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) CAN/CSA C22.2 No. 62368-1-14, 2nd Ed-(Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Listing
CCN:	QQJQ, QQJQ7 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment)
Complementary CCN:	N/A
Product:	ICT/ITE Power Supply
Model:	GT-46240-***-T** The 1st “*” denotes the rated output wattage, which can be “01” to "24", The 2nd “*” denotes the standard rated output voltage designation, with a value of "12", "15" and "24". The 3rd “*” is optional deviation, subtracted from standard output voltage, which can “-0.1” to “-8.9” with interval of 0.1, or blank to indicate no voltage difference. The 2nd and 3rd together denote the output voltage, with a range of 12-24Vdc. The 4th “*” can be 3 or 3A,3 means C14 inlet type for Class I equipment, 3A means C6 inlet type for Class I equipment. The last ”*” can be any six character 0-9 or A-Z, "( )", "[ ]", "-" or blank for marketing purposes
Rating:	I/P: 100-240Vac, 50-60Hz, 0.6A O/P: See Model description of general product information for details
Applicant Name and Address:	GLOBTEK (HONG KONG) LTD UNIT 1402, BENSON TOWER 74 HUNG TO RD KWUN TONG KOWLOON HONG KONG

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:	Amy Wong / Suki Kwong / Project Handler	Reviewed By:	Brian Wong / 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 product covered is a ICT/ITE Power Supply intended for use with audio/video, information and communication technology equipment.

Model Differences

All models are identical except model designation, secondary winding of Transformer (T1), Transistor (Q1), Heat Sink (HS2), and output rating as follows. See Enclosure Id. 07-01 for details.

Models GT-46240-***-T**

The 4th "*" can be 3 or 3A,3 means C14 inlet type for Class I equipment, 3A means C6 inlet type for Class I equipment

Model	Output voltage(V)	Output voltage(V)	Max.Output Wattage(W)
GT-46240-*12-T**	12	2.0	24
GT-46240-*15*-T**	12.1-15	1.98	24
GT-46240-*24*-T**	15.1-24	1.58	24

Test Item Particulars

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 as part of building or equipment installation	20 A; building;
Equipment mobility	movable transportable
Over voltage category (OVC)	OVC II
Class of equipment	Class I
Access location	N/A

Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient (°C)	40
IP protection class	IPX0
Power Systems	TN
Altitude during operation (m)	2000 m or less
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	approximately 0.14

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 values : +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) : Output Connector
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual

Additional Information

Revision: 4789507340

Model GT-46240-***-T** copy from the File E163743-A6002 Vol. X9 to E341351-A6002 Vol. X10.
Model name change from 6A-241DB/Nxx to GT-46240-WWVV-X.X-T3(3A).

Additional Standards

The product fulfills the requirements of: UL 60950-1, 2nd Edition, 2014-10-14 (Information Technology Equipment - Safety - Part 1: General Requirements) / CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements) covered in Report Ref#: E163743-A174.

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
Equipment rating marking – ratings	"Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)"
Limited power source (optional)	Marked with "Limited Power Source" or "LPS".

Special Instructions to UL Representative

Inspect the transformer(s) listed in Production Line Testing Requirements per AA1.1- (C). 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 is 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
6A-241Dxyy (x can be B or N; B stand for C14 Inlet type, N stand for C6 Inlet type; yy can be 12, 15 or 24 for output voltage)	Transformer (T1)	Transformer (T1)	Primary to Secondary	2500	4000	1 or 4
BD1.2	**Earthing Continuity Test Exemptions – This test is not required for the following models:**					
BD1.3	**Electric Strength Test Exemptions – This test is not required for the following 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.**					
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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. Enclosure	LG Chem (Guangzhou) Engineering Plastics Co., Ltd.	LUPOY EF-1006F(m)	Two pieces construction secured together by ultrasonic welding. Minimum V-0, minimum 115 degree C, minimum 1.5 mm thick. See Enclosure Id. 04-01 for details.	QMFZ2	UL	
01a. Enclosure (Alternate)	Covestro Deutschland Ag [PC Resins]	FR6005 + (z)	Two pieces construction secured together by ultrasonic welding. Minimum V-0, minimum 105 degree C, minimum 1.5 mm thick. See Enclosure Id. 04-01 for details.	QMFZ2	UL	
01b. Enclosure (Alternate)	Sabic Innovative Plastics US L L C	915R(GG)	Two pieces construction secured together by ultrasonic welding. Minimum V-0, minimum 120 degree C, minimum 1.5 mm thick. See Enclosure Id. 04-01 for details.	QMFZ2	UL	
01c. Enclosure (Alternate)	Sabic Japan L L C	945 (GG)	Two pieces construction secured together by ultrasonic welding. Minimum V-0, minimum 120 degree C, minimum 1.5 mm thick. See Enclosure Id. 04-01 for details.	QMFZ2	UL	

01d. Enclosure	Silver Age Engineering Plastics (Dongguan) Co., Ltd.	PC2330	Two pieces construction secured together by ultrasonic welding. Minimum V-0, minimum 115 degree C, minimum 1.5 mm thick. See Enclosure Id. 04-01 for details.	QMFZ2	UL	
02. Appliance Inlet (for GT-46240-***-T3*) (C14 type)	Tecx-Unions Technology Corp.	TU-301-SP	10A, 250Vac (C14 type)	AXUT2	UL	
02a. Appliance Inlet (Alternate) (for GT-46240-***-T3*) (C14 type)	Sun Fair Electric Wire & Cable (HK) Co., Ltd.	S-03	10A, 250Vac (C14 type)	AXUT2	UL	
02b. Appliance Inlet (Alternate) (for GT-46240-***-T3*) (C14 type)	Echo Electric Co., Ltd.	AC-P01, AC-P03, AC-P06 or AC-P07	10A, 250Vac (C14 type)	AXUT2	UL	
02c. Appliance Inlet (Alternate) (for GT-46240-***-T3*) (C14 type)	Yueqing Leci Electronics Co., Ltd.	DB-14	10A, 250Vac (C14 type)	AXUT2	UL	
02d. Appliance Inlet (Alternate) (for GT-46240-***-T3*) (C14 type)	Zhe Jiang Bei Er Jia Electronic Co., Ltd.	ST-A01-003J, ST-A01-001L, ST-A01-002L, ST-A01-003K, ST-A01-004L or ST-A01-004K	10A, 250Vac (C14 type)	AXUT2	UL	
02-1. Appliance Inlet (for GT-46240-***-T3A*) (C6 type)	Tecx-Unions Technology Corp.	TU-333	2.5A, 250Vac (C6 type)	AXUT2	UL	
02-1a. Appliance Inlet (Alternate) (for GT-46240-***-T3) (C6 type)	Sun Fair Electric Wire & Cable (HK) Co., Ltd.	S-02	2.5A, 250Vac (C6 type)	AXUT2	UL	

02-1b. Appliance Inlet (Alternate) (for GT-46240-***-T3) (C6 type)	Yueqing Leci Electronics Co., Ltd.	DB-6	2.5A, 250Vac (C6 type)	AXUT2	UL	
02-1c. Appliance Inlet (Alternate) (for GT-46240-***-T3) (C6 type)	Zhe Jiang Bei Er Jia Electronic Co., Ltd.	ST-A04-001 or ST-A04-002	2.5A, 250Vac (C6 type)	AXUT2	UL	
03. Fuse (F1)	Interchangeable	Interchangeable	T1.6A, 250Vac	JDYX	UL	
03a. Fuse (F1) (Alternate)	Conquer Electronics Co., Ltd.	MST	T1.6AL, 250Vac	JDYX2	UL	
03b. Fuse (F1) (Alternate)	Ever Island Electric Co Ltd & Walter Electric	2010	T1.6AL, 250Vac	JDYX2	UL	
03c. Fuse (F1) (Alternate)	Cooper Bussmann L L C	SS-5	T1.6AL, 250Vac	JDYX2	UL	
03d. Fuse (F1) (Alternate)	Bel Fuse Inc.	RST	T1.6AL, 250Vac	JDYX2	UL	
03e. Fuse (F1) (Alternate)	Hollyland Co., Ltd.	5ET	T1.6AL, 250Vac	JDYX2	UL	
03f. Fuse (F1) (Alternate)	Littelfuse Inc.	392	T1.6AL, 250Vac	JDYX2	UL	
03g. Fuse (F1) (Alternate)	Dongguan Better Electronics Technology Co., Ltd.	932 series	T1.6AL, 250Vac	JDYX2	UL	
04. X-Capacitor (CX1)	Cheng Tung Industrial Co., Ltd.	CTX	Maximum 0.22uF, minimum 250Vac, 100 degree C, X1 or X2 type. (Compliance with IEC 60384-14)	FOWX2	UL	

04a. X-Capacitor (CX1) (Alternate)	Tenta Electric Industrial Co., Ltd.	MEX	Maximum 0.22uF, minimum 250Vac, 100 degree C, X1 or X2 type. (Compliance with IEC 60384-14)	FOWX2	UL	
04b. X-Capacitor (CX1) (Alternate)	Ultra Tech Xiphi Enterprise Co., Ltd.	HQX	Maximum 0.22uF, minimum 250Vac, 100 degree C, X1 or X2 type. (Compliance with IEC 60384-14)	FOWX2	UL	
04c. X-Capacitor (CX1) (Alternate)	Carli Electronics Co., Ltd.	MPX	Maximum 0.22uF, minimum 250Vac, 100 degree C, X1 or X2 type. (Compliance with IEC 60384-14)	FOWX2	UL	
04d. X-Capacitor (CX1) (Alternate)	Joey Electronics (Dong Guan) Co., Ltd.	MPX	Maximum 0.22uF, minimum 250Vac, 100 degree C, X1 or X2 type. (Compliance with IEC 60384-14)	FOWX2	UL	
04e. X-Capacitor (CX1) (Alternate)	Xiangtai Electronic (Shenzhen) Co., Ltd.	MKP/MPX	Maximum 0.22uF, minimum 250Vac, 110 degree C, X1 or X2 type. (Compliance with IEC 60384-14)	FOWX2	UL	
05. Bleeder Resistors (R1, R2)	Tzai Yuan Enterprise Co., Ltd.	HSMD********* or SMD*********	Maximum 2.2MΩ, minimum 1/4W.	AZOP2	UL	
05a. Bleeder Resistors (R1, R2) (Alternate)	Prosperity Dielectrics Co., Ltd.	FVS03, FVS05, FVS06, FVS20, FVS25, TF06V, TF08V, TF12V, TF20V or TF25V	Maximum 2.2MΩ, minimum 1/4W.	AZOP2	UL	
06. Bridge Diode (BD1)	--	--	Minimum 2A, minimum 1000V.	--	--	
07. Storage Capacitor (C1)	--	--	47µF, minimum 400Vac, 105 degree C.	--	--	

08. Transistor (Q1) (for GT-46240-*12-T** and GT-46240-*24*-T**))	--	--	4-10A, minimum 600V.	--	--	
08a. Transistor (Q1) (Alternate) (for for GT-46240-*15*-T**)	--	--	4-10A, minimum 650V.	--	--	
09. Bridge Capacitors (CY1,CY2) (Optional)	Success Electronics Co., Ltd.	SB, SE or SF	CY1 maximum 470pF, CY2 maximum 220pF, minimum 250Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14)	FOWX2	UL	
09a. Bridge Capacitors (CY1,CY2) (Optional) (Alternate)	TDK Corporation	CD	CY1 maximum 470pF, CY2 maximum 220pF, minimum 250Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14)	FOWX2	UL	
09b. Bridge Capacitors (CY1,CY2) (Optional) (Alternate)	Walsin Technology Corp.	AH	CY1 maximum 470pF, CY2 maximum 220pF, minimum 250Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14)	FOWX2	UL	
09c. Bridge Capacitors (CY1,CY2) (Optional) (Alternate)	Haohua Electronic Co.	CT7	CY1 maximum 470pF, CY2 maximum 220pF, minimum 250Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14)	FOWX2	UL	
09d. Bridge Capacitors (CY1,CY2) (Optional) (Alternate)	Xiangtai Electronic (Shenzhen) Co., Ltd.	YOB, YOE or YOF	CY1 maximum 470pF, CY2 maximum 220pF, minimum 250Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14)	FOWX2	UL	

09e. Bridge Capacitors (CY1,CY2) (Optional) (Alternate)	Juhong EIE Company	JB	CY1 maximum 470pF, CY2 maximum 220pF, minimum 250Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14)	FOWX2	UL	
09f. Bridge Capacitors (CY1,CY2) (Optional) (Alternate)	Murata Mfg. Co., Ltd.	KX	CY1 maximum 470pF, CY2 maximum 220pF, minimum 250Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14)	FOWX2	UL	
10. Optical Isolator (PC1)	Lite-On Technology Corp.	LTV-817	Isolation: 5000Vac, minimum 100 degree C.	FPQU2	UL	
10a. Optical Isolator (PC1) (Alternate)	Everlight Electronics Co., Ltd.	EL817	Isolation: 5000Vac, minimum 110 degree C.	FPQU2	UL	
10b. Optical Isolator (PC1) (Alternate)	Cosmo Electronics Corp.	K1010	Isolation minimum 5000Vac, minimum 115 degree C.	FPQU2	UL	
10c. Optical Isolator (PC1) (Alternate)	Bright Led Electronics Corp	BPC-817XXXXXX, BPC-817MXXXXXX or BPC-817SXXXXXX, where XXXXXX can be any alphanumeric character or blank.	Isolation minimum 5000Vac, minimum 100 degree C.	FPQU2	UL	
10d. Optical Isolator (PC1) (Alternate)	Renesas Electronics Corporation	PS2561-1	Isolation minimum 5000Vac, minimum 100 degree C.	FPQU2	UL	
10e. Optical Isolator (PC1) (Alternate)	Shenzhen Orient Components Co., Ltd.	ORPC-817 x, ORPC-817M x or ORPC-817S x	Isolation minimum 5000Vac, minimum 100 degree C.	FPQU2	UL	

11. Line Filter (NF1) (Optional)	Interchangeable	NF00103	Open type construction. 105 degree C. See Enclosure Id. 04-02 for details.	--	--	
11a. Core	--	--	Ferrite. Overall 15.5 mm by10.3 mm by 2.5 mm.	--	--	
11b. Coil	Interchangeable	Interchangeable	Minimum 105 degree C.	OBMW2	UL	
12. Transformer (T1)) (for output 12-17.9Vdc)	Eng Electric Co., Ltd.	XF00956	Class B. See Enclosure Id. 04-03 for details.	--	--	
12a. Transformer (T1) (for output 18-24Vdc)	Eng Electric Co., Ltd.	XF00957	Class B. See Enclosure Id. 04-04 for details.	--	--	
12-01. Insulation System for Transformer (T1)	Eng Electric Co., Ltd.	ENG130-1	Class B (130 degree C) Great Leoflon Industrial Co., Ltd., Type GH-130)	OBJY2	UL	
12-02. Core	--	--	EE type. Ferrite. See Enclosure Id. 04-03 or 4-04 for details.	--	--	
12-03. Coil	Interchangeable	Interchangeable	130 degree C	OBMW2	UL	
12-04. Bobbin	Chang Chun Plastics Co., Ltd.	T375J	Phenolic, V-0, 150 degree C, minimum 0.8 mm thick.	QMFZ2	UL	
12-04a. Bobbin (Alternate)	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150 degree C, minimum 0.71 mm thick.	QMFZ2	UL	
12-05. Tubing/Sleeving	Great Holding Industrial Co., Ltd.	TFL, TFS or TFT	VW-1, 200 degree C, 600V	YDPU2	UL	
12-06. Triple Insulated Wire	Great Leoflon Industrial Co., Ltd.	TRW(B)	130 degree C	OBJT2	UL	
12-07. Varnish	John C. Dolph Co.	BC-346A	Minimum 200 degree C.	OBOR2	UL	

12-07a. Varnish (Alternate)	Elantas Electrical Insulation Elantas Pdg Inc.	V1630FS	Minimum 130 degree C.	OBOR2	UL	
12-08. Insulation Tape	3M Company Electrical Markets Div. (EMD)	1350F-1	130 degree C	OANZ2	UL	
13. Internal Glue Materials	Interchangeable	Interchangeable	Minimum V-2.	QMFZ2	UL	
14. Internal Plastic Part Materials	Interchangeable	Interchangeable	Minimum V-2.	QMFZ2	UL	
15. Strain Relief Of Output Cord	Interchangeable	Interchangeable	VW-1 or FT-1, 80 degree C, minimum 300V, maximum 3.05 m long. See Enclosure Id. 04-05 for details.	QMFZ2	UL	
16. PWB	Interchangeable	Interchangeable	Minimum V-0, minimum 130 degree C.	ZPMV2	--	
17. Marking Plate Label	Interchangeable	Interchangeable	Minimum 70 degree C. Used on suitable surface.	PGDQ2 or PGJI2	UL	
18. Heat Sink (HS1)	--	--	(Consideration as Primary) Aluminum, minimum 2.0 mm thick. See Enclosure Id. 04-06 for details.	--	--	
19. Heat Sink (HS2) (for for GT-46240-*12-T** and GT-46240-*15*-T**))	--	--	(Consideration as Secondary) Aluminum, minimum 1.0 mm thick. See Enclosure Id. 04-07 for details.	--	--	
20. Current Sense Resistor (R10)	--	--	0.91ohm, 1W	--	--	

21. Bonding Wire	Interchangeable	Interchangeable	Green/Yellow Lead. FEP, PTFE, PVC, TFE neoprene, polyimide or VW-1; minimum 18 AWG, minimum 80 degree C, minimum 300V. One end mechanically secured and soldered to secondary side of PWB. Other end hooked and soldered to Appliance Inet contacts.	AVLV2	UL	
22. Power Supply Cord (Optional)	Interchangeable	Interchangeable	Detachable. SVT, SJT, SPT-2 or NISPT-2 flexible cord, 18 AWG, minimum 125V, minimum 0.5 m, maximum 4.5 m (14.76 ft.) long. One end terminated in NEMA 5-15P grounding type Attachment Plug, minimum 250V. One end terminated in NEMA 6-15P grounding type Attachment Plug. Other end in Appliance Coupler.	ELBZ or (ZJCZ and RTRT and AXUT)	UL	

Enclosures

Type	Supplement Id	Description
Photographs	03-01	External View for Models GT-46240-***-T3A* (C6 type)
Photographs	03-02	External View for Models GT-46240-***-T3* (C14 type)
Photographs	03-03	External View for Models GT-46240-*12-T**, GT-46240-*15*-T**, GT-46240-*24*-T**
Photographs	03-04	Internal View for Model GT-46240-*24*-T3*
Photographs	03-05	Internal View for ModelGT-46240-*24*-T3A*
Photographs	03-06	Internal View for Model GT-46240-*24*-T3*
Photographs	03-07	Internal View for Model GT-46240-*12-T3A* and GT-46240-*15*-T3A*
Photographs	03-08	Internal View for Model GT-46240-*24*-T3A*
Photographs	03-09	Internal View for Models GT-46240-*12-T3*, GT-46240-*15*-T3*, GT-46240-*24*-T3*
Diagrams	04-01	Enclosure
Diagrams	04-02	Line Filter (NF1)
Diagrams	04-03	Transformer (T1) (for Models GT-46240-*12-T** and GT-46240-*15*-T**)
Diagrams	04-04	Transformer (T1) (for Model GT-46240-*24*-T**)
Diagrams	04-05	Strain Relief Of Output Cord
Diagrams	04-06	Heat Sink (HS1)
Diagrams	04-07	Heat Sink (HS2) (for Models GT-46240-*12-T** and GT-46240-*15*-T**)
Schematics + PWB	05-01	Printed Wiring Board Component Layout and Trace Layout