



Test Report issued under the responsibility of:



TEST REPORT

IEC 62368-1

Audio/video, information and communication technology equipment

Part 1: Safety requirements

Report Number : E317867-A6006-CB-1
Date of issue : 2018-02-26
Total number of pages : 67

Applicant's name : **XP POWER L L C**
Address : **15641 RED HILL AVE, SUITE 100**
TUSTIN CA 92780
UNITED STATES

Name of Test Laboratory : **UL Camas**
preparing the Report : **2600 N.W. Lake Road, Camas, WA, 98607, USA**

Test specification:
Standard : **IEC 62368-1:2014 (Second Edition)**
Test procedure : **CB Scheme**
Non-standard test method :

Test Report Form No. : **IEC62368_1B**
Test Report Form(s) Originator : **UL(US)**
Master TRF : **2014-03**



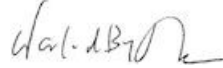
Copyright © 2014 Worldwide System for Conformity Testing and Certification of Electrotechnical Equipment and Components (IECEE), Geneva, Switzerland. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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	Open Frame Switching Power Supply-ECP40USXX-A7	
Trade Mark	XP 	
Manufacturer	XP POWER L L C 15641 RED HILL AVE, SUITE 100 TUSTIN CA 92780 UNITED STATES	
Model/Type reference	ECP40USXX (where XX can be any number between 05 and 48 designating the output voltage)	
Ratings	Input: 100-240 Vac, 50/60 Hz, 1.0 A Output: Model ECP40US05: Output Rated: 5.0 Vdc, 6.0 A Model ECP40US12: Output Rated: 12.0 Vdc, 3.34 A Model ECP40US15: Output Rated: 15.0 Vdc, 2.67 A Model ECP40US18: Output Rated: 18.0 Vdc, 2.22 A Model ECP40US24: Output Rated: 24.0 Vdc, 1.67 A Model ECP40US30: Output Rated: 30.0 Vdc, 1.34 A Model ECP40US48: Output Rated: 48.0 Vdc, 0.84 A	
Testing procedure and testing location:		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	
Testing location/ address	UL Camas 2600 N.W. Lake Road, Camas, WA, 98607, USA	
<input type="checkbox"/>	Associated CB Testing Laboratory:	
Testing location/ address		
Tested by (name + signature).....	Scott Corley / Project Handler	
Approved by (name + signature)	Walid Beytoughan / Reviewer	
<input type="checkbox"/>	Testing procedure: TMP/CTF Stage 1	
Testing location/ address		
Tested by (name + signature).....		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: WMT/CTF Stage 2	

Testing location/ address		
Tested by (name + signature).....		
Witnessed by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: SMT/CTF Stage 3 or 4	
Testing location/ address		
Tested by (name + signature).....		
Approved by (name + signature)		
Supervised by (name + signature).....		

List of Attachments (including a total number of pages in each attachment):	
National Differences (11 pages) Enclosures (39 pages)	
Summary of testing:	
Unless otherwise indicated, all tests were conducted at UL Camas 2600 N.W. Lake Road, Camas, WA, 98607, USA.	
Tests performed (name of test and test clause): CLASSIFICATION OF ELECTRICAL ENERGY SOURCES (5.2, 5.7) MAXIMUM OPERATING TEMPERATURE FOR MATERIALS, COMPONENTS AND SYSTEMS (5.4.1.4, Annex B.2) DETERMINATION OF WORKING VOLTAGE (5.4.1.8) BALL PRESSURE TEST (5.4.1.10.3) SEPARABLE THIN SHEET MATERIAL (5.4.4.6.2) HUMIDITY CONDITIONING (5.4.8) ELECTRIC STRENGTH TEST (5.4.9) PROSPECTIVE TOUCH VOLTAGE AND TOUCH CURRENT MEASUREMENT (5.7) POWER MEASUREMENTS (6.2.2.2, 6.2.2.3) NORMAL OPERATING CONDITIONS TEMPERATURE TEST (6.3) INPUT TEST: SINGLE PHASE (B.2.5) NORMAL OPERATING CONDITIONS TEMPERATURE MEASUREMENT (B.2.6) SIMULATED ABNORMAL OPERATING CONDITIONS (B.3) SIMULATED SINGLE FAULT CONDITIONS (B.4)	Testing location: UL Camas 2600 N.W. Lake Road, Camas, WA, 98607, USA

TEST FOR THE PERMANENCE OF MARKINGS
(ANNEX F.3.10)

TRANSFORMER OVERLOAD (ANNEX G.5.3.3)

MAXIMUM OPERATING TEMPERATURE FOR
MATERIALS, COMPONENTS AND SYSTEMS
(5.4.1.4, 6.2, 9.2.5 ANNEX B.2)

Summary of compliance with National Differences:

List of countries addressed: DK, EN, US,CA

The product fulfils the requirements of: EN 62368-1:2014.

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

TEST ITEM PARTICULARS:	
Classification of use by	Ordinary Person
Supply Connection	AC Mains
Supply % Tolerance	+10%/-10%
Supply Connection – Type	Other : For building-in
Considered current rating of protective device as part of building or equipment installation	20 A; Installation location: building
Equipment mobility.....	for building-in
Over voltage category (OVC)	OVC II
Class of equipment	Not classified
Access Location	N/A
Pollution degree (PD)	PD 2
Manufacturer’s specified maximum operating ambient:	50°C for 100% load. 70°C for 50% load (See Enclosure-Miscellaneous: De-rating Curve for additional details)
IP protection class	IPX0
Power Systems	TN IT-230 V L-L
Altitude during operation (m)	5000 m
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	0.12 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 of receipt of test item	2009-01-19, 2012-06-25, 2017-12-18
Date (s) of performance of tests	2009-02-20 to 2009-02-26, 2009-03-16 to 2009-03-17, 2012-06-28 to 2012-06-29, 2018-01-23
GENERAL REMARKS:	
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	
Manufacturer’s Declaration per sub-clause 4.2.5 of IEC 60335-1:	
The application for obtaining a CB Test Certificate includes more than one factory location 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.....	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Not applicable

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies)	ABES TECHNOLOGY CO LTD NO 78-1 ZHANGMA ST XIUSHUI TOWNSHIP CHANGHUA COUNTY 504 TAIWAN 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 VIETNAM
--	--

GENERAL PRODUCT INFORMATION:

Product Description
 The model covered in this report is an open frame component switching power supply intended for use in Audio/video, information and communication technology equipment.

Model Differences
 All models are identical with exception to the Mains Transformer (TR1) and minor secondary components that allow for different output voltage ratings. See Enclosure-Miscellaneous for additional details.

 See Enclosure-Miscellaneous: De-rating Curve for additional ratings information.

Additional application considerations – (Considerations used to test a component or sub-assembly) –
 Limited tests were conducted under this investigation based on testing previously conducted under CBTR Ref. No. E317867-A7-CB-4, CB Test Certificate Ref. Nos. US-26147-UL to IEC 60950-1:2005 (Second Edition), Am1:2009 + Am2:2013. All required tests were carried out under the previous investigation except where specifically noted.

 Unless indicated otherwise, all previous tests were conducted under UL CBTL Underwriters Laboratories Taiwan Co., Ltd. 260 Da-Yeh Road, 112 Peitou Taipei City, Chinese Taipei. Some tests were additionally conducted under CTDP SMT/CTF Stage 3 at XP POWER Ltd, 401 Commonwealth Drive, Haw Par Technocentre, Lobby B, #02-02, Singapore 149598 Singapore.

 The nameplate markings provided are considered representative of the entire series and only the output ratings may vary.

 This report references component licenses documentation or certificates that are older than 3 years or issued to previous IEC/EN Standard editions. It has being determined that all critical components comply with current safety requirements. Receiving NCB may request additional information. Acceptance of these licenses, certificates or relevant documentation is at the discretion of the Receiving NCB.

Technical Considerations

- The product is intended for use on the following power systems : TN, IT
- The equipment disconnect device is considered to be : N/A - To be provided as an element of the end product.
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer’s specification of : 50°C for 100% load. 70°C for 50% load (See Enclosure-Miscellaneous: De-rating Curve for additional details)
- The power supply series covered by this report employ Double/Reinforced Insulation between Primary and Secondary circuits.
- The clearance distances have additionally been assessed for suitability up to 5000 m elevation (1.48 correction factor as per IEC 60664-1, Table A2).

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:

(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.)
 (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.)

Electrically-caused injury (Clause 5):

(Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification)

Example: +5 V dc input ES1

Source of electrical energy	Corresponding classification (ES)
Mains Circuits (declared)	ES3
All Output Circuits	ES1

Electrically-caused fire (Clause 6):

(Note: List sub-assembly or circuit designation and corresponding energy source classification)

Example: Battery pack (maximum 85 watts): PS2

Source of power or PIS	Corresponding classification (PS)
Mains Circuits (declared)	PS3
All DC Output Circuits	PS2

Injury caused by hazardous substances (Clause 7)

(Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.)

Example: Liquid in filled component Glycol

Source of hazardous substances	Corresponding chemical
N/A	--

Mechanically-caused injury (Clause 8)

(Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.)

Example: Wall mount unit MS2

Source of kinetic/mechanical energy	Corresponding classification (MS)
N/A	--

Thermal burn injury (Clause 9)

(Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.)

Example: Hand-held scanner – thermoplastic enclosure TS1

Source of thermal energy	Corresponding classification (TS)
All Components (declared)	TS3

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:**Radiation (Clause 10)**

(Note: List the types of radiation present in the product and the corresponding energy source classification.)

Example: DVD – Class 1 Laser Product

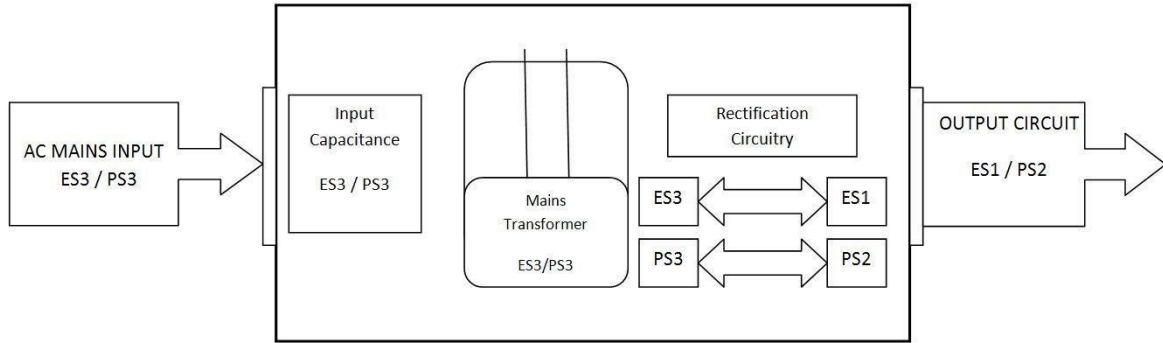
RS1

Type of radiation	Corresponding classification (RS)
N/A	--

ENERGY SOURCE DIAGRAM

Indicate which energy sources are included in the energy source diagram. Insert diagram below

ES PS MS TS RS



OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES3: AC Mains Input Circuits	--	--	Suitable Electrical Enclosure to be determined as part of end product evaluation.
Ordinary	ES1: All DC Output Circuits	No safeguard required.	--	--
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Combustible materials	PS3: Mains Circuits up to Rectification	No ignition. Temperatures under normal and abnormal conditions (see appended table 9.0)	Control Fire Spread (6.4.1) - Components complied with sub-clause 6.4.5; Suitable Fire Enclosure to be determined as part of end product evaluation.	--
	PS2: Output Circuits	No ignition. Temperatures under normal and abnormal conditions (see appended table 9.0)	Control Fire Spread (6.4.1) - Components complied with sub-clause 6.4.5; Suitable Fire Enclosure to be determined as part of end product evaluation.	--
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	--	--	--	--

8.1		Mechanically-caused injury		
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
N/A	--	--	--	--
9.1		Thermal Burn		
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS3: All Components	--	--	To be determined as part of end product evaluation.
10.1		Radiation		
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	--	--	--	--
Supplementary Information:				
(1) See attached energy source diagram for additional details.				
(2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				