

UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 3rd Ed, 2021-10-22 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1:19, 3rd Ed, 2021-10-22 (Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Listing
CCN:	AZOT, AZOT7 (Audio/video, Information and Communication Technology Equipment)
Complementary CCN:	N/A
Product:	Security LED Monitor
Model:	SMT-2431
Rating:	100-240Vac, 50/60Hz, 1.0A
Applicant Name and Address:	WEIHAI DAEWOO ELECTRONICS CO LTD ECONOMIC & TECHNICAL DEVELOPMENT ZONE 26 HONGKONG RD WEIHAI SHANDONG 264205 CHINA

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.

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Prepared By: Rhea Zhao / Project Handler

Reviewed By: Star Gu / 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

Security LED Monitor, powered by AC source. All components are mounted on min. V-1 PWB and housed in metal and plastic enclosure with following features:

- 1.LCD Type: 23.8 inch LCD panel with LED backlight;
- 2.Building-in power supply board MP42TL-2M21-A;
- 3.VGA and HDMI ports;
- 4.The internal metal chassis is considered as fire enclosure and mechanical enclosure, and the external plastic enclosure is regarded as electrical enclosure and mechanical enclosure, made of min. HB material;
- 5.Base stand (optional use), made of min. HB material.
- 6.Maximum declared ambient: 40°C.

Model Differences

N/A

Test Item Particulars

Product group	end product
Classification of use by	Ordinary person Children likely to be present
Supply Connection	AC Mains
Supply tolerance	+10%/-10%
Supply connection – type	pluggable equipment type A - appliance coupler
Considered current rating of protective device	20 A; Location: building
Equipment mobility	movable wall/ceiling-mounted
Over voltage category (OVC)	OVC II
Class of equipment	Class I
Special installation location	N/A

Pollution degree (PD)	PD 2
Manufacturer's specified Tma (°C)	40
IP protection class	IPX0
Power systems	TN
Altitude during operation (m)	5000 m
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	Approx. 3.42
Technical Considerations • The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 40°C • The product is intended for use on the following power systems : TN • Considered current rating of protective device as part of the building installation (A) : 20 • Mains supply tolerance (%) or absolute mains supply : +10%/-10% • The equipment disconnect device is considered to be : Appliance inlet • The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS) : HDMI port, VGA port • The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual • The product was investigated to the following additional standard : CAN/CSA C22.2 No. 62368-1:19, 3rd Edition, UL 62368-1 3rd Edition, Issued December 13, 2019	
Additional Information N/A	
Additional Standards The product fulfills the requirements of: N/A	
Markings and Instructions	
Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listee's or Recognized Company's name, Trade Name, Trademark or File Number
Equipment identification marking – model identification	Model Number
Equipment rating marking – ratings	"Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)"
Special Instructions to UL Representative Inspect the transformer(s) listed in Production - Line Testing Requirements per BD 1.0. When the tests are conducted at other location, inspect test record and specification sheet provided by the component manufacturer. Verify the specification sheet indicates 100% routine test specified in Production - Line Testing Requirements be conducted at the component manufacturer.	

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
SMT-2431	T1	N/A	Primary to secondary	2829	4000	1
BD1.2	Earthing Continuity Test Exemptions – This test is not required for the following models:					
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BD1.3	Electric Strength Test Exemptions – This test is not required for the following models:					
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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
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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. Label	Interchangeable	Interchangeable	Minimum 70 degree C, suitable for affixed material.	PGDQ2 or PGJI2	UL	
02. Internal Wirings (Secondary Circuits)	Interchangeable	Interchangeable	Marked or rated VW-1, min. 30 V, min. 60 degree C, routed away from primary un- insulated live parts and primary circuit wiring.	AVLV2	UL	
03. Insulating Tubing/Sleeving	Interchangeable	Interchangeable	Marked or rated VW-1, min. 105 degree C, min. 300 V.	UZFT2 or YDPU2 or YDTU2	UL	
04. Connectors and Receptacles (Secondary Circuits)	Interchangeable	Metal/Plastic	Copper alloy pins housed in bodies of plastic rated min. V-2.	QMFZ2	UL	
04a. Connectors and Receptacles (Secondary Circuits) (Alternate)	Interchangeable	Interchangeable	Metal/Plastic	ECBT2 or RTRT2	UL	
05. Internal Plastic Part Materials	Interchangeable	Interchangeable	Rated min. V-2.	QMFZ2	UL	
06. Interconnecting Cable, (Optional; detachable)	Interchangeable	Interchangeable	Min. 30V, 60 degree C, max. 3.05 m in length, marked VW-1 , suitable for external use, jacketed.	DVPJ or AVLV2	UL	
06a. Interconnecting Cable, (Optional; detachable) (Alternate)	Interchangeable	Interchangeable	Max. 3.05 m long, suitable for external use, jacketed, type CMP, CMR, CMG, CM, CMX, CMUC.	DUZX	UL	

07. Power Supply Cord (Optional)	Interchangeable	Interchangeable	Detachable, Type SVT, SPT-2 or NISPT-2, min. 250 V ac, min. 18 AWG, min. 1.5 m and max. 2.4 m long, one end with grounding type NEMA 5-15P, the other end with appliance coupler	ZJCZ and RTRT and AXUT or ELBZ	UL	
08. Printed Wiring Boards	Interchangeable	Interchangeable	V-0,130 degree C	ZPMV2	UL	
09. Base (Optional)	Interchangeable	Interchangeable	HB or better	QMFZ2	--	
10. LCD Panel with LED backlight	Weihai Daewoo Electronics Co.,Ltd.	DW238EF	23.8 inch, LED backlight	--	--	
10a. LCD Panel with LED backlight-Alternate	Weihai Taiji Wisdom Display Optoelectronic Co., Ltd.	DW238EF-S7	23.8 inch, LED backlight	--	--	
11. Plastic enclosure	CHI MEI CORPORATION	PA-757(+)	ABS, 80°C, HB min. 2.0mm, see enclosure 04-05	QMFZ2	UL E56070	
12. Mylar sheet (under power board)	SICHUAN DONGFANG INSULATING MATERIAL CO.,LTD	DFR116ECOB	V-0, min. 0.40mm thickness	QMFZ2	UL E199019	
13. Power Board	Shenzhen MEGMEET Electrical Co., Ltd	MP42TL-2M21-A	--	--	--	
13-01. AC-Inlet (CON1)	Zhe Jiang Bei Er JiaElectronic Co., Ltd.	ST-A01-003J	15A,250Vac (UL); 10A,250Vac (VDE), 70°C	AXUT2	UL E225980	

13-01a. AC-Inlet (CON1)-alternate	ZHEJIANG LECI ELECTRONICS CO LTD	DB-14	15A,250Vac (UL); 10A,250Vac (VDE), 70°C	AXUT2	UL E302229	
13-01b. AC-Inlet (CON1)-alternate	TECX-UNIONS TECHNOLOGY CORP	TU-301-SP	15A,250Vac (UL); 10A,250Vac (ENEC), 70°C	AXUT2	UL E220004	
13-02. Fuse (F1)	XC Electronics (Shenzhen) Corp Ltd	5TE	T3.15A, 250 Vac	JDYX2	UL E249609	
13-03. NTC(RT1)	--	--	NTC, Rated 5Ω at 25 degree C,	--	--	
13-05. Bleeder resistors(R1,R2,R3, R4)	--	--	Max.1.5MΩ, Min.1/4W,	--	--	
13-06. X2-capacitor(CX2)	Xiamen Faratronic Co., Ltd.	MKP62	0.47uF, Min.250Vac,X2 type, min.100°C	FOWX2	UL E186600	
13-06a. X2-capacitor(CX2)-alternate	Europtronic (SuZhou)Co. Ltd.	MPX	0.47uF, Min.250Vac,X2 type, min.105°C	FOWX2	UL E211347	
13-06b. X2-capacitor(CX2)-alternate	Europtronic (SuZhou)Co. Ltd.	MPX2	0.47uF, Min.250Vac,X2 type, min.105°C	FOWX2	UL E211347	
13-06c. X2-capacitor(CX2)-alternate	Shenzhen Jinghao Capacitor Co., Ltd.	CBB62B	0.47uF, Min.250Vac,X2 type, min. 110°C	FOWX2	UL E252286	

13-06d. X2-capacitor(CX2)-alternate	YANGZHOU NISSEI ELECTRONICS CO LTD	MP1	0.47uF, Min.250Vac,X2 type, min.100°C	FOWX2	UL E351313	
13-06e. X2-capacitor(CX2)-alternate	NISTRONICS (JIANGXI) CO LTD	MPR	0.47uF, Min.250Vac,X2 type, min.100°C	FOWX2	UL E338685	
13-07. Filter (L2)	Shenzhen Megmeet Electrical Co., Ltd	SQ1212-15mH	Min. 130 degree C	--	--	
13-07-01. Filter (L2) -core	--	--	Ferrite	--	--	
13-07-02. Filter (L2) -coil	Interchangeable	Interchangeable	Rated min. 130 degree C	OBMW2	UL	
13-07-03. Filter (L2) -bobbin	CHANG CHUN PLASTICS CO LTD (E59481)	T375HF	Phenolic (PF), rated V-0, 150 degree C, min. thickness 0.43 mm	QMFZ2	UL	
13-08. Filter (LB1)	Shenzhen Megmeet Electrical Co., Ltd	RM6-L80uH	Min. 130 degree C	--	--	
13-09. Transistor(QF1)	--	--	Min. 500V, Min. 3A	--	--	
13-10. Electrolytic capacitor(C3)	Interchangeable	Interchangeable	Min.105 degree C, Min.450V, Max.82uF	--	--	
13-11. Printed Wiring Boards	Interchangeable	Interchangeable	V-0,130 degree C	ZPMV2	UL	
13-12. Y1-Capacitor (CY1,CY2,CY4)	Yinan Don's Electronic Component Co.,Ltd.	CT81	1000pF, Y1 type, Min.250Vac, 125°C	FOWX2	UL E145038	
13-12a. Y1-Capacitor	Walsin Technology Corp	AH series	1000pF, Y1 type, Min.250Vac	FOWX2	UL E146544	

(CY1,CY2,CY4)- alternate						
13-12b. Y1- Capacitor (CY1,CY2,CY4)- alternate	TDK CORPORATION	CD	1000pF, Y1 type, Min.250Vac	FOWX2	UL E37861	
13-12c. Y1- Capacitor (CY1,CY2,CY4)- alternate	Xiamen Wanming Electronics Co., Ltd.	HJ	1000pF, Y1 type, Min.250Vac	FOWX2	UL E221839	
13-12d. Y1- Capacitor (CY1,CY2,CY4)- alternate	Kunshan Wansheng Electronics Co.,Ltd	CT7	1000pF, Y1 type, Min.250Vac	FOWX2	UL E249006	
13-13. Photocoupler (PC1)	Lite-On Technology Corporation	LTV-817 series, LTV-816 series	Cr≥7.0mm, Cl≥7.0mm, DTI≥0.4mm reinforced insulation, 110°C	FPQU2	UL E113898	
13-13a. Photocoupler (PC1)- alternate	Everlight Electronics Co., Ltd	EL817 series	Cr≥7.6mmCl≥7.6mm, DTI≥0.4mmreinforced Insulation, 110°C	FPQU2	UL E214129	
13-13b. Photocoupler (PC1)- alternate	COSMO Electronics Corp.	K1010	Cr≥6.5mm, Cl≥6.5mm, DTI≥0.4mmreinforced insulation, 110°C	FPQU2	UL E169586	
13-14. Transformer (T1)	Shenzhen Megmeet Electrical Co., Ltd	EQ26-5V-12V	Class B	--	--	
13-14-00. Transformer (T1)- Insulation system	Shenzhen MEGMEET Electrical Co., Ltd	W-B	Class B	OBJY2	UL(E340116)	
13-14-01. Transformer (T1)- Core	--	--	Ferrite	--	--	

13-14-02. Transformer (T1)- Bobbin	SUMITOMO BAKELITE CO.,LTD	PM-9630	V-0, 150 degree C, Phenolic	QMFZ2	UL E41429	
13-14-02a. Transformer (T1)- Bobbin-alternate	Changchun Plastics Co., Ltd	T200HF	V-0, 150 degree C, Phenolic	QMFZ2	UL E59481	
13-14-03. Transformer (T1)- insulation tape	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX*	130 degree C	OANZ2	UL E246820	
13-14-03a. Transformer (T1)- insulation Tape-alternate	JINGJIANG YAHUA PRESSURE SENSITIVEGLUE CO LTD	CT*(b)(g)	130 degree C	OANZ2	UL E165111	
13-14-04. Transformer (T1)- WIRE	SHENZHEN YANCHENG COMPOUND LINE CO LTD	xUEWF@/155,QA- x@/155	155 degree C	OBMW2	UL E360434	
13-14-04a. Transformer (T1)- WIRE-alternate	GUANGDONG MEMI ELETRICAL TECHNOLOGYCO, LTD	@*UEW155	155 degree C	OBMW2	UL E516355	
13-14-05. Transformer (T1)- TRIPLE INSULATED WIRE	GUANGZHOU WANBAO ELECTRONIC MATERIAL CO LTD	DTM-B	130 degree C	OBJT2	UL E323485	
13-14-06. Transformer (T1)- TUBE	GREAT HOLDING INDUSTRIAL CO LTD	TFT	200 degree C	YDPU2	UL E156256	
13-14-07. Transformer (T1)- VARNISH	Guangdong Jianxin Technology Co Ltd	JS-813, JS-812	155 degree C	OBOR2	UL 339578	

13-14-07a. Transformer (T1)- VARNISH-alternate	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	130 degree C	OBOR2	UL E228349	
13-14-08. Transformer (T1)- EPOXY	DONGGUAN EATTO ELECTRONIC MATERIAL CO LTD	3300A/B-1 E-500(XX)	130 degree C	QMFZ2	UL E218090	
14.Adhesive for aluminium foil pasted around internal metal chassis	Kunshan Rich&Crown Eleltronic Materials CO.,LTD	FAP-3875	120 degree C	--	--	
15. Heat sink	--	--	Aluminium alloy, see enclosure 04-04	--	--	
16. Internal tape	Jiangsu Taiyi New Material Technology Co., Ltd.	TY-AP805C	Less than 4g	--	--	
17. Metal Enclosure	Interchangeable	Interchangeable	Aluminium alloy, 0.53 mm thickness, details see enclosure 04-02	--	--	

Enclosures

Type	Supplement Id	Description
Photographs	03-01	External view-1
Photographs	03-02	External view-2
Photographs	03-03	External view-3
Photographs	03-04	External view-4
Photographs	03-05	External view-5
Photographs	03-06	External view-6
Photographs	03-07	Internal view-1
Photographs	03-08	Internal view-2
Photographs	03-09	Internal view-3
Photographs	03-10	Internal view-4
Photographs	03-11	Internal view-5
Photographs	03-12	Internal view-6
Photographs	03-13	Internal view-7
Photographs	03-14	Internal view-8
Photographs	03-15	Internal view-9
Photographs	03-16	Internal view-10
Diagrams	04-01	Framework and Dimension-1
Diagrams	04-02	Internal metal chassis specification
Diagrams	04-03	Mylar specification
Diagrams	04-04	Heat Sink HS1 specification
Diagrams	04-05	Framework and Dimension-2
Schematics + PWB	05-01	PCB Layout
Manuals	06-01	User manual
Miscellaneous	07-01	T1 specification
Miscellaneous	07-02	L2 specification
Miscellaneous	07-03	LB1 specification