Test Report issued under the responsibility of:

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

Report Reference No ..... :	E139109-A76-CB-3
Date of issue ..... :	2015-05-28
Total number of pages ..... :	80
CB Testing Laboratory ..... :	UL San Jose
Address ..... :	455 E. Trimble Rd., San Jose, CA, 95131-1230, USA
Applicant's name ..... :	XP POWER LLC
Address ..... :	SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Test specification:	
Standard ..... :	IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1F
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2014-02

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.

General disclaimer

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 Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description ..... :	Switching Power Supply
Trade Mark ..... :	
Manufacturer ..... :	XP POWER LLC SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Model/Type reference ..... :	EMH250PSXXYY-ZZ and EMH350PSXXYY-ZZ, where XX is 12-48, where YY is any two numbers between 0-9 or blank, ZZ is "SF" or blank , may also be provided with additional suffixes "-TF", "-VF", "D" and "-S"; all "-" considered optional. EMH350PS12-01 XB0118
Ratings ..... :	For Model EMH250PSXXYY-ZZ Series: Input: 100-240Vac, 50/60, Hz, 3.8A, 250W Output: Refer to Model Differences for details. For Model EMH350PSXXYY-ZZ Series and EMH350PS12-01 XB0118: Input: 100-240Vac, 50/60, Hz, 4.8A, 350W Output: Refer to Model Differences for details.

Testing procedure and testing location:		
[x]	**CB Testing Laboratory**	
	Testing location / address .....:	UL San Jose 455 E. Trimble Rd., San Jose, CA, 95131-1230, USA
[ ]	**Associated CB Test Laboratory**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	Robert Leon
	Approved by (name + signature)....:	Walid Beytoughan
[ ]	**Testing Procedure: TMP/CTF Stage 1**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Approved by (name + signature)....:	
[ ]	**Testing Procedure: WMT/CTF Stage 2**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Witnessed by (name + signature) ..:	
	Approved by (name + signature)....:	
[ ]	**Testing Procedure: SMT/CTF Stage 3 or 4**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Approved by (name + signature)....:	
	Supervised by (name + signature) .:	
[ ]	**Testing Procedure: RMT**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Approved by (name + signature)....:	
	Supervised by (name + signature) .:	

List of Attachments

National Differences (36 pages)

Enclosures (92 pages)

Summary of Testing:

All Applicable tests according to the referenced standard(s) have been carried out

Summary of Compliance with National Differences:

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

List of countries addressed: AT, BE, BG, CA, CH, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IT, JP, KR, NL, PL, PT, RO, SE, SI, SK, 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 ..... :	pluggable A
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) ..... :	For Model EMH250PSXXYY Series: 3.8 A/ For Model EMH350PSXYY Series: 4.8 A
Pollution degree (PD) ..... :	PD 2
IP protection class ..... :	IP X0
Altitude of operation (m) ..... :	3048
Altitude of test laboratory (m) ..... :	less than 2000 meters
Mass of equipment (kg) ..... :	410 g
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 ..... :	N/A
Date(s) of Performance of tests ..... :	N/A
General remarks:	
"(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 (KUNSHAN) LTD

230 BIN JIANG NAN RD
ZHANGPU TOWN
KUNSHAN
JIANGSU 215300 CHINA

GENERAL PRODUCT INFORMATION:

Report Summary

All applicable tests according to the referenced standard(s) have been carried out.

Product Description

The products evaluated are switching power supplies for building-in to an end-use product information technology products.

Model Differences

Model EMH250PSXXYY-ZZ Series and Model EMH350PSXXYY-ZZ Series are identical with exception that the EMH250PSXXYY-ZZ Series is designed to be rated for a 250 W output power and the EMH350PSXXYY-ZZ Series designed to be rated for a 350 W output power.

All models within the each series are identical with exception to the output rating, mains transformer windings, and minor secondary components.

Models EMH250PSXXYY-ZZ and EMH350PSXXYY-ZZ have the following nomenclature:

XX = 12-48, denotes the rated output voltage.
YY= 0-9, denotes non-safety related functions
ZZ = SF or blank, denotes either single pole fusing (SF) or double fusing (blank)

Units provided with additional suffix "-TF" or "-VF" provided with Top Fan and Cover.
Units provided with additional suffix "-S" indicates models provided with input screw terminals.
Units provided with additional suffix "D" provided with integral O-ring diode located in the secondary

See below for the Output Rating for 50°C Ambient provided with Forced Air Cooling .

Model EMH250PS12YY-ZZ: 10.1 Vdc to 13.5 Vdc, 21 A Max. (250 W Max)
Model EMH250PS15YY-ZZ: 13.6 Vdc to 17 Vdc, 16.7 A Max, (250 W Max)
Model EMH250PS18YY-ZZ: 17.1 Vdc to 21 Vdc, 14 A Max, (250 W Max)
Model EMH250PS24YY-ZZ: 21.1 Vdc to 26 Vdc, 10.5 A Max, (250 W Max)
Model EMH250PS28YY-ZZ: 26.1 Vdc to 31 Vdc, 9.0 A Max, (250 W Max)
Model EMH250PS33YY-ZZ: 31.1 Vdc to 33 Vdc, 7.6 A Max, (250 W Max)
Model EMH250PS36YY-ZZ: 33.1 Vdc to 42 Vdc, 6.9 A Max, (250 W Max)
Model EMH250PS48YY-ZZ: 42.1 Vdc to 54 Vdc, 5.2 A Max, (250 W Max)

Model EMH350PS12YY-ZZ: 10.1 Vdc to 13.5 Vdc, 29.2 A Max, (350 W Max)
Model EMH350PS15YY-ZZ: 13.6 Vdc to 17 Vdc, 23.3 A Max, (350 W Max)
Model EMH350PS18YY-ZZ: 17.1 Vdc to 21 Vdc, 19.5 A Max, (350 W Max)
Model EMH350PS24YY-ZZ: 21.1 Vdc to 26 Vdc, 14.6 A Max, (350 W Max)
Model EMH350PS28YY-ZZ: 26.1 Vdc to 31 Vdc, 12.5 A Max (350 W Max)
Model EMH350PS33YY-ZZ: 31.1 Vdc to 33 Vdc, 10.6 A Max, (350 W Max)
Model EMH350PS36YY-ZZ: 33.1 Vdc to 42 Vdc, 9.8 A Max, (350 W Max)

Model EMH350PS48YY-ZZ: 42.1 Vdc to 54 Vdc, 7.3 A Max (350 W Max)

Stand-by Output for all models: 5Vdc, 2 A or 12Vdc, 0.8 A
Fan Output for all models (V2): 12 Vdc, 0.6 A (Not marked on nameplate)

See Enclosure 7-02 for Output Rating Curve.

Model EMH350PS12-01 XB0118 is identical to Model EMH350PS12 except for model number.

Additional Information

This report is a reissue of CBTR Ref. No. E139109-A76-CB-2, CB Test Certificate Ref. No. US-21262-UL. Based on the previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, has been determined that the product complies with the standard as specified in the Technical Considerations.

No tests were conducted under this investigation for a standard upgrade to include A2 and to revise Model Differences to show output voltage range for each model. The reissue also covered the following changes:

Table 1.5.1 was also revised as follows:

- Y-Capacitors (C14) to add "Optional" and "Y2".
- Y-Capacitors (C12, C55) to add "Optional" and "Y2".
- Bridging Capacitors (C33, C56) to add "Optional" and "Y2".
- Added - Printed Wiring Board - Conformal Coating - Optional, Dow Corning, type 1-2577.

All required tests were carried out under the original investigation.

The required clearance values have been assessed for suitability up to 3048 m elevation (1.15 correction factor as per IEC 60664-1, Table A2).

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.

Component licenses may be older than 3 years, manufacturer to provide updated licenses upon request.

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 (Output loaded to 100% of rated) de-rated linearly to 70°C (Output loaded to 50% of rated)
- 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 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).

Engineering Conditions of Acceptability

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

- The following warning or its equivalent to be provided as part of the end product without additional

suffix "SF": CAUTION. Double pole/neutral fusing. --

- Temperature, Leakage, Earthing, and Dielectric to be considered as part of the end product investigation. --
- 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: 240 Vrms, 362 Vpk, Primary-SELV: 243 Vrms, 680 Vpk, --
- The following secondary output circuits are SELV: All --
- The following secondary output circuits are at hazardous energy levels: Main Power Output --
- The power supply terminals and/or connectors are: Suitable for factory wiring only --
- 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: Electric Strength --
- An investigation of the protective bonding terminals has: Not 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-T2,L1, L12, L13, L7, PFC (min. Class F), --
- The following end-product enclosures are required: Fire, Electrical --
- The maximum continuous power supply output (Watts) relied on forced air cooling from: For Model EMH350PSXXYY Series: 350 W output rating with 12 cfm fan applied Inward from the Input side from 3 in. (7.62 cm) or provided with Top Fan option., --
- Fans: The fan provided in this sub-assembly is not intended for operator access, to be evaluated in the end product. --

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)