords used outdoors are required to have the suffix "W" marked on the flexible cord.	No such parts.	N/A
Annex DVA (M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the ITE room remote power-off circuit.	Not such application.	N/A
Annex DVA (Q)	If applicable per NEC 725.121(C), some limited power sources supplied from AV/ICT equipment are required to have a label indicating the maximum voltage and rated current output for per conductor for each connection point. Where multiple connection points have the same rating, a single label is permitted to be used.	Not applicable for the equipment.	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.	Not applicable for the equipment.	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.	No outdoor equipment.	N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.	Not such application.	N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.	Not such application.	N/A

IEC62368_1E 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.	UL approved components are used. Refer to table 4.1.2 of IEC 62368-1 test report for details.	P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.	The equipment is not permanently connected equipment.	N/A
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.	The equipment is pluggable equipment type A.	N/A
Annex DVH (DVH.2.1)	For safe and reliable connection to a mains, permanently connected equipment is to be provided.		N/A
Annex DVH (DVH.2.2)	Additional considerations for D.C. mains.		N/A
Annex DVH (DVH.3.2.1)	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified.	No terminals for permanent wiring.	N/A
Annex DVH (DVH.3.2.3)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).	No wire binding screws.	N/A
Annex DVH (DVH.3.2.4)	All associated mains supply terminals are located in proximity to each other and to the main protective earthing terminal, if any.		N/A
Annex DVH (DVH.3.2.5)	Terminals are located, guarded or insulated so that, should a strand of a conductor escape when the conductor is fitted, there is no likelihood of accidental contact between such a strand and accessible conductive parts or unearthed conductive parts separated from accessible conductive parts by supplementary insulation only.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.3.3)	When field connection to an external circuit is via wires (example, free conductors), the wires are not smaller than 18 AWG (0.82 mm ²) and the free length of the wire inside an outlet box or wiring compartment is 150 mm or more.		P
Annex DVH (DVH.3.4)	Size of protective earthing conductors and terminals	(See sub-clause 5.6.5)	P
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	The equipment is not permanently connected equipment.	N/A
Annex DVH (DVH.4.1)	Wire bending space		N/A
Annex DVH (DVH.4.2)	Volume of wiring compartment		N/A
Annex DVH (DVH.4.3)	Separation of circuits		N/A
Annex DVH (DVH.5)	Equipment markings and instructional safeguards		P
Annex DVH (DVH.5.1)	Identification of protective earthing terminal		P
Annex DVH (DVH.5.2)	Identification of terminal for earthed conductor (neutral)		P
Annex DVH (DVH.5.3)	Identification of terminals for aluminium conductors		N/A
Annex DVH (DVH.5.4)	Wire temperature ratings		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.	The equipment not connected to a centralized d.c. power system.	N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.	No TNV circuits within the equipment.	N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.	No TNV circuits within the equipment.	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1:2018 JAPAN NATIONAL DIFFERENCES Audio/video, information and communication technology equipment – Part 1: Safety requirements			
Differences according to: J62368-1(2023)			
TRF template used:: IECCE OD-2020-F3:2022, Ed. 1.2			
Attachment Form No.: JP_ND_IEC62368_1E			
Attachment Originator: UL Solutions (JP)			
Master Attachment: Dated 2023-05-12			
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	National Differences		--
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this document or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.	Complied	P
5.6.1	Mains socket-outlet and interconnection coupler shall comply with Clause G.4.2A if they are incorporated as part of the equipment.	Not such equipment.	N/A
5.6.2.1	Connection for protective conductor of class 0I equipment provided with instructional safeguard in accordance with Clause F.3.6.1A is considered to make earlier and break later than supply connection. Mains plug having a lead wire for protective earthing connection of class 0I equipment shall comply with all of the following: – Not to be used for equipment having a rated voltage of 150 V or more – Clip is not used for the earthing connection of the lead wire. – The lead wire for earthing is at least 10 cm long If class 0I equipment provides an independent main protective earthing terminal and is intended to be installed by ordinary person, earthing wire shall be provided in the package of the equipment.	Class 0I equipment.	P

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2.2	Internal earthing conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector need not be green-and-yellow.		P
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cable with 1.25 mm ² or more cross-sectional area	Class 0I equipment.	P
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series, JIS C 8300 or JIS C 8303, or that is provided with mains appliance outlet as specified in JIS C 8283 series for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.	Class 0I equipment.	P
5.7.5	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990:2016.	Complied, see IEC 62368-1 report.	P
6.4.3.2	A fuse complying with JIS C 6575 series or a fuse having equivalent characteristics shall open within 1 s. A fuse having time/current characteristics other than those specified in IEC 60127 shall be tested with the characteristics taken into account. In case of Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”.		N/A
8.5.4.3.1	Only three-phase stationary equipment rated more than AC 200 V can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.	No moving parts.	N/A
8.5.4.3.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.3.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.		N/A
8.5.4.3.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.		N/A
F.3.5.1	When the mains socket-outlet is configured in accordance with JIS C 8282 series, JIS C 8300 or JIS C 8303, the assigned current or power shall be marked. If the voltage of the socket-outlet is the same as the mains voltage, the voltage need not be marked. Instructional safeguard of Class 0I equipment shall be provided with an instructional safeguard in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8300 or JIS C 8303 to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.		N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic shall be included.	No replaceable fuse.	N/A
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.2 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions shall be provided regarding the earthing connection. In addition to the above, for class 0I equipment, an instruction to connect earthing before and disconnect earthing after the connection of supply conductors shall be marked on the visible place of the main body or shall be in the text of an accompanying document.	Class 0I equipment.	P
F.3.6.2	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		P

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.8A	Attention marking for aging deterioration of CRT television Year of manufacture, standard usage period by design according to JIS C 9921-5 and cautionary statement for possible risks of aging deterioration when used beyond the specified period shall be marked on CRT television except for industrial use CRT television.		N/A
F.4	For audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A, the instructions shall require that the external wiring connected to these terminals shall be installed by a skilled person, or shall be connected by means of ready-made leads or cords that are constructed in a way that would prevent contact with any ES3 circuit. For class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided in the package of the equipment, if the protective earthing connection is made by instructed person or skilled person, the suitable installation instruction for the protective earthing connection shall be provided.	No such component.	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.	No such component.	N/A
G.3.4	Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the applicable JIS or IEC standard in accordance with 4.1.2 or shall have equivalent or better properties. Such a protective device shall have adequate breaking (rupturing) capacity to interrupt the maximum fault current (including short-circuit current) that can flow.	Approved fuse used.	P
G.4.1	This requirement does not apply to connectors covered in Clauses G.4.2 and G.4.2A.	Approved AC inlet used.	P

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

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment)			
Differences according to: AS/NZS 62368.1:2022			
TRF template used:: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No.: AU_NZ_ND_IEC62368_1E			
Attachment Originator: JAS-ANZ			
Master Attachment: 2022-07-01			
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	National Differences		—
Appendix ZZ	Variations to IEC 62368-1:2018 (ED. 3.0) for Australia and New Zealand		P
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2018 (ED. 3.0)		P
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		P
2	After the first paragraph, add the following: The Australian or Australian/New Zealand Standards listed below are modified adoptions of, or not equivalent to, the IEC normative references and are required for the application of this Standard. All references in the source text to those IEC normative references shall be replaced by references to the corresponding Australian or Australian/New Zealand Standards. Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably -AS/NZS 3112, Approval and test specification—Plugs and socket-outlets -AS/NZS 3123, Approval and test specification—Plugs, socket-outlets and couplers for general industrial application -AS/NZS 3191, Electric flexible cords -AS/NZS 60884.1.Plugs and socket-outlets for household and similar purposes, Part 1: General requirements -IEC 60086-2 Primary batteries — Part 2: Physical and electrical specifications -AS/NZS 60065, Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD) -AS/NZS 60320.1, Appliance couplers for	Added.	P

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD) -AS/NZS 60320.2.2, Appliance couplers for household and similar general purposes Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD) -AS/NZS 60695.2.11, Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products -AS/NZS 60695.11.5, Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance -AS/NZS 60695.11.10, Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods -AS/NZS 60884.1, Plugs and socket-outlets for household and similar purposes, Part 1: General requirements -AS/NZS 60950.1, Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD) IEC 61032:1997, Protection of persons and equipment by enclosures—Probes for verification -AS/NZS 61558.1, Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 3, MOD) -AS/NZS 61558.2.16, Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.		

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IEC62368_1E ATTACHMENT					
Clause	Requirement + Test			Result - Remark	Verdict
4.7.2	Requirements <i>Delete</i> the text of the second paragraph and <i>replace</i> with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet conforming to AS/NZS 3112, shall conform to the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets. Conformity is checked by inspection and, if necessary, by the tests in AS/NZS 3112. NOTE: Equipment with plug portions for use in countries other than Australia and New Zealand will need to conform to other countries' requirements Note Additional AS/NZS 3112 Appendix J, TRF is appended to end of this TRF.			Deleted.	N/A
4.7.3	Compliance Criteria <i>Delete</i> this clause.			Deleted.	N/A
4.8.1	General After second list, <i>add</i> the following: NOTE: Refer to the Consumer Goods (Products Containing Button/Coin Batteries) Safety Standard 2020 and Consumer Goods (Products Containing Button/Coin Batteries) Information Standard 2020 for more information on button cell batteries in Australia.				N/A
5.4.10.2.1	General <i>Delete</i> the first paragraph and <i>replace</i> with the following: In Australia, the separation is checked by the test given in both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test given in either 5.4.10.2.2 or 5.4.10.2.3.			Deleted.	N/A
Table 28	<i>Delete</i> Table 28 and <i>replace</i> with the following:				N/A
Parts		Impulse test		Steady state test	
		New Zealand	Australia	New Zealand	Australia
Parts indicated in Clause 5.4.10.1 a) ^a		2.5 kV	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment.	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) ^b		1.5 kV ^c		1.0 kV	1.5 kV
^a Surge suppressors shall not be removed. ^b Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment. ^c During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.					

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.2.2	<i>Delete</i> "NOTE" and <i>replace</i> with "NOTE 1". After NOTE 1, add the following: NOTE 2: For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 3: For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A
5.4.10.2.3	<i>Delete</i> "NOTE" and <i>replace</i> with "NOTE 1". After NOTE 1, add the following: NOTE 2: For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 3: The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
6	Electrically-caused fire		P
6.6	After Clause 6.6, <i>add</i> the new Clauses 6.201 as follows: 6.201 External power supplies, docking stations and other similar devices (see special national conditions)		N/A
8.6	Stability of equipment		P
Table 36	Footnote ^a , after first sentence, <i>add</i> the following: Equipment having displays with moving images shall include "television sets and display devices".	Considered.	P
8.6.1	After Clause 8.6.1 <i>add</i> the following new clauses: 8.6.201 Restraining Device fixing point (see special national conditions) 8.6.202 Restraining device (see special national conditions)	Added.	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F Paragraph F.3.3.4	Rated Voltage Delete "NOTE" and <i>replace</i> with NOTE1" After NOTE 1, <i>add</i> the following Equipment that is intended for connection to the supply mains in Australia and New Zealand shall be marked with: (a) A rated voltage of: • 230 V for single phase equipment • 400 V for poly phase equipment or (b) A rated voltage range that includes: • 230 V for single phase equipment • 400 V for poly phase equipment NOTE 2: equipment that is not rated as above is not suitable for direct connection to the supply mains in Australia or new Zealand.	Replaced.	P
Annex F.3.3.5	After the list, <i>add</i> the following Equipment that is intended for connection to supply mains in Australia or New Zealand shall be marked with a rated frequency of 50 Hz or a rated frequency range or nominal value which includes 50Hz	Replaced.	P
Annex F.3.8	After "The DC output of an external power supply", insert "or docking stations and other similar external devices"	Added.	N/A
Annex G Paragraph G.4.2	Mains connectors 1 After "IEC 60320", insert "or AS/NZS 60320 series". 2 After "IEC 60906-1", insert "or AS/NZS 3123" 3 <i>After</i> first paragraph <i>add</i> the following: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.	Added.	P
Paragraph G.5.3.1	Transformers, General 1 Third dashed point <i>replace</i> 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 Fourth dashed point <i>replace</i> 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.	Considered.	P
Annex G.7.1	Mains supply cords, General Fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'	Considered.	P

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Table G.7	Sizes of conductors 1 First column, second row, <i>delete</i> “6” and <i>replace</i> with “7.5” 2 Second column, second row, <i>delete</i> ‘0,75’ and <i>replace</i> with ‘0.75 ^b ’ 3 <i>Delete</i> NOTE 1. 4 <i>Replace</i> ‘NOTE 2’ with ‘NOTE:’. 5 <i>Delete</i> ‘Footnote b’ and <i>replace</i> with the following: ^b This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm ² three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 Footnote c <i>replace</i> ‘IEC 60320-1’ with ‘AS/NZS 60320.1’ 7 Footnote d <i>replace</i> ‘IEC 60320-1’ with ‘AS/NZS 60320.1’	Considered.	P
Annex M M 2.1	<i>Add</i> “IEC 60086-2” to the list	Added.	N/A
Annex M Paragraph M.3.2	Test method Delete “NOTE” and replace with “NOTE 1” After NOTE 1 <i>add</i> the following: NOTE 2: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of ES1 may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.	No such construction.	N/A
	Special national conditions (if any)		

IEC62368_1E 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— (a) at all ES1 outlets or connectors shall not increase by more than 10 % of the output rated voltage under normal operating conditions, measured after 3 s of introducing a single fault condition and after 3 s of introducing abnormal operating conditions; and (b) of a USB outlet or connector shall not increase by more than 3 V or 10 % of the output rated voltage under normal operating conditions, whichever is higher, measured after 3 seconds of introducing a single fault condition and after 3 s of introducing abnormal operating conditions For equipment with multiple rated voltages at the output, the requirements apply with the equipment configured for each output rated voltage in turn NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. The 3 s measurement delay is based on IEC document 108/742/INF, <i>TC 108, Standards Interpretation Panel Question 15 — Output voltage</i>, in relation to similar requirements in IEC 62368-3:2017. Conformity shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single fault conditions of Annex B.4.	Complied.	P
8.6.201	Restraining device fixing point Freestanding-capable MS2 and MS3 television sets and display devices shall be provided with a fixing point to facilitate the anchoring of the equipment from toppling. The fixing point shall conform to Clause 8.7 where the fixing point uses a wall, ceiling or other structure mount. Alternatively, the fixing point shall be capable of withstanding a pull equal to the mass of the equipment in all directions without damage. Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point.	Provided in user manual.	P

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.202	Restraining device MS2 and MS3 television sets and display devices shall be provided with a restraining device and associated hardware to attach to the television set or display device. The restraining device shall be capable of withstanding a pull equal to the mass of the equipment in all directions. Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point.	Models sold in New Zealand and Australia are for wall mount use only	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

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

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

J3	REQUIREMENTS FOR THE PLUG PORTION		N/A
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J3.1	General The following provisions apply to the dimensional and constructional requirements of plug portions of equipment and any detachable connection between the plug portion and the equipment:		N/A
(a)	For detachable plug portions intended for connection to the equipment in multiple orientations, the relevant tests are performed in the most onerous orientation.		N/A
(b)	For Type A detachable plug portion, the relevant requirements of AS/NZS 3105:2014 are applicable, in addition to conformance with relevant clauses of this Appendix		N/A
(c)	For Type B detachable plug portions, the conformance is shown by the relevant clauses of this Appendix.		N/A
(d)	For Type C detachable plug portions, conformance is shown by assessment to Section 2 _of this Standard (plugs) and relevant clauses of this Appendix (AS/NZS 3112:2017)		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

J3.2	Plug pins of plug portions The requirements of Clause 2.2 are applicable for plug pins.		N/A
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2.2	PLUG PINS		N/A
2.2.1	Current carrying parts of plug pins of metal having sufficient mechanical strength, electrical conductivity and resistance to corrosion adequate for the intended use		N/A
	Plug pin material?		--

2.2.3	Plug pins adequately proportioned throughout and portion adjacent to the connection designed to not introduce a stress concentration which may lead to a fracture of the pin, and suitably shaped to prevent abrasion or cutting of conductor strands due to flexure in normal use		N/A
	Exposed ends of plug pins have a lead-in, bevel or radius to facilitate entry into socket-outlets and to operate shutters		N/A
	Flat-pins with the following profile are deemed to comply:		--
(a)	Flat-pins with a radius on the end with side bevels may have a width and thickness profile as specified in Figure 2.1(h)		N/A
(b)	Flat-pins square on the end with corner and side bevels may have a width and thickness profile as specified in Figure 2.1(i)		N/A
(c)	Flat-pins square on the end with corner bevels and a radius on the sides may have a width and thickness profile as specified in Figure 2.1(j)		N/A
	Contact portion of the pins smooth and free from openings or indentations		N/A
	Flat pin plugs having a longitudinal seam or opening in the contact portion of one face; width not exceeding 0.3 mm and		N/A
	Thickness not exceeding 1.58 mm		N/A
	Exposed portion of earthing pins and pins other than insulated pins free from any non-metallic coverings or coatings (AS/NZS 3112:2017)		N/A
2.2.4	Live parts of insulated pin plugs not exposed when plug is partially or fully engaged with associated socket		N/A
	Compliance by measurement to Figure 2.4	(see appended table)	N/A
	Lacquer, enamel or sprayed insulating coating not		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	considered to be insulation material		
	All live pins on low voltage plugs except for those shown in Figure 2.1 (a2), (b) and (g) of the insulated pin type		N/A
	Colour green or green / yellow not used for insulation of insulated pins (AS/NZS 3112:2017)		N/A

J3.3	Ratings and dimensions for low-voltage plug portions Requirements of clauses 2.8.1 and 2.8.4 apply for rating and dimensions		N/A
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2.8	Ratings and Dimensions of Low Voltage Plugs		--
2.8.1	Low voltage flat-pin plugs and low voltage plugs having one round earth pin and two flat pins or two round live pins and one flat earth pin, having ratings up to and including 20A; compliance with Figure 2.1	(see appended results)	N/A
	Rating of plug	___A	--
	Nominal dimensions covering disposition of pins checked by gauge of Appendix A		N/A
	Distance between live pin and edge of moulding to not less than 9 mm		N/A
	Measured distance	___mm	--
	No point on plug face protrudes more than 0.5 mm		N/A
	Measured protrusion	___mm	--
	Dimensional requirements of Figure 2.1(e2) did not applied to plugs with greater than three pins (AS/NZS 3112:2017)		N/A
2.8.4	Low voltage plugs comply with dimensions of Figure 2.1	(see appended table 2.8.1)	N/A
	Disposition of pins checked by gauge complying with Appendix A, B or F as appropriate		N/A
	Low voltage plug having rating up to 15A and of the Figure 2.1 (a1), (c), (d), (f) or (g) type; comply with dimensional requirements of Figure 2.1 (e1 and e2)		N/A
	20A plug of Figure 2.1(a2) type complies with dimensional requirements of Figure 2.1 (e2)		N/A
	Plugs with insulated pins need not comply with dimension $R20.0 \pm 1$ mm requirement of Figure 2.1 (e3) provided there is at least 9mm from the edge of the live pins to the edge of the plug face Figure 2.1(e3). (AS/NZS 3112:2017)		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

J3.5	Arrangement of earthing connections for plug portions Requirements of clause 2.10 apply for arrangement of earthing connections		N/A
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2.10	Arrangement of earthing connections		N/A
	Earthing pin radial to the circle embracing the pins (AS/NZS 3112:2017)		N/A

J3.6	Configuration of plug portions Requirements of clause 2.12.6 apply for configuration of the plug portion (AS/NZS 3112:2017)		N/A
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2.12	Marking		--
2.12.6	Configuration of plugs		N/A
	Pins disposed so that configuration, as viewed from the pins, is earth, neutral and active in a clockwise direction		N/A
	Where there is no earthing pin; live pins conform to this configuration (AS/NZS 3112:2017)		N/A

J4	Tests		N/A
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Clause	Requirement + Test		Verdict
J4.1	General Plug portions of equipment shall be subjected to the following tests and unless stated otherwise, shall comply with the requirements specified in Section 2 for each test. The number of test samples shall be in accordance with Table J1 For equipment with a detachable plug portion, the assessment(s) of Table J1 tests 2, 3, 5, 10 and 11 shall be conducted on the— (a) assembled equipment with the detachable plug portion connected; and (b) the detachable plug portion after it has been separated from the equipment (AS/NZS 3112:2017/A1:2021)		N/A
J4.2	High voltage test The requirements of Clause 2.13.3 are applicable unless requirements are contained in the relevant product standard (AS/NZS 3112:2017)		N/A
2.13.3	Test No.1 - High voltage test		N/A
	Plug withstands without failure electric strength test as specified (AS/NZS 3112:2017)	(see appended table)	N/A
J4.3	Mechanical strength		N/A
J4.3.1	Tumbling barrel test The tumbling barrel test is applied to determine the mechanical strength of the plug portions and equipment having integral or detachable plug portions. For equipment with a detachable plug portion, the detachable plug portion may become detached during the test. If this occurs the detachable plug portion shall be reassembled with the equipment when the pins are straightened as per (a) and (b) below. Three samples that have not been subjected to any previous test are tested to the requirements of Clause 2.13.7.1, however the test is modified as follows:		N/A
	They are tested in a tumbling barrel as described in AS 60068.2.32 or test Free fall repeated – Procedure 2 in IEC 60068-2.31. The samples shall be dropped from a height of 500 mm onto a steel plate, 3 mm thick. The barrel shall be turned at a rate of 5 r/min, to yield 10 falls per minute. Only one sample shall be tested at a time. A sample is dropped— (a) 500 times if the mass of the specimen does not exceed 250 g. The pins being straightened after each 100 drops and at the completion of the test to		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	pass through the appropriate gauge of Figure A1 , Figure B1 or Figure F1 ; and (b) 250 times if the mass of the specimen exceeds 250 g. The pins being straightened after each 25 drops and at the completion of the test to pass through the appropriate gauge of Figures A1 , Figure B1 or Figure F1 . (AS/NZS 3112:2017/A1:2021)		
	Mass of sample	_____ Grams	N/A
	Number of drops	500 / 250	N/A
	Compliance shall be checked by Paragraph J4.3.3	(See appended table)	N/A

J4.3.2	Test No.3 Impact test. Plug portions and equipment having integral plug portions or detachable plug portions shall withstand lateral impact forces. All samples that were subjected to the tests in Paragraph J4.3.1 shall be tested as follows:		N/A
	(a) The sample shall be positioned at the centre of a steel plate with a thickness of at least 6 mm. Apertures in the steel plate for the plug pins to pass through shall conform to the corresponding socket Standard. The sample shall be held against the steel plate by clamping all the pins.		N/A
	(b) Samples shall be subjected to blows, with an impact energy of 1.0 ± 0.05 J by any means having the same performance as the spring-operated impact-test apparatus of AS/NZS 3100.		N/A
	(c) Three blows shall be applied to every point that is most likely to directly or indirectly stress the enclosure joints of the sample		N/A
	Compliance shall be checked by Paragraph J4.3.3		N/A

J4.3.3	Specific compliance criteria This Paragraph provides the common compliance assessment criteria for tests specified in Paragraphs J4.3.1 and J4.3.2 .		N/A
	Following each test, the samples shall comply with Clause 2.13.7.1		N/A
(a)	assembled equipment with the detachable plug portion connected;		N/A
	After the test, samples show no damage	(See appended table)	N/A
(b)	the detachable plug portion after it has been separated from the equipment.		N/A
	After the test, samples show no damage	(See appended table)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

4.3.4	Pin bending test The pins of the plug portion of three samples (Samples EFG in Table J1) not subjected to any previous tests shall be tested for compliance with the pin bending test of Clause 2.13.7.2 (AS/NZS 3112:2017/A1:2021)		N/A
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2.13.7.2	Test No.4 – Pin bending test		N/A
	All flat-pin plugs rated up to and including 15 A shall be subjected to the pin bending test		N/A
	Three samples are subjected by clamping the plug in a rigid holding block and applying the bending force as specified		N/A
	After the test the pins shall not be broken off. (AS/NZS 3112:2017)		N/A

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

J4.4	Temperature rise test The relevant requirements of Clause 2.13.8 are applicable for the temperature rise test, except that the test current shall be that specified in the relevant product standard		N/A
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Clause	Requirement + Test	Result - Remark	Verdict

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

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

J4.5	Securement of pins of the plug portion The requirements of Clause 2.13.9 are applicable for the securement of pins. (AS/NZS 3112:2017)		N/A
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2.13.9	Test No.7. Securement of pins		N/A
2.13.9.1	Movement of pins		N/A
	Plug pins clamped 5 ± 0.5 mm from pin face; test equipment and sample pre-conditioning for 1 h at $40 \pm 1^\circ\text{C}$		N/A
	Force of 18 ± 1 N applied to pin 14 ± 0.5 mm from plug face; applied gradually over 10 s and maintained for 10 s; applied in four directions		N/A
	Maximum deflection during test not exceeding 2.0 mm	(see appended results)	N/A
	Any distortion 5 minutes after test does not prevent insertion of plug into standard gauge(s) (AS/NZS 3112:2017 + A1:2021)		N/A
2.13.9.2	Fixing of pins		N/A
	Plug heated to $50 \pm 2^\circ\text{C}$ for 1h		N/A
	Force of 60 ± 0.6 N applied to each pin over 10 s and maintained for 10 minutes; applied in two directions along length of pin		N/A
	Maximum displacement during test not exceeding 2.4 mm		N/A
	Maximum measured displacement		--

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Clause	Requirement + Test	Result - Remark	Verdict

	Pin returns to within 0.8 mm of nominal length within 5 minutes of removal of test force (AS/NZS 3112:2017)		N/A
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J4.6	Tests on the insulation material of insulated pin-plug portions The requirements of Clause 2.13.13 are applicable for insulating material of insulated plug pins. (AS/NZS 3112:2017)		N/A
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2.13.13	Test No.8 Tests for insulation material of insulated pin plugs		N/A
2.13.13.1	Material of pin-insulation resistant to stresses at temperature likely to occur		N/A
2.13.13.2	Pressure test at high temperature		N/A
	Specimen tested as per Figure 2.5 with force of 2.5 N applied as specified; maintained for 2 h at $160 \pm 5^{\circ}\text{C}$; removed and cooled by immersion in water within 10 s		N/A
	Thickness of insulation at point of impression not reduced by more than 50%		N/A
	Initial thickness	mm	--
	Thickness after test	mm	--
	No visible cracks on insulation material		N/A
	Dimension of insulating material not below minimum size in Figure 2.4 (AS/NZS 3112:2017)		N/A

2.13.13.3	Static damp heat test		N/A
	Specimen subjected to two damp heat cycles in accordance with AS 60068.2.30; Db (12 + 12h), 95% RH, $25 \pm 3^{\circ}\text{C}$; 40°C		N/A
	After this treatment and recovery to room temperature; specimen subjected to:		N/A
(a)	Insulation resistance test in accordance with clause 2.13.2 (e)	(see appended table)	N/A
(b)	High voltage test in accordance with clause 2.13.3	(see appended table)	N/A
(c)	Abrasion test in accordance with clause 2.13.13.6		N/A
2.13.13.4	Low temperature test		N/A
	Plug maintained at $-15 \pm 2^{\circ}\text{C}$ for minimum of 24 h and returned to room temperature; after which specimen subjected to:		N/A
(a)	Insulation resistance test in accordance with clause 2.13.2 (e)	(see appended table)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

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

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

J4.8	Additional requirements for detachable plug portions		N/A
J4.8.1	Test no.10 Access to live parts		N/A
	Small test finger of Figure 13 of IEC 61032 was not possible to contact live parts with the force of 20N		N/A
	incorrectly assemble the plug portion was not possible (AS/NZS 3112:2017)		N/A

J4.8.2	Test No.11 Construction of detachable contacts where the input current of the equipment exceeds 0.2 A		N/A
	Contacts of the equipment shall be such that they make and maintain, under normal service conditions, satisfactory electrical and mechanical contact with the corresponding contact of the detachable plug portion.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	For connections intended to accommodate pins, contact shall be made on two surfaces diametrically opposite, except if a single spring-assisted contact is used. (AS/NZS 3112:2017/A1:2021)		N/A
	Contacts shall not rely exclusively on the resilience of the contact material and shall have an opposite face of material other than thermoplastic or resilient insulating material. (AS/NZS 3112:2017/ A1:2021)		N/A
	The alignment and contact-making properties of contacts shall be independent of terminal screws		N/A
	The effectiveness of the contacts shall be independent of pressure from any thermoplastic or resilient moulding.		N/A
	A visual inspection is conducted to determine the existence of interference between the metal contacts and the thermoplastic or resilient moulding to provide supplementary contact pressure to the metal contacts.		N/A
	Conformance of the effectiveness of the contacts is checked by inspection and by the inspection and tests in J4.8.3 (AS/NZS 3112:2017)		N/A

J4.8.4	Resistance of insulating material to heat and fire		N/A
J4.8.4.1	Test no.12 Resistance to heat For Type B detachable plug portions parts of non-metallic material, parts of insulating material supporting live parts including connections, and parts of thermoplastic material providing supplementary insulation or reinforced insulation, shall be sufficiently resistant to heat if their deterioration could cause the appliance to fail to comply with this Standard.		N/A
	Ball pressure test conducted in accordance with IEC 60695-10-2		N/A
(a)	75°C ± 2°C, for external parts;		N/A
(b)	125°C ± 2°C, for parts supporting live parts.		N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict

TABLES OF RESULTS

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

2.8.1	TABLE: Dimensions of plugs- 10A (a1)		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase and neutral pin width (A)			6.35 ± 0.15
Earth pin width (B)			6.35 ± 0.15
Pin thickness (C)			$1.63 + 0.15, -0.05$
Pin disposition (D)			checked by test gauge
Pin disposition (E)			checked by test gauge
Phase and neutral pin length (F)			17.06 ± 0.4
Earth pin length (G)			19.94 ± 0.8
Pin boss radius - maximum			21.0 max
Pin boss height			8.6 min

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

2.8.1	TABLE: Dimensions of plugs-20A (a2)		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase and neutral pin width (A)			9.08 ± 0.15
Earth pin width (B)			9.08 ± 0.15

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Clause	Requirement + Test	Result - Remark	Verdict
Pin thickness (C)		1.63 + 0.15, -0.05	
Pin disposition (D)		checked by test gauge	
Pin disposition (E)		checked by test gauge	
Phase and neutral pin length (F)		17.06 ± 0.4	
Earth pin length (G)		19.94 ± 0.8	
Pin boss radius - maximum		21.0 max	
Pin boss height		8.6 min	

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

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

2.13.7.1	Test No.2 – Tumbling barrel test		N/A
J4.8.4.1	Following the test, the samples shall comply with Clause 2.13.7.1(a..e)		N/A
	(a) Live parts shall not have become exposed to the standard test finger		N/A
	(b) For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with Clause 3.14.7 is maintained. AS/NZS 3100 Cl 8.5 The resistance shall not exceed 0.1 Ω	___ Ω.	N/A
	(c) Any other function affecting safety shall not be impaired		N/A
	(d) No live part shall have become detached or loosened, to the extent that a hazardous situation is created (see Clause 2.9)		N/A
	(e) The pins shall be inspected with normal, or		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking		
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	Test No.3 Impact test for assembled equipment with the detachable plug portion connected and for equipment with an integral plug portion.		N/A
	Following the test, the samples shall comply with Clause 2.13.7.1 (a..e) as follows:		N/A
	(a) Live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	(b) For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with Clause 3.14.7 is maintained so that the resistance between the earthing terminal of any socket-outlet provided with an earthing contact and the earthing terminal of the plug used for testing shall be of a low resistance. Compliance is by the test of earthing connection in AS/NZS 3100 Clause 8.5. The resistance shall not exceed 0.1 Ω	___ Ω .	N/A
	(c) Any other function affecting safety shall not be impaired		N/A
	(d) No live part shall have become detached or loosened, to the extent that a hazardous situation is created		N/A
	(e) The pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking.		N/A
	Following the test, the samples shall conform to the 'Guarding of live parts' requirements of AS/NZS 3100:2015 cl 5.1 as follows:		N/A
	Except for equipment intended for use only in a position not accessible to unauthorized persons, all equipment shall be so designed and constructed that, when the equipment is standing, supported, or fixed, in a normal manner, no person can inadvertently come into contact with any live part		N/A
	If a hole giving access to preset controls is marked as such on the enclosure or reference made to it in the instructions and the setting of this control requires a screwdriver or other tool, the adjustment of the control shall not allow contact with any live parts. A metal test pin having a diameter of 2 mm and a length of 100 mm shall not become live when it is inserted through the hole in every position with a force of 10 N.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	In addition, the opening or removal of any cover or component, with or without tools, where such opening or removal is necessary as a normal operation of the equipment as distinct from maintenance, repairs, or adjustment, shall not expose live parts to inadvertent personal contact.		N/A
	Any metal cover or casing enclosing live parts shall be of a strength sufficient to ensure that it cannot be deformed readily so as to come into contact with live parts.		N/A
	Compliance is checked by inspection, test and checking that live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Class II equipment and class II constructions shall be constructed and enclosed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only.		N/A
	It shall only be possible to touch parts which are separated from live parts by double insulation or reinforced insulation.		N/A
	Compliance is checked by application of the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Following the test, the samples shall conform to the 'Separation of live parts from non-current-carrying conductive parts' requirements of AS/NZS 3100.CI 5.2.2 as follows:		N/A
	The support and insulation of every live part shall be such as will ensure that no live part can make contact with any non-current-carrying conductive part exposed to personal contact.		N/A
	In respect of terminals of components such as switches, adequate clearances shall be maintained or insulation shall be provided to prevent contact of the terminals, or loose strands of flexible cords intended to be terminated therein, with exposed conductive parts. Where necessary, provision shall be made to ensure that conductors protruding through terminals, when normally connected, will not contact exposed conductive parts.		
	Compliance is checked by inspection.		N/A
	Test No.3 Impact test for the detachable plug portion after it has been separated from the equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Following the test, the samples shall comply with Clause 2.13.7.1 (a..e)		N/A
	(a) Live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	(b) For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with Clause 3.14.7 is maintained so that the resistance between the earthing terminal of any socket-outlet provided with an earthing contact and the earthing terminal of the plug used for testing shall be of a low resistance. Compliance is by the test of earthing connection in AS/NZS 3100 Clause 8.5. The resistance shall not exceed 0.1 Ω	___ Ω .	N/A
	(c) Any other function affecting safety shall not be impaired		N/A
	(d) No live part shall have become detached or loosened, to the extent that a hazardous situation is created		N/A
	(e) The pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking.		N/A
	Following the test, the samples shall conform to the 'Guarding of live parts' requirements of AS/NZS 3100:2015 cl 5.1 as follows:		N/A
	Except for equipment intended for use only in a position not accessible to unauthorized persons, all equipment shall be so designed and constructed that, when the equipment is standing, supported, or fixed, in a normal manner, no person can inadvertently come into contact with any live part		N/A
	If a hole giving access to preset controls is marked as such on the enclosure or reference made to it in the instructions and the setting of this control requires a screwdriver or other tool, the adjustment of the control shall not allow contact with any live parts. A metal test pin having a diameter of 2 mm and a length of 100 mm shall not become live when it is inserted through the hole in every position with a force of 10 N.		N/A
	In addition, the opening or removal of any cover or component, with or without tools, where such opening or removal is necessary as a normal operation of the equipment as distinct from maintenance, repairs, or adjustment, shall not expose live parts to inadvertent personal contact.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Any metal cover or casing enclosing live parts shall be of a strength sufficient to ensure that it cannot be deformed readily so as to come into contact with live parts.		N/A
	Compliance is checked by inspection, test and checking that live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Class II equipment and class II constructions shall be constructed and enclosed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only.		N/A
	It shall only be possible to touch parts which are separated from live parts by double insulation or reinforced insulation.		N/A
	Compliance is checked by application of the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Following the test, the samples shall conform to the 'Separation of live parts from non-current-carrying conductive parts' requirements of AS/NZS 3100.CI 5.2.2 as follows:		N/A
	The support and insulation of every live part shall be such as will ensure that no live part can make contact with any non-current-carrying conductive part exposed to personal contact.		N/A
	In respect of terminals of components such as switches, adequate clearances shall be maintained or insulation shall be provided to prevent contact of the terminals, or loose strands of flexible cords intended to be terminated therein, with exposed conductive parts. Where necessary, provision shall be made to ensure that conductors protruding through terminals, when normally connected, will not contact exposed conductive parts.		
	Compliance is checked by inspection.		N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict

Earthing terminal			45
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2.13.9.1	TABLE: Movement of pins		N/A
	Earth and neutral pins clamped – phase pin loaded		
Force direction		Measured deflection (mm)	Allowed deflection (mm)
Force towards neutral plane parallel to pin plane			2.0
Force from neutral plane parallel to pin plane			2.0
Force outwards at 90° to pin plane			2.0
Force inwards at 90° to pin plane			2.0

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

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

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

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

2.13.13.4	TABLE: Test No.1 – Insulation resistance test after low temperature test		N/A
Applied between:		Insulation resistance (MΩ)	Minimum required (MΩ)
Live poles and metal foil applied around insulation on pins			5

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

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

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

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

Glow-wire testing was conducted in accordance with IEC 60695-2-10 and IEC 60695-2-11.

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

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

SPECIMEN NUMBER	1	2	3	4	5	6	7	8
SPECIMEN DESCRIPTION								
Material								
Colour								
Test specimen								

IEC62368_1E ATTACHMENT								
Clause	Requirement + Test				Result - Remark			Verdict
Glow wire tip temperature (°C)	750	750	750	750	750	750	750	750
Duration of glow wire application (t _a) (s)	30	30	30	30	30	30	30	30
OBSERVATIONS								
Duration from beginning of glow-wire tip application to ignition of specimen or layer (t _i) (s)								
Duration from beginning of glow-wire tip application to when flames extinguish (t _e) (s)								
Maximum height of flames after initial 1s (to nearest 5 mm)(mm)								
Flame impingement on other parts								
Degree of tip penetration								
Degree of specimen distortion								
Scorching of pinewood board								
EVALUATION CRITERIA								
Visible flame or sustained glowing								
Visible Flame Duration in Seconds during test.								
Duration of flaming or glowing after tip removal (max. allowable 30 s) (s)								
Surrounding parts burned away completely (not permitted)								
Ignition of wrapping tissue layer (not permitted)								
RESULTS								
If parts tested withstand the glow-wire test, but during the test produce a flame that persists for longer than 2 s, then the consequential needle flame test of AS/NZS 3100:2017 Annex A 6.1.5 applies.								

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

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

	PHOTOGRAPHS	
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IEC62368_1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Appendix	Appendix 12, J3000(H25) Special National conditions, National deviation and other information according to MITI Ordinance No. 85.		—
1	General requirement When equipment provides with appliance inlet complying with JIS C 8283-1(2008), soldered parts of appliance inlet is not applied by force during insert or removal of connector. This is not applied when inlet body is fixed itself and not fixed by solder.	Inlet is fixed by adequate mechanical construction, not rely on soldering.	P
2	Requirement for equipment		—
2.1	Heater Appliances When diode is used in parallel for adjustment of power, the equipment shall remain safe for operation under open condition of one diode.	Not electric stove.	N/A
	The current rating of one diode shall be more than main current. The diodes connected in parallel are same type.		N/A
	The heating test specified by clause 11 of JIS C 9335-2-30(2006) under open condition of one diode shall comply with the requirements.		N/A
2.2	Electric heater with glowing heating elements	Not electric stove.	N/A
	Surface treatment by paint or adhesive on protective frame or protective mesh shall not be used.		N/A
	Caution marking like below shall be on - easily visible place of the equipment or - Instruction manual 「注意 当該機器から、使用初期段階で揮発性有機化合物及びカルボニル化合物が最も放散するおそれがあるため、その際には十分換気を行うこと。」		N/A
3	Components used in equipment	No such equipment /components.	N/A
3.1	Motor capacitors used in ventilating fan, electric fan, air conditioner, electric washing machine, refrigerator or electric freezer shall be comply with - capacitors with protective elements or protective mechanism complying with JIS C 4908(2007) - P2 capacitor complying with IEC 60252-1(2001) Capacitor complying with below is acceptable		N/A
	Enclosed by metal or ceramic		N/A
	No non-metallic materials within 50 mm from capacitor surface		N/A

IEC62368_1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Non-metallic material within 50 mm from capacitor surface comply with needle frame test of JIS C 9335-1(2003), Annex E		N/A
	Non-metallic material within 50 mm from capacitor surface comply with V-1 test of JIS C 60965-11-10(2006).		N/A
3.2	Plug directly inserted to outlet used refrigerator or electric freezer. Shall comply with - Face contact with outlet shall have CTI with more than 400 according to JIS C 2134(2007) or - Supporting material of blades shall comply with glow wire test by temperature of 750°C according to JIS C 60695-2-11(2004) or JIS C 60695-2-12(2004). Materials having glow wire frame temperature of 775 °C are acceptable.		N/A

Product: LCD MONITOR

Type Designation: PN-M502, PN-P506



Figure 1. Overview



Figure 2. Overview

Product: LCD MONITOR
Type Designation: PN-M502, PN-P506



Figure 3. Overview



Figure 4. Overview

Product: LCD MONITOR
Type Designation: PN-M502, PN-P506



Figure 5. AC inlet



Figure 6. Data ports

Product: LCD MONITOR
Type Designation: PN-M502, PN-P506



Figure 7. Metal enclosure



Figure 8. Metal enclosure

Product: LCD MONITOR
Type Designation: PN-M502, PN-P506

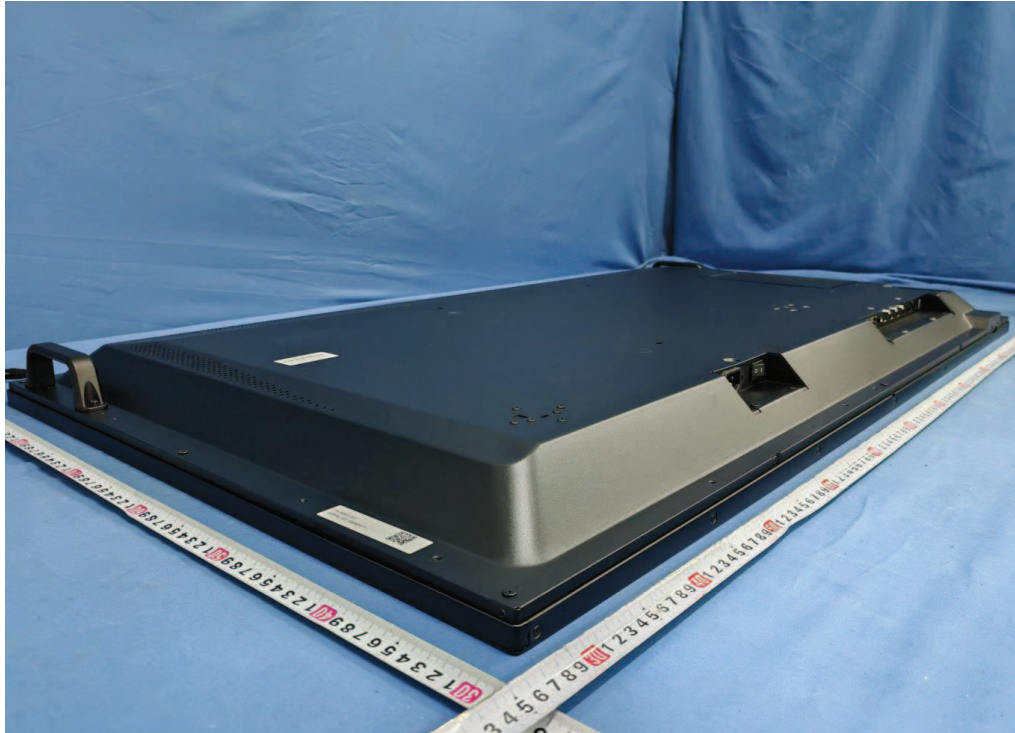


Figure 9. Metal enclosure

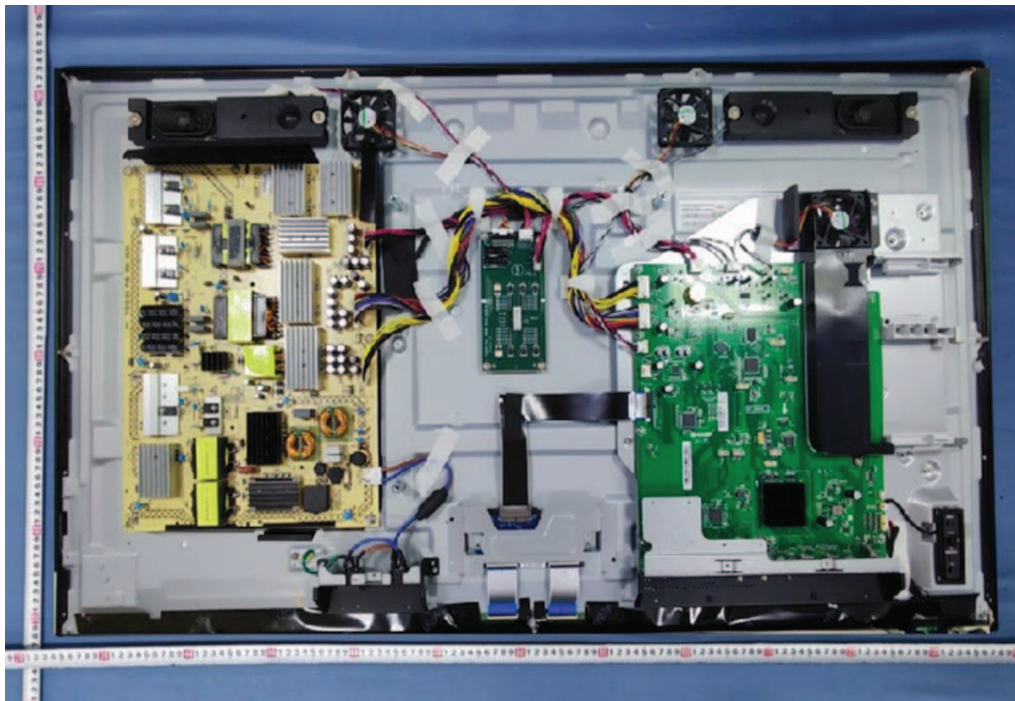


Figure 10. Internal view

Product: LCD MONITOR
Type Designation: PN-M502, PN-P506

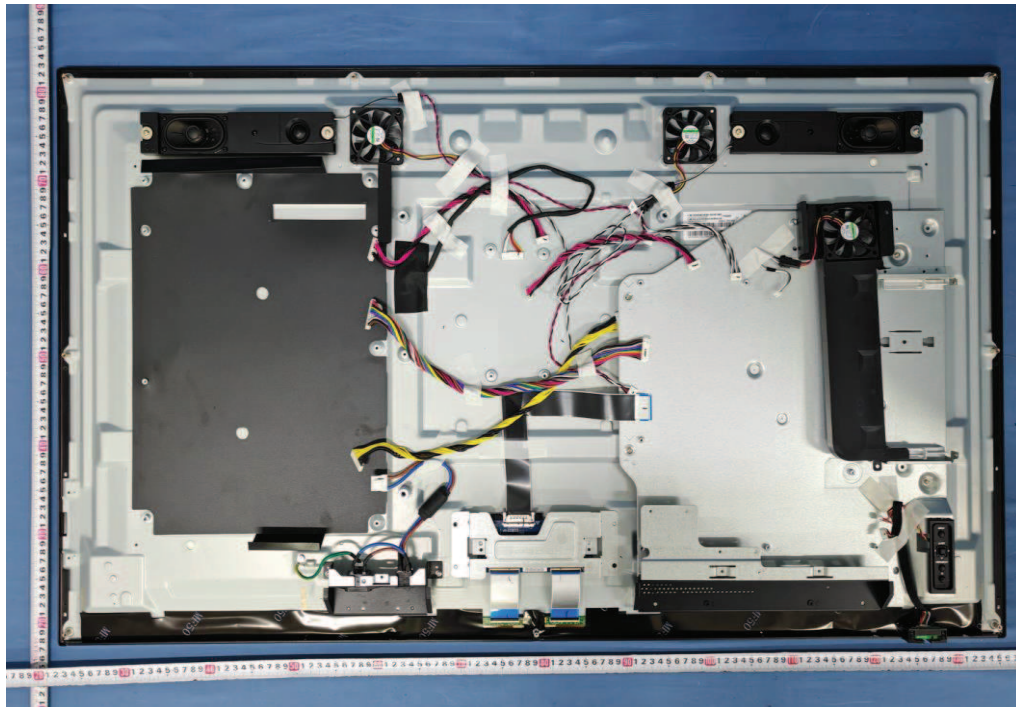


Figure 11. Internal view

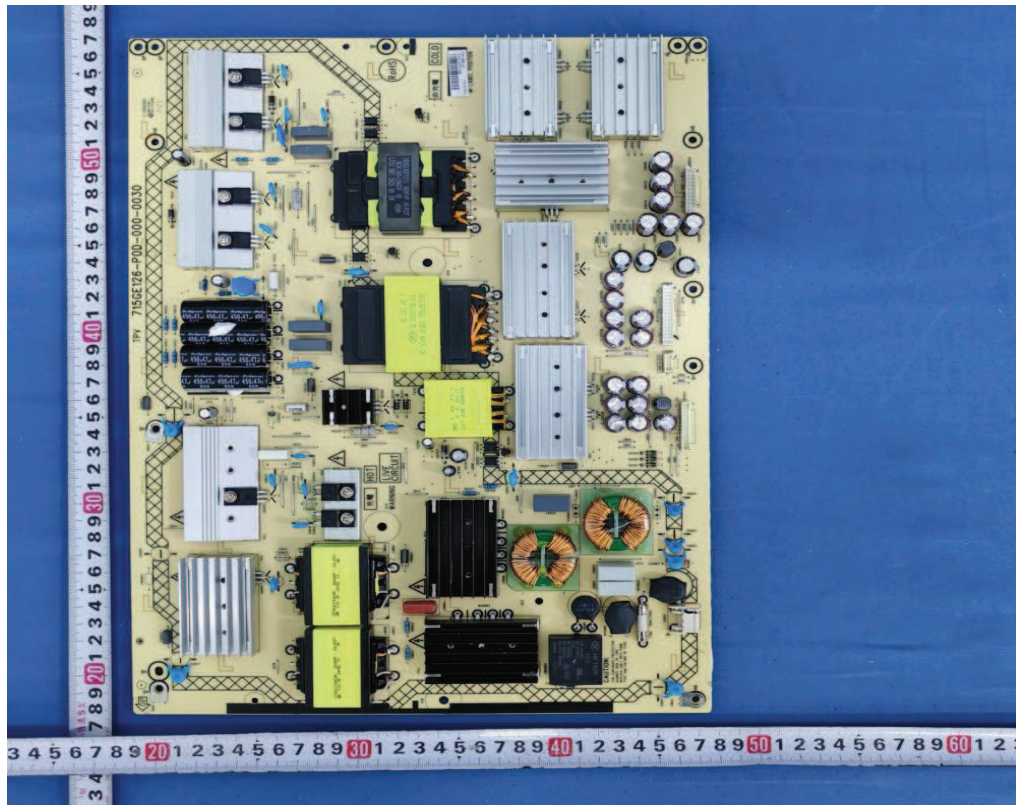


Figure 12. Power board

Product: LCD MONITOR

Type Designation: PN-M502, PN-P506

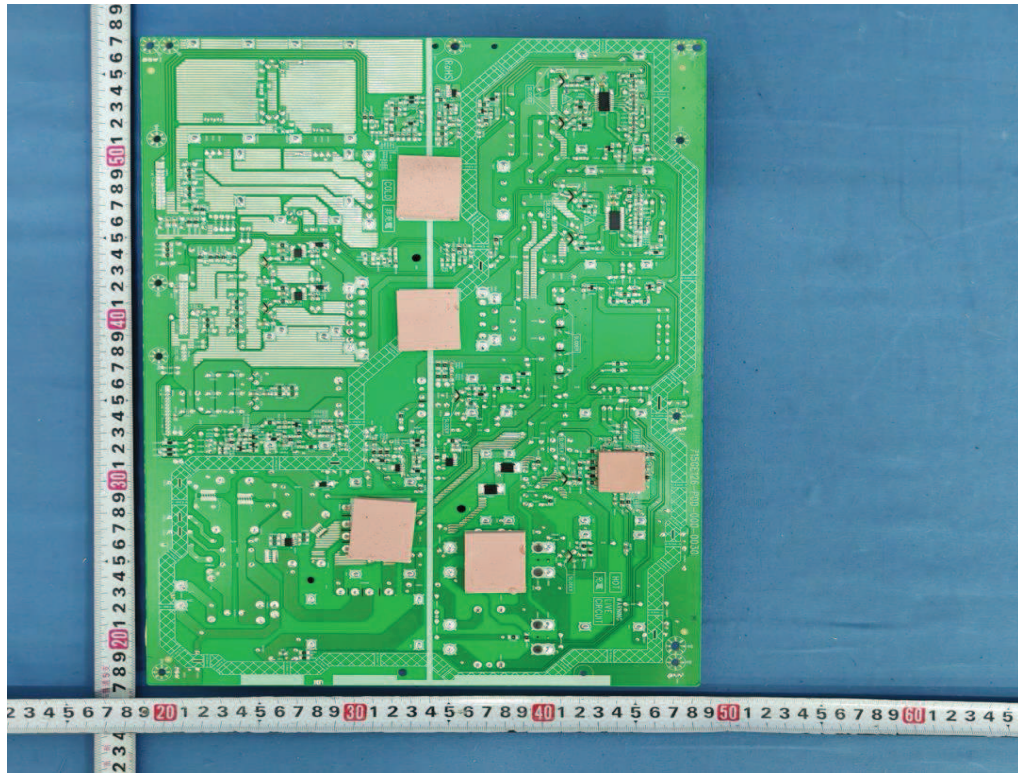


Figure 13. Power board

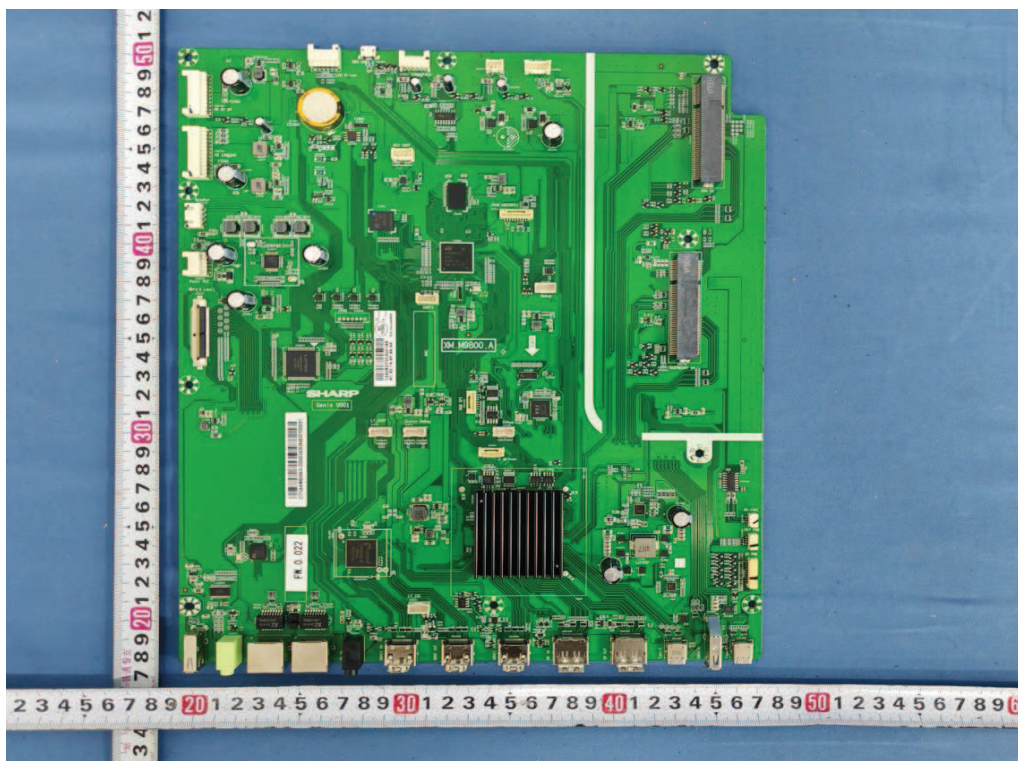


Figure 14. Main board

Product: LCD MONITOR
Type Designation: PN-M502, PN-P506

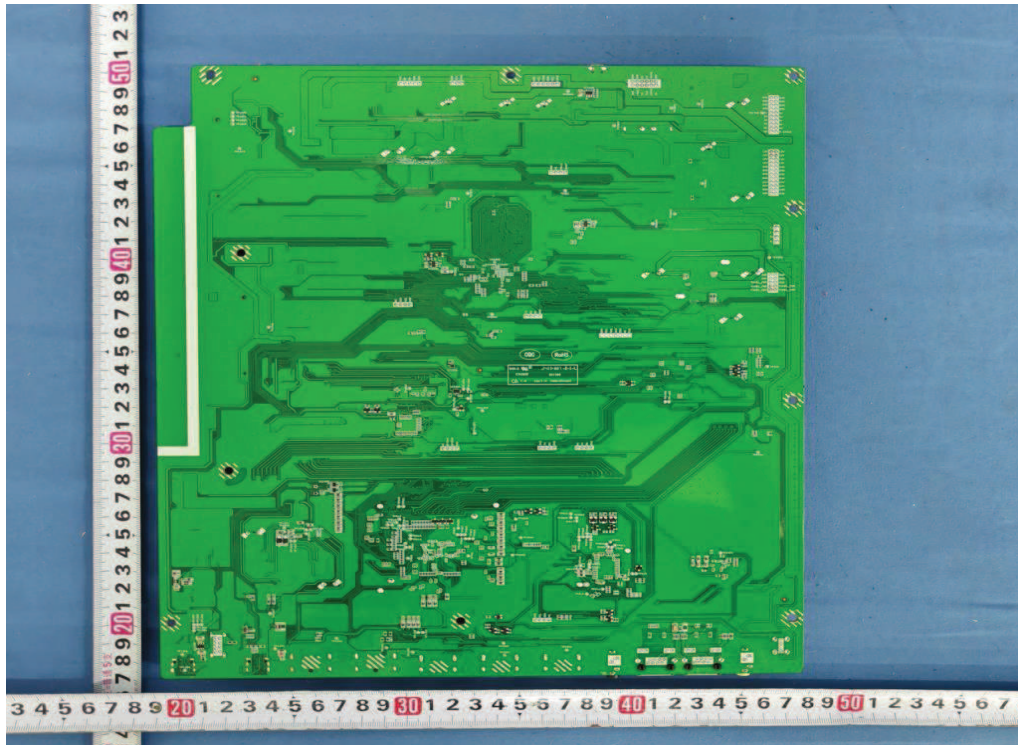


Figure 15. Main board

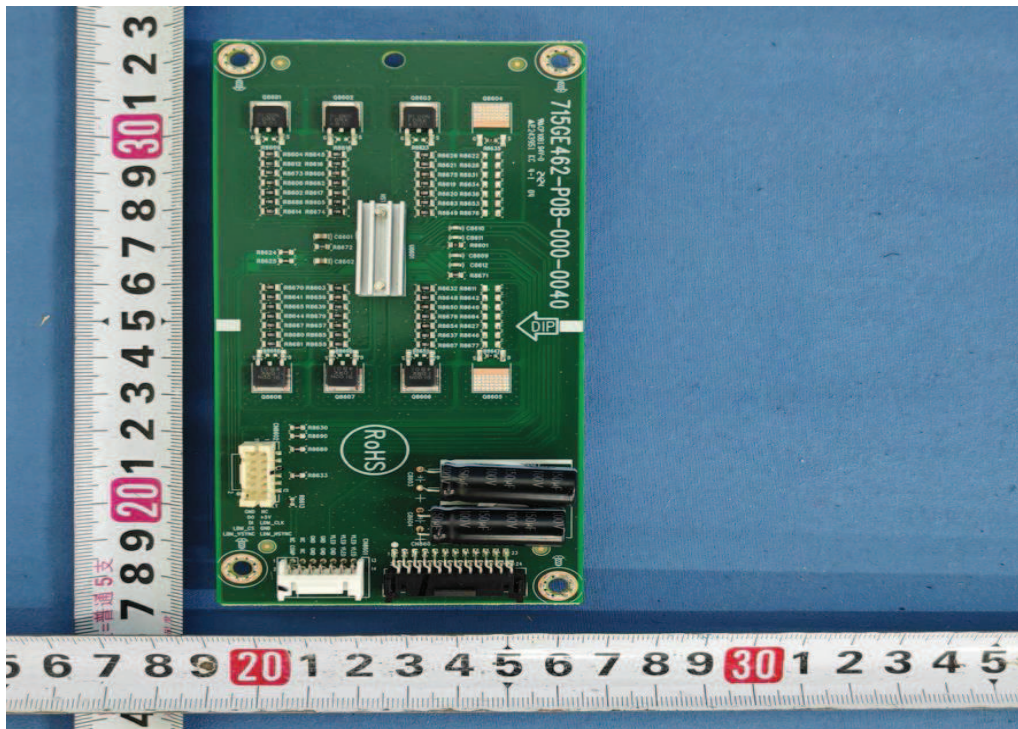


Figure 16. Converter board

Product: LCD MONITOR

Type Designation: PN-M502, PN-P506

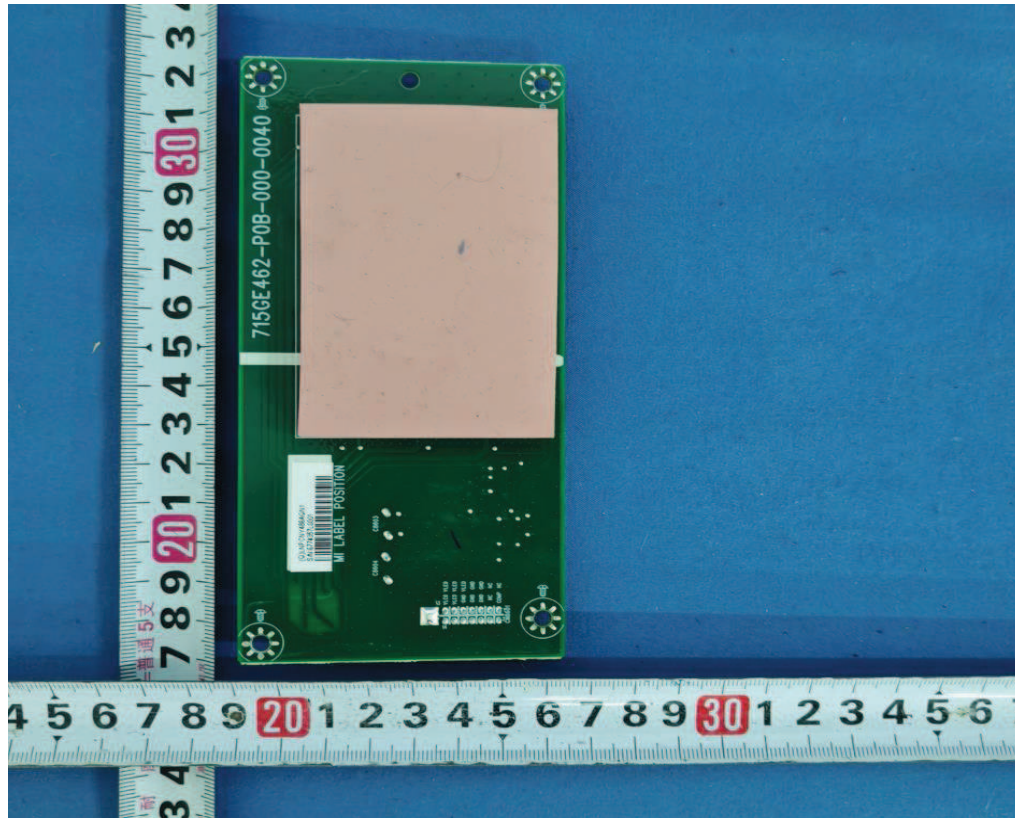


Figure 17. Converter board