Test Report issued under the responsibility of:

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

Report Reference No ..... :	E139109-A5-CB-5
Date of issue ..... :	2015-07-27
Total number of pages ..... :	77
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 ..... :	15641 RED HILL AVE, SUITE 100 TUSTIN CA 92780 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 ..... :	Power supply for building-in, switch mode type
Trade Mark ..... :	
Manufacturer ..... :	XP POWER L L C 15641 RED HILL AVE, SUITE 100 TUSTIN CA 92780 UNITED STATES
Model/Type reference ..... :	ECM60UDxx, ECM60UTxx, ECM40UDxx, ECM40UTxx, ECC60UDxx, ECC60UTxx, ECC40UDxx, ECC40UTxx, where xx can be 21-22,31-37 representing the number of outputs and the output ratings configuration. Maybe followed by 3X5.
Ratings ..... :	Input: 100-240 V ac, 50/60 Hz, 40W or 60W, 1 A or 1.5 A. Output: 3.3, 5, 12, 15, 24, -12 or -15 V dc, Max 40 or 60 W, Dual or Triple outputs.

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)....:	Luis Martinez
[ ]	**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 (48 pages)

Enclosures (56 pages)

Summary Of Testing

Unless otherwise indicated, all tests were conducted at UL San Jose 455 E. Trimble Rd., San Jose, CA, 95131-1230, USA.

Tests performed (name of test and test clause)	Testing location / Comments
Input: Single-Phase (1.6.2)	Test conducted as part of certification

	under CBTR E139109-A4-CB-4, CBTC US-19316-UL.
Capacitance Discharge (2.1.1.7)	Test conducted as part of certification under CBTR E139109-A4-CB-4, CBTC US-19316-UL.
SELV Reliability Test Including Hazardous Voltage Measurements (2.2.2, 2.2.3, 2.2.4, Part 22 6.1)	Test conducted as part of certification under CBTR E139109-A4-CB-4, CBTC US-19316-UL.
Limited Current Circuit Measurement (2.4.1, 2.4.2)	Test conducted as part of certification under CBTR E139109-A4-CB-4, CBTC US-19316-UL.
Humidity (2.9.1, 2.9.2, 5.2.2)	Test conducted as part of certification under CBTR E139109-A4-CB-4, CBTC US-19316-UL.
Determination of Working Voltage; Working Voltage Measurement (2.10.2)	Test conducted as part of certification under CBTR E139109-A4-CB-4, CBTC US-19316-UL.
Heating (4.5.1, 1.4.12, 1.4.13)	Test conducted as part of certification under CBTR E139109-A4-CB-4, CBTC US-19316-UL.
Ball Pressure (4.5.5, 4.5)	Test conducted as part of certification under CBTR E139109-A4-CB-4, CBTC US-19316-UL.
Electric Strength (5.2.2)	Test conducted as part of certification under CBTR E139109-A4-CB-4, CBTC US-19316-UL.
Component Failure (5.3.1, 5.3.4, 5.3.7)	Test conducted as part of certification under CBTR E139109-A4-CB-4, CBTC US-19316-UL.
Abnormal Operation (5.3.1 - 5.3.9)	Test conducted as part of certification under CBTR E139109-A4-CB-4, CBTC US-19316-UL.
Transformer Abnormal Operation (5.3.3, 5.3.7b, Annex C.1)	Test conducted as part of certification under CBTR E139109-A4-CB-4, CBTC US-19316-UL.

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, CN, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IL, IT, JP, KR, NL, NO, PL, PT, RO, SE, SG, SI, SK, UA, US

The product fulfills the requirements of: 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).

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

Test item particulars :	
Equipment mobility ..... :	for building-in
Connection to the mains ..... :	for building-in
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) or 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 ..... :	IPX0
Altitude of operation (m) ..... :	up to 3048 meters for all countries except China
Altitude of test laboratory (m) ..... :	less than 2000 meters
Mass of equipment (kg) ..... :	0.15 kg
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 ..... :	2004-03-31, 2007-06-27
Date(s) of Performance of tests ..... :	2004-06-04 to 2004-08-04, 2007-06-27
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 INC 990 BENECIA AVE US SUNNYVALE CA 94085-2804 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 215321 CHINA

XP POWER (VIETNAM) CO LTD
LOT D - 4Q - CN
MY PHUOC 3 INDUSTRIAL PARK
BEN CAT DISTRICT
BINH DUONG VIET NAM

XP POWER PLC
HORESHOE PARK
PANGBOURNE
RG87 JW UNITED KINGDOM

GENERAL PRODUCT INFORMATION:

Report Summary

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

Product Description

Models covered in this report are component power supplies intended for use in Information Technology Equipment. They are open frame power supplies intended for building-in.

Model Differences

All models are identical except output electrical ratings, designation and may be provided with either dual or triple outputs. Models with designation UD represent dual outputs and UT represents triple outputs. Models rated 40 W are identical in construction to Models rated 60 W and differ for marketing purposes only. Models ECC are identical to Models ECM except for designation.

Additional Information

Models not evaluated for use with cover. Models also evaluated to IEC60601-1 under separate investigation.

See Miscellaneous Enclosure for Output ratings.

This report is a reissue of CBTR Ref. No.E139109-A5-CB-3, CB Test Certificate Ref. No.US/12607/UL. Based on previously conducted testing and the review of product construction it was determined that the product continues to comply with the standard. No tests were conducted under this investigation. All required tests were carried out under the original investigation in E139109-A4-CB-4, CBTC US-19316-UL.

Some of the attached Critical Component Licenses/Certs may be more than 3 years old. Manufacturer shall provide updated licenses upon request from an accepting NCB.

The Critical Components Table includes components in the product as submitted and also includes, in certain cases, alternate generic descriptions (designated as "interchangeable") for equivalent component substitutions. Recognizing NCBs may require additional information and/or evaluation to qualify alternate components.

User's Manuals, instructions and markings will be provided in the national language of the country of sale. The manufacturer is aware of the requirements for language requirements for markings/instructions, cords/cables, plugs and EMC. Detailed information may be obtained directly from the client. See Enclosure-Miscellaneous for a Letter of Assurance.

An additional evaluation was conducted to determine compliance for all countries except China when this product is used at an altitude of up to 3048 m. See Table 2.10.3 & 2.10.4 for details.

Marking label is representative of all models.

Technical Considerations

- 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).
- The product was submitted and tested for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40W Models: Tma = 60°C at 100% load (40W), Convection cooling Tma = 70°C at 75% load (30W), Convection cooling Tma = 70°C at 100% load (40W), Forced air cooling Tma = 80°C at 75% load (30W), Forced air cooling 60W Models: Tma = 50°C at 100% load (60W), Convection cooling Tma = 70°C at 50% load (30W), Convection cooling Tma = 60°C at 100% load (60W), Forced air cooling Tma = 80°C at 50% load (30W), Forced air cooling Convection cooling consists of no external forced air cooling. Forced air cooling consists of an external fan blowing 132 lfm over the power supply input to output, placed approx 1 foot from power supply. --
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: Load side of C22 (Pri to Sec bridging capacitor) --
- The means of connection to the mains supply is: for building-in --
- The product is intended for use on the following power systems: TN --
- According to IEC60664-1, Table A2, required Clearances have been adjusted by multiplying the clearance at sea level by a factor of 1.15 for operating at an altitude of 3048 meters for all countries except China. The correction factor is based on barometric pressure of 70kPa and Overvoltage Category II. If the calculated Clearance exceeded the Creepage, the Creepage was adjusted to the value of clearance. --

Engineering Conditions of Acceptability

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

- Printed Wiring Board rated 130°C. --
- The equipment is provided with double pole/neutral fusing. End product evaluation to consider suitable marking to service personal. --
- The maximum investigated branch circuit rating is: 20 A --
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary to Earthed Dead Metal: 240 Vrms, 340 Vpk , Primary to SELV: 261 Vrms, 406 Vpk --
- The following secondary output circuits are SELV: All outputs --

- The following secondary output circuits are at non-hazardous energy levels: All outputs --
- The power supply terminals and/or connectors are: Suitable for factory wiring only --
- The investigated Pollution Degree is: 2 --
- Proper bonding to the end-product main protective earthing termination is: To be considered in the end use application: open frame power supply components are for building-in Class I or Class II. All units will be considered Class I, except as described below: They will be considered Class II when protection against electric shock does not rely on Basic Insulation only, unit provides additional safety precautions such as Double/Reinforced Insulation and provide minimum of 5 mm creepage and 4 mm clearance distance (mounted above chassis/accessible metal parts on Insulating posts etc.). Class II units have no reliance upon protective earthing. --
- 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 and T1 (Class F, 130°C) --
- The following end-product enclosures are required: Fire , Electrical --
- The maximum continuous power supply output (Watts) relied on forced air cooling from: See Miscellaneous Enclosure - Output Ratings --
- The equipment is suitable for direct connection to: AC mains supply --
- An investigation of the protective bonding terminals has: Not been conducted --
- The unit was evaluated for use at 3048 meters elevation for all countries except China. Further evaluation will be necessary if intended to be installed in China above 2000 meters. --
- The Humidity Test was conducted at 27°C, 93%. If unit is to be installed in tropical conditions further evaluation at 40°C may be necessary in the end use application. --

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)