CERTIFICATE OF COMPLIANCE

Certificate Number	20121130-E123535
Report Reference	E123535-A3-UL
Issue Date	2012-NOVEMBER-30
Issued to:	VICOR CORP 25 FRONTAGE RD ANDOVER MA 01810
This is to certify that representative samples of	Power Supplies for Information Technology Equipment Including Electrical Business Equipment AC-DC Converter, PFC MegaPAC Series, See Miscellaneous Enclosure for model matrix
	Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	UL 60950-1, CSA C22.2 No. 60950-1-07, (Information Technology Equipment - Safety - Part 1: General Requirements)
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Recognized Component Mark should be considered as being covered by UL's Recognition and Follow-Up Service.

The UL Recognized Component Mark generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark: , may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Recognized Component Mark on the product.

William R. Carney

William R. Carney, Director, North American Certification Programs

UL LLC

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2011-12-19 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12 (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)
Product:	AC-DC Converter
Model:	PFC MegaPAC Series See Miscellaneous Enclosure for model matrix.
Rating:	115-230Vac or 300Vdc 47-500Hz Output Voltage: 1-95Vdc Rated Output Current: 15A Max. Output Power: 2400Wmax See Miscellaneous Enclosure for model details.
Applicant Name and Address:	VICOR CORP 25 FRONTAGE RD ANDOVER MA 01810 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: Gerard Soprych Reviewed by: Daniel Pirozzi

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 PFC MegaPAC is an AC-DC/DC-DC chassis based configurable power supply that includes an EMI filter, a single phase power factor corrected front end, cooling fan, and 8 output slots that can provide up to 32 outputs. The PFC MegaPAC accepts a 100-240 Vac or 300Vdc input and the output slots are populated with ConverterPACs or FlexPAC subassemblies. The ConverterPACs are constructed with the Vicor Corporation VI-J, VI-200, or 2nd Gen FastTrak series of modules. The FlexPAC is an approved component that can provide up to 4 outputs totaling 200W max.

The PFC MegaPAC is designed for building-in and can provide a maximum output power of 2400Wmax. The product is for use with Information Technology Equipment. The baseplate temperature of the Vicor modules should be monitored in the end product.

Model Differences

See Miscellaneous Enclosure for model nomenclature.

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : not directly connected to mains
- Operating condition : continuous
- Access location : building-in
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : 15-230Vac or 300Vdc
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : -
- Class of equipment : Class I (earthed)
- Considered current rating of protective device as part of the building installation (A) : 20A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : less than 2000
- Altitude of test laboratory (m) : less than 2000
- Mass of equipment (kg) : MP Chassis(4.42kg), Mx Chassis(4.54kg)
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: maximum baseplate temperature of the 1st Gen VI-200 and BatMod Modules is 85°C maximum baseplate temperature of the VI-J and 2nd Gen FasTrack Modules is 100°C. maximum case temperature of FlexPAC is 50°C.

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-Earthed Dead Metal: 264 Vrms, Primary-SELV: 400 Vpk
- The power supply terminals and/or connectors are: Not investigated for field wiring
- The investigated Pollution Degree is: 2
- The following end-product enclosures are required: Mechanical, Fire, Electrical
- The PFC MegaPAC is designed for building-in and must be installed in accordance with the manufacturer's instructions.
- The maximum baseplate temperature of the 1st Gen VI-200 and BatMod Modules is 85°C.
- The maximum baseplate temperature of the VI-J and 2nd Gen FasTrack Modules is 100°C
- The maximum case temperature of FlexPAC is 50°C.
- Series or single output voltages less than 60 Vdc meet the requirements of SELV.
- Series or single output voltages above 60 Vdc are non-SELV and should be considered hazardous secondary.
- VI-J outputs are limited to less than 40 Vdc to be considered SELV.
- Outputs greater than 240 VA should be considered hazardous energy.
- An external fuse, Bussmann ABC-15, or Littelfuse 505 series rated 15A was used during fault testing.

Additional Information

N/A

PFC MegaPAC Series: Model Mpaa-zbbccccccc-v-xx (Mp may be replaced by IMp)

Item 0. **M = MegaPAC, constant**

Item 1. **Module Configurations**
p = P when populated with 1st Gen Vicor Modules or FlexPACs
p = X when populated with any combination of 1st or 2nd Gen Vicor Modules or FlexPACs

Item 2. **Number of Outputs**
aa = any number 0 – 32

Item 3. **MegaPAC Type**
z = 7 for PFC MegaPAC

Item 4. **Number of Modules & FlexPACs**
bb = any number 0 – 16

Item 5. **Factory assigned Code** (Optional, non-safety related)
cccccc = any alphanumeric combination of up to 6 characters

Item 6. **MegaPAC configuration Revision** (Optional, non-safety related)
v = any alphanumeric combination
(note: v = G for RoHs)

Item 7. **MegaPAC chassis description** (Optional, non-safety related)
xx = any alphanumeric combination
(note: xx = EL for Extended Length)
(note: xx = LL for Low Leakage)
(note: xx = MI for Mil COTs)

Example
MX1-743463-G
M = Constant, MegaPAC series
X = X, unit populated with any combination of 1st or 2nd Gen Vicor DC-DC Modules or FlexPACs
1 = single output configuration
7 = PFC
4 = Number of Vicor modules & FlexPACs
3463 = factory assigned code (non safety related)
G = RoHs compliant