UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2014-10-14 (Information Technology Equipment - Safety - Part 1: General Requirements) CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Component Recognition
CCN:	QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Complementary CCN:	QQJQ2, QQJQ8 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment)
Product:	Switching Power Supply
Model:	ECE05USXX (where XX can be any number between 3 and 48 designating the output voltage), may also be provided with suffix "-P" optionally for open frame type.
Rating:	Input: 100-240 Vac, 0.2 A, 50-60 Hz Output: See Test Report Enclosures-Miscellaneous for details.
Applicant Name and Address:	XP POWER L L C 15641 RED HILL AVE SUITE 100 TUSTIN CA 92780

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Prepared by: Scott Corley / Project Handler Reviewed by: Walid Beytoughan / Final Reviewer

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.

ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.

iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

The model covered in this report is a component power supply intended for use in information technology equipment. It is an open frame power supply with or without cover intended for building-in Class II end-products.

Model Differences

All models in the Model ECE05USXX series are identical with exception to the Mains Transformer, T1, and minor secondary components that allow for different output voltage ratings.

Additional optional Suffix "-P" denotes open frame.

See Enclosure-Miscellaneous for additional details.

Technical Considerations

- 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 : Not classified
- Considered current rating of protective device as part of the building installation (A) : 20
- Pollution degree (PD) : PD 2
- IP protection class : IPX0
- Altitude of operation (m) : 3048 or 5000 (for China)
- Altitude of test laboratory (m) : 33
- Mass of equipment (kg) : less than 0.05 kg

- 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 (5W), 70°C for 50% load (2.5W), See Enclosure-Miscellaneous for additional details on de-rating curve.
- The means of connection to the mains supply is: For building-in (to be determined as an element of the end product)
- The product is intended for use on the following power systems: TN
- The product was investigated to the following additional standards: IEC/CSA/UL 62368-1 2nd Ed, 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 CY1 (Bridging Capacitor)
- 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. 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. When installation at elevations above 2000 meters in China, the units are provided with certified conformal coating which reduces the creepages and clearances to those indicated in Table 2Q.
- The power supply series covered by this report employ Double/Reinforced Insulation between Primary and Secondary circuits. Additionally evaluated for Basic Insulation spacings up to 3048 m between Line and Neutral up to and across the fuse (F1) per internal requirements of XP Power engineering specifications.

Engineering Conditions of Acceptability

For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. 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: 267 Vrms, 550 Vpk
- The following secondary output circuits are SELV: All
- The following secondary output circuits are at non-hazardous energy levels: All
- The following secondary output circuits are Limited Current Circuits: Load side of CY1
- 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
- The following input terminals/connectors must be connected to the end-product supply neutral: ACN
- 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°C)
- The following end-product enclosures are required: Electrical, Fire
- IEC/CSA/UL 62368-1 - Prospective Touch Current and Voltage testing to be conducted in the end-product evaluation.
- IEC/CSA/UL 62368-1 - Safeguards against capacitor discharge after disconnection of a connector (clause 5.5.2.2) shall be evaluated in the end-product.

Additional Information

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

Testing of the marking label for durability was conducted previously as part of TRF E317867-A43, CBTC US-25977-UL.

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.

Additional Standards

The product fulfills the requirements of: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013

Markings and instructions

Clause Title	Marking or Instruction Details
Power rating - Ratings	Ratings (voltage, frequency/dc, current)
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
Fuses - Non-operator access/soldered-in fuses	Unambiguous reference to service documentation for instructions for replacement of fuses replaceable only by service personnel

Special Instructions to UL Representative

Inspect the transformer(s) listed in BD1.1 per AA1.1- (C). When the tests are conducted at other location, inspect test record and specification sheet provided by the component manufacturer. Verify the specification sheet indicates 100% routine test specified in BD1.1 be conducted at the component manufacturer.