



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..... : CN21QQOT 001

Date of issue : May.26, 2021

Total number of pages : 106 pages

**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-F1:2020, Ed.1.3

Test Report Form No..... : IEC62368_1E

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

Master TRF : Dated 2021-02-04

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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)	NEC	
Manufacturer	Sharp NEC Display Solutions, Ltd. 4-28, Mita 1-chome, Minato-ku, Tokyo, 108-0073 Japan	
Model/Type reference	1) P555, 2) MA551, 3) P495, 4) MA491	
Ratings	100-240V~, 50/60Hz, 1) 3.3-1.4A, 2) 2.8-1.2A, 3) 3.2-1.3A, 4) 2.7-1.1A	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	TÜV Rheinland (Shenzhen) Co., Ltd.	TÜV Rheinland (Shenzhen) Co., Ltd.
Testing location/ address	1601 R&D Room, 1602-1604, 17-18F, Building 7 Site C, Vanke Cloud City Phase I, Xingke First Street, Xili Street, Xili Community, Nanshan District, Shenzhen 518052, P.R. China	
Tested by (name, function, signature)	Jason Zheng Project Handler	
Approved by (name, function, signature) ..	Steven Lin Technical Certifier	
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 (13 Pages)
- National Differences (30 Pages)
- Photo documentation (17 Pages)

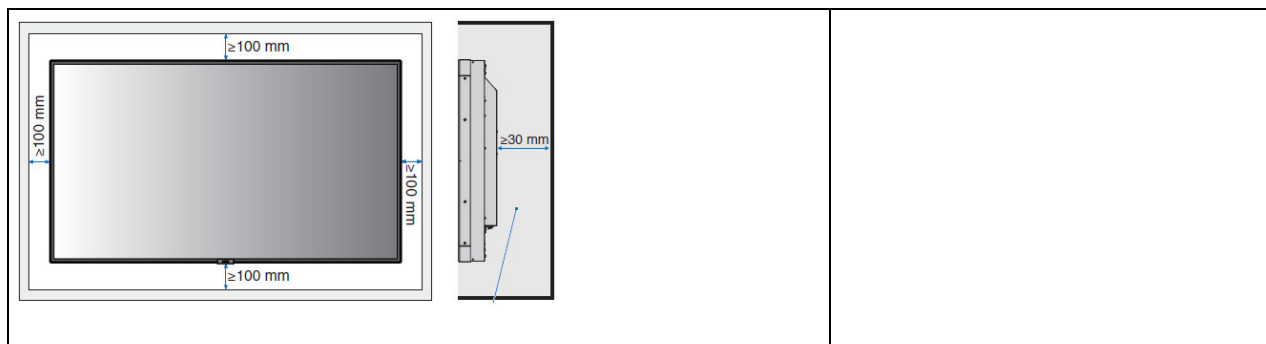
Summary of testing:**Tests performed (name of test and test clause):**

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)	5.6.6.2
Unearthed accessible conductive part test	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
Safeguards against entry of foreign object	Annex P.2.2
Adhesive test	Annex P.4
Limited power source test (LPS)	Annex Q.1
Batteries	Annex M
Steady force test, 10N, 250N	Annex T.2, T.5
Enclosure impact test	Annex T.6
Stress relief test	Annex T.8

Testing location:

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

All applicable tests as described in Test Case and Measurement Sections were performed. - The maximum normal load condition used as below during testing, refer to appended table B.2.6: The equipment operated under maximum brightness, maximum contrast of LED backlight circuit and the volume with 1kHz sinusoidal waveform of unit adjusted to maximum attainable output and dummy load of main board: 5V/2A for USB 2.0 x1, 5V/0.5A for USB 2.0 x1, 3.3V/0.5A for Display x3 (provided two load when Display mode), connected to internet via RJ45 port and transmission data. Without SDM card and compute module: dummy load of main board: For SDM card (CN509) provided 12.0V/ 5.5A. (by client required) With SDM card: dummy load of SDM card: 5V/ 0.9A for USB 3.0 port x2. With SDM card and compute module: dummy load of SDM card: 5V/ 0.9A for USB 3.0 port x2. dummy load of compute module: 5V/ 0.5A for USB 2.0 port x2. • The test samples are pre-production without serial number. • The equipment provided wall mounting function and complied with loading test mentioned at sub-clause 8.7. (Assessment for tipping at 30 angles forward) • The equipment has been evaluated according to the specified by the manufacturer maximum operating altitude of 5000m (correction factor for clearances according to IEC 60664-1:2007 of 1.48 is considered). • The manufacturer specified the maximum ambient temperature as +40°C. • The LCD Monitor can be operated in landscape (0°) to portrait mode (90°) when main board downside. • The decision rule of conformity of this test report is following the requirements of the requested standard in this test report, and agreed among testing laboratory and manufacturer (applicant) to exclude the consideration of Measurement Uncertainty. • During the heating tests, all openings are blocked system fans locked and SDM card fan locked. • Heating test performed in wooden box as illustrate below:	
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Summary of compliance with National Differences (List of countries addressed):

Summary of compliance with National Differences to IEC 62368-1:2020 (Third Edition) and EN 62368-1:2020+ A11: 2020 (for explanation of codes see below):

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

Explanation of used codes: CA=Canada, DK=Denmark, US=United States of America

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

For National Differences see corresponding Attachment..

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

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

☒ **Statement not required by the standard used for type testing**

(Note: When IEC or ISO standard requires a statement concerning the uncertainty of the measurement systems used for tests, this should be reported above. The informative text in parenthesis should be deleted in both cases after selecting the applicable option)

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.

NEC MultiSync P555

VOLTS Range: 輸入電圧 範囲: 100-240V~
AMPERES / Ampere: 消費電流: 3.3~1.4A
FREQUENCY / Mhz: 工作周波数: 50/60Hz

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

ATTENTION: AFIN DE PREVENIR DE TOUT CHOC ELECTRIQUE, NE PAS OUVRIE CE BOITIER.
 AUCUNE PIECE INTERIEURE NE PEUT-ETRE CHANGEE PAR L'UTILISATEUR.

ACHTUNG: ZU TRENNUNG VOM NETZ EIT DER NETZLECKER AUS DER STECKDOCKE ZU ZIEHEN.
 GRÖßT HÖCHST EFERNEN, ES KEINE KABEL DURCH DEN MINUTEN AUSSCHEIDENDE TEILE IM GEFÄHR VERHINDERN.

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

VAROITUS: LAITE ON LIITETTÄVÄ SUOJAKOSKETTIMELLA VARUSTETTUUN PISTORAAJAN.
WARNING: APPARATUS SHALL ANSLUTATS TILL SÄKRAT STYRKED KONTAKT.
ADVARSEL: APPARATET SKALLES IKKE RØRRES I STRØMNETKONTAKT
 MED JORD SOM GIVER FORBRINGERNE TIL STRØMKOPPLINGS JORD.

△注意: 請勿打開蓋子, 小心高壓電氣。機內有光學用戶配件。
 △注意: 請勿打開箱蓋, 小心高壓電氣。機內有光學用戶配件。
 △警告: 使用請讀安全警覺資料。

LCD MONITOR

KKK-MOHIMOTO
 液晶显示器 中画素型
 モニター (55インチ LCD モニター)
 (MODEL / Moplen / 型号 / 型號 / 모델명: P555)

IS 13282(Part IV)
 NEC B069-61

R=1005649
 www.bis.gov.in

 △警告	 高压注意
ケーブルとケーブルの接続に当たっては、必ず電源を切ってください。また、ケーブルの接続が完了したら、必ず電源を入れます。	
電源注意 電圧・電流の値は、必ず表示された値を守ってください。	
電圧: 100V ~ 240V 電流: 3.3A 周波数: 50/60Hz	
PS	N

E136889
 UL LISTED
 1K91

TÜV Rheinland
 Product Safety

SAFETY MARK
 201001-11

Information

Information

EAC

RoHS

CCC

FC

VCCI

No X-ray

Energy Star

Recycling

HDMI

Brand contact:

Sharp NEC Display Solutions, Ltd.
 Sharp NECディスプレイソリューションズ株式会社
 東京都港区三田一丁目4番地2号
 日本国東京都港区三田一丁目4番地2号
 4-28, Mita 1-chome, Minato-ku, Tokyo, Japan

MADE IN CHINA. Common in Korea
 FABRIQUE EN CHINE 中國製造
 FABRICADO EN CHINA 中國製造

生産先: 福建漳州新時代有限公司
 生产厂: 福建漳州新時代有限公司
 工場: 福建省漳州市海山经济开发区光电园区
 изготвотелен в / 制作所:
 TPV Electronics (Fu) Co., Ltd.

NEC MultiSync MA551

LCD MONITOR XGA-MONITOR

液晶表示装置 映像モニター
모니터 (55인치 LCD 모델) / Монитор (55 дюймовый LCD модель)
(MODEL / Modeln / 型号 / 型番) : MA551

VOLTS/Bonus 電源電圧 輸入電壓：100~240V・
AMPERES/Ampere 電流 電流値：2.8~1.2A (3.2 A FOR MEXICO)
FREQUENCY/Frequency 工作頻率 工作周波數：50/60Hz

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



ATTENTION: AFIN DE PRÉVENIR DE TOUT CHOC ÉLECTRIQUE, NE PAS OUVRIRE CE BOÎTIER.
AUCUNE PIÈCE INTERNE NE PEUT ÊTRE CHANGÉE PAR L'UTILISATEUR.

Achtung! Zum Verhindern von Stromschlägen ist das Netzgittergehäuse aus der Steckdose zu ziehen,
Gerät nicht öffnen. Es sind keine durch den Benutzer austauschbaren Teile im Gerät vorhanden.

PRECAUTION: PARA PREVENIR DESCARGAS ELÉCTRICAS, NO QUISTE EL RECINTO.
NINGUNAS PIEZAS DEL USUARIO SERVICIABLE ADENTRO.

VAROITUS: LAITE ON LIETÄIVÄÄ SUJAKOKOSKETTIMILLA VARUSTUUTUON PISTORASAAN.
VARINGN: APPARATEN SKALL ANSLUTAS TILL JORDAD UTÅTGÅNG.

ADVARSLE! APPARATET HAR I SIGE EN KØRERSTYRT STROMNET VED ÅBENHÆDSEL.
ADVAERSE! APPARETTETS STRØMFORSKAL TILSLUTES IKKE I STRØMKONTAKT MED JORD SOM GIVER FØRBEBUDTEDE ILDRISKOPPELS HENDelser.

- ①注意：請勿打開后蓋，小心高壓電氣。機內并無用戶零件。
- ②注意：請勿打开后盖，小心高压电击。机内並無用户配件。
- ③警告：使用觸摸屏要非常小心。

تنبيه

تحتفظ بغطاء الهيكل الجانبي للجهاز من أجل التعرض لصدمة كهربائية.
لا يجب فتح الجهاز لأجزاء داخلية قابلة للتصليق من قبل المستخدم.

사용상 주의사항: 화면의 위험 및 제품의 손상이 발생될 수 있으므로, 제품을 커버를 열지 마십시오.
인용(이전 제품)과 관련하여: R030702-118 (호환(TVS)제품입니다.) *본 라인과 호환 제품은 국내 규정에 따라 저출력 목적으로만 사용되어야 합니다.

CAC ICES-3(B) / NMB-3(B)

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

 E136689 LISTED 10C1		 201003-11
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 R030702 RoHS	 ZUI/R0302-0805 RoHS-TYP/MA551	
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Made in China Comoro à Kenya
Fabrique en Chine Comore au Kenia
Fabricado em China Comores Quênia
изготовлено в Китае Коморы Кения

生産廠：福建華聯電子有限公司
生産場所：福建省福州市晋安区开发区元兴四区

Brand contact:
Sharp NEC Display Solutions, Ltd.
シャープディスプレイソリューションズ株式会社
東京品川区三田二丁目4番2号局
日本国東京都港区三田一丁目4番28号
4-28, Mitaka 1-chome, Minato-ku, Tokyo, Japan

TPV Electronics (Fujiian) Co., Ltd.

Landscape TOP ↑↑↑ Portrait ↓↓↓

NEC MultiSync Display 4950

VOLTS 電源 輸入電圧 100-240V~
 AMPERES 電源 電流 3.2-1.3A
 FREQUENCY 電源 周波数 50/60Hz

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

ATTENTION: AFIN DE PREVENIR DE TOUT CHOC ELECTRIQUE, NE PAS OUVRIER CE BOITIER.
 AUCUNE PIECE INTERNE NE PEUT-ETRE CHANGEE PAR L'UTILISATEUR.

ACHTUNG: ZUR TRENNUNG VOM NETZ BEI DER NETZSTEUERUNG AUS DER STECKDOSE ZU ZIEHEN.
 GROSSY KRAFT OFFENEN, ES SIND KEINE DURCH DEN BENUTZER AUSWECHSELBAREN TEILE IM GERÄT VORHANDEN.

PRECAUCION: PARA PREVENIR DESCARGA ELÉCTRICA, NO quite el recinto.
 NINGUNA PIEZAS DEL USUARIO SERVICABLE ADENTRO.

VAROITUS: LAITE ON LITETTÄVÄ SUOJAKSITUTKIMILLA VARUSTETTUUN PISTORASKAAIN.
VARNING: APPARATEN SKALL ANSLUTAS TILL JORDAD UTSEKT.
ADVARSEL: APPARATET SKAL TILKOPLES JORDET STROKONTAKT.

MEIO JORDOM SKIL SKIPIK FORBODNEDEL JORD. INNEHÅLLER INGEN SERVICEBARA DELAR.
 注意: 请勿打开后盖, 小心高压电击。 机内无用户配件。
 注意: 请勿打开后盖, 小心高压电击。 机内无用户配件。
 警告: 使用须按安全警告卡。

LCD MONITOR

液晶显示器 液晶显示器
 모니터 (49인치 LCD 모니터)
 (Model / Модель / 型号 / 型號 / 모델명 : P495)

IS 13282/Part 1Y
 IEC 60950-1
 8000000

R-41055548
 www.lite.gov.tw

For safety only

警告

最高定格電圧
 サービス電圧 定格電圧の20%以下に設定してください。定格電圧を超過した場合、故障の原因となり、保証の対象外となります。

定格電圧
 電圧200V～240V（交流）に電源を接続する際は必ず、定格電圧に適合する電源を使用してください。

定格電圧
 定格電圧 1100V
 定格電流 3.2A
 消費電力 500W/60W

PS


تنبيه

لا فتح الغطاء الخارجي للجزء من التعرض لصدمة كهربائية.
 لا يحتوي الجهاز على أجزاء قابلة للصيانة من قبل المستخدم.

사용상 주의사항: 안전을 위하여 제품 내부에 발생 할 수 있는 모든 제품의 커버를 열지 마십시오.

인용 제호는, 원산지 제호 (모델 번호 4900-022-0118) (호칭 [TXP-주식회사])
 注意: 本機器の内部には 高電圧が内蔵されています。 必ずしも 安全でない 場合があります。

CAN ICE53-3(B) / NMB-3(B)

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 UNDESired OPERATION.



E135688
 US I.T.E.
 LISTED
 1K91



Technische Universität München
 TÜV SÜD
 TÜV SÜD



SAFETY MARK
 201002-11



TÜV SÜD
 TÜV SÜD













Brand contact:

Sharp NEC Display Solutions, Ltd.
 Sharp NECディスプレイソリューションズ株式会社
 東京都中央区日本橋一丁目4番2号
 日本国東京都港区三田一丁目4番2号
 4-28, Kita 1-chome, Minato-ku, Tokyo, Japan

MADE IN CHINA. Consome a Korea
 FABRIQUEE EN CHINE 中國製造
 FABRICADO EN CHINA 中國製造
 生産地: 中国福建省漳州市有限公司
 中国福建省漳州市漳州经济开发区光远路9号
 中国福建省漳州市漳州经济开发区光远路9号

изготовитель / 製造:
 TPV Electronics (Fujian) Co., Ltd.

Landscape

↑ TOP

Portrait

← TOP

NEC MultiSync MA491

LCD MONITOR 液晶表示装置 液晶モニター

VOLTS 電圧 輸入電圧：100-240V~
AMPERES 電流 消費電力：2.7-1.1A (3.2 A FOR MDXCO)
FREQUENCY フリークエンス 入力周波数：50/60Hz

(MODEL / モデル / 型番 / 모델명 MA491)

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

ATTENTION: AFIN DE PRÉVENIR DE TOUT CHOC ÉLECTRIQUE, NE PAS OUVRIER CE BOÎTIER.
AUCUNE PIÈCE INTERNE NE PEUT ÊTRE CHANGÉE PAR L'UTILISATEUR.

Achtung: ZU TRENNUNG VOM NETZ IST DER NETZSTECKER AUS DER STECKDOSE ZU ZIEHEN.
GERÄT NICHT ÖFFNEN. ES SIND KEINE BENUTZER FÜR REPARATUR FREIGELASSEN TEILE IM GERÄT VORHANDEN.

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

VAROITUS: LAIHE ON LIITTETÄVA SUOJAUKSETTIEMILLÄ VARUSTETTUIHIN PISTOKKAAN.
VARINGNI: APPARATEN SKALL ANSLUTAS TILL JORDNET UTSTICKANT.
ADVSAREL: APPARAATTI MÅ IKKE RÖRKES JORDDET STIKKONTAKT.
ADVARSLE: APPARATENS STRØMPEDE SKAL TILRULLES I STRØMTAKT.

MED JORD SOM GIVER FORBUDSELSE TIL STRØMKOPPLINGSJORD.
注意：请勿打开后盖，小心高压电击。机内并无用户可换件。
注意：請勿打開後蓋，小心高壓觸擊。機內並無用戶配用件。
警告：使用電源設備者請留意。

For Japan Only	
△ 警告 △	
取扱説明書 サービス・ユーザーの安全のために必ずお読みください。修理には専門知識が必要であり、ユーザーは開箱を厳禁します。	
絶縁保護板 電源ケーブルとユーザへの接触を防ぐために設置されています。開封時に損傷しないようご注意ください。	
定格電圧 : 110Vac 最大電流 : 2.7A 最大消費電力 : 50W(約)	

IP30

تنبیه
فتح الطعام العلوي للجهاز مفات التعرض لصدمة كهربائية، لا تحتوي الجهاز على أجزاء داخلية قابلة للصيانة من قبل المستخدم.

사용상 주의사항
가면의 위험 및 제 품은 손상 이 발생할 수 있으므로 제품의 커버를 열지 마십시오 .
인용 서비스 센터 또는 구입처에서 적절한 숙련된 기술자에게 맡기십시오 .

CAN ICES-3(B) / NMB-3(B)

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 UNDESired OPERATION.

TÜV Rheinland
SAFETY MARK
201004-11

R33037 RoHS RU33032-SG004
RoHS-TYPE-MAA001

EFTc R33037 RoHS FC CCC

HDMI

Portrait ↑↑↑
Landscape ↓↓

Brand contact:
Sharp NEC Display Solutions, Ltd.,
シャープ・NECディスプレイソリューションズ株式会社
東京都港区三田一丁目4番2号
日本東京品川区東三田三丁目7丁4番2号
4-28, Mitai 1-chome, Minato-ku, Tokyo, Japan

Made in China Comercio e Marketing FABRIQUE EN CHINA 中國製造
FABRICADO EN CHINA 中國製造
生産厂家：福建寧徳市有年有限公司
北京分公司：福建省南平市中街10號光電園區
上海分公司：上海市静安区南京西路1000號光電園區

изготовитель / 製造人：
TPV Electronics (Fujian) Co., Ltd.

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 (when installed within a wooden box which provided by the manufacture)		
	☒ 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	☒ IP30	☐ IP__	
Power systems	☒ TN	☐ TT	☐ IT - 230 V _{L-L}
	☒ not AC mains		
Altitude during operation (m)	☐ 2000 m or less	☒ 5000 m	
Altitude of test laboratory (m)	☒ 2000 m or less	☐ m	

Mass of equipment (kg) : Max. 27.18kg (P555, MA551) Max. 22.70kg (P495, MA491) (without base stand, SDM card, compute module and external speaker) Max. 1.88kg (Base stand) Max. 0.23kg (SDM card) Max. 0.86kg (External speaker: SP-TF1) Max. 0.10kg (compute module)	
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: May.01, 2021 Date (s) of performance of tests: May.01, 2021 to May.17, 2021	
General remarks: "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☐ comma / ☒ point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC62368-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided:	☒ Yes ☐ Not applicable
When differences exist; they shall be identified in the General product information section.	

Name and address of factory (ies)	1 TPV Display Technology (Wuhan) Co., Ltd Unique No.11 Zhuankou Development District of Economic Technological Development Zone , 430056 Wuhan City, P. R. China 2 TPV Electronics (Fujian) Co., Ltd. Shangzheng, Yuan Hong Road Fuqing City, Fujian, P.R.China 3 L&T Display Technology (Fujian) Ltd Optoelectronic Park, Rongqiao Economic and Technological Development Zone Fuqing, 350301 Fujian, P.R. China 4 TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone Fuqing City, Fujian, P.R.China 5 TPV Display Technology (Beihai) Co.,Ltd. China Electronic Beihai Industry Park, Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi, P.R.China 6 TPV Display Technology (China) Co., Ltd No.106 Jinghai 3 Rd., BDA, 100176 Beijing, P. R. China 7 Trend Smart CE Mexico S de RL de CV Avenida Sor Juana Ines de la Cruz de 19602 Nueva Tijuana, 22435 Tijuana Baja California, MEXICO 8 TPV Technology(Qingdao) Co.,Ltd. NO.99 Huoju Road, High-tech Industrial Development Zone, Qingdao City, Shandong, P. R. China 9 Envision Indústria de Produtos Eletrônicos Ltda. Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM Brazil 10 Pro Concept Manufacturer Co., Ltd. 88/1 Moo 12, Soi Phetkasem 120, Phetkasem Road, Omnoi, Krathumbaen, Samutsakhon 74130, Thailand 11 TPV Technology (Thailand) Co., Ltd. No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District,Prachin Buri Province, Thailand 12 TPV Electronics (Fujian) Co., Ltd. Optoelectronic Park, Rongqiao Economic and Technological Development Zone, Fuqing City, 350301, Fujian, P. R. China 13 GeneTouch Corp. No. 9 Neixi Rd., Luzhu Dist., Taoyuan City, 33852 Taiwan
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General product information and other remarks:**Product Description –**

The model is an LCD Monitor intended for general office use and has following features:

1. LCD panel (LED backlight type)
2. Building-in type non-approved switching power supply board
3. Main board (Speaker terminal x1, Audio OUT x1, LAN x2, Remote IN x1, Display x3, HDMI x3, USB 2.0 x2, USB type B x1 and RS-232C)
4. Key control board (secondary circuit)
5. IR board (secondary circuit)
6. Metal enclosure for rear and front side
7. Metal cover for AC inlet and I/O port
8. Plastic cover for IR board and Key control board
9. Base stand (optional)
10. System DC fan x3 (optional)
11. SDM card (with USB 3.0 x2, RJ45 x1) (optional)
12. External speaker : SP-TF1 (optional)
13. compute module (optional) (USB 2.0 port x2, micro USB x1)

The suitable power supply cord will be provided and evaluated during national approval.

This equipment is intended to be installed by qualified service personnel.

AC Inlet to Primary connector wire (L/N) use style 1617.

Switching Power Supply board type 715GB062

All sources of L9901, L9902 are similar to each other except for type designation and manufacturer.

All sources of L9801, L9802 are similar to each other except for type designation and manufacturer.

All sources of T9302 are similar to each other except for type designation and manufacturer.

All sources of T9102 are similar to each other except for type designation and manufacturer.

Model Differences

Model name	P555	MA551	P495	MA491
Metal Enclosure	Type A		Type B	
Panel	LD550Eqx		LD490*****	
Rating	100-240V~, 50/60Hz, 3.3-1.4A	100-240V~, 50/60Hz, 2.8-1.2A	100-240V~, 50/60Hz, 3.2-1.3A	100-240V~, 50/60Hz, 2.7-1.1A
Mylar sheet (between power board component side and metal enclosure)	Type A (430x355mm)		Type B (430x361mm)	

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

5.1	Table: Power transfer using ES1 or ES2 voltages. General requirements					P
Output Connector	Components	Output voltage (Vdc)				
		No load	Normal load	Max. rated load	Limits	
Test on main board 715GB080						
USB 2.0 (CN406) pin 1 to GND	Normal	5.1	Less than U _{oc}	Less than U _{oc}	5.25	
USB 2.0 (CN706) pin 1 to GND	Normal	5.1	Less than U _{oc}	Less than U _{oc}	5.25	
Test on compute module 715GA873						
USB 2.0 (CN1008) pin 1 to GND	Normal	5.1	Less than U _{oc}	Less than U _{oc}	5.25	
USB 2.0 (CN1009) pin 1 to GND	Normal	5.1	Less than U _{oc}	Less than U _{oc}	5.25	
Test on SDM card						
USB3.0 (JUSB1) pin 1 to GND	Normal	5.0	Less than U _{oc}	Less than U _{oc}	5.25	
USB3.0 (JUSB1) pin 10 to GND	Normal	5.0	Less than U _{oc}	Less than U _{oc}	5.25	
Supplementary Information: For USB port, applied normal load equal to max. rated load.						

5.3.2, 5.4.1	TABLE: DC power transfer interconnection to other equipment					P
Note: Measured each port with maximum attainable current:						
Output Circuit	Components	Output voltage (Vdc)	Any circumstance (A)		More than 5 s (A)	
			Meas.	Limit	Meas.	Limit
Test on main board 715GB080						
USB (CN406) pin 1 to GND	Normal condition	5.1	2.3	8	2.3	6.5 (5.0x1.3)
USB (CN706) pin 1 to GND	Normal condition	5.1	1.5	8	1.5	6.5 (5.0x1.3)
Test on compute module 715GA873						
USB 2.0 (CN1008) pin 1 to GND	Normal condition	5.1	0.5	8	0.5	6.5 (5.0x1.3)
USB 2.0 (CN1008) pin 1 to GND	Fault condition (U1015 pin 1-5 SC)	5.1	3.4	8	3.4	6.5 (5.0x1.3)
USB 2.0 (CN1009) pin 1 to GND	Normal condition	5.1	0.5	8	0.5	6.5 (5.0x1.3)
USB 2.0 (CN1009) pin 1 to GND	Fault condition (U1016 pin 1-5 SC)	5.1	3.4	8	3.4	6.5 (5.0x1.3)
Test on SDM card						

USB3.0 (JUSB1) pin 1 to GND	Normal condition	5.0	2.7	8	2.7	6.5 (5.0x1.3)
USB3.0 (JUSB1) pin 10 to GND	Normal condition	5.0	2.7	8	2.7	6.5 (5.0x1.3)
Supplementary Information: Fault current rating: > 2 A, limit 130%, ≤ 2 A, limit 150%						
Fault conditions tested: SC=Short circuit, OC=Open circuit						

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	Enclosure	Transformers, Photo Couplers, Y1 capacitor
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
Ordinary	MS3: Wall mount	--	--	Compliance with test 8.7.2
Ordinary	MS3: Equipment mass	--	--	Compliance with test 8.6
Ordinary	MS3: Handle of unit	--	--	Compliance with test 8.8
Ordinary	MS3: DC fans (for monitor and SDM card)	--	--	Covered by metal enclosure which is complied with Annex T, no accessible parts.
Ordinary	MS1: Edges and corners	N/A	N/A	N/A

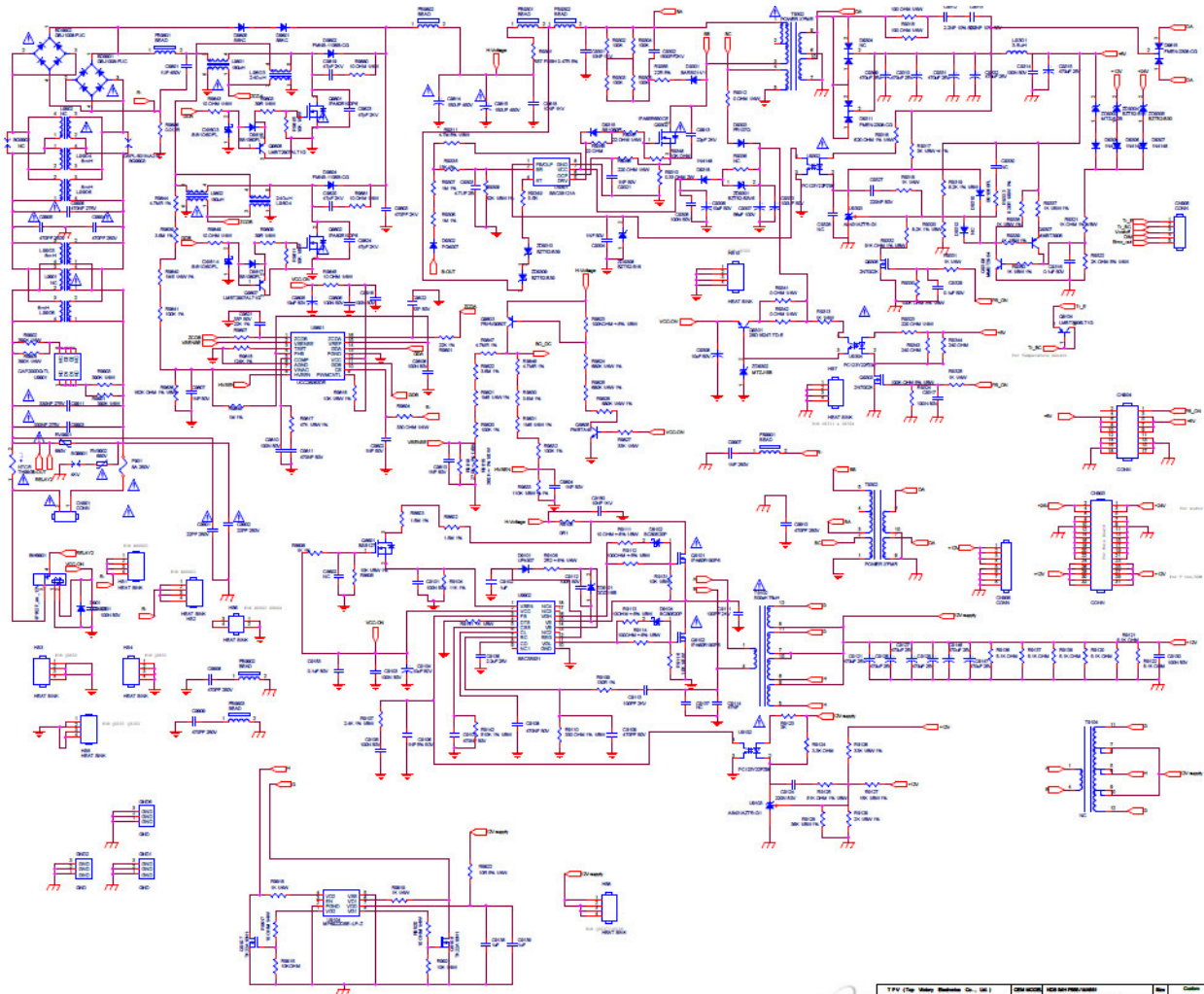
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
Ordinary	TS1: Accessible parts	N/A	N/A	N/A
Ordinary	TS3: Component in unit inside	N/A	N/A	Enclosure
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
Ordinary	RS1: Indicating lights	N/A	N/A	N/A
Ordinary	RS1: LED backlight of LCD panel	N/A	N/A	N/A
Supplementary Information:				
“B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced Safeguard				

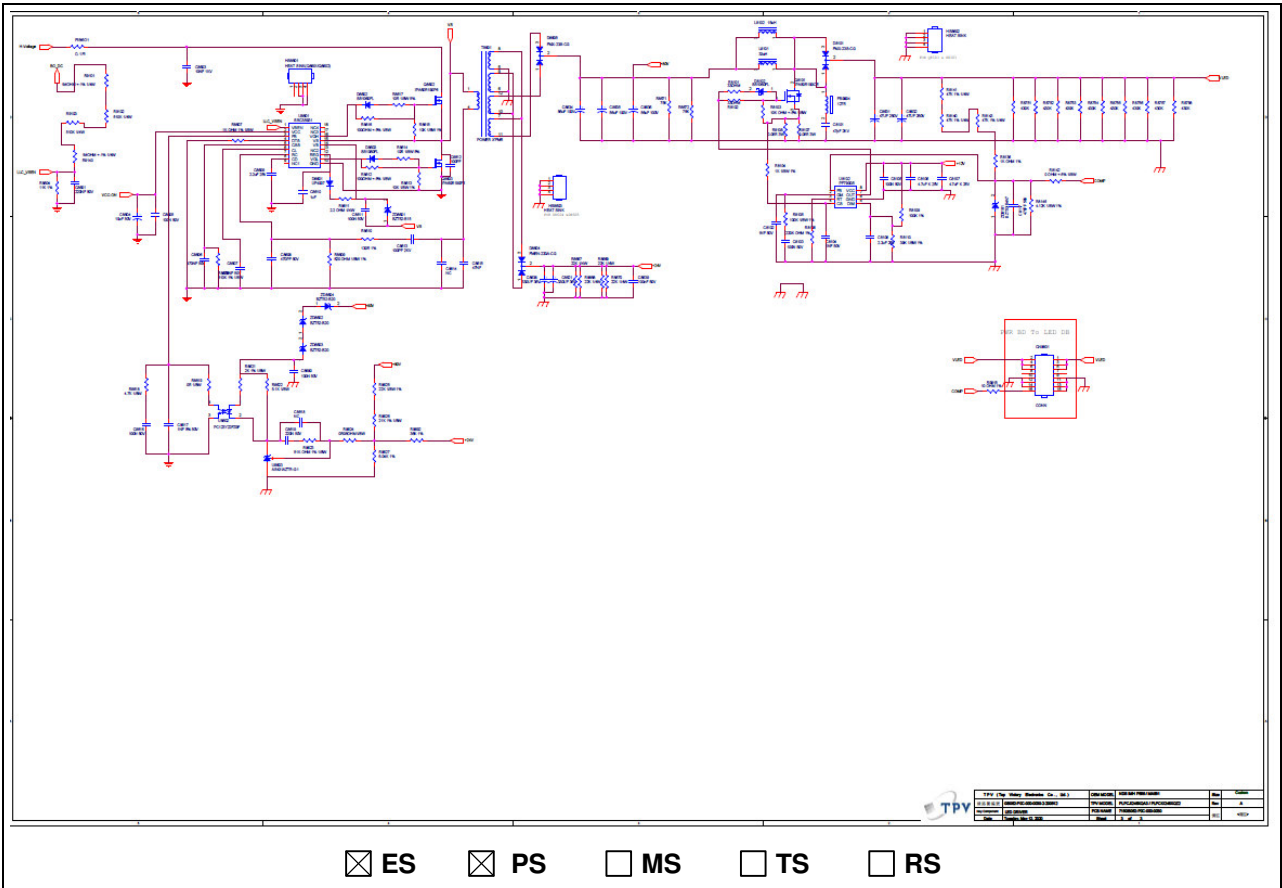
ENERGY SOURCE DIAGRAM

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

**ES3, ES2, ES1 (See “OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS” for the details),
PS2, PS3 (See “OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS” 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.	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	Laminated glass used.	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	Phenolic material used and described in subclauses 5.4.1.10 to 5.4.1.10.3. 70°C, 7 hours, 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		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
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

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Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.3	Capacitance limits	(See appended table 5.2)	P
5.2.2.4	Single pulse limits		N/A
5.2.2.5	Limits for repetitive pulses		N/A
5.2.2.6	Ring signals		N/A
5.2.2.7	Audio signals	(See Clause E.1)	P
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 5.4.2.2, 5.4.2.4 and 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 primary 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 5.4.2.2, 5.4.2.4 and 5.4.3)	P
	Temporary overvoltage	2000V	—
5.4.2.3	Procedure 2 for determining clearance	(See appended table 5.4.2.3)	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	Not applicable.	N/A
5.4.2.5	Multiplication factors for clearances and test voltages	Multiplication factor is 1.48 for altitude up to 5000m.	P
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		P
5.4.4.4	Solid insulation in semiconductor devices		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)	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 Ω)		N/A
	Electric strength test		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%), temperature (°C), duration (h)	Performed at 40 °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 Clause 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

IEC 62368-1			
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		P
5.6.2.1	General requirements	Protective conductor served as a supplementary safeguard to prevent accessible conductive parts from exceeding ES2 limits.	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	Protective bonding wire complied with 5.6.6 and the minimum sizes in table 31.	P
	Protective bonding conductor size (mm ²). :	18AWG, 0.75mm ²	—
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)..... :	No power cord used.	P
	Terminal size for connecting protective bonding conductors (mm)	3.5 mm	P
5.6.5.2	Corrosion	Complied.	P
5.6.6	Resistance of the protective bonding system	See below.	P

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Clause	Requirement + Test	Result - Remark	Verdict
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. (See appended table 5.7.2.2, 5.7.4)	P
5.7.2.2	Measurement of voltage	(See appended table 5.7.2.2, 5.7.4)	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	Result - Remark	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 the 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	Method of Control fire spread used	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	Supplementary safeguards		N/A
6.4.3.2	Single Fault Conditions		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits	See below.	P
6.4.5.2	Supplementary safeguards	Certified wire insulation is used. Components other than PCB and wires are: - mounted on PCB rated V-1 or better, or - made of V-2/VTM-2 or better. (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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	Metal enclosure used 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)..... :	All openings are Ø 2.4mm max.	P
6.4.8.3.4	Bottom openings and properties		P
	Openings dimensions (mm)..... :	All openings are Ø 2.4mm max.	P
	Flammability tests for the bottom of a fire enclosure		N/A
	Instructional Safeguard..... :		N/A
6.4.8.3.5	Side openings and properties		P
	Openings dimensions (mm)..... :	Rear (can be rear when rotated): Ø 2.6mm max.	P
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)		N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating	Metal enclosure used 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

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Clause	Requirement + Test	Result - Remark	Verdict
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
8.5	Safeguards against moving parts		P
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	DC fans is covered by metal enclosure.	N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard.....		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Maximum stopping distance from the point of activation (m).....:		N/A
	Space between end point and nearest fixed mechanical part (mm)		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N).....:		N/A
8.5.4.3.5	Compliance		N/A
8.5.5	High pressure lamps		N/A
	Explosion test		N/A
8.5.5.3	Glass particles dimensions (mm)		N/A
8.6	Stability of equipment		P
8.6.1	General	With skid proof pad and remove skid proof pad to test.	P
	Instructional safeguard.....:	No MS2 or MS3 television set.	N/A
8.6.2	Static stability	MS3 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	For MS3 equipment, Move through any angle after being titled 15 degree. During the test, the EUT did not tip over.	P
8.7	Equipment mounted to wall, ceiling or other structure		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.7.1	Mount means type	Not define specific mounting means.	P
8.7.2	Test methods		P
	Test 1, additional downwards force (N).....		N/A
	Test 2, number of attachment points and test force (N)	28.37kg applied for P555, MA551 each point (four directions plus inward and outward). 23.89kg applied for P495, MA491 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)	52.7kg applied to each handle in turn for P555, MA551. 50.4kg applied to each handle in turn for P495, MA491.	—
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
	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

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Clause	Requirement + Test	Result - Remark	Verdict
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		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 considered as RS1 without tests: - Indicating lights; - LED backlight of LCD panel	P
	Lasers		—
	Lamps and lamp systems		—
	Image projectors		—
	X-Ray		—
	Personal music player		—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	comply		
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
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

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A)		N/A

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.1	General		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.2	Normal operating conditions		P
B.2.1	General requirements	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers	(See Annex E)	P
B.2.3	Supply voltage and tolerances	±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
B.3.7	Audio amplifier abnormal operating conditions	(See appended table B.3)	P
B.3.8	Safeguards functional during and after abnormal operating conditions.....	(See appended table B.3)	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		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
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
C.2.4	Xenon-arc light-exposure test		N/A
D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		P
E.1	Electrical energy source classification for audio signals		P
	Maximum non-clipped output power (W)..... :	See below.	—
	Rated load impedance (Ω) :	See below.	—
	Open-circuit output voltage (V)..... :	See below.	—
	Instructional safeguard :	ES1.	—
E.2	Audio amplifier normal operating conditions		P
	Audio signal source type :	The audio with maximum volume with 1 kHz recorder adjusted to maximum output power.	—
	Audio output power (W)..... :	See below.	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Audio output voltage (V)	The signal voltage for this kinds of speakers are considered to be within ES1 limit according to Table E.1.	—
	Rated load impedance (Ω)	Refer to table 4.1.2	—
	Requirements for temperature measurement	(See appended table B.3 and B.4)	P
E.3	Audio amplifier abnormal operating conditions	(See appended table B.3 and B.4)	P
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language	English. Versions in other languages will be provided when national certificate approval.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		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
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

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Clause	Requirement + Test	Result - Remark	Verdict
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. Build-in fuse F901 (on primary): T8AL/250Vac.	P
	Instructional safeguards for neutral fuse :		N/A
F.3.5.4	Replacement battery identification marking :		N/A
F.3.5.5	Neutral conductor terminal		N/A
F.3.5.6	Terminal marking location		P
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I equipment		P
F.3.6.1.1	Protective earthing conductor terminal :	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
F.3.7	Equipment IP rating marking :		N/A
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 mounting function, provided in user's manual.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	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
G.2.1	Requirements	Approved source used. (See appended table 4.1.2 for the details.)	P
G.2.2	Overload test		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
G.4	Connectors		P
G.4.1	Spacings	The appliance inlet complied with IEC 60320-1.	P
G.4.2	Mains connector configuration.....	The appliance inlet complied with IEC 60320-1.	N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	No misconnection likely.	P
G.5	Wound components		P
G.5.1	Wire insulation in wound components	Triple insulated wire of T9302 used on secondary windings as separation for insulation between primary windings and secondary windings. Bobbin of T9102, 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 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	See appended table 4.1.2.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Method of protection	Overcurrent protection.	P
G.5.3.2	Insulation	See attachment Transformer table.	P
	Protection from displacement of windings	Displacement of windings is unlikely.	—
G.5.3.3	Transformer overload tests	(See appended table B.3 & B.4)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment.	P
G.5.3.3.2	Winding temperatures	(See appended table B.3 & B.4)	P
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation	See attachment Transformer table.	P
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		P
G.5.4.1	General requirements	Motors are used with DC fans only.	P
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4.2	Locked-rotor overload test		N/A
	Test duration (days)		—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
G.5.4.5.3	Alternative method		N/A
G.5.4.6	Locked-rotor overload test for DC motors	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

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Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
	Type		—
G.7.2	Cross sectional area (mm ² or AWG)		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N)		N/A
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)		N/A
G.7.3.2.4	Strain relief and cord anchorage material		N/A
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Test method and compliance		N/A
	Overall diameter or minor overall dimension, <i>D</i> (mm)		—
	Radius of curvature after test (mm)		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	Varistors		P
G.8.1	General requirements	The varistor is located after fuse and protected by fuse. (See appended table 4.1.2)	P
G.8.2	Safeguards against fire		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.8.2.1	General		P
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 the 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
G.10.1	General		N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
G.11	Capacitors and RC units		P
G.11.1	General requirements	X-Capacitors 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 $V_{\text{ini, a}}$:	See above.	—
	Routine test voltage, $V_{\text{ini, b}}$:	See above.	—
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

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Clause	Requirement + Test	Result - Remark	Verdict
G.13.4	Insulation between conductors on the same inner surface		N/A
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation :		N/A
	Number of insulation layers (pcs) :		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements :		N/A
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		P
G.16.1	Condition for fault tested is not required	Approved 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

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Clause	Requirement + Test	Result - Remark	Verdict
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling signal		N/A
H.3.1.1	Frequency (Hz) :		—
H.3.1.2	Voltage (V) :		—
H.3.1.3	Cadence; time (s) and voltage (V) :		—
H.3.1.4	Single fault current (mA):..... :		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)..... :		N/A
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
J.1	General		P
	Winding wire insulation :	Approved triple insulated wire used. See appended table 4.1.2.	—
	Solid round winding wire, diameter (mm) :		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²)..... :		N/A
J.2/J.3	Tests and Manufacturing		—
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard :		N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
K.5.1	Under single fault condition		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance :		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm)..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	In circuit isolated from mains, separation distance for contact gaps (mm)..... :		N/A
	Electric strength test before and after the test of K.7.2 :		N/A
K.7.2	Overload test, Current (A) :		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		P
L.1	General requirements	Appliance Inlet as disconnect device.	P
L.2	Permanently connected equipment		N/A
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		P
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 (C4282).	P
M.3.1	Requirements		P
M.3.2	Test method	Test for RTC battery on SDM card.	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

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Clause	Requirement + Test	Result - Remark	Verdict
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..... :		N/A
M.4.3	Fire enclosure :		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): :		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
	Calculated hydrogen generation rate :		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m ³ /h) :		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%) :		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate :		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%) :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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_2 (m ³ /s)..... :		—
M.8.2.3	Correction factors		—
M.8.2.4	Calculation of distance d (mm)		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse		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 chassis are provided as internal barrier.	P
	Location and Dimensions (mm)	Rear (can be rear when rotated): Ø 2.6mm max.	—
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

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Clause	Requirement + Test	Result - Remark	Verdict
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
P.4.1	General	Ripple Capacitor (C9814, C9815) is considered as safeguard. Adhesive for Mylar sheet is considered as safeguard. Tape for internal wire is considered as safeguard.	P
P.4.2	Tests	After test mentioned above, all safeguards remain effective.	P
	Conditioning, T _c (°C) :	100	—
	Duration (weeks)..... :	1	—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources		P
Q.1.1	Requirements		P
	a) Inherently limited output	(See appended table 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 Q.1)	P
Q.1.2	Test method and compliance :	(See appended table 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
	Overcurrent protective device for test..... :		—
R.3	Test method		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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
T.5	Steady force test, 250 N	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	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.....	(See appended table T.8)	P
T.9	Glass Impact Test		N/A
T.10	Glass fragmentation test		N/A
	Number of particles counted.....:		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)		N/A
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General		N/A
	Instructional safeguard :		N/A
U.2	Test method and compliance for non-intrinsically protected CRTs		N/A
U.3	Protective screen		N/A
V	DETERMINATION OF ACCESSIBLE PARTS		P
V.1	Accessible parts of equipment		P
V.1.1	General		P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		P
V.1.4	Plugs, jacks, connectors tested with blunt probe		N/A
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		N/A
V.2	Accessible part criterion		P
X	ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)		N/A
	Clearance	(See appended table X)	N/A
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General		N/A
Y.2	Resistance to UV radiation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Y.3	Resistance to corrosion		N/A
Y.3	Resistance to corrosion		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by :		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure :		N/A
Y.3.5	Compliance		N/A
Y.4	Gaskets		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A
	Alternative test methods :		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means		N/A
Y.5	Protection of equipment within an outdoor enclosure		N/A
Y.5.1	General		N/A
Y.5.2	Protection from moisture		N/A
	Relevant tests of IEC 60529 or Y.5.3 :		N/A
Y.5.3	Water spray test		N/A
Y.5.4	Protection from plants and vermin		N/A
Y.5.5	Protection from excessive dust		N/A
Y.5.5.1	General		N/A
Y.5.5.2	IP5X equipment		N/A
Y.5.5.3	IP6X equipment		N/A
Y.6	Mechanical strength of enclosures		N/A
Y.6.1	General		N/A
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	24Vdc to GND (earth) for all model name	Normal	23.7Vdc	--	SS	--	ES1
		Abnormal – (see table B.3 for details, maximum result recorded)	23.7Vdc	--	SS	--	
		Single fault – (see table B.4 for details, maximum result recorded)	23.7Vdc	--	SS	--	
264V, 60Hz	VLED to GND (earth) for P555, MA551	Normal	108Vdc	--	SS	--	ES3
		Abnormal – (see table B.3 for details, maximum result recorded)	108Vdc	--	SS	--	
		Single fault – (see table B.4 for details, maximum result recorded)	108Vdc	--	SS	--	
264V, 60Hz	VLED to GND (earth) for P495, MA491	Normal	103Vdc	--	SS	--	ES3
		Abnormal – (see table B.3 for details, maximum result recorded)	103Vdc	--	SS	--	
		Single fault – (see table B.4 for details, maximum result recorded)	103Vdc	--	SS	--	
264V, 60Hz	12Vdc to GND (earth) for all model name	Normal	5.24Vdc	--	SS	--	ES1
		Abnormal – (see table B.3 for details, maximum result recorded)	5.24Vdc	--	SS	--	
		Single fault – (see table B.4 for details, maximum result recorded)	5.24Vdc	--	SS	--	

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Clause	Requirement + Test	Result - Remark	Verdict

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	
100Vac / 60Hz					
T8601 pin1 to pin5,6	253	480	76k		
T8601 pin1 to pin7,8	234	480	76k		
T8601 pin1 to pin9,10	270	460	76k		
T8601 pin1 to pin11	202	550	76k		
T8601 pin1 to pin12	270	448	76k		
T8601 pin4 to pin5,6	160	264	76k		
T8601 pin4 to pin7,8	165	296	76k		
T8601 pin4 to pin9,10	158	272	76k		
T8601 pin4 to pin 11	191	396	76k		
T8601 pin4 to pin 12	187	348	76k		
T9102 pin1 to pin 5,6	257	440	87k		
T9102 pin1 to pin 7,8,9,10	245	420	87k		
T9102 pin1 to pin 11,12	236	430	87k		
T9102 pin4 to pin5,6	152	250	87k		
T9102 pin4 to pin7,8,9,10	153	260	87k		
T9102 pin4 to pin11,12	156	270	87k		
T9302 pin1 to pin6,7	344	404	68k		
T9302 pin1 to pin9,10	345	428	68k		
T9302 pin3 to pin6,7	365	540	68k		
T9302 pin3 to pin9,10	363	532	68k		
T9302 pin4 to pin6,7	84	242	68k		
T9302 pin4 to pin9,10	83	212	68k		
T9302 pin5 to pin6,7	81	160	68k		
T9302 pin5 to pin9,10	77	166	68k		
C9910 primary to secondary	82	160	--		
C9909 primary to secondary	83	162	--		

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Clause	Requirement + Test		Result - Remark	Verdict
U9302 pin 1 to pin 3	75	148	--	
U9302 pin 1 to pin 4	76	149	--	
U9302 pin 2 to pin 3	75	148	--	
U9302 pin 2 to pin 4	75	148	--	
U9304 pin 1 to pin 3	65	132	--	
U9304 pin 1 to pin 4	64	130	--	
U9304 pin 2 to pin 3	66	131	--	
U9304 pin 2 to pin 4	64	132	--	
U9102 pin 1 to pin 3	75	156	--	
U9102 pin 1 to pin 4	74	157	--	
U9102 pin 2 to pin 3	76	156	--	
U9102 pin 2 to pin 4	75	156	--	
U8602 pin 1 to pin 3	82	160	--	
U8602 pin 1 to pin 4	83	161	--	
U8602 pin 2 to pin 3	83	160	--	
U8602 pin 2 to pin 4	83	162	--	
100Vac / 60Hz				
T8601 pin1 to pin5,6	255	464	76k	--
T8601 pin1 to pin7,8	239	480	76k	--
T8601 pin1 to pin9,10	274	452	76k	Highest Vrms of T8601
T8601 pin1 to pin11	204	550	76k	Highest Vpeak of T8601
T8601 pin1 to pin12	265	450	76k	--
T8601 pin4 to pin5,6	163	264	76k	--
T8601 pin4 to pin7,8	169	296	76k	--
T8601 pin4 to pin9,10	161	272	76k	--
T8601 pin4 to pin 11	195	392	76k	--
T8601 pin4 to pin 12	180	344	76k	--
T9102 pin1 to pin 5,6	257	444	87k	Highest Vpeak / Vrms of T9102
T9102 pin1 to pin 7,8,9,10	246	424	87k	--
T9102 pin1 to pin 11,12	237	432	87k	--
T9102 pin4 to pin5,6	149	248	87k	--
T9102 pin4 to pin7,8,9,10	151	256	87k	--
T9102 pin4 to pin11,12	154	268	87k	--

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Clause	Requirement + Test	Result - Remark	Verdict

T9302 pin1 to pin6,7	306	404	68k	--
T9302 pin1 to pin9,10	307	432	68k	--
T9302 pin3 to pin6,7	330	530	68k	--
T9302 pin3 to pin9,10	369	568	68k	Highest Vpeak / Vrms of T9302
T9302 pin4 to pin6,7	186	432	68k	--
T9302 pin4 to pin9,10	183	404	68k	--
T9302 pin5 to pin6,7	183	348	68k	--
T9302 pin5 to pin9,10	183	356	68k	--
C9910 primary to secondary	170	348	--	--
C9909 primary to secondary	181	348	--	--
U9302 pin 1 to pin 3	175	344	--	--
U9302 pin 1 to pin 4	176	345	--	--
U9302 pin 2 to pin 3	175	344	--	--
U9302 pin 2 to pin 4	175	346	--	--
U9304 pin 1 to pin 3	164	364	--	--
U9304 pin 1 to pin 4	164	364	--	--
U9304 pin 2 to pin 3	165	365	--	--
U9304 pin 2 to pin 4	165	364	--	--
U9102 pin 1 to pin 3	180	356	--	--
U9102 pin 1 to pin 4	181	356	--	--
U9102 pin 2 to pin 3	180	355	--	--
U9102 pin 2 to pin 4	181	357	--	--
U8602 pin 1 to pin 3	183	360	--	--
U8602 pin 1 to pin 4	184	361	--	--
U8602 pin 2 to pin 3	183	360	--	--
U8602 pin 2 to pin 4	183	360	--	--
Supplementary information:				

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

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Clause	Requirement + Test	Result - Remark	Verdict

--

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics				P
Allowed impression diameter (mm).....:			≤ 2 mm		—
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)	
Primary Connector	J.S.T: VH series	2.5	125	0.48	
Primary Connector	J.S.T: VT series	2.5	125	0.51	
Primary Connector	Xinya: W7913 series	2.5	125	1.1	
Primary Connector	Xinya: M3962 series	2.5	125	1.1	
Primary Connector	Jowle: A3963 series	2.5	125	1.0	
Primary Connector	Pantronics: 3962 series	2.5	125	1.1	
Supplementary information:					

5.4.2, 5.4.3	TABLE: Minimum Clearances/Creepage distance							P
Clearance (cl) and creepage distance (cr) at/of/between:	U_p (V)	U_{rms} (V)	Freq ¹⁾ (Hz)	Required cl (mm)	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)
Basic/supplementary:								
Line trace to Neutral trace before fuse	420	250	60	2.3	3.4	--	2.5	3.4
Traces under fuse (F901)	420	250	60	2.3	6.3	--	2.5	6.3
Under SG9901	420	250	60	2.3	7.6	--	2.5	7.6
Under C9901	420	250	60	2.3	7.5	--	2.5	7.5
Under C9902	420	250	60	2.3	7.4	--	2.5	7.4
Under C9904	420	250	60	2.3	7.4	--	2.5	7.4
Under C9905	420	250	60	2.3	7.4	--	3.8	7.4
Under C9907	420	250	60	2.3	7.4	--	3.8	7.4
Under C9908	420	250	60	2.3	7.4	--	2.8	7.4
T8601 primary pin to panel chassis(trace side)	550	274	76K	2.3	8.0		5.6	8.0
T9102 primary pin to panel chassis (trace side)	444	257	87K	2.3	8.0		5.2	8.0

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Clause	Requirement + Test				Result - Remark			Verdict

T9302 primary pin to panel chassis (trace side)	568	369	68K	2.3	8.0		7.4	8.0
Reinforced:								
Under C9909	420	250	60	4.5	7.2	--	5.0	7.2
Under C9910	420	250	60	4.5	7.2	--	5.0	7.2
Under U9302	420	250	60	4.5	7.7	--	5.0	7.7
Under U9304	420	250	60	4.5	7.7	--	5.0	7.7
Under U9102	420	250	60	4.5	7.7	--	5.0	7.7
Under U8602	420	250	60	4.5	7.7	--	5.0	7.7
T9102 core to C9113	444	257	87K	4.5	7.7	--	5.2	7.7
Under T8601	550	274	76K	4.5	32.0	--	5.0	32.0
Under T9102	444	257	87K	4.5	19.4	--	5.0	19.4
Under T9302	568	369	68K	4.5	19.3	--	5.0	19.3
Supplementary information:								
1. Material Group IIIa, IIIb considered. 2. The required clearances multiplied by 1.48 considering that EUT operates up to 5000m. 3. For clearance and creepage did not describe above are far larger than limit above. 4. The measurement were conducted on both component side and trace layout side, only smaller value being recorded above. 5. One mylar sheet used between power board component side and metal enclosure. 6. One mylar sheet used between power board trace side and panel chassis.								

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)	
Photo coupler (reinforced insulation)	420	Reinforced	0.4	1)	
Mylar sheet	420	Reinforced	0.4	min. 0.4	
Bobbin of transformer	420	Reinforced	0.4	min. 0.45	
Supplementary information:					
1) For details refer to appended table 4.1.2.					

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz					N/A
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No
Basic/supplementary:				
Unit primary to earthed		DC	2500	No
Gas tube SG9901		AC	2500	No
Mylar sheet		AC	2500	No
T8601 primary to core		AC	2500	No
T8601 secondary to core		AC	2500	No
Reinforced:				
Unit primary to secondary (output)		DC	4000	No
T8601 primary to secondary		AC	4000	No
T8601 bobbin (for all source)		AC	4000	No
T8601 insulation Tape (for all source)		AC	4000	No
T9102 primary to secondary		AC	4000	No
T9102 primary to core		AC	4000	No
T9102 bobbin		AC	4000	No
T9302 primary to secondary		AC	4000	No
T9302 secondary to core		AC	4000	No
T9302 insulation Tape (for all source)		AC	4000	No
Supplementary information:				
1. For all sources of transformer;				
2. The test mentioned above were performed after humidity conditioning 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	--	8.0	ES1 (60Vdc)
L-N	110V, 60Hz	N	--	4.0	ES1 (60Vdc)
Supplementary information:					

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Clause	Requirement + Test	Result - Remark	Verdict

X-capacitors installed for testing: See Table 4.1.2

[X] bleeding resistor rating: See Table 4.1.2

[X] ICX:

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)	
PE terminal of AC inlet to internal metal enclosure	40	2	0.96	0.024	
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	(See table B.2, B.3, B.4 for details, maximum result recorded)	264/100V, 60Hz	--	0.01mA _{pk}	--	ES1
			--	0.01mA _{pk}	--	
			--	0.01mA _{pk}	--	
L/N to button of key board	(See table B.2, B.3, B.4 for details, maximum result recorded)	264/100V, 60Hz	--	0.01mA _{pk}	--	ES1
			--	0.01mA _{pk}	--	
			--	0.01mA _{pk}	--	
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						

5.7.5	TABLE: Earthed accessible conductive part			P
Supply voltage (V)	264Vac/110Vac			—
Phase(s)	[] Single Phase; [] Three Phase: [X] Delta [] Wye			
Power Distribution System	[X] TN []TT [] IT			
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	
L – metal enclosure	1	1.24/0.45	Switch “e” open	
N – metal enclosure	1	1.24/0.45	Switch “e” open	
Supplementary Information:				
1) Tested with normal, abnormal and single-fault condition, and maximum value was recorded.				

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Clause	Requirement + Test	Result - Remark	Verdict

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

6.2.3.1	TABLE: Determination of Arcing PIS				P
Location	Open circuit voltage after 3 s (Vpk)	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No	
2)	2)	2)	2)	2)	
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 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)	3)
Supplementary information:				
Abbreviation: SC= short circuit; OC= open circuit				

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Clause	Requirement + Test	Result - Remark	Verdict

- 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:					

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

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements				P
Supply voltage (V)..... :		See below	See below	See below	—
Ambient temperature during test T_{amb} (°C) :		See below	See below	See below	—
Maximum measured temperature T of part/at:		T (°C)			Allowed T_{max} (°C)
For P555 MA551					
Test Orientation		Horizontal (without SDM card and	Vertical (The main board	Horizontal (without SDM card and	--

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Clause	Requirement + Test	Result - Remark	Verdict

	compute module)	downside) (without SDM card and compute module)	compute module)	
Supply voltage (V/Hz)	90/60	90/60	110/60	--
CN901 body	49.9	48.8	48.7	60
AC inlet near L pin	53.1	52.7	52.5	60
RV9901 body	52.7	53.9	53.7	85
PCB near TH9901	50.1	52.5	52.6	105
C9902 body	48.2	53.1	53.2	85
L9901 coil	62.9	68.6	63.6	130
C9906 body	56.1	63.7	60.9	85
L9902 coil	61.9	69.5	64.2	130
PCB near BD9902	67.6	72.5	68.7	105
PCB near BD9901	71.3	71.1	67.8	105
SW9901 body	68.0	66.0	66.1	70
PCB near Q9302	57.6	53.6	53.4	105
U9302 body	62.2	60.4	60.3	100
T9302 core	61.3	58.5	58.3	110
T9302 coil	61.4	59.2	58.8	110
L9802 coil	72.3	66.2	64.8	130
L9801 coil	71.5	68.9	66.4	130
PCB near Q9801	66.7	67.0	64.4	105
PCB near Q9802	69.0	63.8	61.7	105
PCB near Q9101, Q9102	69.5	64.8	64.4	105
C9910 body	67.7	68.6	68.4	85
T9102 core	73.7	70.4	70.1	110
T9102 coil	73.8	71.4	71.5	110
T8601 core	87.3	86.0	85.6	110
T8601 coil	90.6	88.2	88.1	110
Mylar sheet near T8601 (between power board trace side and panel chassis)	66.4	63.5	62.4	80
PCB near D9804, D9802	72.8	70.0	69.3	105
PCB near Q8602, Q8603	68.8	66.9	66.5	105
C9815 body	61.0	62.7	61.8	105

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Clause	Requirement + Test	Result - Remark		Verdict
PCB near D8604, D8605	74.1	72.4	72.5	105
L8101 coil	73.8	70.0	70.2	105
PCB near Q8101, D8101	75.4	71.3	71.4	105
PCB near Q9107, Q9108	72.3	70.3	70.0	105
PCB near D9311, D9815	59.9	61.4	61.6	105
Mylar sheet near T8601 (between power board component side and metal enclosure)	57.8	59.9	60.1	80
PCB near U401 (main board)	65.5	63.5	63.7	105
Ambient (actual temp.)	40.0(23.2)	40.0(22.2)	40.0(21.9)	--
Panel body	34.0	35.6	32.2	77
Button body	31.0	33.1	33.2	77
Metal enclosure outside near T8601	40.1	33.9	34.0	60
Ambient (actual temp.)	25.0(23.2)	25.0(22.2)	25.0(21.9)	--
Switch body	26.7	28.9	29.1	77
Ambient (actual temp.)	25.0(22.2)	25.0(21.7)	25.0(21.6)	--
Test Orientation	Horizontal (without SDM card and compute module)	--	--	--
Supply voltage (V/Hz)	264/60	--	--	--
CN901 body	47.4	--	--	60
AC inlet near L pin	50.8	--	--	60
RV9901 body	51.4	--	--	85
PCB near TH9901	50.4	--	--	105
C9902 body	50.8	--	--	85
L9901 coil	53.7	--	--	130
C9906 body	53.4	--	--	85
L9902 coil	53.1	--	--	130
PCB near BD9902	58.1	--	--	105
PCB near BD9901	58.3	--	--	105
SW9901 body	65.4	--	--	70
PCB near Q9302	53.3	--	--	105
U9302 body	58.1	--	--	100
T9302 core	56.9	--	--	110
T9302 coil	57.6	--	--	110

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Clause	Requirement + Test	Result - Remark		Verdict
L9802 coil	58.7	--	--	130
L9801 coil	59.5	--	--	130
PCB near Q9801	66.4	--	--	105
PCB near Q9802	62.2	--	--	105
PCB near Q9101, Q9102	63.4	--	--	105
C9910 body	67.7	--	--	85
T9102 core	69.2	--	--	110
T9102 coil	70.7	--	--	110
T8601 core	85.4	--	--	110
T8601 coil	87.8	--	--	110
Mylar sheet near T8601 (between power board trace side and panel chassis)	62.0	--	--	80
PCB near D9804, D9802	68.5	--	--	105
PCB near Q8602, Q8603	66.1	--	--	105
C9815 body	61.2	--	--	105
PCB near D8604, D8605	71.7	--	--	105
L8101 coil	69.8	--	--	105
PCB near Q8101, D8101	71.1	--	--	105
PCB near Q9107, Q9108	69.2	--	--	105
PCB near D9311, D9815	59.9	--	--	105
Mylar sheet near T8601 (between power board component side and metal enclosure)	59.0	--	--	80
PCB near U401 (main board)	63.7	--	--	105
Ambient (actual temp.)	40.0(21.9)	--	--	--
Panel body	31.2	--	--	77
Button body	33.7	--	--	77
Metal enclosure outside near T8601	34.0	--	--	60
Ambient (actual temp.)	25.0(21.9)	--	--	--
Switch body	28.7	--	--	77
Ambient (actual temp.)	25.0(21.4)	--	--	--
Test Orientation	Horizontal (with SDM card and compute module)	--	--	--
Supply voltage (V/Hz)	90/60	--	--	--
Test Orientation	Horizontal	--	--	--

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Clause	Requirement + Test		Result - Remark	Verdict
PCB near UC1 (SDM card)	55.9	--	--	105
RTC battery body (SDM card)	53.3	--	--	100
PCB near U6 (SDM card)	55.1	--	--	105
Heatsink body (SDM card)	53.0	--	--	--
U1 body (compute module)	95.1	--	--	--
PCB near U1 (compute module)	85.0	--	--	105
PCB near U1004 (compute module)	70.5	--	--	105
PCB near U1016 (compute module)	63.7	--	--	105
C1078 body (compute module)	57.6	--	--	85
L1003 coil (compute module)	72.5	--	--	105
Ambient (actual temp.)	40.0 (22.0)	--	--	--
PCB near UC1 (SDM card)	40.9	--	--	77
RTC battery body (SDM card)	38.3	--	--	60
PCB near U6 (SDM card)	40.1	--	--	77
Heatsink body (SDM card)	38.0	--	--	60
Metal cover near USB 3.0 (JUSB1)	36.0	--	--	60
Metal enclosure outside near USB port (CN1008)	35.9	--	--	60
Ambient (actual temp.)	25.0 (22.0)	--	--	--
Abnormal condition	T9102 pin 7, 8, 9, 10 overload (Horizontal) (without SDM card and compute module)	T9302 pin 9, 10 after D9311 overload (Horizontal) (without SDM card and compute module)	T8601 pin 7, 8, 9, 10 after D8604 overload (Horizontal) (without SDM card and compute module)	--
Supply voltage (V/Hz)	90/60	90/60	90/60	--
CN901 body	51.9	54.6	52.8	300
AC inlet near L pin	58.4	61.2	58.5	300
RV9901 body	60.2	62.2	60.3	300
PCB near TH9901	57.9	59.3	57.9	300
C9902 body	58.8	60.1	58.8	300
L9901 coil	87.9	83.3	87.8	300
C9906 body	80.1	76.5	80.2	300
L9902 coil	89.2	85.0	89.3	300
PCB near BD9902	87.5	86.0	87.8	300

IEC 62368-1				
Clause	Requirement + Test	Result - Remark		Verdict
PCB near BD9901	84.5	84.1	84.4	300
SW9901 body	70.4	76.0	70.5	300
PCB near Q9302	56.2	90.5	57.6	300
U9302 body	70.2	88.7	64.1	300
T9302 core	60.2	123	61.2	175
T9302 coil	62.1	122	62.7	175
L9802 coil	77.6	84.1	77.0	300
L9801 coil	81.4	83.2	81.6	300
PCB near Q9801	85.3	86.1	83.2	300
PCB near Q9802	79.0	83.0	75.9	300
PCB near Q9101, Q9102	84.4	78.4	70.9	300
C9910 body	83.0	72.6	78.0	300
T9102 coil	96.0	77.4	73.6	175
T9102 core	90.6	75.1	73.4	175
T8601 coil	94.6	89.0	126	175
T8601 core	94.4	88.0	124	175
Mylar sheet near T8601 (between power board trace side and panel chassis)	76.2	71.6	88.1	300
PCB near D9804, D9802	85.0	84.7	82.8	300
PCB near Q8602, Q8603	76.3	72.5	88.2	300
C9815 body	71.4	68.0	77.8	300
PCB near D8604, D8605	76.1	72.0	86.9	300
L8101 coil	70.8	68.9	71.9	300
PCB near Q8101, D8101	72.6	70.6	71.2	300
PCB near Q9107, Q9108	97.6	78.5	71.5	300
PCB near D9311, D9815	62.9	100.7	61.4	300
Mylar sheet near T8601 (between power board component side and metal enclosure)	60.6	81.0	59.6	300
PCB near U401 (main board)	60.7	61.7	61.7	300
Ambient (actual temp.)	40.0 (21.7)	40.0(23.3)	40.0(22.7)	--
Panel body	35.0	37.0	35.7	87
Button body	32.2	31.6	31.9	87
Metal enclosure outside near T8601	33.3	33.0	33.0	70
Ambient (actual temp.)	25.0 (21.7)	25.0(23.3)	25.0(22.7)	--
Switch body	27.0	28.7	28.3	87

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

Ambient (actual temp.)	25.0 (22.0)	25.0(23.8)	25.0(23.2)	--
Abnormal condition	T8601 pin 11, 12 after D8605 (Horizontal) (without SDM card and compute module)	--	--	--
Supply voltage (V/Hz)	90/60	--	--	--
CN901 body	51.8	--	--	300
AC inlet near L pin	58.1	--	--	300
RV9901 body	60.1	--	--	300
PCB near TH9901	57.8	--	--	300
C9902 body	58.7	--	--	300
L9901 coil	88.2	--	--	300
C9906 body	80.3	--	--	300
L9902 coil	89.7	--	--	300
PCB near BD9902	88.2	--	--	300
PCB near BD9901	84.6	--	--	300
SW9901 body	70.2	--	--	300
PCB near Q9302	55.9	--	--	300
U9302 body	63.4	--	--	300
T9302 core	59.4	--	--	175
T9302 coil	61.1	--	--	175
L9802 coil	77.2	--	--	300
L9801 coil	82.0	--	--	300
PCB near Q9801	83.7	--	--	300
PCB near Q9802	76.2	--	--	300
PCB near Q9101, Q9102	69.1	--	--	300
C9910 body	74.7	--	--	300
T9102 core	71.5	--	--	175
T9102 coil	71.6	--	--	175
T8601 core	143	--	--	175
T8601 coil	117	--	--	175
Mylar sheet near T8601 (between power board trace side and panel chassis)	86.4	--	--	300

IEC 62368-1				
Clause	Requirement + Test	Result - Remark		Verdict
PCB near D9804, D9802	82.5	--	--	300
PCB near Q8602, Q8603	88.4	--	--	300
C9815 body	77.7	--	--	300
PCB near D8604, D8605	79.3	--	--	300
L8101 coil	71.2	--	--	300
PCB near Q8101, D8101	70.8	--	--	300
PCB near Q9107, Q9108	70.0	--	--	300
PCB near D9311, D9815	61.8	--	--	300
Mylar sheet near T8601 (between power board component side and metal enclosure)	60.3	--	--	300
PCB near U401 (main board)	61.4	--	--	300
Ambient (actual temp.)	40.0(24.5)	--	--	--
Panel body	35.8	--	--	87
Button body	31.9	--	--	87
Metal enclosure outside near T8601	33.4	--	--	70
Ambient (actual temp.)	25.0(24.5)	--	--	--
Switch body	27.7	--	--	87
Ambient (actual temp.)	25.0(25.0)	--	--	--
Abnormal condition	I/O port (CN406, CN706, U6) Overload (Horizontal) (with SDM card and without compute module)	I/O port Overload (CN1009) (Horizontal) (with SDM card and compute module)	--	--
Supply voltage (V/Hz)	90/60	90/60	--	--
PCB near U420 (main board)	71.5	--	--	300
PCB near U717 (main board)	70.2	--	--	300
PCB near U6 (SDM card)	67.3	--	--	300
CN1016 (compute module)	--	63.8	--	300
Ambient (actual temp.)	40.0(23.4)	40.0 (22.6)	--	--
Metal enclosure near USB (CN406)	38.2	--	--	70
Metal enclosure near USB (CN706)	38.6	--	--	70
Metal enclosure near USB (JUSB1)	45.4	--	--	70
Metal enclosure near USB (CN1009)	--	35.0	--	70

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

Ambient (actual temp.)	25.0(23.4)	25.0(22.6)	--	--
For P495, MA491				
Test Orientation	Horizontal (without SDM card and compute module)	Vertical (the main board downside) (without SDM card and compute module)	Horizontal (without SDM card and compute module)	--
Supply voltage (V/Hz)	90/60	90/60	264/60	--
AC inlet near L pin	49.4	51.4	50.2	60
CN901 body	52.8	55.6	52.5	60
RV9901 body	53.4	57.0	52.2	85
C9911 body	52.9	56.0	51.4	85
L9901 coil	65.5	69.3	53.2	130
L9902 coil	66.8	72.2	54.0	130
PCB near BD9901	70.4	72.2	59.4	105
SW9901 body	57.6	60.9	57.1	70
PCB near Q9302	56.5	64.4	61.7	105
L9801 coil	74.1	72.6	64.8	130
L9802 coil	72.8	73.7	61.7	130
PCB near Q9801, Q9802	69.1	69.9	67.8	105
PCB near D9804, D9802	69.3	68.7	68.0	105
PCB near Q8602, Q8603	66.6	62.4	68.4	105
PCB near Q9101, Q9102	64.7	66.8	64.2	105
C9815 body	60.1	62.2	59.9	105
T8601 core	79.9	78.7	84.7	110
T8601 coil	82.0	78.7	86.2	110
C9910 body	66.1	68.2	68.1	85
T9102 core	73.9	74.0	75.1	110
T9102 coil	74.3	74.4	75.6	110
U9102 body	62.9	64.2	64.2	100
T9302 core	63.2	65.5	64.7	110
T9302 coil	64.3	66.6	65.7	110
PCB near D9304	65.7	64.8	67.6	105
PCB near Q9107, Q9108	74.1	67.7	75.9	105

IEC 62368-1				
Clause	Requirement + Test	Result - Remark		Verdict
PCB near Q8101, D8101	67.7	58.1	69.1	105
Ambient (actual temp.)	40.0 (21.6)	40.0 (22.0)	40.0 (22.9)	--
L8101 coil	71.7	62.1	72.6	105
PCB near Q8609 (main board)	62.8	54.6	64.7	105
PCB near U531 (main board)	69.7	63.5	71.4	105
PCB near U523 (main board)	54.5	53.4	56.6	105
Mylar near T8601 (between power board component side and metal enclosure)	56.5	50.4	57.1	80
Mylar sheet near T8601 (between power board trace side and panel chassis)	51.0	53.2	48.4	80
Ambient (actual temp.)	40.0	40.0	40.0	--
Metal enclosure outside near USB port (CN406)	31.4	30.2	33.0	60
Metal enclosure outside near T8601	35.6	32.3	36.1	60
Panel body	32.8	34.3	36.9	77
Power Switch body	34.1	35.3	34.9	77
Button body	32.7	34.6	34.0	77
Ambient (actual temp.)	25.0 (21.6)	25.0 (22.1)	25.0 (22.9)	--
Test Orientation	Horizontal (the main board downside) (with SDM card and compute module)	--	--	--
Supply voltage (V/Hz)	90/60	--	--	--
AC inlet near L pin	48.2	--	--	60
CN901 body	50.6	--	--	60
RV9901 body	50.7	--	--	85
C9911 body	50.1	--	--	85
L9901 coil	56.4	--	--	130
L9902 coil	56.9	--	--	130
PCB near BD9901	62.7	--	--	105
SW9901 body	55.3	--	--	70
PCB near Q9302	59.0	--	--	105
L9801 coil	66.5	--	--	130
L9802 coil	64.6	--	--	130

IEC 62368-1				
Clause	Requirement + Test	Result - Remark		Verdict
PCB near Q9801, Q9802	62.0	--	--	105
PCB near D9804, D9802	62.5	--	--	105
PCB near Q8602, Q8603	61.9	--	--	105
PCB near Q9101, Q9102	58.3	--	--	105
C9815 body	56.0	--	--	105
T8601 core	72.8	--	--	110
T8601 coil	76.0	--	--	110
C9910 body	62.5	--	--	85
T9102 core	66.5	--	--	110
T9102 coil	68.2	--	--	110
U9102 body	61.2	--	--	100
T9302 core	62.3	--	--	110
T9302 coil	63.2	--	--	110
PCB near D9304	61.8	--	--	105
PCB near Q9107, Q9108	62.4	--	--	105
PCB near Q8101, D8101	60.8	--	--	105
Ambient (actual temp.)	40.0 (21.3)	--	--	--
L8101 coil	63.7	--	--	105
PCB near Q8609 (main board)	60.1	--	--	105
PCB near U531 (main board)	67.5	--	--	105
PCB near U523 (main board)	56.0	--	--	105
Mylar near T8601 (between power board component side and metal enclosure)	51.6	--	--	80
Mylar sheet near T8601 (between power board trace side and panel chassis)	48.4	--	--	80
Ambient (actual temp.)	40.0	--	--	--
Metal enclosure outside near USB port	32.5	--	--	60
Metal enclosure outside near T8601	33.0	--	--	60
Panel body	31.5	--	--	77
Power Switch body	32.2	--	--	77
Button body	31.5	--	--	77
Ambient (actual temp.)	25.0 (21.4)	--	--	--
PCB near UC1(SDM card)	68.5	--	--	105
RTC battery(SDM card)	62.0	--	--	100
PCB near U6(SDM card)	64.2	--	--	105

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

Heat sink body(SDM card)				66.2	--	--	105
U1 body (Compute module)				98.8	--	--	105
PCB near U1 (Compute module)				85.2	--	--	105
PCB near U1004 (Compute module)				73.3	--	--	105
PCB near U1016 (Compute module)				67.0	--	--	105
C1078 body (Compute module)				60.3	--	--	105
L1003 coil (Compute module)				76.4	--	--	105
Ambient (actual temp.)				40.0 (21.6)	--	--	--
PCB near UC1(SDM card)				53.5	--	--	77
RTC battery(SDM card)				47.0	--	--	60
PCB near U6(SDM card)				49.2	--	--	77
Heat sink body(SDM card)				51.2	--	--	60
Metal cover near USB (JUSB1) (SDM card)				42.0	--	--	60
Metal enclosure near USB (CN1009) (Compute module)				38.7	--	--	60
Ambient (actual temp.)				25.0 (21.6)	--	--	--
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class

Supplementary information:

Note 1: T_{ma} should be considered as directed by applicable requirement

Note 2: T_{ma} is not included in assessment of Touch Temperatures (Clause 9).

Note 3: With a specified ambient temperature of 40°C. All recorded temperature have been calculated to ambient temperature 40°C. Temperature limits are calculated as follows:

Winding components providing safety isolation:

- Class B: T_{max} = 120 - 10

Components with maximum absolute temperature of others:

- T_{max} = T_{max} of component

Note 4: The values for T (°C) are re-calculated from ambient to reflect the ambient temperature value of 25°C.

Note 5: The tests were performed with speaker adjust to max. volume.

Note 6: During the heating tests, all openings are blocked and fan locked.

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	
For P555 and MA551 with external speaker									

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

HDMI mode								
90	50	2.79	--	251	--	F901	2.79	Maximum normal load ¹ .
90	60	2.79	--	251	--	F901	2.79	Maximum normal load ¹ .
100	50	2.45	3.3 or 2.8	244	--	F901	2.45	Maximum normal load ¹ .
100	60	2.45	3.3 or 2.8	244	--	F901	2.45	Maximum normal load ¹ .
110	50	2.22	--	243	--	F901	2.22	Maximum normal load ¹ .
110	60	2.22	--	243	--	F901	2.22	Maximum normal load ¹ .
240	50	1.05	1.4 or 1.2	242	--	F901	1.05	Maximum normal load ¹ .
240	60	1.05	1.4 or 1.2	242	--	F901	1.05	Maximum normal load ¹ .
264	50	0.98	--	240	--	F901	0.98	Maximum normal load ¹ .
264	60	0.98	--	240	--	F901	0.98	Maximum normal load ¹ .
Display mode (without SDM card and compute module)								
90	50	2.66	--	239	--	F901	2.66	Maximum normal load ¹ .
90	60	2.66	--	239	--	F901	2.66	Maximum normal load ¹ .
100	50	2.38	3.3 or 2.8	237	--	F901	2.38	Maximum normal load ¹ .
100	60	2.38	3.3 or 2.8	237	--	F901	2.38	Maximum normal load ¹ .
110	50	2.18	--	236	--	F901	2.18	Maximum normal load ¹ .
110	60	2.18	--	236	--	F901	2.18	Maximum normal load ¹ .
240	50	1.03	1.4 or 1.2	235	--	F901	1.03	Maximum normal load ¹ .
240	60	1.03	1.4 or 1.2	235	--	F901	1.03	Maximum normal load ¹ .
264	50	0.96	--	233	--	F901	0.96	Maximum normal load ¹ .
264	60	0.96	--	233	--	F901	0.96	Maximum normal load ¹ .
SDM mode (with compute module)								
90	50	1.90	--	170	--	F901	1.90	Maximum normal load ¹ .
90	60	1.90	--	170	--	F901	1.90	Maximum normal load ¹ .
100	50	1.71	3.3 or 2.8	169	--	F901	1.71	Maximum normal load ¹ .
100	60	1.71	3.3 or 2.8	169	--	F901	1.71	Maximum normal load ¹ .
110	50	1.60	--	1667	--	F901	1.60	Maximum normal load ¹ .

IEC 62368-1								
Clause	Requirement + Test					Result - Remark		Verdict
110	60	1.60	--	167	--	F901	1.60	Maximum normal load ^{1.}
240	50	0.73	1.4 or 1.2	165	--	F901	0.73	Maximum normal load ^{1.}
240	60	0.73	1.4 or 1.2	165	--	F901	0.73	Maximum normal load ^{1.}
264	50	0.71	--	165	--	F901	0.71	Maximum normal load ^{1.}
264	60	0.71	--	163	--	F901	0.71	Maximum normal load ^{1.}
Compute mode (with SDM card)								
90	50	2.37	--	211	--	F901	2.37	Maximum normal load ^{1.}
90	60	2.37	--	211	--	F901	2.37	Maximum normal load ^{1.}
100	50	2.10	3.3 or 2.8	209	--	F901	2.10	Maximum normal load ^{1.}
100	60	2.10	3.3 or 2.8	209	--	F901	2.10	Maximum normal load ^{1.}
110	50	1.98	--	201	--	F901	1.98	Maximum normal load ^{1.}
110	60	1.98	--	201	--	F901	1.98	Maximum normal load ^{1.}
240	50	0.90	1.4 or 1.2	204	--	F901	0.90	Maximum normal load ^{1.}
240	60	0.90	1.4 or 1.2	204	--	F901	0.90	Maximum normal load ^{1.}
264	50	0.83	--	203	--	F901	0.83	Maximum normal load ^{1.}
264	60	0.83	--	203	--	F901	0.83	Maximum normal load ^{1.}
For P495 and MA491 with external speaker								
HDMI mode (without SDM card and compute module)								
90	50	2.78	--	249	--	F901	2.78	Maximum normal load ^{1.}
90	60	2.78	--	249	--	F901	2.78	Maximum normal load ^{1.}
100	50	2.44	3.2 or 2.7	243	--	F901	2.44	Maximum normal load ^{1.}
100	60	2.44	3.2 or 2.7	243	--	F901	2.44	Maximum normal load ^{1.}
110	50	2.21	--	241	--	F901	2.21	Maximum normal load ^{1.}
110	60	2.21	--	241	--	F901	2.21	Maximum normal load ^{1.}
240	50	1.04	1.3 or 1.1	238	--	F901	1.04	Maximum normal load ^{1.}
240	60	1.04	1.3 or 1.1	238	--	F901	1.04	Maximum normal load ^{1.}
264	50	0.96	--	237	--	F901	0.96	Maximum normal load ^{1.}

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

264	60	0.96	--	237	--	F901	0.96	Maximum normal load ¹ .
Display mode (without SDM card and compute module)								
90	50	2.65	--	237	--	F901	2.65	Maximum normal load ¹ .
90	60	2.65	--	237	--	F901	2.65	Maximum normal load ¹ .
100	50	2.36	3.2 or 2.7	235	--	F901	2.36	Maximum normal load ¹ .
100	60	2.36	3.2 or 2.7	235	--	F901	2.36	Maximum normal load ¹ .
110	50	2.16	--	235	--	F901	2.16	Maximum normal load ¹ .
110	60	2.16	--	235	--	F901	2.16	Maximum normal load ¹ .
240	50	1.01	1.3 or 1.1	230	--	F901	1.01	Maximum normal load ¹ .
240	60	1.01	1.3 or 1.1	230	--	F901	1.01	Maximum normal load ¹ .
264	50	0.93	--	229	--	F901	0.93	Maximum normal load ¹ .
264	60	0.93	--	229	--	F901	0.93	Maximum normal load ¹ .
SDM mode (with compute module)								
90	50	1.42	--	126	--	F901	1.42	Maximum normal load ¹ .
90	60	1.42	--	126	--	F901	1.42	Maximum normal load ¹ .
100	50	1.27	3.2 or 2.7	125	--	F901	1.27	Maximum normal load ¹ .
100	60	1.27	3.2 or 2.7	125	--	F901	1.27	Maximum normal load ¹ .
110	50	1.14	--	124	--	F901	1.14	Maximum normal load ¹ .
110	60	1.14	--	124	--	F901	1.14	Maximum normal load ¹ .
240	50	0.53	1.3 or 1.1	119	--	F901	0.53	Maximum normal load ¹ .
240	60	0.53	1.3 or 1.1	119	--	F901	0.53	Maximum normal load ¹ .
264	50	0.48	--	118	--	F901	0.48	Maximum normal load ¹ .
264	60	0.48	--	118	--	F901	0.48	Maximum normal load ¹ .
Compute mode (with SDM card)								
90	50	2.11	--	188	--	F901	2.11	Maximum normal load ¹ .
90	60	2.11	--	188	--	F901	2.11	Maximum normal load ¹ .
100	50	1.89	3.2 or 2.7	187	--	F901	1.89	Maximum normal load ¹ .

IEC 62368-1			
Clause	Requirement + Test		Verdict

100	60	1.89	3.2 or 2.7	187	--	F901	1.89	Maximum normal load ^{1.}
110	50	1.76	--	185	--	F901	1.76	Maximum normal load ^{1.}
110	60	1.76	--	185	--	F901	1.76	Maximum normal load ^{1.}
240	50	0.78	1.3 or 1.1	179	--	F901	0.78	Maximum normal load ^{1.}
240	60	0.78	1.3 or 1.1	179	--	F901	0.78	Maximum normal load ^{1.}
264	50	0.72	--	178	--	F901	0.72	Maximum normal load ^{1.}
264	60	0.72	--	178	--	F901	0.72	Maximum normal load ^{1.}

Supplementary information:

1. Maximum normal load: See Page 3 for the details.

B.3, B.4 TABLE: Abnormal operating and fault condition tests						P
Ambient temperature T _{amb} (°C)..... :						—
Power source for EUT: Manufacturer, model/type, output rating .. :						—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
P555, MA551						
T8601 Pin 11, 12 after D8605 (VLED)	Overload	90	3hrs 12mins	F901	4.20	Temperature is stabilized at Output overload condition 1.5A, then unit shutdown when increase to 1.8A. No damage, NB, NC, NT, ASRE.
USB2.0 for main board (CN406)	Overload	90	3hrs 22mins	F901	2.05	Temperature is stabilized at Output overload condition 2.3A, then unit shutdown when increase to 2.5A. No damage, NB, NC, NT, ASRE.
USB2.0 for main board (CN706)	Overload	90	3hrs 22mins	F901	2.05	Temperature is stabilized at Output overload condition 1.5A, then unit shutdown when increase to 1.7A. No damage, NB, NC, NT, ASRE.
USB3.0 for SDM card (JUSB1)	Overload	90	3hrs 22mins	F901	2.05	Temperature is stabilized at Output overload condition 2.7A, then unit shutdown when increase to 3.0A. No damage, NB, NC, NT, ASRE.

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Clause	Requirement + Test			Result - Remark		Verdict
USB3.0 for compute module (CN1009)	Overload	90	1hrs 44mins	F901	2.37	Temperature is stabled at Output overload condition 0.5A, then unit shutdown when increase to 0.6A. No damage, NB, NC, NT, ASRE.
5Vout to Earth	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
12Vout to Earth	SC	264	10 min	F901	0.14	Unit shutdown, NT, NB, NC, no hazards, NCD.
24Vout to Earth	SC	264	10 min	F901	0.14	Unit shutdown, NT, NB, NC, no hazards, NCD.
VLED out to Earth	SC	264	10 min	F901	0.17	Unit shutdown, NT, NB, NC, no hazards, NCD.
VLED to secondary (I/O port)	SC	264	10 min	F901	0.17	Unit shutdown, NT, NB, NC, no hazards, NCD.
For model name P495, MA491						
VLED out to Earth	Short	264	10 mins	F901	0.17	Unit shutdown, NB, NC, NT, ASRE.
VLED to secondary (I/O port)	Short	264	10 mins	F901	0.17	Unit shutdown, NB, NC, NT, ASRE.
BD9902 Pin1-4	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards.
BD9902 Pin1-4	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards.
BD9901 Pin1-4	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards.
BD9901 Pin1-4	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards.
Q9801 (G-S)	SC	264	10 min	F901	0.98	Unit normal, NT, NB, NC, no hazards, NCD.
Q9801 (S-D)	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q9801 (S-D)	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.

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Clause	Requirement + Test			Result - Remark		Verdict
Q9801 (G-D)	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q9801 (G-D)	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q9802 (G-S)	SC	264	10 min	F901	0.98	Unit normal, NT, NB, NC, no hazards, NCD.
Q9802 (S-D)	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q9802 (S-D)	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q9802 (G-D)	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q9802 (G-D)	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
U9301 Pin2-7	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
Q9302 (G-S)	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD
Q9302 (S-D)	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q9302 (S-D)	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q9302 (G-D)	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q9302 (G-D)	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
U9302 Pin1-2	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
U9302 Pin4-3	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
U9302 Pin1	OC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
U9304 Pin1-2	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
U9304 Pin4-3	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
U9304 Pin1	OC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
T9302 Pin6,7-9,10	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
T9302 Pin1-3	SC	264	10 min	F901	0.12	Unit shutdown, NT, NB, NC, no hazards, NCD.

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Clause	Requirement + Test			Result - Remark		Verdict
T9302 Pin4-5	SC	264	10 min	F901	0.12	Unit shutdown, NT, NB, NC, no hazards, NCD.
D9311 Pin2-3	SC	264	10 min	F901	0.15	Unit shutdown, NT, NB, NC, no hazards, NCD.
Q9101 (G-S)	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
Q9101 (S-D)	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards.
Q9101 (S-D)	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards.
Q9101 (G-D)	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards.
Q9101 (G-D)	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards.
Q9102 (G-S)	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
Q9102 (S-D)	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q9102 (S-D)	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q9102 (G-D)	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q9102 (G-D)	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
U9902 Pin15-3	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
U9902 Pin16-2	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
U9902 Pin16-3	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
U9902 Pin11-3	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
U9902 Pin11-2	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
U9102 Pin1-2	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
U9102 Pin4-3	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
U9102 Pin1	OC	264	10 min	F901	0.14	Unit shutdown, NT, NB, NC, no hazards, NCD.
U8601 Pin15-3	SC	264	10 min	F901	0.16	Unit shutdown, NT, NB, NC, no hazards, NCD.

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Clause	Requirement + Test			Result - Remark		Verdict
U8601 Pin16-2	SC	264	10 min	F901	0.14	Unit shutdown, NT, NB, NC, no hazards, NCD.
U8601 Pin16-3	SC	264	10 min	F901	0.98	Unit Normal operation, NT, NB, NC, no hazards, NCD.
U8601 Pin11-3	SC	264	10 min	F901	0.98	Unit Normal operation, NT, NB, NC, no hazards, NCD.
U8601 Pin11-2	SC	264	10 min	F901	0.14	Unit shutdown, NT, NB, NC, no hazards, NCD.
U8602 Pin1-2	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
U8602 Pin4-3	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
U8602 Pin1	OC	264	10 min	F901	0.14	Unit shutdown, NT, NB, NC, no hazards, NCD.
T8601 Pin1-4	SC	264	10 min	F901	0.16	Unit shutdown, NT, NB, NC, no hazards, NCD.
T8601 Pin11-7, 8	SC	264	10 min	F901	0.12	Unit shutdown, NT, NB, NC, no hazards, NCD.
T8601 Pin5, 6-7, 8	SC	264	10 min	F901	0.12	Unit shutdown, NT, NB, NC, no hazards, NCD.
T8601 Pin10, 9-6, 5	SC	264	10 min	F901	0.12	Unit shutdown, NT, NB, NC, no hazards, NCD.
T8601 Pin12-10, 9	SC	264	10 min	F901	0.15	Unit shutdown, NT, NB, NC, no hazards, NCD.
D8605 Pin3-2	SC	264	10 min	F901	0.15	Unit shutdown, NT, NB, NC, no hazards, NCD.
Q8602 (G-S)	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
Q8602 (S-D)	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q8602 (S-D)	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q8602 (G-D)	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q8602 (G-D)	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q8603 (G-S)	SC	264	10 min	F901	0.13	Unit shutdown, NT, NB, NC, no hazards, NCD.
Q8603 (S-D)	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q8603 (S-D)	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.

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Clause	Requirement + Test			Result - Remark		Verdict
Q8603 (S-D)	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q8603 (G-D)	SC	264	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
Q8603 (G-D)	SC	110	1 sec	F901	0	F901 open, NT, NB, NC, no hazards, NCD.
D8101 Pin3-2	SC	264	10 min	F901	0.17	Unit shutdown, NT, NB, NC, no hazards, NCD.
D8604 Pin3-2	SC	264	10 min	F901	0.17	Unit shutdown, NT, NB, NC, no hazards, NCD.
T9102 pin 1-4	SC	264	10 min	F901	0.14	Unit shutdown, NT, NB, NC, no hazards, NCD.
T9102 pin 11, 12-10, 9, 8, 7	SC	264	10 min	F901	0.14	Unit shutdown, NT, NB, NC, no hazards, NCD.
T9102 pin 10, 9, 8, 7-5, 6	SC	264	10 min	F901	0.14	Unit shutdown, NT, NB, NC, no hazards, NCD.
For overcharging						
Q423 C-E	SC	264	8hr 59min	F901	0.98	Normal operation, no damage, no hazards. Max. temp. at C4282 = 60.4°C, Ambient = 40.0°C.
R4203	SC	264	9hr 29min	F901	0.98	Normal operation, no damage, no hazards. Max. temp. at C4282 = 58.3°C, Ambient = 40.0°C.
C4282	SC	264	13hr 50min	F901	0.98	Normal operation, no damage, no hazards. Max. temp. at C4282 = 61.5°C, Ambient = 40.0°C.
For excessive discharging						
Q423 C-E	SC	264	1hr 21min	F901	0.98	Normal operation, no damage, no hazards. Max. temp. at C4282 = 41.4°C, Ambient = 40.0°C.
R4203	SC	264	1hr 29min	F901	0.98	Normal operation, no damage, no hazards. Max. temp. at C4282 = 41.1°C, Ambient = 40.0°C.
C4282	SC	264	1hr 19min	F901	0.98	Normal operation, no damage, no hazards. Max. temp. at C4282 = 41.2°C, Ambient = 40.0°C.
Supplementary information:						
1. Results Key:						

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Clause	Requirement + Test	Result - Remark	Verdict

IP = Internal protection operated (Component indicated); CT = Constant temperatures were obtained;
 TW = Transformer winding opened; CD = Components damaged (damaged components indicated);
 NB = No indication of dielectric breakdown; YB = Dielectric breakdown (time and location indicated);
 NC = Cheesecloth remained intact; YC = Cheesecloth charred or flamed;
 NT = Tissue paper remained intact; YT = Tissue paper charred or flamed.
 TV = Touch voltage measured; ASRE = All safeguards remained effectively.

2. All temperature measurement refer to appended table 5.4.1.4
3. All ES measurement refer to table 5.2

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)	--	--	--	3.0mA (D1 pin 1-2 SC) 0mA (RC166 SC)	0mA (D1 pin 1-2 SC) 0mA (RC166 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
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.							

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Clause	Requirement + Test	Result - Remark	Verdict

M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery				N/A
Maximum specified charging voltage (V)					—
Maximum specified charging current (A)					—
Highest specified charging temperature (°C)					
Lowest specified charging temperature (°C)					
Battery manufacturer/type	Operating and fault condition	Measurement			Observation
		Charging voltage (V)	Charging current (A)	Temp. (°C)	
Supplementary information:					
Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature					

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						P
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
For main board							
According to table Q.1, for USB 2.0 (CN406)							
Pin 1 to earth	Normal	5.1	5	2.3	8	6.44	100
Other pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for USB type B (CN704)							
All pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for USB 2.0 (CN706)							
Pin 1 to earth	Normal	5.1	5	1.5	8	6.6	100
Other pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for HDMI (CN501)							
Pin 1, 2, 3, 6, 7, 9, 10, 12 to earth	Normal	3.0	5	Can't loading	8	Can't loading	100
Pin 13 to earth	Normal	3.0	5	Can't loading	8	Can't loading	100
Pin 15, 16 to earth	Normal	3.0	5	Can't loading	8	Can't loading	100

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Clause	Requirement + Test	Result - Remark			Verdict		
Other pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for HDMI (CN502)							
Pin 1, 2, 3, 6, 7, 9, 10, 12 to earth	Normal	3.0	5	Can't loading	8	Can't loading	100
Pin 13 to earth	Normal	3.0	5	Can't loading	8	Can't loading	100
Pin 15, 16 to earth	Normal	3.0	5	Can't loading	8	Can't loading	100
Other pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for HDMI (CN503)							
Pin 1, 2, 3, 6, 7, 9, 10, 12 to earth	Normal	3.0	5	Can't loading	8	Can't loading	100
Pin 13 to earth	Normal	3.0	5	Can't loading	8	Can't loading	100
Pin 15, 16 to earth	Normal	3.0	5	Can't loading	8	Can't loading	100
Other pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for Display (CN505)							
Pin 16, 17 to earth	Normal	2.2	5	Can't loading	8	Can't loading	100
Pin 18 to earth	Normal	3.3	5	Can't loading	8	Can't loading	100
Pin 20 to earth	Normal	3.33	5	1.0	8	3.3	100
Pin 20 to earth	U527 pin 1-5 SC	3.33	5	3.0	8	4.6	100
Other pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for Display (CN506)							
Pin 16, 17 to earth	Normal	2.2	5	Can't loading	8	Can't loading	100
Pin 18 to earth	Normal	3.3	5	Can't loading	8	Can't loading	100
Pin 20 to earth	Normal	3.33	5	1.0	8	3.3	100
Pin 20 to earth	U530 pin 1-5 SC	3.33	5	3.0	8	4.6	100

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Clause	Requirement + Test	Result - Remark				Verdict	
Other pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for Display (CN507)							
Pin 16, 17 to earth	Normal	2.2	5	Can't loading	8	Can't loading	100
Pin 18 to earth	Normal	3.3	5	Can't loading	8	Can't loading	100
Pin 20 to earth	Normal	3.33	5	1.0	8	3.3	100
Pin 20 to earth	U532 pin 1-5 SC	3.33	5	3.0	8	4.6	100
Other pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for LAN (CN707)							
All pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for LAN (CN708)							
All pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for Remote in (CN407)							
Pin 4 to earth	Normal	3.3	5	1.8	8	--	100
Pin 4 to earth	U701 pin 3-4 SC	0	5	--	8	--	100
Other pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for Audio out (CN602)							
All pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for Speaker terminal (CN601)							
Pin 1 to 2	Normal	4.25	5	2.8	8	7.6	100
Pin 1 to 2	U601 pin 26 - 27, 28	0	5	--	8	--	100
Pin 1 to 2	U601 pin 23 - 27, 28	0	5	--	8	--	100
Pin 3 to 4	Normal	4.27	5	2.8	8	7.5	100
Pin 3 to 4	U601 pin 17 - 27, 28	0	5	--	8	--	100
Pin 3 to 4	U601 pin 20 - 27, 28	0	5	--	8	--	100
According to table Q.1, for Raspberry Pi (CN508)							
Pin 1, 2, 3, 50, 51 to earth	Normal	12.1	5	4.2	8	42.0	100

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Clause	Requirement + Test	Result - Remark				Verdict	
Pin 1, 2, 3, 50, 51 to earth	U534 pin 1 to 6 SC	12.1	5	6.8	8	76.9	100
Pin 8, 9, 29, 30, 32, 33, 35, 36, 45, 46 to earth	Normal	3.3	5	Can't loading	8	Can't loading	100
Other pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for SDM (CN509)							
Pin 1, 2, 3, 50, 51 to earth	Normal	12.1	5	6.8	8	74.8	100
Pin 1, 2, 3, 50, 51 to earth	U546 pin 1, 2, 3, 25, 16 to 17, 18, 19, 20, 21, 22, 23, 24 SC	12.1	5	6.8	8	76.9	100
Pin 1, 2, 3, 50, 51 to earth	U547 pin 1, 2, 3, 25, 16 to 17, 18, 19, 20, 21, 22, 23, 24 SC	12.1	5	6.8	8	76.9	100
Other pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for IR (CN404)							
Pin 1 to earth	Normal	3.3	5	3.6	8	7.92	100
Pin 1 to earth	U701 pin 3-4 SC	0	5	--	8	--	100
Pin 4 to earth	Normal	3.2	5	Can't loading	8	Can't loading	100
Pin 7, 9 to earth	Normal	2.6	5	Can't loading	8	Can't loading	100
Other pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for Key control (CN403)							
Pin 1, 3 to earth	Normal	3.3	5	Can't loading	8	Can't loading	100
Other pins to earth	Normal	0	5	--	8	--	100
For SDM card							
According to table Q3.1, for USB3.0 (JUSB1)							
Pin 1 to earth	Normal	5.04	5	2.7	8	11.6	100
Pin 10 to earth	Normal	5.04	5	2.7	8	11.6	100

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Clause	Requirement + Test	Result - Remark				Verdict	
Other pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for RJ45 (JLAN)							
All pins to earth	Normal	0	5	--	8	--	100
For compute module							
According to table Q.1, for USB 2.0 (CN1008)							
Pin 1 to earth	Normal	5.1	5	0.5	8	2.55	100
Pin 1 to earth	U1015 pin 1-5 SC	5.1	5	3.4	8	17.4	100
Pin 1 to earth	U1009 pin 5-6 SC	0	5	0	8	0	100
Other pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for USB 2.0 (CN1009)							
Pin 1 to earth	Normal	5.1	5	0.5	8	2.55	100
Pin 1 to earth	U1016 pin 1-5 SC	5.1	5	3.4	8	17.4	100
Pin 1 to earth	U1009 pin 5-6 SC	0	5	0	8	0	100
Other pins to earth	Normal	0	5	--	8	--	100
According to table Q.1, for Micro USB (CN1002)							
All pins to earth	Normal	0	5	--	8	--	100
Supplementary Information:							
1) Input Voltage is 264Vac, 60Hz. SC=short circuit.							

T.2, T.3, T.4, T.5	TABLE: Steady force test						P
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation	
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.	

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Clause	Requirement + Test	Result - Remark	Verdict

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:					

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

T.8	TABLE: Stress relief test					P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Unit (mylar)	See table 4.1.2	See table 4.1.2	70	7	No indication of shrinkage or distortion on enclosures due to the stress relief test.	
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:					

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Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	TABLE: Critical components information					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
LCD Panel (for P555, MA551)	LG Display	LD550Eqx ('q' can be Q to G denoting for resolution, 'x' can be E, F, R, G, H or S denoting for Control Board option)	Control Board: 12.0 V d.c., Max. 2.25 A	IEC 62368- 1:2018; UL/CSA 62368-1	CB by TUV SUD (SG PSB-IV- 02184) UL	
LCD Panel (for P495, MA491)	LG Display	LD490***** (* can be 0-9, a-z, A-Z, /, \, +, -, • or blank)	48.50" TFT type, with LED backlight.	--	Tested in equipment	
Super Capacitor (C4282 on main board)	DHENMA TECHNOLOGY CO., LTD	DXJ SERIES	0.47F, Min 5.5Vdc, Min. 70°C	--	Tested in equipment	
(Alternative)	Electric Double Layer Capacitor	EECS0HD224H	0.47F, Min 5.5Vdc, Min. 70°C	--	Tested in equipment	
(Alternative)	KEMET	FT Series	0.47F, Min 5.5Vdc, Min. 70°C	--	Tested in equipment	
(Alternative)	JIANGHAI NEW ENERGY	SCV Series	0.47F, Min 5.5Vdc, Min. 70°C	--	Tested in equipment	
(Alternative)	Panasonic	EECF5R5H474	0.47F, Min 5.5Vdc, Min. 70°C	--	Tested in equipment	
Current Limited IC Protector (U420, U717) on main board	DIODES INC	AP21xyz	Single channel / Dual channel: 0.5A-1.5A, 2.7- 5.5Vdc.	IEC 62368- 1:2014	Nemko CB (Cert. No. NO107539)	
(Alternative)	DIODES INC	AP2553	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 0-2.1A Output Current Limit: 104- 3020mA	IEC 62368- 1:2014	UL CB (Cert. No. US- 34481-UL)	
System DC Fan (three provide) (optional)	SUNONWEALT HELECTRIC MACHINE INDUSTRY CO LTD	MF60101V1-1	12Vdc, max. 125mA, 16.3 CFM.	IEC/EN 62368- 1:2014; UL507 Edition Number 10	TUV R 50275749, UL E77551	

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Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO LTD	MB60101V1	12Vdc, max. 138mA, 16.0 CFM	IEC/EN 62368-1:2014; UL507 Edition Number 10	TUV R 50152959, UL E77551
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	UL E350712
(Alternative)	TAE HWA INDUSTRIAL CO LTD	6701	For securing secondary internal wirings. Overall measured minimum 50 by 18 mm.	UL 510A	UL E92677
(Alternative)	DUCK SUNG HITECH CO LTD	231	105 degree C min. For securing secondary internal wirings. Overall measured minimum 50 by 18 mm.	UL 510A	UL E105147
(Alternative)	JIANGMEN NEW ERA ADHESIVES TECHNOLOGY CO LTD	FGB-0011-200PP1	80 degree C min. For securing secondary internal wirings. Overall measured minimum 50 by 18 mm.	UL 510A	UL E216378
(Alternative)	TAEYOUNG CHEMICAL IND CO LTD	TY301A	105 degree C min. For securing secondary internal wirings. Overall measured minimum 50 by 18 mm.	UL 510A	UL E176089

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	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	UL E82910
Wire buckle for internal wire (white)	3M TAIWAN LTD	1600T, 1600TG	For securing secondary internal wirings. Overall measured minimum 36 by 25mm.	UL 746C Edition Number 7	UL
AC Inlet	Solteam	ST-01	10A, 250Vac, 15A, 250Vac, 70°C	IEC/EN 60320-1, ANSI/UL498	VDE 40015691, UL E200241
(Alternative)	Zhang Jia Gang- Hua Jie	SA-4S	10A, 250Vac, 15A, 250Vac, 70°C	IEC/EN 60320-1, ANSI/UL498	VDE 40003610, UL E154342
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac, 15A, 250Vac, 70°C	IEC/EN 60320-1, ANSI/UL498	VDE 40028101, UL E102641
(Alternative)	Shenzhen Delikang / Douling	CDJ-3	10A, 250Vac, 70°C	IEC/EN 60320-1, ANSI/UL498	VDE 40010513, UL E217394
(Alternative)	Shenzhen Delikang / Douling	CDJ-3-1	10A, 250Vac, 70°C	IEC/EN 60320-1, ANSI/UL498	VDE 40015913, UL E217394
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac, 70°C	IEC/ EN 60320-1 UL60320-1	Nemko (P03100418), UL (E94191)
(Alternative)	TECX	TU-301 series	10A, 250Vac, 70°C	IEC/ EN 60320-1	VDE (40025582), UL (E220004)
(Alternative)	Yueqing Hongchang	DB-14	10A/250Vac, 15A, 250Vac, 70°C	IEC/EN 60320-1, ANSI/UL498	VDE 40028645, UL E327347
(Alternative)	Solteam	SC04	10A/250Vac, UL: 10A / 250Vac, 12A / 250Vac, 70°C	IEC/EN 60320-1, ANSI/UL498	VDE 40033517, UL E200241

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	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,125/250Vac 8A, 277Vac	IEC/EN 61058-1, ANSI/UL 1054	ENEC (FI: 2015056) UL (E68037)
(Alternative)	Rong Feng	RF-1003	250 Vac, 10 A	IEC/EN 61058-1, ANSI/UL 1054	TUV (HB 69248433) UL (E94138)
(Alternative)	Solteam	MR-21 series	250 Vac, 10 A	IEC/EN 61058-1, ANSI/UL 1054	ENEC (FI: 2016031) UL E148157
(Alternative)	Solteam	MR-21S	ENEC:6A, 250Vac, UL:10A,125/250Vac	IEC/EN 61058-1, ANSI/UL 1054	ENEC (ENEC16/FI/19/10048) UL (E148157)
(Alternative)	Solteam	MR-22 series	ENEC:12(4)A, 250V UL:12A,125/250Vac 8A, 125/250Vac	IEC/EN 61058-1, ANSI/UL 1054	ENEC (FI: 2016039) UL E148157
(Alternative)	Solteam	OR-L, OR-P	6 A, 250 Vac; 10A, 125 Vac	IEC/EN 61058-1, ANSI/UL 1054	ENEC (ENEC16/FI/19/10075) UL (E148157)
(Alternative)	Zhangjiagang Huajie	PS8-338 series	8 A, 250 Vac; 5 A, 120 Vac	IEC/EN 61058-1, ANSI/UL 1054	TUV (R 50181231) UL (E151790)
(Alternative)	Hongchang	RS series, RT series	10 A, 125 Vac; 6 A, 250 Vac	IEC/EN 61058-1, ANSI/UL 1054	ENEC (ENEC-02699) UL (E148157)
Mylar sheet (near power board HS8602, between power board trace side and panel chassis, between power board component side and metal chassis) (type A and B)	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	V-0 or VTM-0, Thickness: 0.4mm, min 80°C	UL 94	UL E249605

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	SICHUAN LONGHUA FILM CO LTD	PC-770F, PC-770F-A, PC-770	V-0 or VTM-0, Thickness: 0.4mm, min 80°C	UL 94	UL E254551
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F	V-0 or VTM-0, Thickness: 0.4mm, min 80°C	UL 94	UL E199019
(Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1860B, KLX FRPC-1870B	V-0 or VTM-0, Thickness: 0.4mm, min 80°C	UL 94	UL E315185
(Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B	V-0 or VTM-0, Thickness: 0.4mm, min 80°C	UL 94	UL E315185
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECOC, DFR117ECOB	V-0 or VTM-0, Thickness: 0.4mm, min 80°C	UL 94	UL E199019
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	V-0 or VTM-0, Thickness: 0.4mm, min 80°C	UL 94	UL E199019
(Alternative)	JINGMEN GORUN TECHNOLOGY CO LTD	HF70	V-0 or VTM-0, Thickness: 0.4mm, min 80°C	UL 94	UL E305163
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	V-0 or VTM-0, Thickness: 0.4mm, min 80°C	UL 94	UL E199019
(Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10	V-0 or VTM-0, Thickness: 0.4mm, min 80°C	UL 94	UL E315185
Adhesive for Mylar sheet within metal enclosure inside	SYMBIO	DS50-A, DS50L	100°C, 0.05mm Thickness	--	Tested with appliance
(Alternative)	3M CHINA CO LTD	3M55236	100°C, 0.05mm Thickness	--	Tested with appliance
(Alternative)	TESA SE	68646	100°C, 0.05mm Thickness	--	Tested with appliance

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	NITTO DENKO CORP	GA606	100°C, 0.05mm Thickness	--	Tested with appliance
(Alternative)	Interchangeable	Interchangeable	100°C, 0.05mm Thickness	UL 746C	UL
Fan cover (on the main board)	LG CHEM LTD	LUPOY GN5001RF(T), LUPOY GN-5001RF(T)	Min. V-2.	UL 94 Edition Number 6	UL
(Alternative)	GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHE26(##)	Min. V-2.	UL 94 Edition Number 6	UL
(Alternative)	LOTTE CHEMICAL CORPORATION	NE-1030(+)	Min. V-2.	UL 94 Edition Number 6	UL
SDM card (optional)					
Power Distribution Switch (U6) for USB1	Excelliance MOS Corporation	EM5203AJ-20, EM5203AN-20, EM5203J-20, EM5203N-20	2.5 to 5.5 Vdc, maximum Continuous Current 2.0 A, Protective Current 4.0 A	UL2367, Ed.1; IEC/EN 60950-1:2005 + A1:2009 + A2:2013 IEC 62368-1: 2014	UL CB (issued by US-26371-UL) UL CB (issued by DK-85996-UL)
RTC	Interchangeable	CR1632	3V dc, maximum abnormal charging current 4 mA.	UL 1642 Edition Number 5	UL
DC fan	Sunonwealth Electric Machine Industry Co., Ltd	MF40060V1-1Z (Z stands for 30 characters. Each character stands for one of the following signs: 0-9, A-Z, (,), ., /, - order (or) freibleibend (blank)	5V dc, max. 0.65W, 6.3CFM, mass(m) = 0.003kg, radius(r) = 18.4mm, rotational speed (N) = 7000 rpm, K factor = 29.861	UL507, Ed. 10; IEC/EN 60950-1:2005 + A1:2009 + A2:2013 UL 60950-1; IEC 62368-1:2014 (CB (issued by TUV Rh R 50275749))	UL
Switching mode power supply board: 715GB062 by TPV					
Primary connector (CN901)	J.S.T	VH series	7 A, 250 Vac	--	Tested with appliance

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	J.S.T	VT series	Max. 12 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	H3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	W7913 series,	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Jowle	A3963 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Interchangeable	Interchangeable	12 A, 250 Vac	IEC/EN 61984, UL 1977	TUV, UL
Fuse (F901 in primary)	Littelfuse	618 series, 215 series	T8AL, 250 Vac	IEC/ EN 60127-1 IEC/ EN 60127-2 UL 248-1	VDE 40014776, 40016610 UL E10480
(Alternative)	Conquer	UDA, UDA-A	T8AL, 250 Vac	IEC/ EN 60127-1 IEC/ EN 60127-2 UL 248-1	VDE 40008022, UL E82636
(Alternative)	Cooper Bussmann	S505-xxx-R, S505-V-xxx-R	T8AL, 250 Vac	IEC/ EN 60127-1 IEC/ EN 60127-2 UL 248-1	VDE 40014091, UL E19180
(Alternative)	Walter Electronic Co., Ltd.	TSC	T8AL, 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	Rated 350 Vac, 450Vdc, 40/85/56, 6KV/3KA, pluse test passed V-0 coating	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd	VDE 40021243, UL E314979
(Alternative)	Centra Science corp.	CNR-14D681K	Rated 420Vac, 560Vdc, 40/85/56, 6KV/3KA, pulse test passed V-0 coating.	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd	VDE 40021243, UL E314979
(Alternative)	Thinking Electronic Industrial Co., Ltd.	TVR14681	Rated 420 Vac, 560Vdc, 40/85/56, 6KV/3KA, pluse test passed V-0 coating	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd	VDE 40021243, UL E314979

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Panasonic	V14681U	Rated 420 Vac, 560Vdc, 40/85/56, 6KV/3KA, pluse test passed V-0 coating	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd	VDE 40018677, UL E321499
(Alternative)	TDK	S14KV681, SNF14K420	Rated 420 Vac, 560Vdc, 40/85/56, 6KV/3KA, pluse test passed V-0 coating	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd	VDE 40027582, UL E321126
Relay (SW9901)	HONGFA	HF140FF	VDE: 8A / 250Vac UL: 8A / 277Vac, 10A/125Vac, 105°C	IEC 61810-1: 2015, UL 508	VDE (40039387), UL (E134517)
(Alternative)	HONGFA	HF162F	VDE: 8A / 250Vac UL: 8A / 277Vac, 10A/125Vac, 105°C	IEC 61810-1: 2015, UL 508	VDE (40032669), UL (E133481)
(Alternative)	Panasonic	LKG1aF-12v	16A, 250Vac, 105°C	IEC 61810-1: 2015, UL 508	TUV SUD B013461 0379, UL (E43149)
(Alternative)	Song Chuan	834	10A, 250Vac, 105°C	IEC/EN 61810-1: 2015, UL 508 Edition Number 18	TUV R 09552452, UL88991
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)
(Alternative)	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)
(Alternative)	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)

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	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)
Bridge-Capacitors (C9909, C9910) (Y1 type) (Optional)	Walsin	AH series	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
(Alternative)	TDK	CD	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
(Alternative)	Murata	KX	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
(Alternative)	Kunshan Wansheng	CT7	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40012143, UL E249006
(Alternative)	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 135256, UL E145038
(Alternative)	SUCCESS	SE	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40037218, UL E114280
(Alternative)	SUCCESS	SB	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40037221, UL E114280
(Alternative)	SUCCESS	SL	Max. 82pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40019465, UL E114280
(Alternative)	Interchangeable	Interchangeable	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y-Capacitors (C9901, C9902, C9904, C9905, C9907, C9908) (Y1 or Y2 type) (Optional)	Walsin	AH series	Max. 4700pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
(Alternative)	TDK	CD	Max. 4700pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
(Alternative)	Murata	KX	Max. 4700pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Kunshan Wansheng	CT7	Max. 4700pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40012143, UL E249006
(Alternative)	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 4700pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 135256, UL E145038
(Alternative)	SUCCESS	SE	Max. 4700pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40037218, UL E114280
(Alternative)	SUCCESS	SB	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40037221, UL E114280
(Alternative)	SUCCESS	SL	Max. 82pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40019465, UL E114280
(Alternative)	Interchangeable	Interchangeable	Max. 4700pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitors (C9911, C9903) (X1 or X2 type) (Optional)	Ultra Tech Xiphi	HQX	Max. 0.33μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE 40024534, UL E183780
(Alternative)	Europtronic	MPX	Max. 0.33μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE 40018238, UL E211347
(Alternative)	Europtronic	MPX2	Max. 0.33μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE 40025981, UL E211347
(Alternative)	Liow Gu	GS-L	Max. 0.33μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE 40023391, UL E186321
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.33μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	ENEC DAT9700014 1, UL E97797
(Alternative)	TDK	B3292#	Max. 0.33μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE 40010694, UL E97863
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.33μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE 40028680, UL E200596
(Alternative)	FARAD	PXK	Max. 0.33μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE 40014111, UL E247953
(Alternative)	Interchangeable	Interchangeable	Max. 0.33μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE, UL

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Clause	Requirement + Test		Result - Remark		Verdict
X-Capacitors (C9906) (X1 or X2 type) (Optional)	Ultra Tech Xiphi	HQX	Max. 0.47μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE 40024534, UL E183780
(Alternative)	Europtronic	MPX	Max. 0.47μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE 40018238, UL E211347
(Alternative)	Europtronic	MPX2	Max. 0.47μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE 40025981, UL E211347
(Alternative)	Liow Gu	GS-L	Max. 0.47μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE 40023391, UL E186321
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.47μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	ENEC DAT9700014 1, UL E97797
(Alternative)	TDK	B3292#	Max. 0.47μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE 40010694, UL E97863
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.47μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE 40028680, UL E200596
(Alternative)	FARAD	PXK	Max. 0.47μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE 40014111, UL E247953
(Alternative)	Interchangeable	Interchangeable	Max. 0.47μF, min. 250Vac, min. 85°C.	IEC/EN 60384-14 UL 60384-14	VDE, UL
Optocoupler (U9302, U9304, U9102, U8602)	Sharp	PC123	Di more than 0.4mm, int = thermal cycling test, ext. more than 8.0mm, 5000Vac, 100°C.	DIN EN 60747-5-5:2007 IEC60747-5-5:2007 IEC/EN 60950-1 UL 1577	VDE 40008087, UL E64380, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di more than 0.5mm, int. cr more than 6.0mm, ext. cr more than 7.7mm, 4000Vac, 100°C.	DIN EN 60747-5-5:2007 IEC60747-5-5:2007 IEC/EN 60950-1 UL 1577	VDE 40028080, UL E76222, Semko, Fimko

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 7.7mm, 4000Vac, 100°C.	DIN EN 60747-5-5:2007 IEC60747-5-5:2007 IEC/EN 60950-1 UL 1577	VDE 132249, UL E214129, Semko, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F , TLP781	Di more than 0.5mm, int. cr =thermal cycling test, ext. cr more than 8.0mm, 4800Vac, 100°C.	DIN EN 60747-5-5:2007 IEC60747-5-5:2007 IEC/EN 60950-1 UL 1577	VDE 40021173, UL E67349, Semko
(Alternative)	TOSHIBA	TLP421F	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.0mm, 5000Vac, 100°C.	DIN EN 60747-5-5:2007 IEC60747-5-5:2007 IEC/EN 60950-1 UL 1577	VDE 40010944, UL E67349
(Alternative)	RENESAS ELECTRONICS CORPORATION	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.0mm, 5000Vac, 100°C.	DIN EN 60747-5-5:2007 IEC60747-5-5:2007 IEC/EN 60950-1 UL 1577	VDE 40008862, UL E72422, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.1mm, 4000Vac, 100°C.	DIN EN 60747-5-5:2007 IEC60747-5-5:2007 IEC/EN 60950-1 UL 1577	VDE, UL E214129, Semko, Fimko
(Alternative)	Lite-On	LTV-817	Di more than 0.6mm, int.cr=thermal cycling test, ext. cr more than 8.0mm, 4800Vac, 100°C.	DIN EN 60747-5-5:2007 IEC60747-5-5:2007 IEC/EN 60950-1 UL 1577	VDE 40015248, UL E113898, Semko, Fimko

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Discharge IC (U9901)	POWER INTEGRATIONS	CAP200DG	1000V, Resistance: 7.5MΩ - 142kΩ. Total X-capacitance: 100nF-6μF.	IEC 62368-1: 2014	CB by UL (DK-70248-UL)
Inductor (L9901, L9902) (Optional)	ASET	73G174-272-X	Min. 130°C.	--	--
(Alternative)	Dadon / Channelon / HA	73G174-272-H	Min. 130°C.	--	--
Inductor (L9801, L9802) (Optional)	Dadon / Channelon / HA	373G0174450H	Min. 130°C.	--	--
(Alternative)	LFDJ	373G0174450J	Min. 130°C.	--	--
(Alternative)	LI TAI	373G0174450L	Min. 130°C.	--	--
Transformer (T9302)	Dadon / Channelon / HA	380GL32P689H	Class 130, material (B).	Applicable parts of IEC 62368-1 and according to IEC 60085	Test with appliance
- Bobbin	CHANG CHUN	T200NA	V-0, phenolic, 150°C, min. 0.45 mm thick.	UL 94 Edition Number 6	UL E59481
- Insulation tape	Jingjiang Yahua Pressure Sensitive Co Ltd	CT	130°C.	UL 510A Edition Number 9	UL E165111
- Triple Insulation Wire	KBI COSMOLINK CO LTD	TIW-M series	130°C.	IEC 62368-1:2014, EN 62368-1 (VDE 0868-1):2016-05; EN 62368-1:2014, UL 2353 Edition Number 3	VDE 138053, UL E213764
Transformer (T9302) (alternate)	LFDJ	380GL32P689J	Class 130, material (B).	Applicable parts of IEC 62368-1 and according to IEC 60085	Test with appliance
-Bobbin	CHANG CHUN	T200NA	V-0, phenolic, 150°C, min. 0.45 mm thick.	UL 94 Edition Number 6	UL E59481
-Insulation Tape	Jingjiang Yahua Pressure Sensitive Co Ltd	CT	130°C.	UL 510A Edition Number 9	UL E165111

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
-Triple Insulation Wire	KBI COSMOLINK CO LTD	TIW-M series	130°C.	IEC 62368-1:2014, EN 62368-1 (VDE 0868-1):2016-05; EN 62368-1:2014, UL 2353 Edition Number 3	VDE 138053, UL E213764
Transformer (T9302) (alternate)	PHOENIX	380GL32P689P	Class 130, material (B).	Applicable parts of IEC 62368-1 and according to IEC 60085	Test with appliance
-Bobbin	SUMITOMO BAKELITE CO LTD	PM-9750	V-0, phenolic, 150°C, min. 0.45 mm thick.	UL 94 Edition Number 6	UL E41429
-Insulation Tape	Jingjiang Yahua Pressure Sensitive Co Ltd	CT	130°C.	UL 510A Edition Number 9	UL E165111
-Triple Insulation Wire	SUZHOU YUSHENG ELECTRONIC CO LTD	VDE: TIW-B, UL: TIW-B*	130°C.	IEC 62368-1:2014, EN 62368-1 (VDE0868-1) :2016-05; EN 62368-1:2014, UL 2353 Edition Number 3	VDE 40022527, UL E332529
Transformer (T8601)	Dadon / Channelon / HA	380GL32P685H	Class 130, material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Test with appliance
-Bobbin	CHANG CHUN	T200HF	V-0, phenolic, 150°C, min. 0.45 mm thick.	UL 94 Edition Number 6	UL E59481
-Insulation Tape	Jingjiang Yahua Pressure Sensitive Co Ltd	CT	130°C.	UL 510A Edition Number 9	UL E165111
Transformer (T8601) Alternate	TAICHANG	380GL32P685S	Class 130, material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Test with appliance
-Bobbin	CHANG CHUN	T200HF	V-0, phenolic, 150°C, min. 0.45 mm thick.	UL 94 Edition Number 6	UL E59481
-Insulation Tape	Jingjiang Yahua Pressure Sensitive Co Ltd	CT	130°C.	UL 510A Edition Number 9	UL E165111

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Transformer (T9102)	Dadon / Channelon / HA	380GL32P691H	Class 130, material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Test with appliance
-Bobbin	SUMITOMO BAKELITE CO LTD	PM-9750	V-0, phenolic, 150°C, min. 0.45 mm thick.	UL 94 Edition Number 6	UL E41429
-Insulation Tape	Jingjiang Yahua Pressure Sensitive Co Ltd	CT	130°C.	UL 510A Edition Number 9	UL E165111
Transformer (T9102) (alternate)	ASET	380GL32P691X	Class 130, material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Test with appliance
-Bobbin	SUMITOMO BAKELITE CO LTD	PM-9750	V-0, phenolic, 150°C, min. 0.45 mm thick.	UL 94 Edition Number 6	UL E41429
-Insulation Tape	Jingjiang Yahua Pressure Sensitive Co Ltd	CT	130°C.	UL 510A Edition Number 9	UL E165111
Rating information of components which are not critical components					
Metal Enclosure and Metal Cover	Interchangeable	Interchangeable	SGCC, thickness 0.6mm min.	--	--
IR board plastic cover and Key control board plastic cover	Interchangeable	Interchangeable	HB or better	UL 94 Edition Number 6	UL
Battery for remote controller used (Optional)	Interchangeable	Interchangeable	1.5Vdc, Two AA or AAA consumer type batteries provide.	--	--
Base Stand (optional)	Interchangeable	Interchangeable	SGCC, total weight: 1.88kg.	--	--
External Speaker (two provided) (Optional)	Interchangeable	Interchangeable	Each rated 80ohm, max. 40W.	--	--

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
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.	UL 758	UL
Tube of control wire	CHANGYUAN ELECTRONICS GROUP CO LTD	CYG-ZHP	600V, 125°C, min. 0.4mm thick.	UL 224 Edition 6	UL
Alt.	DONGGUAN SALIPT CO LTD	SALIPT S-HPT-600	600V, 125°C, min. 0.4mm thick.	UL 224 Edition 6	UL
PCB	Interchangeable	Interchangeable	V-1 or better Min. 105°C.	UL 796 Edition Number 11	UL
Primary wiring	Interchangeable	1015, 1617	Min. 18AWG, VW-1, 105°C, 300V	UL 758 3rd	UL
Thermistors (TH9901)	Interchangeable	Interchangeable	Min. 10ohm, min. 5A at 25°C.	--	--
Transistors (Q9801, Q9802, Q9101, Q9102, Q8602, Q8603)	Interchangeable	Interchangeable	Min. 600V, 6.5-30A	--	--
Bridge Diodes (BD9901, BD9902)	Interchangeable	Interchangeable	Min. 10A, min. 800V.	--	--
Ripple Capacitors (C9814, C9815)	Interchangeable	Interchangeable	150μF, min. 450V, 105°C.	--	--
Bleeder Resistors (R9901, R9902, R9903, R9904)	Interchangeable	Interchangeable	390KΩ, min. 1/4W. (four provided, located after fuse, SMD type)	--	--
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
(Alternative)	I-Sheng	SP-65	3A/5A/10A, 250V~	BS 1363 SASO 2203:2018	CVC
Cable	I-Sheng	H05VV-F	3 x 0.75mm2 3 x 1.0mm2 3 x 1.5mm2	EN 50525-2-11 IEC 60227-5	VDE
(Alternative)	I-Sheng	H05RR-F	3 x 0.75mm2	IEC 60245-4	VDE
(Alternative)	I-Sheng	H03VV-F	3 x 0.75mm2	EN 50525-2-11 IEC 60227-5	VDE
Connector	I-Sheng	IS-14	250V~, 10A	IEC 60320-1	ENEC
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

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

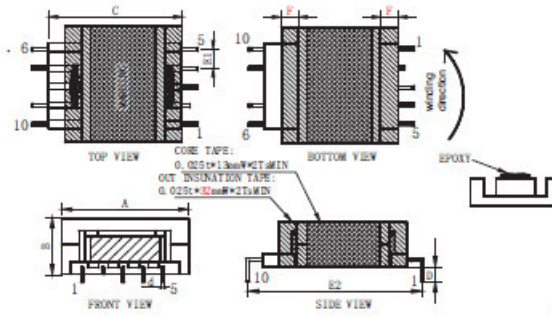
Clause	Requirement + Test	Result - Remark	Verdict
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G.5.3.2	TABLE: transformers						P
Loc.	Tested insulation	Working voltage peak / V (5.4.1.8)	Working voltage rms / V (5.4.1.8)	Required electric strength (5.4.9)	Required clearance / mm (5.4.2)	Required creepage distance / mm (5.4.3)	Required distance thr. insul. (5.4.4)
T9302	Primary wire to secondary pin	568	369	AC 4000 Vpeak	4.5 (3.0*1.48)	7.4	Triple insulation wire used
T9302	Primary wire to core	--	--	--	--	--	--
T9302	Secondary pin to core	568	369	AC 4000 Vpeak	4.5 (3.0*1.48)	7.4	Triple insulation wire used
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measure d creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T9302	Primary wire to secondary pin			AC 4000 Vpeak	9.9	9.9	Triple insulation wire used.
T9302	Primary wire to core			--	--	--	--
T9302	Secondary pin to core			AC 4000 Vpeak	9.9	9.9	Triple insulation wire used.
supplementary information:							
1. The constructions of all sources of T9302 are identical, only model designation, manufacturer, and the material of bobbin are different.							
2. Altitude correction factor for clearances for an altitude of 5000 m (based on IEC 60664-1:2007): 1.48.							

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

3.1. DIMENSIONS



1 PCS PFC CHOKE WEIGHT IS: 37.0±2g

b. 引线镀层结构图

c. MARKING 打印在产品上端。

d. 引脚挂PIN圈数: 配线ALL PIN 1.0Ts MIN.

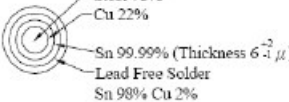
e. CORE GAP(单边) AT TOP SIDE; 中柱点胶;

f. PIN 1 CUT OFF ,PIN 2 CUT OFF 1/2.

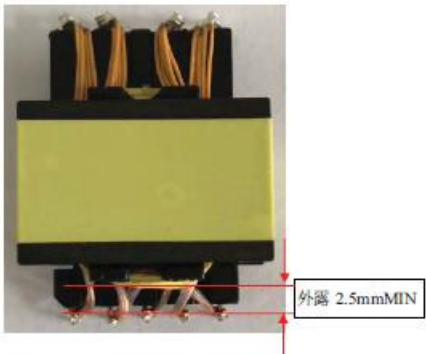
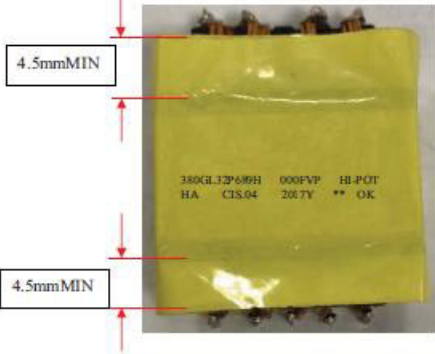
A=32.0±2.0 mm
B=14.5+0/-2.0 mm
C=37.5±1.5 mm
D=3.5±0.3 mm
E1=5.0±0.3 mm
E2=42.5±0.5 mm
F=4.5mmMIN
d=0.64±0.1 mm

CORE TAPE:
0.025*13mm*0.1mm
OUT INSULATION TAPE:
0.025*13mm*0.1mm

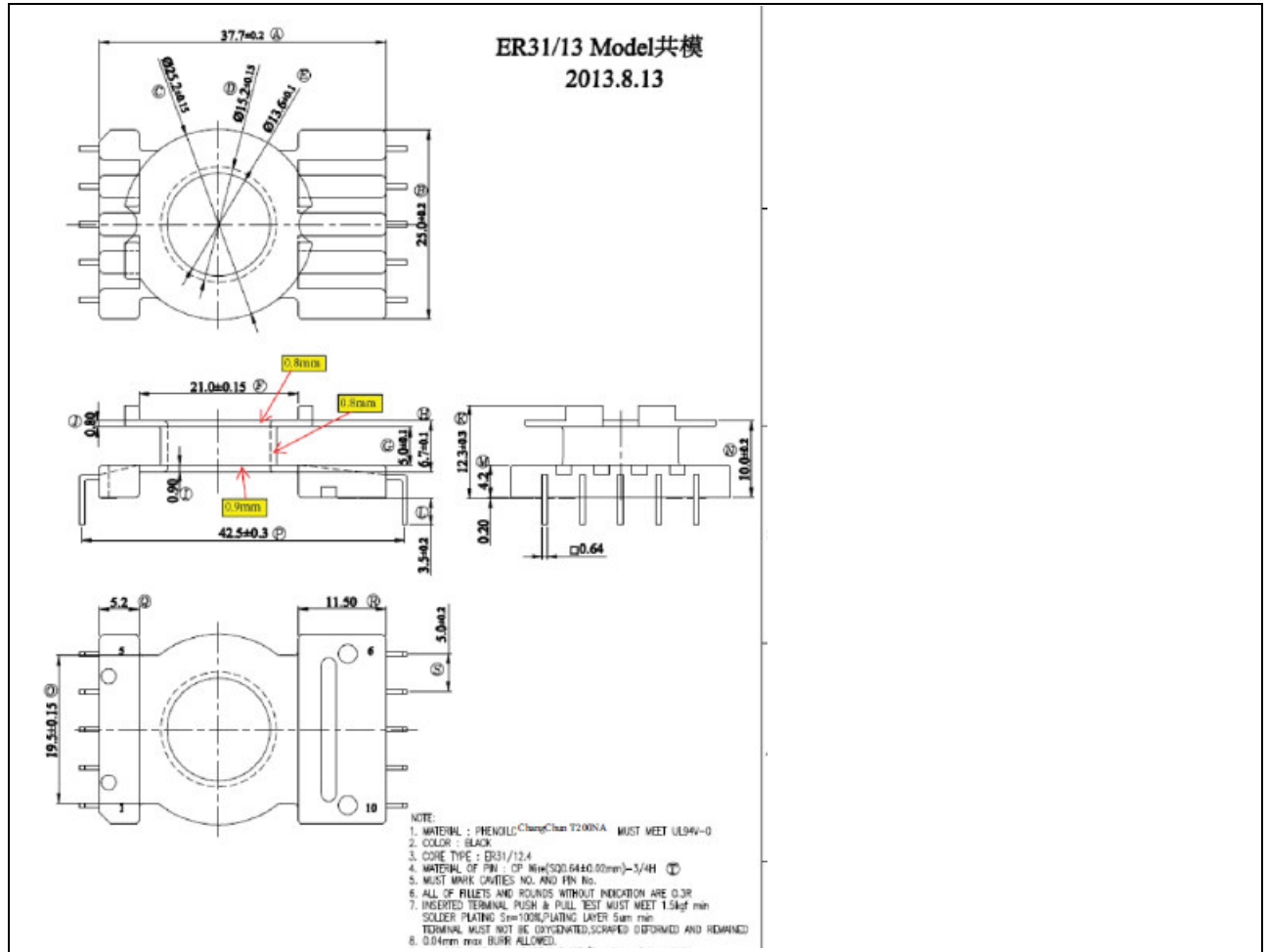
NOTE: 1. Lead Wire Composition



Steel 78%
Cu 22%
Sn 99.99% (Thickness 6-2 μm)
Lead Free Solder
Sn 98% Cu 2%

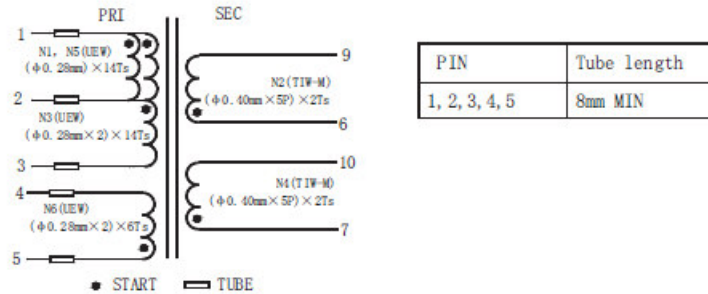
Clause	Requirement + Test	Result - Remark	Verdict
	 4.5mmMIN 4.5mmMIN 外露 2.5mmMIN 380GL32P689H 000FVP HI-POT HA CTS.04 2087Y ** OK GAP CORE EPOXY (E-500) WEIGHT ALMOST 0.1g ± 0.05(REF) 次级绕组TAPE适当加宽为5.5mm及在次级侧三层线上贴一层宽度约为4.5mm的TAPE，使得TAPE向三层线方向偏移约1mm贴到三层线上及直接贴TAPE在三层线上，使得初级线圈与三层线交叉处不接触 4.5mm tape bottom View(靠二次侧贴一层 tape) N3,N5 绕组前各贴一层，共二层		

Clause	Requirement + Test	Result - Remark	Verdict
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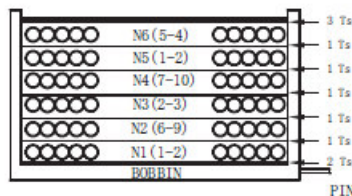


Clause	Requirement + Test	Result - Remark	Verdict
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3.4. SCHEMATIC:



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 2Ts
1	N1	1-2	φ 0.28 mm	UEW	14	CLOSED	1Ts
2	N2	6-9	φ 0.40mm×5	TIW-M	2	CLOSED	1Ts
3	N3	2-3	φ 0.28 mm×2	UEW	14	CLOSED	1Ts
4	N4	7-10	φ 0.40 mm×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×2	UEW	6	CLOSED	3Ts

3.7. Winding Direction: It is anti-clockwise From Bottom Side

Note: 1) Bare wires and insulated wires should not intersect contacts each other. (漆包线和绝缘线不能相互交叉接触)

2) Reflexed tape of copper foil :N/A

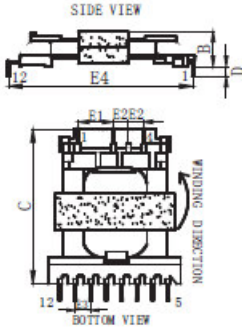
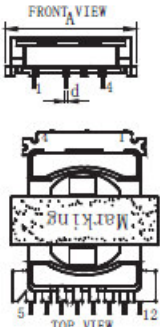
Description of design:

(a) Bobbin

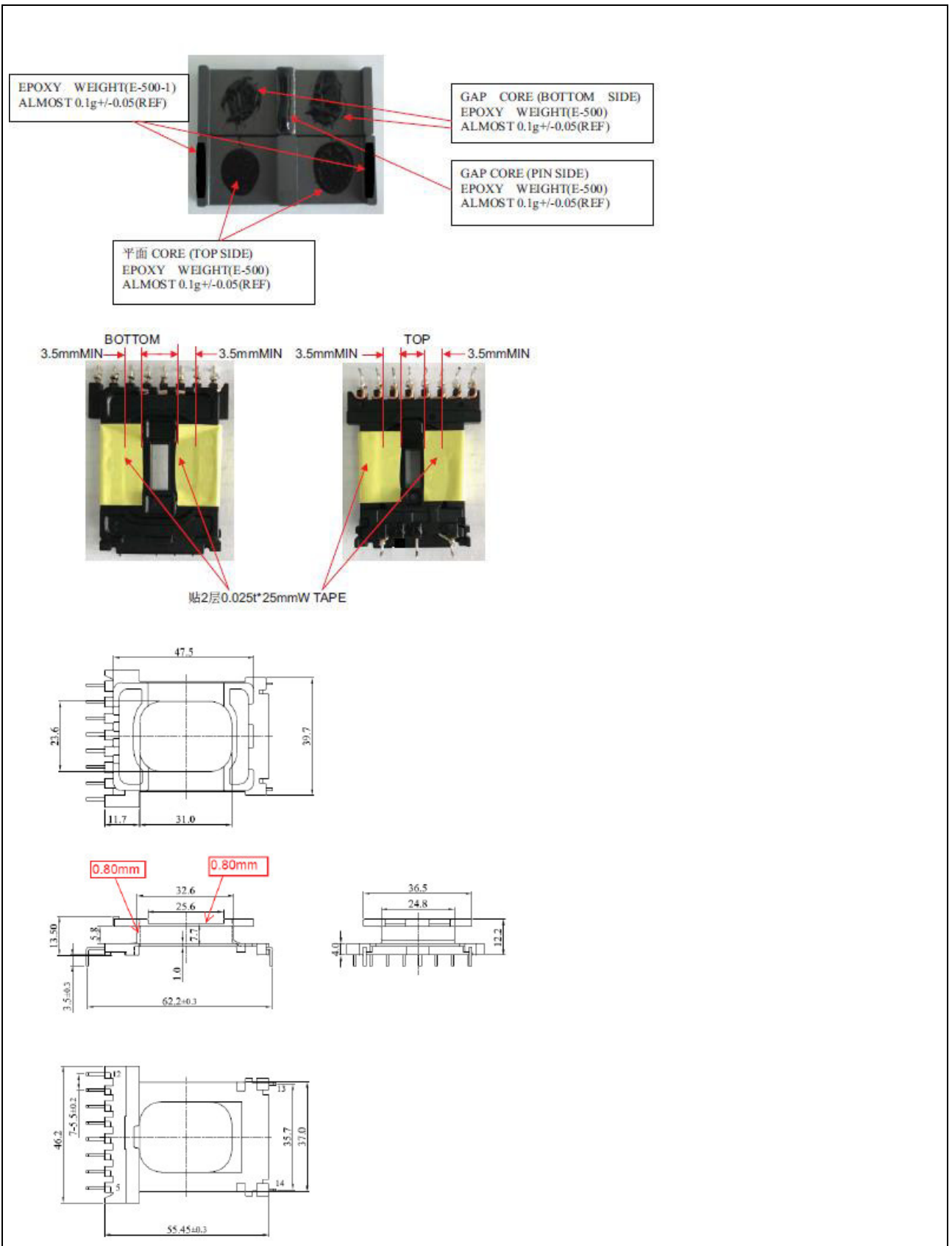
Primary/input pins	1-2-3, 5-4
Secondary/output pins	6-9, 7-10
Material (manufacturer, type, ratings)	See table 4.1.2
Thickness (mm)	Min. 0.45mm.

G.5.3.2 TABLE: transformers							P
Loc.	Tested insulation	Working voltage peak / V (5.4.1.8)	Working voltage rms / V (5.4.1.8)	Required electric strength (5.4.9)	Required clearance / mm (5.4.2)	Required creepage distance / mm (5.4.3)	Required distance thr. insul. (5.4.4)
T8601	Primary wire to secondary wire	550	274	AC 4000Vpeak	4.5	5.6	--

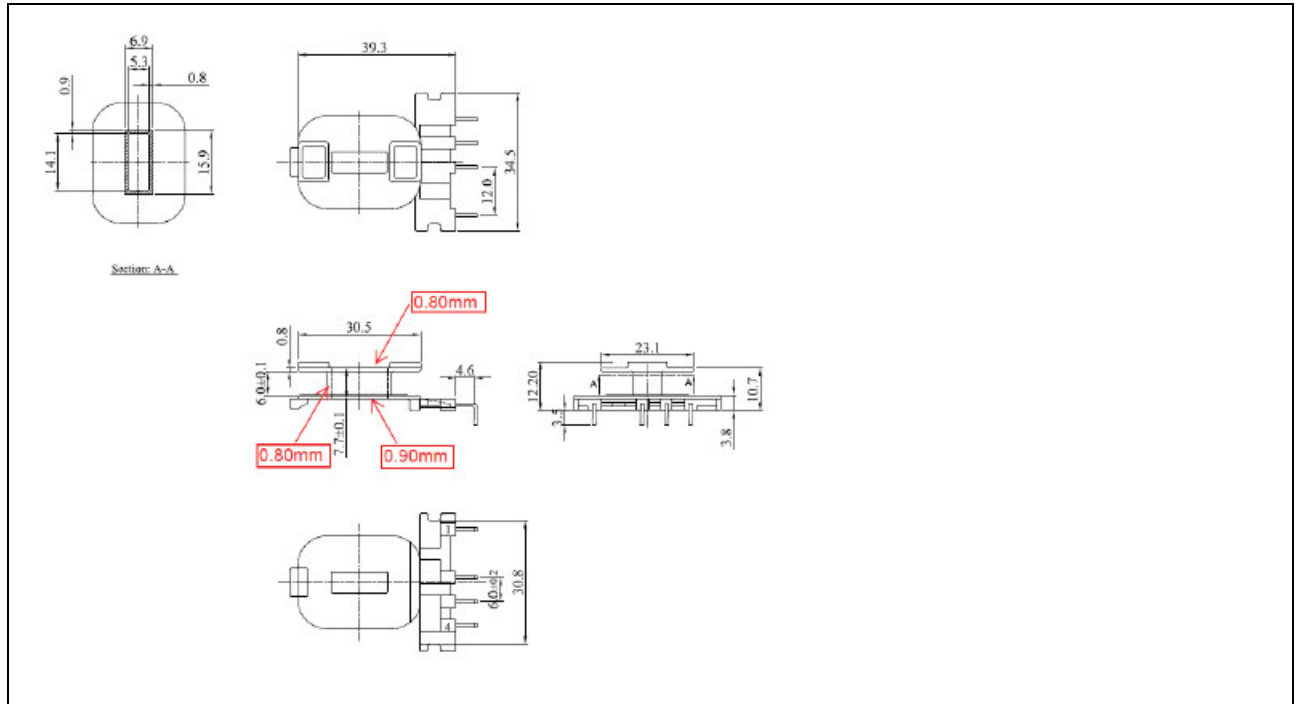
Clause	Requirement + Test			Result - Remark			Verdict
T8601	Primary wire to core	550	274	AC 2500Vpeak	2.3	2.8	--
T8601	Secondary wire to core	550	274	AC 2500Vpeak	2.3	2.8	--
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured d creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T8601	Primary wire to secondary wire			AC 4000Vpeak	8.1	8.1	Bobbin 0,45mm used.
T8601	Primary wire to core			AC 2500Vpeak	3.5	3.5	Bobbin 0,45mm used.
T8601	Secondary wire to core			AC 2500Vpeak	3.5	3.5	Bobbin 0,45mm used.
supplementary information:							
1. The constructions of all sources of T8601 are identical, only model designation, manufacturer, and the material of bobbin are different.							
2. Altitude correction factor for clearances for an altitude of 5000 m (based on IEC 60664-1:2007): 1.48.							

G.5.3.2	TABLE: transformers	P
3. APPEARANCE & MECHANICAL CHARACTERISTICS 3.1. DIMENSIONS  SIDE VIEW BOTTOM VIEW  FRONT VIEW TOP VIEW a. 1 PCS POWER TRANS WEIGHT IS: 46.9±3g b. 引线镀层结构图 c. MARKING 打印在产品TOP端。 d. 引脚挂PIN圈数: 配线 ALL PIN 1.0Ts MIN e. CORE GAP(单边) AT PIN SIDE; 中柱及两边柱点胶 f. PIN 3,13,14 CUT OFF; A=46.2±2.0 mm B=14.5+0/-1.5 mm C=55.45±2.0 mm D=3.5±0.5 mm E1=12.0±0.3 mm E2=6.0±0.3 mm E3=5.5±0.3 mm E4=62.2±0.5 mm d=0.8±0.1 mm NOTE: 1. Lead Wire Composition - Steel 78% - Cu 22% - Su 99.99% (Thickness 6~12 μ) - Lead Free Solder - Su 98% Cu 2%		

Clause	Requirement + Test	Result - Remark	Verdict
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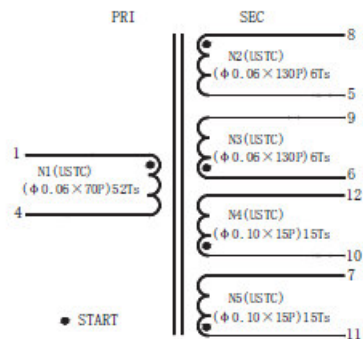


Clause	Requirement + Test	Result - Remark	Verdict
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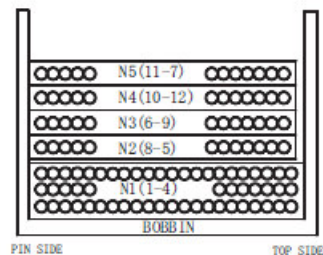


Clause	Requirement + Test	Result - Remark	Verdict
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3.4. SCHEMATIC:



3.5. WINDING CONSTRUCTION:



3.6. WINDING MODE:

No.	COIL	TERMINAL	WIRE GAUGE	WIRE TYPE	TUNS	WINDING METHOD	TAPE
1	N1	1-4	0.06mm×70	USTC	52	CLOSE	/
2	N2	8-5	0.06mm×130	USTC	6	CLOSE	/
3	N3	6-9	0.06mm×130	USTC	6	CLOSE	/
4	N4	10-12	0.10mm×15	USTC	15	CLOSE	/
5	N5	11-7	0.10mm×15	USTC	15	CLOSE	/

3.7. Winding Direction: It is anti-clockwise From bottom Side

Note: 1) Bare wires and insulated wires should not intersect contacts each other. (漆包线和绝缘线不能相互交叉接触):

2) Reflexed tape of copper foil :N/A

Description of design:	
(a) Bobbin	
Primary/input pins	1-4
Secondary/output pins	8-5, 6-9, 10-12, 1-7
Material (manufacturer, type, ratings)	See table 4.1.2
Thickness (mm)	Min. 0.45mm.

Clause	Requirement + Test	Result - Remark	Verdict
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G.5.3.2	TABLE: transformers						P
Loc.	Tested insulation	Working voltage peak / V (5.4.1.8)	Working voltage rms / V (5.4.1.8)	Required electric strength (5.4.9)	Required clearance / mm (5.4.2)	Required creepage distance / mm (5.4.3)	Required distance thr. insul. (5.4.4)
T9102	Primary wire to secondary wire	444	257	AC 4000Vpeak	4.5	5.2	--
T9102	Primary wire to core	444	257	AC 4000Vpeak	4.5	5.2	--
T9102	Secondary wire to core	--	--	--	--	--	--
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T9102	Primary wire to secondary wire			AC 4000Vpeak	8.6	8.6	Bobbin 0,45mm used.
T9102	Primary wire to core			AC 4000Vpeak	8.6	8.6	Bobbin 0,45mm used.
T9102	Secondary wire to core			--	--	--	--
supplementary information:							
1. The constructions of all sources of T9102 are identical, only model designation, manufacturer, and the material of bobbin are different.							
2. Altitude correction factor for clearances for an altitude of 5000 m (based on IEC 60664-1:2007): 1.48.							

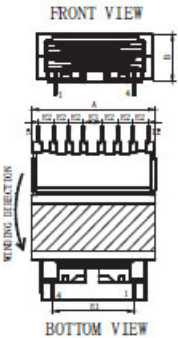
G.5.3.2	TABLE: transformers	P

Clause	Requirement + Test	Result - Remark	Verdict
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3. APPEARANCE & MECHANICAL CHARACTERISTICS

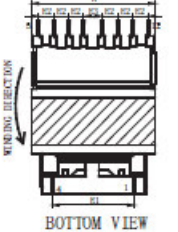
3.1. DIMENSIONS

FRONT VIEW

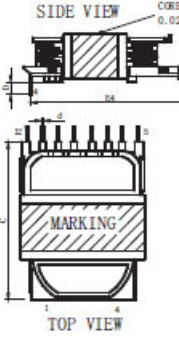


WINDING DIRECTION

BOTTOM VIEW



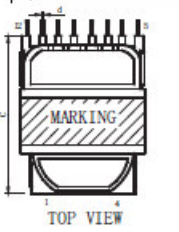
SIDE VIEW



CORE TAPE
0.025(+0.05/-0) * 0.25MM

MARKING

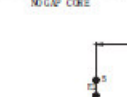
TOP VIEW



EPOXY



GAP CORE



NO GAP CORE



A=55.0±2.0 mm
B=21.0+0/-2.0 mm
C=62.0±2.0 mm
D=3.5±0.5 mm
E1=34.5±0.5 mm
E2=6.5±0.5 mm
E3=8.0±0.5 mm
E4=67.0±0.5 mm
d=SQ1.2±0.1 mm

a. 1 PCS POWER TRANS WEIGHT IS: 133.5 ±3g
b. 引线镀层结构图
c. MARKING 打印在产品TOP端。
d. 引脚挂PIN 圈数: 配线 ALL PIN 1.0Ts MIN
e. CORE GAP(单边) AT PIN SIDE; 中柱点胶
CORE与骨架接触处按图示4点位置点胶。
f. PIN 2,3 CUT OFF;

NOTE: 1. Lead Wire Composition
Steel 78%
Cu 22%





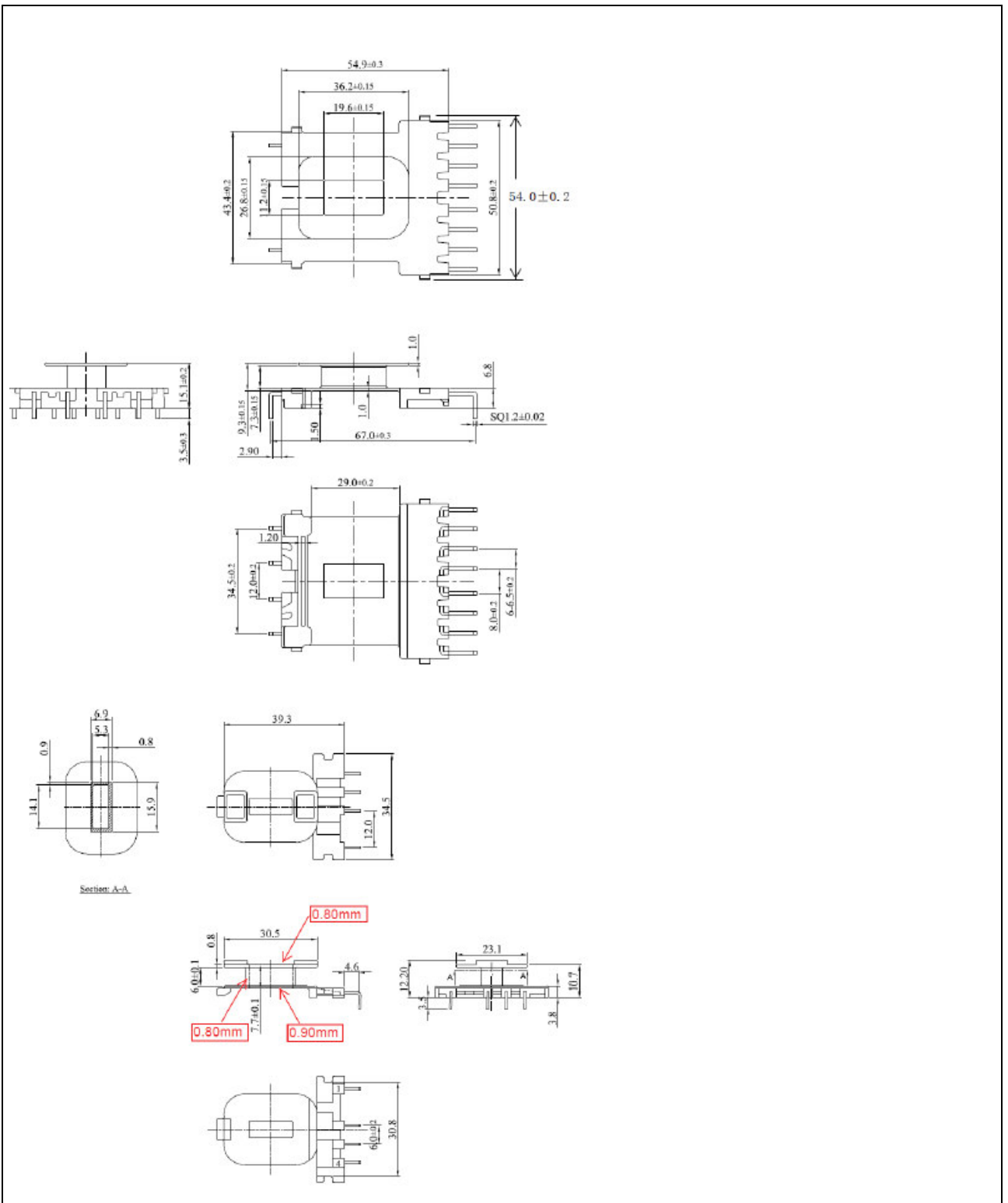
GAP CORE (BOTTOM SIDE)
EPOXY WEIGHT(E-500)
ALMOST 0.1g+/-0.05(REF)

GAP CORE (PIN SIDE)
EPOXY WEIGHT(E-500)
ALMOST 0.1g+/-0.05(REF)

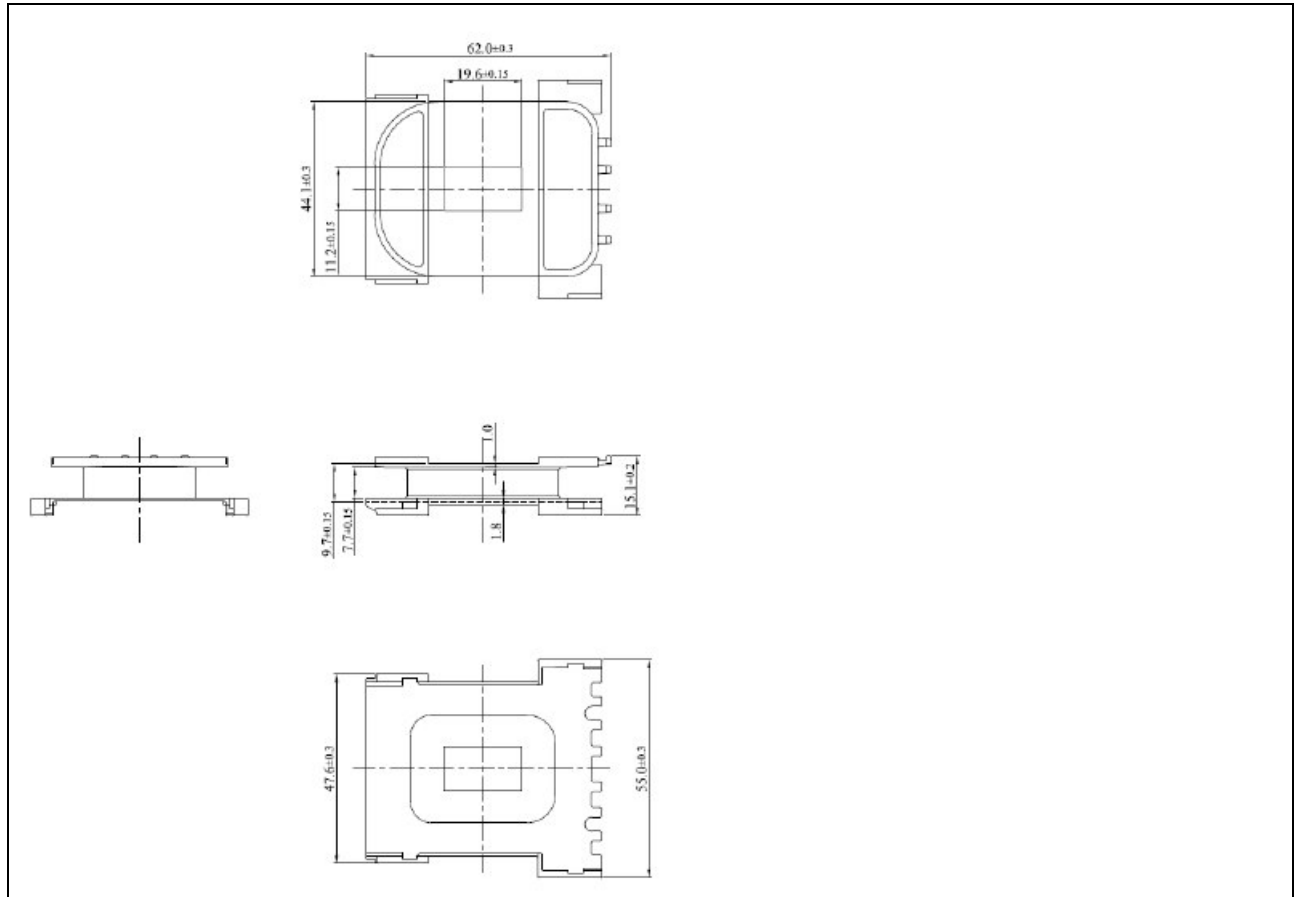
平面 CORE (TOP SIDE)
EPOXY WEIGHT(E-500)
ALMOST 0.1g+/-0.05(REF)

Rev. 0

Clause	Requirement + Test	Result - Remark	Verdict
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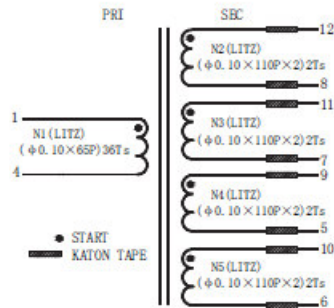


Clause	Requirement + Test	Result - Remark	Verdict
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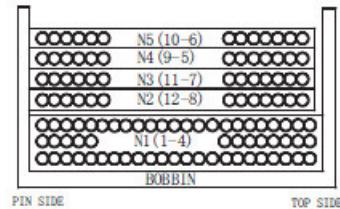
Clause	Requirement + Test	Result - Remark	Verdict
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3.4. SCHEMATIC:



PIN	Tube length
5, 6, 7, 8, 9, 10, 11, 12	12mm MIN

3.5. WINDING CONSTRUCTION:



Note:

- 1.) PIN5,6,7,8,9,10,11,12 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	$\phi 0.10\text{mm} \times 65$	LITZ	36	CLOSE	/
2	N2	12-8	$\phi 0.10\text{mm} \times 110 \times 2$	LITZ	2	CLOSE	/
3	N3	11-7	$\phi 0.10\text{mm} \times 110 \times 2$	LITZ	2	CLOSE	/
4	N4	9-5	$\phi 0.10\text{mm} \times 110 \times 2$	LITZ	2	CLOSE	/
5	N5	10-6	$\phi 0.10\text{mm} \times 110 \times 2$	LITZ	2	CLOSE	/

3.7. Winding Direction: It Is anti-clockwise From bottom Side

Description of design:

(a) Bobbin

Primary/input pins	1-4
Secondary/output pins	12-8, 11-7, 9-5, 10-6
Material (manufacturer, type, ratings)	See table 4.1.2
Thickness (mm)	Min. 0.45mm.

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;	No such consideration for the purpose of personal music players.	N/A

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

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete song. In this case, T becomes the duration of the song. NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song does not exceed the required limit. For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB.		
10.6.2.2	RS1 limits (to be superseded, see 10.6.3.2) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 85 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1. – 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.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed “programme simulation noise” as described in EN 50332-1.		
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		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1.		
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		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	of an ordinary person to an RS2 source without intentional physical action from the ordinary person and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off. The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time. NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed. NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off. A skilled person shall not be unintentionally exposed to RS3.		
10.6.5	Requirements for dose-based systems		N/A
10.6.5.1	General requirements Personal music players shall give the warnings as provided below when tested according to EN 50332-3, using the limits from this clause. The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical 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		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	ances, etc.		
10.6.5.2	Dose-based warning and requirements When a dose of 100 % <i>CSD</i> is reached, and at least at every 100 % further increase of <i>CSD</i>, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1. The warning shall at least clearly indicate that listening above 100 % <i>CSD</i> leads to the risk of hearing damage or loss.		N/A
10.6.5.3	Exposure-based requirements With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at. The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3. The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster. Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface. NOTE In case the source is known not to be music (or test signal), the EL may be disabled.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input With 94 dB L_{Aeq} acoustic pressure output of the listening device, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the input voltage of the listening device when playing the fixed “programme simulation noise” as described in EN 50332-1 shall be ≥ 75 mV. NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.		N/A
10.6.6.2	Corded listening devices with digital input With any playing device playing the fixed “programme simulation noise” described in EN 50332-1, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.3	Cordless listening devices In cordless mode, – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.4	Measurement method <i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i>		N/A
3	Modification to the whole document		

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IEC62368_1E ATTACHMENT							
Clause	Requirement + Test			Result - Remark		Verdict	
	Delete all the “country” notes in the reference document according to the following list:						P
	0.2.1	Note 1 and 2	1	Note 4 and 5	3.3.8.1	Note 2	
	3.3.8.3	Note 1	4.1.15	Note	4.7.3	Note 1 and 2	
	5.2.2.2	Note	5.4.2.3.2.2 Table 12	Note c	5.4.2.3.2.4	Note 1 and 3	
	5.4.2.3.2.4 Table 13	Note 2	5.4.2.5	Note 2	5.4.5.1	Note	
	5.4.10.2.1	Note	5.4.10.2.2	Note	5.4.10.2.3	Note	
	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3 and 4	
	5.6.8	Note 2	5.7.6	Note	5.7.7.1	Note 1 and Note 2	
	8.5.4.2.3	Note	10.2.1 Table 39	Note 3 and 4 and 5	10.5.3	Note 2	
	10.6.1	Note 3	F.3.3.6	Note 3	Y.4.1	Note	
Y.4.5	Note						
4	Modification to Clause 1						
1	Add the following note: <i>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.</i>			Added.		P	

IEC62368_1E ATTACHMENT			
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

IEC62368_1E ATTACHMENT			
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

IEC62368_1E ATTACHMENT			
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.	P

IEC62368_1E ATTACHMENT			
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 during manufacturing, using a test voltage of 1,5 kV.	No TNV circuits.	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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
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

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.2.1	Ireland and United Kingdom After the indent for pluggable equipment type A , the following is added: – the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.	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 mm ² to 1,5 mm ² 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

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	Not such system.	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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 jordtilkoplede utstyr – og er tilkoplede et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.” Translation to Swedish: “Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.		

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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	The power supply cord has not been checked, see GENERAL PRODUCT INFORMATION.	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.	The power supply cord has not been checked, see GENERAL PRODUCT INFORMATION.	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)							
	<table><tr><th rowspan="2">Type of flexible cord</th><th colspan="2">Code designations</th></tr><tr><th>IEC</th><th>CENELEC</th></tr></table>		Type of flexible cord	Code designations		IEC	CENELEC	N/A
	Type of flexible cord	Code designations						
		IEC	CENELEC					
	PVC insulated cords							
	Flat twin tinsel cord	60227 IEC 41	H03VH-Y					
	Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F					
	Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F H05VVH2-F					
	Rubber insulated cords							
	Braided cord	60245 IEC 51	H03RT-F					
	Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F					
	Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F					
	Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F					
	Cords having high flexibility							
	Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H					
	Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H					
	Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H					
	Cords insulated and sheathed with halogen-free thermoplastic compounds							
Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F						
Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F						

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 U.S.A. AND CANADA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to : CSA/UL 62368-1:2019			
TRF template used : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : US_CA_ND_IEC62368_1E			
Attachment Originator : UL(US)			
Master Attachment : Dated 2021-02-04			
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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.	Class III equipment.	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.	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
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

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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 maximum current, or maximum voltage and nominal current output for each connection point. Where multiple connection points have the same rating, a single label is permitted to be used.	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
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

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.3.2)	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified.	No terminals for permanent wiring.	N/A
	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.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 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

Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Overall front view (Horizontal) (for P555, MA551)



Overall front view (Horizontal) (with external speaker) (for P555, MA551)



Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Overall rear view (Horizontal) (with external speaker) (for P555, MA551)



Overall rear view (Horizontal) (Minimum height) (for P555, MA551)



Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Overall rear view (Horizontal) (Maximum height) (for P555, MA551)



Overall front view (Vertical) (for P555, MA551)



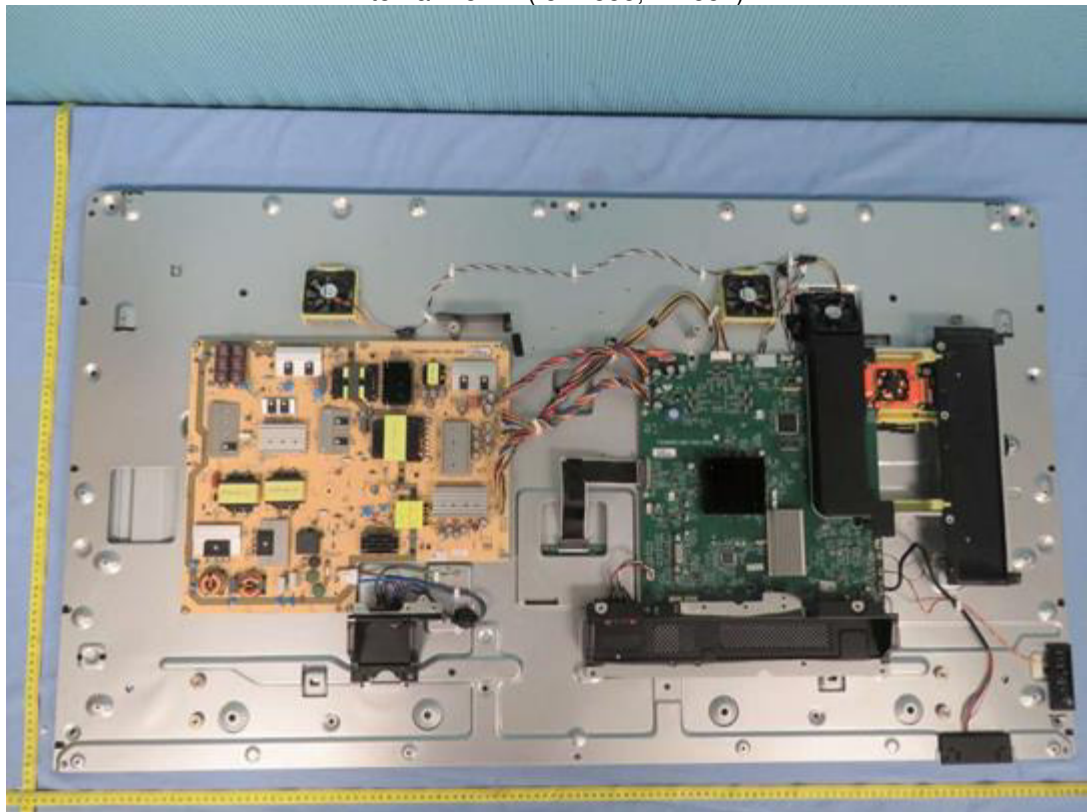
Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Overall rear view (Vertical) (for P555, MA551)



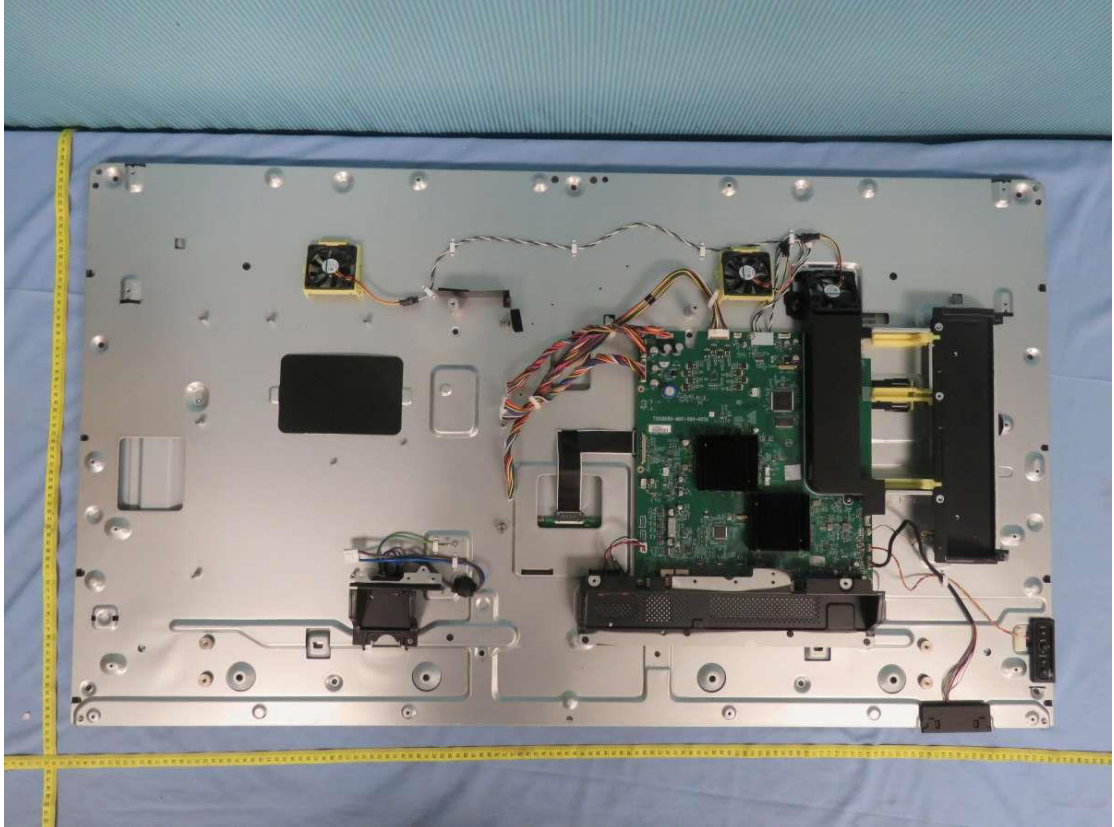
Internal view 1 (for P555, MA551)



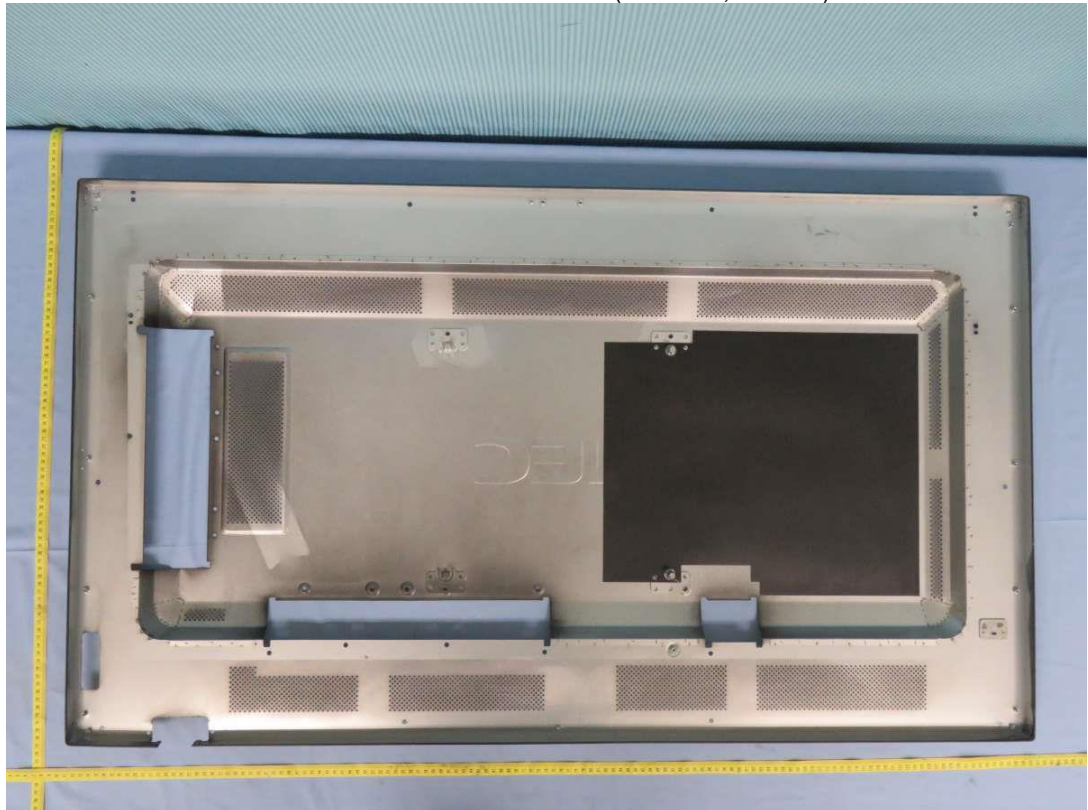
Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Internal view 2 (for P555, MA551)



Metal enclosure internal view (for P555, MA551)



Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Overall front view (Horizontal) (with external speaker) (for P495, MA491)



Overall rear view (Horizontal) (with external speaker) (for P495, MA491)



Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Overall front view (Vertical) (for P495, MA491)



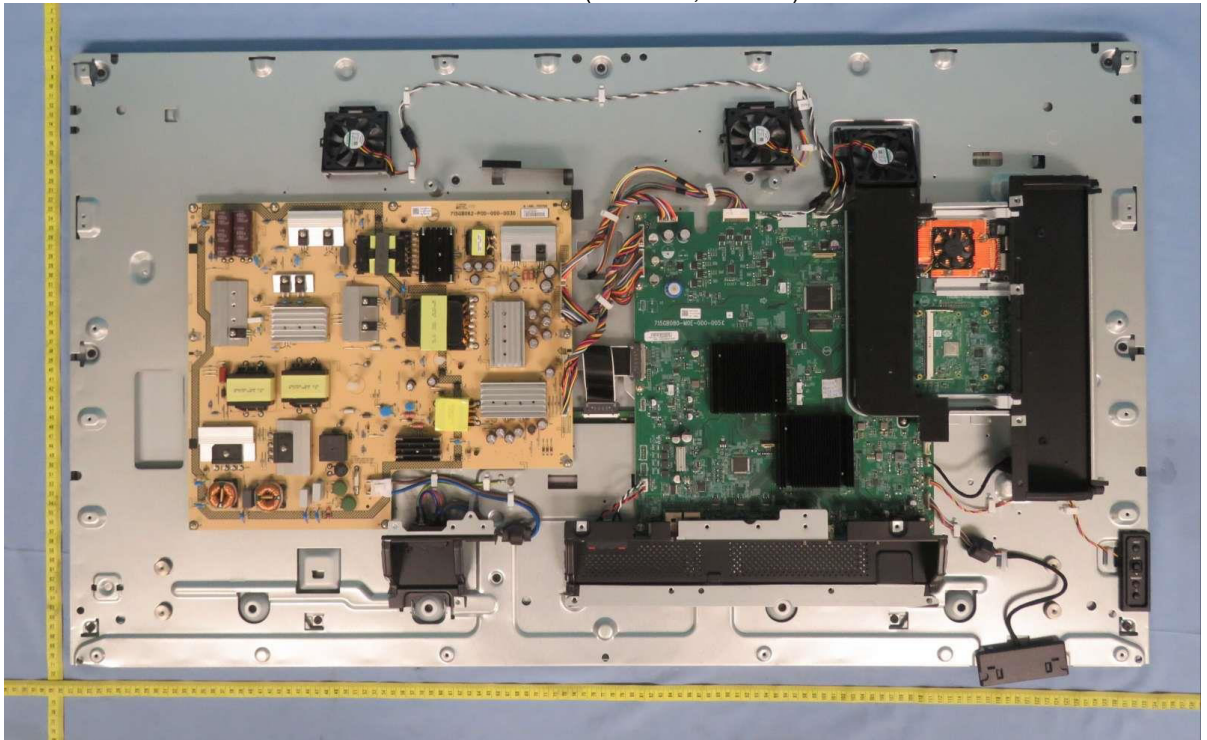
Overall rear view (Vertical) (for P495, MA491)



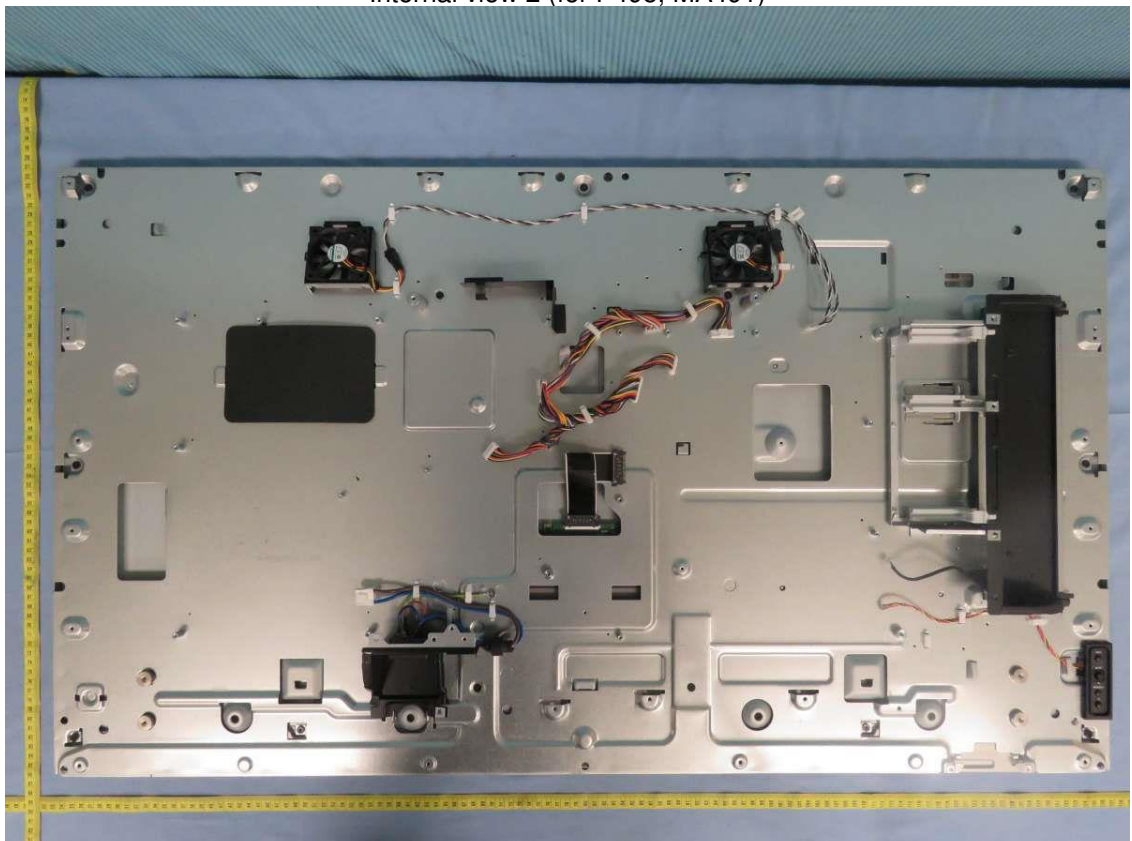
Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Internal view 1 (for P495, MA491)



Internal view 2 (for P495, MA491)



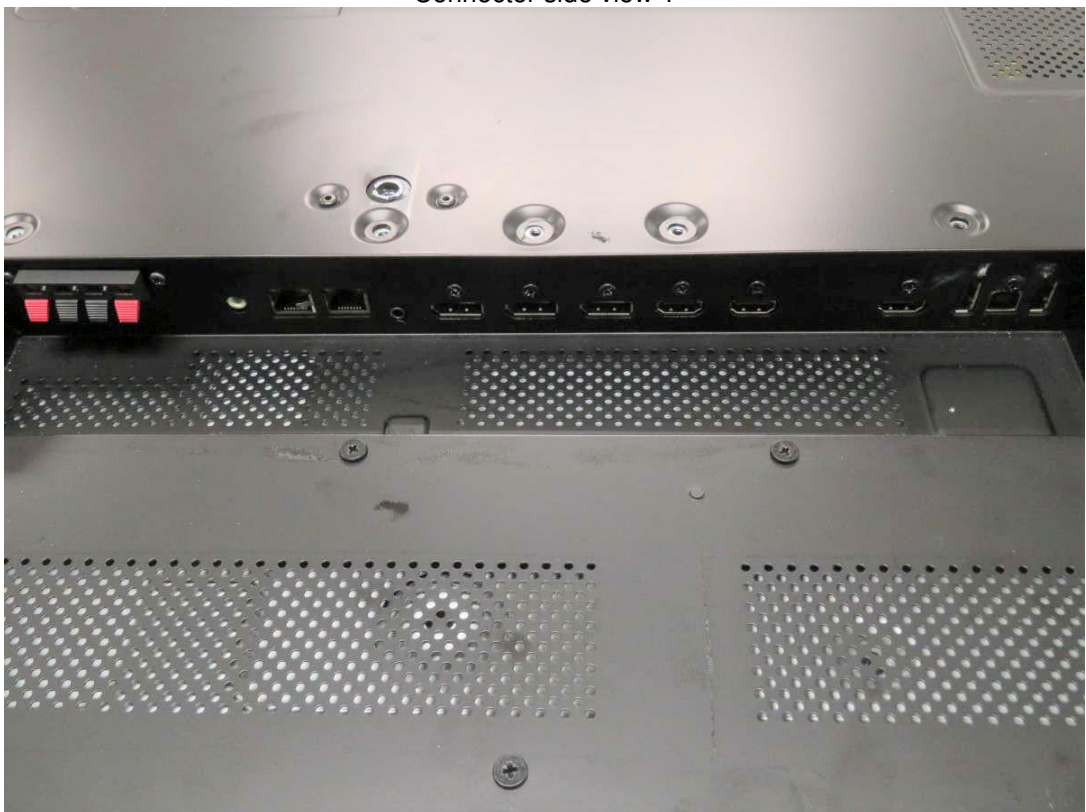
Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Metal enclosure internal view (for P495, MA491)



Connector side view 1



Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Connector side view 2 (without SDM card and compute module)



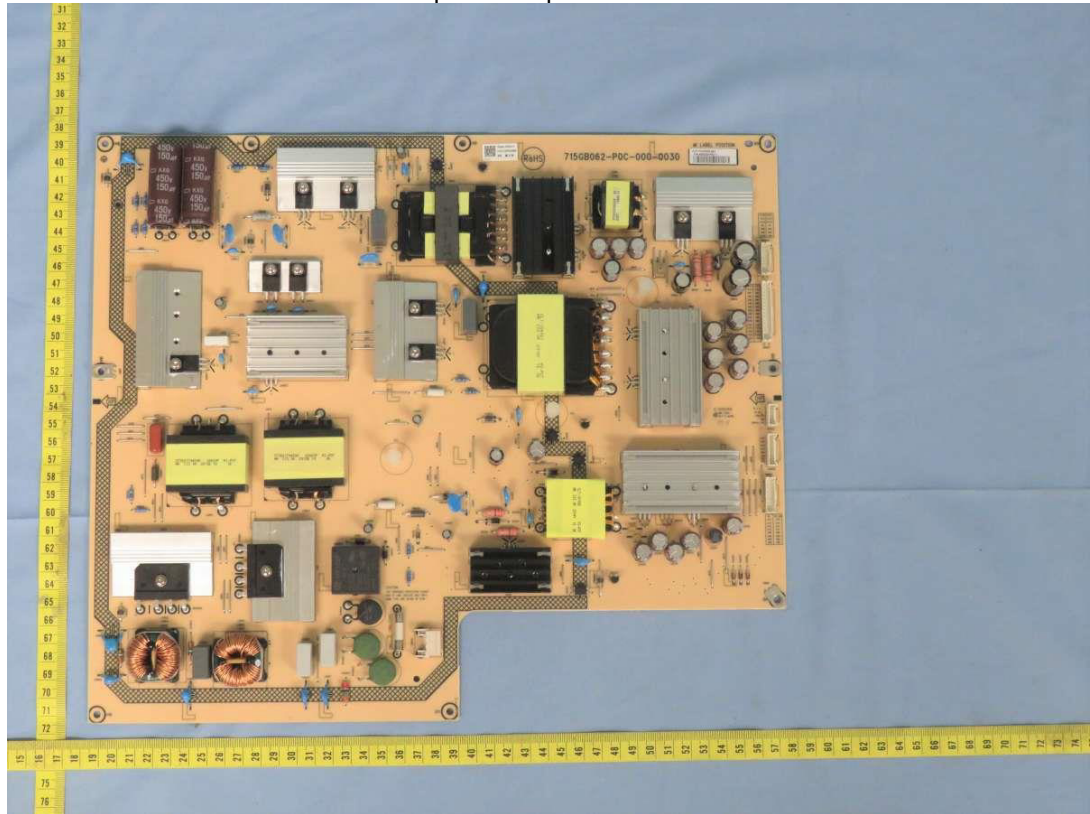
Connector side view 3 (with SDM card)



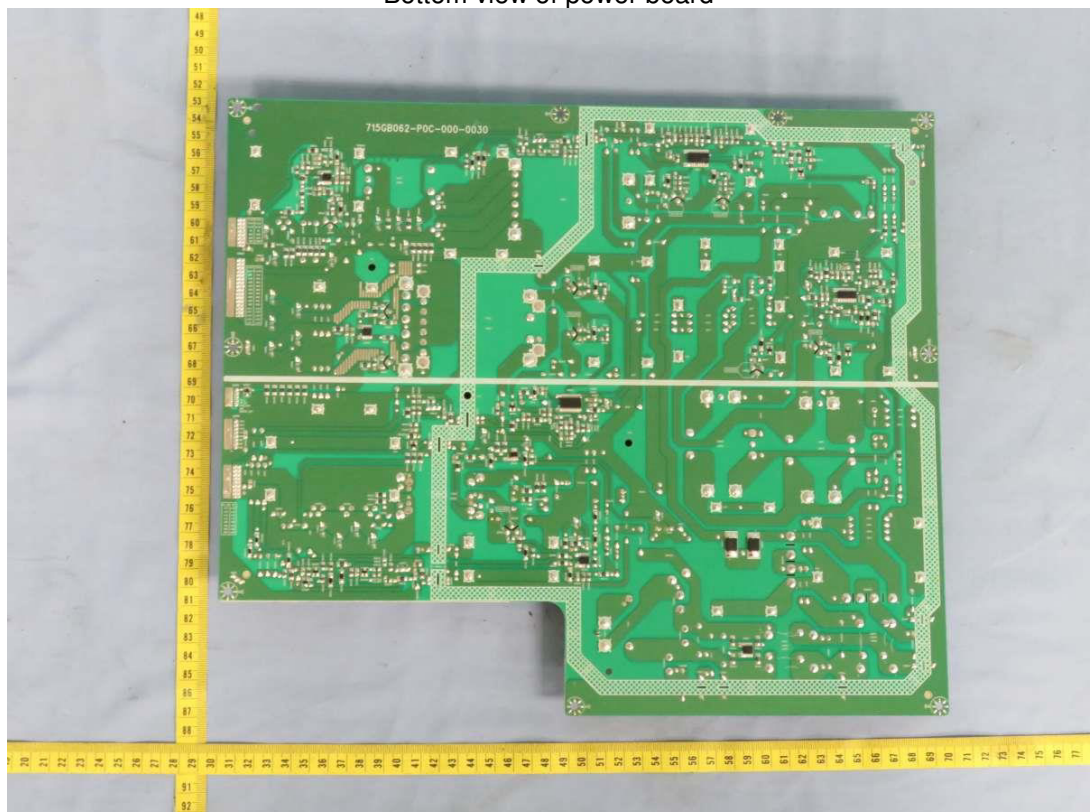
Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Top view of power board



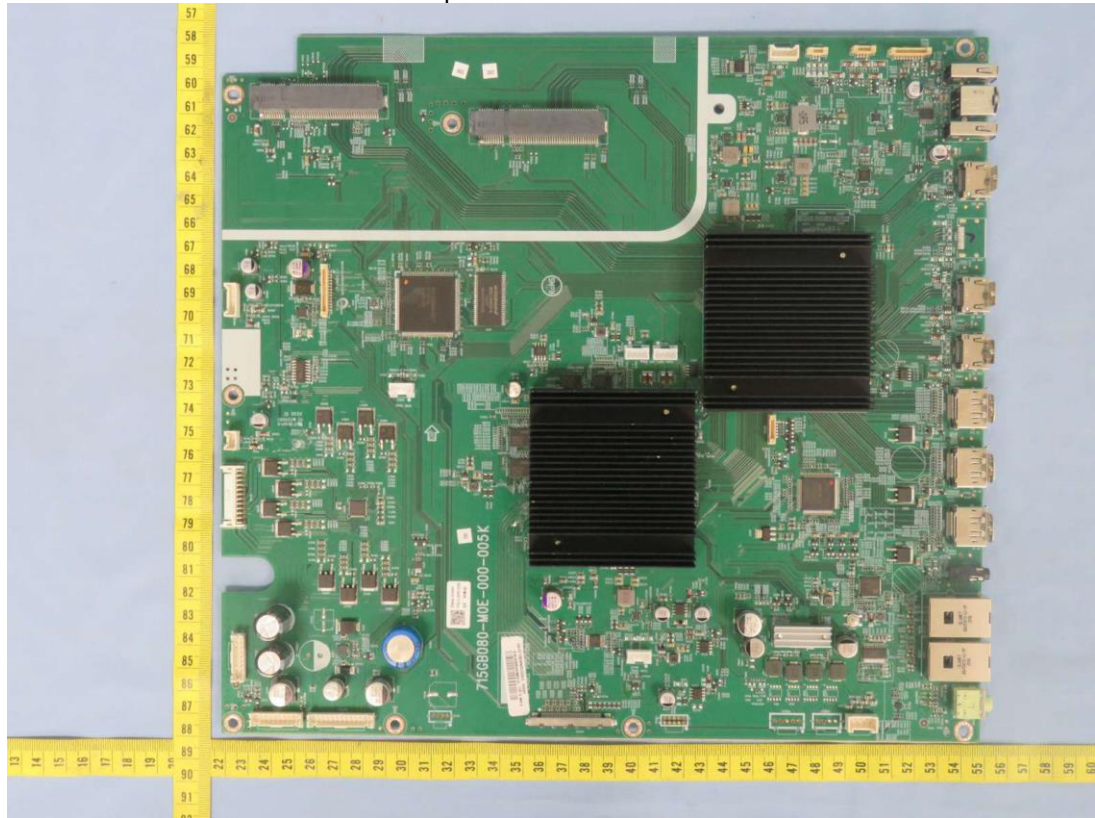
Bottom view of power board



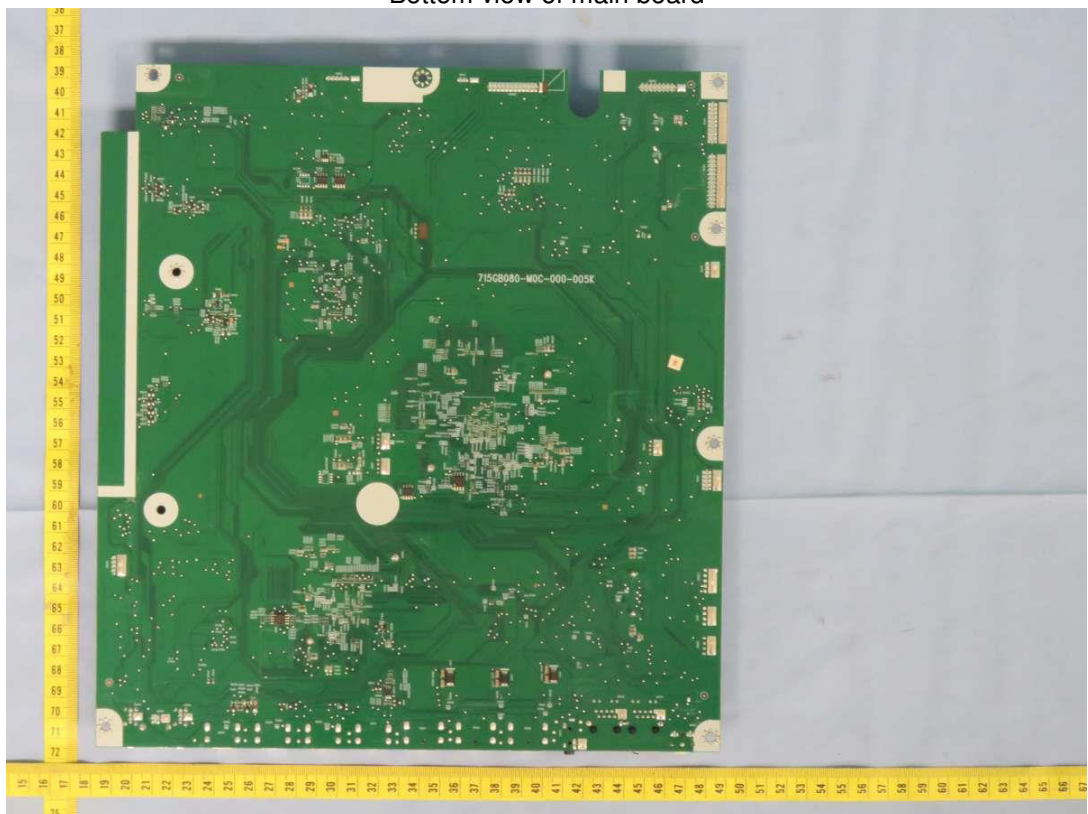
Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Top view of main board



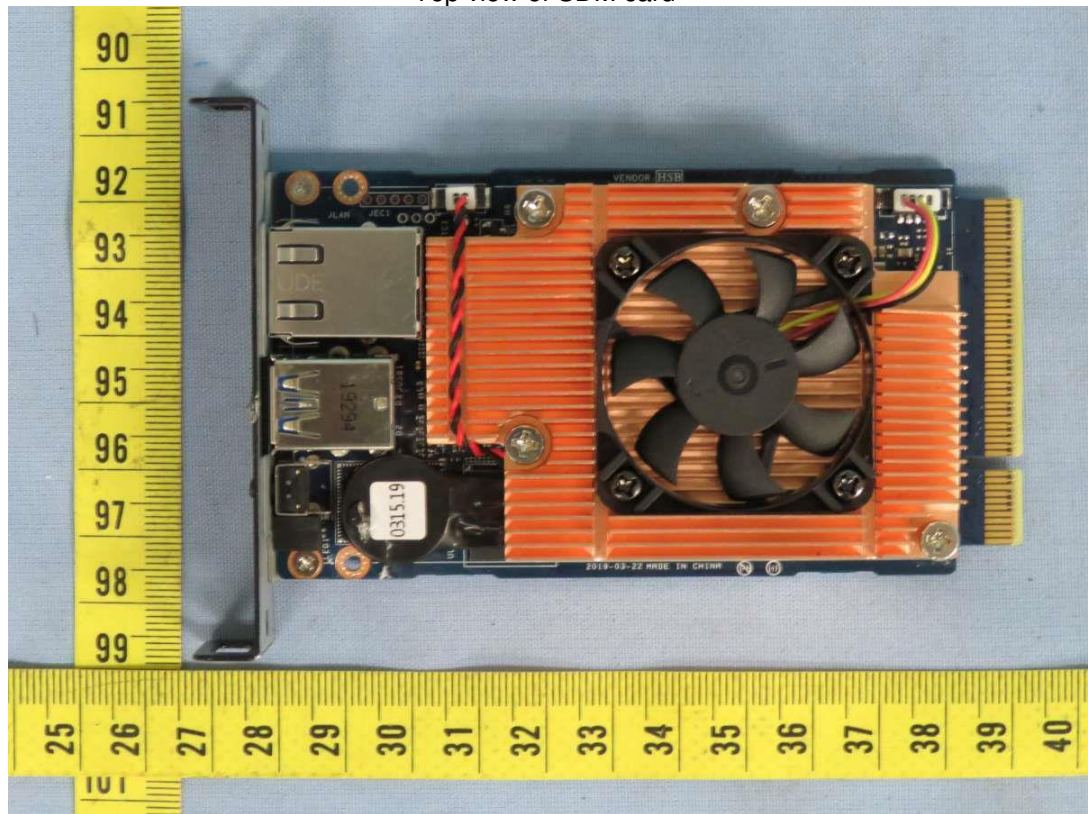
Bottom view of main board



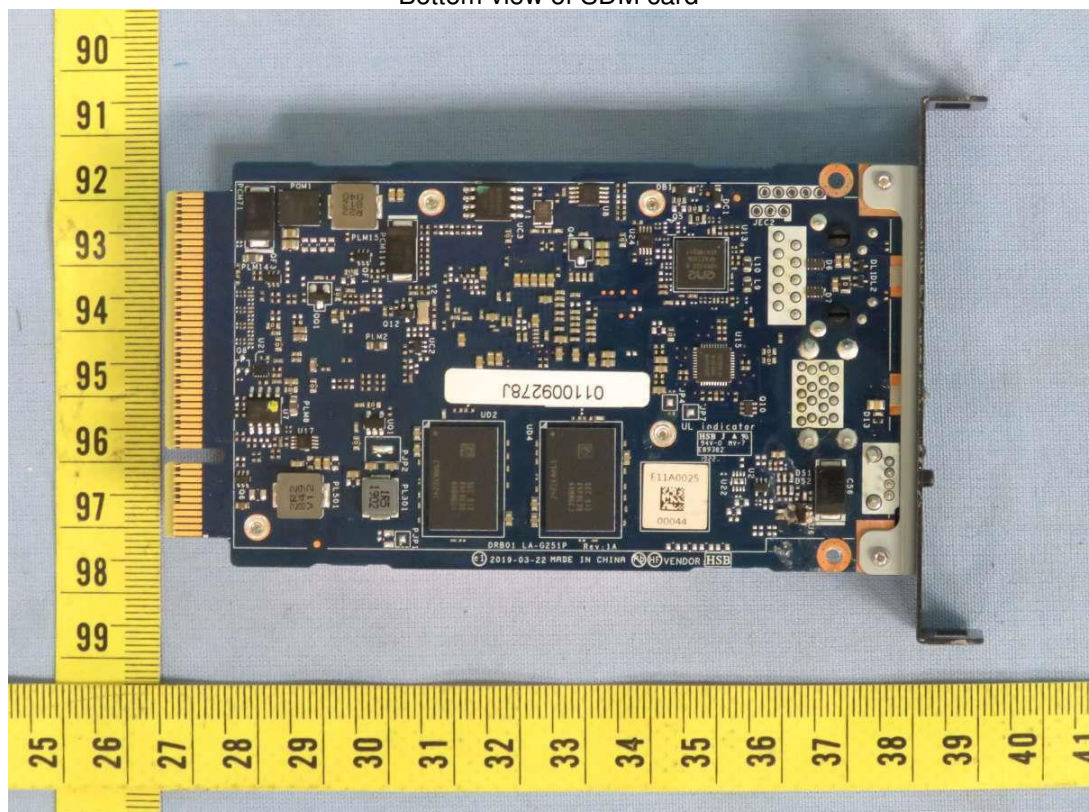
Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Top view of SDM card



Bottom view of SDM card



Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Base stand



AC inlet and switch view



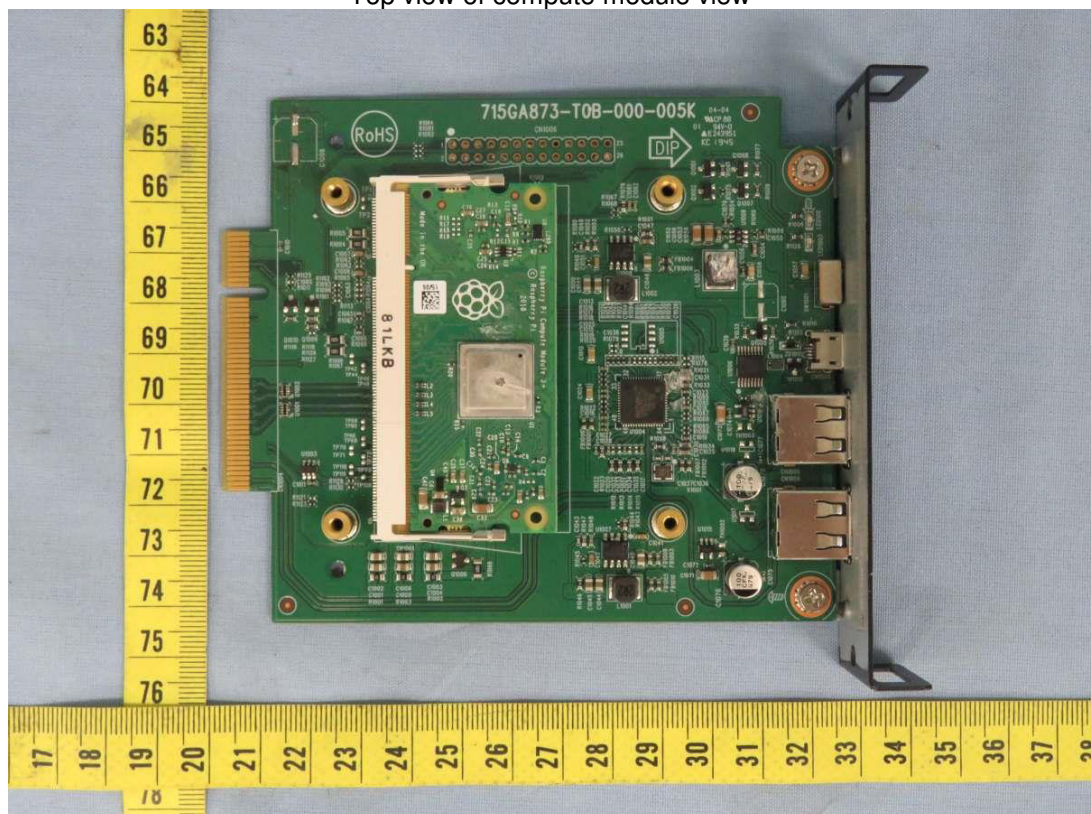
Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Connector side view (with SDM card and compute module)



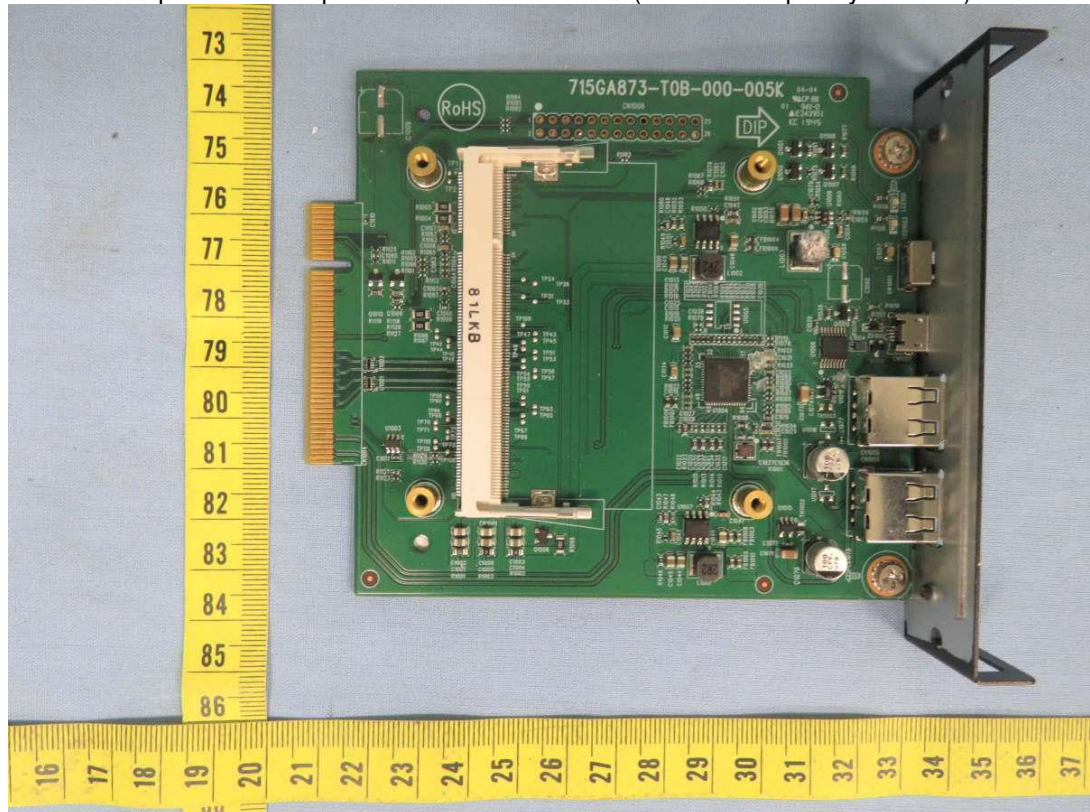
Top view of compute module view



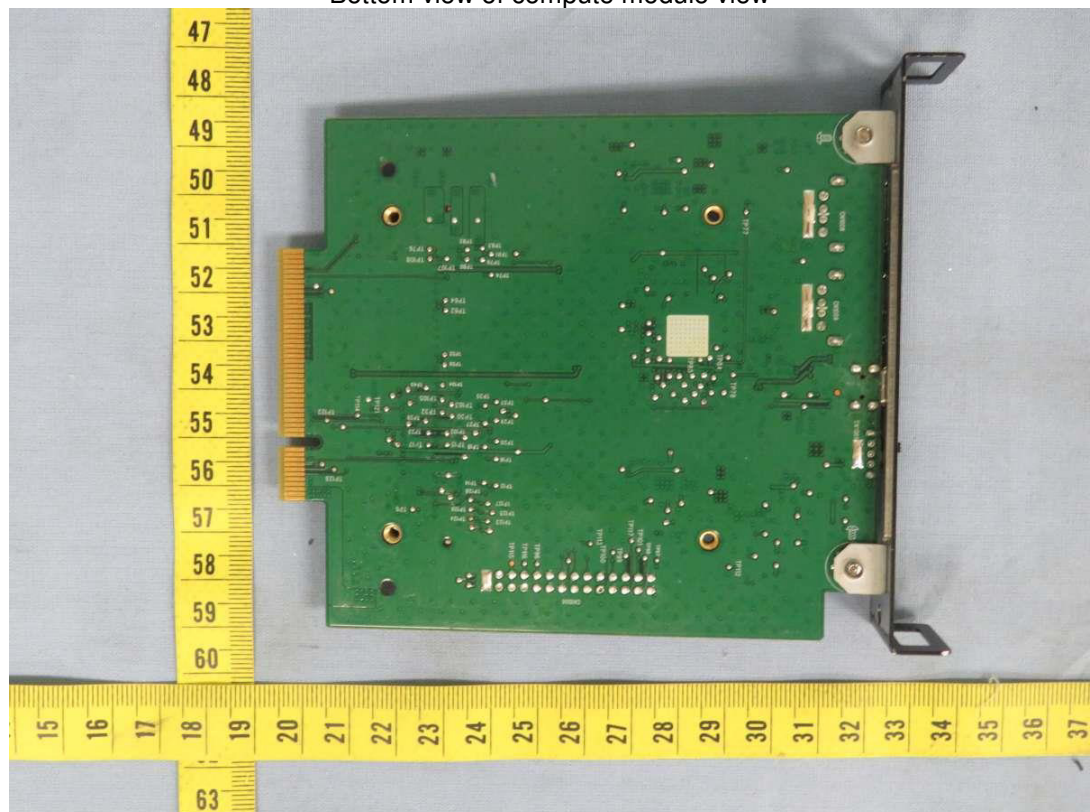
Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Top view of compute module if board view (remove Raspberry Pi Linux)



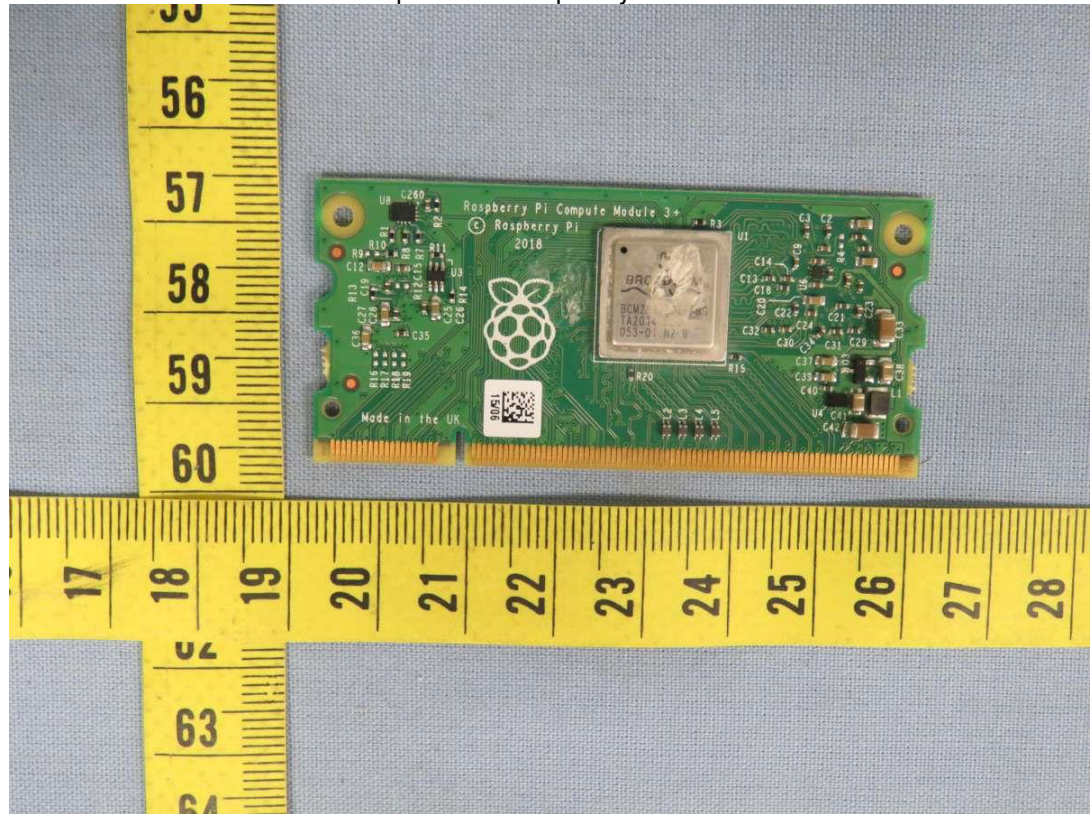
Bottom view of compute module view



Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Top view of Raspberry Pi Linux



Bottom view of Raspberry Pi Linux

