

**IECEE**

TM

Ref. Certif. No.

JPTUV-112101-M1

**IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT
(IECEE) CB SCHEME****CB TEST CERTIFICATE**

Product

LCD Monitor

Name and address of the applicant

Top Victory Electronics (Taiwan) Co., Ltd.
10F., No. 230, Liancheng Rd.
Zhonghe Dist., New Taipei City, 23553 Taiwan

Name and address of the manufacturer

NEC Display Solutions, Ltd.
4-28 Mita 1-chome, Minato-ku
Tokyo, 108-0073 Japan

Name and address of the factory

See additional page(s)

Ratings and principal characteristics

AC 100-240V; 50/60Hz; 1) 3.3-1.4A, 2) 2.8-1.2A, 3) 3.2-1.3A,
4) 2.7-1.1A; Class I

Trademark (if any)

NEC

Customer's Testing Facility (CTF) Stage used

N/A

Model / Type Ref.

1) P555, 2) MA551, 3) P495, 4) MA491

Additional information (if necessary may
also be reported on page 2)For model differences, refer to the test report.
Re-issue of JPTUV-112101 dated 03.08.2020,
due to first modification.A sample of the product was tested and
found to be in conformity withIEC 60950-1:2005+A1+A2
See Test Report for National DifferencesAs shown in the Test Report Ref. No. which
forms part of this Certificate

60395974 002

This CB Test Certificate is issued by the National Certification Body

TÜV Rheinland Japan Ltd.
Global Technology Assessment Center
4-25-2 Kita-Yamata, Tsuzuki-ku
Yokohama 224-0021, Japan
Phone + 81 45 914-3888
Fax + 81 45 914-3354
Mail: info@jpn.tuv.com
Web : www.tuv.com

Date: 2020-10-21

Signature:

Dipl.-Ing. F. Stoelzel

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

Additional information (if necessary)

Report Ref. No. : 60395974 002

Date: 2020-10-21

Signature:



Dipl.-Ing. F. Stoelzel

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. GeneTouch Corp.
No. 9 Neixi Rd.,
Luzhu Dist., Taoyuan City 33852
Taiwan
13. TPV Electronics (Fujian) Co., Ltd.
Optoelectronic Park,
Rongqiao Economic and
Technological Development Zone,
Fuqing City, 350301 Fujian, P.R. China
14. Treeview Co., Ltd.
106/29 Moo 8,
Sukhumvit Road, T.Banglamung,
A.Banglamung, Chonburi 20150
Thailand

Additional information (if necessary)

Report Ref. No. : 60395974 002

Date: 2020-10-21

Signature:



Dipl.-Ing. F. Stoelzel



Test Report issued under the responsibility of:



TEST REPORT
IEC 60950-1
Information technology equipment – Safety –
Part 1: General requirements

Report Number.: 60395974 002

Date of issue: 2020-10-07

Total number of pages.....: 41

**Name of Testing Laboratory
preparing the Report**.....: Audix Technology Corporation

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

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

Test specification:

Standard: IEC 60950-1:2005, AMD1:2009, AMD2:2013

Test procedure: CB Scheme

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

Test Report Form No.....: IEC60950_1G

Test Report Form(s) Originator.....: SGS Fimko Ltd

Master TRF: Dated 2019-07-02

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Equipment and Components (IECEE System). All rights reserved.**

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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:

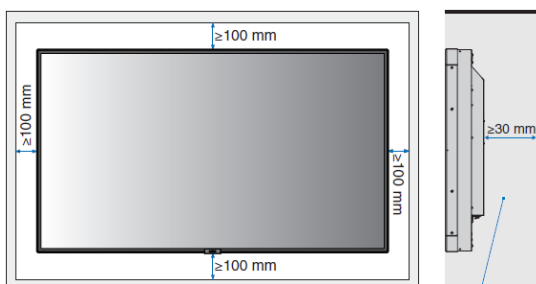
The test results presented in this report relate only to the object tested.

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	NEC	
Manufacturer.....	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):		
☒	CB Testing Laboratory:	Audix Technology Corporation
Testing location/ address		No. 53-11, Dingfu, Linkou Dist., New Taipei City, Taiwan, Chinese Taipei
Tested by (name, function, signature)		Thomas Lin (Project handle) 
Approved by (name, function, signature) ..		Ben Lu (Reviewer) 
☐	Testing procedure: CTF Stage 1:	
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		
☐	Testing procedure: CTF Stage 2:	
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name, function, signature) .		
Approved by (name, function, signature) ..		
☐	Testing procedure: CTF Stage 3:	
☐	Testing procedure: CTF Stage 4:	
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) .		
Approved by (name, function, signature) ..		
Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment): - Measurement Section (1 pages) - Photo documentation (7 pages) Total number of pages in each attachment is indicated in each individual attachment.	
Summary of testing:	
Tests performed (name of test and test clause): 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 1.6.2: 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 numbers. - The equipment provided wall mounting function and complied with loading test mentioned at sub-clause 4.2.10. (Assessment for tipping at 30 angles forward)	Testing location: All tests as described in Test Case and Measurement Sections were performed at the laboratory described on page 2.

- The equipment has been evaluated according to the specified by the manufacturer maximum operating altitude of 5000m (correction factor for clearances according to IEC 60664:1992+A1:2000+A2:2002 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.
- Heating test performed in wooden box as illustrate below:



- During the heating tests, all openings are blocked, system fans locked and SDM card fan locked.

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

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

Explanation of used codes: US = United States of America, CA = Canada, AU = Australia, NZ = New Zealand, JP = Japan.

☒ The product fulfils the requirements of EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013

For National Differences see corresponding attachment in report no. 60395974 001.

NEC MultiSync P495

LCD MONITOR
ЖК-МОНИТОР
液晶显示器 彩色显示器
모니터 (49인치 LCD 모니터)
(MODEL / Модель / 型号 / 型號 / 모델명: P495)

VOLTS/BOMER 輸入電圧 輸入電壓: 100-240V~
AMPERES/電流 電流: 3.2-1.3A
FREQUENCY/電圧周波数 工作頻率: 50/60Hz

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE THE ENCLOSURE, NO USER-SERVICEABLE PARTS INSIDE.
ATTENTION: AFIN DE PREVENIR DE TOUT CHOC ELECTRIQUE, NE PAS OUVRIR CE BOITIER, AUCUNE PIECE INTERIEURE NE PEUT-ETRE CHANGEE PAR L'UTILISATEUR.
ACHTUNG: ZUR TRENNUNG VOM NETZ IST DER NETZSTECKER AUS DER STECKDOSE ZU ZIEHEN, GERÄT NICHT ÖFFNEN, ES SIND KEINE DURCH DEN BENUTZER AUSWECHSELBAREN TEILE IM GERÄT VORHANDEN.
PRECAUCIÓN: PARA PREVENIR DESCARGA ELECTRICA, NO QUITÉ EL RECINTO, NINGUNAS PIEZAS DEL USUARIO SERVICABLE ADENTRO.
VAROITUS: LAITE ON LITETTÄVÄ SUOJAOSKESKETTIMALLA VARUSTETTUUN PISTORASAAHAN.
VARNING: APPARATEN SKALL ANSLUTAS TILL JORDAT UTÅG.
ADVARSEL: APPARATET MÅ TILKOPLES JORDET STIKKONTAKT.
ADVARSEL: APPARATETS STIKKPROP SKAL TILSLUTTES EN STIKKONTAKT MED JORD SOM GIVER FORBINDELSE TIL STIKPROPPENS JORD.
△注意: 請勿打開外蓋, 小心高壓電击, 機內並無用戶配件。
△注意: 請勿打開外蓋, 小心高壓電击, 機內並無用戶配件。
△警告: 使用前請先斷電。
사용상 주의사항: 강전력의 위험 및 제품의 손상이 발생할 수 있으므로 제품의 커버를 열지 마십시오.
인용 서비스 센터 전화 번호: 080-023-4155 (호성ITX주식회사)
* 본 제품의 전파발생은 국내 규정 내에서 적절한 대책으로만 사용되어야 합니다.
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 UNDESIRABLE OPERATION.

For Japan only
警告
△注意: 電源プラグの抜き差しは、必ず電源を切った状態で行ってください。
△注意: 電源プラグの抜き差しは、必ず電源を切った状態で行ってください。
電源コードのケーブルと電源プラグの間に電圧が掛かる場合があります。
△注意: 電源プラグの抜き差しは、必ず電源を切った状態で行ってください。
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UL E135689 LISTED US I.T.E. 1KB1
CE EAC ENEC FC ULE
R33037 FORIS
HDMI
Landscape
Portrait
Brand contact:
NEC Display Solutions, Ltd.
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28号
日本国東京都港区三田一丁目4番28号
4-28, Mita 1-chome, Minato-ku, Tokyo, Japan
Сделано в Китае
MADE IN CHINA 中國製造 中國製造
生產廠: 福建聯華電子有限公司
總代理: 福建聯華電子有限公司
生產地址: 福建省晉江經濟技術開發區
изготовитель / 製造:
TPV Electronics (Fujian) Co., Ltd.

NEC MultiSync MA491

LCD MONITOR
ЖК-МОНИТОР
液晶显示器 彩色显示器
모니터 (49인치 LCD 모니터)
(MODEL / Модель / 型号 / 型號 / 모델명: MA491)

VOLTS/BOMER 輸入電圧 輸入電壓: 100-240V~
AMPERES/電流 電流: 2.2-1.1A (1.2 A FOR MEXICO)
FREQUENCY/電圧周波数 工作頻率: 50/60Hz

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE THE ENCLOSURE, NO USER-SERVICEABLE PARTS INSIDE.
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PRECAUCIÓN: PARA PREVENIR DESCARGA ELECTRICA, NO QUITÉ EL RECINTO, NINGUNAS PIEZAS DEL USUARIO SERVICABLE ADENTRO.
VAROITUS: LAITE ON LITETTÄVÄ SUOJAOSKESKETTIMALLA VARUSTETTUUN PISTORASAAHAN.
VARNING: APPARATEN SKALL ANSLUTAS TILL JORDAT UTÅG.
ADVARSEL: APPARATET MÅ TILKOPLES JORDET STIKKONTAKT.
ADVARSEL: APPARATETS STIKKPROP SKAL TILSLUTTES EN STIKKONTAKT MED JORD SOM GIVER FORBINDELSE TIL STIKPROPPENS JORD.
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인용 서비스 센터 전화 번호: 080-023-4155 (호성ITX주식회사)
* 본 제품의 전파발생은 국내 규정 내에서 적절한 대책으로만 사용되어야 합니다.
CAN ICES-3(B) / NMB-3(B)
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UL E135689 LISTED US I.T.E. 1KB1
CE EAC ENEC FC ULE
R33037 FORIS
HDMI
Landscape
Portrait
Brand contact:
NEC Display Solutions, Ltd.
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28号
日本国東京都港区三田一丁目4番28号
4-28, Mita 1-chome, Minato-ku, Tokyo, Japan
Сделано в Китае
MADE IN CHINA 中國製造 中國製造
生產廠: 福建聯華電子有限公司
總代理: 福建聯華電子有限公司
生產地址: 福建省晉江經濟技術開發區
изготовитель / 製造:
TPV Electronics (Fujian) Co., Ltd.

Test item particulars.....:	
Equipment mobility.....:	☐ movable ☐ hand-held ☐ transportable ☒ stationary ☒ for building-in (when installed within a wooden box which provided by the manufacture) ☐ direct plug-in
Connection to the mains.....:	☒ pluggable equipment ☒ type A ☐ type B ☐ permanent connection ☒ detachable power supply cord ☐ non-detachable power supply cord ☐ not directly connected to the mains
Operating condition.....:	☒ continuous ☐ rated operating / resting time:
Access location	☒ operator accessible ☐ restricted access location
Over voltage category (OVC)	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other: not directly connected to the mains
Mains supply tolerance (%) or absolute mains supply values	±10
Tested for IT power systems	☒ Yes ☐ No
IT testing, phase-phase voltage (V)	230 for Norway
Class of equipment	☒ Class I ☐ Class II ☐ Class III ☐ Not classified
Considered current rating of protective device as part of the building installation (A)	16 (20 for North America)
Pollution degree (PD)	☐ PD 1 ☒ PD 2 ☐ PD 3
IP protection class	IP30
Altitude during operation (m)	Up to 5000
Altitude of test laboratory (m)	Less than 2000
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: 2020-08-18

Date (s) of performance of tests: 2020-09-07 to 2020-09-27

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 IEC60950:	
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) Treeview Co., Ltd.
106/29 Moo 8, Sukhumvit Road, T.Banglamung,
A.Banglamung, Chonburi 20150 Thailand
- 12) TPV Technology (Thailand) Co., Ltd.
No.267 Mu7, Tha Tum Sub- District, Si Maha
Pho District, Prachin Buri Province Thailand
- 13) GeneTouch Corp.
No. 9 Neixi Rd., Luzhu Dist., Taoyuan City
33852 Taiwan
- 14) TPV Electronics (Fujian) Co., Ltd.
Optoelectronic Park, Rongqiao Economic and
Technological Development Zone, Fuqing City,
350301 Fujian, P.R. China

General product information:

Refer to Report No. 60395974 001.

The equipment consists of the following critical components:

- LCD panel (LED backlight type)
- Building-in type non-approved switching power supply board
- 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)
- Key control board (secondary circuit)
- IR board (secondary circuit)
- Metal enclosure
- Metal cover for AC inlet and I/O port
- Plastic cover for IR board and Key control board
- Base stand (optional)
- System DC fan x3 (optional)
- SDM card (with USB 3.0 x2, RJ45 x1) (optional)
- External speaker : SP-TF1 (optional)
- **compute module (with USB 2.0 port x2, micro USB x1) (optional)**

Users are allowed to replace internal of equipment to update SDM card only.

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)	

Description of change(s):

1. Add model name as P495 and MA491.
2. Add rating for new models.
3. Add mylar sheet, panel and metal enclosure for new models.
4. Add compute module for all models.
5. Modify P555 and MA551 rating.
6. Add power cord by client's request.
7. Add secondary source for internal fire barrier on top of main board.
8. Correct typing error of table 1.5.1, 2.2. 2.10.3, 2.10.5, 4.3.8, 4.5, 5.2, 5.3, C.2 in report (60395974 001)
9. Correct typing error of sub-clauses 1.6.4., 2.10.5.12, 3.4.6, in report (60395974 001)
10. Change heatsink (HS501) of main board.

Change	Testing	Comment
1, 2, 5	N/A	Refer to bold texts in copy of marking plate and model differences for detail.
3, 4	- Input test - SELV measurement - Limited power sources test - Grounding test - Humidity test - Stability test - Mechanical test - Loading test - Handle test - Heating test - Hi-Pot test - Fault condition test - Construction check	For results, see appended tables. For new sources, see appended table 1.5.1. For new construction detail, refer to photo documentation.
6, 7	N/A	For new sources, see appended table 1.5.1.
8, 9	N/A	Refer to bold texts in table 1.5.1, 2.2. 2.10.3, 2.10.5, 4.3.8, 4.5, 5.2, 5.3, C.2 for detail. Refer to bold texts in sub-clauses 1.6.4., 2.10.5.12, 3.4.6 for detail.
10	N/A	See photo for detail.

History of amendments and modifications:

Ref. No. 60395974 001, dated 2020-07-21 (original test report)

Ref. No. 60395974 002, dated 2020-10-07 (modification)

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**

Abbreviations used in the report:

- normal conditions	N.C.	- single fault conditions	S.F.C
- functional insulation	OP	- basic insulation	BI
- double insulation	DI	- supplementary insulation	SI
- between parts of opposite polarity	BOP	- reinforced insulation	RI

Indicate used abbreviations (if any)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1	GENERAL		P
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1.5	Components		P
1.5.1	General	See below.	P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	Components certified to IEC standards and/or their harmonized standards, are used within their ratings and are checked for correct application. Non-certified components are checked for correct application, used within their ratings, tested as part of the equipment and subjected to applicable tests of the component standard. Components, which no relevant IEC-Standard exists, are used within their ratings and are tested under the conditions occurring in the equipment.	P

1.6	Power interface		P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.4	Neutral conductor	Neutral is insulated from earth and body throughout the equipment and components rated accordingly.	P

1.7	Marking and instructions		P
1.7.1	Power rating and identification markings	See below.	P
1.7.1.1	Power rating marking	See copy of marking plate.	P
	Rated voltage(s) or voltage range(s) (V)	See copy of marking plate.	P
	Rated frequency or rated frequency range (Hz)	See copy of marking plate.	P
	Rated current (mA or A)	See copy of marking plate.	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark	See copy of marking plate.	P
	Model identification or type reference	See copy of marking plate.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	See below.	P
2.1.1.1	Access to energized parts		P
	Test by inspection	No access with test finger to any parts with only basic insulation to hazardous voltage. The test pin cannot touch hazardous voltage through any seams within the appliance.	P
	Test with test finger (Figure 2A)	See above.	P
	Test with test pin (Figure 2B)	See above.	P
	Test with test probe (Figure 2C)	No TNV circuit.	N/A
2.2	SELV circuits		P
2.2.1	General requirements	See below.	P
2.2.2	Voltages under normal conditions (V)	(see appended table 2.2)	P
2.2.3	Voltages under fault conditions (V)	(see appended table 2.2)	P
2.2.4	Connection of SELV circuits to other circuits	Complied with 2.2.2 and 2.2.3 and 2.4.3.	P
2.5	Limited power sources		P
	a) Inherently limited output	(see appended table 2.5)	P
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition	(see appended table 2.5)	P
	Max. output voltage (V), max. output current (A), max. apparent power (VA)	(see appended table 2.5)	—
2.6	Provisions for earthing and bonding		P
2.6.3.2	Size of protective earthing conductors	See below.	P
	Rated current (A), cross-sectional area (mm ²), AWG.....	Max. 3.3A, min. 0.75 mm ² , 18AWG.	—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)	(see appended table 2.6.3.4)	P
2.9	Electrical insulation		P
2.9.2	Humidity conditioning	Tested for 120hrs.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Relative humidity (%), temperature (°C)	95% R.H., 40°C.	—
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2.10	Clearances, creepage distances and distances through insulation		P
2.10.3	Clearances	See below.	P
2.10.3.1	General	Annex F is considered.	P
2.10.3.2	Mains transient voltages	See below.	P
	a) AC mains supply	2500 Vpk considered.	P
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.4	Creepage distances	See below.	P
2.10.4.1	General	Considered.	P
2.10.4.2	Material group and comparative tracking index	Material group IIIb assumed.	P
	CTI tests	See above.	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5.12	Wire in wound components	Triple insulated wire used in transformer (T9302)	P
	Two wires in contact inside wound component; angle between 45° and 90°	Tubing and tape used to relieve mechanical stress at crossover points.	P

3.2	Connection to a mains supply		P
3.2.5	Power supply cords		P
3.2.5.1	AC power supply cords	See appended table 1.5.1.	P
	Type	See appended table 1.5.1.	—
	Rated current (A), cross-sectional area (mm ²), AWG	Max. 3.3A, min. 0.75 mm ² , 18AWG.	—

3.4	Disconnection from the mains supply		P
3.4.6	Number of poles - single-phase and d.c. equipment	The disconnect device disconnects both poles simultaneously .	P

3.5	Interconnection of equipment		P
3.5.1	General requirements	See below.	P
3.5.2	Types of interconnection circuits	SELV and limited current circuits.	P
3.5.4	Data ports for additional equipment	See appended table 2.5.	P

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Clause	Requirement + Test	Result - Remark	Verdict

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		P
	Angle of 10°	The equipment does not fall over.	P

4.2	Mechanical strength		P
4.2.1	General	See below. After the tests, the equipment complies with the requirements of sub-clauses 2.1.1, 2.6.1, 2.10.	P
4.2.2	Steady force test, 10 N	10N applied to all components other than the parts serving as enclosure.	P
4.2.4	Steady force test, 250 N	After subjected 250N, no damage to the metal enclosure and panel.	P
4.2.5	Impact test	No hazard as result from the steel ball impact test to the external metal enclosure and panel.	P
	Fall test	See above.	P
	Swing test	See above.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.2.10	Wall or ceiling mounted equipment; force (N)	For P555, MA551: Add an additional force of 834.1N (3 times the mass of the unit and the mass is 28.37kg (with SDM card, external speaker, compute module and without base)) was applied to the unit with the VESA adaptor kit. (Assessment for tipping at 30 angles forward when during wall mount test) For P495, MA491: Add an additional force of 702.4N (3 times the mass of the unit and the mass is 23.89kg (with SDM card, external speaker, compute module and without base)) was applied to the unit with the VESA adaptor kit. (Assessment for tipping at 30 angles forward when during wall mount test) The unit withstood the load test without damages or breaks from the VESA adaptor kit.	P

4.3	Design and construction		P
4.3.1	Edges and corners	The edges and corners are rounded and smoothed.	P
4.3.2	Handles and manual controls; force (N)..... :	For M555, MA551: Two handles provided, each handle provide additional force 592.9N For M495, MA491: Two handles provided, each handle provide additional force 505.1N No loosen and no hazard results.	P
4.3.13	Radiation	See below.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.5.2	Light emitting diodes (LEDs)	The following parts are considered complied without tests: Indicating lights. Optocouplers. For LED backlight, the luminance is far less than 10000cd/m ² . With reference to sub clause 4.1 of IEC 62471:2006 no further test is necessary.	P

4.5	Thermal requirements		P
4.5.1	General	No exceeding temperature.	P
4.5.2	Temperature tests	See appended table 4.5.	P
	Normal load condition per Annex L	(See Annex L)	—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat	Phenolic material used without further test and primary connectors are IEC approval components.	P

4.6	Openings in enclosures		P
4.6.1	Top and side openings	See below.	P
	Dimensions (mm)	(see appended table 4.6.1 and 4.6.2)	—
4.6.2	Bottoms of fire enclosures	See below.	P
	Construction of the bottommm, dimensions (mm) ..	(see appended table 4.6.1 and 4.6.2)	—

5.2	Electric strength		P
5.2.1	General	See appended table 5.2.	P
5.2.2	Test procedure	Table 5B used.	P

5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	See appended table 5.3.	P
5.3.7	Simulation of faults	Complied.	P
5.3.9	Compliance criteria for abnormal operating and fault conditions	See below.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.9.1	During the tests	No fire propagated beyond the equipment, no molten metal emitted and no deformation of enclosure.	P
5.3.9.2	After the tests	Electric strength test made.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾	
LCD Panel (for P495, MA491)	LG Display	LD490***** (* can be 0-9, a-z, A-Z, /, \, +, - , • or blank)	48.50" TFT type, with LED backlight.	--	--	
Mylar sheet (near power board HS8602, between power board trace side and panel chassis, between power board component side and metal enclosure (type A and type B))	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC- 1860B, KLX FRPC-1870B	V-0, Thick min. 0.4mm, min. 80 degree C.	UL 94 Edition Number 6	UL	
-alt.	SUZHOU OMAI OPTICAL MATERIAL CO LTD	SE42B, SE42B- F	V-0, Thick min. 0.4mm, min. 80 degree C.	UL 94 Edition Number 6	UL	
-alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117, DFR117ECO, A, DFR117ECOB, DFR117ECOC	V-0, Thick min. 0.4mm, min. 80 degree C.	UL 94 Edition Number 6	UL	
-alt.	Sichuan Dongfang Insulating Material Co., Ltd.	DFR700, DFR700F	V-0, Thick min. 0.4mm, min. 80 degree C.	UL 94 Edition Number 6	UL	
-alt.	KUNSHAN DOBESTY OPTOELECTRO NIC MATERIALS CO LTD	PC9821B, PC9832B, PC9842B, DB98HD, DB98	V-0 or VTM-0, Thick min. 0.4mm, min. 80 degree C.	UL 94 Edition Number 6	UL	
Metal Enclosure (type A and type B) and Metal Cover	Interchangeable	Interchangeable	SGCC, thickness 0.6mm min.	--	--	

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Internal fire barrier on top of main board	LG CHEM LTD	LUPOY GN5001RF(T), LUPOY GN-5001RF(T), LUPOY GN5001TF(#), LUPOY GN-5001TF(#), LUPOY GN-5008HF(#), AF342(#), AF312T1,	Min. V-1.	UL 94 Edition Number 6	UL
-alt.	LOTTE CHEMICAL CORPORATION	VH-0810(+), VE-1890(+), VE-1890(+), VE-0812(+), VE-0819F, EN-1052(+), VH-0815(+), VH-819(+), HM-1100(+), NH-1017(p), NH-1000T(+)(&), NE-1030(+), LS-1159(r), LS-1159F, LS-1159SF, GC-1017	Min. V-1.	UL 94 Edition Number 6	UL
-alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-1000A	Min. V-1.	UL 94 Edition Number 6	UL
-alt.	KINGFA SCI & TECH CO LTD	HF-606, HF-626, FRABS-518, JH9606(M), FRHIPS-960	Min. V-1.	UL 94 Edition Number 6	UL
-alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H(#), TH7500(c), TH-7500F(#), TN-7500M(#)	Min. V-1.	UL 94 Edition Number 6	UL
-alt.	SAMYANG CORPORATION	210NHF(@), 210NHF	Min. V-1.	UL 94 Edition Number 6	UL

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
-alt.	CHI MEI CORPORATION	PC-540(Y)(a)	Min. V-1.	UL 94 Edition Number 6	UL
-alt.	GUO HENG(DONGGU AN) PLASTIC TECHNOLOGY CO LTD	YOUHE26(##)	Min. V-1.	UL 94 Edition Number 6	UL
Power cord set listed below by client's request					
Mains cord set (Saudi Arabia) (Optional)					
Plug	I-Sheng	SP-62	3A/5A/10A/13A, 250V~	BS 1363 SASO 2203:2018	CVC
-alt.	I-Sheng	SP-65	3A/5A/10A, 250V~	BS 1363 SASO 2203:2018	CVC
Cable	I-Sheng	H05VV-F	3 x 0.75mm ² 3 x 1.0mm ² 3 x 1.5mm ²	BS 1363 SASO 2203:2018	CVC
-alt.	I-Sheng	H05RR-F	3 x 0.75mm ²	BS 1363 SASO 2203:2018	CVC
-alt.	I-Sheng	H03VV-F	3 x 0.75mm ²	BS 1363 SASO 2203:2018	CVC
Supplementary information: 1. Provided evidence ensures the agreed level of compliance. See OD-CB2039. 2. In Optocoupler technical data column, where "Di" means distance through insulation. 3. Interchangeable components are components that may be substituted by equivalent technical data and like approved/certified components which will not impact the safety and function of the particular end product. 4. License available upon request.					

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	
1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
For P555 and MA551 with external speaker						
HDMI mode (without SDM card and compute module)						
90V/50Hz	2.79	--	251	F901	2.79	Maximum normal load
90V/60Hz	2.79	--	251	F901	2.79	Maximum normal load
100V/50Hz	2.45	3.3 or 2.8	244	F901	2.45	Maximum normal load
100V/60Hz	2.45	3.3 or 2.8	244	F901	2.45	Maximum normal load
240V/50Hz	1.05	1.4 or 1.2	242	F901	1.05	Maximum normal load
240V/60Hz	1.05	1.4 or 1.2	242	F901	1.05	Maximum normal load
264V/50Hz	0.98	--	240	F901	0.98	Maximum normal load
264V/60Hz	0.98	--	240	F901	0.98	Maximum normal load
Display mode (without SDM card and compute module)						
90V/50Hz	2.66	--	239	F901	2.66	Maximum normal load
90V/60Hz	2.66	--	239	F901	2.66	Maximum normal load
100V/50Hz	2.38	3.3 or 2.8	237	F901	2.38	Maximum normal load
100V/60Hz	2.38	3.3 or 2.8	237	F901	2.38	Maximum normal load
240V/50Hz	1.03	1.4 or 1.2	235	F901	1.03	Maximum normal load
240V/60Hz	1.03	1.4 or 1.2	235	F901	1.03	Maximum normal load
264V/50Hz	0.96	--	233	F901	0.96	Maximum normal load
264V/60Hz	0.96	--	233	F901	0.96	Maximum normal load
SDM mode (without compute module)						
90V/50Hz	1.84	--	165	F901	1.84	Maximum normal load
90V/60Hz	1.84	--	165	F901	1.84	Maximum normal load
100V/50Hz	1.65	3.3 or 2.8	163	F901	1.65	Maximum normal load
100V/60Hz	1.65	3.3 or 2.8	163	F901	1.65	Maximum normal load
240V/50Hz	0.71	1.4 or 1.2	159	F901	0.71	Maximum normal load
240V/60Hz	0.71	1.4 or 1.2	159	F901	0.71	Maximum normal load
264V/50Hz	0.69	--	158	F901	0.69	Maximum normal load
264V/60Hz	0.69	--	158	F901	0.69	Maximum normal load
SDM mode (with compute module)						
90V/50Hz	1.90	--	169.4	F901	1.90	Maximum normal load
90V/60Hz	1.90	--	169.4	F901	1.90	Maximum normal load
100V/50Hz	1.71	3.3 or 2.8	168.3	F901	1.71	Maximum normal load

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Clause	Requirement + Test			Result - Remark		Verdict
100V/60Hz	1.71	3.3 or 2.8	168.4	F901	1.71	Maximum normal load
240V/50Hz	0.73	1.4 or 1.2	164.6	F901	0.73	Maximum normal load
240V/60Hz	0.73	1.4 or 1.2	164.6	F901	0.73	Maximum normal load
264V/50Hz	0.71	--	164.2	F901	0.71	Maximum normal load
264V/60Hz	0.71	--	164.2	F901	0.71	Maximum normal load
Compute mode (with SDM card)						
90V/50Hz	2.37	--	211	F901	2.37	Maximum normal load
90V/60Hz	2.37	--	211	F901	2.37	Maximum normal load
100V/50Hz	2.10	3.3 or 2.8	209	F901	2.10	Maximum normal load
100V/60Hz	2.10	3.3 or 2.8	209	F901	2.10	Maximum normal load
240V/50Hz	0.90	1.4 or 1.2	204	F901	0.90	Maximum normal load
240V/60Hz	0.90	1.4 or 1.2	204	F901	0.90	Maximum normal load
264V/50Hz	0.83	--	203	F901	0.83	Maximum normal load
264V/60Hz	0.83	--	203	F901	0.83	Maximum normal load
For P495 and MA491 with external speaker						
HDMI mode (without SDM card and compute module)						
90V/50Hz	2.78	--	249	F901	2.78	Maximum normal load
90V/60Hz	2.78	--	249	F901	2.78	Maximum normal load
100V/50Hz	2.44	3.2 or 2.7	243	F901	2.44	Maximum normal load
100V/60Hz	2.44	3.2 or 2.7	243	F901	2.44	Maximum normal load
240V/50Hz	1.04	1.3 or 1.1	238	F901	1.04	Maximum normal load
240V/60Hz	1.04	1.3 or 1.1	238	F901	1.04	Maximum normal load
264V/50Hz	0.96	--	237	F901	0.96	Maximum normal load
264V/60Hz	0.96	--	237	F901	0.96	Maximum normal load
Display mode (without SDM card and compute module)						
90V/50Hz	2.65	--	237	F901	2.65	Maximum normal load
90V/60Hz	2.65	--	237	F901	2.65	Maximum normal load
100V/50Hz	2.36	3.2 or 2.7	235	F901	2.36	Maximum normal load
100V/60Hz	2.36	3.2 or 2.7	235	F901	2.36	Maximum normal load
240V/50Hz	1.01	1.3 or 1.1	230	F901	1.01	Maximum normal load
240V/60Hz	1.01	1.3 or 1.1	230	F901	1.01	Maximum normal load
264V/50Hz	0.93	--	229	F901	0.93	Maximum normal load
264V/60Hz	0.93	--	229	F901	0.93	Maximum normal load
SDM mode (with compute module)						

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Clause	Requirement + Test				Result - Remark	Verdict
90V/50Hz	1.42	--	126	F901	1.42	Maximum normal load
90V/60Hz	1.42	--	126	F901	1.42	Maximum normal load
100V/50Hz	1.27	3.2 or 2.7	125	F901	1.27	Maximum normal load
100V/60Hz	1.27	3.2 or 2.7	125	F901	1.27	Maximum normal load
240V/50Hz	0.53	1.3 or 1.1	119	F901	0.53	Maximum normal load
240V/60Hz	0.53	1.3 or 1.1	119	F901	0.53	Maximum normal load
264V/50Hz	0.48	--	118	F901	0.48	Maximum normal load
264V/60Hz	0.48	--	118	F901	0.48	Maximum normal load
Compute mode (with SDM card)						
90V/50Hz	2.11	--	188	F901	2.11	Maximum normal load
90V/60Hz	2.11	--	188	F901	2.11	Maximum normal load
100V/50Hz	1.89	3.2 or 2.7	187	F901	1.89	Maximum normal load
100V/60Hz	1.89	3.2 or 2.7	187	F901	1.89	Maximum normal load
240V/50Hz	0.78	1.3 or 1.1	179	F901	0.78	Maximum normal load
240V/60Hz	0.78	1.3 or 1.1	179	F901	0.78	Maximum normal load
264V/50Hz	0.72	--	178	F901	0.72	Maximum normal load
264V/60Hz	0.72	--	178	F901	0.72	Maximum normal load
Note(s):						
1. The measured input current at rated voltage shall be $\leq 110\%$ of rated current.						
2. See summary of testing in the test report for the detail max. normal condition.						
3. Unless otherwise specified, all tests are performed with HDMI mode (without SDM card and compute module for worst case.						

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			P
Component (measured between)		max. voltage (V) (normal operation)		Voltage Limiting Components
		V peak	V d.c.	
For P555 and MA551				
LED circuit of main board ¹ .				
CN8606 pin 1, 2, 3, 4, 5, 6, 7, 8 to earth		--	107.1	--
For P495 and MA491				
LED circuit of main board ¹ .				
CN8606 pin 1, 2, 3, 4, 5, 6, 7, 8 to earth		--	102.4	--
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)		

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Clause	Requirement + Test	Result - Remark	Verdict
VLED to earth		0Vdc	
VLED to secondary (I/O port)		0Vdc	
supplementary information:			
Input Voltage is 240Vac, 60Hz.			
1. The output of LED circuit are considered to be hazardous (not user accessible).			

2.5	TABLE: Limited power sources					P
Circuit output tested:						
Note: Measured Uoc (V) with all load circuits disconnected:						
Components	Test condition (Single fault)	Uoc (V)	I _{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
For compute module						
According to table 2B, for USB 2.0 (CN1008)						
Pin 1 to earth	Normal	5.1	0.5	8	2.55	100
Pin 1 to earth	U1015 pin 1-5 SC	5.1	3.4	8	17.34	100
Pin 1 to earth	U1009 pin 5-6 SC	0	0	8	0	100
Other pins to earth	Normal	0	--	8	--	100
According to table 2B, for USB 2.0 (CN1009)						
Pin 1 to earth	Normal	5.1	0.5	8	2.55	100
Pin 1 to earth	U1016 pin 1-5 SC	5.1	3.4	8	17.34	100
Pin 1 to earth	U1009 pin 5-6 SC	0	0	8	0	100
Other pins to earth	Normal	0	--	8	--	100
According to table 2B, for Micro USB (CN1002)						
All pins to earth	Normal	0	--	8	--	100
supplementary information:						
1. Tested on 240Vac, 60Hz.						
2. SC: short circuit.						

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)	
Basic/supplementary:							
For P495 and MA491							
T8601 primary pin to panel chassis(trace side)	550	274	3.3 (2.2 * 1.48)	8.1	3.3	8.1	
T9102 primary pin to panel chassis (trace side)	444	257	3.2 (2.1 * 1.48)	8.1	3.2	8.1	
T9302 primary pin to panel chassis (trace side)	568	369	3.5 (2.3 * 1.48)	8.1	3.7	8.1	
For P555 and MA551							
T9302 primary pin to panel chassis (trace side)	568	369	3.5 (2.3 * 1.48)	8.0	3.7	8.0	
Reinforced:							
Under T9302	568	369	6.9 (4.6 * 1.48)	19.3	7.4	19.3	
Supplementary information:							
1. Functional insulation shorted, see 5.3.4 c).							
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.							

2.10.5	TABLE: Distance through insulation measurements					P
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)	
Photo couplers	420	250	3000	0.4	1.	
T9102 bobbin	444	257	3000	0.4	0.45	
T8601 bobbin	550	274	3000	0.4	0.45	
T8601 Insulation Tape	550	274	3000	Two layers	Two layers	
T9302 Insulation Tape	568	369	3000	Two layers	Two layers	
Mylar sheet	568	369	3000	--	0.4	
Supplementary information:						
1. See appended table 1.5.1 for the source details.						
2. Test for all source, see table 1.5.1 for the source details.						

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Clause	Requirement + Test	Result - Remark	Verdict

4.3.8	TABLE: Batteries								P
The tests of 4.3.8 are applicable only when appropriate battery data is not available					Yes			P	
Is it possible to install the battery in a reverse polarity position?					No			N/A	
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition	--	--	0.01 mA	--	--	--	--	--	--
Max. current during fault condition (D1 pin 1-2 short)	--	--	3.3 mA	--	--	--	--	--	--
Max. current during fault condition (RC166 short)	--	--	0.01 mA	--	--	--	--	--	--

Test results:			Verdict
- Chemical leaks			No chemical leaks affecting required insulation.
- Explosion of the battery			No explosion.
- Emission of flame or expulsion of molten metal			No emission of flame or expulsion of molten metal.
- Electric strength tests of equipment after completion of tests			No insulation breakdown
Supplementary information:			

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Clause	Requirement + Test		Result - Remark		Verdict
4.5	TABLE: Thermal requirements				P
	Supply voltage (V)	See below	See below	See below	—
	Ambient T _{min} (°C)	--	--	--	—
	Ambient T _{max} (°C)	--	--	--	—
Maximum measured temperature T of part/at.....:		T (°C)			Allowed T _{max} (°C)
For P555 and MA551					
Test condition (Under HDMI mode)		90V/60Hz Horizontal (without SDM card)	90V/60Hz Vertical (The main board downside) (without SDM card)	264V/60Hz Horizontal (without SDM card)	--
CN901 body		49.9	48.8	47.4	60
AC inlet near L pin		53.1	52.7	50.8	60
RV9901 body		52.7	53.9	51.4	85
PCB near TH9901		50.1	52.5	50.4	105
C9902 body		48.2	53.1	50.8	85
L9901 coil		62.9	68.6	53.7	130
C9906 body		56.1	63.7	53.4	85
L9902 coil		61.9	69.5	53.1	130
PCB near BD9902		67.6	72.5	58.1	105
PCB near BD9901		71.3	71.1	58.3	105
SW9901 body		68.0	66.0	65.4	70
PCB near Q9302		57.6	53.6	53.3	105
U9302 body		62.2	60.4	58.1	100
T9302 core		61.3	58.5	56.9	110
T9302 coil		61.4	59.2	57.6	110
L9802 coil		72.3	66.2	58.7	130
L9801 coil		71.5	68.9	59.5	130
PCB near Q9801		66.7	67.0	66.4	105
PCB near Q9802		69.0	63.8	62.2	105
PCB near Q9101, Q9102		69.5	64.8	63.4	105
C9910 body		67.7	68.6	67.7	85

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Clause	Requirement + Test	Result - Remark		Verdict
T9102 core	73.7	70.4	69.2	110
T9102 coil	73.8	71.4	70.7	110
T8601 core	87.3	86.0	85.4	110
T8601 coil	90.6	88.2	87.8	110
Mylar sheet near T8601 (between power board trace side and panel chassis)	66.4	63.5	62.0	80
PCB near D9804, D9802	72.8	70.0	68.5	105
PCB near Q8602, Q8603	68.8	66.9	66.1	105
C9815 body	61.0	62.7	61.2	105
PCB near D8604, D8605	74.1	72.4	71.7	105
L8101 coil	73.8	70.0	69.8	105
PCB near Q8101, D8101	75.4	71.3	71.1	105
PCB near Q9107, Q9108	72.3	70.3	69.2	105
PCB near D9311, D9815	59.9	61.4	59.9	105
Mylar sheet near T8601 (between power board component side and metal enclosure)	57.8	59.9	59.0	80
PCB near U401 (main board)	65.5	63.5	63.7	105
Panel body	49.0	47.6	46.2	95
Key control button body	46.0	48.1	48.7	95
Metal enclosure outside near T8601	55.1	48.9	49.0	70
Power switch body	41.7	43.9	43.7	95
Ambient	40.0	40.0	40.0	--
Test condition (Under SDM mode)	90V/60Hz Horizontal (with SDM card)	--	--	--
CN901 body	51.6	--	--	60
AC inlet near L pin	56.6	--	--	60
RV9901 body	55.3	--	--	85
PCB near TH9901	51.9	--	--	105
C9902 body	49.0	--	--	85
L9901 coil	55.6	--	--	105
C9906 body	52.2	--	--	85
L9902 coil	53.6	--	--	105

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Clause	Requirement + Test	Result - Remark		Verdict
PCB near BD9902	59.2	--	--	105
PCB near BD9901	61.5	--	--	105
SW9901 body	69.6	--	--	70
PCB near Q9302	56.8	--	--	105
U9302 body	58.1	--	--	100
T9302 coil	60.1	--	--	110
T9302 core	59.5	--	--	110
L9802 coil	61.5	--	--	105
L9801 coil	58.2	--	--	105
PCB near Q9801	54.1	--	--	105
PCB near Q9802	56.1	--	--	105
PCB near Q9101, Q9102	59.5	--	--	105
C9910 body	58.8	--	--	85
T9102 core	60.8	--	--	110
T9102 coil	62.4	--	--	110
T8601 core	75.3	--	--	110
T8601 coil	77.0	--	--	110
Mylar sheet near T8601 (between power board trace side and panel chassis)	56.1	--	--	80
PCB near D9804, D9802	58.5	--	--	105
PCB near Q8602, Q8603	55.9	--	--	105
C9815 body	49.4	--	--	105
PCB near D8604, D8605	66.3	--	--	105
L8101 coil	66.3	--	--	105
PCB near Q8101, D8101	68.9	--	--	105
PCB near Q9107, Q9108	61.4	--	--	105
PCB near D9311, D9815	57.8	--	--	105
Mylar sheet near T8601 (between power board component side and metal enclosure)	56.5	--	--	80
PCB near U401 (main board)	62.8	--	--	105
Panel body	45.8	--	--	95
Button body	41.7	--	--	95
Metal enclosure outside near T8601	61.3	--	--	70

IEC 60950-1				
Clause	Requirement + Test		Result - Remark	
Power switch body	47.1	--	--	95
RTC Battery body(SDM card)	62.0	--	--	100
PCB near CPU(SDM card)	70.8	--	--	105
Ambient	40.0	--	--	--
Test condition (Under compute mode)	90V/60Hz Horizontal (with SDM card and compute module) ⁶ .	--	--	--
PCB near UC1 (SDM card)	55.9	--	--	105 / 95*
RTC battery body (SDM card)	53.3	--	--	100 / 70*
PCB near U6 (SDM card)	55.1	--	--	105 / 95*
Heatsink body (SDM card)	53.0	--	--	-- / 70*
Metal cover near SDM card USB 3.0 (JUSB1)	51.0	--	--	70*
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 board)	57.6	--	--	85
L1003 coil (compute board)	72.5	--	--	105
Metal enclosure outside near USB 2.0(CN1008)	50.9	--	--	70*
Ambient	40.0	--	--	--
For P495 and MA491				
Test condition (Under HDMI mode)	90V/60Hz Horizontal (without SDM card and compute module)	90V/60Hz Vertical (The main board downside (without SDM card and compute module)	264V/60Hz Horizontal (without SDM card and compute module)	--
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

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Clause	Requirement + Test		Result - Remark	Verdict
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
PCB near Q8101, D8101	67.7	58.1	69.1	105
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
Metal enclosure outside near USB port (CN406)	46.4	45.2	48.0	70*
Metal enclosure outside near T8601	50.6	47.3	51.1	70*

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Clause	Requirement + Test	Result - Remark		Verdict
Panel body	47.8	49.3	51.9	95*
Power Switch body	49.1	50.3	49.9	85*
Button body	47.7	49.6	49.0	85*
Ambient	40.0	40.0	40.0	--
Test condition (Under compute mode)	90V/60Hz Horizontal (with SDM card and compute module)	--	--	--
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
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

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Clause	Requirement + Test				Result - Remark		Verdict
PCB near D9304		61.8		--	--	105	
PCB near Q9107, Q9108		62.4		--	--	105	
PCB near Q8101, D8101		60.8		--	--	105	
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	
Metal enclosure outside near USB port (CN406)		47.5		--	--	70*	
Metal enclosure outside near T8601		48.0		--	--	70*	
Panel body		46.5		--	--	95*	
Power Switch body		47.2		--	--	85*	
Button body		46.5		--	--	85*	
PCB near UC1 (SDM card)		68.5		--	--	105 / 95*	
RTC battery body (SDM card)		62.0		--	--	100 / 70*	
PCB near U6 (SDM card)		64.2		--	--	105 / 95*	
Heatsink body (SDM card)		66.2		--	--	-- / 70*	
Metal cover near SDM card USB 3.0 (JUSB1)		57.0		--	--	70*	
U1 body (Compute module)		98.8		--	--	--	
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		--	--	85	
L1003 coil (Compute module)		76.4		--	--	105	
Metal cover near USB (Compute module)		53.7		--	--	70*	
Ambient		40.0		--	--	--	
Supplementary information:							
Temperature T of winding:		t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

1. The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in 1.6.2 at voltages as described in above.
2. The instruction installation manual defines the Tma at of 40°C.
Winding components (providing safety isolation):
 - Class 130 material (B) Tmax = 120°C – 10°C = 110°C
3. All values for T (°C) are re-calculated from actual ambient.
4. Put in a wooden box to testing.
5. During the heating tests, all openings are blocked system fans locked and SDM card fan locked.
6. Test condition 90V/60Hz Horizontal of temperatures is worst case on original report.
7. *: Touch temperature limit.

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Functional:				
--		--	--	--
Basic/supplementary:				
Unit: primary to earth (for P555, MA551, P495, MA495)		DC	2611	No
Mylar sheet (for all source)		AC	3000	No
T8601 primary to core		AC	1819	No
T8601 secondary to core		AC	1819	No
Reinforced:				
Primary to secondary		DC	4242	No
Supplementary information:				
1. The tests mentioned above were performed after humidity test.				

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)		40°C, if not otherwise specified			—
	Power source for EUT: Manufacturer, model/type, output rating		See appended table 1.5.1			—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
For P555 and MA551						

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Clause	Requirement + Test				Result - Remark	Verdict
Openings (Horizontal) (with SDM card and compute module)	Blocked	90	1hr 30min	F901	2.31	Unit normal operation, No hazards. No damage. All temperatures see table 4.5.
All fan (Horizontal) (with SDM card and compute module)	Locked	90	1hr 30min	F901	2.31	Unit normal operation, No hazards. No damage. All temperatures see table 4.5.
Openings (Horizontal) (without SDM card)	Blocked	264	1hr 29min	F901	0.98	Unit normal operation, No hazards. No damage. All temperatures see table 4.5.
Openings (Horizontal) (with SDM card)	Blocked	90	2hr 29min	F901	1.84	Unit normal operation, No hazards. No damage. All temperatures see table 4.5.
All fan (Horizontal) (without SDM card)	Locked	264	1hr 29min	F901	0.98	Unit normal operation, No hazards. No damage. All temperatures see table 4.5.
All fan (Horizontal) (with SDM card)	Locked	90	2hr 29min	F901	1.84	Unit normal operation, No hazards. No damage. All temperatures see table 4.5.
For P495 and MA491						
Openings (Horizontal) (without compute module and SDM card)	Blocked	90	2hr 23min	F901	2.72	Unit normal operation, No hazards. No damage. All temperatures see table 4.5.
Openings Vertical (the main board downside) (without compute module and SDM card)	Blocked	90	1hr 29min	F901	2.72	Unit normal operation, No hazards. No damage. All temperatures see table 4.5.

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Clause	Requirement + Test				Result - Remark	Verdict
Openings (Horizontal) (without compute module and SDM card)	Blocked	264	2hr 44min	F901	0.90	Unit normal operation, No hazards. No damage. All temperatures see table 4.5.
Openings (Horizontal) (with compute module and SDM card)	Blocked	90	2hr 55min	F901	2.05	Unit normal operation, No hazards. No damage. All temperatures see table 4.5.
All fan (Horizontal) (without compute module and SDM card)	Locked	90	2hr 23min	F901	2.72	Unit normal operation, No hazards. No damage. All temperatures see table 4.5.
All fan Vertical (the main board downside) (without compute module and SDM card)	locked	90	1hr 29min	F901	2.72	Unit normal operation, No hazards. No damage. All temperatures see table 4.5.
All fan (Horizontal) (without compute module and SDM card)	locked	264	2hr 44min	F901	0.90	Unit normal operation, No hazards. No damage. All temperatures see table 4.5.
All fan (Horizontal) (with compute module and SDM card)	locked	90	2hr 55min	F901	2.05	Unit normal operation, No hazards. No damage. All temperatures see table 4.5.
Overload of operator accessible connector test ⁴ .						
For compute module						
USB 2.0 (CN1008) pin 1	Overload	240	1hr	F901	--	Max. available current: 0.5A, Uoc = 5.10V, No hazards, no damage.
USB 2.0 (CN1009) pin 1	Overload	240	1hr	F901	--	Max. available current: 0.5A, Uoc = 5.10V, No hazards, no damage.

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

1. In fault column, where SC= short-circuited, OC = open-circuited.
2. For fuse opened condition, same results were carried out for all sources fuses.
3. Maximum temperatures limitation of safety isolation transformers based on a test temperature of 40°C:
Class B $T_{max} = 175^{\circ}\text{C}$
4. All other condition which not being mentioned above were all under "output could not be load" condition.

C.2		TABLE: transformers						P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)	
T9302	Primary wire to secondary pin	568	369	AC 3000V	6.9 (4.6*1.48)	7.4	Triple insulation wire	
T9302	Primary wire to core	--	--	--	--	--	--	
T9302	Secondary pin to core	568	369	AC 3000V	6.9 (4.6*1.48)	7.4	Triple insulation wire	
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers	
T9302	Primary wire to secondary pin			AC 3000V	9.9	9.9	Triple insulation wire used.	
T9302	Primary wire to core			--	--	--	--	
T9302	Secondary pin to core			AC 3000V	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. The required clearances multiplied by 1.48 considering that EUT operates up to 5000m.								
3. Triple insulation wire used in secondary, core considered as primary.								

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Clause	Requirement + Test	Result - Remark	Verdict

C.2		TABLE: transformers						P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)	
T8601	Primary wire to secondary wire	550	274	AC 3000V	6.6 (4.4*1.48)	6.6	Dti 0.4mm min.	
T8601	Primary wire to core	550	274	AC 1819V	3.3 (2.2*1.48)	3.3	Dti Two layers.	
T8601	Secondary wire to core	550	274	AC 1819V	3.3 (2.2*1.48)	3.3	Dti Two layers.	
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers	
T8601	Primary wire to secondary wire			AC 3000V	8.1	8.1	Bobbin 0.45 mm used.	
T8601	Primary wire to core			AC 1819V	3.5	3.5	Used two layers of insulation tape.	
T8601	Secondary wire to core			AC 1819V	3.5	3.5	Used two layers of insulation tape.	
supplementary information:								
1. The constructions of all sources of T8601 are identical, only model designation, manufacturer, and the material of bobbin are different.								
2. The required clearances multiplied by 1.48 considering that EUT operates up to 5000m.								

List of test equipment used:

A completed list of used test equipment shall be provided in the Test Reports when a Manufacturer Testing Laboratory according to TMP/CTF stage 1 or WMT/CTF stage 2 procedure has been used.

Clause	Measurement / testing	Testing / measuring equipment / material used	Range used	Calibration date

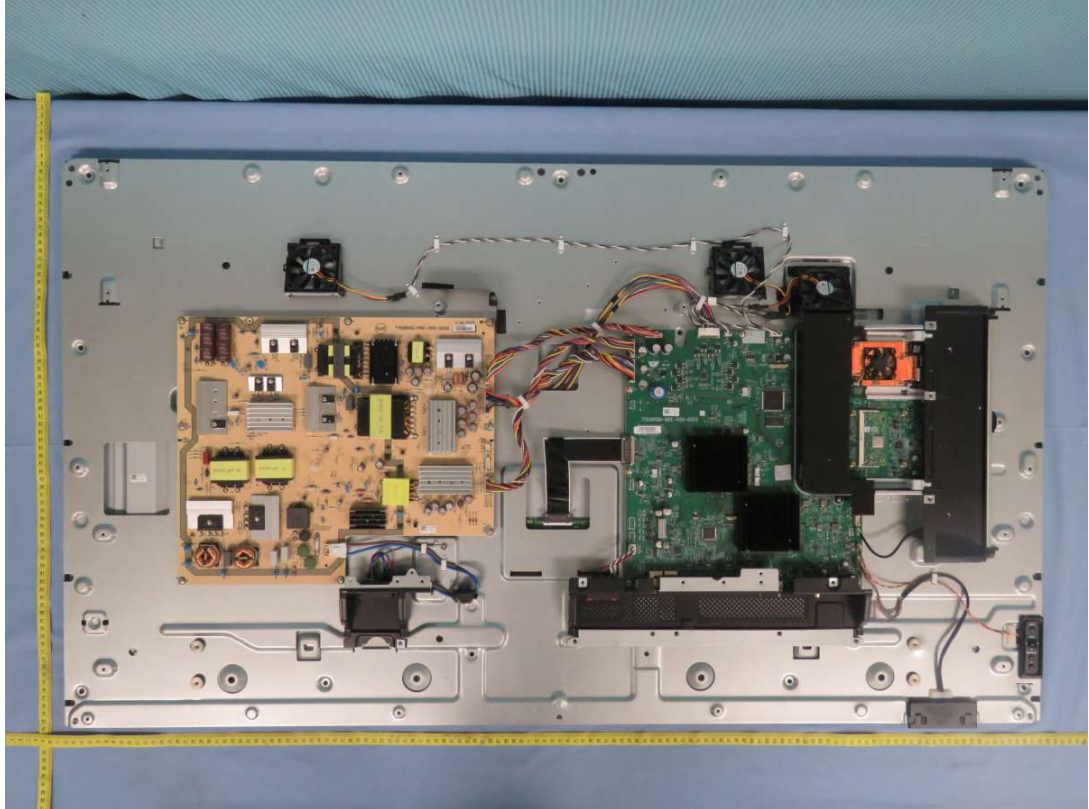
Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.4	TABLE: Resistance of earthing measurement		P
Location		Resistance measured (mΩ)	Comments
AC inlet earth pin to metal chassis		8	Test current : 32A, duration: 2min., Voltage drop: 0.256V.
AC inlet earth pin to metal chassis		9	Test current : 40A, duration: 2min., Voltage drop: 0.36V.
Supplementary information:			

4.6.1, 4.6.2	Table: Enclosure opening measurements		P
Location	Size (mm)	Comments	
Metal enclosure as fire enclosure (Horizontal)			
Top	1) Ø 2.4mm max.	1) Numerous circle openings provided. ¹	
Rear	1) Ø 2.4mm max.	1) Numerous circle openings provided. ^{1, 2}	
Side (near power board)	1) Ø 2.4mm max.	1) Numerous circle openings provided. ^{1, 2}	
I/O Metal cover (Horizontal)			
Rear	1) Ø 2.4mm max.	1) Numerous circle openings provided. ^{1, 2}	
Metal enclosure as fire enclosure (Vertical)			
Rear	1) Ø 2.4mm max.	1) Numerous circle openings provided. ^{1, 2} (impede by plastic fire barrier on top of main board)	
Top (near power board)	1) Ø 2.4mm max.	1) Numerous circle openings provided. ¹	
Side	1) Ø 2.4mm max.	1) Numerous circle openings provided. ^{1, 2} (impede by mylar barrier)	
I/O Metal cover (Vertical)			
Rear	1) Ø 2.4mm max.	1) Numerous circle openings provided. ^{1, 2} .	
Supplementary information:			
1. Openings didn't exceed 5 mm in any dimension or 1 mm in width regardless of length.			
2. There is no portion of the side of fire enclosure falls within the area traced out by the 5° angle.			

Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Internal view (with SDM card and compute module) (for P555, MA551)



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



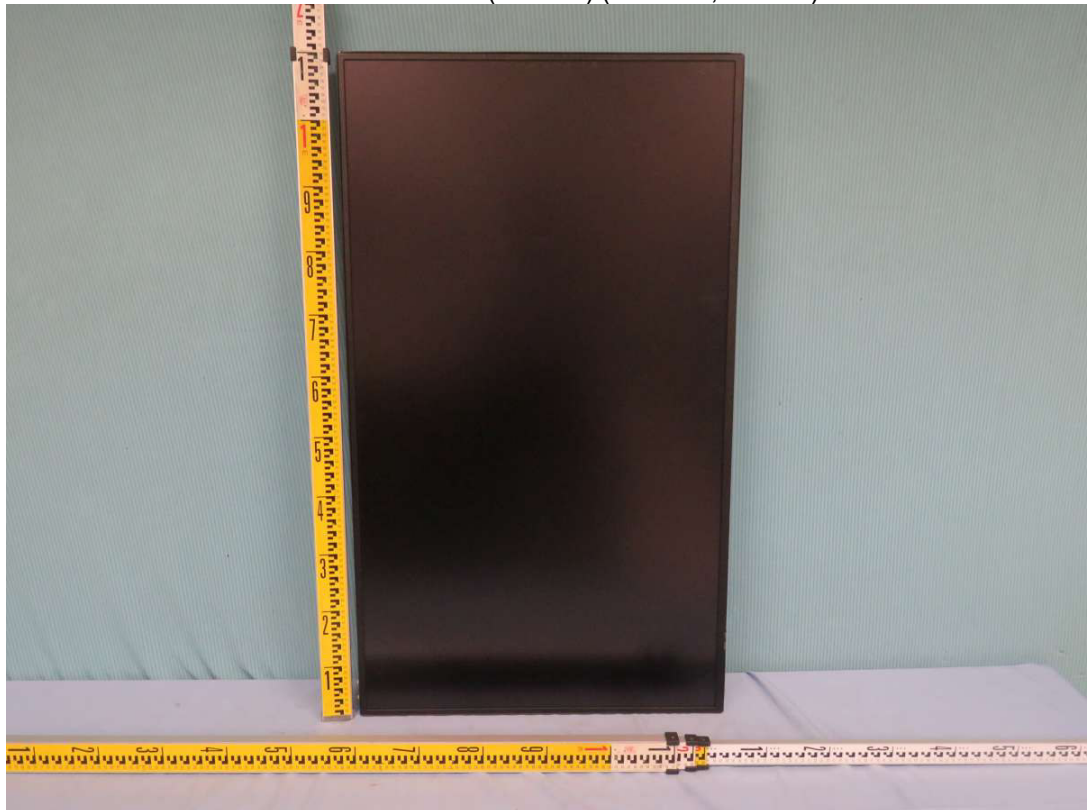
Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

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



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



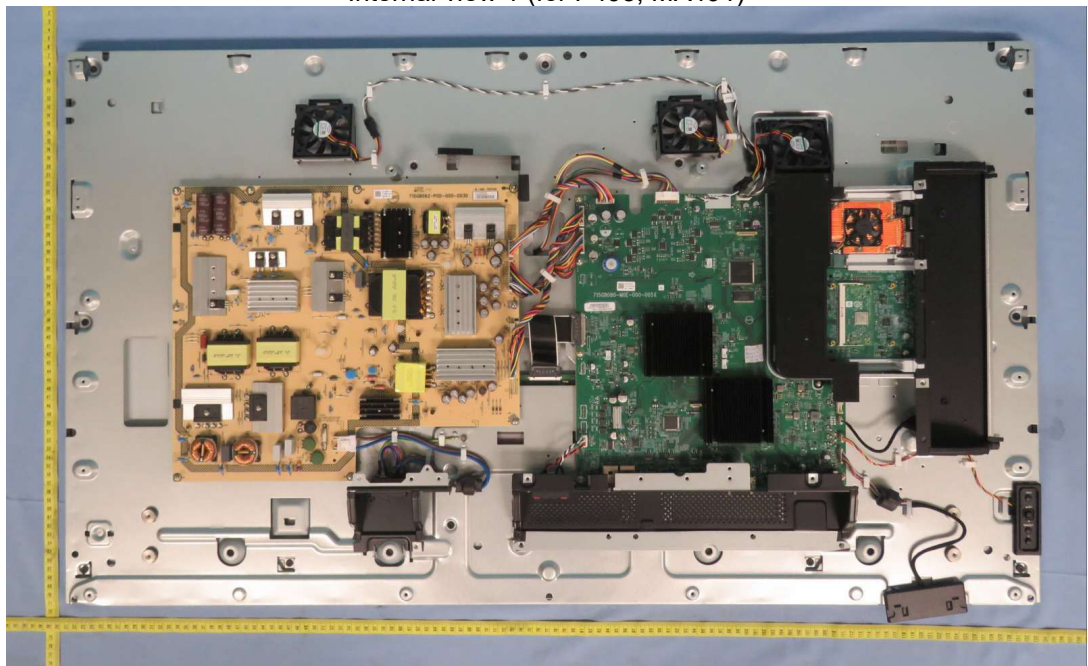
Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

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



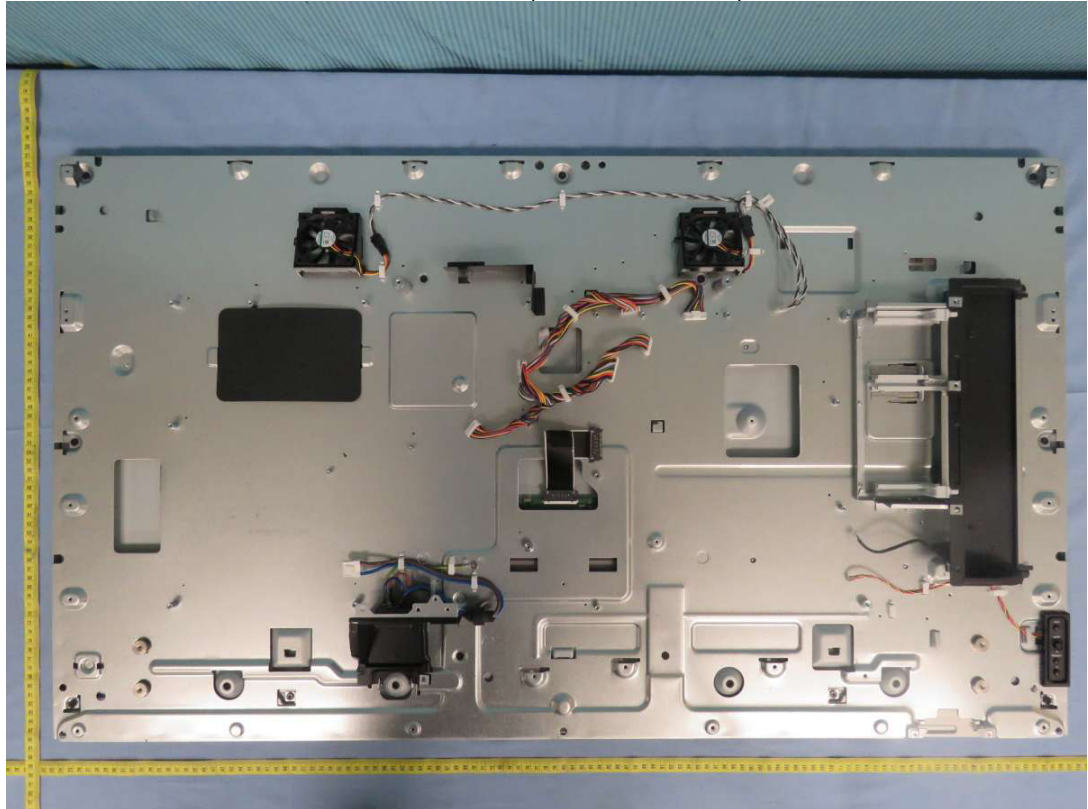
Internal view 1 (for P495, MA491)



Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Internal view 2 (for P495, MA491)



Metal enclosure internal view (for P495, MA491)



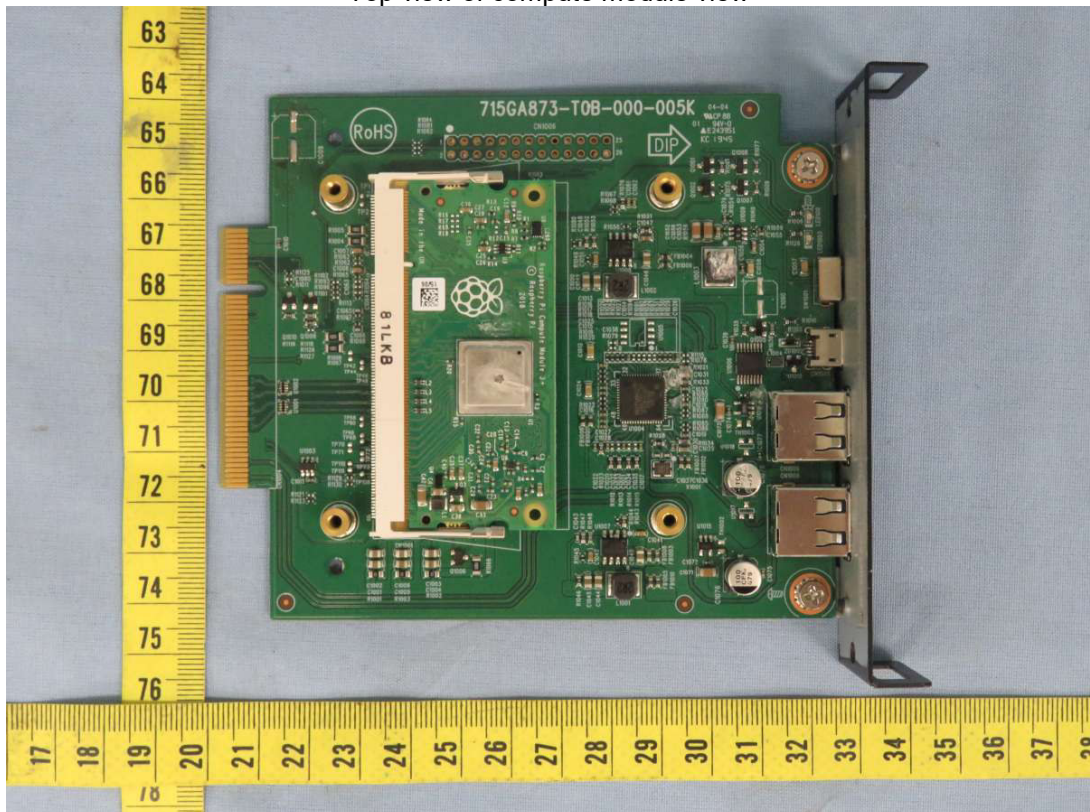
Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Connector side view (with SDM card and compute module)



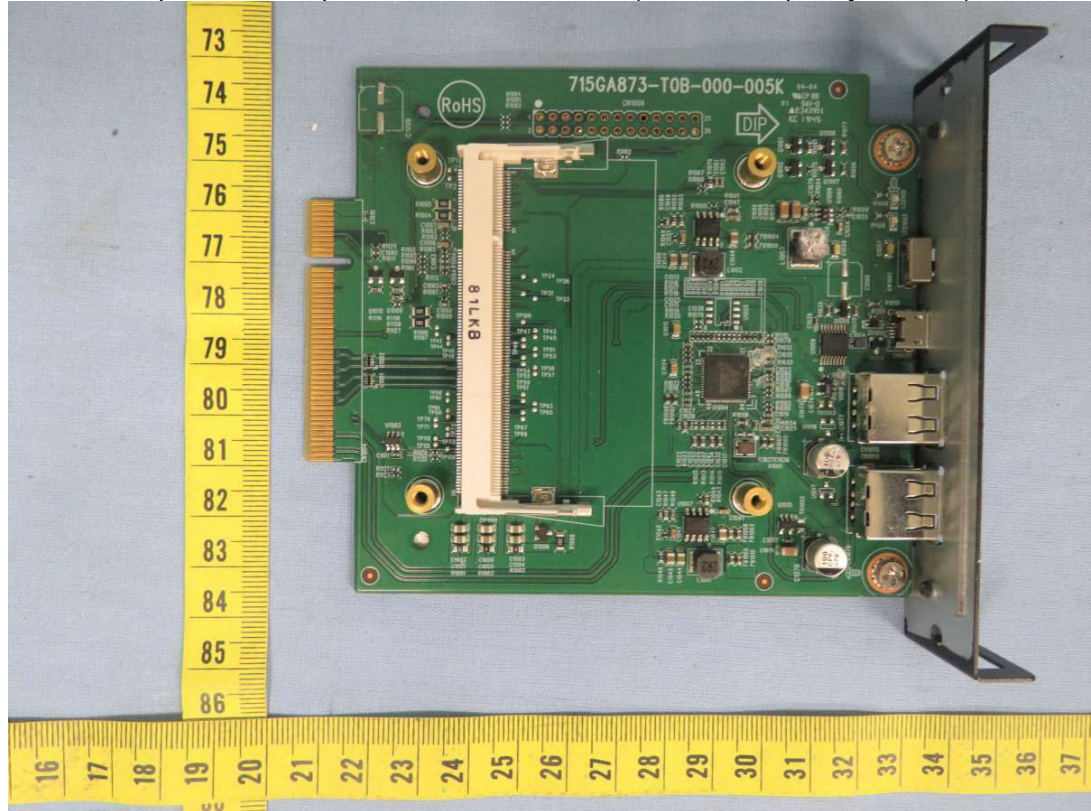
Top view of compute module view



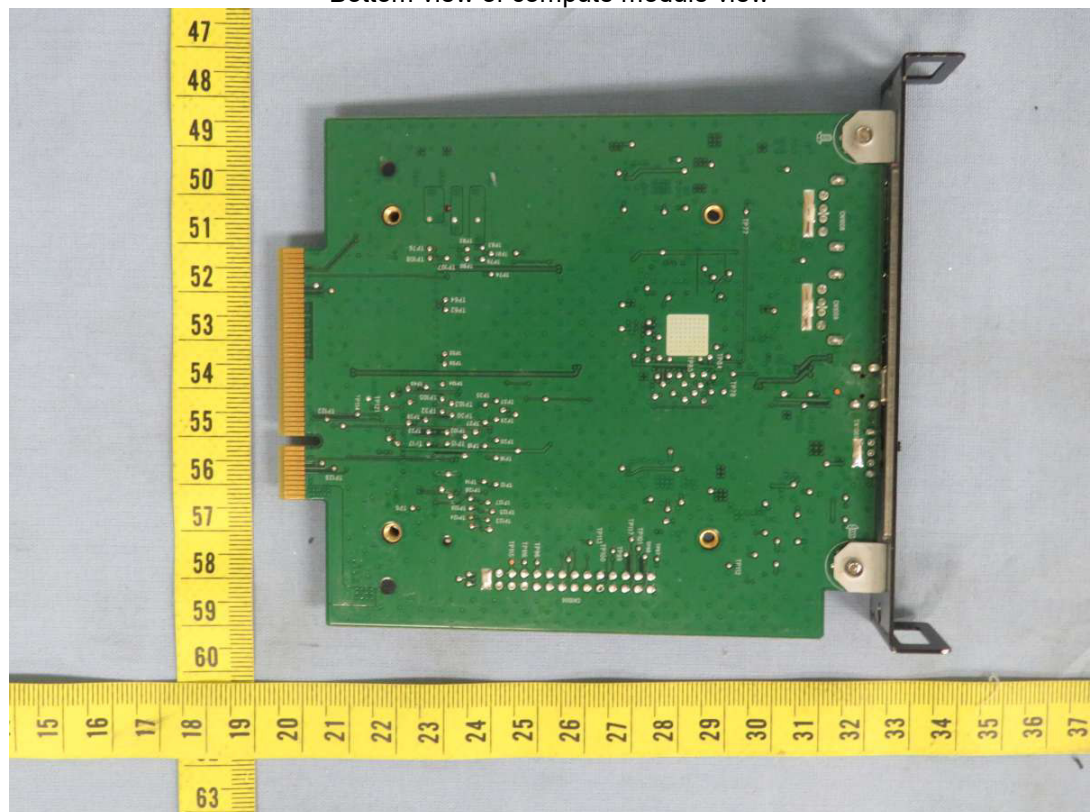
Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

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



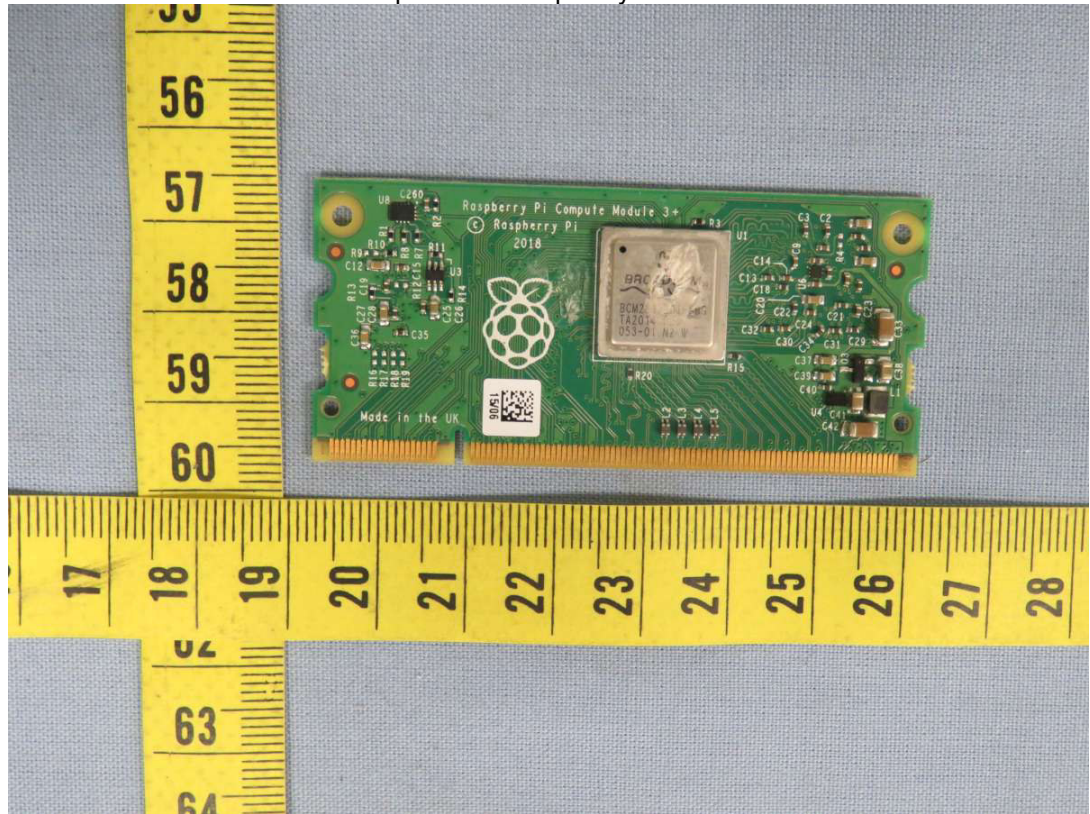
Bottom view of compute module view



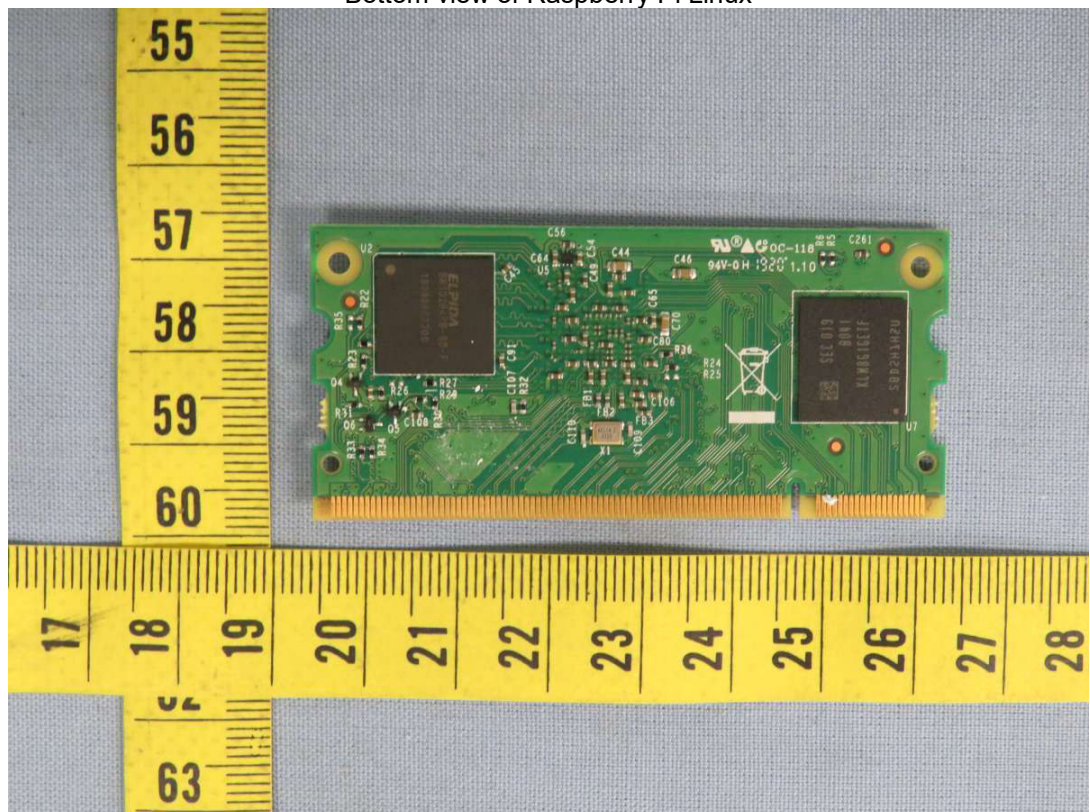
Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

Top view of Raspberry Pi Linux



Bottom view of Raspberry Pi Linux



Product: LCD Monitor

Type Designation: P555, MA551, P495, MA491

top view of main board (change heatsink HS501)

