

## UL TEST REPORT AND PROCEDURE

<b>Standard:</b>	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)
<b>Certification Type:</b>	Listing
<b>CCN:</b>	QQGQ, QQGQ7 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
<b>Product:</b>	ITE Power Supply
<b>Model:</b>	GT*96600-*05-T** The 1st "*" part can be 'M' or 'L' or 'H' for market identification and not related to safety. The 2nd "*" denotes the rated output wattage designation, which can be "01" to "40", with interval of 1. The 3rd "*" = 3 means desktop class I with C14 AC inlet =3A means desktop class I with C6 AC inlet The last * denote any six character = 0-9 or A-Z or ()[] or - or blank for marketing purposes.
<b>Rating:</b>	AC input: 100-240V~, 50-60Hz, 1.5A; DC output: 5.0V, 8Amax, 40Wmax (full rating);  (For derating information please refer to enclosure id 7-01 for detail)
<b>Applicant Name and Address:</b>	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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Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

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Reviewed by: Brian Wong / Project 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 covered in this report is a AC to DC switching power supply unit intended for use with information technology equipment in TN power system and for indoor use only. It consists of a switching transformer, electronic components mounted on PWB and housed within plastic enclosure and sealed by ultrasonic welding. The unit employs an AC inlet for the connection to mains power and output with DC cord type.

**Model Differences**

N/A

**Technical Considerations**

- Equipment mobility : transportable
- Connection to the mains : pluggable A
- Operating condition : continuous
- Access location : operator accessible
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10%, -10%
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class I (earthed)
- Considered current rating of protective device as part of the building installation (A) : 20A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : 5000m
- Altitude of test laboratory (m) : <2000
- Mass of equipment (kg) : 0.291kg
- The product was submitted and evaluated for use at the maximum ambient temperature (T<sub>ma</sub>) permitted by the manufacturer's specification of: 40°C at full load; 50°C at 80% load; 60°C at 60% load; 70°C at 40% load;

- The means of connection to the mains supply is: Pluggable A
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: Appliance inlet
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 (which includes all European national differences, including those specified in this test report).
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: CY2 secondary pin
- LEDs provided in the product are considered low power devices: Yes

**Additional Information**

The equipment covered in this report has a de-rating characteristics)  
(For derating information please refer to enclosure id 7-01 for detail)

**Additional Standards**

The product fulfills the requirements of: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013

**Markings and instructions**

Clause Title	Marking or Instruction Details
Power rating - Ratings	Ratings (voltage, frequency/dc, current)
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.
Warning to service personnel	"CAUTION: Double pole/neutral fusing"

**Special Instructions to UL Representative**

N/A

<b>Production-Line Testing Requirements</b>						
<b><u>Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.</u></b>						
Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
All model covered in this report	T1	N/A	Primary winding to Secondary winding	300 0	4243	1s
<b><u>Earthing Continuity Test Exemptions - This test is not required for the following models:</u></b>						
<b><u>Electric Strength Test Exemptions - This test is not required for the following models:</u></b>						
<b><u>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:</u></b>						
<b><u>Sample and Test Specifics for Follow-Up Tests at UL</u></b>						
Model	Component	Material	Test	Sample(s)	Test Specifics	
N/A						

1.5.1	TABLE: list of critical components					Pass
Object/part or Description	Manufacturer/ trademark	type/model	technical data	Product Category CCN(s)	Required Marks of Conformity	Supplement ID
Plastic Enclosure	SABIC INNOVATIVE PLASTICS B V	945GG	Rated min V-0, min 2.0mm thick; (See id enclosure 7-02 for details of enclosure dimension.)	QMFZ2/8	UL/cUL (E45329)	
Appliance –Inlet (for T3A series )	ZHEJIANG LECI ELECTRONICS CO LTD	DB-6	Rated 5A, 250Vac, 105°C.	AXUT2/8	UL/cUL (E302229)	
-Alternate	TECX-UNIONS TECHNOLOGY CORP	TU-333 series	Rated 2.5A, 250Vac, 75°C.	AXUT2/8	UL (E220004)	
-Alternate	SUN FAIR ELECTRIC WIRE & CABLE (HK) CO LTD	S-02	Rated 2.5A, 250Vac	AXUT2/8	UL/cUL (E226643)	
-Alternate	RICH BAY CO LTD	R-30790	Rated 2.5A, 250Vac, 105°C	AXUT2/8	UL/cUL (E184638)	
-Alternate	RONG FENG INDUSTRIAL CO LTD	RF-190	Rated 2.5A, 250Vac, 105°C.	AXUT2/8	UL/cUL (E102641)	
-Alternate	SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD	CDJ-2	Rated 2.5A, 250Vac, 105°C.	AXUT2/8	UL/cUL (E217394)	
Appliance –Inlet (for T3 series )	ZHEJIANG LECI ELECTRONICS CO LTD	DB-14	Rated 15A, 250Vac, 105°C	AXUT2/8	UL/cUL (E302229)	
-Alternate	TECX-UNIONS TECHNOLOGY CORP	TU-301-SP	Rated 15A, 250Vac , 105°C	AXUT2/8	UL (E220004)	
-Alternate	SUN FAIR ELECTRIC WIRE & CABLE (HK) CO LTD	S-03	Rated 10A, 250Vac	AXUT2/8	UL/cUL (E226643)	
-Alternate	RICH BAY CO LTD	R-301SN	Rated 15A, 250Vac, 105°C	AXUT2/8	UL/cUL	

					(E184638)	
-Alternate	RONG FENG INDUSTRIAL CO LTD	SS-120	Rated 15A, 250Vac, 105°C	AXUT2/8	UL/cUL (E102641)	
-Alternate	INALWAYS CORP	0711	Rated 15A, 250Vac, 90°C	AXUT2/8	UL/cUL (E94191)	
-Alternate	ZHE JIANG BEI ER JIA ELECTRONIC CO LTD	ST-A01-003J	Rated 15A, 250Vac, 95°C	AXUT2/8	UL/cUL (E225980)	
Earthing Conductor (For class I series)	Interchangeable	Interchangeable	Yellow and Green in Color, provided between inlet and PWB secondary side. Rated min 300V, min105 degC, VW-1, min18 AWG	AVLV2/8	UL	
Tube on earthing conductor	Interchangeable	Interchangeable	Rated minimum 105°C, minimum 300V, VW-1 or FT-1	YDPU2/8	UL	
Fuse (F1) and (F2) F2 optional	Walter	2010	Rated 3.15A, 250Vac.	JDYX2/8	UL/cUL (56092)	
-Alternate	Interchangeable	Interchangeable	Rated 3.15A, 250Vac.	JDYX/7	UL	
Varistor (MOV1) (optional)	THINKING ELECTRONIC INDUSTRIAL CO LTD	TVR10471, TVR14471	Rated 300Vac. 85 degree C. Body coated with minimum V-1 material.	VZCA2/8	UL/cUL (E314979)	
-Alternate	JOYIN CO LTD	7N471K, 10N471K, 14N471K	Rated 300Vac. 85 degree C. Body coated with minimum V-1 material.	VZCA2/8	UL/cUL (E325508)	
-Alternate	CENTRA SCIENCE CORP	CNR07D471K, CNR10D471K, CNR14D471K	Rated 300Vac. 105 degree C. Body coated with minimum V-1 material.	VZCA2/8	UL/cUL (E316325)	
-Alternate	SUCCESS ELECTRONICS CO LTD	SVR07D471K, SVR10D471K, SVR14D471K	Rated 300Vac. 105 degree C. Body coated with minimum V-1 material.	VZCA2/8	UL/cUL (E330256)	
-Alternate	BRIGHTKING (SHENZHEN) CO LTD	471KD07, 471KD10, 471KD14	Rated 300Vac. 105 degree C. Body coated with minimum V-1 material.	VZCA2/8	UL/cUL (E327997)	
-Alternate	WALSIN TECHNOLOGY	VZ07D471K, VZ10D471K	Rated 300Vac. 105 degree C. Body coated with minimum V-1	VZCA2/8	UL/cUL (E309297)	

	CORP		material.			
-Alternate	LIEN SHUN ELECTRONICS CO LTD	07D471K, 10D471K, 14D471K	Rated 300Vac. 105 degree C. Body coated with minimum V-1 material.	VZCA2/8	UL/cUL (E315524)	
-Alternate	CERAMATE TECHNICAL CO LTD	GNR07D471K, GNR10D471K, GND14D471K	Rated 300Vac. 105 degree C. Body coated with minimum V-1 material.	VZCA2/8	UL/cUL (E315429)	
X-Capacitor (CX1) (Optional)	CHENG TUNG INDUSTRIAL CO LTD	CTX	Rated 0.47uF max. Min 250Vac, 100deg C, marked X1 or X2	FOWX2/8	UL/cUL (E193049)	
-Alternate	WINDAY ELECTRONIC INDUSTRIAL CO LTD	MPX	Rated 0.47uF max. Min 250Vac, 100deg C, marked X2	FOWX2/8	UL/cUL (E302125)	
-Alternate	ULTRA TECH XIPHI ENTERPRISE CO LTD	HQX	Rated 0.47uF max. Min 250Vac, 100deg C, marked X2	FOWX2/8	UL/cUL (E183780)	
-Alternate	OKAYA ELECTRIC INDUSTRIES CO LTD	RE series	Rated 0.47uF max. Min 250Vac, 100deg C, marked X2	FOWX2/8	UL/cUL (E47474)	
-Alternate	VISHAY CAPACITORS BELGIUM N V	F1772	Rated 0.47uF max. Min 250Vac, 100deg C, marked X2	FOWX2/8	UL/cUL (E354331)	
-Alternate	TENTA ELECTRIC INDUSTRIAL CO LTD	MEX	Rated 0.47uF max. Min 250Vac, 100deg C, marked X2	FOWX2/8	UL/cUL (E222911)	
-Alternate	DAIN ELECTRONICS CO LTD	MEX, MPX, NPX	Rated 0.47uF max. Min 250Vac, 100deg C, marked X2	FOWX2/8	UL/cUL (E147776)	
-Alternate	SINHUA ELECTRONICS (HUZHOU) CO LTD	MPX	Rated 0.47uF max. Min 250Vac, 100deg C, marked X1 or X2	FOWX2/8	UL/cUL (E237560)	
-Alternate	FOSHAN SHUNDE CHUANG GE ELECTRONIC INDUSTRIAL CO LTD	MKP-X2	Rated 0.47uF max. Min 250Vac, 100deg C, marked X2	FOWX2/8	UL/cUL (E308832)	

Y-Capacitors (CY1, CY2) –(Optional)	WELSON INDUSTRIAL CO LTD	WD	Rated max.2200pF Min 250V, 125degC, marked with Y1	FOWX2/8	UL/cUL (E104572)	
-Alternate	SUCCESS ELECTRONICS CO LTD	SE, SB	Rated max.2200pF Min 250V, 125degC, marked with Y1	FOWX2/8	UL/cUL (E114280)	
-Alternate	TDK CORP	CD	Rated max.2200pF Min 250V, 125degC, marked with Y1	FOWX2/8	UL/cUL (E37861)	
-Alternate	WALSIN TECHNOLOGY CORP	AH	Rated max.2200pF Min 250V, 125degC, marked with Y1	FOWX2/8	UL/cUL (E146544)	
-Alternate	JYA-NAY CO LTD	JN	Rated max.2200pF Min 250V, 125degC, marked with Y1	FOWX2/8	UL/cUL (E201384)	
-Alternate	KUNSHAN WANSHENG ELECTRONICS CO LTD	CT7	Rated max.2200pF Min 250V, 125degC, marked with Y1	FOWX2/8	UL/cUL (E249006)	
-Alternate	MURATA MFG CO LTD	KX	Rated max.2200pF Min 250V, 125degC, marked with Y1	FOWX2/8	UL/cUL (E37921)	
-Alternate	HAOHUA ELECTRONIC CO	CT7	Rated max.2200pF Min 250V, 125degC, marked with Y1	FOWX2/8	UL/cUL (E233106)	
Line Filter (LF2) (optional)	Interchangeable	NF00031	130 degree C (OBMW2) coil wound on a core. (see enclosure id 4-02 for detail)	--	--	
- Core	--	--	Ferrite core, approximate overall 16 by 12 by 8 mm.	--	--	
- Wire	NINGBO JINTIAN NEW MATERIAL CO LTD	2UEW	MW 75-C, 130 degree C	OBMW2	UL/cUL (E227047)	
-Alternate	WUXI JUFENG COMPOUND LINE CO LTD	2UEWB	MW 75-C, 130 degree C	OBMW2	UL/cUL (E206882)	
-Alternate	Interchangeable	Interchangeable	MW 75-C, 130 degree C	OBMW2	UL	
- Tube	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR-H	600V, 125 degree C, VW-1	YDPU2	UL/cUL (E203950)	



Line Filter (LF1) (optional) (Alternate)	Interchangeable	Interchangeable	130 degree C (OBMW2) coil wound on a core. (see enclosure id 4-01 for detail)	--	--	
- Core	--	--	Ferrite core	--	--	
- Wire	NINGBO JINTIAN NEW MATERIAL CO LTD	UEW	MW 75-C, 130 degree C	OBMW2	UL/cUL (E227047)	
-Alternate	CHANGZHOU DAYANG WIRE & CABLE CO LTD	2EUW	MW 75-C, 130 degree C	OBMW2	UL/cUL (E158909)	
-Alternate	Various	Various	MW 75-C, 130 degree C	OBMW2	UL	
- Triple Insulated Wire	QIDONG BLUELINK ELECTRONICS CO LTD	TRW -(B)	130 degree C	OBJT2	UL/cUL (E365660)	
- Triple Insulated Wire -Alternate	GREAT LEOFLON INDUSTRIAL CO LTD	TRW(B)	Rated 130 degC	OBJT2	UL (E211989)	
- Glue (Epoxy)	SUZHOU EATTO ELECTRONIC MATERIALS CO LTD	3300A/3300B	V-0	QMFZ2	UL/cUL (E253983)	
-Alternate	Interchangeable	Interchangeable	V-0	QMFZ2	UL/cUL	
Transistor (Q1)	Interchangeable	Interchangeable	Rated min 7A, Min. 600V	--	--	
Transformer (T1)	GLOBTEK INC / WUXI HAOPUWEI ELECTRONICS CO LTD	TF058	(OBJY2) Class B. (See enclosure id 4-03 for details.	--	--	
- Insulation system used in T1	GLOBTEK INC	GTX-130-TM	Class 130 (B) Insulation System.	OBJY2	UL (E243347)	
- Insulation system used in T1 (Alternate)	WUXI HAOPUWEI ELECTRONICS CO LTD	ZT-130	Class 130 (B) Insulation System.	OBJY2	UL (E315275)	
- Primary winding used in T1	Interchangeable	Interchangeable	Polyurethane with or without overcoat Polyamide, 130 degC Min. Type MW-75 or MW-28.	OBMW2	UL	
- Secondary winding used in T1	GREAT LEOFLON INDUSTRIAL CO	TRW(B)	Rated 130 degC Triple insulated wire	OBJT2	UL (E211989)	

	LTD					
- Bobbin used in T1	CHANG CHUN PLASTICS CO LTD	T375J	Phenolic, rated V-0, 150 degC, min 0.45mm thick	QMFZ2	UL (E59481)	
- Insulation Tape used in T1	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ, CT	Rated 130 degC.	OANZ2	UL (E165111)	
- Insulation Tape used in T1 (Alternate)	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	Rated 130 degC.	OANZ2	UL (E246950)	
- Varnish used in T1	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	MW 28. Rated 130 degC.	OBOR2	UL (E228349)	
- Tube used in T1	GREAT HOLDING INDUSTRIAL CO LTD	TFL, TFT	VW-1. Rated 150V, 200 degC for TFL; Rated 300V, 200 degC for TFT	YDPU2	UL (E156256)	
- Tube used in T1 (Alternate)	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	WF	VW-1. Rated 600V, 200 degC	YDPU2	UL (E203950)	
Opto-couplers (U4)	EVERLIGHT ELECTRONICS CO LTD	EL817	Rated min. 110deg C Provide min 5000Vac isolation test voltage rating.	FPQU2/8	UL/cUL (E214129)	
Opto-couplers (U4) (Alternate)	COSMO ELECTRONICS CORP	K1010, KP1010	Rated min. 115deg C Provide min 5000Vac isolation test voltage rating.	FPQU2/8	UL/cUL (E169586)	
Opto-couplers (U4) (Alternate)	LITE-ON TECHNOLOGY CORP	LTV-357T, LTV- 817	Rated min. 115deg C Provide min 3750Vac isolation test voltage rating for LTV-357T and LTV-357, 5300Vac isolation test voltage rating for LTV-817.	FPQU2/8	UL/cUL (E113898)	
Opto-couplers (U4) (Alternate)	FAIRCHILD SEMICONDUCTOR CORP	H11A817B, FOD817B	Rated min. 110deg C Provide min 5000Vac isolation test voltage rating.	FPQU2/8	UL/cUL (E90700)	
Opto-couplers (U4) (Alternate)	SHARP CORP ELECTRONIC	PC817	Rated min. 100deg C Provide min 5000Vac isolation test	FPQU2	UL (E64380)	

	COMPONENTS AND DEVICES GROUP		voltage rating.			
Opto-couplers (U4) (Alternate)	BRIGHT LED ELECTRONICS CORP	BPC-817, BPC-817M, BPC817S series	Rated min. 100deg C Provide min 5000Vac isolation test voltage rating.	FPQU2/8	UL (E236324)	
Heat Sink - HS1	--	--	Aluminium. Approximate overall dimension 82mm by 43mm by 23.5mm, 2.0mm thick, secured to PWB by soldering. (see enclosure id 7-05 for dimension)	--	--	
Heat Sink - HS2	--	--	Aluminium. Approximate overall dimension 103.5mm by 14.5mm by 24mm, 2.0mm thick, secured to PWB by soldering. (see enclosure id 7-06 for dimension)	--	--	
Tube used on HS2	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR-H	600V, 125degC, VW-1, min. 0.4 mm thick	YDPU2	UL (E203950)	
Insulation tape provided on HS1	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350T-1, 44	Rated 130 degC - Insulating tape wrapped around HS1 should be double pack edged (wrapped over the edge), the tape should also has a 10mm extension towards the heatsink body and have minimum 2 layers	OANZ2	UL (E17385)	
Insulation tape provided on HS1(Alternate)	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F, 1350-1	Rated 130 degC - Insulating tape wrapped around HS1 should be double pack edged (wrapped over the edge), the tape should also has a 10mm extension towards the heatsink body and have minimum 2 layers	OANZ2	UL (E17385)	
Insulation tape provided	SYMBIO INC	35660Y	Rated 130 degC - Insulating	OANZ2	UL (E50292)	

on HS1(Alternate)			tape wrapped around HS1 should be double pack edged (wrapped over the edge), the tape should also has a 10mm extension towards the heatsink body and have minimum 2 layers			
Insulation tape provided on HS1(Alternate)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT	Rated 130 degC - Insulating tape wrapped around HS1 should be double pack edged (wrapped over the edge), the tape should also has a 10mm extension towards the heatsink body and have minimum 2 layers	OANZ2	UL (E165111)	
Insulation tape provided on HS1(Alternate)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	Rated 130 degC - Insulating tape wrapped around HS1 should be double pack edged (wrapped over the edge), the tape should also has a 10mm extension towards the heatsink body and have minimum 2 layers	OANZ2	UL (E246820)	
DC output cord	Interchangeable	Interchangeable	Jacketed wire. Min. 24AWG, min. VW-1,Min.80°C, min. 60V.	AVLV2/ZJCZ2	UL	
Strain Relief	Interchangeable	Interchangeable	Min. V-1 (see enclosure id 7-03 for detail)	QMFZ2	UL	
Label (Optional) (Alternate)	Interchangeable	Interchangeable	Rated min 80deg C. Suitable for use on the plastic enclosure	PGDQ2/PGJI2	UL	
PWB	Interchangeable	Interchangeable	Min. V-1, 130°C (see enclosure 5-01, 5-02 for layout)	ZPMV2	UL	
Glue (for fixing or thermal)	Interchangeable	Interchangeable	Min. V-2	QMFZ2	UL	
Bridge diode BD1	Interchangeable	Interchangeable	Min.4A, Min. 600V	--	--	
Indication LED in secondary circuit	Interchangeable	Interchangeable	minimum 0.4mm plastic head cover	--	--	

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Report Reference #

E341351-A90-UL

