

1.0 Reference and Address			
Report Number	180402164SHA-001	Original Issued: 6-Jun-2018	Revised: None
Standard(s)	ENERGY STAR® Program Requirements for Displays Version 7.0 and 7.1		
Applicant	<u>Top Victory Electronics (Taiwan) Co.,Ltd.</u>	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
Country	Taiwan	Country	P.R.China
Contact	David.Cheng	Contact	Winter.Feng
Phone	+886-2-82261668-2375	Phone	+86-591-85285555
FAX	+886-2-82261668-2375	FAX	+86-591-85285447
Email	David.cheng@tpv-tech.com	Email	winter.feng@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
Phone	18277949678	Phone	86(10)64326699-8312
FAX	86-779-2232270	FAX	NA
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
Contact	Shan Xu	Contact	Zhe.Zhou
Phone	86(591)8651-5556	Phone	86(27)-6884 3822
FAX	86(591)8651-5556	FAX	86(27)-6884 3822
Email	shan.xu@Intdisplayfj.com	Email	zhe.zhou@tpv-tech.com

2.0 Product Description			
Product	Display(LCD Monitor)		
Brand Name	AOC		
Description	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 7.1 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	22V2H(22V2);22V2Q(22V2)		
Model Similarity	Model Name: 22V2H; 22V2Q Model Number: 22V2 22V2H: with VGA + HDMI interface; 22V2Q: with HDMI + DisplayPort interface.		
Ratings	19Vdc, 0.94A		
Other Ratings	NA		
Date Available	05/08/2018	Market Availability	Yes
		Last Mfg Date	NA
Major Markets	Canada, Europe, Japan, Switzerland, Taiwan, United States		
Trans Type	Initial Certification: Model Meets ENERGY STAR Requirements		
Notes	NA		
Additional Model Details (Optional)	Model Name and Number	Identifying Information	
Original Certificate Actual Issued Date for Model Tested (Only Applies to Revised Reports)			NA

3.0 Product Photographs

Photo 1 - External view (Front)



Photo 2 - External view (Back)



3.0 Product Photographs

Photo 3 - Main board (L&T / 715G9612)

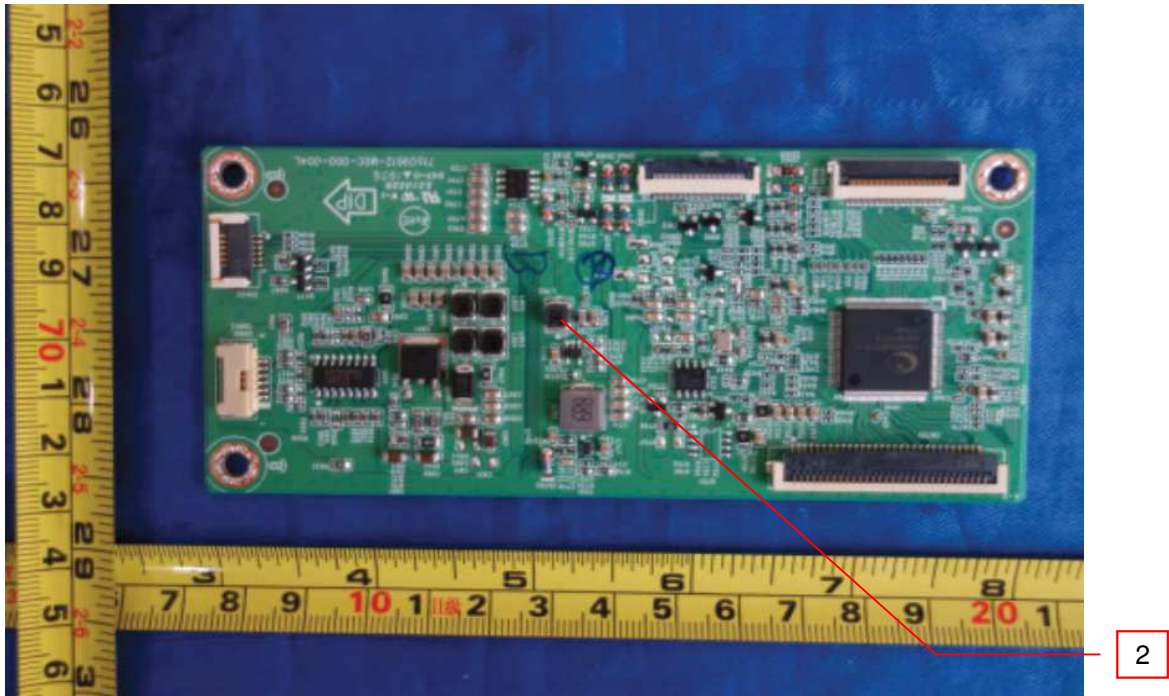
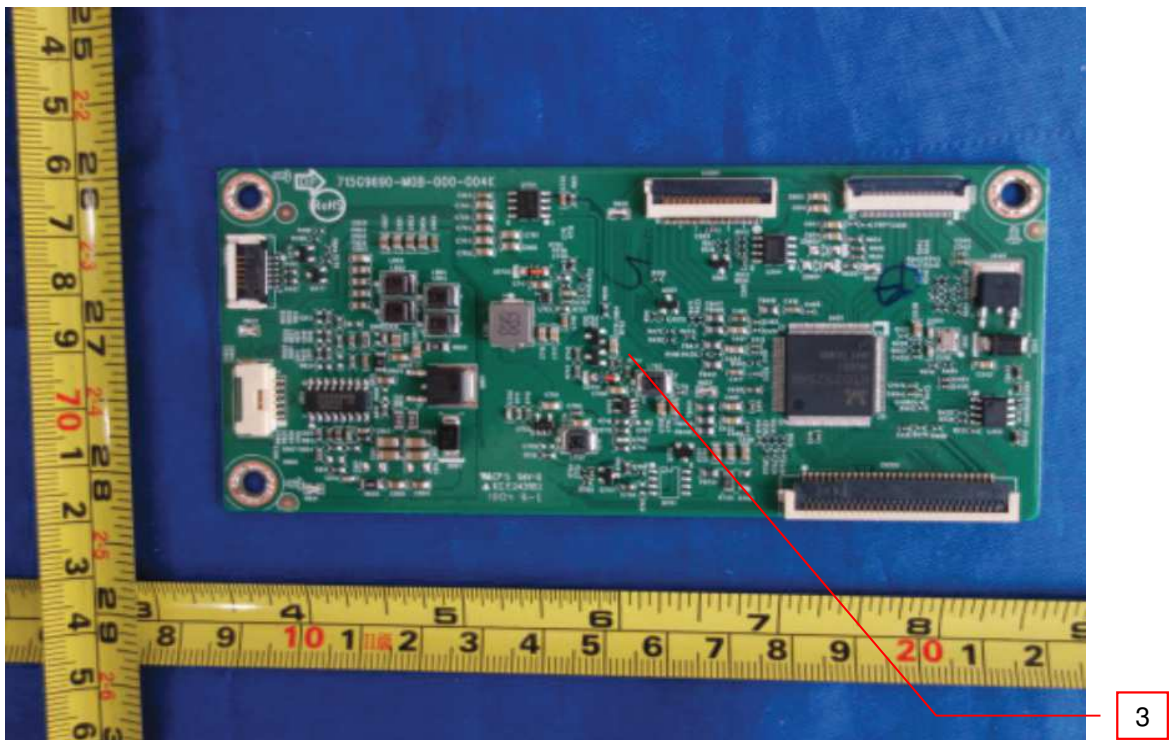
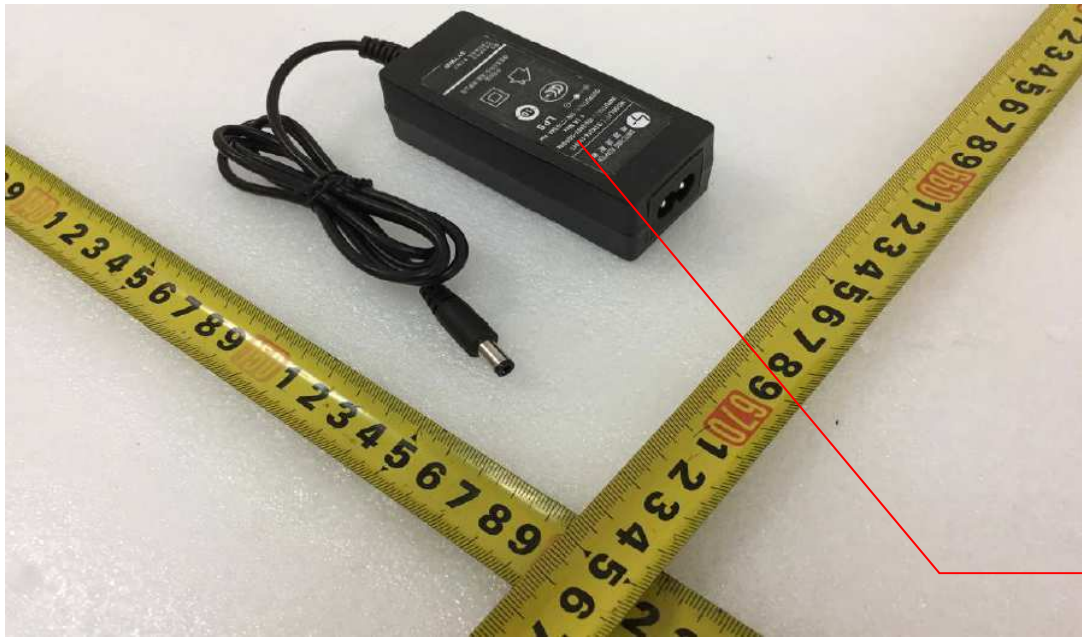


Photo 4 - Main board (L&T / 715G9690)



3.0 Product Photographs

Photo 5 - Power adapter (HONOR / ADS-25SE-19-2 19018E)



4

4.0 Critical Components						
Photo #	Item no. ¹	Name	Manufacturer/ trademark ²	Type / model ²	Technical data and securement means	Mark(s) of conformity ³
1	1	LCD panel	L&T	LM215WF* (* can be 0-9, A-Z, a-z or blank)	21.5 inch, TFT type, with LED backlight LM215WF9 is tested as a representation.	NR
3	2	Main Board	L&T	715G9612	I/P: 19Vdc, 0.94A 715G9612 is tested as a representation.	NR
4	3			715G9690		NR
5	4	Power Adapter	HONOR	ADS-25SE-19-2 19018E	I/P: 100-240Vac, 50/60Hz, Max.0.7A; O/P: 19Vdc, 0.94A Energy efficiency: Level VI	NR
NOTES:						
1) Not all item numbers are indicated (called out) in the photos, as their location is obvious. 2) "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.						

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.

6.0 Critical Features

Critical Features/Components - 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.

Listed Component - 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.

Recognized Component - 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.

Unlisted Component - 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.

Construction Details - 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. Installation, Operating and Safety Instructions - Instructions for installation and use of this product are provided by the manufacturer. Refer to Illustration No.1-2.for details.

5. Package Markings - NA

6. Warranty Information - NA

7. Marking Label - Refer to Illustration No.3.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.



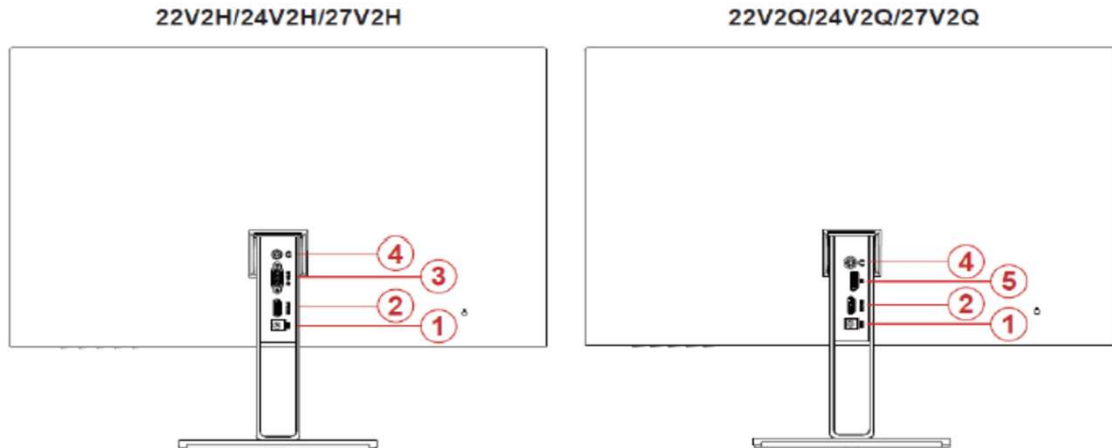
WARNING: A WARNING indicates the potential for bodily harm and tells you how to avoid the problem. Some warnings may appear in alternate formats and may be unaccompanied by an icon. In such cases, the specific presentation of the warning is mandated by regulatory authority.

7.0 Illustrations

Illustration 2 - Installation, Operating and Safety Instructions (Continued)

Connecting the Monitor

Cable Connections In Back of Monitor and Computer:



- 1 Power
- 2 HDMI
- 3 Analog (D-Sub 15-Pin VGA cable)
- 4 Earphone out
- 5 DP

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

1. Connect the power cable to the DC port on the back of the monitor.
2. Connect one end of the 15-pin D-Sub cable to the back of the monitor and connect the other end to the computer's D-Sub port.
3. (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.
4. (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.
5. Turn on your monitor and computer.

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



7.0 Illustrations

Illustration 3 -Marking Label



8.0 Test Summary			
Evaluation Period	6/6/2018-6/6/2018		Project No. 180402164SHA
Sample Rec. Date	18-Apr-2018	Condition Prototype	Sample ID. 0180418-68-009
Test Location	Intertek Testing Services Shanghai Limited. EPA ID(1105997) Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China		
Test Procedure	Testing Lab	Test type	Qualification
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
Model Name and/or Number tested			22V2H(22V2)
Date tested			06/06/2018
Serial number of Unit tested			1 sample
ENERGY_STAR_Specification_Version*			7.1
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*			10.5
Image_Width_in*			18.7
Diagonal_Screen_Size_in*			21.5
Screen_Area_sq_in*			197.6
Aspect_Ratio*			1.78
Native_Vertical_Resolution_lines*			1080
Native_Horizontal_Resolution_lines*			1920
Total_Native_Resolution_megapixels*			2.1
Native_Pixel_Density_Dp_pixels_sq_in*			10494
Screen_Refresh_Rate_Hz*			60
Color_Gamut*			32.7
Enhanced_Performance_Criteria*			None
Reported_Contrast_Ratio_at_85_deg_Left_Horiz_Viewing_Angle			
Reported_Contrast_Ratio_at_85_deg_Right_Horiz_Viewing_Angle			
Is_This_Model_Shipped_With_an_External_Power_Supply_EPS*			Yes
Is_Model_Sold_Through_Enterprise_Channels*			Yes
Other_Available_Interfaces			NA
Other_Features			NA
Signal_Interface*			HDMI 1.4
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*			No
Maximum_Measured_Luminance_cd_m_2*			242.2
Maximum_Reported_Luminance_cd_m_2*			250
As_shipped_Luminance_cd_m_2			226.8
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			14.77
Reported_On_Mode_Power_at_115_Volts_W			14.77
Maximum_On_Mode_Power_Limit_for_Signage_Certification_W			
Measured_Sleep_Mode_Power_at_115_Volts_W			0.19
Reported_Sleep_Mode_Power_at_115_Volts_W			0.19

8.0 Test Summary	
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	0.13
Reported Off Mode Power at 115 Volts W	0.13
Measured Total Energy Consumption at 115 Volts kWh	46.35
Reported Total Energy Consumption at 115 Volts kWh	46.35
Max Total Energy Consumption Limit for Monitor kWh	50.59
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	14.92
Measured Sleep Mode Power at 230 Volts W	0.23
Measured Disconnected Sleep Mode Power at 230 Volts W	
Measured Off Mode Power at 230 Volts W	0.17
Measured Total Energy Consumption at 230 Volts kWh	47.04
True Power Factor PF During On Mode Testing at 115 Volts W	0.49
True Power Factor PF During On Mode Testing at 230 Volts W	0.36
Number of Sleep Modes in Addition to Default Sleep Mode*	0
Color Spaces Supported*	sRGB
Available Signal or Data Interfaces*	HDMI 1.4,VGA
Model Features*	None
Features Enabled in Default On Mode*	None
Features Enabled in Default Sleep Mode*	None
Wireless Technologies Supported*	None
Low Power Wireless Technologies*	None
Ethernet Supported*	None
Power Source*	Ac power supply
Mechanism for Automatically Entering Sleep or Off Mode*	Display Power Management 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	14.82
Measured Sleep Mode Power at 100 Volts 50Hz W	0.19
Measured Disconnected Sleep Mode Power at 100 Volts 50Hz W	
Measured Off Mode Power at 100 Volts 50Hz W	0.12
Measured Total Energy Consumption at 100 Volts 50Hz kWh	46.52
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	14.81
Measured Sleep Mode Power at 100 Volts 60Hz W	0.19
Measured Disconnected Sleep Mode Power at 100 Volts 60Hz W	
Measured Off Mode Power at 100 Volts 60Hz W	0.12
Measured Total Energy Consumption at 100 Volts 60Hz kWh	46.49

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:	

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.		
Address	10F.,No.230,Liancheng Rd. Zhonghe City. Taipei Country 23553		
Country	Taiwan	EPA ID	1065104
Product	Display(LCD Monitor)		
Contact	David.Cheng		
Phone	+886-2-82261668-2375		
FAX	+886-2-82261668-2375		
Email	David.cheng@tpv-tech.com		

MULTIPLE LISTEE 1	None		
Address			
Country		EPA ID	
Contact			
Phone			
FAX			
Email			
Brand Name			
Date Available		Market Availability	Last Mfg Date
Major Markets			
Trans Type			
Notes			

ASSOCIATED MANUFACTURER			
Address			
Country			

MULTIPLE LISTEE 1 MODELS		BASIC LISTEE MODELS
Additional Model Details (Optional)	Model Name and Number	Identifying Information

MULTIPLE LISTEE 2	None		
Address			
Country		EPA ID	
Contact			
Phone			
FAX			
Email			
Brand Name			
Date Available		Market Availability	Last Mfg Date
Major Markets			
Trans Type			
Notes			

ASSOCIATED MANUFACTURER			
Address			
Country			

MULTIPLE LISTEE 2 MODELS		BASIC LISTEE MODELS
Additional Model Details (Optional)	Model Name and Number	Identifying Information

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

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. Angela Han

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:				
Date/ Proj # Site ID	Project Handler/ Reviewer	Section	Item	Description of Change
				None