

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:	Unlisted Component
CCN:	QQGQ3, QQGQ9 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Product:	Switching Power Supply
Model:	S-BX030XYXX, S-XE30XYXX, S-BX040XYXX, S-XE40XYXX (Where X may be alphanumeric, "for marketing purpose and no impact safety related critical components and constructions", where YY may any number 05 through 48)
Rating:	S-BX030XYXX, S-XE30XYXX, S-BX040XYXX, S-XE40XYXX series; Input Rating: 100-240 Vac, 50-60 Hz, 1.2 A Output Rating: 5 Vdc, 4.0A/5.0A or 9 Vdc, 3.0A/4.0A or 12 Vdc, 2.5A/3.4A or 15 Vdc, 2.0A/2.7A or 18 Vdc, 1.67A / 2.22A or 24 Vdc, 1.33A / 1.7A or 48 Vdc, 0.63 A./ 0.83A or 5Vdc/4.0A~48Vdc /0.83A
Applicant Name and Address:	BRIDGEPOWER CORP (GOSAEK-DONG) 16 OMOKCHEN-RO 132BEON-GIL GWONSEON-GU SUWON-SI GYEONGGI 441-813 KOREA

Sample(s) of the components covered by this Test Report have been found to comply with the requirements covering the category for factory installed components for this Applicant's Listed, Classified, or Recognized basic equipment where the acceptability of the combination is determined by UL LLC ('UL') and where the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the specific identification marking described in the Follow-Up Service Procedure on such products which comply with said Procedure and any other applicable requirements. Only those products which properly bear the above specific identification marking are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

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: HyeongKyun Park

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 Mode Power Supply(AC/DC adaptor), consists of electronic components mounted on PWB, a switching transformer and electronic components mounted on PWB

Model Differences

Models S-XE40 series is identical to models S-BX040 series except for model designation.
 Models S-XE30 series is identical to models S-BX030 series except for model designation.
 Models S-BX030 series is identical to models S-BX040 series except for model designation and rated output current

Nomenclature

S-B X 040 X YY X, S-B X 030 X YY X
 (a) (b) (c) (d) (a) (b) (c) (d)

(a) Family Related Designs

X is A-Z

(b) Output

X is S (S=Single)

(c) Output Voltage

05, 09, 12, 15, 18, 24, 48 , 05 through 48

(d) Standard Input Cord Options

Can be F or Q or N or B or H or G or M or C for input plug type. Photographs for each plug-type configuration

F : (Class I = IEC320-C14)

Q: (Class II = IEC320-C18)

N: ((Class II = IEC320-C8)

B: Class II North America, UK, Korea, Australia, European, China, Japan Changeable Direct-plug-in type

C: Class II - direct-plug-in for North America, China, Japan

H- Class II direct-plug-in for Australia(AS/NZS 3112) & Argentina

G- Class II direct-plug-in for British(BS 1363) & Singapore

M- Class II direct-plug-in for European(CEE /16)] & Korea

S-XE 30 X YY XX X XX, S-XE 40 X YY XX X XX
 (a) (b) (c) (d) (e) (f) (a) (b) (c) (d) (e) (f)

(a) Family Related Designs

- X is A-Z
- (b) AC Ground Configuration
A to Z (Standard)
- (c) Output Voltage
05, 09, 12, 15, 18, 24, 48 , 05 through 48
- (d) Standards Output Cord Options
Number : 00 thru 99
- (e) Standard Input Connector Options
Can be F or Q or N or B or H or G or M or C for input plug type. Photographs for each plug-type configuration
F : (Class I = IEC320-C14)
Q: (Class II = IEC320-C18)
N: ((Class II = IEC320-C8)
B: Class II North America, UK, Korea, Australia, European, China, Japan Changeable Direct-plug-in type
C: Class II - direct-plug-in for North America, China, Japan
H- Class II direct-plug-in for Australia(AS/NZS 3112) & Argentina
G- Class II direct-plug-in for British(BS 1363) & Singapore
M- Class II direct-plug-in for European(CEE /16)] & Korea
- (f) Model Configuration
Number : 00 thru 99

Technical Considerations

- Equipment mobility : movable
- Connection to the mains : pluggable A
- Operating condition : continuous
- Access location : N/A
- 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) : -
- Class of equipment : Class I (earthed) or Class II (double insulated)
- Considered current rating of protective device as part of the building installation (A) : 20
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : Up to 5000m
- Altitude of test laboratory (m) : N/A
- Mass of equipment (kg) : max 200g
- 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
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): All outputs

Engineering Conditions of Acceptability

For use only in or with Applicant's complete equipment where the acceptability is determined by UL LLC. When installed in an end-product, consideration must be given to the following:

- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-SELV: _292 Vrms, 620 Vpk,

- The following secondary output circuits are SELV: output
- The following secondary output circuits are at non-hazardous energy levels: output
- The following secondary output circuits are supplied by a Limited Power Source: output
- The maximum investigated branch circuit rating is: 20 A
- The investigated Pollution Degree is: 2
- Proper bonding to the end-product main protective earthing termination is: Required(for ClassI)
- An investigation of the protective bonding terminals has: Been conducted
- The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class A (105°C): T1(Class B)
- The following end-product enclosures are required: Electrical, Fire, Mechanical

Additional Information

4787080329

The assembly is manufactured by WENDENG JEIL ELECTRONICS Co LTD(All requirements associate with this report is evaluated as UL report E300305-A110)

Additional Standards

The product fulfills the requirements of: N/A

Markings and instructions

Clause Title	Marking or Instruction Details
Power rating - Model	Model Number
Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.

Special Instructions to UL Representative

Products complying with the description in this procedure are authorized to be marked with the following split inspection marking and shipped to the factory locations covered by File E300305, Volume X1. This marking is to be applied to the products.

Products not in compliance with the description of this procedure are not authorized to bear this marking and are not authorized for use in products that bear the UL Listing Mark.

Split Inspection Marking:

S-BX040XYXX, S-XE40XYXXXXXX, S-BX030XYXX, S-XE30XYXXXXXX

Production-Line Testing Requirements						
<u>Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.</u>						
Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
All model	T1	N/A	Primary to Secondary	300 0	4242	1
<u>Earthing Continuity Test Exemptions - This test is not required for the following models:</u>						
all models						
<u>Electric Strength Test Exemptions - This test is not required for the following models:</u>						
<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>						
<u>Sample and Test Specifics for Follow-Up Tests at UL</u>						
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
Enclosure - Optional	SAMSUNG SDI CO LTD	HN-1064(+)	Overall Sized approx. 95.0 by 54.0 by 32mm. Min 2.0 mm thickness, V-0. RTI = 130 degreeC	QMFZ2	UL(E115797)	
Appliance Inlet (Class I)	Rong Feng Industrial	SS-120	Min.10A, 250V	AXUT2	UL(E102641)	
Appliance Inlet (Class II)	Rong Feng Industrial	RF-180	Min.2.5A, 250V	AXUT2	UL(E102641)	
Appliance Inlet (Class II) - Alternate	Rong Feng Industrial	SS-120A	Min.10A, 250V	AXUT2	UL(E102641)	
Fuse (F1)	LITTELFUSE WICKMANN WERKE	392	Rated 250 V, 2.0A	JDYX2	UL(E67006)	
Fuse (F1) - Alternate	COOPER BUSSMANN LLC	SS-5	Rated 250 V, 2.0A	JDYX2	UL(E19180)	
Fuse (F1) - Alternate	Hollyland co., ltd.	5ET	Rated 250 V, 2.0A	JDYX2	UL(E156471)	
Fuse (F2) (Optional)	LITTELFUSE WICKMANN WERKE	392	Rated 250 V, 2.0A	JDYX2	UL(E67006)	
Fuse (F2) (Optional) - Alternate	COOPER BUSSMANN LLC	SS-5	Rated 250 V, 2.0A	JDYX2	UL(E19180)	
Fuse (F2) (Optional) - Alternate	Hollyland co., ltd.	5ET	Rated 250 V, 2.0A	JDYX2	UL(E156471)	
Thermister (TH1)	DSC ELECTRONICS CO LTD	DSC-5D-9	NTC, 5ohm at 25°C.	Tested in the equipment	-	
Thermister (TH1)	THINKING ELECTRONIC INDUSTRIAL CO LTD	SCK-083	NTC, 5ohm at 25°C.	Tested in the equipment	-	
Varistor (VAR1) (Optional)	Amotech	10D471 & 14D471	Rated 470 V, (line-to-line), Overall dimension 10 mm & 14mm.	VZCA2	UL(E332687)	
Varistor (VAR1)	Success Electronics	SVR10D471K &	Rated 470 V, (line-to-line),	VZCA2	UL(330256)	

(Optional) _Alternate		SVR14D471K	Overall dimension 10 mm & 14mm.			
X-capacitor (CX1) (Line to Line)	Carli	MPX	Rated 275V, Max. 0.47 uF. Marked with X1 or X2. Meets IEC/EN60384-14.	FOWX2	UL(E120045)	
X-capacitor (CX1) (Line to Line) - Alternate	Iskra	KNB1562 or 1563	Rated 250V, Max. 0.47 uF. Marked with X1 or X2. Meets IEC/EN60384-14.	FOWX2	UL(E145156)	
X-capacitor (CX1) (Line to Line) - Alternate	Pilkor	PCX2 335M or PCX2 337	Rated 250V, Max. 0.47 uF. Marked with X1 or X2. Meets IEC/EN60384-14.	FOWX2	UL(E165646)	
X-capacitor (CX1) (Line to Line) - Alternate	Okaya	LE	Rated 250V, Max. 0.47 uF. Marked with X1 or X2. Meets IEC/EN60384-14.	FOWX2	UL(E236227)	
X-capacitor (CX1) (Line to Line) - Alternate	Sunil	436D	Rated 250V, Max. 0.47 uF. Marked with X1 or X2. Meets IEC/EN60384-14.	FOWX2	UL(E199061)	
Line Filter (LF1)	BridgePower & Wendeng Jeil &TNC	3025701	Core: Ferrite, 16.5 by 10.5 by 20 mm, Coils: Polyurethane wire min130°C. Bobbin: (QMFZ2), Hexian Specialty Chemicals, type PM9820 , V-0, 150°C. See Enclosure for details.	Tested in the equipment	-	
Line Filter (LF1) - Alternate	TNC	CV408360SH	Core: Ferrite, 16.5 by 10.5 by 20 mm, Coils: Polyurethane wire min130°C. Bobbin: (QMFZ2), Hexian Specialty Chemicals, type PM9820 , V-0, 150°C. See Enclosure for details.	Tested in the equipment	-	
Y-Capacitors (CY1, CY2)	APEX INTEC	NK	Rated 250V, Max. 2200 pF Marked with Y1. Meets IEC/EN60384-14.	FOWX2	UL(E107942)	
Y-Capacitors (CY1, CY2) – Alternate	DONGIL	DA	Rated 250V, Max. 2200 pF Marked with Y1. Meets IEC/EN60384-14.	FOWX2	UL(E128646)	

Y-Capacitors (CY1, CY2) – Alternate	SAMWHA CAPACITOR	SD	Rated 250V, Max. 2200 pF Marked with Y1. Meets IEC/EN60384-14.	FOWX2	UL(E97754)	
Y-Capacitors (CY1, CY2) – Alternate	Success Electronics	SE	Rated 250V, Max. 2200 pF Marked with Y1. Meets IEC/EN60384-14.	FOWX2	UL(E114280)	
Bridge diode (BD1)	Interchangeable	Interchangeable	Min. 600V, Max. 0.4A.	Tested in the equipment	-	
Electrolytic Capacitor (PC1)	Interchangeable	Interchangeable	Rated Min. 400 V, Max. 120uF, Min. 105°C.	Tested in the equipment	-	
FET (PQ1)	Interchangeable	Interchangeable	650 V Min, 7.2A Max.	Tested in the equipment	-	
Switching IC (PU1)	Interchangeable	Interchangeable	Max. 30V, 250mA.	Tested in the equipment	-	
Main Transformer (T1) for 5V output	BridgePower & Wendeng Jeil	JEC(B) (Part No.: 3025758001)	Class B. Core: Ferrite, size 28 by 20 mm. Coils: TIW: Furukawa, TEX-E, 130 deg C. Bobbin: (QMFZ2), V-0, 130 deg C.	OBJY2	UL	
Main Transformer (T1) for 9V output	BridgePower & Wendeng Jeil	JEC(B) (Part No.: 3025758002)	Class B. Core: Ferrite, size 28 by 20 mm. Coils: TIW: Furukawa, TEX-E, 130 deg C. Bobbin: (QMFZ2), V-0, 130 deg C.	OBJY2	UL	
Main Transformer (T1) for 12V & 15V output	BridgePower & Wendeng Jeil	JEC(B) (Part No.: 3025758003)	Class B. Core: Ferrite, size 28 by 20 mm. Coils: TIW: Furukawa, TEX-E, 130 deg C. Bobbin: (QMFZ2), V-0, 130 deg C.	OBJY2	UL	
Main Transformer (T1) for 18V output	BridgePower & Wendeng Jeil	JEC(B) (Part No.: 3025758005)	Class B. Core: Ferrite, size 28 by 20 mm. Coils: TIW: Furukawa, TEX-E, 130 deg C. Bobbin: (QMFZ2), V-0, 130 deg C.	OBJY2	UL	
Main Transformer (T1) for 24V output	BridgePower & Wendeng Jeil	JEC(B) (Part No.: 3025758006)	Class B. Core: Ferrite, size 28 by 20 mm. Coils: TIW: Furukawa, TEX-E, 130 deg C.	OBJY2	UL	

			Bobbin: (QMFZ2), V-0, 130 deg C.			
Main Transformer (T1) for 48V output	BridgePower & Wendeng Jeil	JEC(B) (Part No.: 3025758007)	Class B. Core: Ferrite, size 28 by 20 mm. Coils: TIW: Furukawa, TEX-E, 130 deg C. Bobbin: (QMFZ2), V-0, 130 deg C.	OBJY2	UL	
Insulator Sheet (Between Inlet & PC1)	FORMEX, DIV OF ILLINOIS TOOL WORKS INC, FORMERLY	FORMEX GK- (a)(b)(f2)	Overall Sized approx. 23 by 20 mm. Rated V-0, 115°C, min. 0.4 mm thick.	QMFZ2	UL(E121855)	
Optical Isolator (U1) - Alternate	COSMO ELECTRONICS CORP	KP1010	Double protection optical isolator. Providing isolation voltage 5000 Vac. External dcr min. 8.0 mm. Internal Cl; 6.5mm, CR; 6.5mm	FPQU2	UL(E169586)	
Optical Isolator (U1) - Alternate	Sharp Corp	PC123	Double protection optical isolator. Providing isolation voltage 5000 Vac. Internal CL,CR; 6.4mm, External CL,CR;8.0mm	FPQU2	UL(E64380)	
Optical Isolator (U1) - Alternate	AUK CORP	PC-17K or PC- 17K1C	Double protection optical isolator. Providing isolation voltage 5000 Vac. External dcr min. 8.0 mm. Internal CL,CR;7.0mm	FPQU2	UL(E107486)	
Heatsink (HS1) (Primary)	Interchangeable	Interchangeable	Metal, overall sized approx. 27 by 20 mm, 2.0 mm thickness. Wound by polyester film tape OANZ2), Min. 130 deg C,	Tested in the equipment	-	
Heatsink (HS2) (Secondary)	Interchangeable	Interchangeable	Metal, overall sized approx. 27 by 20 mm, 2.0 mm thickness. Wound by polyester film tape OANZ2), Min. 130 deg C,	Tested in the equipment	-	
PWB	Interchangeable	Interchangeable	Min. V-1, 130°C.	ZPMV2	UL	
Bonding Glue	Interchangeable	Interchangeable	Min. V-2, min. 100 °C for additional secureness of	QMFZ2	UL	

			internal conductor.			
Output Cable	Interchangeable	Interchangeable	(For use of external interconnection) Style No. 2464 or 1777, min. 300 V, 80°C, 18 AWG, VW-1 or FT-1. Max. 3.05 m long.	AVLV2	UL	
Output Cable Alternate	Interchangeable	Interchangeable	For use of external interconnection, max 3.05 m long, max. 300 V, 80 °C, min.20 AWG, Marked with VW-1 or FT-1.	AVLV2 or ZJCZ	UL	
Nameplate Label- For I.T.E-optional	Interchangeable	Interchangeable	Suitable for use on surface of Polycarbonate (PC) with max.80°C surface temperature.	PGDQ2, PGAA	UL	
Tube (Inside Inlet F.G)	Interchangeable	Interchangeable	Rated 600 V, 125°C, VW-1.	YDPU2	UL	
Bonding conductor (Class I)	Interchangeable	Interchangeable	Mechanically clamped or secured on PWB from Appliance Inlet. Min 18 AWG, VW-1 or FT-1, Green-and-Yellow Insulation.	AVLV2	UL	

Enclosures

<u>Type</u>	<u>Supplement Id</u>	<u>Description</u>
Photographs	3-01	Direct type PCB top
Photographs	3-05	Classs I PCB Top
Diagrams	4-01	Pattern Diagram
Miscellaneous	7-02	Line Filter (LF1)
Miscellaneous	7-04	Transformer (T1)_3025758001
Miscellaneous	7-05	Transformer (T1)_3025758002
Miscellaneous	7-06	Transformer (T1)_3025758003
Miscellaneous	7-07	Transformer (T1)_3025758005
Miscellaneous	7-08	Transformer (T1)_3025758006
Miscellaneous	7-10	Transformer (T1)_3025758007