Test Report issued under the responsibility of:

TEST REPORT
IEC 62368-1
Audio/video, information and communication technology equipment
Part 1: Safety requirements

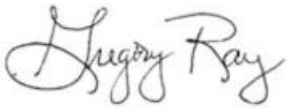
Report Number .....:	E317867-A6044-CB-1
Date of issue.....:	2019-05-24 ; Amendment 1 : 2019-08-27
Total number of pages .....:	22
Applicant's name.....:	**XP POWER L L C**
Address .....:	**15641 RED HILL AVE, SUITE 100** **TUSTIN CA 92780** **UNITED STATES**
Name of Test Laboratory preparing the Report .....:	UL Vancouver 14301 SE 1st Street, Suite 140, Vancouver, WA, 98684, USA
Test specification:	
Standard .....:	IEC 62368-1:2014 (Second Edition)
Test procedure .....:	CB Scheme
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC62368_1B
Test Report Form(s) Originator .....:	UL(US)
Master TRF.....:	2014-03

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 L L C 15641 RED HILL AVE, SUITE 100 TUSTIN CA 92780 UNITED STATES	
Model/Type reference .....:	ECE80USXX-ZZ-YYYYYY Where XX is between 12-48, ZZ is blank, S, D, or SD, Y is blank, any alphanumeric character, or "-".	
Ratings .....:	INPUT: 100-240V~ 1.7A 50/60Hz OUTPUT: See Model Differences section.	
Testing procedure and testing location:		
☒ CB Testing Laboratory:		
Testing location/ address .....:	UL Vancouver, 14301 SE 1st Street, Suite 140, Vancouver, WA, 98684, USA	
Tested by (name + signature).....:	Adam Tangocci / Project Handler	Adam Tangocci
Approved by (name + signature) .....:	Gregory Ray / Reviewer	Gregory Ray
☐ Testing procedure: CTF Stage 1		
Testing location/ address..... :		
Tested by (name + signature).....:		
Approved by (name + signature) .....:		
☐ Testing procedure: CTF Stage 2		
Testing location/ address.....:		
Tested by (name + signature).....:		
Witnessed by (name + signature).....:		
Approved by (name + signature) .....:		
☒ Testing procedure: CTF Stage 3		
☐ Testing procedure: CTF Stage 4		

Testing location/ address..... :	XP POWER LLC, 15641 RED HILL AVE, SUITE 100, TUSTIN, CA 92780 USA	
Tested by (name + signature).....:	Rodney Reyes / Tester	See the original CBTR for signatures
Witnessed by (name + signature).....:	N/A	N/A
Approved by (name + signature) .....:	Gregory Ray / Reviewer	
Supervised by (name + signature) .....:	Adam Tangocci / Project Handler	See the original CBTR for signatures

List of Attachments (including a total number of pages in each attachment):

National Differences (2 pages)
Enclosures (1 pages)

Summary of testing:

Tests performed (name of test and test clause):	**Testing Location:**
PROSPECTIVE TOUCH VOLTAGE AND TOUCH CURRENT MEASUREMENT (5.7)	**CTF Stage 3: XP POWER LLC, 15641 RED HILL AVE, SUITE 100, TUSTIN, CA 92780 USA**

Summary of compliance with National Differences:

List of countries addressed: AU,NZ, JP, EU Group Differences, US,CA

☒ **The product fulfils the requirements of:** EN 62368-1:2014 + A11:2017

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	For building-in
Considered current rating of protective device as part of building or equipment installation	20 A; 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	See Model Differences section.
IP protection class	IPX0
Power Systems	TN IT - 230 V L-L
Altitude during operation (m)	5000 m
Altitude of test laboratory (m)	17 m m
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 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 ☐ comma / ☒ point is used as the decimal separator.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
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 ..... :	☒ **Yes** ☐ **Not applicable**

When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	CINCON ELECTRONICS CO LTD 8-1 FU KUNG RD FU HSING PARK FU HSING HSIANG CHANGHUA HSIEN 506 TAIWAN DONGGUAN CINCON ELECTRONICS LTD 1 JING XIANG RD DONGCHENG FOREIGN TRADE INDUSTRIAL PARK ZHUSHAN DONGCHENG DISTRICT DONGGUAN GUANGDONG 523128 CHINA

GENERAL PRODUCT INFORMATION:

Report Summary

The original report was modified on 2019-08-27 to include the following changes/additions:
This is a technical amendment. Changes associated with this report are considered not to affect compliance with the requirements of the standard. Because of this and previously performed testing, no sample or additional testing was considered necessary. Changes and notes:
-Table 4.1.2: The temperature limits of all CY1, CY2, and CY3 capacitors were corrected from 85°C to 125°C.
-Table B.2.6: The temperature limit for measurements taken at CY2 was corrected from 85°C to 125°C.

Product Description

The models covered in this Test Report are component AC-DC power supplies intended for use in Information Technology Equipment. Open frame switching power supplies intended for building-in.

Model Differences

All models in the Model ECE80USXX-ZZ-YYYYYY Series are identical with exception to the Mains Transformer, T1, and minor secondary components that allow for different output voltage ratings.

Model nomenclature:

XX is between 12-48, representing output voltage.

ZZ is blank, S, D, or SD

"S" denotes units provided with Screw Terminals.

"D" denotes units provided with DIN Rail mounting Clip.

"SD" denotes units provided with DIN Rail mounting Clip with Screw Terminals.

Y is blank, any alphanumeric character, or "-".

Ratings for 50°C ambient:

Model ECE80US12: Output Rated: 12 Vdc, 6.67 A max, 80 W max

Model ECE80US15: Output Rated: 15 Vdc, 5.33 A max, 80 W max

Model ECE80US24: Output Rated: 24 Vdc, 3.33 A max, 80 W max

Model ECE80US36: Output Rated: 36 Vdc, 2.22 A max, 80 W max

Model ECE80US48: Output Rated: 48 Vdc, 1.67 A max, 80 W max

All models rated 50°C at 100% rated load, 70°C at 50% rated load.

Additional application considerations – (Considerations used to test a component or sub-assembly) -
Marking Plate is representative of all models.

This report replaces CBTR Ref. No. E317867-D10-CB-1 (CBTC Ref. No. US-30849-UL), a previous evaluation to IEC 62368-1:2014 (Second Edition). Based on the previously conducted performance testing, limited additional testing was considered necessary. As part of this reissue, the following changes were made:

-Evaluation to EN 62368-1:2014 + A11:2017 was added.

-Evaluation of Touch Current was conducted.

The following tests were conducted under CTDP SMT/CTF Stage 3 to IEC 60950-1 E2+A1+A2 at XP POWER LLC, 15641 RED HILL AVE, SUITE 100, TUSTIN , CA 92780, USA:

Input: Single-Phase (1.6.2)

Capacitance Discharge (2.1.1.7)

SELV Reliability Test Including Hazardous Voltage Measurements (2.2.2, 2.2.3, 2.2.4, Part 22 6.1)

Humidity (2.9.1, 2.9.2, 5.2.2)

Determination of Working Voltage; Working Voltage Measurement (2.10.2)

Distance Through Insulation Measurements (2.10.5)

Heating (4.5.1, 1.4.12, 1.4.13)

Ball Pressure (4.5.5, 4.5)

Electric Strength (5.2.2)

Component Failure (5.3.1, 5.3.4, 5.3.7)

Abnormal Operation (5.3.1 - 5.3.9)

Transformer Abnormal Operation (5.3.3, 5.3.7b, Annex C.1)

Power Supply Output Short-Circuit/Overload (5.3.7)

The following additional tests were conducted on a sample of ECE80US48 under CTDP SMT/CTF Stage 3 to IEC 62368-1:2014 (Second Edition) at XP POWER LLC, 15641 RED HILL AVE, SUITE 100, TUSTIN, CA 92780 USA:

Prospective Touch Voltage and Touch Current Measurement (5.7)

This is a technical amendment. Changes associated with this report are considered not to affect compliance with the requirements of the standard. Because of this and previously performed testing, no sample or additional testing was considered necessary. Changes and notes:

-Table 4.1.2: The temperature limits of all CY1, CY2, and CY3 capacitors were corrected from 85°C to 125°C.

-Table B.2.6: The temperature limit for measurements taken at CY2 was corrected from 85°C to 125°C.

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : See Model Differences section.
- The product is intended for use on the following power systems : TN, IT (230 V L-L)
- The equipment disconnect device is considered to be : To be determined in the end-product.
- Required Clearances have been adjusted by multiplying the clearance at sea level by a factor of 1.48 for operating at an altitude of 5000 meters. 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:

- The following product-line tests are conducted for this product : Electric Strength
- The following output circuits are at ES1 energy levels : All Outputs.
- The following output circuits are at PS3 energy levels : All Outputs.
- The maximum investigated branch circuit rating is : 20 A
- The investigated Pollution Degree is : 2
- The following input terminals/connectors must be connected to the end-product supply neutral : ACN
- The following end-product enclosures are required : Mechanical, Fire, Electrical
- 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 (130).
- The power supply was evaluated to be used at altitudes up to : "5,000 m"
- Printed Wiring Board rated 130°C.
- When installed in a Class II end product, the power supply shall be mounted on insulating posts in a manner that provides the minimum required Clearance between the power supply and any accessible conductive parts.
- A suitable main disconnect device shall be provided in the end product.
- Consideration to repeating the Touch Current test should be given in the end-product evaluation.
- The power supplies in this report have been subject to Capacitance Discharge testing. Additionally, all associated component safeguards have been assessed to the applicable requirement in Annex G.10. Additional testing should not be needed if directly connected to mains e.g. using an appliance inlet, wiring terminals, etc.