CERTIFICATE OF COMPLIANCE

Certificate Number	20190110-E317867
Report Reference	E317867-A26-UL
Issue Date	2019-JANUARY-10
Issued to:	XP POWER L L C 15641 RED HILL AVE, SUITE 100 TUSTIN CA 92780
This certificate confirms that representative samples of	COMPONENT - POWER SUPPLIES, INFORMATION TECHNOLOGY EQUIPMENT INCLUDING ELECTRICAL BUSINESS EQUIPMENT Switching Power Supply : VCS50USXX Where XX is 05, 12, 15, 24, 36, 48 Have been investigated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.
Standard(s) for Safety:	UL 60950-1 - Information Technology Equipment - Safety - Part 1: General Requirements CAN/CSA C22.2 No. 60950-1-07 - Information Technology Equipment - Safety - Part 1: General Requirements
Additional Information:	See the UL Online Certifications Directory at https://iq.ulprospector.com for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Recognized Component Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

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:	VCS50USXX Where XX is 05, 12, 15, 24, 36, 48.
Rating:	INPUT : 100-240V~1.1A 50/60Hz For Model VCS50US05 OUTPUT: 5V dc 8.00A, 40 W For Model VCS50US12 OUTPUT: 12V dc 4.20A, 50 W For Model VCS50US15 OUTPUT: 15V dc 3.30A, 50 W For Model VCS50US24 OUTPUT: 24V dc 2.10A, 50 W For Model VCS50US36 OUTPUT: 36V dc 1.39A, 50 W For Model VCS50US48 OUTPUT: 48V dc 1.05A, 50 W
Applicant Name and Address:	XP POWER L L C 15641 RED HILL AVE, SUITE 100 TUSTIN CA 92780 UNITED STATES

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: Adam Tangocci Reviewed by: Gregory Ray

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 unit is a build-in AC-DC switching type open frame power supply which electronic components mounted on PWB for installing to Information Technology Equipment (ITE).

Model Differences

VCS50US05, VCS50US12, VCS50US15, VCS50US24, VCS50US36, VCS50US48 are identical to each other, except for the Model Designation, Output Electrical Ratings, R02, C02, R4, Transformer (T01) and Secondary Components.

Technical Considerations

- Equipment mobility : movable
- Connection to the mains : To be determined in end-product
- 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 : Yes
- IT testing, phase-phase voltage (V) : 230V
- Class of equipment : Class I or Class II (Determined in end-product)
- 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) : up to 3048 m
- Altitude of test laboratory (m) : up to 2000 m
- Mass of equipment (kg) : 0.27 kg
- 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 evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer’s specification of: 50°C at full output power and 70°C at half output

power.

- The means of connection to the mains supply is: Pluggable A
- The product is intended for use on the following power systems: IT, TT and TN
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: CY04 Secondary Pin to Earth
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
- LEDs provided in the product are considered low power devices: Yes
- 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.

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:

- Earthing test is necessary to be considered in end system.
- The Casing Temperature is 74 deg C at Tma 70 deg C.
- The following Production-Line tests are conducted for this product: Electric Strength and Earthing Continuity Tests
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-SELV: 262 Vrms, 570 Vpk, Primary-Earthed Dead Metal: 260 Vrms, 530 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: Not investigated for field wiring
- The maximum investigated branch circuit rating is: 20 A
- The investigated Pollution Degree is: 2
- The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class 105(A): T01 - Class 130(B)
- The following end-product enclosures are required: Mechanical, Fire, and Electrical
- The equipment is suitable for direct connection to: AC mains supply
- The following LEDs operate within the exempt group per IEC 62471: Risk Exempt Group
- The clearance and creepage distances have additionally been assessed for suitability up to 3048 m elevation. An additional evaluation may be necessary if installed at altitudes higher than 3048 meters.
- Printed Wiring Board rated 130°C.

Additional Information

This report is a Standard upgrade/reissue of CBTR Ref. No.: E317867-A26-CB-2, CB Test Certificate Ref. No. US-21402-UL to IEC 60950-1:2005 (Second Edition), Am1:2009 + Am2:2013. Based on the previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, only the construction review and the review of previous tests was deemed necessary. All required tests were carried out under the original investigation.

In addition, two alternate label systems were added to this report (Brady Worldwide, Type B-423 and 3M,

Types 7816 or 7818) based on previous evaluation for this manufacturer under CBTR Ref. No.: E139109-A139, CBTC Ref. No.: US-24981-UL and US-24981-M1-UL.

In addition, all Y-capacitors were made optional.

The clearance and creepage distances have been assessed for suitability up to 3048 m elevation.

The label is a draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.

There are CB test certificates older than 3 years; these components have been evaluated as part of end-product to Amendment 1 requirements and are compliant. Acceptance of the component CBTCs older than 3 years will be up to the discretion of the target country NCB.

Technical Amendment 1:
-Models and ratings sections were updated for clarity.
-UL: The manufacturer submitted representative production samples of these models for construction review and testing. Evaluation and testing were performed for compliance to UL 62368-1 Edition 2 and CSA C22.2 NO. 62368-1-14 - Edition 2. Evaluation specifics can be found under CBTR E317867-A6031-CB-1.

Additional Standards

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, UL 60950-1 2nd Ed. Revised 2014-10-14, CSA C22.2 No. 60950-1-07 2nd Ed. Revised 2014-10-14

Markings and instructions

Clause Title	Marking or Instruction Details
1.7.1 Power rating - Ratings	Ratings (voltage, frequency/dc, current)
1.7.1 Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
1.7.1 Power rating - Model	Model Number
1.7.6 Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.

Special Instructions to UL Representative

N/A

Production-Line Testing Requirements

Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
All models covered in this report	T01	--	Primary and Secondary	3000	2	2

Earthing Continuity Test Exemptions - This test is not required for the following models:

--

Electric Strength Test Exemptions - This test is not required for the following models:

--

Electric Strength Test Component Exemptions - The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test:

--

Sample and Test Specifics for Follow-Up Tests at UL

Model	Component	Material	Test	Sample(s)	Test Specifics
N/A	---	---	---	---	---