

UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CSA C22.2 No. 62368-1-14, 2nd Ed., Issue Date: 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Component Recognition
CCN:	AZOT2, AZOT8 (Audio/video, Information and Communication Technology Equipment)
Complementary CCN:	N/A
Product:	LCD Panel (LED Backlight)
Model:	G101STNZZZZ, G101STTZZZZ, G101SANZZZZ (Where Z may be any alphanumeric character or a dot or blank for marketing purpose and no impact safety related critical components and constructions.)
Rating:	(Optional) 12 Vdc, 0.165 A (with LED Drive Board: 10G08-M01) or 5 Vdc, 0.6 A (with LED Drive Board: 10G08-M04) or 5 Vdc, 0.7 A (for LED Drive Board, P/N: 10G09-MXX, X=0-9, A-Z) 5 Vdc, 0.518 A (with LED Drive Board: 10G08-C0R) (Optional) 3.3Vdc, 12.5 mA Max. (for control board)
Applicant Name and Address:	AUO CORPORATION NO 1 LI-HSIN RD 2 HSINCHU SCIENCE PARK HSINCHU 300094 TAIWAN

Issue Date: 2020-06-05
Revision Date: 2023-10-12

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This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Prepared By: Timothy Liu / Project Handler Reviewed By: Levi Lee / Reviewer

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

- i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
- ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
- iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

The equipment under test (EUT) is a TFT LCD module with LED type LCD Backlight unit and panel control board with LED driver circuit installed for backlight, intended to use in information technology equipment.

Model Differences

All Models are identical except for model designation.

See the definition of variable(s).

Test Item Particulars

Classification of use by	To be determined in end product
Supply Connection	External Circuit - not Mains connected ES1
Supply % Tolerance	None
Supply Connection – Type	To be determine in end product
Considered current rating of protective device as part of building or equipment installation	N/A
Equipment mobility	for building-in
Over voltage category (OVC)	other: not directly connected to mains
Class of equipment	Class III
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient (°C)	60
IP protection class	IPX0
Power Systems	N/A
Altitude during operation (m)	5000 m
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	0.45

Technical Considerations

- ☐ The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 60°C
- ☐ The product is intended for use on the following power systems : No direct connection
- ☐ Considered current rating of protective device as part of the building installation (A) : N/A
- ☐ Mains supply tolerance (%) or absolute mains supply values : No direct connection
- ☐ The Risk Group of a lamp or lamp system (including LEDs) is : Exempt
- ☐ The following are available from the Applicant upon request : Product specification

Engineering Conditions of Acceptability

For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. When installed in an end-product, consideration must be given to the following:

- ☐ The following output circuits are at ES1 energy levels : Output of LED driver boards
- ☐ The investigated Pollution Degree is : 2
- ☐ The following end-product enclosures are required : Fire, Mechanical
- ☐ The supply source shall be ES1.
- ☐ Classification of PIS has not been conducted. Therefore, all electrical components were assumed to be resistive PIS.
- ☐ This component has been evaluated in "control of fire spread" method assuming appropriate fire enclosure is provided in end product.
- ☐ The touch temperature for Panel Surface shall be evaluated in end product.

Additional Information

N/A

Additional Standards

The product fulfills the requirements of: The product fulfills the requirements of: EN 62368-1:2014 + A11:2017; UL 62368-1 2nd Edition, Issued December 1, 2014; CSA CAN/CSA-C22.2 No. 62368-1 2nd Edition, Issued December 1, 2014; AS/NZS 62368.1: 2018

Markings and Instructions

Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listee's or Recognized companys name, Trade Name, Trademark or File Number
Equipment identification marking – model identification	Model Number

Special Instructions to UL Representative

N/A

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
N/A	--	--	--	--	--	--
BD1.2	Earthing Continuity Test Exemptions – This test is not required for the following models:					
	All models					
BD1.3	Electric Strength Test Exemptions – This test is not required for the following models:					
	All models					
BD1.4	Electric Strength Test Component Exemptions – The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test.					
	N/A					

BE1.0	Sample and Test Specifics for Follow-Up Tests at UL				
Model	Component	Material	Test	Sample (s)	Test Specifics
N/A	--	--	--	--	--

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4.1.2	TABLE: List of critical components					Pass
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Product Category CCN(s)	Mark(s) of conformity	Supplement ID
01. Panel	Interchangeable	Interchangeable	TFT Type, 10.1"	--	--	
02. Chassis/ Enclosure	Interchangeable	Interchangeable	Steel Metal or Aluminum.	--	--	
03. PWB	TAIWAN PRINTED CIRCUIT BOARD TECHVEST CO., LTD.	MV-0	V-0, minimum 130 degree C.	ZPMV2	UL	
03a. PWB(Alternate)	Interchangeable	Interchangeable	Minimum V-1 or better, 105 degree C.	ZPMV2	UL	
04. Label	Interchangeable	Interchangeable	Min. 80 degree C, suitable for applied surface	PGDQ2 or PGJ12	UL	
05. Connectors and Receptacles (ES1 circuits)	Interchangeable	Interchangeable	--	ECBT2, RTRT2	UL	
05a. Connectors and Receptacles (ES1 circuits) (alternate)	--	Metal/Plastic	Copper alloy pins housed in bodies of plastic rated V-2 min.	QMFZ2	UL	
06. Flexible PWB (Optional)	Interchangeable	Interchangeable	Rated V-2 minimum or VTM-2 minimum, when no components mounted on surface; If components mounted on surface, it should be minimum V-1 or VTM- 1, 80 degree C	ZPKX2, ZPMV2	UL	
06a. Flexible PWB (Optional)	Interchangeable	Interchangeable	Rated V-2 minimum or VTM-2 minimum, when no components	QMFZ2, QMTS2	UL	

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			mounted on surface, 80 degree C			
06b. Flexible PWB (Optional) (Alternate)	Interchangeable	Interchangeable	Flammability level is ignored, when combustible material are small parts (4 g or 1750 mm ³ max.).	--	--	
07. Mylar / Cover film for PCBA (Optional)	Interchangeable	Interchangeable	Minimum V-2 or VTM-2 or better	QMFZ2	UL	
07a. Mylar / Cover film for PCBA (Optional) (Alternate)	Interchangeable	Interchangeable	Flammability level is ignored, when combustible material are small parts (4 g or 1750 mm ³ max.).	--	--	
08. LED Driver Board (Optional)	AUO	10G08-MXX (X =0-9, A-Z or a dot or blank, except for 04)	I/P: 12Vdc, 0.165 A max.	--	--	
08a.LED driver board (Alternate)	AUO	10G08-M04	I/P: 12Vdc, 0.6 A max.	--	--	
08b.LED driver board (Alternate)	AUO	10G09-MXX (X=0-9, A-Z)	I/P: 12Vdc, 0.7 A max.	--	--	
08c.LED driver board (Alternate)	AUO	10G08-C0R	I/P: 5Vdc, 0.518A max.	--	--	

Enclosures

Type	Supplement Id	Description
Photographs	03-01	Front View (With LDE driver board)
Photographs	03-02	Rear View - 1 (With LDE driver board)
Photographs	03-03	Rear View - 2 (With LDE driver board)
Photographs	03-04	LED Drive Board, P/N.: 10G08-M01
Photographs	03-05	Front View (With control board only) -Alternate
Photographs	03-06	Rear View (With control board only) -Alternate
Photographs	03-07	Alternate - Rear View - 1 (LED Drive Board, P/N.: 10G08-M04)
Photographs	03-08	Alternate - Rear View - 2 (LED Drive Board, P/N.: 10G08-M04)
Photographs	03-09	Alternate - LED Drive Board, P/N.: 10G08-M04
Photographs	03-10	Alternate - Front view
Photographs	03-11	Alternate - Rear view – 1 (With LED driver board: 10G09-MXX)
Photographs	03-12	Alternate - Rear view – 2 (With LED driver board: 10G09-MXX)
Photographs	03-13	LED driver board view - (P/N: 10G09-MXX)
Photographs	03-14	Alternative construction - Front view
Photographs	03-15	Alternative construction - Rear view
Photographs	03-16	Alternative construction - PCB view
Photographs	03-17	Front View of LCD Panel (Model: G101STN01.K)
Photographs	03-18	Rear View of LCD Panel (Model: G101STN01.K)
Photographs	03-19	LED driver board view (10G08-C0R)
Photographs	03-20	Front View of LCD Panel (Model: G101SANZZZZ)
Photographs	03-21	Rear View of LCD Panel (Model: G101SANZZZZ)