

UL TEST REPORT AND PROCEDURE

Standard:	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)
Certification Type:	Listing
CCN:	QQGQ, QQGQ7 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Product:	ITE POWER SUPPLY
Model:	GT-86182-WWVV-W2-USB & GT-86182-WWVV-WF2-USB (WW is the standard output wattage, with a maximum value of "18" VV is the standard rated output voltage designation, can be "03.6" to "12" or "3.6" to "12.0") with interval of 0.1
Rating:	Input: 100-240Vac, 50/60Hz, 0.8A Output: 3.6-12Vdc, Max. 3A
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.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Prepared by: Angela Au

Reviewed by: Brian Wong

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

- Switching Adapter for ITE, all electrical components are mounted on one PWB and housed in plastic enclosure

Model Differences

- GT-86182-WWVW-W2-USB is similar to GT-86182-WWVW-WF2-USB except for blade construction
- Construction A is for GT-86182-WWVW-W2-USB and construction B is for GT-86182-WWVW-WF2-USB

Technical Considerations

- Equipment mobility : direct plug-in
- 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% (declared by manufacturer)
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class II (double insulated)
- Considered current rating of protective device as part of the building installation (A) : 20 A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : Up to 5000 m
- Altitude of test laboratory (m) : less than 2000 meters
- Mass of equipment (kg) : Max. 0.047
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50 °C

- 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: Plug
- The product was investigated to the following additional standards: (1) The unit were evaluated to the maximum acceptable moment, center of gravity, dimensions and weight of the unit in accordance with UL 1310 and CSA C22.2 No. 223. , (2) The blade dimension was evaluated to be complied with NEMA configurations in accordance with Wiring Devices-Dimensional Specifications, ANSI/NEMA WD6., (3) The product was investigated to the following additional standards: This equipment is intended to be operated under altitude up to 5000m, so the clearance is multiplied by the altitude correction factor (1.48, linear interpolation used), specified in table A.2 of IEC 60664-1.
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: CY1 secondary
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): Output terminal
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual

Additional Information

Revision 4787988900

USL/CNL - Copy the E135856-A176, Vol. X2 to E341351-A94, Vol. X9.


Revision: SR4106104.1015124

Model name changed to GT-86182-WWVV-W2-USB & GT-86182-WWVV-WF2-USB in E341351-A94, Vol. X9.

Additional Standards

The product fulfills the requirements of: NA

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
Power rating - Class II symbol	Symbol for Class II construction  (60417-2-IEC-5172)

Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.
Marking of " L.P.S" or " LPS", Optional	Optional, marked with " L.P.S" or " LPS" for " Limited Power Sources".

Special Instructions to UL Representative

Inspect the transformer(s) listed in Production-Line Testing Requirements (Electric Strength Test Special Constructions) 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 (Electric Strength Test Special Constructions) be conducted at the component manufacturer.

Production-Line Testing Requirements

Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
All Model(s)	T1	-	Primary to Secondary	300 0	4242	1

Earthing Continuity Test Exemptions - This test is not required for the following models:

All Model(s)

Electric Strength Test Exemptions - This test is not required for the following models:

-

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:

-

Sample and Test Specifics for Follow-Up Tests at UL

Model	Component	Material	Test	Sample(s)	Test Specifics
-	-	-	-	-	-

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
01. Enclosure	Sabic Innovative Plastics Us L L C	SE1X	V-1 minimum, 2.0mm thick minimum, 105 degree C minimum, Plastic enclosure secured together by ultra-sonic welding. See enclosure 7-01 for details.	QMFZ2	UL E121562	
01a. Enclosure (Alternate)	Asahi Kasei Corporation	540V	Rated V-1, 105 degree C. Minimum 2.0 mm thickness, Plastic enclosure secured together by ultra-sonic welding. See enclosure 7-01 for details.	QMFZ2	UL E82268	
01b. Enclosure (Alternate)	COVESTRO DEUTSCHLAND AG [PC RESINS]	6485 + (z)(f2)	Rated V-0, 115 degree C. Minimum 2.0 mm thickness, Plastic enclosure secured together by ultra-sonic welding. See enclosure 7-01 for details.	QMFZ2	UL E41613	
01c. Enclosure (Alternate)	SABIC Japan L L C	925U	Rated V-0, 115 degree C. Minimum 2.0 mm thickness, Plastic enclosure secured together by ultra-sonic welding. See enclosure 7-01 for details.	QMFZ2	UL E207780	
03. PCB	Interchangeable	Interchangeable	V-0, minimum 130 degree C.	ZPMV2	UL	
04 Fuse (F1)	Interchangeable	Interchangeable	Rated 2.0A, 250Vac	JDYX	UL	
04a. Fuse (F1) (Alternate)	Littelfuse Wickmann Werke.	392	Rated 2.0A, 250Vac	JDYX2	UL E67006	
04b. Fuse (F1) (Alternate)	Conquer Electronics Co Ltd	MST	Rated 2.0A, 250Vac	JDYX2	UL E82636	
04c. Fuse (F1) (Alternate)	Cooper Bussmann LLC	SS-5	Rated 2.0A, 250Vac	JDYX2	UL E19180	
04d. Fuse (F1) (Alternate)	Bel Fuse Inc	RST	Rated 2.0A, 250Vac	JDYX2	UL E20624	
04e. Fuse (F1)	CHI LICK	SPT	Rated 2.0A, 250Vac	JDYX2	UL E184831	

(Alternate)	SCHURTER LTD					
04f. Fuse (F1) (Alternate)	Conquer Electronics Co Ltd	PTU	Rated 2.0A, 250Vac	JDYX2	UL E82636	
04g. Fuse (F1) (Alternate)	Littelfuse Inc	877+	Rated 2.0A, 250Vac	JDYX2	UL E10480	
04h. Fuse (F1) (Alternate)	EVER ISLAND ELECTRIC CO LTD & WALTER ELECTRIC	2010	Rated 2.0A, 250Vac	JDYX2	UL E220181	
04i. Fuse (F1) (Alternate)	NIPPON SEISEN CABLE LTD	SLT	Rated 2.0A, 250Vac	JDYX2	UL E120786	
04j. Fuse (F1) (Alternate)	Walter Electronic Co Ltd	ICP	Rated 2.0A, 250Vac	JDYX	UL E56092	
04k. Fuse (F1) (Alternate)	XC ELECTRONICS (SHENZHEN) CORP LTD	5TE, 4T	Rated 2.0A, 250Vac	JDYX	UL E249609	
05. Electrolytic capacitors (EC1,EC2, EC3)	--	--	Min.400V, max.15uF, 105 degree C. Provided pressure relief slot.	--	--	
06. Bridge Rectifier (BD1)	--	--	Min. 2.0A, Min.600V	--	--	
07. IC (U1)	POWER INTEGRATIONS INC	INN2215K	Minimum 1A, Minimum 600V, rated for 3500 Vac isolation	FPPT2	UL E358471	
08. Choke (L1)	--	--	Minimum 130 degree C. See 4- 01 for details.	--	--	
08-1. Choke (L1) - Triple Insulation Wire	Interchangeable	Interchangeable	Minimum 130 degree C.	OBOR2	UL	
08-2. Choke (L1)- Magnet wire	Interchangeable	Interchangeable	Minimum 130 degree C.	OBMW2	UL	
09. Choke (L2)	--	--	Minimum 130 degree C. see enclosure ID4-02 for details.	--	--	
10.Y-Capacitor(CY1) (Optional)	TDK CORPORATION	CD	Rated maximum 1000 pF, minimum 250 V, 125 degree C. Y1 capacitor.	FOWX2	UL E37861	
10a.Y-Capacitor(CY1) (Optional) (Alternate)	Murata Mfg Co Ltd	KX	Rated maximum 1000 pF, minimum 250 V, 125 degree C.	FOWX2	UL E37921	

			Y1 capacitor.			
10b.Y-Capacitor(CY1) (Optional) (Alternate)	Success Electronics Co Ltd	SE,SB	Rated maximum 1000 pF, minimum 250 V, 125 degree C. Y1 capacitor.	FOWX2	UL E114280	
10c.Y-Capacitor(CY1) (Optional) (Alternate)	Jya-Nay Co Ltd	JN	Rated maximum 1000 pF, minimum 250 V, 125 degree C. Y1 capacitor.	FOWX2	UL E201384	
10d.Y-Capacitor(CY1) (Optional) (Alternate)	Welson Industrial Co Ltd	WD	Rated maximum 1000 pF, minimum 250 V, 125 degree C. Y1 capacitor.	FOWX2	UL E104572	
10e.Y-Capacitor(CY1) (Optional) (Alternate)	Samwha Capacitor Co Ltd	SD	Rated maximum 1000 pF, minimum 250 V, 125 degree C. Y1 capacitor.	FOWX2	UL E97754	
10f.Y-Capacitor(CY1) (Optional) (Alternate)	Nan Jing Yuyue Electronics Co Ltd	CT7	Rated maximum 1000 pF, minimum 250 V, 125 degree C. Y1 capacitor.	FOWX2	UL E237728	
10g.Y-Capacitor(CY1) (Optional) (Alternate)	Yinan Don's Electronic Component Co Ltd	CT81	Rated maximum 1000 pF, minimum 250 V, 125 degree C. Y1 capacitor.	FOWX2	UL E145038	
10h.Y-Capacitor(CY1) (Optional) (Alternate)	Jyh Hsu (Jec) Electronics Ltd	JD	Rated maximum 1000 pF, minimum 250 V, 125 degree C. Y1 capacitor.	FOWX2	UL E356696	
11. Transformer (T1)			Class B. See 4-03 for construction details.	--	--	
11-1. Transformer (T1) insulation system			Class 130(B)	OBJY2	UL E159480	
11-2. Transformer - Bobbin	Sumitomo Bakelite Co Ltd	PM-9820, PM- 9630	Phenolic, V-0, 150 degree C , Min. thickness 0.71mm	QMFZ2	UL E41429	
11-2a. Transformer - Bobbin (Alternate)	Hitachi Chemical Co Ltd	CP-J-8800	Phenolic, V-0, 150 degree C , Min. thickness 0.71mm	QMFZ2	UL E42956	
11-3. Transformer -	3m company	1350F-1, 1350F-2	Rated 130 degree C.	OANZ2	UL E17385	

Insulation Tape	electrical markets div (EMD)					
11-3a. Transformer - Insulation Tape (Alternate)	Symbio Inc	35660, 35661, 35660Y	Rated 130 degree C.	OANZ2	UL E50292	
11-4 Transformer - Core	--	--	Ferrite, With min. 2 layers of insulation tape wrapped around core body. Ferrite, overall size 17.1 by 14.5 by 23.0 mm.	--	--	
11-5. Transformer Winding	Interchangeable	Interchangeable	MW28 and rated 130 degree C or MW75.	OBMW2	UL	
11-6. Transformer - Triple insulation wire	Young Chang Silicone Co Ltd	STW-B	Rated 130 degree C	OBJT2	UL E242198	
11-7 Transformer - Varnish (optional)	Hitachi Chemical Co Ltd	WP-2952F-2G	Rated 130 degree C.	OBOR2	UL E72979	
11-7a. Transformer - Varnish (optional) (Alternate)	Elantas Electrical Insulation Elantas Pdg Inc	468-2(x)	Rated 130 degree C.	OBOR2	UL E75225	
18. Current Sense Resistor (R20)	--	--	10m ohm minimum, 1W minimum	--	--	
19.Label	Interchangeable	Interchangeable	79 degree C minimum, suitable for its application surface. All marking labels should be provided by authorized suppliers (PGAA).	PGDQ2 or PGJ12	UL	
20a. Permanency of Marking (Alternate)	--	--	Permanently ink-stamped, silk-screened, molded in, or on self-adhesive labels.	--	--	
21. Electrolytic capacitors (C11)	--	--	105 degree C. Provided pressure relief slot.	--	--	
22.Input blade	---	--	Copper or Copper Alloy, non-polarized (NEMA 1-15P configuration). Integrally melded onto Plug Holder, perimeter of face section from which Blade projection minimum 5.5 mm from any	--	--	

			point on either blade. See Enclosure Id. 7-03 for details.			
23. Primary wire	Interchangeable	Interchangeable	FEP, PTFE, PVC, TFE, neoprene, polyimide or VW-1 or FT-1, 300V, minimum 105 degree C, minimum 22AWG	AVLV2	UL	
24. Connectors and Receptacles (secondary ELV/SELV circuits)	Interchangeable	Interchangeable	Copper alloy pins housed in bodies of plastic rated V-2 min.	QMFZ2	UL	
24a. Connectors and Receptacles (secondary ELV/SELV circuits) (Alternate)	Interchangeable	Interchangeable	--	ECBT2, RTRT2, NWGQ2	UL	

Issue Date: 2017-06-05
2017-08-09

Page 10 of 10

Report Reference #

E341351-A94-UL