



TEST REPORT #: Q03480

DATE: September 18, 2003

TITLE: Harmonics and Flicker Test of the Smart UPS RT Transformer

Model: SURT001 and SURT002
Serial Number: Proto 2

STANDARDS:

EN61000-3-2, 2001, Section 2, Limits for Harmonic Current Emissions
(Equipment Input Current \leq 16 Amps per Phase), Class A

EN61000-3-3, 1995, Section 3, with A1 (2001), Limitations of Voltage
Fluctuations and Flicker in Low-Voltage Supply Systems for Equipment
with Rated Current \leq 16 Amps

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NVLAP LAB CODE 200036-0

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the written approval of Quest Engineering Solutions, Inc.*

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SECTION 1 OVERVIEW

1.1 Purpose of Test

Engineering test to determine the emissions of the Smart UPS RT Transformer in regards to the EN61000-3-2 and EN61000-3-3 requirements for harmonics and flicker.

1.2 Date of Test

September 17, 2003

1.3 Statement of Compliance

The Smart UPS RT Transformer unit that was tested and referenced in this test report was found to comply with the requirements of:

EN61000-3-3

EN61000-3-2 Class A failed to pass.

SECTION 2 REFERENCES

2.1 Procedures/Standards

- ° EN61000-3-2, 2001, Section 2, Limits for Harmonic Current Emissions (Equipment Input Current \leq 16 Amps per Phase)
- ° EN61000-3-3, 1995, Section 3, with A1 (2001), Limitations of Voltage Fluctuations and Flicker in Low-Voltage Supply Systems for Equipment with Rated Current \leq 16 Amps

2.2 Deviations from Standards

None

SECTION 3 DETAILS

3.1 Description of Product

The Equipment Under Test (EUT) consisted of a single unit, the Smart UPS RT Transformer. Model SURT002. The SURT001 is the same unit with a lower current rating.

The EUT was configured as given in Appendix A.

3.2 Test Software / Operating Mode

No software required/The EUT was tested with the UPS operating in the "Full Load Charging" mode as pre-scans of both Radiated and Conducted emissions demonstrated this to be worse case.

3.3 Laboratory Test Configuration

The test setup was per the procedures and standards referenced in section 2.1. The voltage supplied to the EUT was 230 VAC, 50 Hz.

Harmonics and Flicker Test

Testing was performed in the Quest Safety Lab. The power supplied to the EUT was 230VAC/50HZ from the Behlman ACP-3000-100 AC Source. The support equipment was supplied with 120VAC/60HZ. The IEC555 Impedance Box (required for Flicker testing) was bypassed during Harmonics testing.

Test Equipment Used

Date of Calibration

| | |
|---|-------------------------|
| Voltek PM3000A Analyzer, s/n A118/0990..... | 12/10/02 |
| Voltek IEC555 Source Impedance Box, s/n 6808..... | 12/10/02 |
| Behlman ACP-3000-100 AC Power Source, s/n 3209..... | NO CALIBRATION REQUIRED |

All test equipment used was calibrated and traceable to the U.S Department of Commerce, National Institute of Standards and Technology (NIST).

Test Environment: Temp.= 70°C, Relative Humidity = 40%

3.4 Pictures



Test Setup

SECTION 4 CONCLUSIONS

4.1 Summary of Test Results

EN61000-3-2, Class A: **Failed**

EN61000-3-3: **Passed**

4.2 Special Notes

The test engineer was F. Maglio.

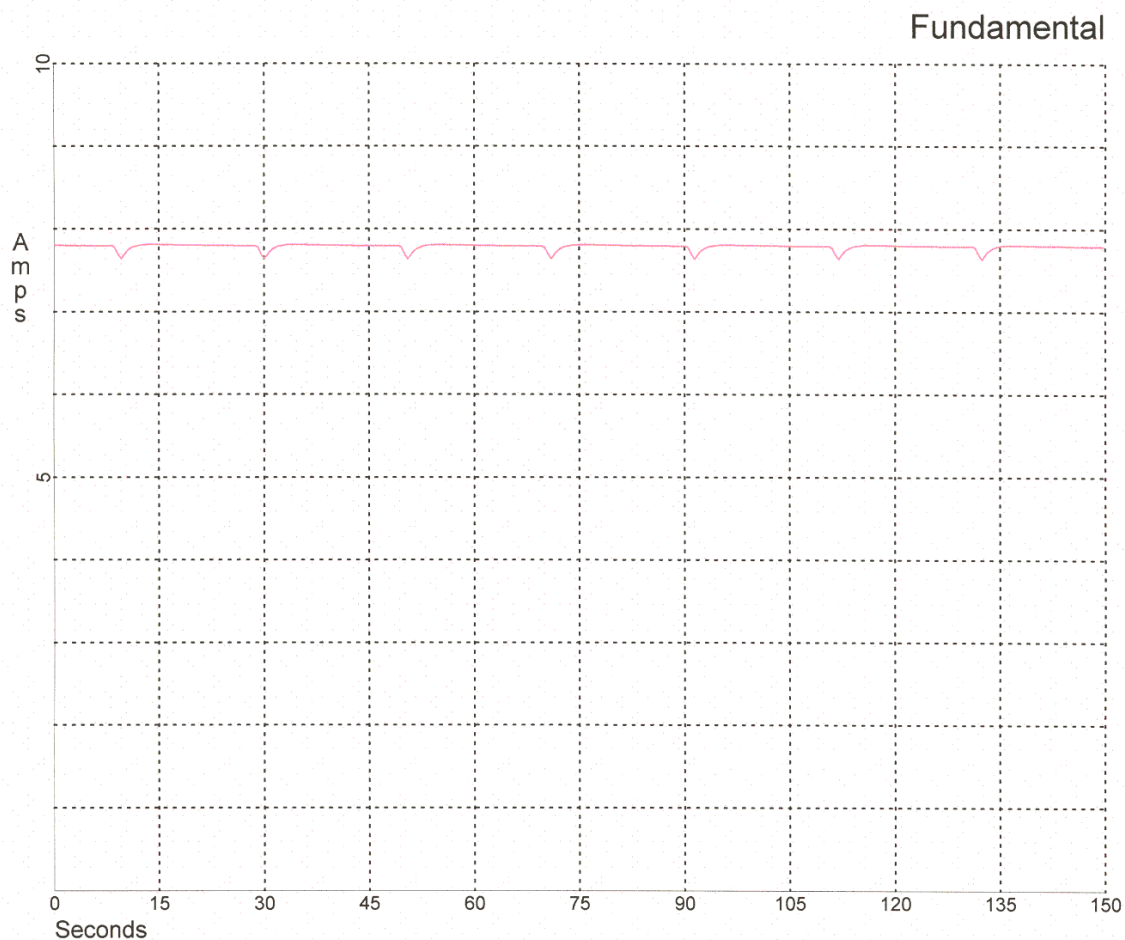
The test results set forth in this report are expressly limited to the configuration and tests herein. Any changes in configuration may void test results. Quest agrees to quote charges for any retesting requested by the customer.

This report must not be used by the customer to claim product endorsement by NVLAP or any agency of the U.S. Government.

SECTION 5 DATA

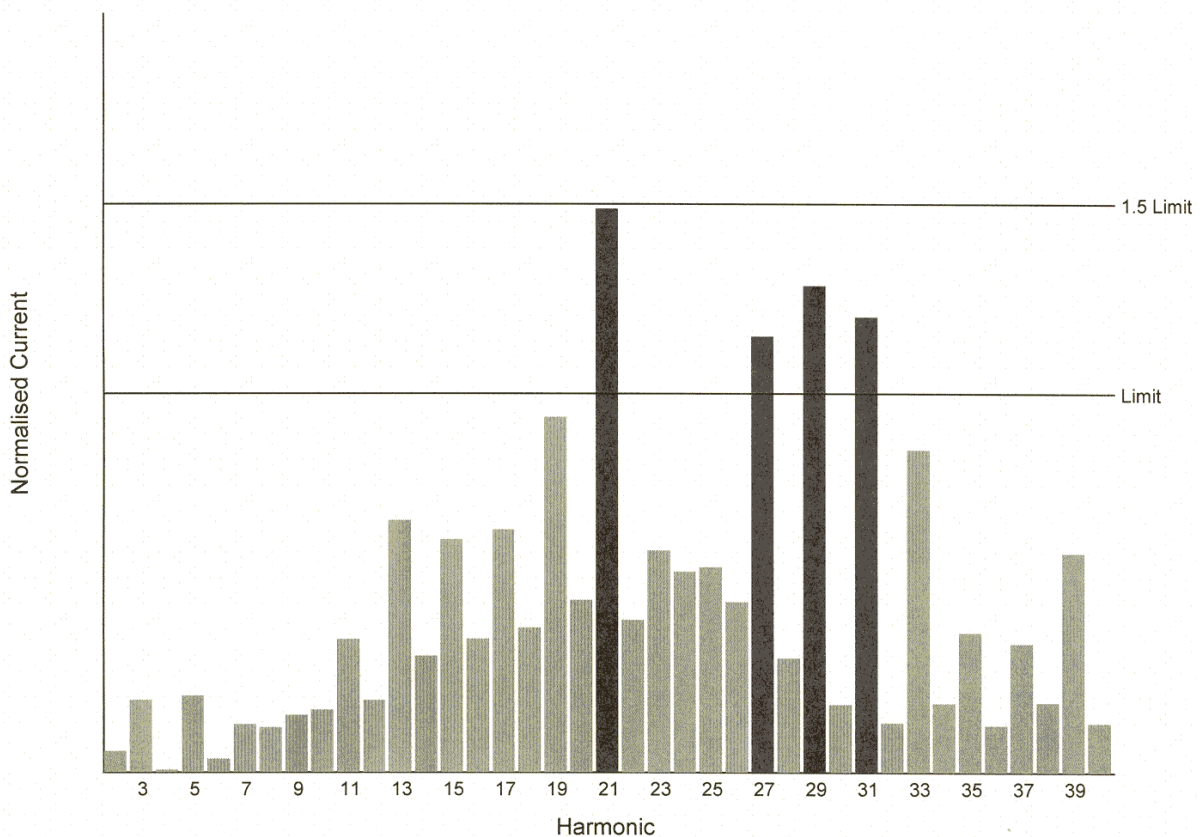
| | | |
|--|---|--------------------|
| Product: 5 KVA TRANSFORMER | | Sep 17 2003 1:36pm |
| Serial no: | | Page 1 of 1 |
| Description: APC Models SURT001, SURT002, SURT003, SURT004 with 5 KVA | | |
| Test Date: Sep 17 2003 10:27am | | |
| Result Name: 5KVA | | |
| Type of Test: EN61000:2001 Harmonics | | |
| Limits: Class A | | |
| Power Analyzer: Voltech PM3000A v1.67 s/n 0990 | | |
| AC Source: Mains / Manual Source | | |
| Overall Result: | Notes: | |
| FAIL | Current harmonic > limit 2 POHC limit exceeded | |
| Test Parameter Details | User Entered | Measured |
| Operating Frequency: | 50 | 49.9941 |
| Operating Voltage: | 230 | 230.6000 |
| Specified Power: | 0.0000 | 1768.5000 |
| Fundamental Current: | 0.0000 | 7.8177 |
| Power Factor: | 0.0000 | 0.9773 |
| Average Input Current: | | 1.2392 |
| Maximum POHC: | | 0.0782 |
| POHC Limit: | | 0.0779 |
| Maximum THC: | | 0.1009 |
| Minimum Power: | 75 | |
| Class Multiplier: | 1.0000 | |
| Test Duration: | 00:02:30 | |

| | | |
|--|--|--------------------------------|
| Product: | 5 KVA TRANSFORMER | Sep 17 2003 1:36pm |
| Serial no: | | Page 1 of 1 |
| Description: | APC Models SURT001, SURT002, SURT003, SURT004 with 5 KVA | |
| Result Name: | 5KVA | |
| Voltech IEC1000-3 Windows Software 3.03.04 | | Test Date: Sep 17 2003 10:27am |
| Type of Test: | Fluctuating Harmonics Test - Single Harmonic Plot (2001) | |
| Power Analyzer: | Voltech PM3000A v1.67 s/n 0990 | |
| AC Source: | Mains / Manual Source | |
| Overall Result: | Notes: Current harmonic > limit 2 POHC limit exceeded FAIL | |



| | | |
|--|---|--------------------------------|
| Product: | 5 KVA TRANSFORMER | Sep 17 2003 1:36pm |
| Serial no: | | Page 1 of 1 |
| Description: | APC Models SURT001, SURT002, SURT003, SURT004 with 5 KVA | |
| Result Name: | 5KVA | |
| Voltech IEC1000-3 Windows Software 3.03.04 | | Test Date: Sep 17 2003 10:27am |
| Type of Test: | Fluctuating Harmonics Test - Normalised Worst Case Bar Chart (2001) | |
| Power Analyzer: | Voltech PM3000A v1.67 s/n 0990 | |
| AC Source: | Mains / Manual Source | |
| Overall Result: | Notes: Current harmonic > limit 2 POHC limit exceeded | |
| FAIL | | |

| | |
|------------------|---------|
| Class | Class A |
| Class Multiplier | 1 |



| | | |
|--|--|--------------------|
| Product: | 5 KVA TRANSFORMER | Sep 17 2003 1:36pm |
| Serial no: | | Page 1 of 1 |
| Description: | APC Models SURT001, SURT002, SURT003, SURT004 with 5 KVA | |
| Result Name: | 5KVA | |
| Voltech IEC1000-3 Windows Software 3.03.04 | Test Date: Sep 17 2003 10:27am | |
| Type of Test: | Fluctuating Harmonics Test - Worst Case Table (2001) | |
| Power Analyzer: | Voltech PM3000A v1.67 s/n 0990 | |
| AC Source: | Mains / Manual Source | |
| Overall Result: | Notes: Current harmonic > limit 2 POHC limit exceeded FAIL | |

| | |
|------------------|---------|
| Class | Class A |
| Class Multiplier | 1 |

| Harm | Limit 1 | Limit 2 | Average Reading | <L1 <L2 | Max Reading | <L2 | Pass FAIL | Harm | Limit 1 | Limit 2 | Average Reading | <L1 <L2 | Max Reading | <L2 | Pass FAIL |
|------|----------|----------|-----------------|---------|-------------|-----|-----------|------|----------|----------|-----------------|---------|-------------|-----|-----------|
| 2 | 1.08A | 1.62A | 56.33mA | ✓ ✓ | 61.92mA | ✓ | Pass | 3 | 2.30A | 3.45A | 441.37mA | ✓ ✓ | 442.17mA | ✓ | Pass |
| 4 | 430.00mA | 645.00mA | 2.83mA | ✓ ✓ | 3.29mA | ✓ | N/A | 5 | 1.14A | 1.71A | 232.17mA | ✓ ✓ | 232.55mA | ✓ | Pass |
| 6 | 300.00mA | 450.00mA | 10.52mA | ✓ ✓ | 10.92mA | ✓ | Pass | 7 | 770.00mA | 1.15A | 97.65mA | ✓ ✓ | 98.38mA | ✓ | Pass |
| 8 | 230.00mA | 345.00mA | 27.01mA | ✓ ✓ | 27.47mA | ✓ | Pass | 9 | 400.00mA | 600.00mA | 56.26mA | ✓ ✓ | 60.96mA | ✓ | Pass |
| 10 | 184.00mA | 276.00mA | 30.11mA | ✓ ✓ | 30.66mA | ✓ | Pass | 11 | 330.00mA | 495.00mA | 110.98mA | ✓ ✓ | 115.98mA | ✓ | Pass |
| 12 | 153.33mA | 153.33mA | 27.68mA | ✓ ✓ | 29.36mA | ✓ | Pass | 13 | 210.00mA | 315.00mA | 137.53mA | ✓ ✓ | 140.04mA | ✓ | Pass |
| 14 | 131.43mA | 131.43mA | 39.11mA | ✓ ✓ | 40.42mA | ✓ | Pass | 15 | 150.00mA | 225.00mA | 90.46mA | ✓ ✓ | 92.39mA | ✓ | Pass |
| 16 | 115.00mA | 115.00mA | 39.67mA | ✓ ✓ | 40.50mA | ✓ | Pass | 17 | 132.35mA | 198.53mA | 82.94mA | ✓ ✓ | 85.00mA | ✓ | Pass |
| 18 | 102.22mA | 102.22mA | 37.50mA | ✓ ✓ | 39.03mA | ✓ | Pass | 19 | 118.42mA | 177.63mA | 109.28mA | ✓ ✓ | 111.17mA | ✓ | Pass |
| 20 | 92.00mA | 92.00mA | 38.12mA | ✓ ✓ | 41.88mA | ✓ | Pass | 21 | 107.14mA | 107.14mA | 157.65mA | ✗ ✗ | 159.42mA | ✗ | Fail |
| 22 | 83.64mA | 83.64mA | 32.45mA | ✓ ✓ | 33.66mA | ✓ | Pass | 23 | 97.83mA | 97.83mA | 54.57mA | ✓ ✓ | 57.41mA | ✓ | Pass |
| 24 | 76.67mA | 76.67mA | 39.83mA | ✓ ✓ | 40.67mA | ✓ | Pass | 25 | 90.00mA | 90.00mA | 35.44mA | ✓ ✓ | 48.79mA | ✓ | Pass |
| 26 | 70.77mA | 70.77mA | 30.79mA | ✓ ✓ | 31.83mA | ✓ | Pass | 27 | 83.33mA | 83.33mA | 94.26mA | ✗ ✗ | 96.00mA | ✗ | Fail |
| 28 | 65.71mA | 65.71mA | 18.78mA | ✓ ✓ | 19.82mA | ✓ | Pass | 29 | 77.59mA | 77.59mA | 98.30mA | ✗ ✗ | 99.74mA | ✗ | Fail |
| 30 | 61.33mA | 61.33mA | 9.89mA | ✓ ✓ | 11.07mA | ✓ | Pass | 31 | 72.58mA | 72.58mA | 84.80mA | ✗ ✗ | 87.34mA | ✗ | Fail |
| 32 | 57.50mA | 57.50mA | 5.62mA | ✓ ✓ | 7.58mA | ✓ | N/A | 33 | 68.18mA | 68.18mA | 55.82mA | ✓ ✓ | 58.06mA | ✓ | Pass |
| 34 | 54.12mA | 54.12mA | 7.79mA | ✓ ✓ | 9.92mA | ✓ | Pass | 35 | 64.29mA | 64.29mA | 21.60mA | ✓ ✓ | 23.68mA | ✓ | Pass |
| 36 | 51.11mA | 51.11mA | 4.78mA | ✓ ✓ | 6.37mA | ✓ | N/A | 37 | 60.81mA | 60.81mA | 18.96mA | ✓ ✓ | 20.66mA | ✓ | Pass |
| 38 | 48.42mA | 48.42mA | 6.39mA | ✓ ✓ | 8.97mA | ✓ | N/A | 39 | 57.69mA | 57.69mA | 31.26mA | ✓ ✓ | 33.40mA | ✓ | Pass |
| 40 | 46.00mA | 46.00mA | 5.33mA | ✓ ✓ | 6.04mA | ✓ | N/A | | | | | | | | |

<L1 : Reading is below limit 1.

<L2 : Reading is below limit 2.

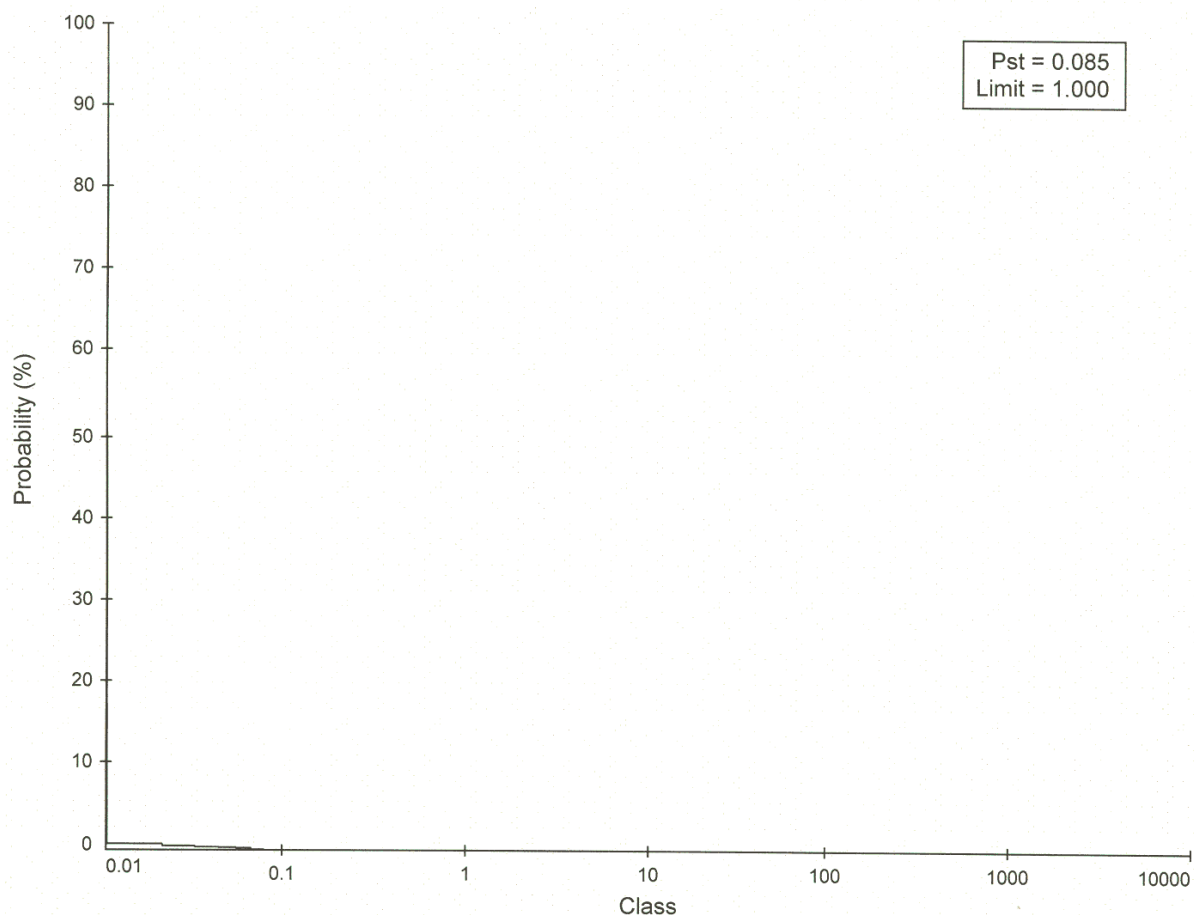
N/A : Harmonic current below 0.6% of rated current or 5mA, whichever is greater, are disregarded.

| | | |
|--|--|--------------------|
| Product: | 5 KVA TRANSFORMER | Sep 17 2003 1:36pm |
| Serial no: | | Page 1 of 1 |
| Description: | APC Models SURT001, SURT002, SURT003, SURT004 with 5 KVA | |
| Result Name: | 5KVA | |
| Voltech IEC1000-3 Windows Software 3.03.04 | Test Date: Sep 17 2003 10:27am | |
| Type of Test: | Fluctuating Harmonics Test - Source Qualification (2001) | |
| Power Analyzer: | Voltech PM3000A v1.67 s/n 0990 | |
| AC Source: | Mains / Manual Source | |
| Overall Result: | Notes: Current harmonic > limit 2 POHC limit exceeded FAIL | |

| | Nominal | Measured | Deviation | Allowed Deviation | Result |
|------------------|---------|----------|-----------|-------------------|--------|
| Supply Voltage | 230.00V | 230.60V | 0.60V | 4.60V | Pass |
| Supply Frequency | 50.00Hz | 49.99Hz | 0.01Hz | 0.25Hz | Pass |

| Harmonic | Reading | Limit | Result | Harmonic | Reading | Limit | Result |
|----------|---------|-------|--------|----------|---------|-------|--------|
| 2 | 0.03% | 0.20% | Pass | 3 | 0.30% | 0.90% | Pass |
| 4 | 0.02% | 0.20% | Pass | 5 | 0.16% | 0.40% | Pass |
| 6 | 0.02% | 0.20% | Pass | 7 | 0.06% | 0.30% | Pass |
| 8 | 0.02% | 0.20% | Pass | 9 | 0.12% | 0.20% | Pass |
| 10 | 0.02% | 0.20% | Pass | 11 | 0.05% | 0.10% | Pass |
| 12 | 0.02% | 0.10% | Pass | 13 | 0.06% | 0.10% | Pass |
| 14 | 0.02% | 0.10% | Pass | 15 | 0.03% | 0.10% | Pass |
| 16 | 0.02% | 0.10% | Pass | 17 | 0.02% | 0.10% | Pass |
| 18 | 0.01% | 0.10% | Pass | 19 | 0.03% | 0.10% | Pass |
| 20 | 0.02% | 0.10% | Pass | 21 | 0.05% | 0.10% | Pass |
| 22 | 0.02% | 0.10% | Pass | 23 | 0.02% | 0.10% | Pass |
| 24 | 0.02% | 0.10% | Pass | 25 | 0.07% | 0.10% | Pass |
| 26 | 0.01% | 0.10% | Pass | 27 | 0.05% | 0.10% | Pass |
| 28 | 0.01% | 0.10% | Pass | 29 | 0.04% | 0.10% | Pass |
| 30 | 0.01% | 0.10% | Pass | 31 | 0.10% | 0.10% | Pass |
| 32 | 0.01% | 0.10% | Pass | 33 | 0.02% | 0.10% | Pass |
| 34 | 0.01% | 0.10% | Pass | 35 | 0.01% | 0.10% | Pass |
| 36 | 0.01% | 0.10% | Pass | 37 | 0.05% | 0.10% | Pass |
| 38 | 0.01% | 0.10% | Pass | 39 | 0.05% | 0.10% | Pass |
| 40 | 0.01% | 0.10% | Pass | | | | |

| | | |
|---|------------------------------|--------------------------------|
| Product: 5 KVA TRANSFORMER | | Sep 17 2003 1:35pm |
| Serial no: | | Page 1 of 1 |
| Description: APC Models SURT001, SURT002, SURT003, SURT004 with 5 KVA | | |
| Result Name: 5KVA | | |
| Voltech IEC1000-3 Windows Software 3.03.04 | | Test Date: Sep 17 2003 10:56am |
| Type of Test: Flickermeter Test - Pst Curve | | |
| Power Analyzer: Voltech PM3000A v1.67 s/n 0990 | | |
| AC Source: Mains / Manual Source | | |
| Overall Result: | Notes: | |
| PASS | Measurement method - Voltage | |

Pst Curve 1

| | | | |
|--|--|--------------------------------|--------------------|
| Product: | 5 KVA TRANSFORMER | | Sep 17 2003 1:35pm |
| Serial no: | | | Page 1 of 1 |
| Description: | APC Models SURT001, SURT002, SURT003, SURT004 with 5 KVA | | |
| Result Name: | 5KVA | | |
| Voltech IEC1000-3 Windows Software 3.03.04 | | Test Date: Sep 17 2003 10:56am | |
| Type of Test: | Flickermeter Test - Table | | |
| Power Analyzer: | Voltech PM3000A v1.67 s/n 0990 | | |
| AC Source: | Mains / Manual Source | | |
| Overall Result: | Notes: Plt test duration 120 minutes Measurement method - Voltage PASS | | |

| | |
|---------|-------|
| | Plt |
| Limit | 0.650 |
| Reading | 0.077 |

| | Pst | dc (%) | dmax (%) | d(t) > 3.3%(ms) |
|------------|-------|--------|----------|-----------------|
| Limit | 1.000 | 3.300 | 4.000 | 500 |
| Reading 1 | 0.085 | 0.093 | 0.267 | 0 |
| Reading 2 | 0.078 | 0.085 | 0.290 | 0 |
| Reading 3 | 0.071 | 0.078 | 0.267 | 0 |
| Reading 4 | 0.074 | 0.078 | 0.236 | 0 |
| Reading 5 | 0.074 | 0.078 | 0.244 | 0 |
| Reading 6 | 0.074 | 0.078 | 0.244 | 0 |
| Reading 7 | 0.076 | 0.078 | 0.259 | 0 |
| Reading 8 | 0.076 | 0.078 | 0.244 | 0 |
| Reading 9 | 0.079 | 0.078 | 0.290 | 0 |
| Reading 10 | 0.079 | 0.070 | 0.267 | 0 |
| Reading 11 | 0.079 | 0.070 | 0.275 | 0 |
| Reading 12 | 0.079 | 0.078 | 0.275 | 0 |

APPENDIX A

EMI Emissions and Immunity Test Form

The information contained in this Appendix was provided by Bill Burks of American Power Conversion. It contains specific configuration details of the system as tested.

Quest Engineering Solutions EMI Emissions and Immunity Test Form

Please complete all that applies for the equipment under test (EUT). Include a block diagram showing the EUT and all support equipment.

Date: _____
Company: American Power Conversion **Contact:** Bob Powers, Stephen Lee
Street: 85 Rangeway Road
City, State ZIP: North Billerica, MA 01862
Telephone: 978 - 670 - 2440 x 17252 **FAX:** 978-670-2380

Test Type:

Emissions

| | | | |
|-------------|-------------------------------------|--------------------------|-------------------------------------|
| CISPR 11 | <input type="checkbox"/> | FCC Part 15 | <input checked="" type="checkbox"/> |
| CISPR 22 | <input checked="" type="checkbox"/> | FCC Part 18 | <input type="checkbox"/> |
| VCCI | <input checked="" type="checkbox"/> | CNS 13438 | <input type="checkbox"/> |
| AUSTEL | <input checked="" type="checkbox"/> | Other <u>AS/NZS 3548</u> | |
| Class A (1) | <input checked="" type="checkbox"/> | Class B (2) | <input type="checkbox"/> |

Immunity

| | | | | | |
|-------------|-------------------------------------|--------------|-------------------------------------|--------------|--------------------------|
| EN50082-1 | <input type="checkbox"/> | EN50082-2 | <input type="checkbox"/> | IEC60601-1-2 | <input type="checkbox"/> |
| EN61326 | <input type="checkbox"/> | EN61000-6-2 | <input type="checkbox"/> | Other _____ | |
| EN61000-4-2 | <input checked="" type="checkbox"/> | EN61000-4-6 | <input checked="" type="checkbox"/> | Test Level 1 | <input type="checkbox"/> |
| EN61000-4-3 | <input checked="" type="checkbox"/> | EN61000-4-8 | <input checked="" type="checkbox"/> | Test Level 2 | <input type="checkbox"/> |
| EN61000-4-4 | <input checked="" type="checkbox"/> | EN61000-4-11 | <input checked="" type="checkbox"/> | Test Level 3 | <input type="checkbox"/> |
| EN61000-4-5 | <input checked="" type="checkbox"/> | | | Test Level 4 | <input type="checkbox"/> |

Special: EN50092-1 EMC for UPS's and BSMI certification

Equipment Under Test (EUT) Description:

Models SURT001, SURT002, SURT003 and SURT004, which are all accessories for the
Following models SURT5000XLI, SURT5000XLT, SURT5000XLJ, SURT5000UXI
SURT3000XLI, SURT3000XLT, SURT3000XLJ, SURT3000UXI, SURT3000XLIX322

Model Number(s): SURT001, SURT002 **Serial Number(s):** Prototypes
SURT003, SURT004

EUT Weight(lb.): _____ **EUT Size (LxWxH):** _____

Power Interface:

Frequency 50/60Hz
Voltage 200-240
No. of Phases 1
Current 1. 16 2. 25 3,4 24
Plug Type 1. C20 2. hardwire 3,4 L6-30
Cord Type 3/10AWG

Power Supply:

Description N/A
Manufacturer N/A
Model Number N/A
Switching Freq. N/A
RF Filter Manufac. N/A
RF Filter Model N/A

Equipment Cycle Time: Continuos

Failure Criteria: ± 5% Voltage variation

| Equipment Configuration | Slot No. | Board Type |
|-------------------------|----------|------------|
| N/A | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| Equipment Internal Devices (e.g. disks, tapes) | Manufacturer | Part No. | Serial No. |
|--|--------------|----------|------------|
| N/A | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Oscillator Frequencies of EUT (Please list all):

80Khz

RF Suppression Components of EUT (i.e., ferrites, gasketting, filters, etc.):

| Manufacturer | Part No. | Locations used |
|--------------|----------|----------------|
| None | | |
| | | |
| | | |

Cabinet Shielding/Construction of EUT:

Metal Chassis

I/O Cables:

Note: Interconnecting cables shall be connected to one of each type of functional port of the EUT. Where there are multiple ports of the same type, additional cables shall be attached to each of these ports. These additional cables do not need to be terminated.

| Quantity | Part No. | Function | Shield description (e.g. braid, foil, none) |
|---|----------|----------|---|
| Unshielded AC mains cords (Approximately 2 meters long) | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Software Description:

Note: The EUT must be exercised by software or other means so as to ensure that the various parts of the system are active. The exercise shall generate traffic representative of typical equipment usage. For immunity testing, the software must be capable of reporting any errors that may occur.

No Software Required

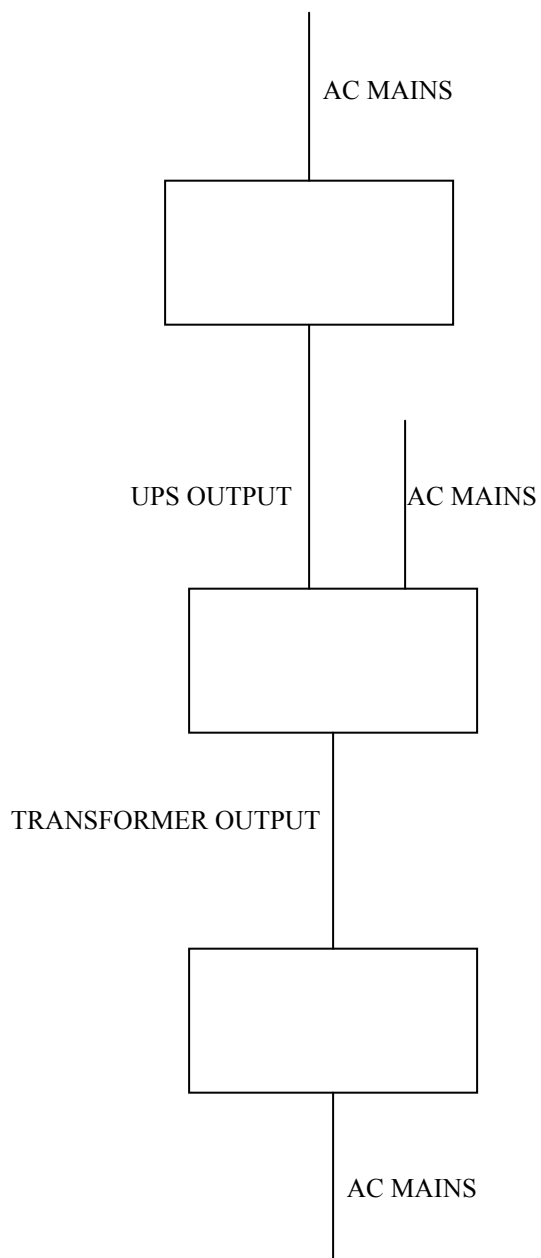
Support Equipment Description (Manufacturer, model number, serial number, cable numbers):

1. APC SURT5000XL

2. Avtron Model# K490 load

Additional Information:

Block Diagram



APPENDIX B

QUEST CREDENTIALS

FCC registered test site

NVLAP Lab Code 200036-0

ANSI C63-4, (2001), FCC Method-47 CFR Part 15 – Digital Devices

Conducted Emissions, Power Lines, 450 kHz to 30 MHz

Radiated Emissions

International Special Committee on Radio Interference (CISPR) Methods

IEC/CISPR 22 (1993) Amendment 1 (1995) and Amendment 2 (1996)

IEC/CISPR 22 (1997) and EN 55011 (1998)

CISPR 14-1 March 30, 2000

EN 55014-1 (1993) with Amendments A1 (1997) and A2 (1999)

IEC 61000-3-2, Edition 2.1 (2001-10) and EN61000-3-2 (2000)

IEC 61000-3-3 (1995) and EN61000-3-3 (1995)

IEC 61000-4-2 (1995) and Amendment 1 (1998)

IEC 61000-4-3 (1995) and Amendment 1 (1998)

IEC 61000-4-4 (1995)

IEC 61000-4-5 (1995)

IEC 61000-4-6 (1996)

IEC 61000-4-8 (1993)

IEC 61000-4-11 (1994)

CNS 13438, 1997, Accreditation No. SL2-IN-E-23R

Australian Standards, A96/TH/0079

AS/NZS CISPR 22 and AS/NZS 3548

AS/ZNS 1044 (1995)

Conformity Assessment Body (CAB) For the EMC annex

VCCI Registration Numbers R-712 and C732

TEST SERVICES

TEST REPORT POLL

Please rate the attached test report's quality by responding to the brief questions listed in this poll. Our goal is to provide you with high quality test reports in a timely manner. Therefore, your feedback is vital in order to determine how good our test reports are, and what areas could be improved.

Please indicate beside each question what you feel is the rating. Also, feel free to make comments directly on the poll, or by attaching a separate sheet. The completed form should then be returned by mail or FAX to Herman Held at 978-667-3388. Your cooperation and effort are truly appreciated.

TEST REPORT NUMBER: Q03480

YES NO

1. Was the information presented clearly?..... [][]
2. Was the report complete?..... [][]
3. Was the report timely?..... [][]
4. Did the report satisfy your requirements?..... [][]
5. Your organization type?. []Engineering.... []Manufacturing
..... []Marketing..... []Other
6. Your work environment?.. []Hardware..... []Software .[]Both

YOUR NAME (OPTIONAL): _____

OPTIONAL COMMENTS: _____

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