

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:	<p>GT-46120-***-W2*****:</p> <p>The 1st "*" is the standard output wattage, with a maximum value of "12".</p> <p>The 2nd "*" is the standard rated output voltage designation, with a maximum value of "48", which can be 05,06, 09, 12, 15, 24, 36, 48.</p> <p>The 3rd "*" denote the output voltage differentiator, subtracted from standard output voltage, which can be "-0.01" to "-11.99" with interval of 0.01, the actual output voltage range is 5-48VDC, blank is to indicate the no voltage different.</p> <p>The 4th "*" denote type of plug and can be E for European plug, U for British plug, blank for North American /Japan/Taiwan plug, C for Chinese plug, A for Australia plug.</p> <p>-W2* can be optional, when it is blank, denote to be with replaceable plug</p> <p>The last six "*" can be 0-9 or A-Z, "(", ")", "[", "]", "-", or blank for marketing purposes</p>
Rating:	<p>Input: 100-240Vac, 50-60Hz, 0.6A</p> <p>Output: See Model description of general product information for details</p>
Applicant Name and Address:	<p>GLOBTEK (HONG KONG) LTD UNIT 1402, BENSON TOWER 74 HUNG TO RD KWUN TONG KOWLOON HONG KONG</p>

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.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

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

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 is a Class II direct plug-in ICT/ITE POWER SUPPLY intended to be used for information technology equipment or audio/video equipment, all electronic components are mounted on PWB and housed in a plastics enclosure which is secured by ultrasonic welding. Output with non-detachable wire.

Model Differences

All models are identical to each other except for type designation, plug type, enclosure type, PCB type, transformer type, output rating and the ratings of some components.

Models GT-46120-***-W2*****, where -W2* denotes type of fixed plug; The 4th "*" denote type of plug and can be E for European plug, U for British plug, blank for North American /Japan/Taiwan plug, C for Chinese plug, A for Australia plug; -W2* can be optional, when it is blank, denote to be with replaceable plug

Model name	Output voltage	Max.output current	Max.Power W
Transformer			
GT-46120-*05-W2***** XF00950	5VDC	2.0A	10W
GT-46120-*06*-W2***** X F00950	5.01-6VDC	2.0A	12W
GT-46120-*09*-W2***** XF00950 / XF00924	6.01-9VDC	1.99A	12W
GT-46120-*12*-W2***** XF00950 / XF00924	9.01-12VDC	1.33A	12W
GT-46120-*15*-W2***** XF00950 / XF00924	12.01-15VDC	0.99A	12W
GT-46120-*24*-W2*****	15.01-24VDC	0.79A	12W

XF00924 / XF00939

GT-46120-*36*-W2*****

24.01-36VDC

0.49A

12W

XF00939 / XF00940

GT-46120-*48*-W2*****

36.01-48VDC

0.33A

12W

XF00939 / XF00940

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 - direct plug-in
Considered current rating of protective device as part of building or equipment installation	20 A; building;
Equipment mobility	direct plug-in
Over voltage category (OVC)	OCV II
Class of equipment	Class II
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient	40
IP protection class	IPX0
Power Systems	TN TT
Altitude during operation (m)	5000 m
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	approx. 0.093kg

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of : 40
- The product is intended for use on the following power systems : TN, TT
- 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 : Plug
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS) : All Output
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual

Additional Information

Revision: 4789507340


Model GT-46120-***-W2*****copy from the File E163743-A6001 Vol. X9 to E341351-A6001 Vol. X10.

Model name change from 6A-121WX(P)YY to GT-46120-***-W2*****.

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 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)"
Fuses – replaceable by skilled person	(component ID: Fusible resistor (RF1) 2ohm 1W, and (symbol of required characteristics) located on or adjacent to fuse or fuseholder or in service manual.
Class II Equipment without Functional Earth	Symbol for Class II construction  (IEC 60417-5172)
F.3.3 Equipment rating marking – Output ratings	Output Ratings (voltage, frequency/dc, current/power) and polarity
Limited Power Source Marking	"LPS" or "Limited Power Source." may be marked on unit.

Special Instructions to UL Representative

For transformer test - 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
All models	Transformer T1	N/A	Primary to Secondary	-	4000	1
All models	EUT	-	Primary to Output Terminal	-	4000	1
BD1.2	Earthing Continuity Test Exemptions – This test is not required for the following models:					
	All models					
BD1.3	Electric Strength Test Exemptions – This test is not required for the following models:					
	N/A					
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
N/A					

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 and plug pin holder	SABIC JAPAN L L C	945 (GG)	Rated V-0, 120 degree C, Minimum 1.7 mm thickness. See supplementary 7-01 for details.	QMFZ2	UL E207780	
01a. Enclosure and plug pin holder (Alternate)	Sabic Innovative Plastics Us L LC	915R(GG)	Rated V-0, 120 degree C, Minimum 1.7 mm thickness. See supplementary 7-01 for details.	QMFZ2	UL E121562	
01b. Enclosure and plug pin holder (Alternate)	LG CHEM (GUANGZHOU) ENGINEERINGPLA STICS CO LTD	LUPOY EF- 1006F(m)	Rated V-0, 115 degree C, Minimum 1.7 mm thickness. See supplementary 7-01 for details.	QMFZ2	UL E248280	
01c. Enclosure and plug pin holder (Alternate)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR6005 + (z)	Rated V-0, 105 degree C, Minimum 1.7 mm thickness. See supplementary 7-01 for details.	QMFZ2	UL E41613	
01d. Enclosure and plug pin holder (Alternate)	SILVER AGE ENGINEERING PLASTICS(DONGG UAN) CO LTD	PC2330	Rated V-0, 115 degree C, Minimum 1.7 mm thickness. See supplementary 7-01 for details.	QMFZ2	UL E225348	

02. Input Blades	--	--	Copper or a copper based alloy, Non-polarized, Type NEMA 1-15P, integrally melded onto enclosure. From any point of either blade to the plug face section of the edge of enclosure is spaced minimum 5.1 mm perimeter. See supplementary 7-02 for details.	--	--	
03. PCB	Interchangeable	Interchangeable	V-0 or better, minimum 130 degree C	ZPMV2	UL	
04. Fusible resistor (RF1)	SHENZHEN GREAT ELECTRONICS CO LTD	RXF-1W Series	2ohm, 1W	FPEW2	UL E301541	
04a. Fusible resistor (RF1) (Alternate)	ANHUI CHANGSHENG ELECTRONICS CO LTD	RXF21-1W	2ohm, 1W	FPEW2	UL E306095	
05. Bridge Diode (BD1)	Interchangeable	Interchangeable	Rated minimum 1A, minimum 800 V.	--	--	
06. Storage Capacitor (C1,C2)	Interchangeable	Interchangeable	Rated 400 V, max. 10uF, min. 105 degree C	--	--	
07. IC (U1)	Interchangeable	Interchangeable	Rated minimum 0.5A, minimum 600 V.	--	--	
08. Current sense resistor (RS6, RS7)	Interchangeable	Interchangeable	Rated max.1.5 ohm, 1/4 W	--	--	
09. Inductor (L1, L2) (for Color code inductance, for PCB type A) (Optional)	Interchangeable	Interchangeable	130 degree C. See enclosure 4-05 for details.	--	--	

09a. Line Choke (L1) (for EE8.3 inductance, for PCB type B) (Optional) (Alternate)	Interchangeable	Interchangeable	130 degree C. See enclosure 4-06 for details.	--	--	
09a-1. Magnet Wire	Interchangeable	Interchangeable	Magnet wire, minimum 130 degree C	OBMW2	UL	
09a-2. Core	--	--	Ferrite.	--	--	
09a-3. Bobbin	CHANG CHUN PLASTICS CO LTD	T375J	Phenolic, V-0, Minimum 0.8 mm thick, 150 degree C	QMFZ2	UL E59481	
09a-4. Insulation Tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ* (b), CT* (b)(g), CT* (c)(g)	130 degree C	QMFZ2	UL E165111	
10. Bridge capacitor (CY1) (Optional)	SUCCESS ELECTRONICS CO LTD	SE, SB	Maximum 2200 pF, minimum 250 Vac, 125 degree C. Y1 type.	FOWX2	UL E114280	
10a. Bridge capacitor (CY1) (Optional) (Alternate)	Walsin Technology Corp	AH Series (#)(&)	Maximum 2200 pF, minimum 250 Vac, 125 degree C. Y1 type.	FOWX2	UL E146544	
10b. Bridge capacitor (CY1) (Optional) (Alternate)	JUHONG ELE COMPANY	JB	Maximum 2200 pF, minimum 250 Vac, 125 degree C. Y1 type.	FOWX2	UL E253194	
10c. Bridge capacitor (CY1) (Optional) (Alternate)	XIANGTAI ELECTRONIC (SHENZHEN) CO LTD	YOF, YOE	Maximum 2200 pF, minimum 250 Vac, 125 degree C. Y1 type.	FOWX2	UL E319473	

11. Transformer (T1)	ENG Electric Co Ltd	1) XF00950 (for output voltage 5-7.5Vdc) 2) XF00924 (for output voltage 12Vdc) 3) XF00939 (for output voltage 24Vdc) 4) XF00940 (for output voltage 48Vdc)	Class B, See supplement 4-01 to 4-04 for details.	--	--	
11-01. Insulation system	ENG Electric Co., Ltd.	ENG130-1	Class B	OBJY2	UL E308897	
11-02. Core	--	--	Ferrite, approx. dimension 13.5 mm by 12.5mm by 6.0mm	--	--	
11-03. Magnet Wire	Interchangeable	Interchangeable	Magnet wire, MW 28, MW75, MW79, MW80, MW82, MW83, MW85 minimum 130 degree C	OBMW2	UL	
11-04. Bobbin	CHANG CHUN PLASTICS CO LTD	T375J	Phenolic, V-0, Minimum 0.8 mm thick, 150 degree C	QMFZ2	UL E59481	
11-05. Triple insulated wire	GREAT LEOFLON INDUSTRIAL CO LTD	TRW(B)	130 degree C.	OBJT2	UL E211989	
11-06. Insulation Tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350-1 (b)	130 degree C	OANZ2	UL E17385	
11-06a. Insulation Tape (Alternate)	BONDTEC PACIFIC CO LTD	370S (b)	130 degree C	OANZ2	UL E175868	
11-07. Insulating Tubing	GREAT HOLDING INDUSTRIAL CO LTD	TFL, TFS, TFT	Minimum 300 V, 200 degree C, VW-1.	YDPU2	UL E156256	
11-08. Varnish	John C. Dolph Co.	BC-346A	Rated minimum 130 degree C.	OBOR2	ULE317427	

11-08a. Varnish (Alternate)	Elantas Electrical Insulation Elantas Pdg Inc	V1630FS	Rated minimum 155 degree C.	OBOR2	UL E75225	
12. Output cord	Interchangeable	Interchangeable	VW-1 or FT-1, minimum 24AWG, Rated minimum 80 degree C, minimum 30V	AVLV2	UL	
13. Strain relief	Interchangeable	Interchangeable	V-1 or better, See supplement 7-03 for details	QMFZ2	UL	
14. Label	Interchangeable	Interchangeable	Minimum 65 degree C, Suitable for its application surface.	PGDQ2, PGJ12	UL	
14a. Rating Marking (Alternative)	--	--	Required markings are molded, permanently ink stamped, silkscreened or laser carved on plastic enclosure.	--	--	
15. Glue	Interchangeable	Interchangeable	V-2 or better.	QMFZ2	UL	

Enclosures

Type	Supplement Id	Description
Photographs	03-01	Overall view for detechable plug
Photographs	03-02	Overall view for detechable plug
Photographs	03-03	Overall view for detechable plug
Photographs	03-04	Internal view
Photographs	03-05	Overall view for integral plug
Photographs	03-06	Overall view for integral plug
Photographs	03-07	Component side (PCB type A, 101845)
Photographs	03-08	PWB trace side (PCB type A, 101845)
Photographs	03-09	Component side (PCB type B, 101855)
Photographs	03-10	PWB trace side (PCB type B, 101855)
Photographs	03-11	Transformer top
Photographs	03-12	Transformer bottom
Photographs	03-13	Transformer internal
Photographs	03-14	Transformer internal
Diagrams	04-01	Transfromer spec ENG XF00950
Diagrams	04-02	Transfromer spec ENG XF00924
Diagrams	04-03	Transfromer spec ENG XF00939
Diagrams	04-04	Transfromer spec ENG XF00940
Diagrams	04-05	L1, L2 spec N01-AL0410-014
Diagrams	04-06	L1 spec EE8.3_N00-000117-001
Schematics + PWB	05-01	101845 PWB type A
Schematics + PWB	05-02	101855 PWB type B
Miscellaneous	07-01	Enclosure dimension drawing
Miscellaneous	07-02	Input blade dimension
Miscellaneous	07-03	SR spec
Miscellaneous	07-04	Label