CERTIFICATE OF COMPLIANCE

Certificate Number	20190122-E317867
Report Reference	E317867-A39-UL
Issue Date	2019-JANUARY-22

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 INCLUDINGELECTRICAL BUSINESS EQUIPMENT; COMPONENT - POWER SUPPLIES FOR USE WITH AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT

SEE ADDENDUM PAGE

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 & 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

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Certificate Number	20190122-E317867
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This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Switching Power Supply
VCT40USX
VCT60USY

Where X is 05, 053, Y is 12, 15, 16, 18, 19, 20, 24, 30.

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:	VCT40USX VCT60USY Where X is 05, 053, Y is 12, 15, 16, 18, 19, 20, 24, 30.
Rating:	Model VCT40US05 INPUT ~ 100-240VAC, 1.0A 50-60Hz, 400Hz OUTPUT: 5V dc 8A 40W max Model VCT40US053 INPUT ~ 100-240VAC, 1.0A 50-60Hz, 400Hz OUTPUT: 5.3V dc 7.55A 40W max Model VCT60US12 INPUT ~ 100-240VAC, 1.7A 50-60Hz, 400Hz OUTPUT: 12V dc 5.00A Model VCT60US15 INPUT ~ 100-240VAC, 1.7A 50-60Hz, 400Hz OUTPUT: 15V dc 4.00A Model VCT60US16 INPUT ~ 100-240VAC, 1.7A 50-60Hz, 400Hz OUTPUT: 16V dc 3.75A Model VCT60US18 INPUT ~ 100-240VAC, 1.7A 50-60Hz, 400Hz OUTPUT: 18V dc 3.33A Model VCT60US19 INPUT ~ 100-240VAC, 1.7A 50-60Hz, 400Hz OUTPUT: 19V dc 3.16A Model VCT60US20 INPUT ~ 100-240VAC, 1.7A 50-60Hz, 400Hz OUTPUT: 20V dc 3.00A

	Model VCT60US24 INPUT ~ 100-240VAC, 1.7A 50-60Hz, 400Hz OUTPUT: 24V dc 2.50A Model VCT60US30 INPUT ~ 100-240VAC, 1.7A 50-60Hz, 400Hz OUTPUT: 30V dc 2.00A
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 / Project Handler Reviewed by: Gregory Ray / 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 product is a AC/DC switching mode power supply with open-frame type, and it is intended for building-in from factory installation as a component of the end product Information Technology Equipment (ITE).

Model Differences

Models VCTXUSY series are similar to each other except for model designations, output ratings transformer secondary construction and frequency (50-60Hz/400Hz). The detailed description of model nomenclature are as follows:

Model nomenclature:
Models VCTXUSY, where X can be 40, 60; Y can be 05, 053, 12, 15, 16, 18, 19, 20, 24, 30.
-- X can be 40, 60 which represents output power (i.e. 40 = 40 W, 60 = 60 W).
-- Y can be 05, 053, 12, 15, 16, 18, 19, 20, 24, 30 which represents output voltage (i.e. 05 = 5 Vdc, 12 = 12 Vdc, 18 = 18 Vdc).

Technical Considerations

- Equipment mobility : movable
- Connection to the mains : To be determined by 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% (manufacturer declared)
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class I or Class II (Determined by 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 3048m

- Altitude of test laboratory (m) : Less than 2000m
- Mass of equipment (kg) : 0.14 kg
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50 degree C
- The product is intended for use on the following power systems: TN
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: CY3
- 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:

- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-SELV: 260 Vrms, 492 Vpk
- The following secondary output circuits are SELV: All power outputs
- The following secondary output circuits are at non-hazardous energy levels: All power outputs
- The following secondary output circuits are Limited Current Circuits: CY3
- 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 magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class 105(A): T1 - Class 130(B)
- The following end-product enclosures are required: Mechanical, Fire, Electrical
- The equipment is suitable for direct connection to: AC mains supply
- Clearances and Creepage Distances have additionally been assessed for suitability up to 3048 m elevation. An additional evaluation shall be necessary if installed at an altitude above 3048 meters.
- Printed Wiring Board rated 130°C.

Additional Information

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

Technical Amendment:
-Models and ratings sections were updated for clarity.
-Bleeder resistors were updated for 60950 and 62368 in the critical components table.
-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-A6035-CB-1.

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

Inspect the transformer(s) listed in Production-Line Testing Requirements per Production - Line Testing Requirement. 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 Production-Line Testing Requirements be conducted at the component manufacturer.
The earthing continuity shall be done on 100% of production with acceptable results.

Verify the Specification Sheet indicates 100% routine test specified in Electric Strength Test Special Constructions be conducted at the component manufacturer.

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
VCTXUSY (X = 40, 60; Y = 05, 053, 12, 15, 16, 18, 19, 20, 24, 30) when X = 40 is for Y = 05, 053 and X = 60 is for Y = 12, 15, 16, 18, 19, 20, 24, 30.	Transformer (T1)	--	Primary to Secondary	3000	4200	1

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

VCTXUSY (X = 40, 60; Y = 05, 053, 12, 15, 16, 18, 19, 20, 24, 30) when X = 40 is for Y = 05, 053 and X = 60 is for Y = 12, 15, 16, 18, 19, 20, 24, 30.

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

VCTXUSY (X = 40, 60; Y = 05, 053, 12, 15, 16, 18, 19, 20, 24, 30) when X = 40 is for Y = 05, 053 and X = 60 is for Y = 12, 15, 16, 18, 19, 20, 24, 30.

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:

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Sample and Test Specifics for Follow-Up Tests at UL

Model	Component	Material	Test	Sample(s)	Test Specifics
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