

Compliance Constructional Data Report (CDR)

1.0 Reference and Address				
Report Number	160501577SHA-001 Original Issued:		15-Aug-2016	Revised: None
Standard(s)	ENERGY STAR® Program Requirements for Displays Version 7.0			
Applicant	Top Victory Electronics (Taiwan) Co.,Ltd.		Manufacturer	TPV Electronics(Fujian) Co., Ltd
Address	10F.,No.230,Liancheng Rd. Zhonghe City. Taipei Country 23553		Address	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province
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Email	David.cheng@tpv-tech.com		Email	lissa.wang@tpv-tech.com
Manufacturer 2	TPV Display Technology (Beihai) Co.,Ltd		Manufacturer 3	TPV Display Technology (China) Co., Ltd.
Address	China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road Beihai City,Guangxi		Address	No.106 Jinghai 3 Rd., BDA, Beijing City
Country	China		Country	China
Contact	Yin Tao		Contact	Nancy.Shang
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Email	yin.tao@tpv-tech.com		Email	lijia.shang@tpv-tech.com
Manufacturer 4	L&T Display Technology (Fujian) Ltd.		Manufacturer 5	TPV Display Technology(Wuhan)Co.,Ltd
Address	Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian		Address	Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan
Country	China		Country	China
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2.0 Product Description Display (LCD Monitor) **Product** Brand name AOC The product covered by this report is a LCD Display (LED backlighting) The evaluation standard of this report is based on: ENERGY STAR Program Requirements Product Specification for Displays Eligibility Criteria Version 7.0 Description And the test specification of this report refer to: IEC 62301:2011(Ed.2.0): Household electrical appliances -Measurement of standby power IEC 62087:2011(Ed.3.0): Methods of measurement for the power consumption of audio, video and related equipment Models Q2781PQ(270LM00028) Model Similarity NA 19Vdc, 2.37A Ratings Other Ratings NA Market availability No 08/25/2016 Date available Last Mfg date NA Australia, New Zealand, Canada, Europe, Japan, Switzerland, Taiwan, United States Major Markets Trans Type Initial Certification: Model Meets ENERGY STAR Requirements Notes NA Model Name or Number **Identifying Information** Additional model details (optional) NA Original Certificate actual issued date for model tested (only applies to revised reports)

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3.0 Product Photographs

Photo 1 - External View (front)

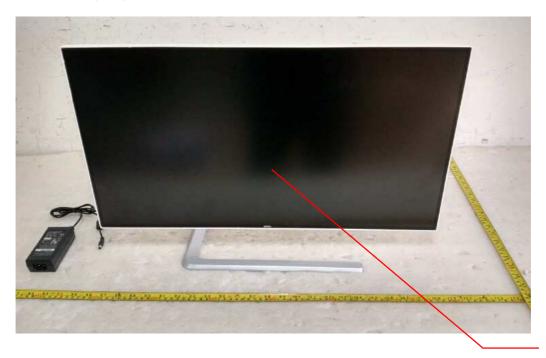


Photo 2 - External View (back)



3.0 Product Photographs

Photo 3 - Main board

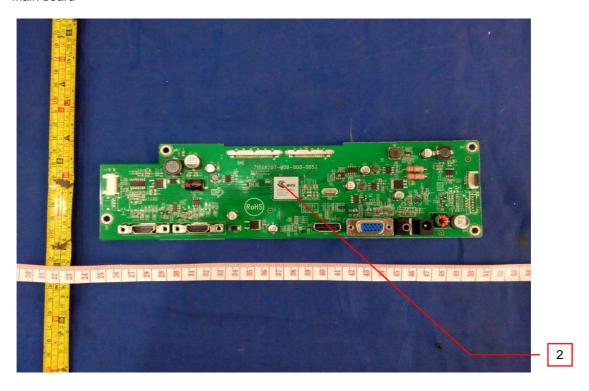


Photo 4 - Power adapter



4.0 Critical Components Photo # Manufacturer/ Mark(s) of Item Technical data and securement Type / model² Name no.1 trademark² means conformity³ LM270WQ* 27 inch, LED backlighting (* can be A-Z, 1 LCD Panel LGD LM270WQ5 is representative test NR 1 a-z, 0-9 or model blank) 3 Main Board L&T 715G8207 2 I/P: 19V, 2.37A NR I/P:100-240VAC, 50-60Hz, 1.3A TPV 4 3 Power Adapter ADPC1945EX NR O/P:19V 2.37A Energy efficiency: level VI

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^{2) &}quot;Various" means any type, from any manufacturer that complies with the "Technical data and securement means" and meets the "Mark(s) of conformity" can be used.

³⁾ Indicates specific marks to be verified, which assures the agreed level of surveillance for the component. "NR" - indicates: a) Unlisted and only visual examination is necessary or b) marks are not required to be verified.

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5.0 Critical Unlisted CEC Components

Periodic Evaluation of Critical Unlisted Components by the Intertek Component Evaluation Centers (CEC) is not required under the INTERTEK ENERGY STAR Program.

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6.0 Critical Features

<u>Critical Features/Components</u> - An essential part, material, subassembly, system, software, or accessory of a product that has a direct bearing on the product's conformance to applicable requirements of the ENERGY STAR ® Program Requirements.

<u>Listed Component</u> - A component part, which has been previously Listed or Certified by an accredited Certification Organization with no restrictions and is used in the intended application within its ratings.

<u>Recognized Component</u> - A component part, which has been previously evaluated by an accredited certification body with restrictions and must be evaluated as part of the basic product considering the restrictions as specified by the Conditions of Acceptability.

<u>Unlisted Component</u> - A part that has not been previously evaluated to the appropriate designated component standard. It may also be a Listed or Recognized component that is being used outside of its evaluated Listing or component recognition.

<u>Construction Details</u> - For specific construction details, reference should be made to the photographs and descriptions. All dimensions are approximate unless specified as exact or within a tolerance. In addition to the specific construction details described in this Report, the following general requirements also apply.

- 1. Product Safety Compliance NA
- 2. EMI Compliance NA
- 3. Schematics NA
- 4. <u>Installation, Operating and Safety Instructions</u> Instructions for installation and use of this product are provided by the manufacturer. Refer to Illustration No.1.for details.
- 5. Package Markings NA
- 6. Warranty Information NA
- 7. Marking Label Refer to Illustration No.2.for details.

7.0 Illustrations

Illustration 1 - Installation, Operating and Safety Instructions

Safety

National Conventions

The following subsections describe notational conventions used in this document.

Notes, Cautions, and Warnings

Throughout this guide, blocks of text may be accompanied by an icon and printed in bold type or in italic type.

These blocks are notes, cautions, and warnings, and they are used as follows:



NOTE: A NOTE indicates important information that helps you make better use of your computer system.



CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.



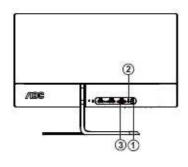
WARNING: A WARNING indicates the potential for bodily harm and tells you how to avoid the problem. Some warnings may appear in alternate formats and may be unaccompanied by an icon. In such cases, the specific presentation of the warning is mandated by regulatory authority.

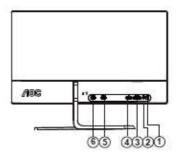
7.0 Illustrations

Illustration 1 - Installation, Operating and Safety Instructions (continued)

Connecting the Monitor

Cable Connections In Back of Monitor and Computer:





12481PXH

Q2781PQ

- 1 AC/DC port
- 2 Earphone
- 3 D-SUB
- 4 DP
- 5 HDMI-1
- 6 HDMI-2

To protect equipment, always turn off the PC and LCD monitor before connecting.

- 1 Connect the adapter cable to the AC/DC port on the back of the monitor.
- 2 Connect one end of the D-Sub cable to the back of the monitor and connect the other end to the computer's D-Sub port.
- 3/4 Optional (Requires a video card with HDMI port) Connect one end of the HDMI cable to the back of the monitor and connect the other end to the computer's HDMI port.
- 5 Optional (Requires a video card with DP port) Connect one end of the DP cable to the back of the monitor and connect the other end to the computer's DP port.
- 6 (Optional-for machine type with headset function) Connect the headset to headset port in the back of monitor..

If your monitor displays an image, installation is complete. If it does not display an image, please refer Troubleshooting.

7.0 Illustrations

Illustration 2 - Marking Label



8.0 Test Summary Project No. 160501577SHA **Evaluation Period** 7/22/2016-8/15/2016 Condition Prototype Sample ID. 0160618-33-002 Sample Rec. Date 18-Jun-2016 Intertek Testing Services Shanghai Limited. EPA ID(1105997) **Test Location** Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China Testing Lab Test type Qualification **Test Procedure** Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria. The following requirements were evaluated: Required Submittal Information Submittal Data Q2781PQ(270LM0 Model Name and/or Number tested 0028) Date tested 07/22/2016 Serial number of Unit tested **Engineer Sample** ENERGY_STAR_Specification_Version* 7.0 Product_Type* Monitor Display_Type* Other Other_Display_Type TFT LCD Display Backlight Technology LED Other_Display_Backlight_Technology NA Display_Contrast_Ratio* 1000 Image_Height_in* 13.2 Image_Width_in* 23.5 Diagonal_Screen_Size_in* 27 Screen_Area_sq_in* 310.47 Aspect_Ratio* 1.78 Native_Vertical_Resolution_lines* 1440 Native Horizontal Resolution lines 2560 Total_Native_Resolution_megapixels' 3.7 Native Pixel Density Dp pixels sq in* 11874 Screen Refresh Rate Hz* 60 Color_Gamut* 35 EPD I (32.9% CIE LUV/99% sRGB Enhanced Performance Criteria* area or greater) Reported_Contrast_Ratio_at_85_deg_Left_Horiz_Viewing_Angle 127 Reported_Contrast_Ratio_at_85_deg_Right_Horiz_Viewing_Angle 127 Is_This_Model_Shipped_With_an_External_Power_Supply_EPS* Yes Is_Model_Sold_Through_Enterprise_Channels* Yes Other_Available_Interfaces NA Other Features NΑ Signal_Interface* DisplayPort 1.2 Other_Interface NA Other Power Source NA VESA_FPDM2_Test_Pattern_Used* No Other_Mechanism_for_Automatically_Entering_Sleep_or_Off_Mode NA Default_Delay_Time_to_Sleep_min 5 Does_Model_Have_a_Forced_Menu_at_Initial_Start_up* No User_Interface* Yes Maximum_Measured_Luminance_cd_m_2* 340 Maximum Reported Luminance cd m 2* 350 As_shipped_Luminance_cd_m_2 317.7 As_tested_Luminance_cd_m_2* 200 On Mode Power at 12 Lux at 115 Volts W On_Mode_Power_at_300_Lux_at_115_Volts_W Measured On Mode Power at 115 Volts W 25.62

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8.0 Test Summary Reported_On_Mode_Power_at_115_Volts_W 25.62 Maximum_On_Mode_Power_Limit_for_Signage_Certification_W Measured_Sleep_Mode_Power_at_115_Volts_W 0.42 Reported_Sleep_Mode_Power_at_115_Volts_W 0.42 Measured Disconnected Sleep Mode Power at 115 Volts W Maximum Sleep Mode Power Limit for Signage Certification W Measured Off Mode Power at 115 Volts W 0.33 Reported_Off_Mode_Power_at_115_Volts_W 0.33 Measured_Total_Energy_Consumption_at_115_Volts_kWh 80.93 Reported_Total_Energy_Consumption_at_115_Volts_kWh 80.93 Max_Total_Energy_Consumption_Limit_for_Monitor_kWh 81.4 On_Mode_Power_at_12_Lux_at_230_Volts_W On_Mode_Power_at_300_Lux_at_230_Volts_W Measured_On_Mode_Power_at_230_Volts_W 25.35 Measured_Sleep_Mode_Power_at_230_Volts_W 0.45 Measured_Disconnected_Sleep_Mode_Power_at_230_Volts_W Measured_Off_Mode_Power_at_230_Volts_W 0.37 Measured_Total_Energy_Consumption_at_230_Volts_kWh 80.28 True_Power_Factor_PF_During_On_Mode_Testing_at_115_Volts_W 0.4 True_Power_Factor_PF_During_On_Mode_Testing_at_230_Volts_W 0.3 Number_of_Sleep_Modes_in_Addition_to_Default_Sleep_Mode* 0 Color_Spaces_Supported* None DisplayPort Available_Signal_or_Data_Interfaces* 1.2, HDMI 1.4, VGA Model_Features* **Built-In Speakers** Features_Enabled_in_Default_On_Mode* **Built-In Speakers** Features_Enabled_in_Default_Sleep_Mode* None Wireless_Technologies_Supported* None Low_Power_Wireless_Technologies* None Ethernet_Supported* None Power Source' Ac power supply **Display Power** Management Mechanism_for_Automatically_Entering_Sleep_or_Off_Mode* Signaling On Mode Power at 12 Lux at 100 Volts 50Hz W On_Mode_Power_at_300_Lux_at_100_Volts_50Hz_W Measured_On_Mode_Power_at_100_Volts_50Hz_W 25.65 Measured_Sleep_Mode_Power_at_100_Volts_50Hz_W 0.4 Measured_Disconnected_Sleep_Mode_Power_at_100_Volts_50Hz_W Measured_Off_Mode_Power_at_100_Volts_50Hz_W 0.32 Measured_Total_Energy_Consumption_at_100_Volts_50Hz_kWh 80.91 On_Mode_Power_at_12_Lux_at_100_Volts_60Hz_W On_Mode_Power_at_300_Lux_at_100_Volts_60Hz_W Measured_On_Mode_Power_at_100_Volts_60Hz_W 25.71 Measured_Sleep_Mode_Power_at_100_Volts_60Hz_W 0.4 Measured_Disconnected_Sleep_Mode_Power_at_100_Volts_60Hz_W Measured_Off_Mode_Power_at_100_Volts_60Hz_W 0.33 Measured_Total_Energy_Consumption_at_100_Volts_60Hz_kWh 81.11

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8.0 Test Summary
8.1 Signatures

A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the standards indicated in Section 1.0.

Completed by: Carl Dong Reviewed by: Jarree Jiang
Title: Engineer Title: Engineer

Signature: Signature:

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Address Country

9.0 Correlation Page For Multiple Listings The following products, which are identical to those identified in this report except for model number and Company name. **BASIC LISTEE** Top Victory Electronics (Taiwan) Co.,Ltd. 10F., No. 230, Liancheng Rd. Zhonghe City. Taipei Country 23553 Address Country 1065104 Taiwan EPA ID Product Display (LCD Monitor) Contact David.Cheng +886-02-82261668 Phone +886-02-82261707 FAX Email David.cheng@tpv-tech.com MULTIPLE LISTEE 1 Top Victory Electronics (Taiwan) Co.,Ltd. Address 10F., No. 230, Liancheng Rd. Zhonghe City. Taipei Country 23553 EPA ID Country Taiwan 1065104 David.Cheng Contact Phone +886-02-82261668 FAX +886-02-82261707 Email David.cheng@tpv-tech.com AOC **Brand Name** 08/25/2016 Last Mfg date Date available Market availability No Major Markets Australia, New Zealand, Japan, Switzerland, Taiwan Initial Certification: Model Meets ENERGY STAR Requirements Trans Type Notes NA **ASSOCIATED** TPV Electronics(Fujian) Co., Ltd **MANUFACTURER** Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province Address P.R.China Country **MULTIPLE LISTEE 1 MODELS BASIC LISTEE MODELS** Q2781PS(270LM00028) Q2781PQ(270LM00028) Model Name or Number Identifying Information Additional model details (Optional) MULTIPLE LISTEE 2 None Address EPA ID Country Contact Phone FAX **Email Brand Name** Market availability Last Mfg date Date available Major Markets Trans Type Notes **ASSOCIATED MANUFACTURER**

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9.0 Correlation Page For Multiple Listings

MULTIPLE LISTEE 2 MODELS

Additional model details (Optional)

Model Name or Number

Identifying Information

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10.0 General Information

The Applicant has agreed to produce products in accordance with the requirements of this report and to maintain compliance with all ENERGY STAR Product Specification requirements.

Changes to Product Design / Alternate Components

As part of this agreement, the Applicant also has agreed to notify Intertek and to request authorization prior to making any changes to the product (including but not limited to using alternate parts, components or materials) which may effect compliance with the ENERGY STAR Product Specification. Those parts, components or materials identified as critical have been listed in Section 4.0 of this report.

Product Surveillance

Under this Program, market surveillance is conducted on an annual basis. For each Product Type defined in the EPA ENERGY STAR Program, Intertek will select 10% of those certified products for Verification Testing in accordance with the requirements of the EPA ENERGY STAR Product Specification.

The primary source for products under Verification Testing will be the retail market. Applicants whose products are selected for Verification Testing are required to provide a list of locations where the product might be obtained. The Applicant is responsible for the cost of procurement and the Verification Tests. Should products not be readily available on the retail market, the Applicant is required to provide access to distribution warehouses to allow selection of those products. Should the product not be available on the retail market or if procurement from the retail market is not feasible, then alternate arrangements for Verification Testing will be made by the Intertek

As a general rule under the Verification Testing requirements, the products must achieve energy values within 5% of the required Tier Limit.

Compliance with ENERGY STAR Product Specifications under Verification Testing

Products found non-compliant with ENERGY STAR Product Specification under Verification Testing, will be reported to the EPA within 48 hours and the product removed from the ENERGY STAR Program. If it is determined during Verification Testing that changes have been made to product design or critical components, the Certification Body may increase Verification Testing frequency of those products.

10.1 Evaluation of Unlisted Components

Because Unlisted Components are uncontrolled, and they do not fall under a third party follow up program, Intertek may require these components to be tested and/or evaluated at least once annually, more often for certain components, as part of the independent certification process. The Unlisted Components in Section 5.0 require testing and/or evaluation as indicated.

Note to Intertek Follow Up Inspector: The Component Evaluation Center, CEC, will notify you in writing when these components must be selected and sent to the CEC for re-evaluation

Ship the samples to:

Intertek Testing Services Shanghai Limited

ETL Component Evaluation Center

Building No. 86, 1198 Qinzhou Road (North)

Shanghai 200233, China

Attn: Ms. Dansy Xu

Sample Disposition: Due to the destructive nature of the testing, all samples will be discarded at the conclusion of testing unless, the manufacturer specifically requests the return of the samples. The request for return must accompany the initial component shipment.

11.0 Manufacturing and Production Tests

Manufacturing and Production tests are not required under the INTERTEK ENERGY STAR Program. However, Intertek encourages the use of such ongoing product testing to ensure compliance with the EPA ENERGY STAR Product Specifications.

12.0 Revision Summary The following changes are in compliance with the declaration of Section 8.1: Project Handler/ Section Item Description of Change Proj # Site ID Reviewer None

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