Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT
IEC 62368-1
Audio/video, information and communication technology equipment
Part 1: Safety requirements

Report Number ..... :	60436654 001
Date of issue ..... :	29.Apr.2021
Total number of pages ..... :	60 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

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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

General disclaimer:

The test results presented in this report relate only to the object tested.
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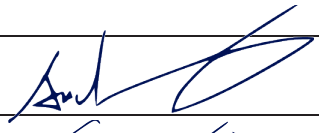
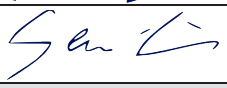
Test item description .....:	LCD MONITOR
Trade Mark(s) .....:	AOC
Manufacturer.....:	**Same as applicant.**
Model/Type reference .....:	AG274******** (* can be 0-9, A-Z, a-z, –, \, /, + or blank, represent different sales region and enclosure colour for marketing purpose)
Ratings .....:	I/P: 19.5Vdc, 16.9A

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	**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) ..... :		Anderson Wang Senior Project Manager	
Approved by (name, function, signature) .. :		Steven Lin Technical Reviewer	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Approved by (name, function, signature) .. :			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address ..... :			
Tested by (name, function, signature)			
Witnessed by (name, function, signature) . :			
Approved by (name, function, signature) .. :			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Witnessed by (name, function, signature) . :			
Approved by (name, function, signature) .. :			
Supervised by (name, function, signature) :			

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

- Photo documentation (6 Pages)
- National Differences (30 Pages)
- Measurement Section (1 Page)

Summary of testing:

Tests performed (name of test and test clause):

The tests were carried out under the most unfavorable combination within the manufacturer's operating specifications of the following parameters:

-supply voltage 19.5Vdc
-operating temperature, Max. ambient temperature 40°C declared by the client
-operating mode: continuous
-operating load:
The equipment operated under full screen with three vertical bar signal according IEC60107-1 with max. brightness and contrast; with 1KHz sinusoidal signal and turned to maximum volume; each USB 3.0 port loaded with 5V/0.9A, each USB 3.0 port with fast charging loaded with 5V/1.5A, and each USB type C port loaded with 20V/3.25A.

name of test	test clause number
Classification of electrical energy sources	5.2
Maximum operating temperature test (Heating test)	5.4.1.4, 9.3, B.1.5, B.2.6
Electrical Power Source (PS) measurements for classification	6.2.2
Stability	8.6
Wall or ceiling mount loading test	8.7
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
Test for permanence of markings	Annex F.3.10
Limited power source test (LPS)	Annex Q.1
Steady force test, 30N, 250N	Annex T.3, 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.

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=Demark, US=United States of America

The product fulfils the requirements of 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 delete in both cases after selecting the applicable option)

Copy of marking plate:

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

The above label represents labels for model names other than above covered by the model name.

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: not directly connected to the mains
Considered current rating of protective device ..... :	☐ A; Location: ☒ building ☐ equipment ☒ N/A
Equipment mobility ..... :	☒ movable ☐ hand-held ☐ transportable ☐ direct plug-in ☐ stationary ☐ for building-in ☒ wall/ceiling-mounted ☐ SRME/rack-mounted ☐ other:
Overvoltage category (OVC) ..... :	☐ OVC I ☐ OVC II ☐ OVC III ☐ OVC IV ☐ other: not directly connected to the mains
Class of equipment ..... :	☐ Class I ☐ Class II ☒ Class III ☐ Not classified ☐
Special installation location ..... :	☒ N/A ☐ restricted access area ☐ outdoor location ☐
Pollution degree (PD) ..... :	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified T_{ma} ..... :	40 °C ☐ Outdoor: minimum °C
IP protection class ..... :	☒ IPX0 ☐ IP___
Power systems ..... :	☐ TN ☐ TT ☐ IT - 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) ..... :	Whole unit: 8.09kg; Base weight: 2.16kg.

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 .....: 04.Jan.2021

Date (s) of performance of tests .....: 04.Feb.2021 - 24.Feb.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 IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....:	☒ **Yes** ☐ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) ..... :

1 TPV 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

General product information and other remarks:

Product Description –

The models are an LCD MONITOR with LED backlight intended for general office use with following features:

1. LCD Type: TFT LCD with LED backlight;
2. External approved adapter used, which output comply with SELV;
3. Built-in main board: **715GB729** with HDMI, DisplayPort, USB type C, USB 3.0 type A, Micro USB, USB 3.0 type A with fast charging, USB 3.0 type B and Audio ports;
4. LED ambient lamp boards 715GB516 and 715GB517 (optional), which is meet the requirement of IEC 62471: 2008 (approved by SGS and CTI);
5. The internal metal chassis is considered as fire enclosure and mechanical enclosure, and the external plastic enclosure is regarded as fire enclosure and mechanical enclosure, made of min. V-0 material;
6. Base stand (optional);
7. Maximum declared ambient: 40°C.
8. All models are identical except for type designation.

Definition of variable(s):

Variable:	Range of variable:	Content:
*	0-9, A-Z, a-z, –, \, /, + or blank	represent different sales region and enclosure colour for marketing purpose

Other comments:
Declaration of the manufacturer: the sample(s) submitted for evaluation is (are) representative of the products from each factory.

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

5.1	**Table: Power transfer using ES1 or ES2 voltages. General requirements**				**P**
Output Connector	Components	Output voltage V dc)			
		No load	Normal load	Max. road	Limits
Circuit output tested: data ports on main board 715GB729					
USB type C (CN5004) pin 4,9,16,21 to GND	Normal condition	20.0	Less than U_{oc}	Less than U_{oc}	20
USB (CN1003) pin 1 to GND	Normal condition	5.1	Less than U_{oc}	Less than U_{oc}	5.25
USB (CN1003) pin 10 to GND	Normal condition	5.1	Less than U_{oc}	Less than U_{oc}	5.25

USB (CN1004) pin 1 to GND	Normal condition	5.1	Less than U_{oc}	Less than U_{oc}	5.25
USB (CN1004) pin 10 to GND	Normal condition	5.1	Less than U_{oc}	Less than U_{oc}	5.25
Micro USB (CN1004) pin 1 to GND	Normal condition	5.1	Less than U_{oc}	Less than U_{oc}	20
Supplementary Information: For USB ports, applied normal load equal to max. rated load.					

5.3.2, 5.4.1	**TABLE: DC power transfer interconnection to other equipment**					**P**
Note: Measured each port with maximum attainable current:						
Output Circuit	Components	Uoc	Any circumstance (A)		More than 5 s (A)	
			Meas.	Limit	Meas.	Limit
Circuit output tested: data ports on main board 715GB729						
USB type C (CN5004) pin 4,9,16, 21 to GND	Single fault condition (U7018 pin 7-11 SC)	20.0	6.3	8	6.3	6.5 (5.0x1.3)
USB (CN1003) pin 1 to GND	Single fault condition (C1048 SC)	0 (Unit shut down)	0 (Unit shut down)	8	0 (Unit shut down)	6.5 (5.0x1.3)
USB (CN1003) pin 10 to GND	Single fault condition (C1059 SC)	0 (Unit shut down)	0 (Unit shut down)	8	0 (Unit shut down)	6.5 (5.0x1.3)
USB (CN1004) pin 1 to GND	Single fault condition (C1068 SC)	0 (Unit shut down)	0 (Unit shut down)	8	0 (Unit shut down)	6.5 (5.0x1.3)
USB (CN1004) pin 10 to GND	Single fault condition (C1079 SC)	0 (Unit shut down)	0 (Unit shut down)	8	0 (Unit shut down)	6.5 (5.0x1.3)
Micro USB (CN1004) pin 1 to GND	Single fault condition (U1002 pin 1-6 SC)	5.1	2.5	8	2.5	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
ES1: Data ports of main board	Ordinary	N/A	N/A	N/A
ES1: DC input port of main board	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	1st S	2nd S
PS3	Combustible materials inside main board	Ignition not occur	Fire enclosure	--
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Sharp edges and corners	Ordinary	N/A	N/A	N/A
MS2: Equipment mass	Ordinary	--	--	Compliance with test 8.6
MS3: Wall-mounted	Ordinary	--	--	Compliance with test 8.7
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: Accessible parts	Ordinary	N/A	N/A	N/A
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
RS1: Indicating lights	Ordinary	N/A	N/A	N/A
RS1: backlight of LCD panel	Ordinary	N/A	N/A	N/A
RS1: LED ambient lamp	Ordinary	N/A	N/A	N/A
Supplementary Information: "B" – Basic Safeguard; "S" – Supplementary Safeguard; "R" – Reinforced Safeguard				

ENERGY SOURCE DIAGRAM
Optional. Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems. Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings
ES1 (all circuit) **PS3 (See Source of power or PIS for the details)** ☒ **ES** ☒ **PS** ☐ **MS** ☐ **TS** ☐ **RS**