

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2019-05-09 (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:	N/A
Product:	Power Supply
Model:	HPCSA-1000Px (where x maybe maximum 50 characters, any alphanumeric character, hyphen or blank, which denotes control number)
Rating:	AC INPUT: 100-240 V, 9.6-4.0 A, 50/60 Hz DC OUTPUT: CH1: 3.3 Vdc, 10 A (maximum 25 A, peak 30 A) CH2: 5 Vdc, 10 A (maximum 25 A, peak 30 A) CH3: 12 Vdc, 15 A (maximum 18 A, peak 25 A) CH4: 12 Vdc, 15 A (maximum 18 A, peak 25 A) CH5: 12 Vdc, 15 A (maximum 18 A, peak 25 A) CH6: 12 Vdc, 15 A (maximum 18 A, peak 25 A) CH7: -12 Vdc, 0.3 A (maximum 0.4 A, peak 0.6 A) CH8: 5 Vdc, 3 A (maximum 3 A, peak 4 A) Peak: Maximum 5 seconds Interval: 45 seconds Total Wattage: 822 W maximum (CH1 + CH2: 207.5 W maximum, CH3 + CH4 + CH5 + CH6: 792 W maximum, CH7 + CH8: 19.8 W maximum) Total Peak Wattage: 1000 W maximum (CH1 + CH2: 249 W maximum, CH3 + CH4 + CH5 + CH6: 1000 W maximum, CH7 + CH8: 27.2 W maximum)
Applicant Name and Address:	NIPRON CO LTD 2-57 OHAMA-CHO AMAGASAKI-SHI HYOGO-KEN 660-0095 JAPAN

Issue Date: 2011-02-07

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Report Reference #

E161936-A50-UL

Revision Date: 2022-04-06

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: Toshiyuki Suzuki / Project
Handler

Reviewed By: Tadao Nakayama / Reviewer

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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

This equipment is component type power supply.

Model Differences

HPCSA-1000P-x (where x maybe maximum 3 characters, any alphanumeric character, hyphen or blank).
Suffixes denote control number which does not affect safety.

Test Item Particulars

Mass of equipment (kg)	2.4
Equipment mobility	for building-in
Connection to the mains	pluggable equipment pluggable A
Operating condition	continuous
Access location	operator accessible
Over voltage category (OVC)	OVC II
Mains supply tolerance (%) or absolute mains supply values	+10%, -10%
Tested for IT power systems	Yes (only for Norway)
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
Pollution degree (PD)	PD 2
IP protection class	IP X0
Altitude of operation (m)	up to 2000
Altitude of test laboratory (m)	approximately 10 to 20

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 40 °C for 100% load / 60°C for 60% load
- The means of connection to the mains supply is : Pluggable A / Detachable Power Supply Cord
- The product is intended for use on the following power systems : TN / IT (only for Norway)

- The equipment disconnect device is considered to be : Appliance Inlet
- The following were investigated as part of the protective earthing/bonding : Printed Wiring Board Trace

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 / Earthing Continuity
- The end-product Electric Strength Test is to be based upon a maximum working voltage of : 342Vrms / 592Vpk
- The following secondary output circuits are SELV : All outputs
- The following secondary output circuits are at hazardous energy levels : 12V1, 12V2, 12V3, and 12V4 outputs
- The following secondary output circuits are at non-hazardous energy levels : 5V, 3.3V, -12V, and 5VSB outputs
- 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
- Proper bonding to the end-product main protective earthing termination is : Not required
- An investigation of the protective bonding terminals has : Been conducted
- The following end-product enclosures are required : Electrical / Fire
- The Heating Test shall be evaluated in the end-product.

Additional Information

Load conditions were as follows (CH1, CH2, CH3, CH4, CH5, CH6, CH7, CH8))

Condition A (Rated Load)

3.3V/10A, 5V/10A, 12V/15A, 12V/15A, 12V/15A, 12V/15A, -12V/0.3A, 5V/3A

Condition B (Maximum continuous load 1 (Most unfavorable load for T201, total 822W))

3.3V/0A, 5V/6A, 12V/18A, 12V/18A, 12V/18A, 12V/12A, -12V/0A, 5V/0A

Condition C (Maximum continuous load 2 (Most unfavorable load for T101, total 822W))

3.3V/0A, 5V/3A, 12V/18A, 12V/18A, 12V/18A, 12V/12A, -12V/0A, 5V, 3A

Condition D (Pulse 1 (Most unfavorable load for T201, total 1000W))

3.3V/0A, 5V/0A, 12V/22A, 12V/22A, 12V/22A, 12V/18A, -12V/0A, 5V/0A

Condition E (Pulse 1 (Most unfavorable load for T101, total 1000W))

3.3V/0A, 5V/0A, 12V/22A, 12V/22A, 12V/22A, 12V, 15.7A, -12V/0A, 5V/4A

Condition F (No Load)

3.3V/0, 5V/0A, 12V/0A, 12V/0A, 12V/0A, 12V/0A, -12V/0A, 5V/0A

Additional Standards

The product fulfills the requirements of:

Markings and Instructions

Clause Title	Marking or Instruction Details
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Power rating - Ratings	Ratings (voltage, frequency/dc, current)
Power rating - Company identification	Listee's or Recognized companys name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.
1.7.8.3 Symbols - On/Off switch	All other controls to be marked with
Special Instructions to UL Representative Inspect the transformer(s) listed below 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 below be conducted at the Component manufacturer.	

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
HPCSA-1000P-x (where x maybe maximum 3 characters, any alphanumeric character, hyphen or blank, which denotes control number)	Transformers (T101, T102, T103, T104, T201)	N/A	PRI to SEC	3000	4242	1
BD1.2	Earthing Continuity Test Exemptions – This test is not required for the following models:					
	N/A					
BD1.3	Electric Strength Test Exemptions – This test is not required for the following models:					
	N/A					
BD1.4	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:					
	N/A					
BE1.0	Sample and Test Specifics for Follow-Up Tests at UL					
Model	Component	Material	Test	Sample (s)	Test Specifics	
N/A	--	--	--	--	--	