Ref. Certif. No.

US-22101-A1-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product Produit	Switching Power Supplies
Name and address of the applicant Nom et adresse du demandeur	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Name and address of the manufacturer Nom et adresse du fabricant	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	XP POWER LLC 990 BENECIA AVE SUNNYVALE CA 94085 UNITED STATES ☒ Additional Information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	Input: 100-277 Vac, 50/60 Hz, 9 A Output: See test report for details.
Trademark (if any) Marque de fabrique (si elle existe)	XP
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	SMT
Model / Type Ref. Ref. De type	HHP650PSXX See Page 2
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire,, peuvent être indiqués sur la 2ème page	Additionally evaluated to EN 60950-1:2006/A11:2009/A1:2010/A12:2011. National Differences specified in the CB Test Report. ☒ Additional Information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1(ed.2), IEC 60950-1(ed.2);am1
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	E139109-A127-CB-1 issued on 2014-02-18

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme **National de Certification**

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2014-02-18
Original Issue Date: 2013-08-19

Signature:

Jolanta M. Wroblewska

Ref. Certif. No.

US-22101-A1-UL

Model Details:
HHP650PSXX (where XX = represents the output voltage between 12-48)

Factories:
XP POWER (S) PTE LTD
LIPO BLDG, #05-01 621 ALJUNIED RD SINGAPORE 389834
SINGAPORE

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD ZHANGPU TOWN KUNSHAN JIANGSU 215300
CHINA

Additional Information:
The original report was modified to include the following changes/additions:
Electric Strength Test conducted at higher test voltage per XP Power specifications.

Additional information (if necessary)
Information complémentaire (si nécessaire)

- [x] UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
- [ ] UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
- [ ] UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
- [ ] UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2014-02-18
Original Issue Date: 2013-08-19

Signature:

Jolanta M. Wroblewska

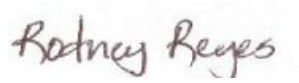
Test Report issued under the responsibility of:

TEST REPORT
IEC 60950-1
Information technology equipment - Safety - Part 1: General requirements

Report Reference No ..... :	E139109-A127-CB-1
Date of issue ..... :	2013-08-19
Total number of pages ..... :	9
CB Testing Laboratory ..... :	UL San Jose
Address ..... :	455 E. Trimble Rd., San Jose, CA, 95131-1230, USA
Applicant's name ..... :	XP POWER L L C
Address ..... :	SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Test specification:	
Standard ..... :	IEC 60950-1:2005 (2nd Edition); Am 1:2009
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1C
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	2012-08

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	Switching Power Supplies
Trade Mark ..... :	
Manufacturer ..... :	XP POWER LLC SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Model/Type reference ..... :	HHP650PSXX (where XX = represents the output voltage between 12-48)
Ratings ..... :	Input: 100-277 Vac, 50/60 Hz, 9 A Output: See Model Differences.

Testing procedure and testing location:			
[ ]	**CB Testing Laboratory**		
	Testing location / address..... :		
[ ]	**Associated CB Test Laboratory**		
	Testing location / address..... :		
	Tested by (name + signature) ..... :		
	Approved by (name + signature) ... :		
[ ]	**Testing Procedure: TMP**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: WMT**		
	Tested by (name + signature) ..... :		
	Witnessed by (+ signature)..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[x]	**Testing Procedure: SMT**		
	Tested by (name + signature) ..... :	Rodney Reyes	
	Approved by (+ signature) ..... :	Tac Pham	
	Supervised by (+ signature) ..... :	David E. Drewes	
	Testing location / address..... :	XP Power LLC, Suite 150, 1241 E Dyer Rd, Santa Ana, 92705 USA	
[ ]	**Testing Procedure: RMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		

List of Attachments

National Differences (0 pages)

Enclosures (0 pages)

Summary Of Testing

Unless otherwise indicated, all tests were conducted at XP Power LLC, Suite 150, 1241 E Dyer Rd, Santa Ana, 92705 USA.

	Tests performed (name of test and test clause)	**Testing location / Comments**
	Electric Strength (5.2.2)	

Summary of Compliance with National Differences:

Countries outside the CB Scheme membership may also accept this report.

List of countries addressed: AT, BE, BG, BY, CA, CH, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IT, JP, KR, NL, PL, PT, RO, SE, SI, SK, UA, US

The product fulfills the requirements of: CSA C22.2 No. 60950-1-07 + A1:2011, EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011, UL 60950-1 2nd Ed. Revised 2011-12-19, IEC 60950-1:2005 + A1:2009

Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.

Test item particulars :	
Equipment mobility ..... :	for building-in
Connection to the mains ..... :	To be determined in the end-use product.
Operating condition ..... :	continuous
Access location ..... :	for building-in
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) ..... :	20 A
Pollution degree (PD) ..... :	PD 2
IP protection class ..... :	IP X0
Altitude of operation (m) ..... :	5000
Altitude of test laboratory (m) ..... :	less than 2000 meters
Mass of equipment (kg) ..... :	1.5
Possible test case verdicts:	
- test case does not apply to the test object ..... :	N / A
- test object does meet the requirement ..... :	P(Pass)
- test object does not meet the requirement ..... :	F(Fail)
Testing:	
Date(s) of receipt of test item ..... :	2014-01-15
Date(s) of Performance of tests ..... :	2014-02-13

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

Manufacturer's Declaration per Sub Clause 4.2.5 of IECEE 02: Yes

The application for obtaining a CB Test Certificate includes more than one factory and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....

When differences exist, they shall be identified in the General Product Information section.

Name and address of Factory(ies): XP POWER LLC
990 BENECIA AVE
SUNNYVALE CA 94085

UNITED STATES

XP POWER (S) PTE LTD
LIPO BLDG, #05-01
621 ALJUNIED RD
SINGAPORE 389834 SINGAPORE

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD
ZHANGPU TOWN
KUNSHAN
JIANGSU 215300 CHINA

GENERAL PRODUCT INFORMATION:

Report Summary

The original report was modified on 2014-02-18 to include the following changes/additions:
Electric Strength Test conducted at higher test voltage per XP Power specifications.

Product Description

The product is a component AC-DC power supply for building-in, open frame type provided with a metal chassis, incorporating primary and SELV components. The power supply is intended for use in Class I Information Technology Equipment.

The main PWB is secured to the chassis by multiple machine screws.

Model Differences

The power supplies in the series are differentiated by the output voltage and current ratings, number of turns of primary/secondary windings in the Transformers (T302) and minor differences in the secondary circuit components.

See below for Model Ratings (up to 50°C) for Model HHP650PSXX, where XX indicated the output voltage:

Model HHP650PS12: Output Rated: 12.0 Vdc, 50A (600W)
Model HHP650PS15: Output Rated: 15.0 Vdc, 40A (600W)
Model HHP650PS24: Output Rated: 24.0 Vdc, 27.0 A (650W)
Model HHP650PS24 (Input: 180-277Vac): Output Rated: 24.0 Vdc, 32.4 A (780W)
Model HHP650PS28: Output Rated: 28.0 Vdc, 23.0 A (650W)
Model HHP650PS28 (Input: 180-277Vac): Output Rated: 28.0 Vdc, 27.6 A (780W)
Model HHP650PS36: Output Rated: 36.0 Vdc, 18.0 A (650W)
Model HHP650PS36 (Input: 180-277Vac): Output Rated: 36.0 Vdc, 21.6 A (780W)
Model HHP650PS48: Output Rated: 48.0 Vdc, 13.5 A (650W)
Model HHP650PS48 (Input: 180-277Vac): Output Rated: 48.0 Vdc, 16.2 A (780W)

Additional Information

The need for the additional testing and evaluation shall be determined in the end product investigation.

The nameplate markings provided as an Enclosure - Marking Plate are considered representative of the entire series.

The power supply series covered by this report employ Double/Reinforced Insulation between Primary and Secondary circuits.

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50°C at full rated load and 70°C at half rated load.
- The means of connection to the mains supply is: for building-in, to be determined in the end product.
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: for building-in, to be determined in the end product.
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 (which includes all European national differences, including those specified in this test report).
- The following are available from the Applicant upon request: Specific data sheets for LED indicators that are class I and operate at wavelength in the 400-710 nm range.,
- LEDs provided in the product are considered low power devices: Yes
- Per manufacturer specifications, the Electric Strength Test from input to ground conducted at 2000Vac. --

Engineering Conditions of Acceptability

When installed in an end-product, consideration must be given to the following:

- The following Production-Line tests are conducted for this product: Electric Strength, Earthing Continuity
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-Earthed Dead Metal: 277 Vrms, 390 Vpk, Primary-SELV: 360 Vrms, 534 Vpk,
- The following secondary output circuits are SELV: All outputs
- The following secondary output circuits are at hazardous energy levels: Power output
- The following secondary output circuits are at non-hazardous energy levels: 5V Standby output
- The power supply terminals and/or connectors are: Not investigated for field wiring
- 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
- An investigation of the protective bonding terminals has: Not been conducted
- The following input terminals/connectors must be connected to the end-product supply neutral: AC-N (J1)
- 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): L1-L3, L50, T201, T301-T303, and L301 (Class F) ,
- The following end-product enclosures are required: Electrical, Fire, Mechanical
- The following LEDs operate within the exempt group per IEC 62471: Indicating LED.

- Fans: The fan provided in this sub-assembly is not intended for operator access.
- GDT, meeting basic insulation, provided in series with Line to Ground VDR in order to meet the requirements of sub-clause 1.5.9.4. --
- Temperature, Leakage, Earthing, and Dielectric to be considered as part of the end product investigation. --
- Required values for clearance are adjusted for 5000m(1.48 correction factor as per IEC 60664-1, Table A2) --
- Unit was evaluated as a component for building-in, the need for markings and marking durability testing shall be determined as part of the end product. --
- Output terminals V+ and V- are provided with multiple pole terminals (3) rated 20 A per pole totaling up to no more than a maximum of 50 A device output. , --

Abbreviations used in the report:

- normal condition	N.C.	- single fault condition	S.F.C
- operational insulation	OP	- basic insulation	BI
- basic insulation between parts of opposite polarity:	BOP	- supplementary insulation	SI
- double insulation	DI	- reinforced insulation	RI

Indicate used abbreviations (if any)