Test Report issued under the responsibility of:

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

Report Reference No ..... :	E139109-A178-CB-1
Date of issue ..... :	2017-12-14
Total number of pages ..... :	77
CB Testing Laboratory ..... :	UL Fremont
Address ..... :	47173 Benicia Street, Fremont, CA, 94538, 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 ..... :	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 ..... :	CMP250PSXX-YYZ, where XX is 12-48, YY is 01, 50 or blank, Z is C or blank, may also be provided with additional suffixes "-S", and "-SF", where "-" is optional
Ratings ..... :	Input: 100-240Vac, 50/60Hz, 3.8A 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/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)....:	
[x]	**Testing Procedure: SMT/CTF Stage 3 or 4**	
	Testing location / address .....:	XP POWER LLC, 15641 RED HILL AVENUE, SUITE 100, TUSTIN, CA 92780 USA
	Tested by (name + signature) .....:	Rodney Reyes/Tester Rodney Reyes
	Approved by (name + signature)....:	Walid Beytoughan/Approver
	Supervised by (name + signature) .:	Walid Beytoughan/Reviewer
[ ]	**Testing Procedure: RMT**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Approved by (name + signature)....:	
	Supervised by (name + signature) .:	

List of Attachments

National Differences (57 pages)

Enclosures (33 pages)

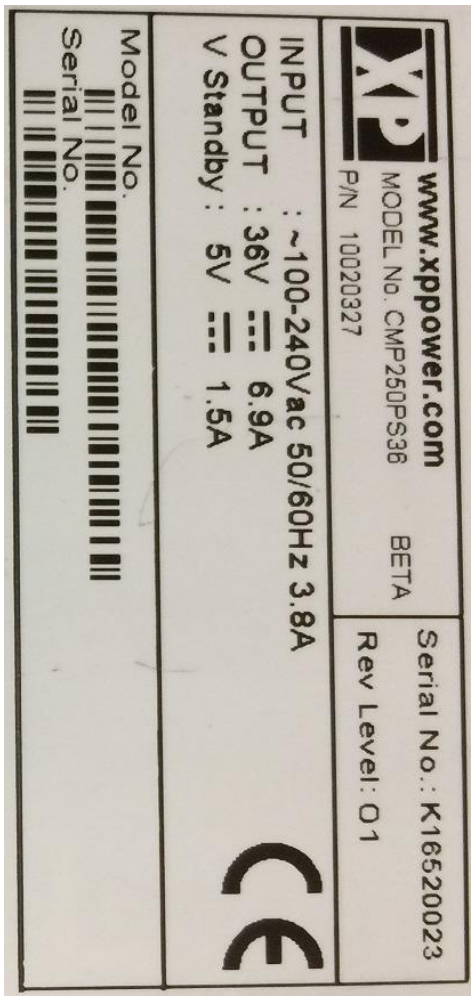
Summary Of Testing

Unless otherwise indicated, all tests were conducted at XP POWER LLC, 15641 RED HILL AVENUE, SUITE 100, TUSTIN, CA 92780 USA.

Tests performed (name of test and test clause)	Testing location / Comments
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)	
Protective Bonding I (2.6.3.4, 2.6.1)	
Humidity (2.9.1, 2.9.2, 5.2.2)	
Determination of Working Voltage; Working Voltage Measurement (2.10.2)	
Thin Sheet Material (2.10.5.9, 2.10.5.10, 2.10.5.6)	
Transformer and Wire /Insulation Electric Strength (2.10.5.13)	
Heating (4.5.1, 1.4.12, 1.4.13)	
Ball Pressure (4.5.5, 4.5)	
Touch Current (Single-Phase; TN/TT System) (5.1, Annex D)	
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)	
Summary of Compliance with National Differences:	
Countries outside the CB Scheme membership may also accept this report.	
List of countries addressed: AR, AT, AU, BE, BG, BY, CA, CH, CN, CS, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IL, IN, IT, JP, KR, MY, NL, NO, NZ, PL, PT, RO, SA, SE, SG, SI, SK, UA, US, ZA	
The product fulfills the requirements of: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013, IEC 60950-1:2005 + A1:2009 + A2:2013	

Copy of Marking Plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



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 ..... :	To be considered in the end system
Over voltage category (OVC) ..... :	OVC II
Mains supply tolerance (%) or absolute mains supply values ..... :	+10%, -10%
Tested for IT power systems ..... :	Yes
IT testing, phase-phase voltage (V) ..... :	230
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) ..... :	17
Mass of equipment (kg) ..... :	1.2
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 ..... :	2017-03-01
Date(s) of Performance of tests ..... :	2017-03-02 to 2017-06-02
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 (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

The products in this report are open frame component power supplies that are intended for use in Information Technology Equipment.

Model Differences

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

Model CMP250PSXX-YYZ has the following nomenclature where:
XX = 24, 36 or 48, denotes the rated output voltage,
YY= 01, 50 or blank, where 01 or 50 denotes the 5V standby,
Z= C for units provided with a cover (20% derating applies)

See below for the Output Rating for 50°C Ambient with conventional cooling, see Enclosure 7-02 for output ratings with various configurations, standby output, and ambient:

Model CMP250PS24-YYZ: 21.1 Vdc to 26 Vdc, 10.4 A Max, (250 W Max)
Model CMP250PS36-YYZ: 33.1 Vdc to 42 Vdc, 6.94 A Max, (250 W Max)
Model CMP250PS48-YYZ: 42.1 Vdc to 54 Vdc, 5.2 A Max, (250 W Max)

All models may be provided with 5Vstandby rated 1.5A Max.

Additional Information

Testing of the marking label for durability was conducted previously for this manufacturer as part of CBTR E139109-A141, CBTC US-24246-UL.

Nameplate Markings are representatives for all models described in this report.

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: IT,TN
- The equipment disconnect device is considered to be: For building-in. To be evaluated in end product.
- The product was investigated to the following additional standards: IEC 62368-1 2nd Ed and 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 following accessible locations (with circuit/schematic designation) are within a limited current circuit: Load Side of Bridging Capacitors (C33)
- According to IEC60664-1, Table A2, 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. 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. No other additional requirements were considered at this time as they are not explicitly addressed in UL 60950-1. --
- The internal wiring is certified Appliance Wiring Material rated VW-1 and/or FT-1 which were considered equivalent to the tests of IEC60332-1-2 and IEC60332-1-3. The final acceptability of the internal wiring may be determined under the discretion of the receiving NCB. --

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
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-SELV: 240Vrms, 484Vpk, Primary-Earthed Dead Metal: 240Vrms, 340Vpk
- The following secondary output circuits are SELV: All Outputs
- The following secondary output circuits are at hazardous energy levels: All Main Outputs
- The power supply terminals and/or connectors are: Suitable for factory wiring only
- The maximum investigated branch circuit rating is: 20A
- The investigated Pollution Degree is: 2
- Proper bonding to the end-product main protective earthing termination is: required when the power supply is used in a Class I end product. The power supply will be considered Class II only when protection against electric shock does not rely on Basic Insulation and provides a 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.
- 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, T3, T4, PFC (min. Class F),
- The following end-product enclosures are required: Mechanical, Electrical and Fire

- The equipment is provided with a fuse in both the Line and Neutral of the primary circuit. The need for a marking warning service person of the hazards associated with neutral fusing shall be considered in the end-product. --
- The end-product Electric Strength Test is to be based upon a Mains Transient Voltage of 2500Vdc for Basic and 4000Vdc for Reinforced. --
- Safeguards against capacitor discharge after disconnection of a connector (clause 5.5.2.2) shall be evaluated in the end-product. --
- Clearances were evaluated for 5000m altitude. Additional consideration maybe necessary in the end-use product. --
- Consideration to repeating the Touch Current test should be given in the end-product evaluation. --

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)