

CERTIFICATE OF CONFORMANCE

Issued By: **RETLIF TESTING LABORATORIES**
101 New Boston Road
Goffstown, New Hampshire 03045

Date of Issue: July 20, 2005

Issued To: TUV America
5 Cherry Hill Drive
Danvers, MA 01923

Reference: Retlif Report Number R-4455N3

RETLIF TESTING LABORATORIES hereby acknowledges that compliance testing in accordance with the below listed standards was performed on a representative sample of the equipment listed below. RETLIF TESTING LABORATORIES further acknowledges that the test sample listed below was found to be in compliance with these standards. This certificate is hereby issued to the above named grantee and is valid only for the equipment identified below.

Manufacturer: Globtek Inc.
186 Veterans Drive
Northvale, NJ 07647

Equipment Tested: AC-DC Power Supplies

**Model Numbers Tested*

For Radiated Emissions: GTM9200P35048, GTM9200P2313.3, GTM9200P1503.3
& GTM9200P20048

**Model Numbers Tested*

For Emissions & Immunity: GTM9200P2313.3 & GTM9200P35048

Brand Name: Globtek Inc.

Product Type: Medical Equipment/Information Technology Equipment

Note(s):

1) See attached report R-4455N3 for details and/or conditions pertaining to this certificate.

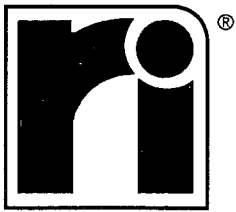
2) Conforms to the emissions requirements of:

IEC 60601-1-2:2001/EN 60601-1-2:2002
CISPR 22/EN55022:1998/A1:2000, Class B, Conducted Emissions, 150kHz to 30MHz
CISPR 22/EN55022:1998/A1:2000, Class B, Radiated Emissions, 30MHz-1GHz
EN55011:1998/A1:1999/A2:2002 Group 1, Class B, Conducted Emissions 150kHz to 30MHz
EN55011:1998/A1:1999/A2:2002 Group 1, Class B, Radiated Emissions, 30MHz to 1GHz
EN 61000-3-2:2001 Harmonic Current Emissions
EN61000-3-3:1995/A1:2001/A2:2002 Voltage Fluctuations and Flicker

3) Conforms to the immunity requirements of: IEC 60601-1-2:2001/EN60601-1-2:2002:

EN61000-4-2:1995/A1:1998/A2:2001 Electrostatic Discharge
2kV, 4kV, 6kV Direct and Indirect Contact
Radiated Immunity 80kHz to 2.5GHz, 10V/m, 80% AM 1000Hz
EN61000-4-3:2002/A1:2002 EFT, 0.5kV, 1.0kV & 2kV Power
EN61000-4-4:2004 Surge Immunity, 0.5kV, 1kV, 2kV Common Mode, 0.5kV, 1kV Differential Mode
EN61000-4-5:1995/A1:2001 Conducted RF Immunity, 150kHz-80MHz, 10Vrms, 80% AM 1kHz
EN 61000-4-6:1996/A1:2001 Voltage Dips and Interruption
EN61000-4-11:2004

* These Models were tested as representative of the complete GTM9200 Model Series. See report R-4455N3 for a description of the Model Series.



Retlif Testing Laboratories

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**EMC TEST REPORT
ON
GLOBTEK 9200 SERIES
AC-DC POWER SUPPLIES
MODELS: GTM9200P35048, GTM9200P2313.3,
GTM9200P1503.3 & GTM9200P20048**

CUSTOMER NAME: TUV America
CUSTOMER P.O.: DC502794
DATE OF REPORT: July 20, 2005
TEST REPORT NO.: R-4455N3
TEST START DATE: June 8, 2005
TEST FINISH DATE: July 13, 2005
TEST TECHNICIAN: Todd Hannemann
TEST ENGINEER: Scott Wentworth
SUPERVISOR: Scott Wentworth
REPORT PREPARED BY: Jamie Ramsey

GOVERNMENT SOURCE INSPECTION: Not Applicable

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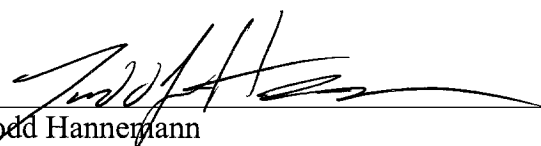


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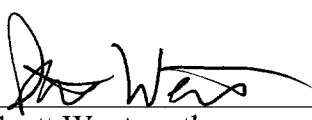
Test Report Number R-4455N3

CERTIFICATION AND SIGNATURES

We certify that this report is a true representation of the results obtained from the tests of the equipment stated. We further certify that the measurements shown in this report were made in accordance with the procedures indicated and vouch for the qualifications of all Retlif Testing Laboratories personnel taking them.



Todd Hannermann
EMC Test Technician



Scott Wentworth
Manager

NON-WARRANTY PROVISION

The testing services have been performed, findings obtained and reports prepared in accordance with generally accepted laboratory principles and practices. This warranty is in lieu of all others, either expressed or implied.

NON-ENDORSEMENT

This test report contains only findings and results arrived at after employing the specific test procedures and standards listed herein. It is not intended to constitute a recommendation, endorsement or certification of the product or material tested. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.



Retlif Testing Laboratories

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REVISION HISTORY

Revision

Date

Pages Affected



Retlif Testing Laboratories

Test Report Number R-4455N3

ADMINISTRATIVE DATA

RETLIF TESTING LABORATORIES TEST REPORT NUMBER: R-4455N3

TEST SPECIFICATION: IEC 60601-1-2:2001/EN60601-1-2:2002
EN55022:1998/A1:2001/A2:2003
EN55024:1998/A1:2001/A2:2003
EN 61000-3-2:2001
EN61000-3-3:1995/A1:2001/A2:2002

CUSTOMER: TUV America
5 Cherry Hill Drive
Danvers, MA 01923

MANUFACTURER: Globtek Inc.
186 Veterans Drive
Northvale, NJ 07647

TEST SAMPLE: AC-DC Power Supplies
Model Number: GTM9200P35048/Serial Number: #1, Model Number:
GTM9200P2313.3/Serial Number: #1: Model Number:
GTM9200P1503.3/Serial Number: #2 and Model Number:
GTM9200P20048/Serial Number: #2

APPLICABLE DOCUMENTS: EN55011:1998/A1:1999/A2:2002
EN55022:1998/A1:2000
EN61000-4-2:1995/A1:1998/A2:2001
EN61000-4-3:2002/A1:2002
EN 61000-4-4:2004
EN61000-4-5:1995/A1:2001
EN 61000-4-6:1996/A1:2001
EN 61000-4-8:1994/A1:2001
EN61000-4-11:2004
See Paragraph 2.0

TESTING DATES: June 8, 2005 TO July 13, 2005

DATE OF REPORT: July 20, 2005



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ADMINISTRATIVE DATA (continued)

EUT	DESCRIPTION	MODEL	TEST METHODS PERFORMED
1	AC-DC Power Supply	GTM9200P35048	Full Emissions and Immunity
2	AC-DC Power Supply	GTM9200P2313.3	Full Emissions and Immunity
3	AC-DC Power Supply	GTM9200P1503.3	Radiated Emissions Only
4	AC-DC Power Supply	GTM9200P20048	Radiated Emissions Only

GTM9200 SERIES TABLE:

NATURAL CONVECTION:	Output Voltage	Max Load
GT(M)9200P1323.3-X.X	3.3 V	40A
GT(M)9200P1503.3X.X	3.3V	45.45A
GT(M)9200P20005-X.X	5V	40A
GT(M)9200P2007.5-X.X	7.5V	26.67A
GT(M)9200P20009-X.X	9V	22.22A
GT(M)9200P20012-X.X	12V	16.67A
GT(M)9200P20015-X.X	15V	13.33A
GT(M)9200P20018-X.X	18V	11.11A
GT(M)9200P20024-X.X	24V	8.33A
GT(M)9200P20036-X.X	36V	5.55A
GT(M)9200P20048-X.X	48V	4.17A



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ADMINISTRATIVE DATA (continued)

TOP MOUNTED FAN FOR FORCED AIR:	Output Voltage	Max Load
GT(M)9200P1853.3-X.X	3.3V	56A
GT(M)9200P2313.3X.X	3.3V	70A
GT(M)9200P2805-X.X	5V	56A
GT(M)9200P35005-X.X	5V	70A
GT(M)9200P3507.5-X.X	7.5V	46.67A
GT(M)9200P35012-X.X	12V	29.17A
GT(M)9200P35015-X.X	15V	23.33A
GT(M)9200P35018-X.X	18V	19.44A
GT(M)9200P35024-X.X	24V	14.58A
GT(M)9200P35036-X.X	36V	9.72A
GT(M)9200P35048-X.X	48V	7.3A

The Models GTM9200P35048, GTM9200P2313.3, GTM9200P1503.3 and GTM9200P200P20048 were tested as representative of the Globtek 9200 Model series which includes all models listed on Page 2 of this report. The test results contained in this report are considered to be valid for the complete model series.



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**MODIFICATION TO THE EUT
MADE DURING THE TEST PROGRAM**

Test Method:

Conducted Emissions

Reason for Modification:

EUT emission levels were above the specified limits.

Description of Modification:

Changed value of CY6 from 470pf to 1nf. This modification will be made to all 9200 series power supplies.

Result of Modification:

EUT emission levels decreased and met the specified limit.

**THE VALIDITY OF THE EUT COMPLIANCE AND OF THIS REPORT
IS BASED, IN PART, ON THE PRESENCE OF THE ABOVE MODIFICATION.**

At the time of the modification installation, and at the conclusion of the test program, the EUT manufacturer was made aware of the need to have the above modification incorporated in all future productions of the EUT.

Test methods administered subsequent to the listed modification included the above modification.



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**MODIFICATION TO THE EUT
MADE DURING THE TEST PROGRAM**

Test Method:

Voltage Dips and Interruptions

Reason for Modification:

EUT was damaged and ceased functioning during application of 60%, 100Msec voltage dip.

Description of Modification:

Added 1 Mohm resistor in parallel with 10nF capacitor from D200 anode to U200 Pin 1.

Result of Modification:

EUT continued to operate during application of 60%, 100Msec voltage dip.

**THE VALIDITY OF THE EUT COMPLIANCE AND OF THIS REPORT
IS BASED, IN PART, ON THE PRESENCE OF THE ABOVE MODIFICATION.**

At the time of the modification installation, and at the conclusion of the test program, the EUT manufacturer was made aware of the need to have the above modification incorporated in all future productions of the EUT.

Test methods administered subsequent to the listed modification included the above modification.



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1.0 SCOPE

The purpose of this testing program was to determine the compliance of AC-DC Power Supplies, Model Numbers: GTM9200P35048, GTM9200P2313.3, GTM9200P1503.3 and GTM9200P20048 manufactured by Globtek Inc., as described in paragraphs 4.0 and 5.0 of this report, to the EMC requirements of IEC 60601-1-2:2001/EN60601-1-2:2002, EN55022:1998/A1:2001/A2:2003, EN55024:1998/A1:2001/A2:2003, EN61000-3-2:2001 and EN61000-3-3:1995. The Models GTM9200P35048, GTM9200P2313.3, GTM9200P1503.3 and GTM9200P200P20048 were tested as representative of the Globtek 9200 Model series which includes all models listed on Page 2 of this report. The test results contained in this report are considered to be valid for the complete model series.

2.0 APPLICABLE DOCUMENTS

The following documents form a part of this test report to the extent specified herein:

RCM-001	-Retlif Testing Laboratories, Calibration Manual.
RQM-001	-Retlif Testing Laboratories, Quality Assurance Manual.
ANSI/NCSL Z-540	-Calibration Laboratories and Measuring and Test Equipment-General Requirements
MIL-STD-45662A	-Calibration System Requirements.
EN 60601-1-2:2002	- Medical Electrical Equipment Part 1: General Requirements for Safety Part 2: Collateral Standard: Electromagnetic compatibility- Requirements and Tests.
IEC 60601-1-1-2:2001	- Medical Electrical Equipment Part 1: General Requirements for Safety Part 2: Collateral Standard: Electromagnetic compatibility-Requirements and Tests.
EN55011:1998/ A1:1999/A2:2002	- Specification for Limits and Methods of Measurement of Radio
EN55022:1998/ A1:2001/A2:2003	- Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment.
EN55024:1998/ A1:2001/A2:2003	-Information Technology Equipment-Immunity, Characteristics-Limits and Methods of Measurements
CISPR 11: 1997	Disturbance Characteristics of Industrial, Scientific, and Medical (ISM) Radio Frequency Equipment.
EN 61000-3-2:2001	- Electromagnetic Compatibility (EMC). Part 3: Limits. Section 2: Limits for Harmonic Current Emissions (equipment input current ≤ 16 A per phase)



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2.0 APPLICABLE DOCUMENTS (continued)

- EN61000-3-3:1995/
A1:2001/A2:2002** - Electromagnetic Compatibility (EMC). Part 3: Limits. Section 3: Limitation of Voltage Fluctuations and Flicker in Low-voltage Supply Systems for Equipment with rated current ≤ 16 A
- EN61000-4-2:1995/
A1:1998/A2:2001** - Electromagnetic Compatibility for Industrial Process Measurement and Control Equipment. Part 2: Method of Evaluating Susceptibility to Electrostatic Discharge.
- EN61000-4-3: 2002/
A1:2002** - Electromagnetic Compatibility for Industrial Process Measurement and Control Equipment. Part 3: Radiated Electromagnetic Field Requirements.
- EN61000-4-4: 2004** - Electromagnetic Compatibility for Industrial Process Measurement and Control Equipment. Part 4: Electrical Fast Transient/Burst Requirements.
- EN61000-4-5: 1995/
A1:2001** - Electromagnetic Compatibility for Industrial Process Measurement and Control Equipment. Part 5: Surge Immunity.
- EN 61000-4-6:1996/
A1:2001** -Section 6: Conducted Disturbances Induced by Radio-Frequency Fields - Immunity Test
- EN 61000-4-8:1994/
A1:2001** -Section 8: Power Frequency Magnetic Field Immunity Requirements
- EN61000-4-11:2004** -Section 11: Voltage Dips and Short Interruptions



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3.0 GENERAL REQUIREMENTS

3.1 TEST ENVIRONMENT

All testing was performed at the Retlif Testing Laboratories Goffstown, New Hampshire facility. Each test method was performed in the environment specified within the test standard. Where the test environment deviated from that specified, it is noted in the applicable test method.

3.1.1 Shielded Enclosures

All testing which required the use of a shielded enclosure was performed in a solid steel, double wall, modular type. The attenuation characteristics of the enclosure were in accordance with MIL-STD-285. All input power lines to the enclosure were filtered utilizing filters manufactured in accordance with MIL-F-15733F and tested in accordance with MIL-STD-220A. The enclosure was equipped with a 0.63 mm brass sheet with an minimum area of 4 square meters, with the minimum dimension no less than 90 cm. The ground planes were continuously bonded to the enclosure wall with a DC bonding resistance of less than 2.5 milliohms. Test methods requiring anechoic treatment were performed in a room treated with a combination of pyramidal carbon impregnated foam absorber and ferrite tile.

3.1.2 Conducted Emissions

All conducted emissions testing described herein was performed on a conducting ground plane. The conducting ground plane for measuring AC power line conducted emissions consisted of a floor-earth grounded conducting surface. The conducting surface extended at least 0.5 M beyond the vertical projection (footprint) of the test sample. The ground plane was covered by insulating material 10 mm thick. The vertical reference plane was located 0.4 meters from the rear of the test sample. It was continuously bonded to the conducting ground plane.



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3.0 GENERAL REQUIREMENTS (continued)

3.1.3 Radiated Emissions

3.1.3.1 Preliminary

Preliminary radiated emissions measurements were performed in a shielded enclosure.

3.1.3.2 Formal

Formal radiated emissions testing was performed on an open area test site (OATS). The test site measured was covered with a conducting ground plane constructed of one quarter inch ground cloth. The equipment under test was placed in an RF transparent enclosure on top of a 1.2 M Diameter, flush mounted, metallic turntable. An 80 cm high non-metallic table was mounted to the turntable for placement of portable equipment. The test site met the test site attenuation requirements specified in CISPR 16 throughout the range of measurement frequencies.

3.2 TEST INSTRUMENTATION

A listing of all test instrumentation utilized is contained within each applicable test method. These listings indicate the model, manufacturer, frequency range, last calibration date and calibration due date of all instrumentation utilized. All instrumentation utilized was calibrated prior to use in accordance with the procedures set forth in Retlif Testing Laboratories standard manuals RCM-001 and RQM-001 which are in accordance with the requirements of ANSI/NCSL Z-540.

3.3 DETECTOR FUNCTION

For the conducted emissions testing described herein both Quasi-Peak and Average detector functions were utilized as specified in

EN55022:1998/A1:2001/A2:2003/EN55011:1998/A1:1999/A2:2002.

For the radiated emissions testing described herein a Quasi-Peak detector function was utilized as specified in

EN55022:1998/A1:2001/A2:2003/EN55011:1998/A1:1999/A2:2002.



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4.0 TEST SAMPLE DESCRIPTION

4.1 GENERAL

The test samples were four AC-DC Power Supplies, Model Number: GTM9200P35048/Serial Number: #1, Model Number: GTM9200P2313.3/Serial Number: #1, Model Number: GTM9200P1503.3/Serial Number: #2 and Model Number: GTM9200P20048/Serial Number: #2 manufactured by Globtek Inc. of North Bergen, New Jersey. Each test sample was powered by 230VAC, 50Hz, single phase.

4.2 PORT CONFIGURATIONS AND INPUT/OUTPUT CABLES

During testing the power and I/O ports of each AC-DC Power Supply were configured as follows:

CABLE FROM	LENGTH	S/U ¹	TYPE	CABLE ROUTED TO
Power Input	2m	U	3 Conductor	Mains
Output	0.2m	U	Multi Conductor	Load

¹Shielded or Unshielded

All ports not listed were unterminated.

4.3 LEADS TESTED

The following leads of the AC-DC Power Supply were tested during the course of this testing program as specified in each applicable test method:

- 230 VAC, 50 Hz - Hot
- 230 VAC, 50 Hz - Neutral



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5.0 TEST SAMPLE PARAMETERS

5.1 MODE OF OPERATION

During all testing, the AC-DC Power Supplies were converting AC to DC power. DC output: EUT 1: 48 volts, 73 amps. EUT 2: 3.3 volts, 70 amps. EUT 3: 3.3 volts, 45.45amps. EUT 4: 48 volts, 4.17 amps.

5.1.1 Support Equipment

EUT	DESCRIPTION	MANUFACTURER	MODEL NUMBER
1	Resistor Load	N/A	6.6 ohm
2	Resistor Load	N/A	0.5 ohm
3	Resistor Load	N/A	.07 ohm
4	Resistor Load	N/A	9.2ohms

5.1.2 Monitoring Equipment

The EUT was monitored by visually observing the LED during the course of testing. The illuminated LED indicated that the output was on.



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5.0 TEST SAMPLE PARAMETERS (continued)

5.3 Immunity Test Performance Criteria

The following standard criteria, as stated in EN55024:1998/A1:2001/A2:2003/A1:2001/A2:2003, are the minimum acceptable performance allowed and are the basis used to determine the minimum compliance of the EUT with the requirements of the standard. The manufacturer's criterion for performance was used to determine acceptance of the EUT.

<u>TEST</u>	<u>CRITERION</u>
EN 61000-4-2:1995/A1:1998/A2:2001	Performance Criterion B
EN 61000-4-3:1996:2002/A1:2002	Performance Criterion A
EN 61000-4-4:1995:2004	Performance Criterion B
EN 61000-4-5:1995:1995/A1:2001	Performance Criterion B
EN 61000-4-6:1996:1996/A1:2001	Performance Criterion A
EN61000-4-8:1994/A1:2001/A2:2003	Performance Criterion A
EN 61000-4-11: 2004	Voltage Dips, Performance Criterion B
	Voltage Dips, Performance Criterion C
	Voltage Interruption, Performance Criterion C



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5.2 PERFORMANCE CRITERIA

EN55024:1998/A1:2001/A2:2003, Performance Criterion A: The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

EN55024:1998/A1:2001/A2:2003, Performance Criterion B: After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test. If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

EN55024:1998/A1:2001/A2:2003, Performance Criterion C: Loss of function is allowed; provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

Manufacturer's EUT Performance Criterion: In order to be considered acceptable, the LED must stay lit.



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5.2 PERFORMANCE CRITERIA (continued)

EN60601-1-2 CLAUSE 36.202 COMPLIANCE CRITERIA

Under the test conditions specified in 36.202, the equipment or system shall be able to provide the essential performance and remain safe. The following degradation associated with essential performance and safety shall not be allowed:

- component failures;
- changes in programmable parameters
- reset to factory defaults (manufacturer's presets);
- change of operating mode;
- false alarms;
- cessation or interruption of any intended operation, even if accompanied by an alarm;
- initiation of any unintended operation, including unintended or uncontrolled motion, even if accompanied by an alarm;
- error of a displayed numerical value sufficiently large to affect diagnosis or treatment;
- noise on a waveform in which the noise would interfere with diagnosis, treatment or monitoring;
- artefact or distortion in an image in which the artefact would interfere with diagnosis, treatment or monitoring;
- failure of automatic diagnosis or treatment equipment and systems diagnose or treat, even if accompanied by an alarm.

For equipment and systems with multiple functions, the criteria apply to each function, parameter and channel.

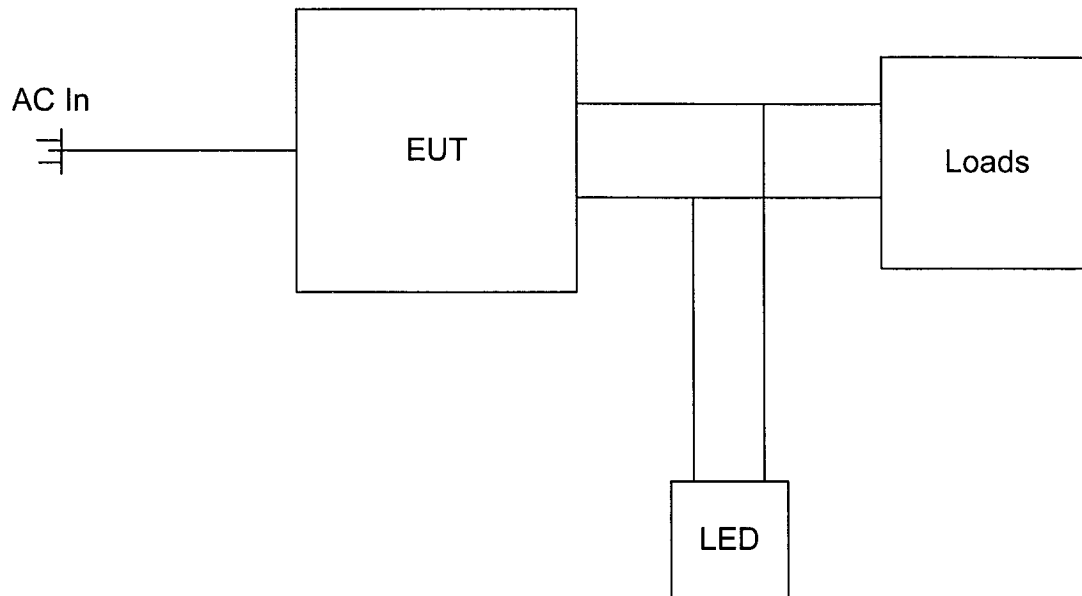
The equipment or system may exhibit degradation of performance (e.g. deviation from manufacturer's specifications) that does not affect essential performance or safety.



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FIGURE 1 - TEST SAMPLE BLOCK DIAGRAM



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6.0 TEST METHODS PERFORMED AND TEST RESULTS

6.1 TEST METHOD SUMMARY

The tests outlined in the table below were performed in accordance with the requirements of IEC 60601-1-2:2001/EN60601-1-2:2002, EN55022:1998/A1:2001/A2:2003, EN55024:1998/A1:2001/A2:2003, EN61000-3-2:2001 and EN61000-3-3:1995:

PARAGRAPH	STANDARD	TEST METHOD	RESULTS
7.0	EN60601-1-2/ EN55011:1998/ A1:1999/A2:2002 EN55022:1998/A1:2001/ A2:2003	Conducted Emissions, Class B	Complied
8.0	EN60601-1-2/ EN55011:1998/ A1:1999/A2:2002 EN55022:1998/A1:2001/ A2:2003	Radiated Emissions, Class B	Complied
9.0	EN 61000-3-2:2001	Harmonics	Complied
10.0	EN61000-3-3:1995/ A1:2001/A2:2002	Flicker	Complied
11.0	EN61000-4-2:1995/ A1:1998/A2:2001	Electrostatic Discharge	Complied
12.0	EN61000-4-3:2002/ A1:2002	Radiated Immunity	Complied
13.0	EN 61000-4-4:2004	Electrical Fast Transient/Burst, Power Leads	Complied
14.0	EN61000-4-5:1995/ A1:2001	Surge Immunity, Power Leads	Complied
15.0	EN 61000-4-6:1996/ A1:2001	Conducted Immunity, Power Leads	Complied
16.0	EN 61000-4-8:1994/A1:2001	Magnetic Immunity	Complied
17.0	EN61000-4-11:2004	Voltage Dips and Interruption	Complied

See individual test methods contained in paragraphs 7.0 through 17.0 of this test report for a full description of the test procedures utilized and the results obtained.



Retlif Testing Laboratories

Test Report Number R-4455N3

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Retlif Testing Laboratories

Test Report Number R-4455N3

7.0 CONDUCTED EMISSIONS,

EN55022:1998/A1:2001/A2:2003/EN55011:1998/A1:1999/A2:2002

PURPOSE

The purpose of this test was to record the emissions emanating from the test sample and appearing on the input power leads.

TEST SETUP

The test sample setup is shown in the attached photograph. The general test setup is shown in Retlif Testing Laboratories Drawing, per the requirements in EN55022:1998/A1:2001/A2:2003/EN55011:1998/A1:1999/A2:2002. The test sample was placed on a wooden test stand 0.8 meters above the floor ground plane and 0.4 meters from the wall ground plane. The test sample was at least 0.8 meters from all other grounded surfaces. The input power cord was connected to a floor grounded 50ohm/50μH artificial mains network (LISN), which was located a minimum of 0.8 meters from the test sample. The test sample was connected to the artificial mains network by a cord specified by the manufacturer, and if the cord length exceeded 1 meter, it was shortened by folding at the center into a 40cm bundle until the length was equal to 1 meter.

MEASUREMENTS

With the test samples configured as described above, a spectrum analyzer or receiver was connected to the mains network. The RF voltages were then measured on each power lead specified below, utilizing the peak or quasi-peak detector. These measurements were taken over the frequency range of 150kHz to 30MHz. The obtained readings were then compared to the average detector limits. If the peak/quasi-peak readings were below the average limit, the test samples were compliant, and no further testing was needed. However, if the peak/quasi-peak readings were above the average limit but below the quasi-peak limit, additional measurements had to be taken using the average detector, with the readings compared to the average limit. The following leads were tested:

- 230 VAC, 50Hz, Hot
- 230 VAC, 50Hz, Neutral



Retlif Testing Laboratories

Test Report Number R-4455N3

7.0 CONDUCTED EMISSIONS,

EN55022:1998/A1:2001/A2:2003/EN55011:1998/A1:1999/A2:2002

TEST LIMITS

The limits shown in the table below were used to determine test sample compliance.

FREQUENCY RANGE 150kHz to 30MHz	EN55022 CLASS B/EN55011 GROUP 1, CLASS B LIMITS [dB (μV)]	
	Quasi-Peak	Average
0.15MHz to 0.50MHz	66.0 to 56.0*	56.0 to 46.0*
0.50MHz to 5.00MHz	56.0	46.0
5.00MHz to 30.0MHz	60.0	50.0

(*) Limit decreases linearly with the logarithm of frequency

TEST RESULTS

After the modification listed on page four of this report, the Models GTM9200P35048 and GTM9200P2313.3 were tested and complied with the Class B requirements specified for this test method. See attached data for a full presentation of the results obtained.



Retlif Testing Laboratories

Test Report Number R-4455N3

TEST SETUP PHOTOGRAPHS
CONDUCTED EMISSIONS
EUT 1



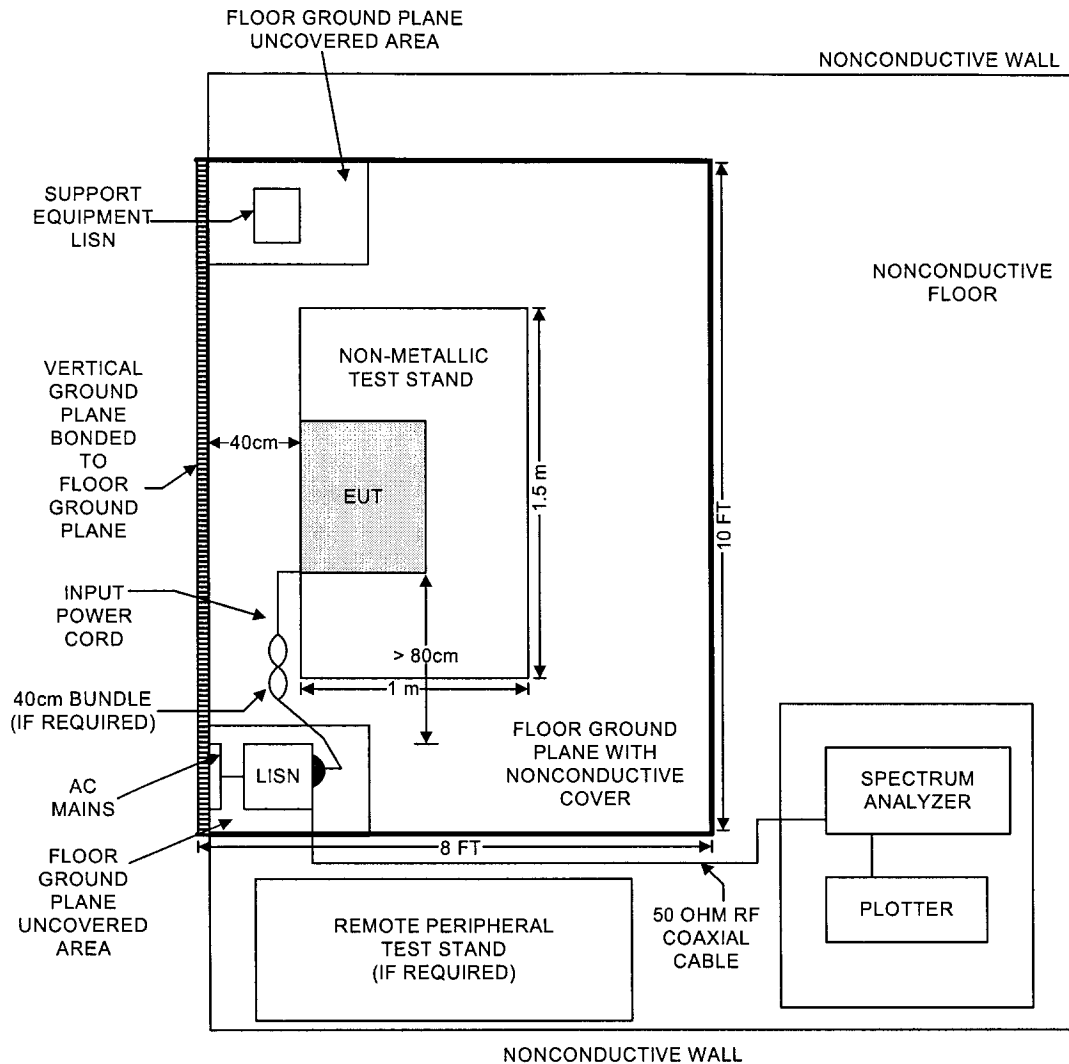
EUT 2



Retlif Testing Laboratories

Test Report Number R-4455N3

TEST SETUP DRAWING-CONDUCTED EMISSIONS



-- DRAWING IS NOT TO SCALE --

NOTES:

- 1) THE TOP OF THE NON-METALLIC TEST STAND IS 0.8 METERS ABOVE THE FLOOR GROUND PLANE.
- 2) THE FRONT AND SIDE EDGES OF THE NON-METALLIC TEST STAND ARE MORE THAN ONE METER DISTANT FROM ANY GROUND/REFLECTING VERTICAL SURFACE.
- 3) THE LISN IS BONDED TO THE FLOOR GROUND PLANE.
- 4) THE VERTICAL GROUND PLANE IS BONDED TO THE FLOOR GROUND PLANE AT 1 FT INTERVALS.



Retlif Testing Laboratories

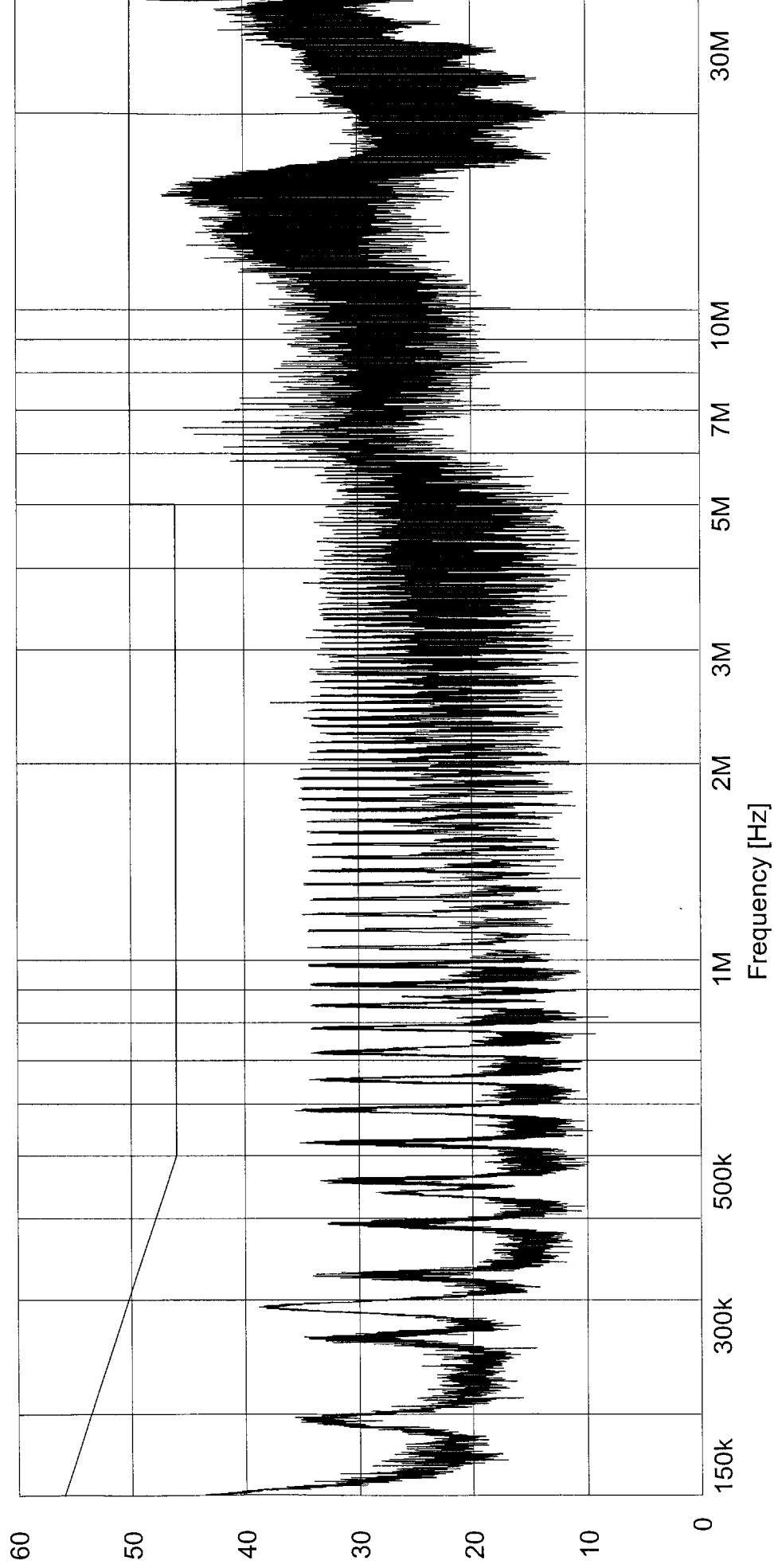
Test Report Number R-4455N3

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:		Conducted Emissions 150 kHz to 30 MHz	
Customer:	TUV America	Test Sample:	Globtek AC-DC Power Supply
Model No:	GTM9200P2313.3	Serial No:	1
Test Specification:	EN60601-1-2, EN55011/EN55022 Class B		
Operating Mode:	Output 3.3VDC, 70A		
Notes:	Lead Tested: 230 VAC 50 Hz Hot Peak Readings to Average Limits.		
Job No:	R-4455N3		
Technician:	T. Hannemann		
Date:	June 20, 2005		

Level [dBμV]

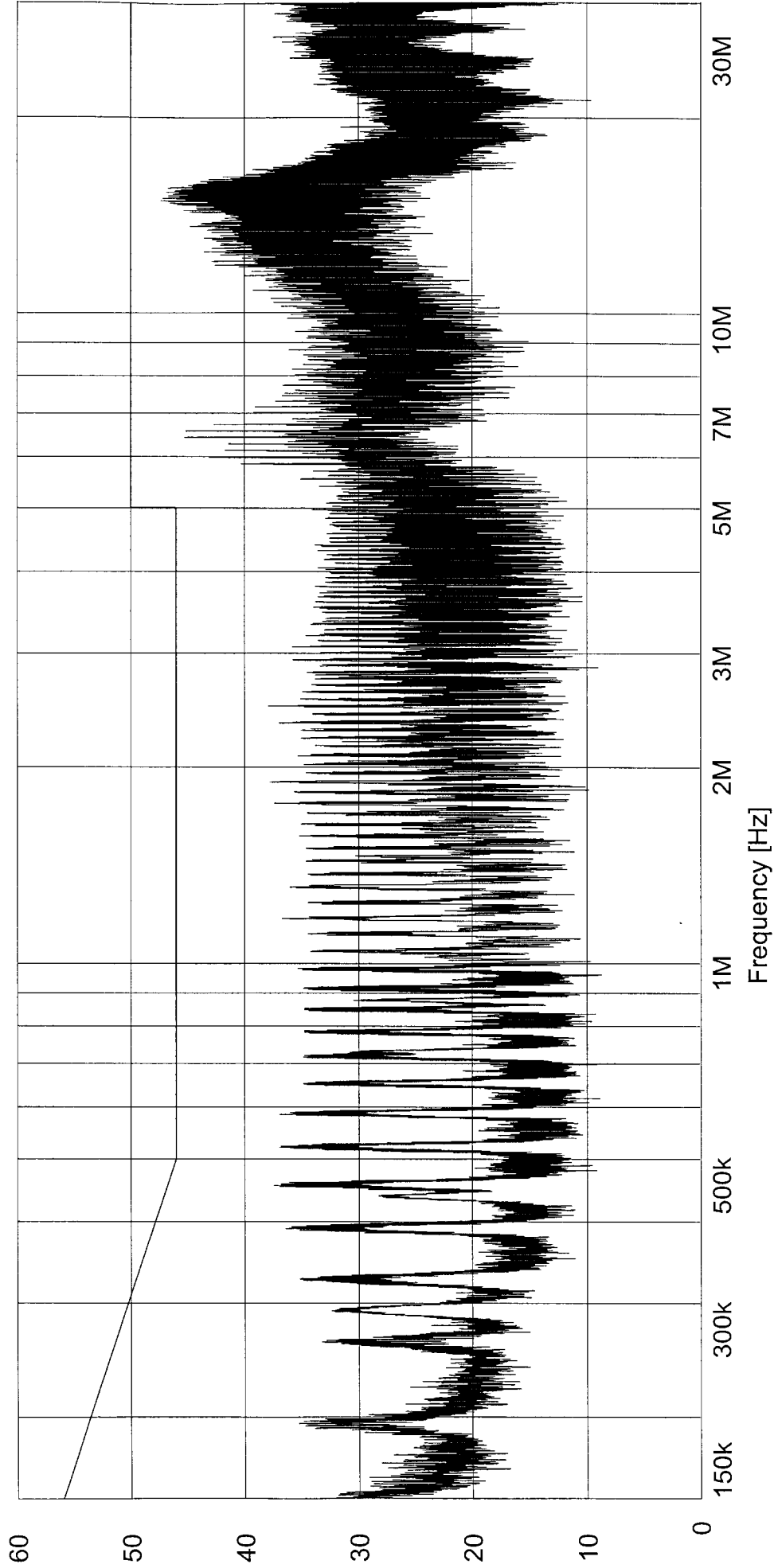


RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:		Conducted Emissions 150 kHz to 30 MHz	
Customer:	TUV America	Test Sample:	Globtek AC-DC Power Supply
Model No:	GTM9200P2313.3	Serial No:	1
Test Specification:	EN60601-1-2, EN55011/EN55022 Class B		
Operating Mode:	Output 3.3VDC, 70A		
Notes:	Lead Tested: 230 VAC 50 Hz Neutral Peak Readings to Average Limits.		
Job No:	R-4455N3		
Technician:	T. Hannemann		
Date:	June 20, 2005		

Level [dBμV]

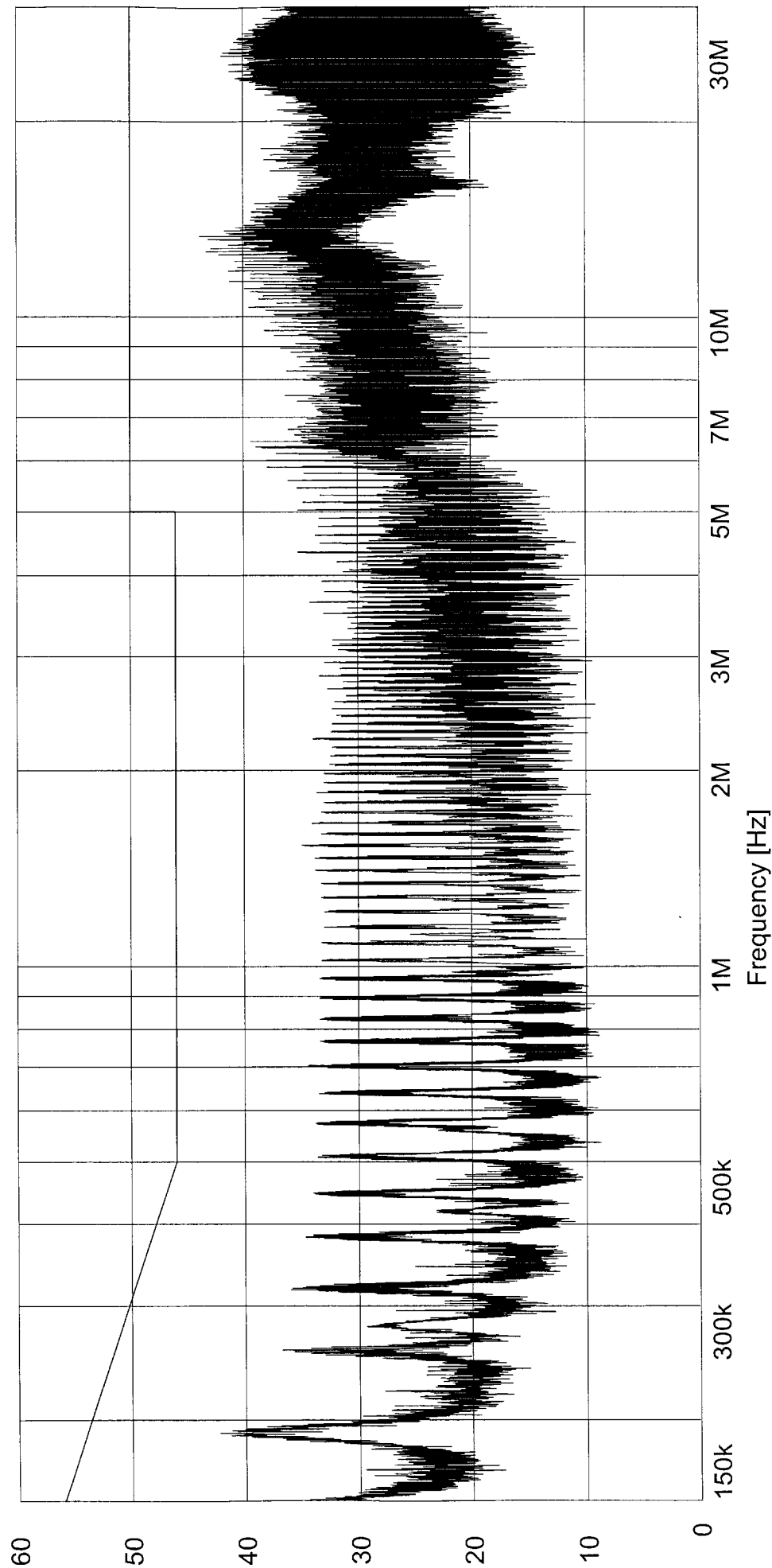


RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Conducted Emissions 150 kHz to 30 MHz		
Customer:	TUV America	Test Sample:	Globtek AC-DC Power Supply
Model No:	GTM9200P35048	Serial No:	1
Test Specification:	EN60601-1-2, EN55011/EN55022 Class B		
Operating Mode:	Output 48VDC, 7.3A		
Notes:	Lead Tested: 230 VAC 50 Hz Hot Peak Readings to Average Limits.		
Job No:	R-4455N3		
Technician:	T. Hannemann		
Date:	June 20, 2005		

Level [dBμV]

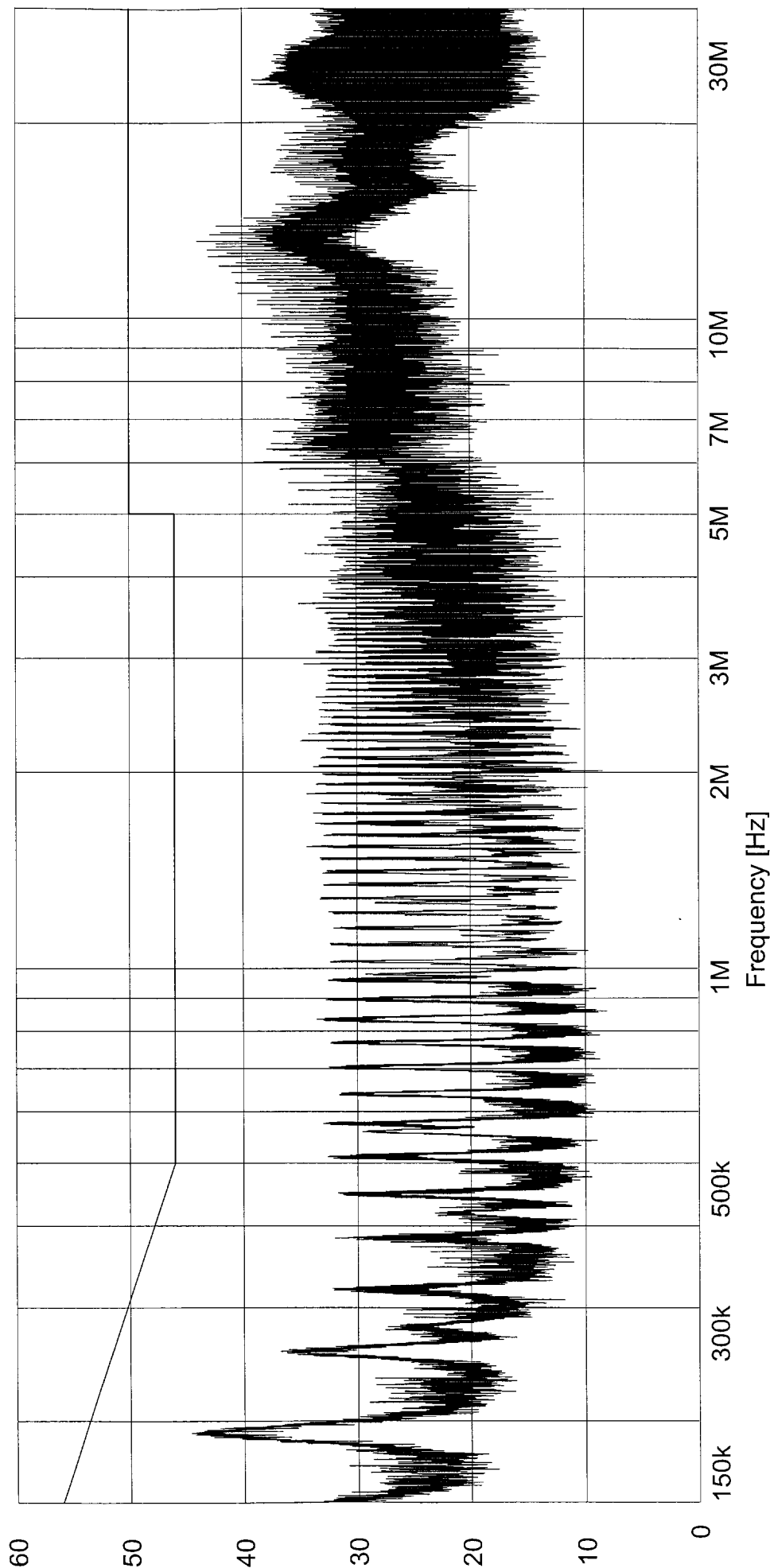


RETILF TESTING LABORATORIES

EMISSIONS DATA SHEET

Conducted Emissions 150 kHz to 30 MHz	
Test Method:	Customer:
TUV America	Job No:
Model No:	Technician:
GTM9200P35048	T. Hannemann
Test Specification:	Date:
EN60601-1-2, EN55011/EN55022 Class B	June 20, 2005
Operating Mode:	
Output 48VDC, 7.3A	
Notes:	
Lead Tested: 230 VAC 50 Hz Neutral	Peak Readings to Average Limits.

Level [dBμV]



TEST EQUIPMENT LISTING
CONDUCTED EMISSIONS

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
4028	Isolation Transformer	Acme	N/A	120x240	01/31/2005	01/31/2006
4029	Open Area Test Site	Retlif	3 / 10 Meters	RNH	11/14/2003	11/14/2006
5038	10 DB Atten. (50 ohm)	Fluke	DC - 12.4 GHz	Y9304	02/07/2005	02/07/2006
713	EMI Test Receiver	Rohde & Schwarz	20 Hz - 26.5 GHz	ESI26	03/22/2005	03/22/2006



Retlif Testing Laboratories

Test Report Number R-4455N3

8.0 RADIATED EMISSIONS,

EN55024:1998/A1:2001/A2:2003/EN55011:1998/A1:1999/A2:2002

PURPOSE

The purpose of this test was to determine the magnitude of the radiated emissions emanating from the test sample.

TEST SETUP

The test sample setup is shown in the attached photograph. The general test setup is shown in Retlif Testing Laboratories Drawing, per the requirements in EN55022:1998/A1:2001/A2:2003/EN55011:1998/A1:1999/A2:2002. The test sample was placed on a 0.8 meter high wooden test stand above the ground plane of the open field test site. The test stand is placed directly on the ground mounted turntable. The turntable positions are relative to the EUT as follows: When facing the EUT the front is at 0 °, the rear is at 180 °, and the left side is at 270 °. The turn stand was situated such that the boundary of the test sample was located 10 meters from the measuring antenna. The test sample was arranged on the test stand in accordance with the manufacturer's instructions.

MEASUREMENTS

With the test samples arranged as described above, a spectrum analyzer or receiver was connected to the measuring antenna. The emissions from the test samples were measured over the frequency range of 30MHz to 1000MHz with the test antenna specified below:

Frequency Range
30MHz to 1GHz

Antenna
Biconilog

At each frequency upon which an emission from the test samples was observed the following steps were performed to maximize the field strength of the emission:

1. The antenna height was varied from 1 to 4 meters.
2. The antenna was both horizontally and vertically polarized.
3. The test samples was rotated about its vertical axis.
4. The test samples and interconnecting cables were reoriented within the confines of the manufacturer's instructions.



Retlif Testing Laboratories

Test Report Number R-4455N3

8.0 RADIATED EMISSIONS,
EN55022:1998/A1:2001/A2:2003/EN55011:1998/A1:1999/A2:2002 (continued)

TEST LIMITS

The limits shown in the table below were used to determine test sample compliance.

FREQUENCY RANGE	EN55022, CLASS B/EN55011 GROUP 1, CLASS B QUASI-PEAK LIMITS [dB (μV/M)], @ 10 METERS
30.0MHz to 230.0MHz	30.0
230.0MHz to 1000.0MHz	37.0

TEST RESULTS

The test samples complied with the Class B requirements specified for this test method. See attached data for a full presentation of the results obtained.

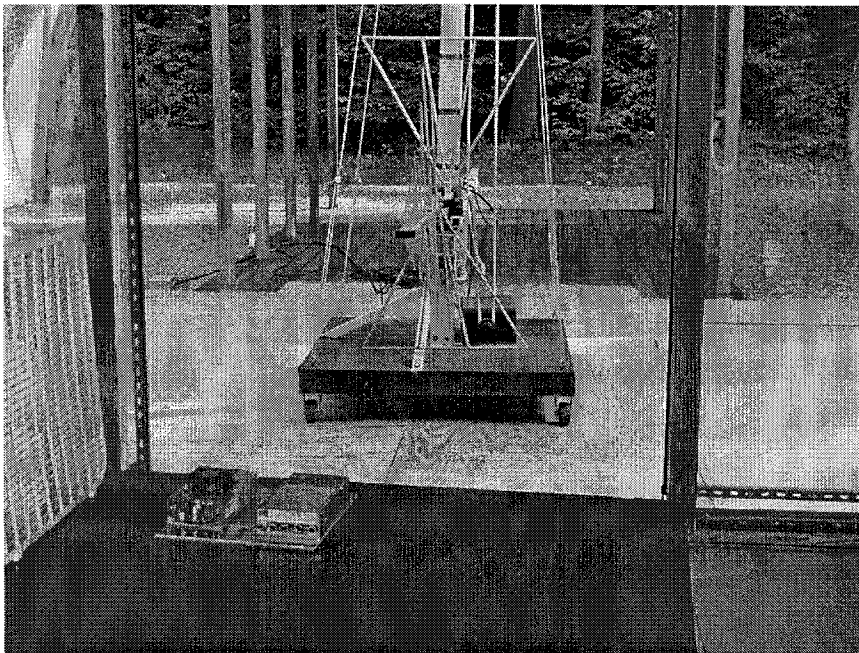


Retlif Testing Laboratories

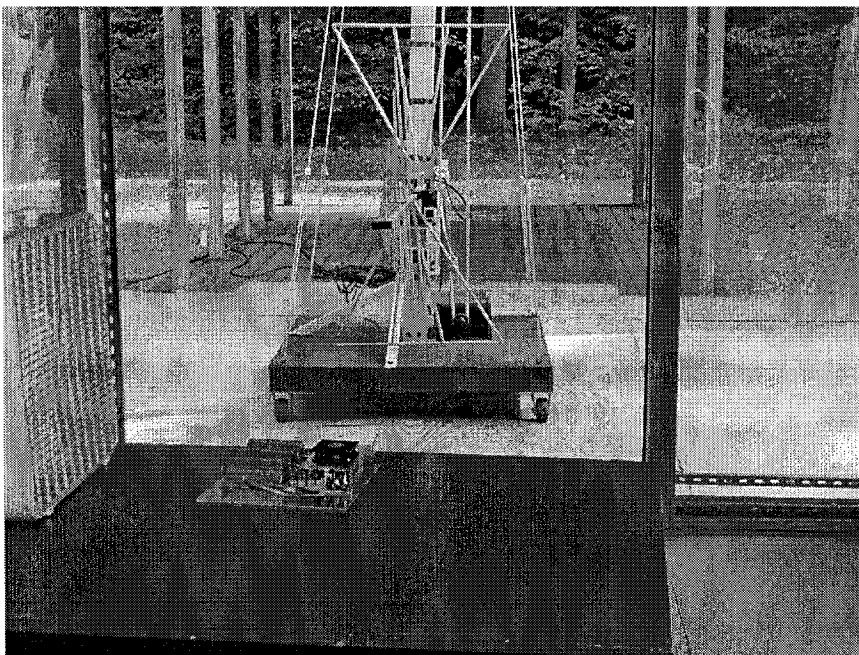
Test Report Number R-4455N3

TEST SETUP PHOTOGRAPHS RADIATED EMISSIONS

EUT 1



EUT 2

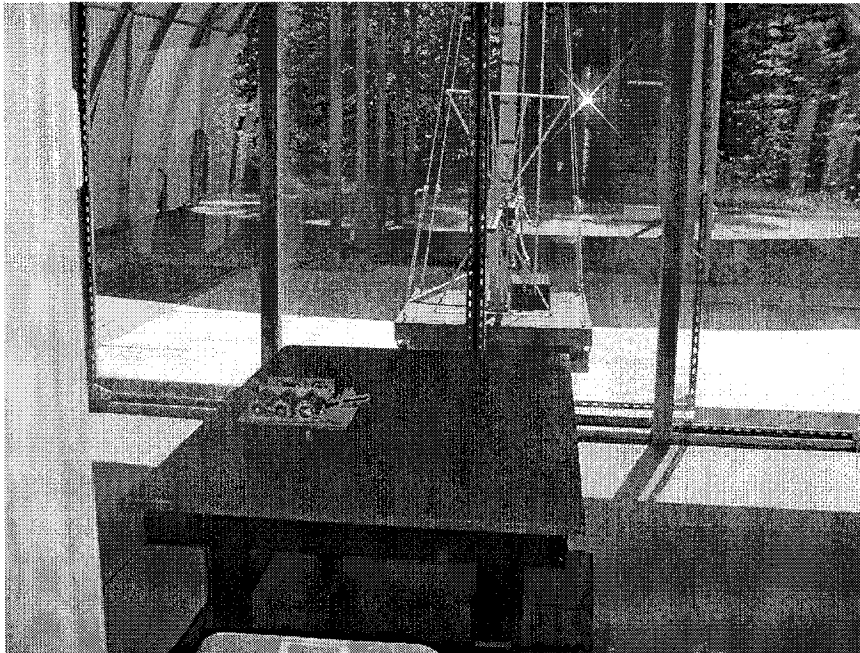


Retlif Testing Laboratories

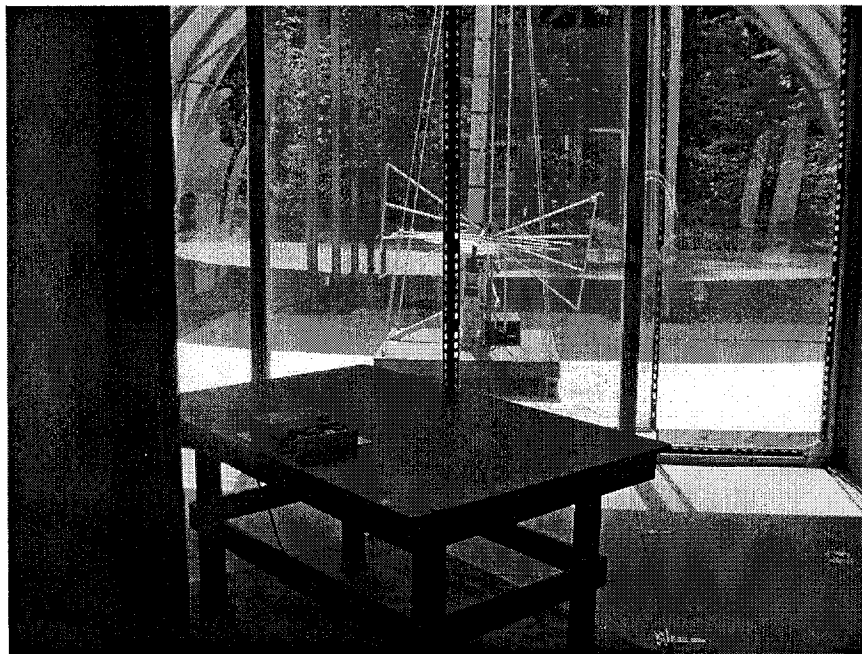
Test Report Number R-4455N3

**TEST SETUP PHOTOGRAPHS
RADIATED EMISSIONS**

EUT 3



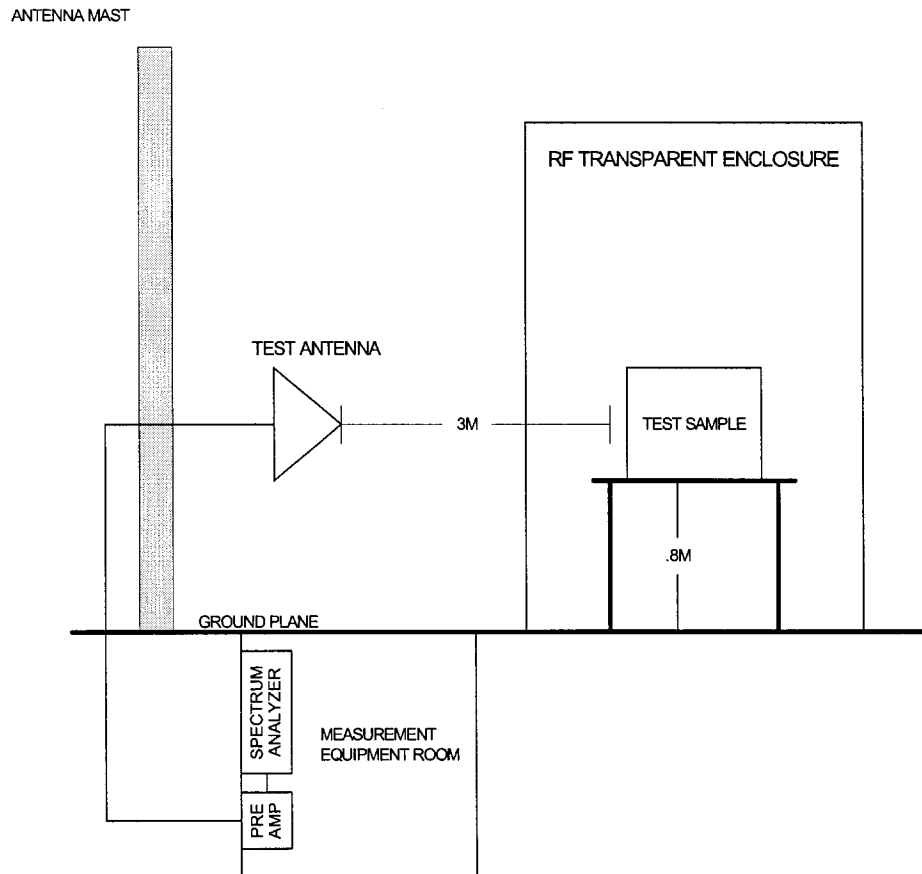
EUT 4



Retlif Testing Laboratories

Test Report Number R-4455N3

DRAWING NO. RCISPR11-RE GENERAL TEST SETUP, TEST METHOD
RADIATED EMISSIONS



Retlif Testing Laboratories

Test Report Number R-4455N3

EMISSIONS DATA SHEET

Test Method:	Radiated Emissions 30 MHz to 1 GHz		
Customer	TUV America	Job No.	R-4455N3
Test Sample	Globtek AC-DC Power Supply		
Model No.	GTM9200P2313.3	Serial No.	1
Test Specification:	EN60601-1-2, EN55011/EN55022 Class B Paragraph 36.201, Table 6/Table 4		
Operating Mode:	Output 3.3VDC, 70A		
Technician:	T. Hannemann	Date:	June 8, 2005
Notes:	Test Distance: 3 Meters Detector: Quasi-Peak		

[illegible]

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet.

EMISSIONS DATA SHEET

Radiated Emissions 30 MHz to 1 GHz

TUV America

Job No.

R-4455N3

Globtek AC-DC Power Supply

GTM9200P1503.3

Serial No.

2

EN60601-1-2, EN55011/EN55022 Class B

Paragraph 36.201, Table 6/Table 4

Output 3.3VDC, 45.45A

T. Hannemann

✓

Date:

June 8, 2005

Test Distance: 3 Meters

Detector: Quasi-Peak

[illegible]

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet.

TEST EQUIPMENT LISTING **RADIATED EMISSIONS**

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
3119A	Pre-Amplifier	Retlif	10 kHz - 1 GHz	RET-PA-SW	07/23/2004	07/23/2005
4029B	Test Site Attenuation	Retlif	3 / 10 Meters	RNH	12/03/2004	12/03/2005
4202	Biconilog	EMCO	26 MHz - 2 GHz	3142	12/13/2004	12/13/2005
713	EMI Test Receiver	Rohde & Schwarz	20 Hz - 26.5 GHz	ESL26	03/22/2005	03/22/2006



Retlif Testing Laboratories

Test Report Number R-4455N3

9.0 HARMONIC CURRENT EMISSIONS, CLASS A, EN 61000-3-2:2001

PURPOSE

The purpose of this test method was to determine the frequency and level of the Harmonic components of the input current which may be produced by the EUT.

TEST SETUP AND MEASUREMENTS

The equipment setup is shown in the attached photograph. The general test setup is shown in Retlif Testing Laboratories Drawing No. EN61000-3-2, per the requirements in EN 61000-3-2:2000. The EUT input power cord was plugged into the test outlet on the Harmonic current measurement system receiver. The receiver was connected to the mains voltage source, which was maintained within $\pm 2\%$ of the EUT Rated Voltage and within $\pm 0.5\%$ of nominal frequency. The EUT was switched on and the level and frequency of the input current Harmonics were recorded and compared to the specified limit.

LIMITS FOR CLASS A EQUIPMENT

HARMONIC COMPONENT NUMBER —	MAXIMUM PERMISSIBLE HARMONIC CURRENT AMPS
2	1.08
3	2.30
4	0.43
5	1.14
6	0.30
7	0.77
$8 \leq n \leq 40$	$0.23 \times 8/n$
9	0.40
10 (see 8)	(see 8)
11	0.33
12 (see 8)	(see 8)
13	0.21
14 (see 8)	(see 8)
$15 \leq n \leq 39$	$0.15 \times 15/n$

TEST RESULTS

The EUT meets the requirements of the test specification. No Harmonic components of the input current exceeded the maximum permissible values. See attached data for a full presentation of the results obtained.

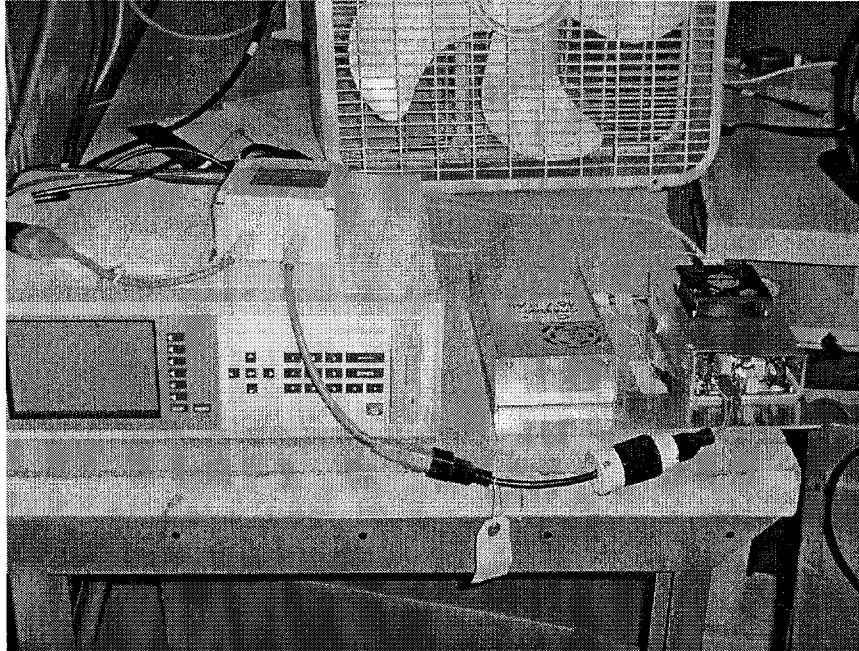


Retlif Testing Laboratories

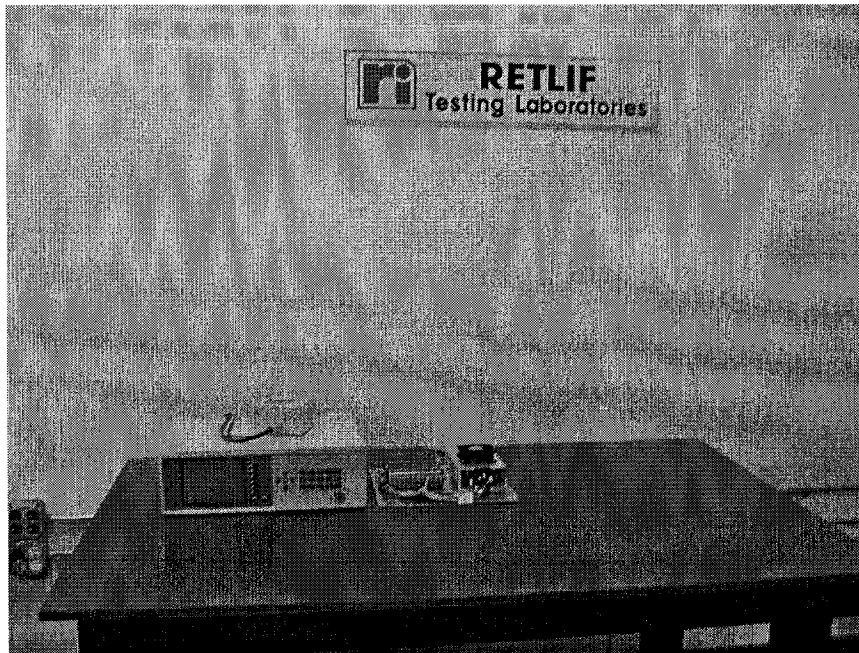
Test Report Number R-4455N3

**TEST SETUP PHOTOGRAPH
HARMONIC CURRENT EMISSIONS**

EUT 1



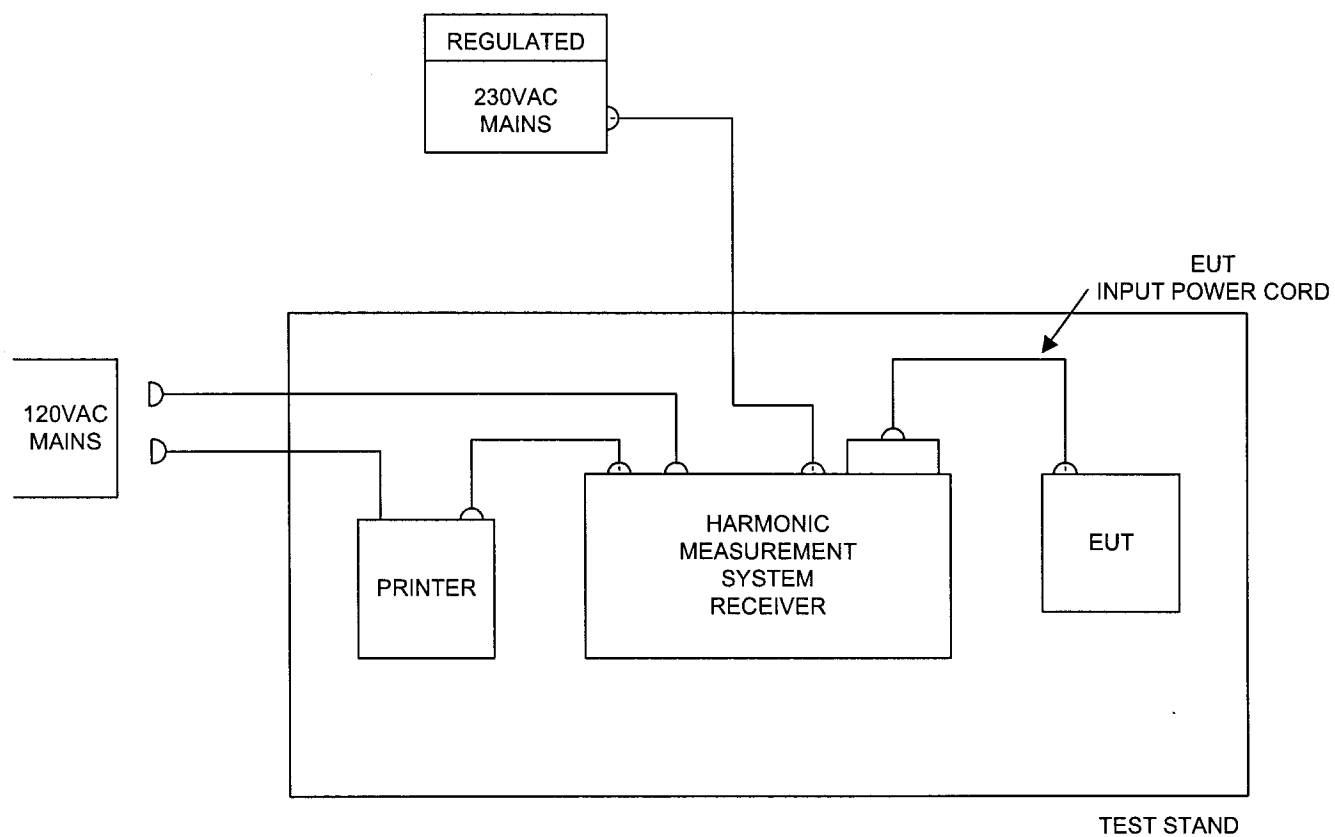
EUT 2



Retlif Testing Laboratories

Test Report Number R-4455N3

DRAWING NO. 61000-3-2 GENERAL TEST SETUP. TEST METHOD
HARMONIC CURRENT EMISSIONS



Retlif Testing Laboratories

Test Report Number R-4455N3

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:		Harmonics	
Customer:	TUV America	Test Sample:	Globtek AC-DC Power Supply
Model No:	GTM9200P2313.3	Serial No:	1
Test Specification:	EN61000-3-2: 2001	Job No:	R-4455N3
Operating Mode:	Output 3.3VDC, 70A	Technician:	T. Hanneemann
Notes:	Lead Tested: Main Power 230 VAC 50 Hz	Date:	June 25, 2005

Combinova

Analyzer 300

2005-06-24 21:44:13

Current Harmonics

Setup: DEFAULT_H Gen Setting: 1(1) U: 229.72 V fu: 49.998 Hz
 Live Analysed periods: 6 I: 1.4305 A P: 308.2 W
 Module: M1 Limit: Class A (EN61000_A14) I1: 1.3964 A

Note:

THD=22.20 % (PF=0.938) PASSED

No	A	Lim A	No	A	Lim A	No	A	Lim A
1	1.396		15	0.042	0.150	29	0.001	0.078
2	0.002	1.081	16	0.001	0.115	30	0.001	0.061
3	0.286	2.303	17	0.027	0.133	31	0.003	0.073
4	0.001	0.431	18	0.001	0.102	32	0.000	0.058
5	0.038	1.141	19	0.014	0.119	33	0.003	0.068
6	0.001	0.300	20	0.000	0.092	34	0.000	0.054
7	0.068	0.771	21	0.020	0.107	35	0.003	0.064
8	0.000	0.230	22	0.000	0.084	36	0.000	0.051
9	0.040	0.401	23	0.006	0.098	37	0.003	0.061
10	0.002	0.184	24	0.000	0.077	38	0.000	0.048
11	0.025	0.330	25	0.019	0.090	39	0.001	0.058
12	0.001	0.154	26	0.001	0.071	40	0.000	0.046
13	0.047	0.210	27	0.006	0.083			
14	0.002	0.132	28	0.002	0.066			
Current range:		3 Ap						

App1: DEFAULT

RETLIE TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:		Harmonics	
Customer:	TUV America	Test Sample:	Globtek AC-DC Power Supply
Model No:	GTM9200P35048	Serial No:	1
Test Specification:	EN61000-3-2: 2001	Technician:	T. Hannemann
Operating Mode:	Output 48VDC, 7.3A	Date:	June 27, 2005
Notes:	Lead Tested: Main Power 230 VAC 50 Hz		

Combinova Analyzer 300 2005-06-27 19:44:50

Current Harmonics

Setup: DEFAULT_H Live Module: M1
 Gen setting: 1(1) U: 228.31 V fu: 50.015 Hz
 Analysed periods: 6 I: 1.784 A P: 0.387 kW
 Limit: Class A (EN61000_A14) I1: 1.754 A

Note: THD=18.35 % (PF=0.949) PASSED

No	A	Lim A	No	A	Lim A	No	A	Lim A
1	1.754		15	0.028	0.151	29	0.002	0.078
2	0.003	1.088	16	0.002	0.116	30	0.001	0.062
3	0.259	2.317	17	0.032	0.133	31	0.003	0.073
4	0.001	0.433	18	0.001	0.103	32	0.000	0.058
5	0.122	1.148	19	0.020	0.119	33	0.002	0.069
6	0.001	0.302	20	0.002	0.093	34	0.000	0.055
7	0.097	0.776	21	0.027	0.108	35	0.003	0.065
8	0.001	0.232	22	0.000	0.084	36	0.000	0.052
9	0.061	0.403	23	0.012	0.099	37	0.003	0.061
10	0.003	0.185	24	0.001	0.077	38	0.000	0.049
11	0.055	0.332	25	0.010	0.091	39	0.001	0.058
12	0.002	0.154	26	0.001	0.071	40	0.000	0.046
13	0.043	0.212	27	0.001	0.084			
14	0.002	0.132	28	0.002	0.066			
Current range:		10 Ap						

Appl: DEFAULT

EQUIPMENT LIST

HARMONICS

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
5048	Power Meas. Sys. Analyzer	Combinova	N/A	300	9/9/2004	9/9/2005



Retlif Testing Laboratories

Test Report Number R-4455N3

10.0 VOLTAGE FLUCTUATIONS AND FLICKER, EN61000-3-3:1995/A1:2001/A2:2002

PURPOSE

The purpose of this test method was to examine voltage fluctuations and flicker produced by the EUT and impressed on the public mains system.

TEST SETUP AND MEASUREMENTS

The equipment setup is shown in the attached photograph and drawing. The EUT input power cord was plugged into the test outlet on the Flickermeter. The Flickermeter was connected to the mains voltage. The EUT was turned on and the voltage fluctuations and flicker produced were measured and compared to the specified limits.

TEST RESULTS

The EUT meets the specified requirements of the test specification. See attached data for a full presentation of the results obtained.

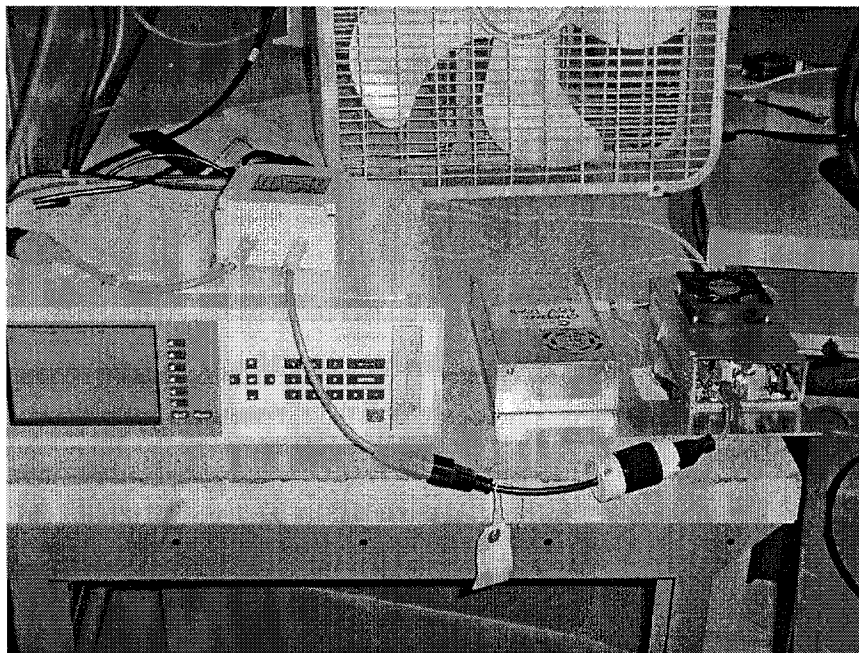


Retlif Testing Laboratories

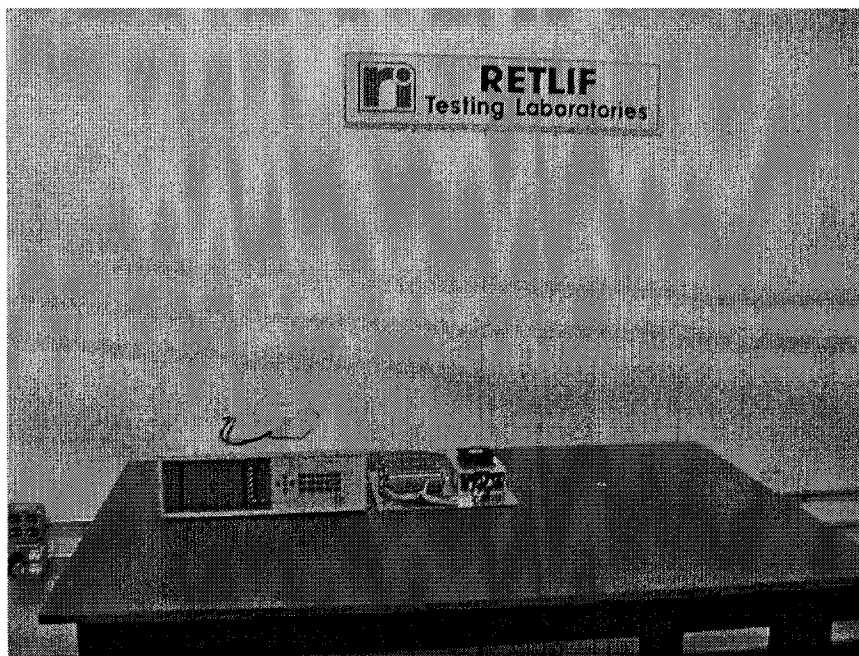
Test Report Number R-4455N3

**TEST SETUP PHOTOGRAPH
VOLTAGE FLUCTUATIONS AND FLICKER**

EUT 1



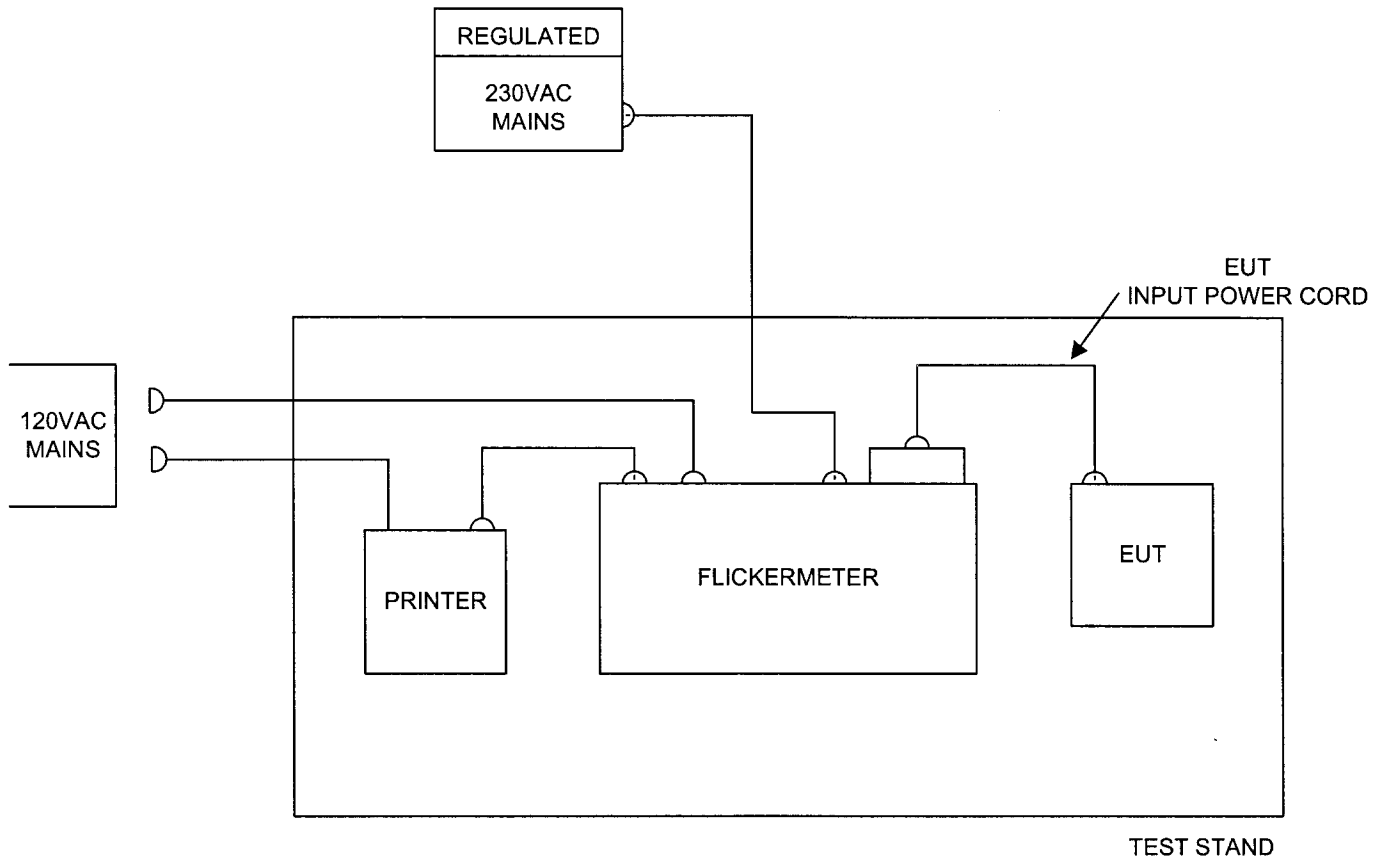
EUT 2



Retlif Testing Laboratories

Test Report Number R-4455N3

DRAWING NO. 61000-3-3 GENERAL TEST SETUP, TEST METHOD
VOLTAGE FLUCTUATIONS AND FLICKER



Retlif Testing Laboratories

Test Report Number R-4455N3

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Flicker	Job No:	R-4455N3
Customer:	TUV America	Technician:	T. Hannemann
Model No:	GTM9200P2313.3	Date:	June 25, 2005
Test Specification:	EN61000-3-3: 1995		
Operating Mode:	Output 3.3VDC, 70A		
Notes:	Lead Tested: Main Power 230 VAC 50 Hz		

Combinova Analyzer 300 2005-06-25 00:02:50

Extreme Flicker-I M1

Note:

Numerical Reference Impedance
 U: 229.6 V I: 1.431 A f: 49.999 Hz PF: 0.936

EVALUATION:

Observation time	Short	Long	Limit
Maximum relative voltage change	10	120 min	4
Max rel steady state voltage change		0.28 %	3
Duration of d(t) > 3 %		0.20 %	0.2
Short term flicker severity		0.00 s	1.00
Long term flicker severity	---	0.07	0.65

Based on 12 (12) short term cycles

PASSED

Measurement completed

Appl: DEFAULT

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

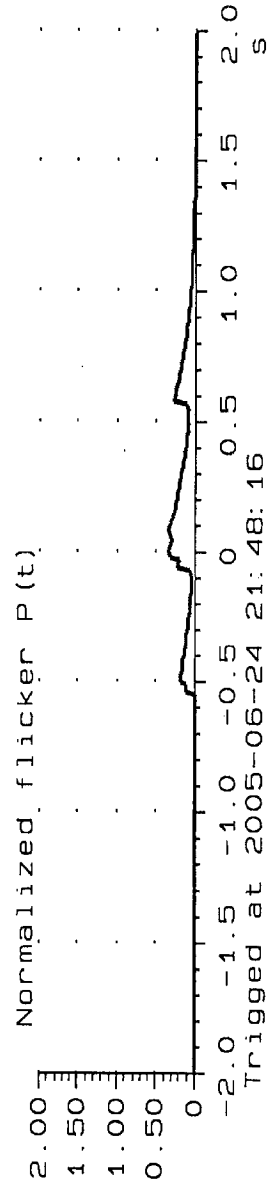
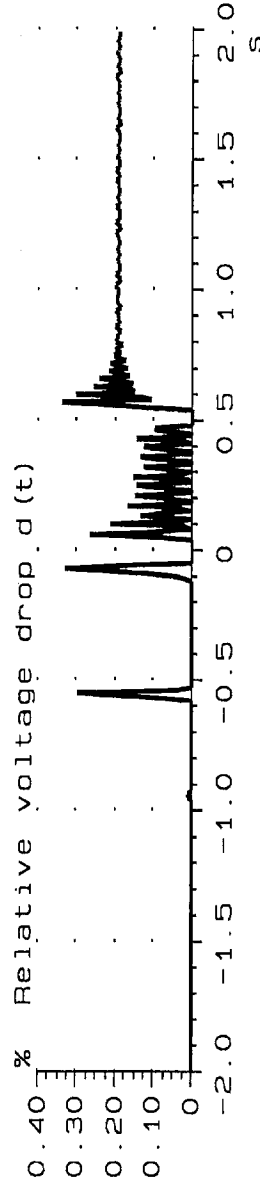
Test Method:	Flicker	Job No:	R-4455N3
Customer:	TUV America	Test Sample:	Globtek AC-DC Power Supply
Model No:	GTM9200P2313.3	Serial No:	1
Test Specification:	EN61000-3-3: 1995	Technician:	T. Hannemann
Operating Mode:	Output 3.3VDC, 70A	Date:	June 25, 2005
Notes:	Lead Tested: Main Power 230 VAC 50 Hz		

Combinova Analyzer 300 2005-06-25 00:03:25

Extreme Flicker-I M1

Note:

Numerical Reference Impedance
 U: 229.6 V I: 1.431 A f: 49.999 Hz PF: 0.936



Appl: DEFAULT

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Flicker	Job No:	R-4455N3
Customer:	TUV America	Technician:	T. Hannemann
Model No:	GTM9200P35048	Date:	June 27, 2005
Test Specification:	EN61000-3-3: 1995		
Operating Mode:	Output 48VDC, 7.3A		
Notes:	Lead Tested: Main Power 230 VAC 50 Hz		

350.44

Combinova Analyzer 300 2005-06-27 23:55:07

Extreme Flicker-I M1

Note:

Numerical Reference Impedance
 U: 229.6 V I: 1.817 A f: 49.988 Hz PF: 0.926

EVALUATION:			
Type of observation period	Short	Long	Limit
Observation time	10	120 min	4
Maximum relative voltage change	dmax:	0.54 %	3
Max rel steady state voltage change	dc	0.25 %	0.2
Duration of d(t) > 3 %	t	0.00 s	1.00
Short term flicker severity	Pst	0.38	0.65
Long term flicker severity	Plt	---	
Based on 12 (12) short term cycles			

Measurement completed

PASSED

Appl: DEFAULT

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Flicker
Customer:	TUV America
Model No:	GTM9200P35048
Test Specification:	EN61000-3-3: 1995
Operating Mode:	Output 48VDC, 7.3A
Notes:	Lead Tested: Main Power 230 VAC 50 Hz
	Test Sample: Globtek AC-DC Power Supply
	Serial No: 1
	Job No: R-4455N3
	Technician: T. Hannemann
	Date: June 27, 2005

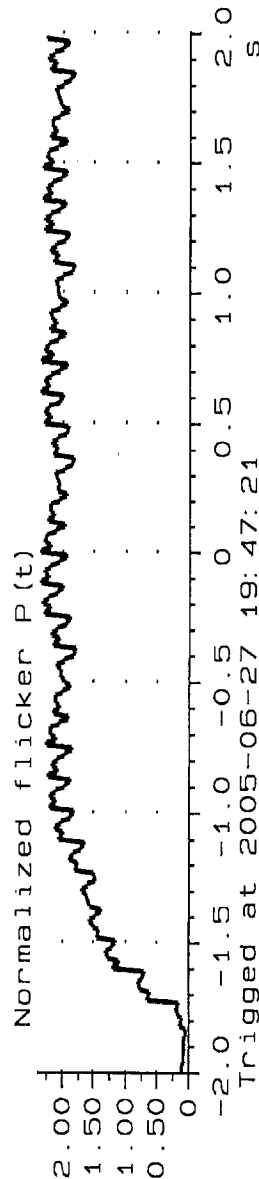
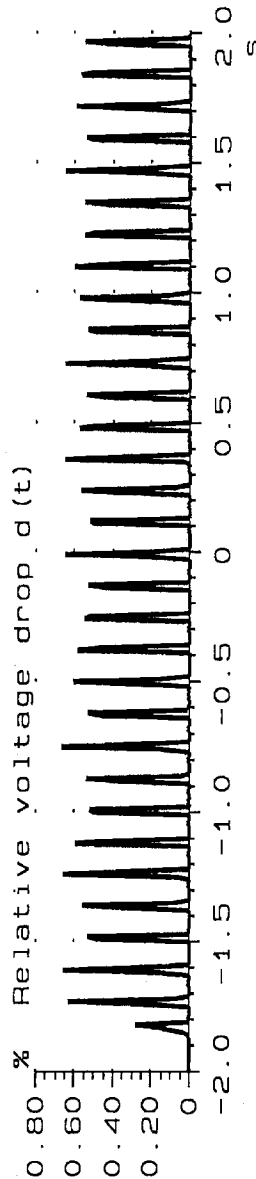
350 48

Combinova Analyzer 300 2005-06-27 23: 55: 43

Extreme Flicker-I M1

Note:

Numerical Reference Impedance
U: 229.6 V I: 1.817 A f: 49.988 Hz PF: 0.926



Appl: DEFAULT

EQUIPMENT LIST

FLICKER

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
5048	Power Meas. Sys. Analyzer	Combinova	N/A	300	9/9/2004	9/9/2005



Retlif Testing Laboratories

Test Report Number R-4455N3

11.0 ELECTROSTATIC DISCHARGE, EN61000-4-2:1995/A1:1998/A2:2001

PURPOSE

The purpose of this test method was to determine the ability of the AC-DC Power Supply to withstand electrostatic discharges applied directly to the AC-DC Power Supply and those applied to objects adjacent to the AC-DC Power Supply.

TEST PARAMETERS

The critical parameters of the electrostatic discharge generator and the applied voltage waveform are shown below:

CONTACT:

Discharge Voltage:	2.0kV, 4.0kV, 6.0kV
Discharge Polarity:	Positive/Negative
Discharge Rate:	1 PPS
Rise Time:	0.7 to 1 nanosecond
Pulse Duration:	20 nanoseconds
Storage Capacitor:	150 picofarads
Discharge Resistor:	330 Ohms

TEST SETUP

The equipment setup is shown in the attached photograph. The general setup is shown in Retlif Testing Laboratories Drawing, per the requirements in EN 61000-4-2:1995/A1:1999/A2:2002. An 80 cm tall, 1.0 x 1.6 meter, wooden test stand table was standing, centered, on the floor mounted Ground Reference Plane (GRP). A Horizontal Coupling Plane (HCP), 0.8 x 1.6 meters, was on top of the test stand and coupled to the GRP with a cable which had a 470Kohm resistor located at each end. Using the same material and a similar cable as the HCP, the 0.5 x 0.5 meter Vertical Coupling Plane (VCP) was connected to the GRP. The EUT and the EUT associated cabling (including input power) were isolated from the HCP by a 0.5 mm insulating support. The EUT setup was a minimum of one meter from all walls and vertical metallic surfaces. The ESD generator discharge return cable, nominally 2 meters long, was connected to the GRP and kept at least 0.2 meters away from conductive parts of the setup.



Retlif Testing Laboratories

Test Report Number R-4455N3

11.0 ELECTROSTATIC DISCHARGE, EN61000-4-2:1995/A1:1998/A2:2001 (continued)

TEST POINT DETERMINATION

After an engineering evaluation the following test points on the EUT were selected:

CONTACT DISCHARGE, DIRECT APPLICATION

- Right Side
- Left Side
- Top
- Both Ends

CONTACT DISCHARGE, INDIRECT APPLICATION

- Vertical Coupling Plane - All four sides of Test Sample
- Horizontal Coupling Plane - All four sides of Test Sample

CONTACT DISCHARGE

The contact electrode was positioned perpendicular to, and in contact with, the surface to which the discharge was to be applied. The generator was charged and the discharge switch was activated to apply the single discharge. This procedure was repeated until 10 discharges, in both the positive and negative polarities, were applied to the test point. The procedure was then repeated on each of the remaining test points.

AIR DISCHARGE

The EUT had no non-conductive parts and air discharge was not performed.

TEST RESULTS

The AC-DC Power Supply complied with the requirements specified for this test method. The test sample did not exhibit any malfunction or degradation of performance when subjected to the electrostatic discharges specified above. See the attached data sheets for a complete presentation of the results obtained.

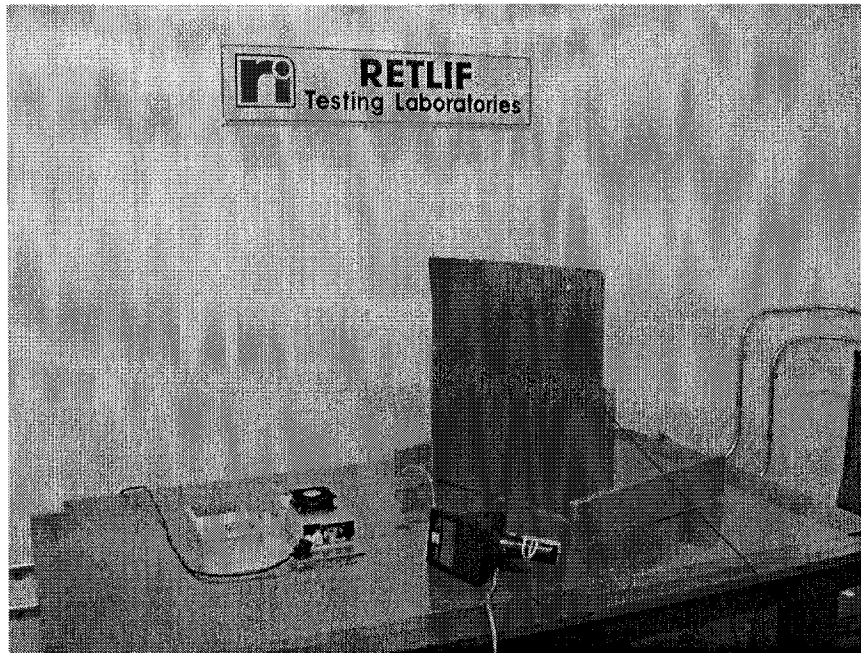


Retlif Testing Laboratories

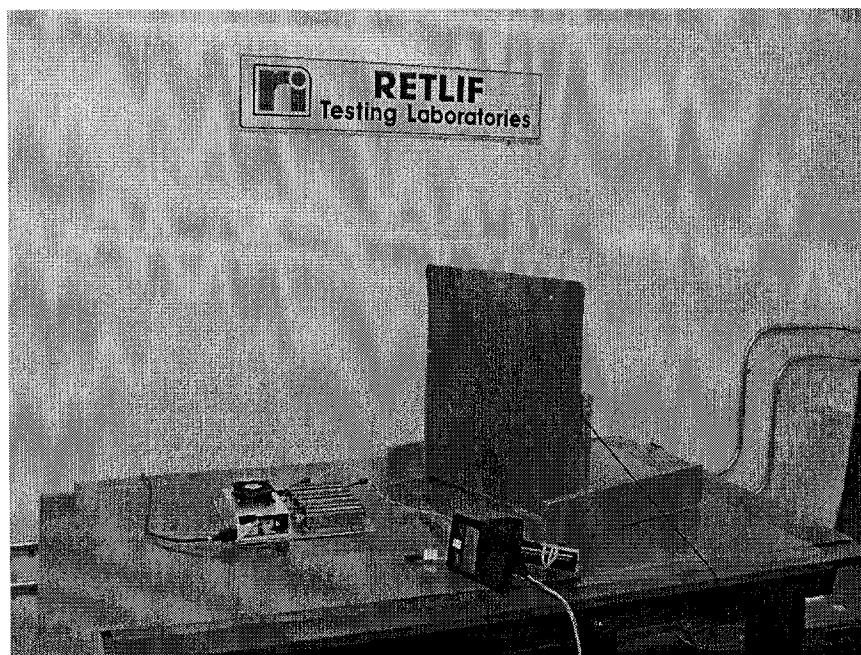
Test Report Number R-4455N3

**TEST SETUP PHOTOGRAPHS
ELECTROSTATIC DISCHARGE**

EUT 1



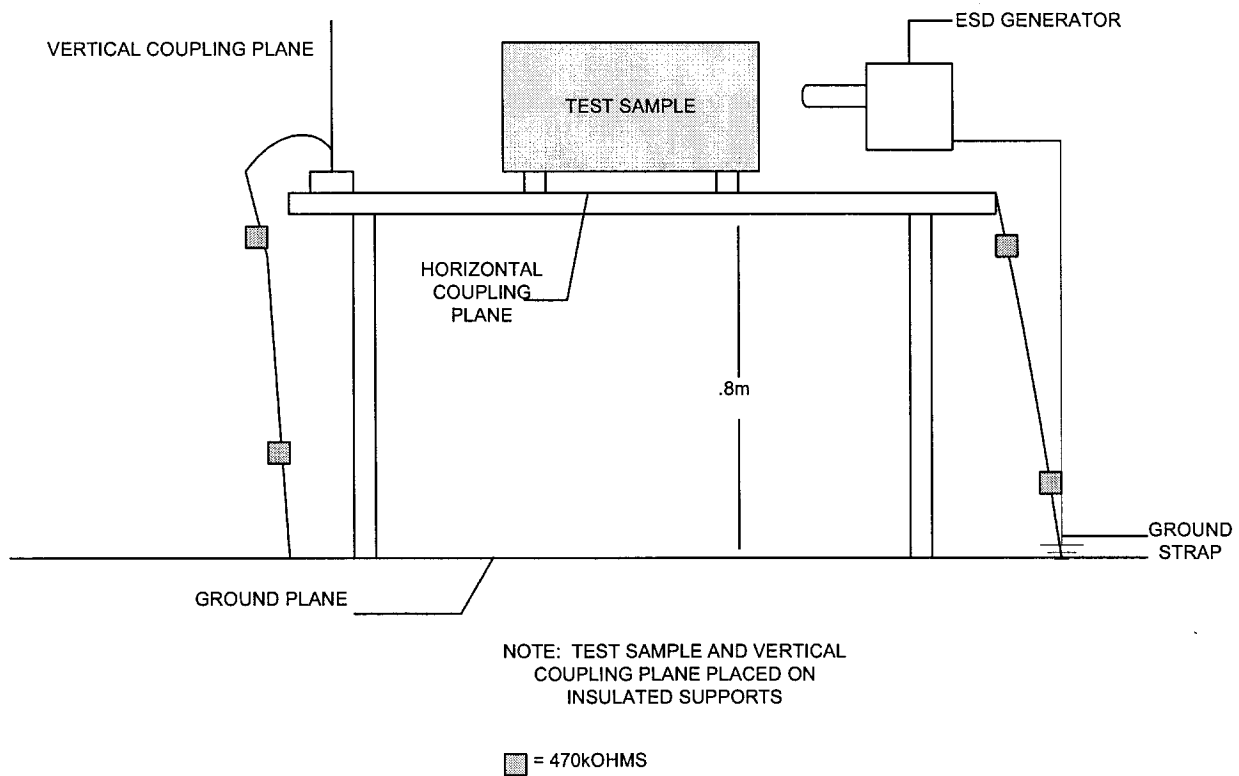
EUT 2



Retlif Testing Laboratories

Test Report Number R-4455N3

DRAWING NO. 61000-4-2- GENERAL TEST SETUP.
TEST METHOD ELECTROSTATIC DISCHARGE



Retlif Testing Laboratories

Test Report Number R-4455N3

RETLIF TESTING LABORATORIES

SUSCEPTIBILITY DATA SHEET

Test Method:	EN61000-4-2:1995/A1:1998/A2:2001, ELECTROSTATIC DISCHARGE		
Customer:	TUV America	Job No:	R-4455N3
Test Sample:	Globtek AC-DC Power Supply		
Model No.	GTM9200P2313.3	Serial No:	1
Test Specification:	EN60601-1-2, EN55024 Para. 36.202.2, Table 1: 1.3		
Operating Mode:	Output 3.3VDC, 70A		
Climatic Conditions:			
Technician:	T. Firkowski	Date:	July 9, 2005
Notes:			

[illegible]

The test sample did not exhibit any malfunction, degradation of performance or deviation from specified indication beyond the tolerances specified by Criteria B of EN55024 and paragraph 36.202 j) of EN60601-1-2 or approved test plan in accordance with the above stated test method as defined by the manufacturer. If no threshold is listed, then the highest level EUT was subjected to, was the highest test level.

RETLIF TESTING LABORATORIES

SUSCEPTIBILITY DATA SHEET

Test Method:

EN61000-4-2:1995/A1:1998/A2:2001, ELECTROSTATIC DISCHARGE

Customer:

TUV America

Job No:

R-4455N3

Test Sample:

Globtek AC-DC Power Supply

Model No.

GTM9200P35048

Serial No:

1

Test Specification:

EN60601-1-2, EN55024

Para. 36.202.2, Table 1: 1.3

Operating Mode:

Output 48VDC, 7.3A

Climatic Conditions:

T. Firkowski

Date:

July 9, 2005

Notes:

[illegible]

The test sample did not exhibit any malfunction, degradation of performance or deviation from specified indication beyond the tolerances specified by Criteria B of EN55024 and paragraph 36.202 j) of EN60601-1-2 or approved test plan in accordance with the above stated test method as defined by the manufacturer. If no threshold is listed, then the highest level EUT was subjected to, was the highest test level.

**TEST EQUIPMENT LISTING
ELECTROSTATIC DISCHARGE**

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
461	ESD Gun	Schaffner	N/A	NSG 435	04/25/2005	04/25/2006



Retlif Testing Laboratories

Test Report Number R-4455N3

12.0 RADIATED IMMUNITY, EN61000-4-3:2002/A1:2002, 80MHz to 2.5GHz

PURPOSE

The purpose of this test method was to determine if the AC-DC Power Supply was so constructed as to have an adequate level of intrinsic immunity to radiated electromagnetic fields in the frequency range of 80 to 2500 MHz, enabling the AC-DC Power Supply to operate as intended.

TEST PARAMETERS

The critical parameters of the applied electromagnetic field are as shown below:

Frequency Range	80 to 2500MHz
Field Strength	10 V/M
Modulation	1kHz, 80%, AM
Test Distance	1 Meter
Polarization of Applied Field	Horizontal & Vertical

TEST SETUP

The test instrumentation and AC-DC Power Supply were configured as shown in the attached photographs and detailed in Paragraph 4.2 herein. This configuration was based upon the general test setup shown in Retlif Testing Laboratories Drawing Number R61000-4-3 and the requirements of EN 61000-4-3. The AC-DC Power Supply was placed on an 80 cm high wooden test stand above the test enclosure floor. The cabling of the AC-DC Power Supply was routed to the edge of the 1.5 by 1 meter test stand top, then directly to the enclosure floor. The field strength generating antenna was placed at a distance of one meter from the periphery of the AC-DC Power Supply and the associated cabling. An RF signal generator was connected to the input of the RF power amplifier. The output of the RF power amplifier was connected to an RF coupler which in turn was connected to the test antenna. A power meter was connected to the forward power port of the RF coupler.



Retlif Testing Laboratories

Test Report Number R-4455N3

12.0 RADIATED IMMUNITY, EN61000-4-3:2002/A1:2002, 80MHz to 2.5GHz (continued)

The RF signal generator and power meter were connected to an automation computer in order to maintain the required field strength during testing. The test enclosure ceiling, walls and portions of the floor were treated with a mixture of ferrite tile and carbon impregnated foam absorber. Prior to testing, the field was calibrated as specified in paragraph 6.2 of EN61000-4-3:2002. A uniform area, 1.5 M x 1.5 M, 80 cm above the ground plane, was established. Sixteen (16) evenly spaced calibration points were assigned within the 1.5 M x 1.5 M grid. The field was calibrated in both the Vertical and Horizontal polarizations in one percent steps in the frequency range of 80 MHz to 1000 MHz. The field was considered uniform if 12 of 16 points (75%) were within - 0dB to + 6 dB of nominal. Additionally, three percent of the frequencies were allowed to be within - 0 dB to + 10 dB of nominal. The following seven frequencies were found to be within this three percent window for the horizontal polarization: 138.28 MHz, 139.66 MHz, 141.06 MHz, 142.47 MHz, 143.90 MHz, 145.34 MHz & 146.79 MHz. All other frequencies met the - 0 dB to + 6 dB criteria.

TEST PROCEDURE

With the AC-DC Power Supply configured as described above, the following steps were performed:

1. The biconical test antenna was horizontally polarized facing the front of the AC-DC Power Supply.
2. The signal generator was adjusted for a frequency of 80 MHz and 80 % AM 1 kHz modulation.
3. The output level of the generator was increased until the power meter measured 10 V/M.
4. The automation computer was programmed to incrementally sweep the frequency range of 80 to 200 MHz in step sizes not exceeding 1% of the fundamental.
5. The field strength, as measured on the power meter, was continuously adjusted as necessary by the automation computer to maintain the test level at 10 V/M utilizing the power meter readings obtained during calibration.
6. The AC-DC Power Supply was continuously monitored for degradation or malfunction as specified in paragraph 5.2.
7. The biconical antenna was vertically polarized and steps 2 through 6 were repeated.
8. Steps 1 through 7 were repeated for the 200 to 1000 MHz frequency range with the double ridge antenna.
9. Steps 1 through 8 were repeated on each of the rear, left and right sides of the test sample.
10. The double ridge guide horn test antenna was horizontally polarized facing the front of the AC-DC Power Supply .
11. The signal generator was adjusted for a frequency of 1000 MHz and 80 % AM 1 kHz modulation.
12. The output level of the generator was increased until the E-field sensor measured 10 V/M.
13. The signal generator was configured to incrementally sweep the frequency range of 1000 to 2500 MHz in step sizes not exceeding 1% of the fundamental.
14. The field strength, as measured on the E-field sensor, was continuously monitored and adjusted as necessary to maintain the test level at 10 V/M.



Retlif Testing Laboratories

Test Report Number R-4455N3

12.0 RADIATED IMMUNITY, EN61000-4-3:2002/A1:2002, 80MHz to 2.5GHz (continued)

15. The AC-DC Power Supply was continuously monitored for degradation or malfunction as specified in paragraph 5.2.
16. The double ridge guide antenna was vertically polarized and steps 11 through 15 were repeated.
17. Steps 10 through 16 were repeated on each of the rear, left and right sides of the test sample.

TEST RESULTS

The AC-DC Power Supply complied with the requirements specified for this test method. The test sample did not exhibit any malfunction or degradation of performance when subjected to the radiated electromagnetic energy specified above. See the attached data sheets for a complete presentation of test results.



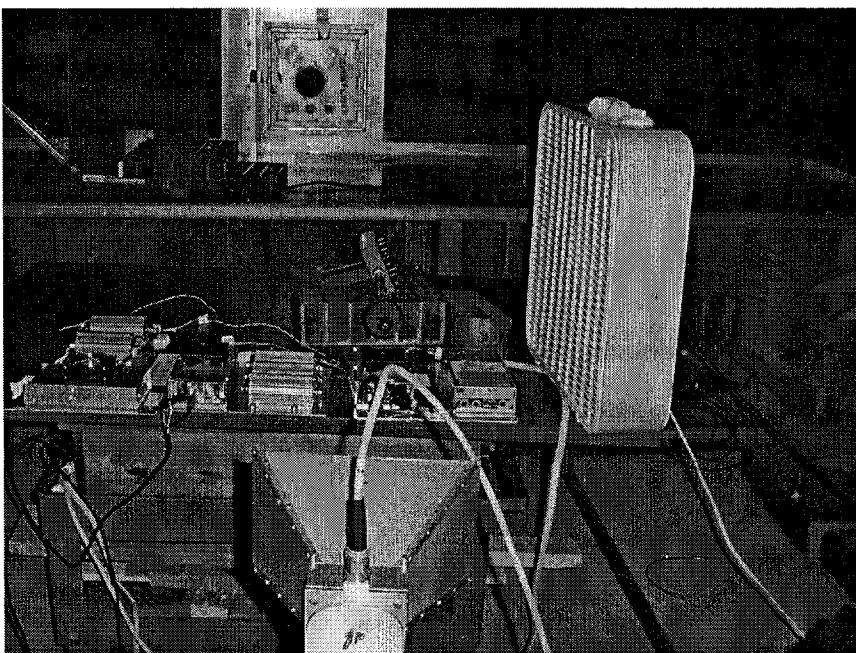
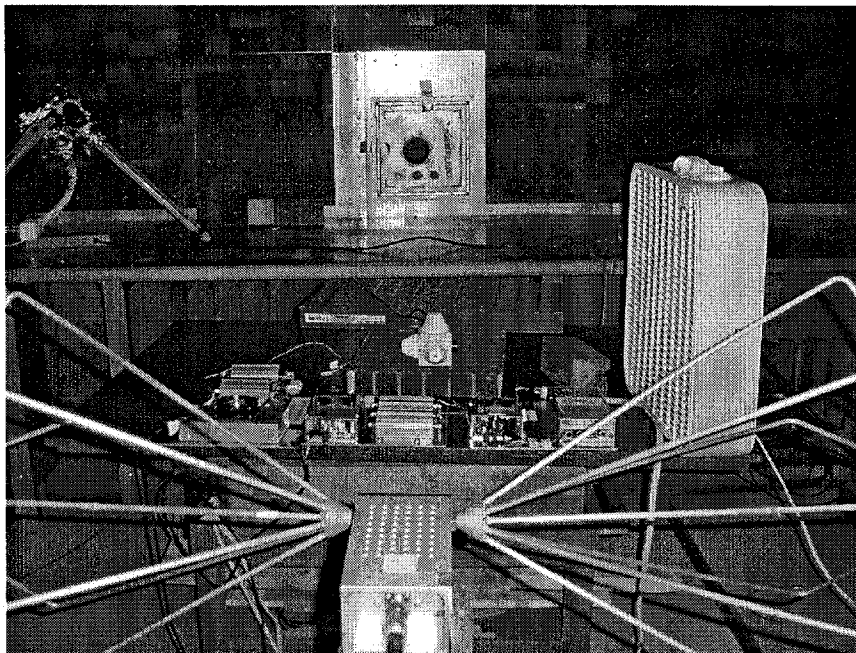
Retlif Testing Laboratories

Test Report Number R-4455N3

TEST SETUP PHOTOGRAPHS

RADIATED IMMUNITY

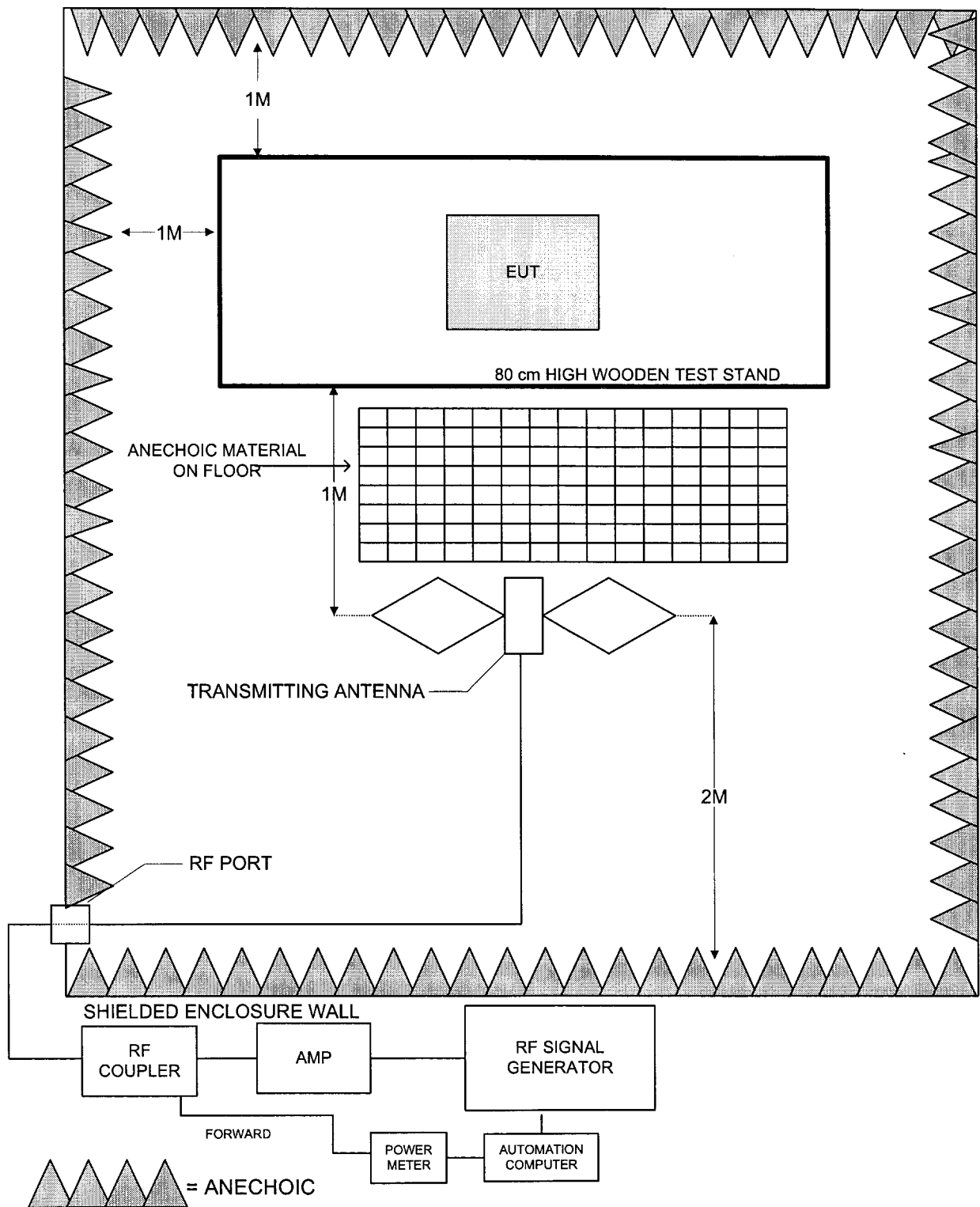
EUT 1 & 2



Retlif Testing Laboratories

Test Report Number R-4455N3

FIGURE R61000-4-3 - RADIATED IMMUNITY



Retlif Testing Laboratories

Test Report Number R-4455N3

RETLIF TESTING LABORATORIES

SUSCEPTIBILITY DATA SHEET

Test Method:

EN61000-4-3:2002/A1:2002, Radiated Immunity 80 MHz to 2.5 GHz

Customer:

TUV America

Job No:

R-4455N3

Test Sample:

Globtek AC-DC Power Supply

Model No.

GTM9200P2313.3

Serial No:

1

Test Specification:

EN60601-1-2, EN55024

Para. 36.202.3, Table 1: 1.2

Operating Mode:

Output 3.3VDC, 70A

Climatic Conditions:

M. Hippert

Date:

June 27, 2005

Notes:

[illegible]

The test sample did not exhibit any malfunction, degradation of performance or deviation from specified indication beyond the tolerances specified by Criteria A of EN55024 and paragraph 36.202 j) of EN60601-1-2 or approved test plan in accordance with the above stated test method as defined by the manufacturer. If no threshold is listed, then the highest level EUT was subjected to, was the highest test level.

RETLIF TESTING LABORATORIES

SUSCEPTIBILITY DATA SHEET

Test Method:

EN61000-4-3:2002/A1:2002, Radiated Immunity 80 MHz to 2.5 GHz

Customer:

TUV America

Job No:

R-4455N3

Test Sample:

Globtek AC-DC Power Supply

Model No.

GTM9200P35048

Serial No:

1

Test Specification:

EN60601-1-2, EN55024

Para. 36.202.3, Table 1: 1.2

Operating Mode:

Output 48VDC, 7.3A

Climatic Conditions:

M. Hippert

Date:

June 27, 2005

Notes:

[illegible]

The test sample did not exhibit any malfunction, degradation of performance or deviation from specified indication beyond the tolerances specified by Criteria A of EN55024 and paragraph 36.202 j) of EN60601-1-2 or approved test plan in accordance with the above stated test method as defined by the manufacturer. If no threshold is listed, then the highest level EUT was subjected to, was the highest test level.

RADIATED IMMUNITY

EQUIPMENT LIST

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
3258	Double Ridge Guide	EMCO	1 - 18 GHz	3115	06/01/2004	08/01/2005
4002	Biconical Antenna	EMCO	20 MHz - 200 MHz	3109	01/14/2005	01/14/2006
4016	Double Ridge Guide	EMCO	200MHz - 2GHz	3106	05/03/2005	05/03/2006
4025	Shielded Enclosure	Universal Shielding	100dB, 14kHz -	A1 NH/USC26	09/28/2004	09/28/2005
4944	Isotropic Field Probe	Amplifier Research	.010 - 1000 MHz	FP2000	10/11/2004	10/11/2005
4945	Isotropic Field Monitor	Amplifier Research	.010 - 1000 MHz	FM2000	10/11/2004	10/11/2005
4994	Amplifier	Amplifier Research	80-1000MHz, 250W	250W1000	11/18/2004	11/18/2005
5050	TWT Amplifier	Hughes	1 - 2 GHz	8020H09F000	04/15/2004	07/15/2005
530A	AM/FM Signal Generator	Marconi Instru.	10 kHz - 1.2 GHz	2023	08/12/2004	08/12/2005



Retlif Testing Laboratories

Test Report Number R-4455N3

13.0 ELECTRICAL FAST TRANSIENT / BURST, EN 61000-4-4:2004

PURPOSE

The purpose of this test method was to determine if the AC-DC Power Supply was so constructed as to have an adequate level of intrinsic immunity to electrical fast transient bursts applied to input power enabling the AC-DC Power Supply sample to operate as intended.

TEST PARAMETERS*

The critical parameters of the electrical fast transient/burst generator and the applied waveform are shown below:

Critical parameters of the electrical fast transient/burst generator and the applied waveform:

•	Transient Voltage:	0.5kV, 1.0kV, 2.0kV, Power
•	Transient Polarity:	Positive and Negative
•	Repetition Rate:	5 kHz
•	Rise Time of Pulse:	5 ns \pm 30%
•	Pulse Duration:	50 ns \pm 30%
•	Burst Period:	300 ms
•	Burst Duration:	15 ms

**The above parameters were verified prior to testing.*

TEST SETUP

The equipment setup is shown in the attached photographs. The general test setups are shown in Retlif Testing Laboratories Drawing per the requirements in EN 61000-4-4:2004. The equipment under test, configured as specified by the manufacturer, was placed on a wooden test stand 80 cm above the ground plane floor. The EUT was at least 50cm from all conductive surfaces. The electrical fast transient/burst generator, with the coupling/decoupling network installed, was placed directly on, and was bonded to, the ground plane floor. For power lead testing, the AC line under test was connected directly to the EUT power port of the coupling/decoupling network.



Retlif Testing Laboratories

Test Report Number R-4455N3

13.0 ELECTRICAL FAST TRANSIENT / BURST, EN 61000-4-4:2004 (continued)

LEADS TESTED

The following leads on the AC-DC Power Supply were tested in order to demonstrate compliance to the above requirements:

- 230VAC, 50Hz AC Input

POWER LEADS

With the equipment under test configured as stated above, the electrical fast transient/burst generator was configured to apply positive, then negative, transient bursts to the AC power leads. The 0.5kV, 1.0kV and 2.0kV bursts were applied for a duration of at least one minute.

TEST SAMPLE LEADS TESTED	
230VAC	Line to Ground
230VAC	Neutral to Ground
230VAC	Earth to Ground
All Leads to Ground	

TEST RESULTS

The AC-DC Power Supply complied with the requirements specified for this test method. The test sample did not exhibit any malfunction or degradation of performance when the power input leads were subjected to the 0.5kV, 1.0kV and 2.0kV electrical fast transients/bursts specified above. See the attached data sheets for a full presentation of the results obtained.

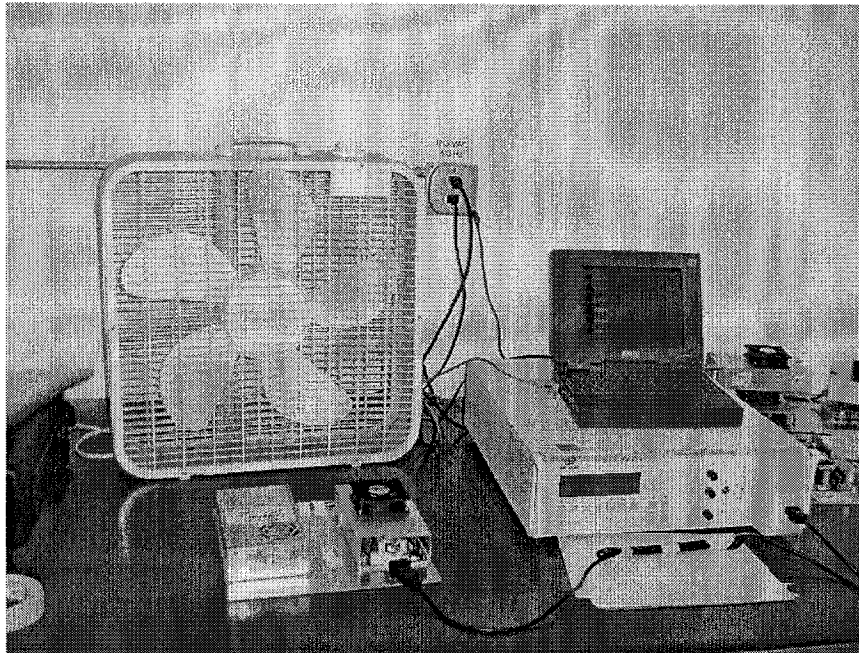


Retlif Testing Laboratories

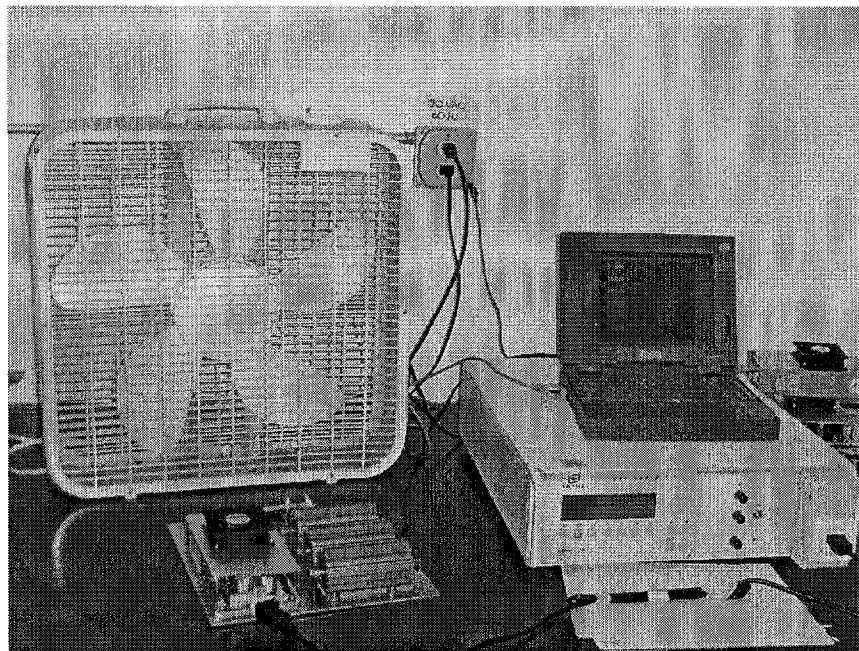
Test Report Number R-4455N3

TEST SETUP PHOTOGRAPHS
ELECTRICAL FAST TRANSIENT/BURST

EUT 1



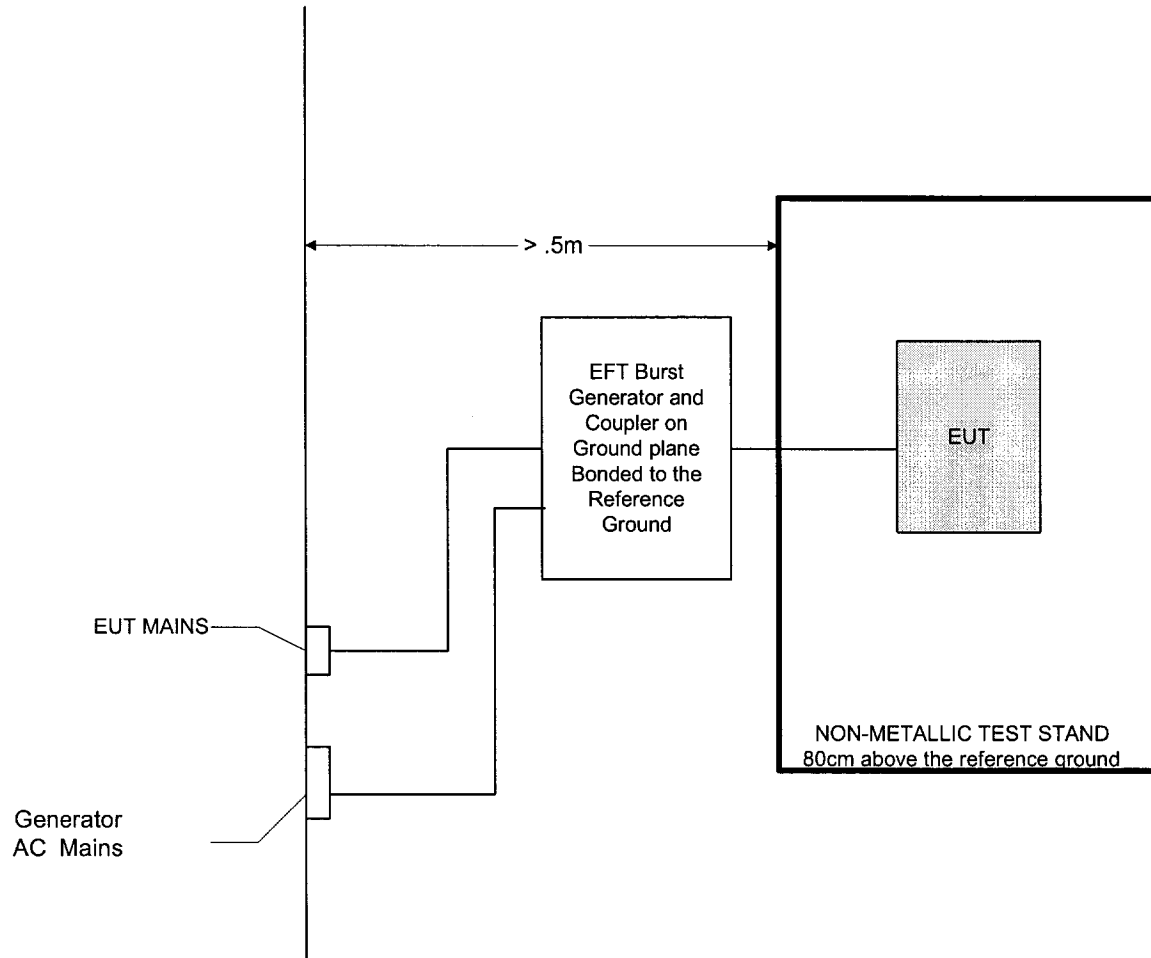
EUT 2



Retlif Testing Laboratories

Test Report Number R-4455N3

DRAWING NO. 61000-4-4- GENERAL TEST SETUP.
TEST METHOD ELECTRIC FAST TRANSIENT/BURST.
POWER LEADS

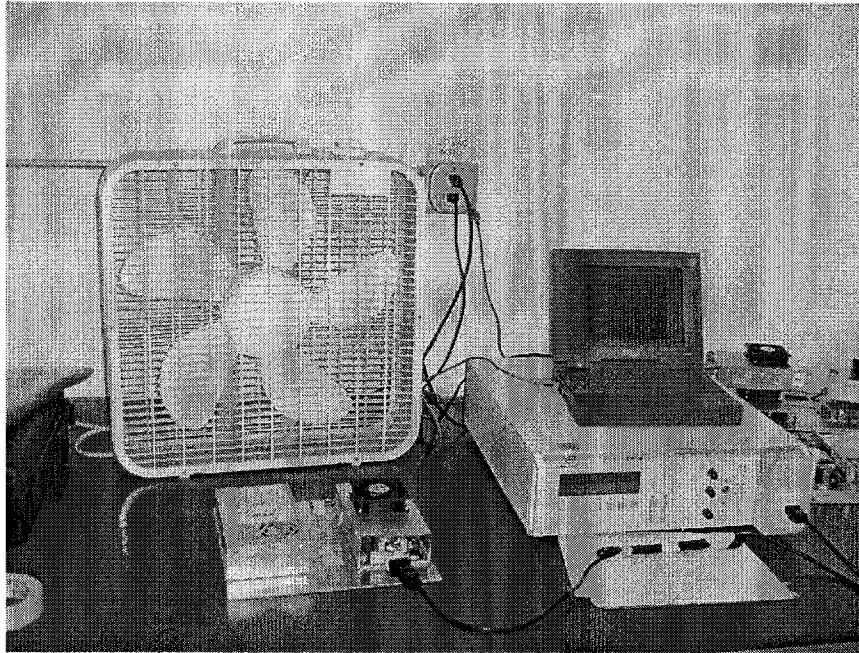


Retlif Testing Laboratories

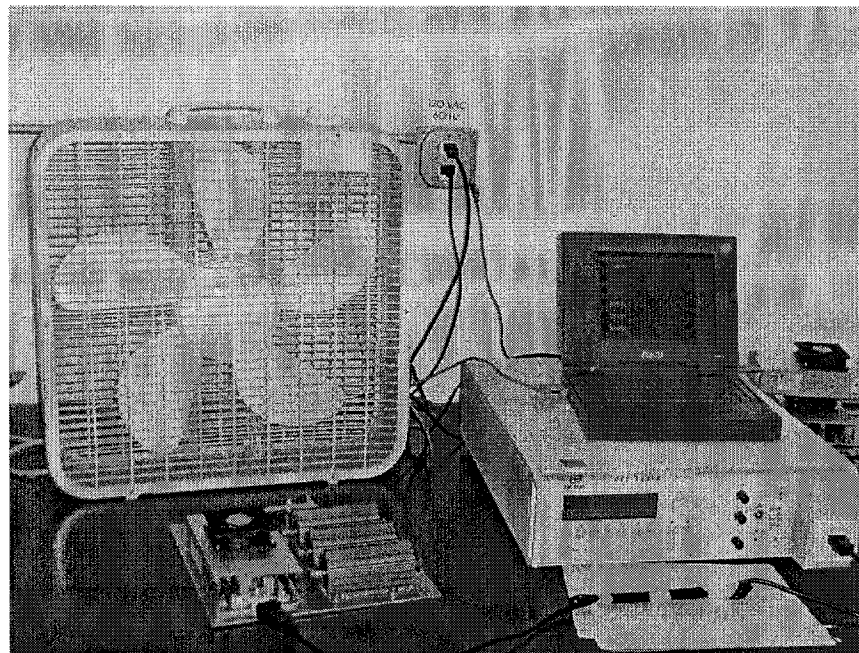
Test Report Number R-4455N3

TEST EQUIPMENT LISTING
ELECTRICAL FAST TRANSIENT BURST

EUT 1



EUT 2



Retlif Testing Laboratories

Test Report Number R-4455N3

SUSCEPTIBILITY DATA SHEET

Test Method:	EN61000-4-4:2004, Electrical Fast Transient Burst		
Customer:	TUV America	Job No:	R-4455N3
Test Sample:	Globtek AC-DC Power Supply		
Model No:	GTM9200P2313.3	Serial No:	1
Test Specification:	EN60601-1-2, EN55024 Para. 36.202.4, Table 4: 4.5		
Operating Mode:	Output 3.3VDC, 70A		
Climatic Conditions:			
Technician:	M. Hippert	Date:	June 30, 2005
Notes:			

[illegible]

The test sample did not exhibit any malfunction, degradation of performance or deviation from specified indication beyond the tolerances specified by Criteria B of EN55024 and paragraph 36.202 j) of EN60601-1-2 or approved test plan in accordance with the above stated test method as defined by the manufacturer. If no threshold is listed, then the highest level EUT was subjected to, was the highest test level.

SUSCEPTIBILITY DATA SHEET

Test Method:	EN61000-4-4:2004, Electrical Fast Transient Burst		
Customer:	TUV America	Job No:	R-4455N3
Test Sample:	Globtek AC-DC Power Supply		
Model No.	GTM9200P35048	Serial No:	1
Test Specification:	EN60601-1-2, EN55024 Para. 36.202.4, Table 4: 4.5		
Operating Mode:	Output 48VDC, 7.3A		
Climatic Conditions:			
Technician:	M. Hippert	Date:	June 30, 2005
Notes:			

[illegible]

The test sample did not exhibit any malfunction, degradation of performance or deviation from specified indication beyond the tolerances specified by Criteria B of EN55024 and paragraph 36.202 j) of EN60601-1-2 or approved test plan in accordance with the above stated test method as defined by the manufacturer. If no threshold is listed, then the highest level EUT was subjected to, was the highest test level.

EQUIPMENT LIST

EFT

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
7015	Ultra Compact Generator	EM Test	N/A	USC 500-M	4/25/2005	4/25/2006



Retlif Testing Laboratories

Test Report Number R-4455N3

14.0 SURGE, EN61000-4-5:1995/A1:2001

PURPOSE

The purpose of this test method was to determine if the AC-DC Power Supply was so constructed as to have an adequate level of intrinsic immunity to common and differential mode surges applied to input power leads, enabling the AC-DC Power Supply to operate as intended.

TEST PARAMETERS

The critical parameters of the applied surge waveform are shown below:

Transient Voltage:	Common Mode, $\pm 0.5\text{kV}$; $\pm 1\text{kV}$; $\pm 2\text{kV}$ Differential Mode, $\pm 0.5\text{kV}$; $\pm 1\text{kV}$
Transient Polarity:	Positive and Negative
Rise Time of Pulse:	$1.2\mu\text{s}$ (10/90% Value)
Pulse Duration:	$50\mu\text{s}$ (50% Value)

**The above parameters were verified prior to testing.*

LEADS TESTED

The following leads on the AC-DC Power Supply were tested in order to demonstrate compliance to the above requirements:

- 230 VAC, 50Hz Hot to Ground
- 230 VAC, 50Hz Neutral to Ground
- 230 VAC, 50Hz Hot to Neutral

TEST SETUP

The equipment setup is shown in the attached photograph. The general test setup is shown in Retlif Testing Laboratories Drawing, per the requirements in EN 61000-4-5:1995/A1:2001. The equipment under test was configured as specified by the manufacturer on a wooden test stand 80cm above the ground plane floor. The surge generator and the coupling/decoupling network were bonded to the ground plane. The input power line under test was connected directly to the coupling/decoupling network.

TEST RESULTS

The AC-DC Power Supply complied with the requirements specified for this test method. The test sample did not exhibit any malfunction or degradation of performance when subjected to the surges specified above. See the attached data sheets for a full presentation of the results obtained.



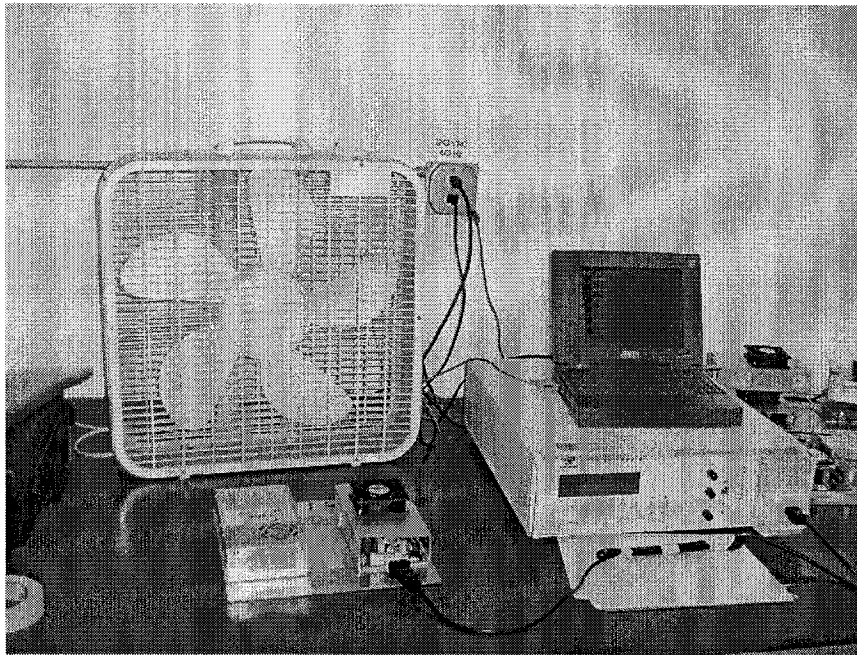
Retlif Testing Laboratories

Test Report Number R-4455N3

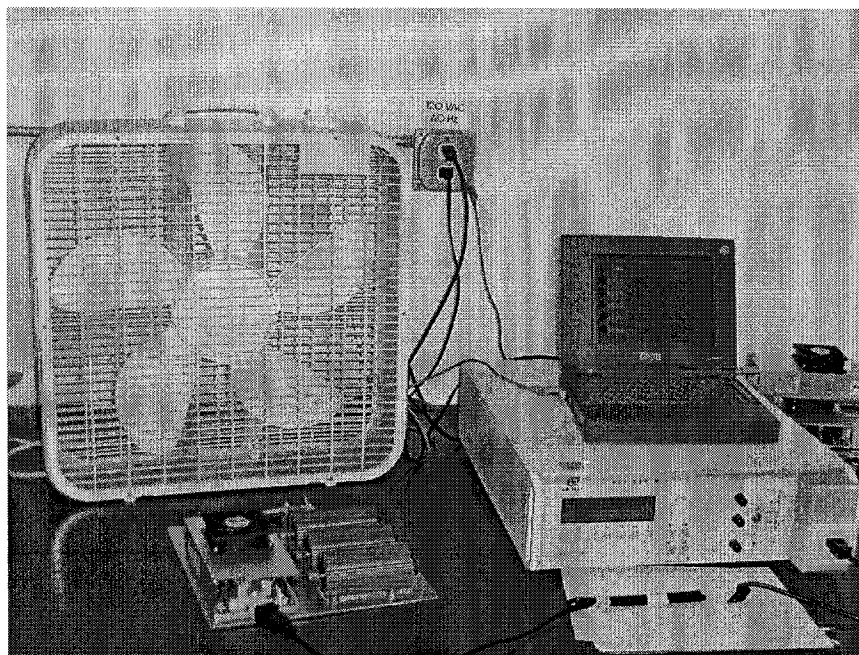
TEST SETUP PHOTOGRAPH

SURGE

EUT 1



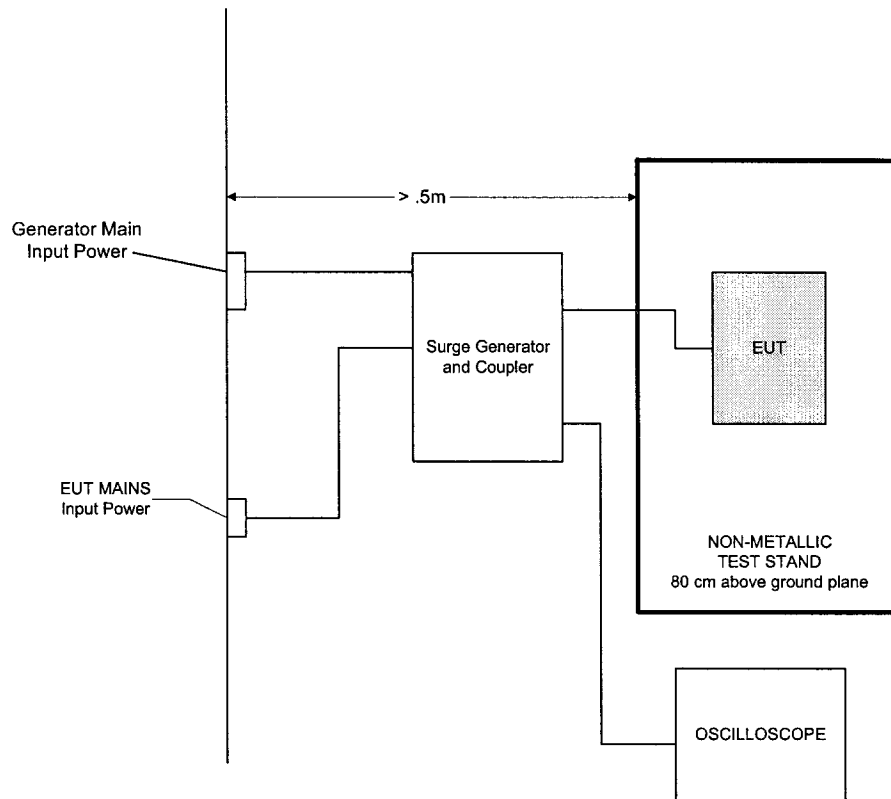
EUT 2



Retlif Testing Laboratories

Test Report Number R-4455N3

DRAWING NO. 61000-4-5- GENERAL TEST SETUP.
TEST METHOD SURGE IMMUNITY



Retlif Testing Laboratories

Test Report Number R-4455N3

SUSCEPTIBILITY DATA SHEET

[illegible]

R-4455N3

TEST EQUIPMENT LISTING

SURGE

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
7015	Ultra Compact Generator	EM Test	N/A	USC 500-M	4/25/2005	4/25/2006



Retlif Testing Laboratories

Test Report Number R-4455N3

15.0 CONDUCTED RF IMMUNITY, 150kHz TO 80MHz, EN 61000-4-6:1996/A1:2001

PURPOSE

The purpose of this test method was to determine if the AC-DC Power Supply was so constructed as to have an adequate level of intrinsic immunity to radio frequency electromagnetic energy injected into input power leads in the frequency range of 0.15 to 80 MHz, enabling the AC-DC Power Supply to operate as intended.

TEST PARAMETERS

The critical parameters of the applied electromagnetic energy for testing the power input leads were as shown below:

Frequency Range:	0.15 to 80 MHz
Applied Signal Level:	10 Vrms
Modulation:	1 kHz, 80%, AM
Injection Method:	Power Input Leads - Coupling Decoupling Network (CDN)

LEADS TESTED

The following leads of the AC-DC Power Supply were tested in order to demonstrate compliance:

- 230 VAC, 50 Hz Power Input Leads



Retlif Testing Laboratories

Test Report Number R-4455N3

15.0 CONDUCTED RF IMMUNITY, 150kHz TO 80MHz, EN 61000-4-6:1996/A1:2001

(continued)

TEST SETUP

The test instrumentation and AC-DC Power Supply were configured as shown in the attached photographs and detailed in Paragraph 4.2 herein. This configuration was based upon the general test setup shown in Retlif Testing Laboratories Drawing Number and per the requirements of EN 61000-4-6. The AC-DC Power Supply was placed on 10 cm high insulating supports above a ground reference plane.

A coupling / decoupling network was placed in the power input lead under test. All power leads were supported 5 cm above the ground reference. The signal generator was connected to the RF power amplifier which in turn, was connected to the injection device. A directional coupler was placed between the injection device and RF amplifier in order to monitor the level applied to the AC-DC Power Supply.

TEST PROCEDURE

With the test instrumentation and AC-DC Power Supply configured as stated above, the following steps were performed:

1. The AC-DC Power Supply was arranged with its cables terminated as specified in Paragraph 4.2 herein.
2. The injection device was connected to the lead under test.
3. The output of the directional coupler was connected to the injection device for the lead under test.
4. The AC-DC Power Supply was placed in the operating mode described in Paragraph 5.1 herein.
5. The signal generator was set for a frequency of 150 kHz and the level was adjusted for 10 Vrms.
6. The signal was then amplitude modulated 80% by a 1 kHz sine wave.
7. The frequency range was incrementally swept from 150 kHz to 80 MHz, while maintaining the required forward power to the injection network.
8. The AC-DC Power Supply was continuously monitored as described in Paragraph 5.2 herein.
9. Steps 2 through 8 were repeated for each lead subjected to this requirement.



Retlif Testing Laboratories

Test Report Number R-4455N3

15.0 CONDUCTED RF IMMUNITY, 150kHz TO 80MHz, EN 61000-4-6:1996/A1:2001

(continued)

TEST RESULTS

The AC-DC Power Supply complied with the requirements specified for this test method. The test sample did not exhibit any malfunction or degradation of performance when the input power leads were subjected to the conducted electromagnetic energy specified above. See the following test data for a complete presentation of test results.

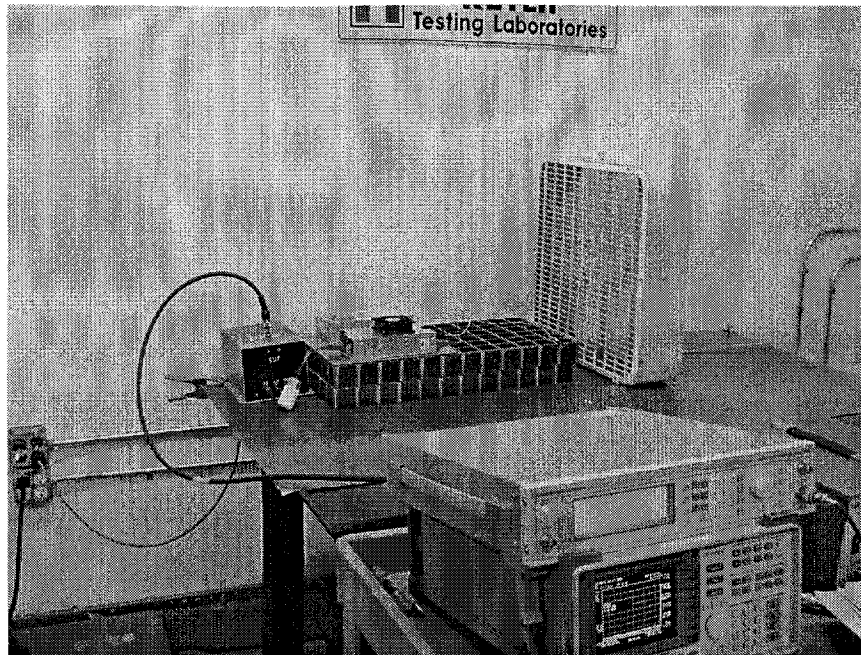


Retlif Testing Laboratories

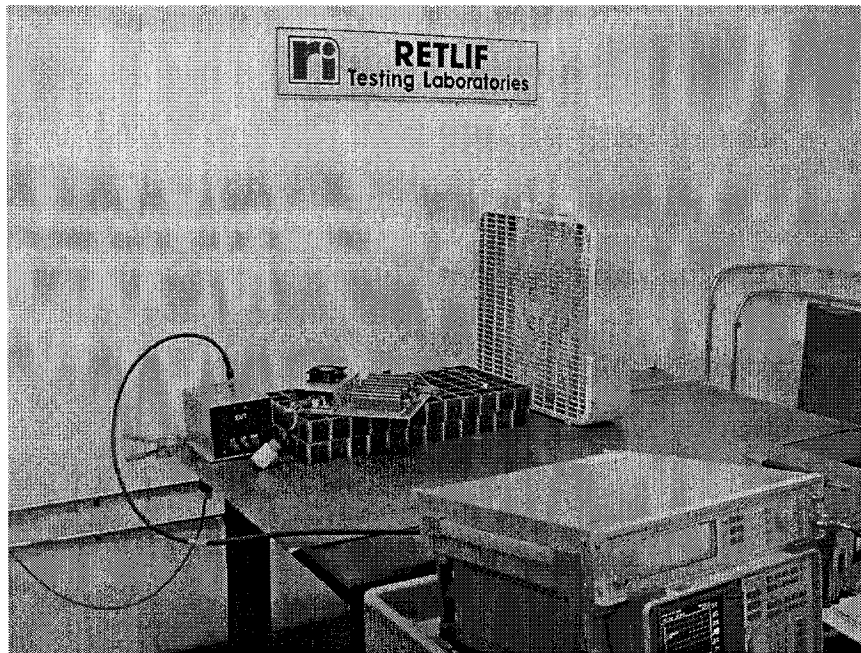
Test Report Number R-4455N3

TEST SETUP PHOTOGRAPH - CONDUCTED RF IMMUNITY

EUT 1



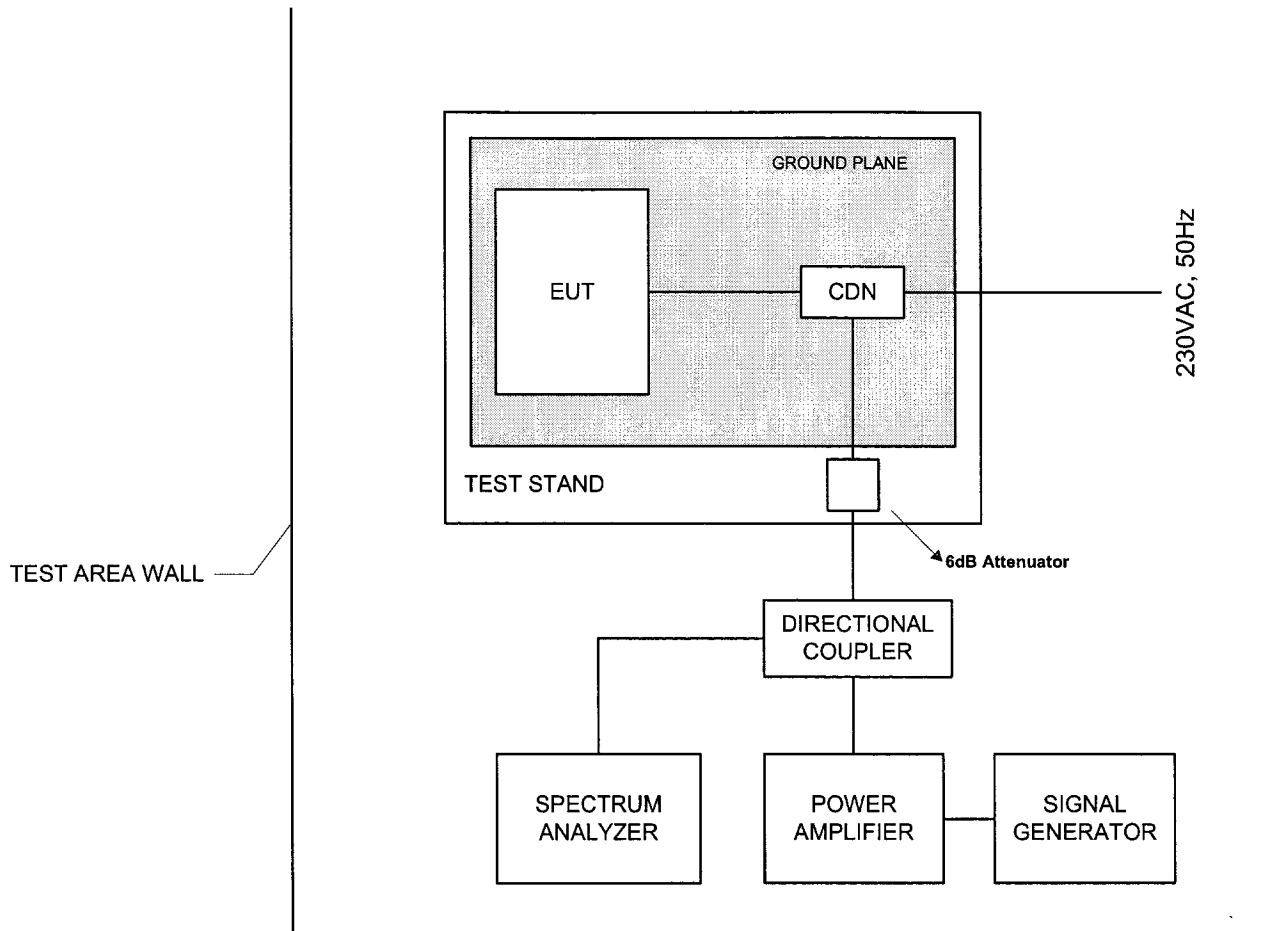
EUT 2



Retlif Testing Laboratories

Test Report Number R-4455N3

GENERAL SETUP DRAWING -61000-4-6:1996
CONDUCTED IMMUNITY, POWER LEADS



Retlif Testing Laboratories

Test Report Number R-4455N3

RETLIF TESTING LABORATORIES

SUSCEPTIBILITY DATA SHEET

Test Method:	EN61000-4-6:1996/A1:2001, Conducted Immunity 150 kHz to 80 MHz		
Customer:	TUV America	Job No:	R-4455N3
Test Sample:	Globtek AC-DC Power Supply		
Model No:	GTM9200P2313.3	Serial No:	1
Test Specification:	EN60601-1-2, EN55024 Para. 36.202.6, Table 4: 4.1		
Operating Mode:	Output 3.3VDC, 70A		
Climatic Conditions:			
Technician:	M. Hippert	Date:	June 27, 2005
Notes:			

[illegible]

The test sample did not exhibit any malfunction, degradation of performance or deviation from specified indication beyond the tolerances specified by Criteria A of EN55024 and paragraph 36.202 j) of EN60601-1-2 or approved test plan in accordance with the above stated test method as defined by the manufacturer. If no threshold is listed, then the highest level EUT was subjected to, was the highest test level.

SUSCEPTIBILITY DATA SHEET

Test Method:	EN61000-4-6:1996/A1:2001, Conducted Immunity 150 kHz to 80 MHz		
Customer:	TUV America	Job No:	R-4455N3
Test Sample:	Globtek AC-DC Power Supply		
Model No:	GTM9200P35048	Serial No:	1
Test Specification:	EN60601-1-2, EN55024 Para. 36.202.6, Table 4: 4.1		
Operating Mode:	Output 48VDC, 7.3A		
Climatic Conditions:			
Technician:	M. Hippert	Date:	June 27, 2005
Notes:			

[illegible]

The test sample did not exhibit any malfunction, degradation of performance or deviation from specified indication beyond the tolerances specified by Criteria A of EN55024 and paragraph 36.202 j) of EN60601-1-2 or approved test plan in accordance with the above stated test method as defined by the manufacturer. If no threshold is listed, then the highest level EUT was subjected to, was the highest test level.

EQUIPMENT LIST

CONDUCTED IMMUNITY

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
4895	Spectrum Analyzer	Hewlett Packard	9kHz - 22GHz	8593EM	4/22/2004	7/22/2005
4935A	6.0 dB Attenuator	JFW Inc.	DC - 4 GHz	50FH-006-50N	1/27/2005	1/27/2006
4975	Power Amplifier	ENI	100 kHz - 150 MHz	325LA-HP	4/20/2005	4/20/2006
5046	AM/FM Signal Generator	Marconi Instru.	10 kHz - 1.2 GHz	2023A	9/16/2004	9/16/2005
531	RF Injection Probe	FCC	10 kHz - 100 MHz	F-120-3	9/29/2004	9/29/2005
532	High Power Dir Coupler	Werlatone Inc.	.01 - 1000 MHz	C2630	1/27/2005	1/27/2006
555A	Coupling/Decoupling Net	FCC	150 kHz - 230 MHz	FCC-801-M3-16	8/6/2004	8/6/2005



Retlif Testing Laboratories

Test Report Number R-4455N3

16.0 POWER FREQUENCY MAGNETIC FIELD IMMUNITY, EN 61000-4-8:1994/A1:2001

PURPOSE

The purpose of this test method was to determine if the equipment under test was susceptible to power frequency magnetic fields.

TEST PARAMETERS

Critical parameters of the power frequency magnetic field test:

Severity Level:	3 A/M
Power Frequency:	50Hz

CALIBRATION

Prior to testing the following calibration procedure was performed to ensure that the equipment under test was subjected to the specified Magnetic Field.

The induction coil was positioned at a 1 m minimum distance from the laboratory wall and any magnetic material and then connected to the test generator. A magnetic field loop sensor was placed in the center of the induction coil. The test generator was adjusted to obtain the required current in the induction coil at the power frequency needed to establish the required field strength specified by the test level. The coil factor is determined by the above procedure. The coil factor gives the current value to be injected in the coil to obtain the required test magnetic field.

TEST SETUP

The equipment setup is shown in the attached photograph. The general test setup is shown in Retlif Testing Laboratories Drawing, per the requirements in EN 61000-4-8:1994/A1:2001. The test sample was placed on a 1 x 1.5 meter ground reference plane with the interposition of a 0.1m insulating support. The test generator was connected to and placed less than 3 meters from the induction coil. The induction coil was centered around the test sample. The test sample was rotated by 90 degrees inside the induction coil in order to expose the EUT to the test field in each possible orientation. All cables were placed so that they would be exposed to the magnetic field for 1 meter of their length.

APPLICATION OF MAGNETIC FIELD

With the equipment under test configured as stated above, the required current value necessary to produce the specified test level as determined in the calibration procedure was established in the induction coil. During application of the magnetic field, the equipment under test was continuously monitored for signs of degradation of performance.

TEST RESULTS

The EUT continued to operate as intended and as required under the specified performance criterion, per the manufacturer's operation guidelines. See attached data for a full presentation of the results obtained.

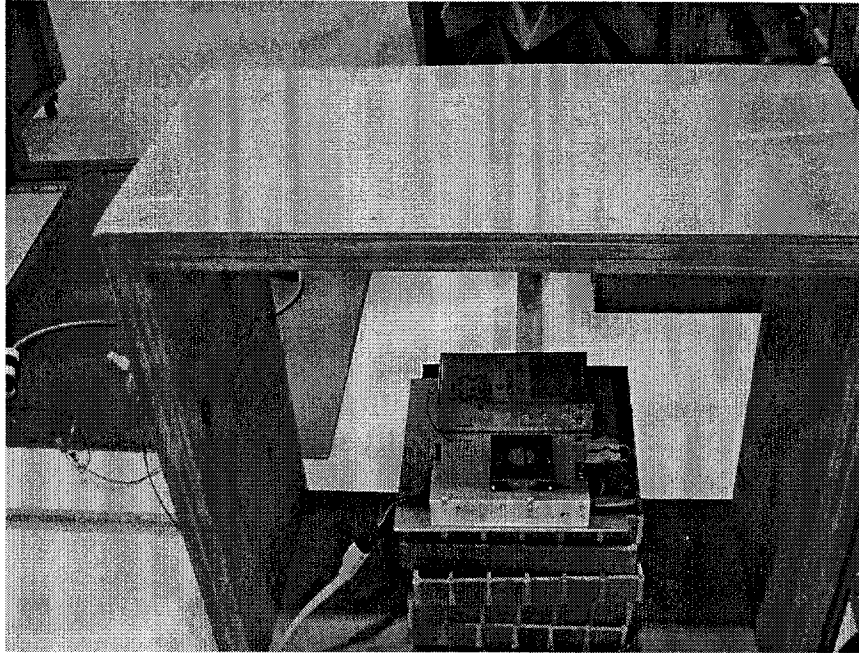


Retlif Testing Laboratories

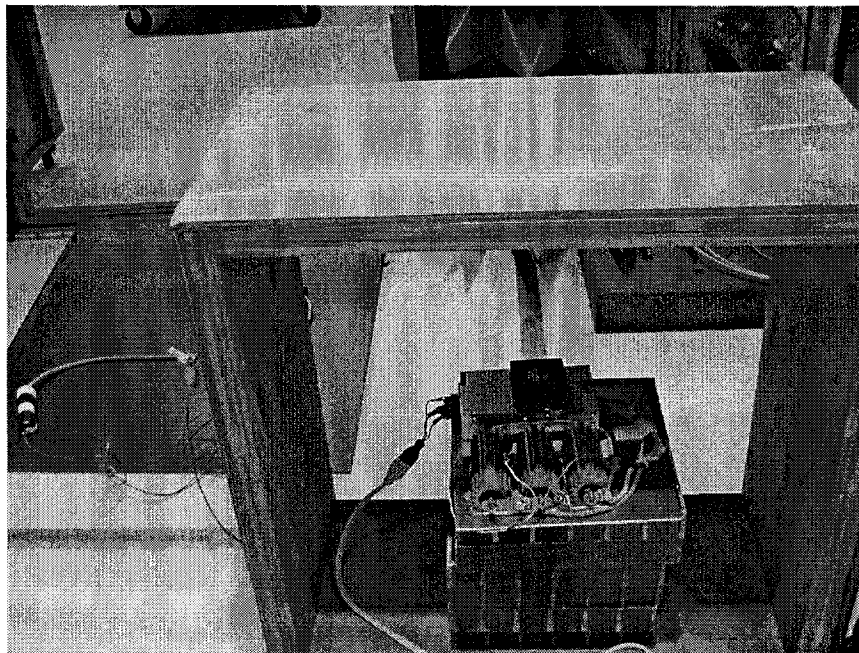
Test Report Number R-4455N3

**TEST SETUP PHOTOGRAPHS -
POWER FREQUENCY MAGNETIC FIELD IMMUNITY**

EUT 1



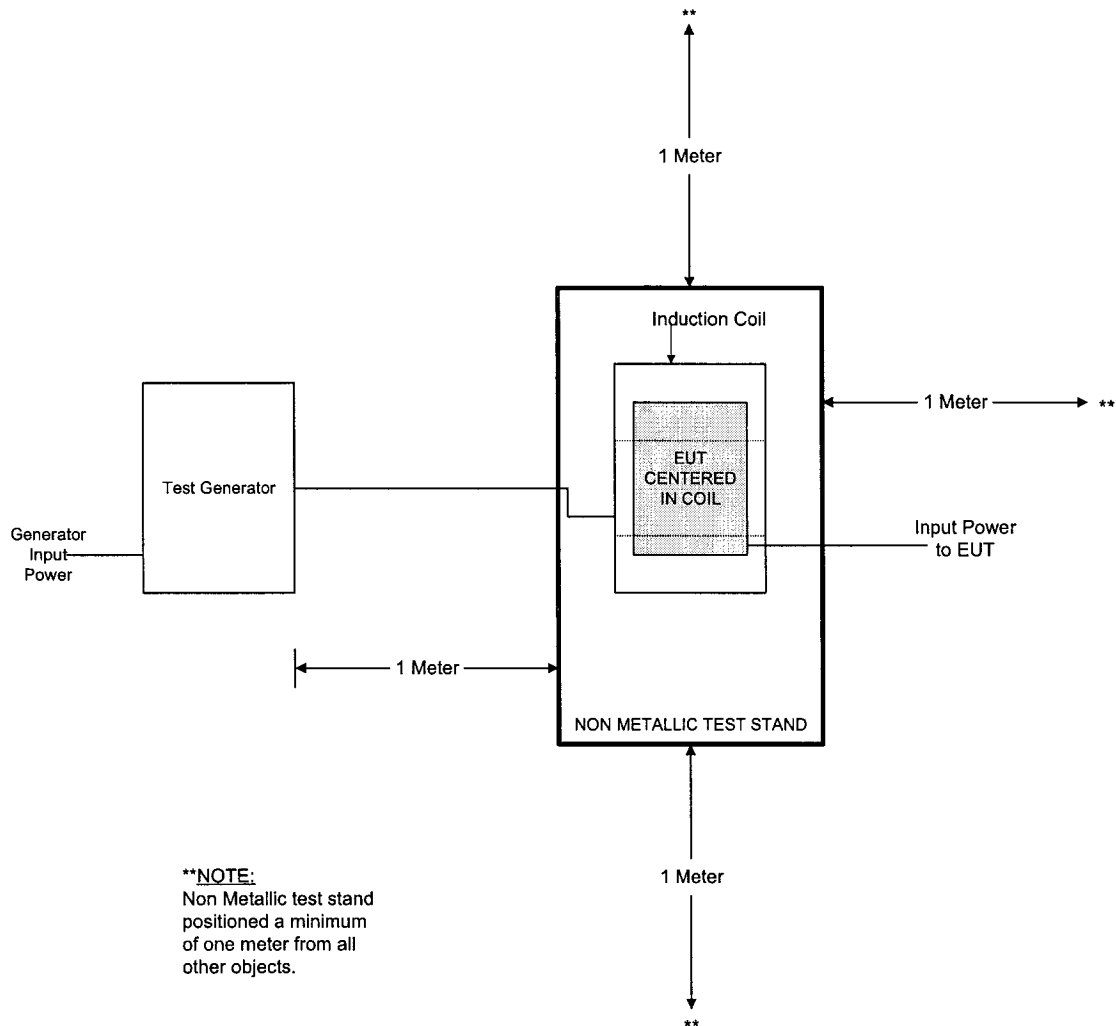
EUT 2



Retlif Testing Laboratories

Test Report Number R-4455N3

DRAWING NO. 61000-4-8 GENERAL TEST SETUP
TEST METHOD POWER FREQUENCY MAGNETIC FIELD



Retlif Testing Laboratories

Test Report Number R-4455N3

RETLIF TESTING LABORATORIES

SUSCEPTIBILITY DATA SHEET

Test Method:	EN61000-4-8: 1994, Magnetic Field Immunity 50 Hz		
Customer:	TUV America	Job No:	R-4455N3
Test Sample:	Globtek AC-DC Power Supply		
Model No:	GTM9200P2313.3	Serial No:	1
Test Specification:	EN60601-1-2, EN55024 Table 1: 1.1		
Operating Mode:	Output 3.3VDC, 70A		
Climatic Conditions:			
Technician:	M. Hippert	Date:	June 30, 2005
Notes:			

[illegible]

The test sample did not exhibit any malfunction, degradation of performance or deviation from specified indication beyond the tolerances specified by paragraph 36.202 j) of EN60601-1-2 or approved test plan in accordance with the above stated test method as defined by the manufacturer. If no threshold is listed, then the highest level EUT was subjected to, was the highest test level.

RETLIF TESTING LABORATORIES

SUSCEPTIBILITY DATA SHEET

Test Method:

EN61000-4-8: 1994, Magnetic Field Immunity 50 Hz

Customer:

TUV America

Job No:

R-4455N3

Test Sample:

Globtek AC-DC Power Supply

Model No:

GTM9200P35048

Serial No:

1

Test Specification:

EN60601-1-2, EN55024

Table 1: 1.1

Operating Mode:

Output 48VDC, 7.3A

Climatic Conditions:

M. Hippert

Date:

June 30, 2005

Notes:

[illegible]

The test sample did not exhibit any malfunction, degradation of performance or deviation from specified indication beyond the tolerances specified by paragraph 36.202 j) of EN60601-1-2 or approved test plan in accordance with the above stated test method as defined by the manufacturer. If no threshold is listed, then the highest level EUT was subjected to, was the highest test level.

EQUIPMENT LIST
MAGNETIC IMMUNITY

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
4275	Magnetic Coil (1m X 1m)	Retlif	DC - 400H	RTL-0010	1/14/2005	1/14/2006
4990	Audio Oscillator	Rohde & Schwarz	1 Hz - 1.3 MHz	SPN 336.3019.32	7/23/2004	7/23/2005
7010	AC Power Source	Elgar	45 - 500 Hz	3001	7/27/2004	7/27/2005



Retlif Testing Laboratories

Test Report Number R-4455N3

17.0 VOLTAGE DIPS AND INTERRUPTIONS, EN61000-4-11:2004

PURPOSE

The purpose of this method was to determine if the equipment under test was susceptible to voltage dips and short interruptions of power.

TEST SETUP

The equipment setup is shown in the attached photograph. The general test setup is shown in Retlif Testing Laboratories Drawing, per the requirements of EN 61000-4-11:2004.. The EUT was configured as specified by the manufacturer, with the input power leads connected to a variable power source.

APPLICATION OF DIPS AND INTERRUPTIONS

The EUT was subjected to variations in nominal AC voltage:

Voltage dip of >-95% for a duration of 10 milliseconds

Voltage dip of -30% for a duration of 500 milliseconds

Voltage dip of -60% for a duration of 100 milliseconds

Voltage interruption of >-95% for a duration of 5 seconds

TEST RESULTS

After the modification listed on page five of this test report, the AC-DC Power Supply complied with the requirements specified for this test method. The test sample did not exhibit any malfunction or degradation of performance when subjected to the voltage dips and interruptions specified above. See the attached data sheets for a full presentation of the results obtained.

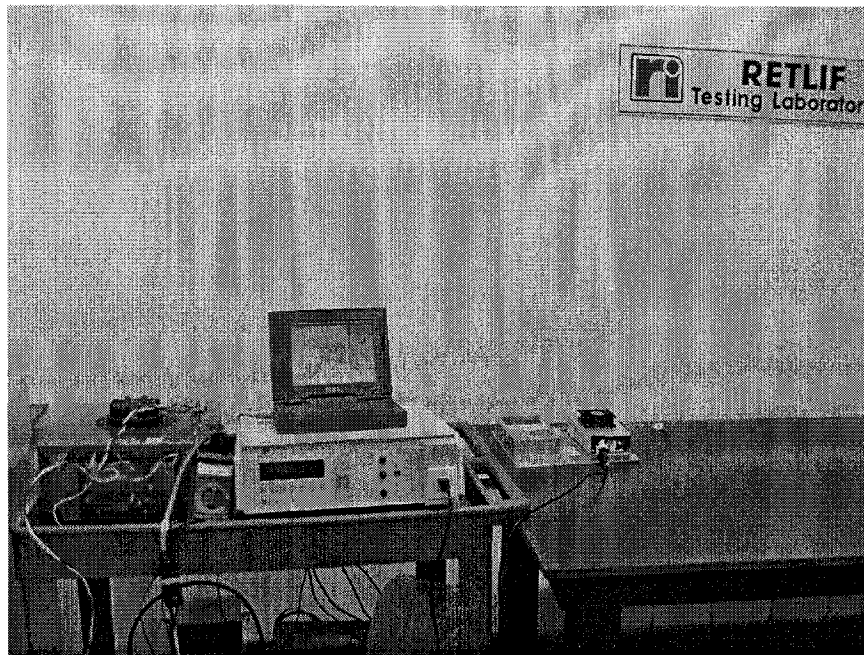


Retlif Testing Laboratories

Test Report Number R-4455N3

**TEST SETUP PHOTOGRAPH
VOLTAGE DIPS AND INTERRUPTION**

EUT 1



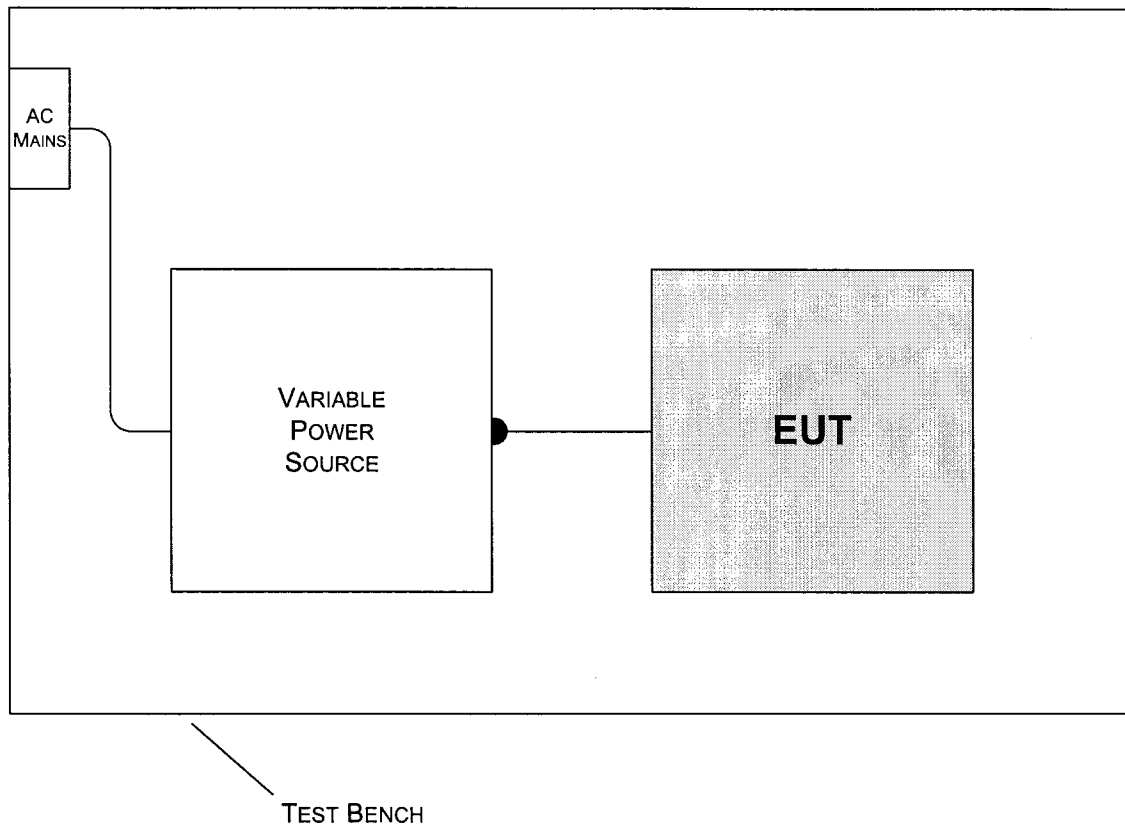
EUT 2



Retlif Testing Laboratories

Test Report Number R-4455N3

DRAWING NO. 61000-4-11 - GENERAL TEST SETUP
VOLTAGE DIPS AND INTERRUPTIONS



Retlif Testing Laboratories

Test Report Number R-4455N3

RETLIF TESTING LABORATORIES

SUSCEPTIBILITY DATA SHEET

Test Method:	EN61000-4-11:2004, Voltage Dips & Interruptions		
Customer:	TUV America	Job No:	R-4455N3
Test Sample:	Globtek AC-DC Power Supply		
Model No:	GTM9200P2313.3	Serial No:	1
Test Specification:	EN60601-1-2, EN55024 Para. 36.202.7, Table 4: 4.2 & 4.3		
Operating Mode:	Output 3.3VDC, 70A		
Climatic Conditions:			
Technician:	T. Firkowski	Date:	July 9, 2005
Notes:	Lead Tested: 230 VAC 50 Hz		

[illegible]

The test sample did not exhibit any malfunction, degradation of performance or deviation from specified indication beyond the tolerances specified by Criteria B & C of EN55024 and paragraph 36.202 (j) of EN60601-1-2 or approved test plan in accordance with the above stated test method as defined by the manufacturer. If no threshold is listed, then the highest level EUT was subjected to, was the highest test level.

RETLIF TESTING LABORATORIES

SUSCEPTIBILITY DATA SHEET

Test Method:	EN61000-4-11:2004, Voltage Dips & Interruptions		
Customer:	TUV America	Job No:	R-4455N3
Test Sample:	Globtek AC-DC Power Supply		
Model No:	GTM9200P35048	Serial No:	1
Test Specification:	EN60601-1-2, EN55024 Para. 36.202.7, Table 4: 4.2 & 4.3		
Operating Mode:	Output 48VDC, 7.3A		
Climatic Conditions:			
Technician:	T. Firkowski	Date:	July 9, 2005
Notes:	Lead Tested: 230 VAC 50 Hz		

[illegible]

The test sample did not exhibit any malfunction, degradation of performance or deviation from specified indication beyond the tolerances specified by Criteria B & C of EN55024 and paragraph 36.202 (j) of EN60601-1-2 or approved test plan in accordance with the above stated test method as defined by the manufacturer. If no threshold is listed, then the highest level EUT was subjected to, was the highest test level.

EQUIPMENT LIST

VOLTAGE DIPS AND INTERRUPTIONS

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
7015	Ultra Compact Generator	EM Test	N/A	USC 500-M	4/25/2005	4/25/2006



Retlif Testing Laboratories

Test Report Number R-4455N3

RETLIF TESTING LABORATORIES
101 New Boston Road
Goffstown, New Hampshire 03045

CERTIFICATE OF CONFORMANCE
FCC RULES PART 15, SUBPART B, CLASS B

June 20, 2005

Issued to: TUV America
5 Cherry Hill Drive
Danvers, MA 01923

Reference: Retlif Report Number R-4455N2

RETLIF TESTING LABORATORIES hereby acknowledges that compliance testing in accordance with the below listed standards was performed on a representative sample of the equipment listed below. RETLIF TESTING LABORATORIES further acknowledges that the test sample listed below was found to be in compliance with these standards. This certificate is hereby issued to the above-named grantee and is valid only for the equipment identified below.

Manufacturer: Globtek, Inc.
186 Veterans Drive
Northvale, NJ 07647

Equipment Tested: AC-DC Power Supplies

Model Series: GTM 9200

**Model Numbers Tested
For Radiated Emissions:* GTM9200P35048, GTM9200P2313.3, GTM9200P1503.3
& GTM9200P20048

** Model Numbers Tested
For Conducted Emissions:* GTM9200P2313.3 & GTM9200P35048

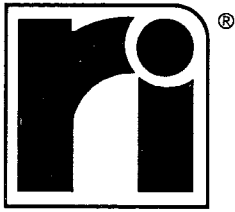
Brand Name: Globtek, Inc.

Equipment Class: B

Authorization: Verification, Digital Device

Note(s): 1) See attached report R-4455N2 for details and/or conditions pertaining to this certificate.
2) Conforms to the requirements of:
Para. 15.107(a) for Conducted Emissions, 150 kHz to 30 MHz
Para. 15.109(a) for Radiated Emissions, 30 MHz to 1GHz

* These Models were tested as representative of the complete GTM9200 Model Series. See report R-4455N2 for a description of the Model Series.



Retlif Testing Laboratories

101 New Boston Road, Goffstown, NH 03045
603-497-4600 - Fax: 603-497-5281

CORPORATE OFFICE
795 Marconi Avenue
Ronkonkoma, NY 11779
631-737-1500 Fax 631-737-1497
(A NY Corporation)

WASHINGTON
REGULATORY OFFICE
703-533-1614 Fax 703-533-1612



FCC COMPLIANCE TEST REPORT
ON
GLOBTEK SERIES 9200
AC-DC POWER SUPPLIES
MODELS: GTM9200P35048, GTM9200P2313.3,
GTM9200P1503.3 & GTM9200P20048

CUSTOMER NAME: TUV America

CUSTOMER P.O.: DC502794

DATE OF REPORT: July 19, 2005

TEST REPORT NUMBER: R-4455N2

TEST START DATE: June 9, 2005

TEST FINISH DATE: July 10, 2005

TEST TECHNICIAN: Todd Hannemann

TEST ENGINEER: Scott Wentworth

REPORT WRITTEN BY: Jamie Ramsey

SUPERVISOR: Scott Wentworth

GOVERNMENT SOURCE INSPECTION: Not Applicable

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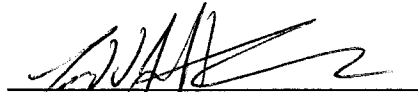


Retlif Testing Laboratories

Test Report Number R-4455N2

Certification and Signatures

We certify that this report is a true report of the results obtained from the tests of the equipment stated. We further certify that the measurements shown in this report were made in accordance with the procedures indicated and vouch for the qualifications of all Retlif Testing Laboratories personnel taking them.



Todd Hanemann
EMC Test Technician



Scott Wentworth
Laboratory Manager
NVLAP Approved Signatory

NON-WARRANTY PROVISION

The testing services have been performed, findings obtained, and reports prepared in accordance with generally accepted testing laboratory principles and practices. This warranty is in lieu of all other warranties, either express or implied.

NON-ENDORSEMENT

This test report contains only findings and results arrived at after employing the specific test procedures and standards listed herein. It is not intended to constitute a recommendation, endorsement, or certification of the product or material tested. This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.



Retlif Testing Laboratories

Test Report Number R-4455N2

Administrative Data

Retlif Testing Laboratories Test Report R-4455N2

Test Specification: FCC Rules and Regulations Part 15, Subpart B, Class B

Customer: TUV America
5 Cherry Hill Drive
Danvers, MA 01923

Manufacturer: Globtek, Inc.
186 Veterans Drive
Northvale, NJ 07647

Test Sample: AC-DC Power Supply, Series 9200
EUT 1: Model Number: GTM9200P35048, Serial No: #1
EUT 2: Model Number: GTM9200P2313.3, Serial No: #1
EUT 3: Model Number: GTM9200P1503.3, Serial No. #2
EUT 4: Model Number: GTM9200P20048, Serial No. #2

Applicable See Paragraph 2.0

Testing Dates: June 9, 2005 TO July 10, 2005

Date of Report: July 19, 2005

EUT	DESCRIPTION	MODEL NO.	TESTS PERFORMED
1	AC-DC Power Supply	GTM9200P35048	Radiated & Conducted Emissions
2	AC-DC Power Supply	GTM9200P2313.3	Radiated & Conducted Emissions
3	AC-DC Power Supply	GTM9200P1503.3	Radiated Emissions
4	AC-DC Power Supply	GTM9200P20048	Radiated Emissions



Retlif Testing Laboratories

Test Report Number R-4455N2

Administrative Data (continued)

GTM9200 SERIES TABLE:

NATURAL CONVECTION:	Output Voltage	Max Load
GT(M)9200P1323.3-X.X	3.3V	40A
GT(M)9200P1503.3X.X	3.3V	45.45A
GT(M)9200P20005-X.X	5V	40A
GT(M)9200P2007.5-X.X	7.5V	26.67A
GT(M)9200P20009-X.X	9V	22.22A
GT(M)9200P20012-X.X	12V	16.67A
GT(M)9200P20015-X.X	15V	13.33A
GT(M)9200P20018-X.X	18V	11.11A
GT(M)9200P20024-X.X	24V	8.33A
GT(M)9200P20036-X.X	36V	5.55A
GT(M)9200P20048-X.X	48V	4.17A



Retlif Testing Laboratories

Test Report Number R-4455N2

Administrative Data (continued)

TOP MOUNTED FAN FOR FORCED AIR:	Output Voltage	Max Load
GT(M)9200P1853.3-X.X	3.3V	56A
GT(M)9200P2313.3X.X	3.3V	70A
GT(M)9200P25005-X.X	5V	70A
GT(M)9200P2805-X.X	5V	56A
GT(M)9200P3507.5-X.X	7.5V	46.67A
GT(M)9200P35015-X.X	12V	29.17A
GT(M)9200P35015-X.X	15V	23.33A
GT(M)9200P35018-X.X	18V	19.44A
GTM(M)9200P35024-X.X	24V	14.58A
GT(M)9200P35036-X.X	36V	9.72A
GT(M)9200P35048-X.X	48V	7.3A

The Models GTM9200P35048, GTM9200P2313.3, GTM9200P1503.3 and GTM9200P200P20048 were tested as representative of the Globtek 9200 Model series which includes all models listed above. The test results contained in this report are considered to be valid fo the complete model series.



Retlif Testing Laboratories

Test Report Number R-4455N2

**MODIFICATION TO THE EUT
MADE DURING THE TEST PROGRAM**

Test Method:

Conducted Emissions

Reason for Modification:

EUT emission levels were above the specified limits.

Description of Modification:

Changed value of CY6 from 470pF to 1nF.

Result of Modification:

EUT emission levels decreased and met the specified limit.

**THE VALIDITY OF THE EUT COMPLIANCE AND OF THIS REPORT
IS BASED, IN PART, ON THE PRESENCE OF THE ABOVE MODIFICATION.**

At the time of the modification installation, and at the conclusion of the test program, the EUT manufacturer was made aware of the need to have the above modification incorporated in all future productions of the EUT.

Test methods administered subsequent to the listed modification included the above modification.



Retlif Testing Laboratories

Test Report Number R-4455N2

1.0 Scope

This test report documents the methods used in measuring the conducted and radiated emissions produced by four AC-DC Power Supplies, manufactured by Globtek, Inc. This report further serves to fully record the details of the sample tested including all interconnecting cables and support equipment. The objective of this test report is to demonstrate compliance of the AC-DC Power Supplies to the Class B Digital Device limits as set forth in Part 15, Subpart B, of the Rules and Regulations of the Federal Communications Commission. The Models GTM9200P35048, GTM9200P2313.3, GTM9200P1503.3 and GTM9200P200P20048 were tested as representative of the Globtek 9200 Model series which includes all models listed on Page 1 of this report. The test results contained in this report are considered to be valid for the complete model series.

2.0 Applicable Documents

The following documents form a part of this test report to the extent specified herein:

RCM001	- Retlif Testing Laboratories Calibration Manual.
RQM001	- Retlif Testing Laboratories Quality Assurance Manual.
ANSI/NCSL Z-540	-Calibration Laboratories and Measuring and Test Equipment-General Requirements
MIL-STD-45662A	- Calibration System Requirements.
FCC Part 15	- Federal Communications Commissions Part 15, Radio Frequency Devices, Subpart B, Unintentional Radiators.
ANSI C63.4:2001	- Interim Standard for Methods of Measurement of Radio - Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz.
CISPR 22:1998	- Specification for Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment.



Retlif Testing Laboratories

Test Report Number R-4455N2

3.0 General Requirements

3.1 Test Environment

All testing was performed according to each methods individual requirements. Each test method outlined herein describes the individual environment in which testing was performed. Both the conducted and radiated emissions tests described herein were performed by Retlif Testing Laboratories which is a NIST/NVLAP accredited facility. All radiated emissions testing was performed on an FCC listed open area test site (OATS).

3.1.1 Conducted Emissions

All conducted emissions testing described herein was performed on a conducting ground plane. The conducting ground plane for measuring AC power line conducted emissions consisted of a floor-earth grounded conducting surface. The conducting surface was 3 m x 2.5 m in size, and extended at least 0.5 m beyond the vertical projection (footprint) of the EUT. The ground plane was covered by insulating material 1 mm thick.

3.1.2 Radiated Emissions

3.1.2.1 Preliminary

Preliminary radiated measurements were performed in a shielded enclosure.

3.1.2.2 Formal

Formal radiated emissions testing was performed on an open area test site (OATS). The test site measured 12 m x 20 m and was covered with a conducting ground plane constructed of one quarter inch ground cloth. The equipment under test was placed in an RF transparent enclosure on top of a 1.2 meter diameter, flush mounted, metallic turntable. The test site met the test site attenuation requirements specified in ANSI C63.4:2001 throughout the range of measurement frequencies.

3.2 Test Instrumentation

All test equipment utilized in determining compliance with the requirements specified herein was calibrated prior to use in accordance with the procedures and standards set forth in Retlif Testing Laboratories standard manuals RCM001, RQM001 and in ANSI/NCSL Z-540. See each test method for a full listing of test equipment utilized.

3.2.1 Grounding of Measuring Instrument

Interference measuring instruments were physically grounded with only one connection. When an antenna was used, the measuring instrument was connected to ground with only the power ground cord (green wire).

3.2.2 Measurement Accuracy

The accuracy of all measurements was as follows:

Frequency Accuracy: +/- 2%

Amplitude Accuracy: +/- 2 dB



Retlif Testing Laboratories

Test Report Number R-4455N2

3.0 General Requirements (continued)

3.3 Emissions Testing

3.3.1 Ambient Interference Levels

Ambient interference levels were at least 6 dB below the specified limit for conducted emissions. For radiated emissions, the ambient levels were verified. If the ambient was within 6 dB of the specified limit the following procedure was performed:

1. The device was pre-screened in a shielded enclosure to determine its spectral content.
2. When measuring on OATS, if the ambient interference level was less than 6 dB below the limit, the measurement antenna was moved closer to the equipment under test. The measurement was then taken and measurement was extrapolated out to the desired test distance using a 1/D extrapolation factor.

3.3.2 Detector Function

For the conducted and radiated emissions testing described herein a Peak detector function was utilized as specified in ANSI C63.4.

If any emission emanating from the EUT was found to be exceeding the specified limit then the measurements were retaken utilizing a Quasi-Peak detector function as specified in ANSI C63.4.

3.3.3 Measurement Frequencies

The entire frequency range for each applicable test method was scanned. All frequencies with emissions within 20 dB of the specified limit were recorded.



Retlif Testing Laboratories

Test Report Number R-4455N2

4.0 Test Sample Description

4.1 General

The EUT were four GTM Series 9200 AC-DC Power Supplies, manufactured by Globtek, Inc. of North Bergen, New Jersey. Each AC-DC Power Supply was powered via 120VAC, 60H, 1 phase. The EUT consisted of the following components:

EUT	MANUFACTURER	DESCRIPTION	MODEL NO.	SERIAL NO.
1	Globtek	AC-DC Power Supply	GTM9200P35048	#1
2	Globtek	AC-DC Power Supply	GTM9200P2313.3	#1
3	Globtek	AC-DC Power Supply	GTM9200P1503.3	#2
4	Globtek	AC-DC Power Supply	GTM9200P20048	#2

4.2 Configuration

Each AC-DC Power Supply had its cables configured as follows:

CABLE FROM	LENGTH	S/U ¹	CABLE TYPE	CABLE ROUTED TO
Power Input	2m	U	3 Conductor	Mains
Output	0.2m	U	Multi Conductor	Load

¹Shielded or Unshielded

All ports not listed were unterminated

4.3 Leads Tested

The following leads of the AC/DC power supply were tested during the course of this testing program in order to ensure compliance:

- 120 VAC, 60 Hz, Hot
- 120 VAC, 60 Hz, Neutral



Retlif Testing Laboratories

Test Report Number R-4455N2

5.0 Test Sample Parameters

5.1 Mode of Operation

During testing, the EUT was converting AC to DC power. DC output: EUT 1: 48 volts, 7.3amps. EUT 2: 3.3 volts, 70 amps. EUT 3: 3.3 volts, 45.45 amps. EUT 4: 48 volts, 4.17amps.

5.1.1 Support Equipment

The AC-DC Power Supplies utilized the following as support equipment in order to attain the above operating state during the course of this testing program:

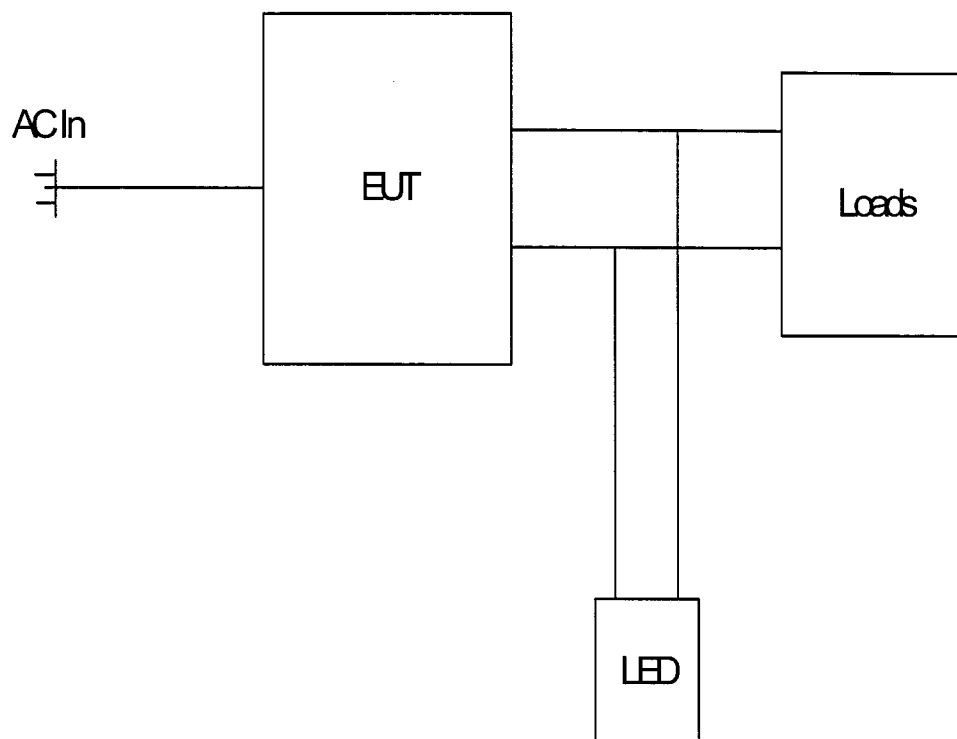
EUT	MANUFACTURER	DESCRIPTION	MODEL NO.	SERIAL NO.
1	N/A	Resistor Load	6.6 ohm	N/A
2	N/A	Resistor Load	.05 ohm	N/A
3	N/A	Resistor Load	.07 ohm	N/A
4	N/A	Resistor Load	9.2 ohm	N/A



Retlif Testing Laboratories

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Figure 1 - Test Sample Outline Diagram



Retlif Testing Laboratories

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6.0 Test Methods Performed

Test Method Summary

The tests outlined in the table below were performed on each power supply in accordance with the requirements of FCC Rules and Regulation Part 15, Subpart B, Class B limits:

PARAGRAPH	TEST METHOD	FREQUENCY RANGE	RESULTS
15.107(a)	Conducted Emissions, Class B	150 kHz to 30 MHz	Complied
15.109(a)	Radiated Emissions, Class B	30 MHz to 1 GHz	Complied

See individual test methods contained in paragraphs 6.1 through 6.2 of this test report for a full description of the test procedures utilized and the results obtained.



Retlif Testing Laboratories

Test Report Number R-4455N2

6.1 Conducted Emissions, 150 kHz TO 30 MHz

Purpose

The purpose of this test was to determine the magnitude of the radio frequency emissions emanating from the AC-DC Power Supply via conduction on the AC power leads in the frequency range of 0.150 to 30 MHz.

Test Limits

The limits shown in the table below were used to determine AC-DC Power Supply compliance:

Frequency Range	Class B Limits [dB (μV)]	
	Quasi-Peak	Average
0.15MHz to 0.50MHz	66.0 to 56.0	56.0 to 46.0
0.50MHz to 5.00MHz	56.0	46.0
5.00MHz to 30.0MHz	60.0	50.0

Leads Tested

The following leads of each AC-DC power supply were tested during the course of this testing program in order to ensure compliance:

- 120 VAC, 60 Hz, Hot
- 120 VAC, 60 Hz, Neutral

TEST SETUP

The AC-DC Power Supply was configured as shown in the attached photograph. This configuration was based on the test setup shown in Retlif Testing Laboratories Drawing No. R15107A-CE.

The test sample was placed on a 0.8 meter high wooden test stand above the floor of the test area (ground plane). The rear of the sample, including peripherals, was aligned and flush with the rear of the test stand. The test stand was situated such that the test sample was located 0.4 meters from one wall of the test area (the reference ground plane).

The test sample was located at least 0.8 meters from all other grounded surfaces (walls, floor, and ceiling of the test area). The power cord was then connected to a 50 ohm/50 uH artificial mains network (LISN). The artificial mains network was mounted on the ground plane of the test area in a position that produced a minimum distance of 0.8 meters between the test sample and the mains network. The test sample was connected to the artificial mains network by means of a cord of the type and length specified by the manufacturer. Where the cord length exceeded 1 meter it was folded in 40 cm bundles until the overall length was equal to 1 meter. External safety grounds were installed as specified by the manufacturer. Where not specified, the ground lead was 1 meter long and was ran parallel to and within 10 cm of the mains connection. The AC-DC Power Supply was arranged with cables terminated in accordance with manufacturer instructions.



Retlif Testing Laboratories

Test Report Number R-4455N2

6.1 Conducted Emissions, 150 kHz TO 30 MHz (continued)

Care was taken during testing to relocate all system components and cabling in an effort to maximize the emissions from the test sample. Excess interface cable length was draped over the back edge of the test stand. If any draped cable extended closer than 40 cm to the conducting ground plane, the excess was bundled in the center in a serpentine fashion using 40 cm lengths to maintain the 40 cm height. If the cable(s) could not be bundled due to bulk, length, or stiffness, they were draped over the back edge of test stand unbundled, but in such a way that all portions of the interface cable remained at least 40 cm from the horizontal conducting ground plane.

Test Procedure

With the test instrumentation and the AC-DC Power Supply configured as stated above, the following steps were performed in accordance with ANSI C63.4:

1. The test sample was arranged with cables terminated as specified in Paragraph 4.2 herein.
2. The spectrum analyzer was configured to display the frequency range of 0.15 to 30 MHz.
3. The operating mode of the AC-DC Power Supply was varied in order to determine the operating mode which produced the maximum conducted emissions with respect to the limit. This mode is detailed in paragraph 5.1 herein.
4. The spectrum analyzer was then configured to attain a max hold trace of the 120 VAC Hot lead in the 0.15 to 0.50 MHz frequency band utilizing a peak detector function.
5. The attained peak data was then compared to the average specified limit. If the obtained data was found to be in compliance with the average limit, then the test sample was found to comply.
6. If the obtained data did not comply with the average limit the scan was repeated utilizing a CISPR compliant receiver with a Quasi-Peak detector.
7. The attained Quasi-Peak data was then compared to the average specified limit. If the obtained data was found to be in compliance with the average limit, then the test sample was found to comply.
8. If the obtained data did not comply with the average limit step 6 was repeated utilizing an average detector.
9. The attained average data was then compared to the average specified limit. If the obtained data was found to be in compliance with the average limit, then the test sample was found to comply.
10. Steps 3 through 8 were repeated for each remaining lead to be tested.
11. Steps 3 through 9 were repeated with the analyzer configured to acquire data in the 0.50 to 5.0 MHz range.
12. Steps 3 through 9 were repeated with the analyzer configured to acquire data in the 5.0 to 30 MHz range.



Retlif Testing Laboratories

Test Report Number R-4455N2

6.1 Conducted Emissions, 150 kHz TO 30 MHz (continued)

Test Results

After the modifications listed on page two of this report, no emissions which exceeded the specified Part 15, Subpart B, Class B limits were observed and the two AC-DC Power Supplies tested (Models: GTM9200P35048 and GTM9200P2313.3) were found to comply with the requirements specified for this method. See the following data sheets for a full presentation of the results obtained.



Retlif Testing Laboratories

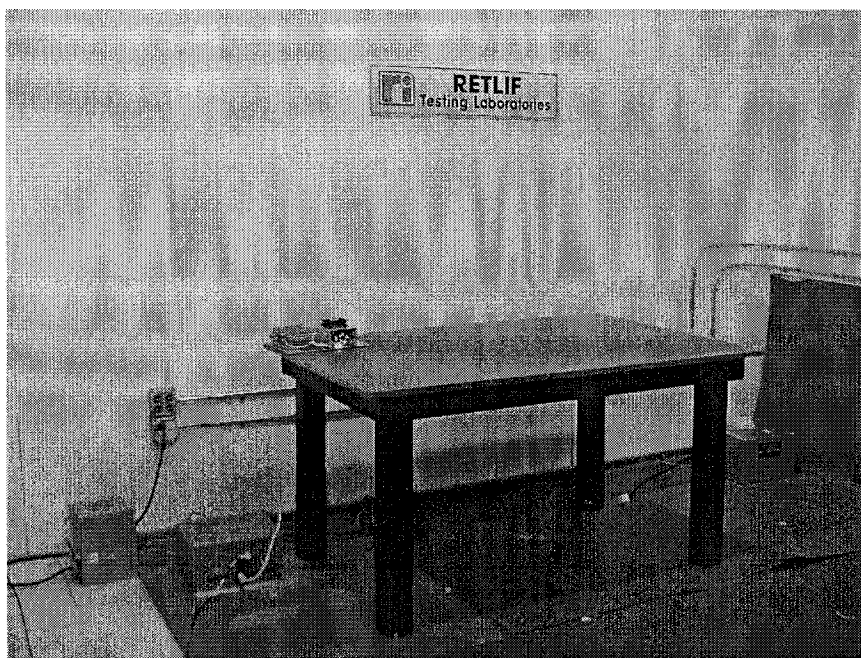
Test Report Number R-4455N2

**Test Photograph
Conducted Emissions**

EUT 1



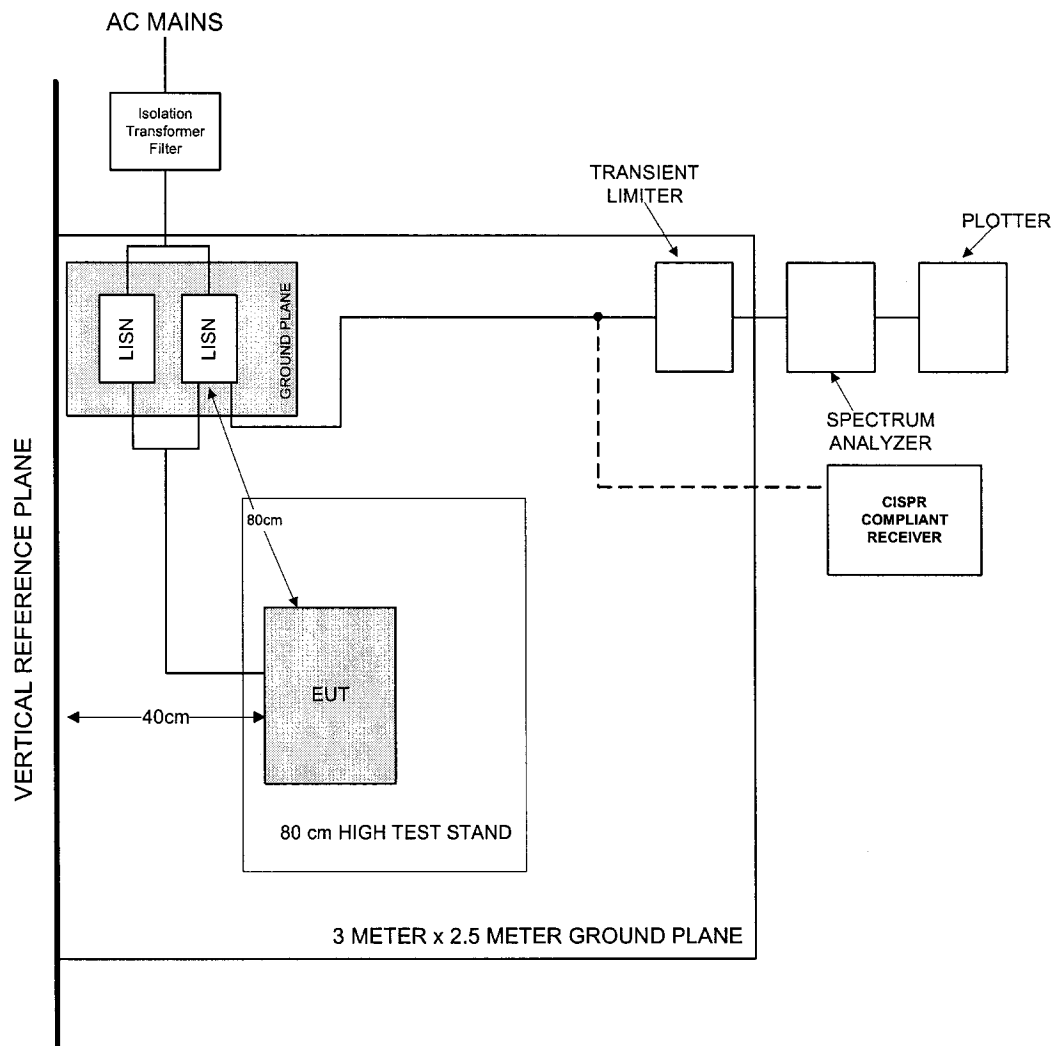
EUT 2



Retlif Testing Laboratories

Test Report Number R-4455N2

Figure R15107A-CE
Conducted Emissions



Retlif Testing Laboratories

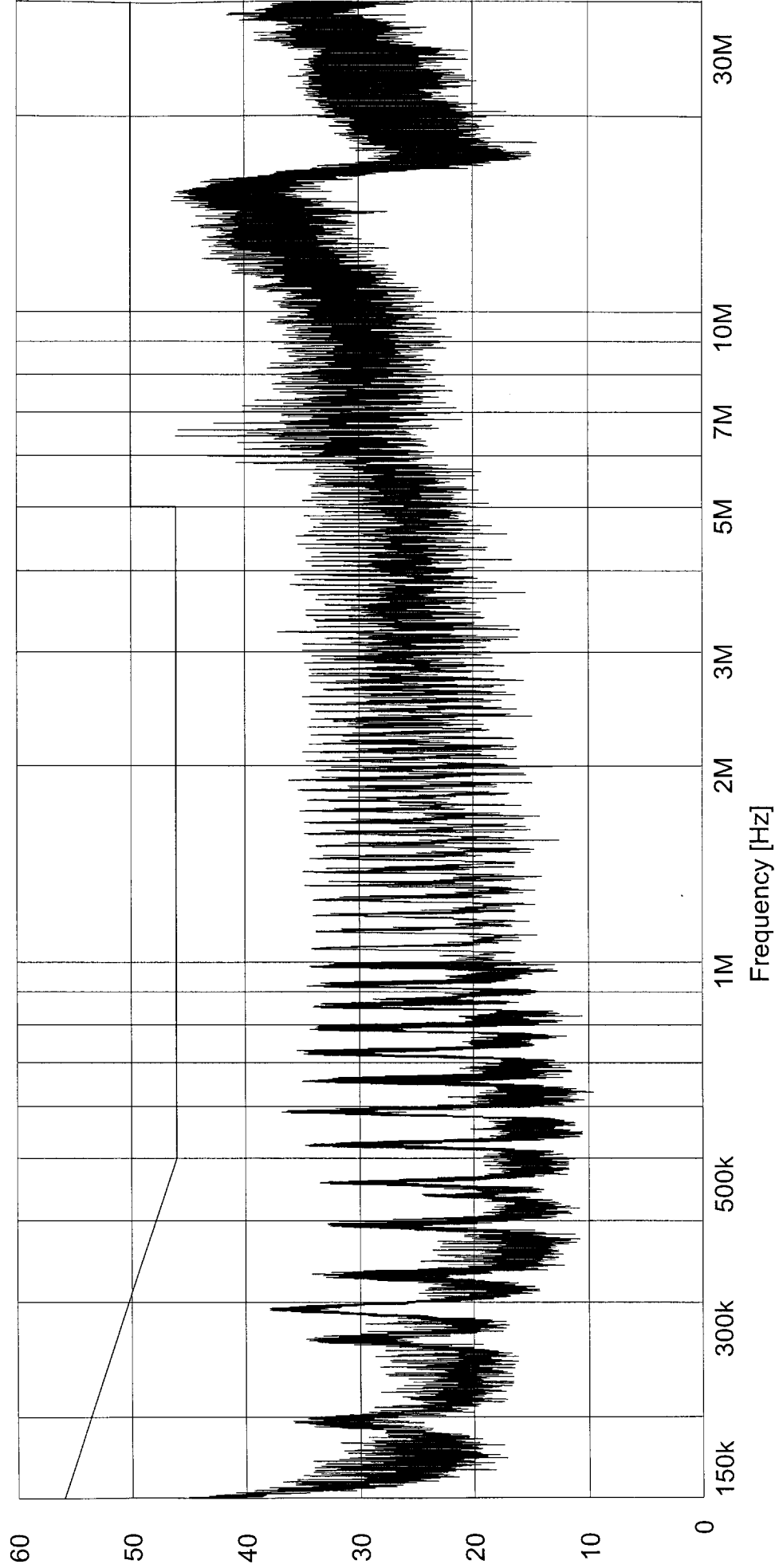
Test Report Number R-4455N2

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:		Conducted Emissions 150 kHz to 30 MHz	
Customer:	TUV America	Test Sample:	Globtek AC-DC Power Supply
Model No:	GTM9200P2313.3	Serial No:	1
Test Specification:	FCC Part 15 Subpart B Class B	Paragraph:	15.107 (a)
Operating Mode:	Output 3.3VDC, 70A	Job No:	R-4455N2
Notes:	Lead Tested: 120 VAC 60 Hz Hot	Technician:	T. Hannemann
	Peak Readings to Average Limits.	Date:	June 20, 2005

Level [dBμV]

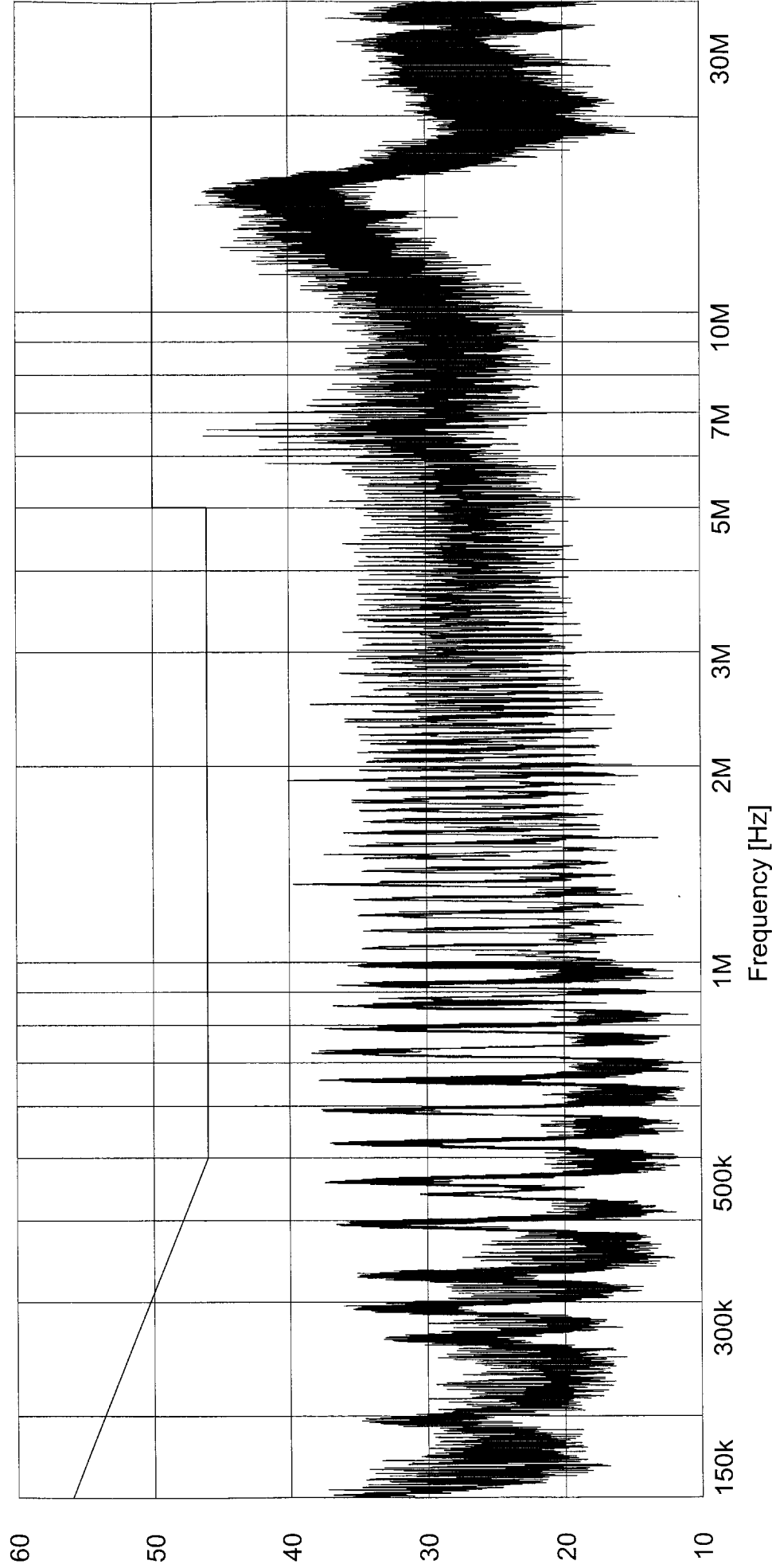


RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:		Conducted Emissions 150 kHz to 30 MHz	
Customer:	TUV America	Test Sample:	Globtek AC-DC Power Supply
Model No:	GTM9200P2313.3	Serial No:	1
Test Specification:	FCC Part 15 Subpart B Class B	Paragraph:	15.107 (a)
Operating Mode:	Output 3.3VDC, 70A	Job No:	R-4455N2
Notes:	Lead Tested: 120 VAC 60 Hz Neutral	Technician:	T. Hannemann
	Peak Readings to Average Limits.	Date:	June 20, 2005

Level [dBμV]

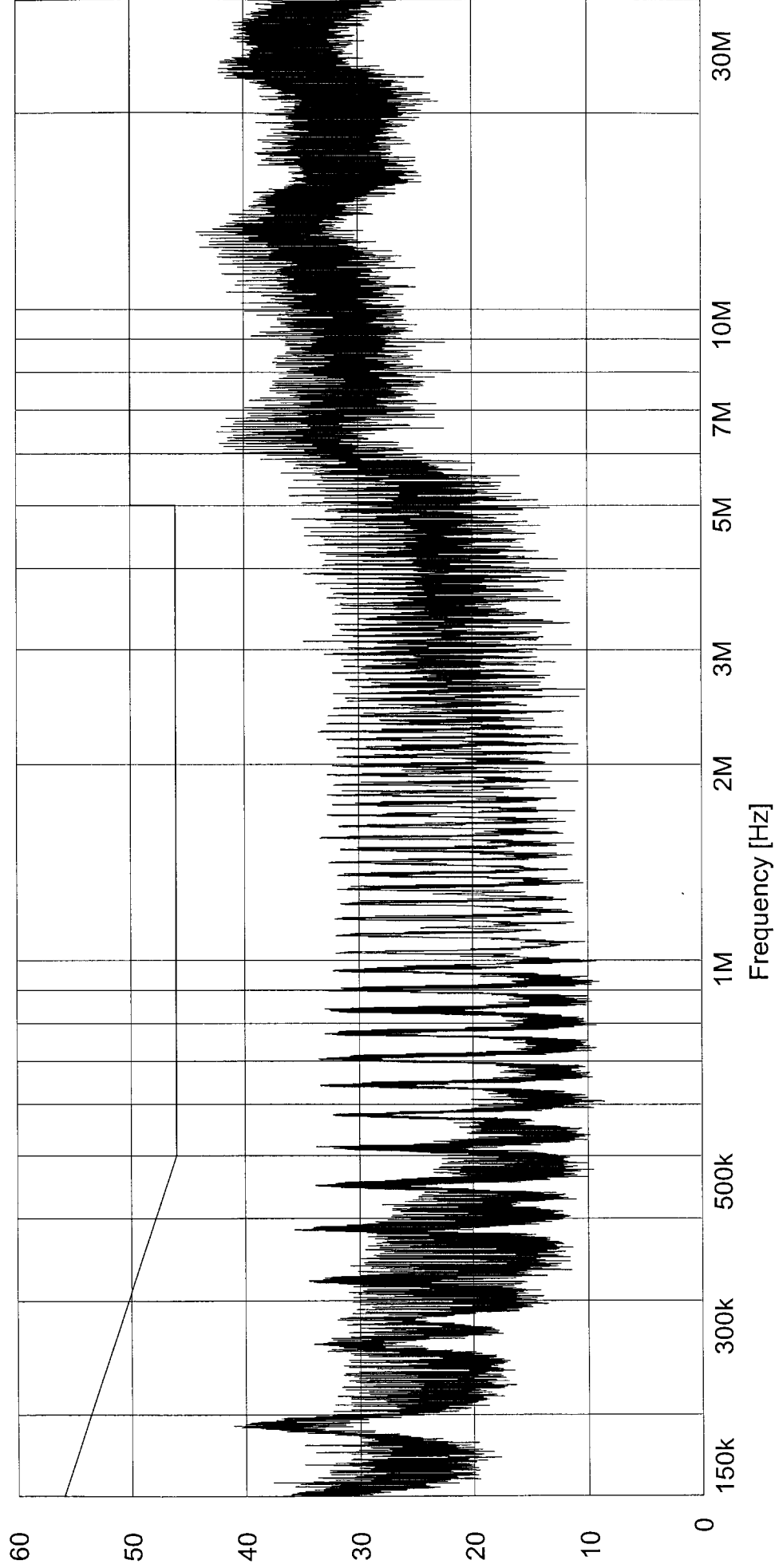


RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:		Conducted Emissions 150 kHz to 30 MHz	
Customer:	TUV America	Test Sample:	Globtek AC-DC Power Supply
Model No:	GTM9200P35048	Serial No:	1
Test Specification:	FCC Part 15 Subpart B Class B	Paragraph:	15.107 (a)
Operating Mode:	Output 48VDC, 7.3A	Job No:	R-4455N2
Notes:	Lead Tested: 120 VAC 60 Hz Hot	Technician:	T. Hannemann
	Peak Readings to Average Limits.	Date:	June 20, 2005

Level [dB μ V]

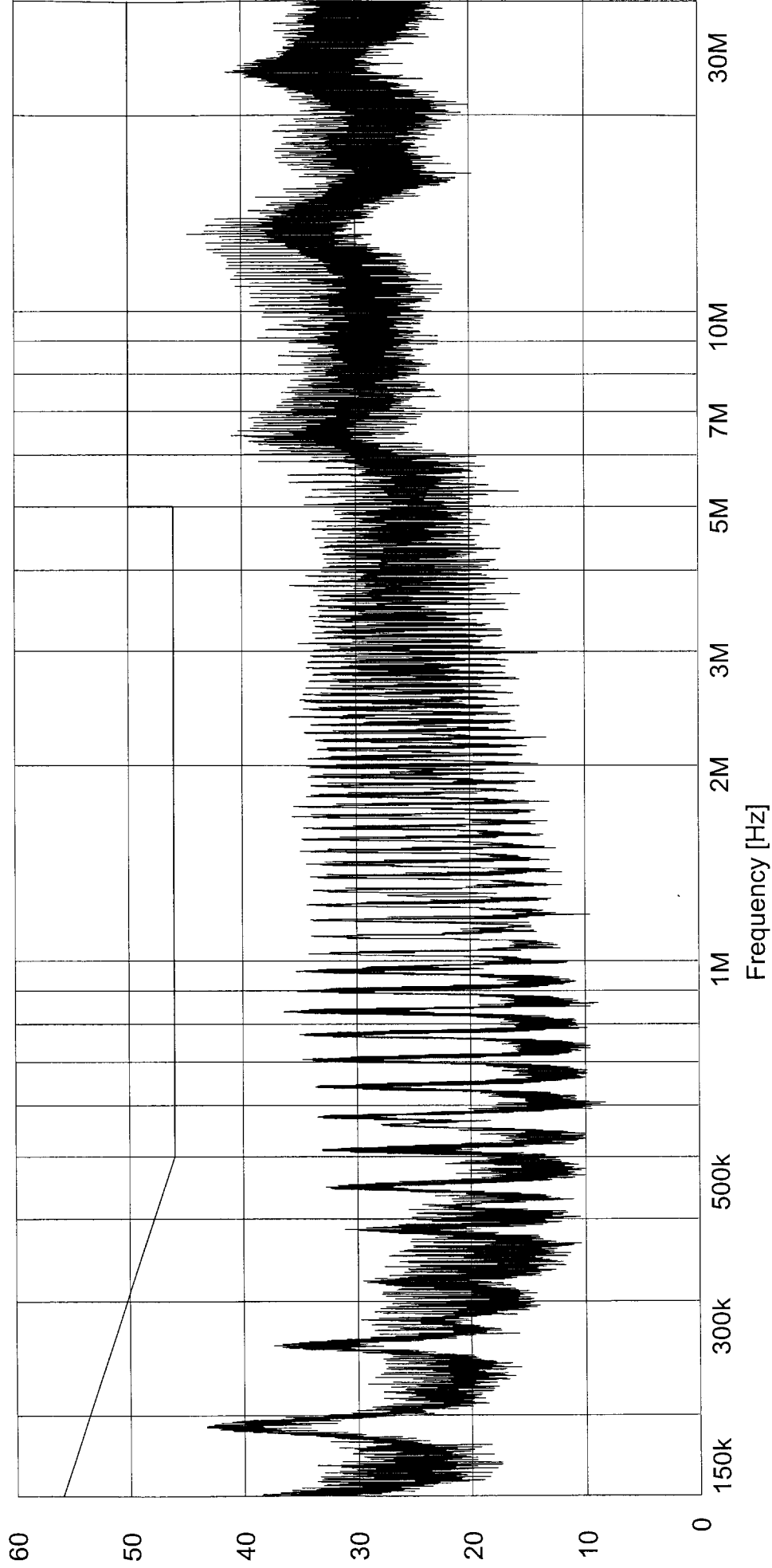


RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:		Conducted Emissions 150 kHz to 30 MHz	
Customer:	TUV America	Test Sample:	Globtek AC-DC Power Supply
Model No:	GTM9200P35048	Serial No:	1
Test Specification:	FCC Part 15 Subpart B Class B	Paragraph:	15.107 (a)
Operating Mode:	Output 48VDC, 7.3A	Job No:	R-4455N2
Notes:	Lead Tested: 120 VAC 60 Hz Neutral	Technician:	T. Hannemann
	Peak Readings to Average Limits.	Date:	June 20, 2005

Level [dBμV]



**Equipment List
Conducted Emissions**

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
4028	Isolation Transformer	Acme	N/A	120x240	01/31/2005	01/31/2006
4029	Open Area Test Site	Retlif	3 / 10 Meters	RNH	11/14/2003	11/14/2006
5038	10 DB Atten. (50 ohm)	Fluke	DC - 12.4 GHz	Y9304	02/07/2005	02/07/2006
713	EMI Test Receiver	Rohde & Schwarz	20 Hz - 26.5 GHz	ESL26	03/22/2005	03/22/2006



Retlif Testing Laboratories

Test Report Number R-4455N2

6.2 Radiated Emissions, 30 MHz TO 1 GHz

Purpose

The purpose of this test was to determine the magnitude of the radio frequency emissions emanating from the AC-DC Power Supply via radiation from the enclosure and connected cabling in the frequency range of 30 MHz to 1 GHz.

Test Limits

The limits shown in the table below were used to determine AC-DC Power Supply compliance:

FREQUENCY RANGE	CLASS B LIMITS @ 3 Meters
	dB μ V/M
30.0 MHz to 230.0 MHz	40.0
230.0 MHz to 1000 MHz	47.0

Test Setup

The AC-DC Power Supply was configured as shown in the attached photograph. This configuration was based on the test setup shown in Retlif Testing Laboratories Drawing No. R15109A-RE. The test sample was placed on an 80 cm high wooden test stand above the ground plane of the shielded enclosure for preliminary measurements and the FCC listed OATS for final measurements. The rear of the test sample, including peripherals, was aligned and flush with the rear of the test stand. The test stand was placed directly on the flush mounted turn table. The turn table positions were relative to the test sample as follows: When facing the AC-DC Power Supply the front is at 0°, the rear is at 180°, and the left side is at 270°. The test stand was situated such that the boundary of the test sample was located 3 meters from the measuring antenna.

The AC-DC Power Supply was arranged on the test stand in accordance with the manufacturers instructions. Care was taken during testing to relocate all system components and cabling in an effort to maximize the emissions from the test sample. Excess interface cable length was draped over the back edge of the test stand. If any draped cable extended closer than 40 cm to the conducting ground plane, the excess was bundled in the center in a serpentine fashion using 40 cm lengths to maintain the 40 cm height. If the cable(s) could not be bundled due to bulk, length, or stiffness, they were draped over the back edge of test stand unbundled, but in such a way that all portions of the interface cable remained at least 40 cm from the horizontal conducting ground plane. The AC power cable(s) were draped over the rear edge of the test stand and routed down to the AC mains.



Retlif Testing Laboratories

Test Report Number R-4455N2

6.2 Radiated Emissions, 30 MHz TO 1 GHz (continued)

Test Procedure

With the test instrumentation and the AC-DC Power Supply configured as stated above, the following steps were performed in accordance with ANSI C63.4:2001:

1. The AC-DC Power Supply was arranged with cables terminated as specified in Paragraph 4.2 herein.
2. The spectrum analyzer was configured to display the frequency range of 30 MHz to 80 MHz.
3. With the test antenna vertically polarized, the AC-DC Power Supply cabling was relocated in order to maximize the radiated emissions.
4. The operating mode of the AC-DC Power Supply was varied in order to determine the operating mode which produced maximum radiated emissions with respect to the limit.
5. Once the configuration, both cabling and operating mode, which produced maximum emissions was determined the AC-DC Power Supply was maintained in this configuration for the duration of testing.
6. A max hold spectrum analyzer trace, trace A, was obtained with the AC-DC Power Supply operating.
7. The AC-DC Power Supply was powered off and a max hold spectrum analyzer trace, trace B, was obtained to denote the ambient interference levels.
8. The two obtained traces were analyzed in order to determine which recorded emissions were produced by the AC-DC Power Supply.
9. At each frequency upon which an emission was determined to be from the AC-DC Power Supply the following steps were performed in order to further maximize the observed emissions:
 - a. The test antenna height was varied from 1 to 4 meters.
 - b. The test antenna polarization was varied from vertical to horizontal.
 - c. The AC-DC Power Supply was rotated 360° about its vertical axis.
10. The test antenna RF cable was connected to the CISPR compliant receiver.
11. For all emissions found to be within 20 dB of the specified limit, the following was recorded on the x-y plot:
 - a. Frequency of emission
 - b. Quasi-Peak detector receiver meter reading.
 - c. Correction factor consisting of antenna factor, cable loss and pre-amp gain.
 - e. Test antenna height and polarization.
 - f. Turntable position.
12. Steps 6 through 11 above were repeated for the following frequency ranges: 80 to 130 MHz, 130 to 200 MHz, 200 to 500 MHz, 500 to 750 MHz and 750 MHz to 1 GHz.



Retlif Testing Laboratories

Test Report Number R-4455N2

6.2 Radiated Emissions, 30 MHz TO 1 GHz (continued)

Test Results

No emissions which exceeded the specified Part 15, Subpart B, Class B limits were observed and the four AC-DC Power Supplies were found to comply with the requirements specified for this method. See the following data sheets for a full presentation of the results obtained.

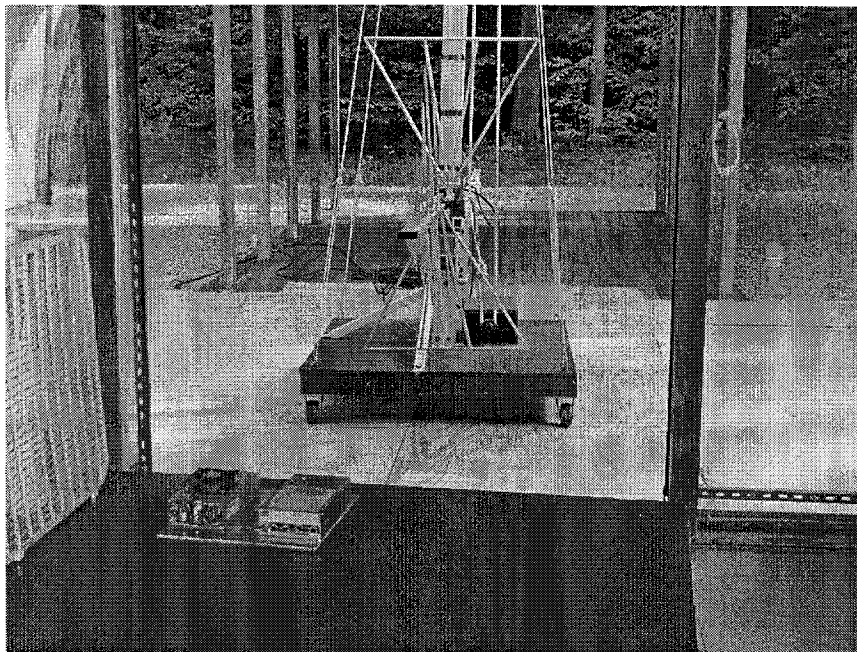


Retlif Testing Laboratories

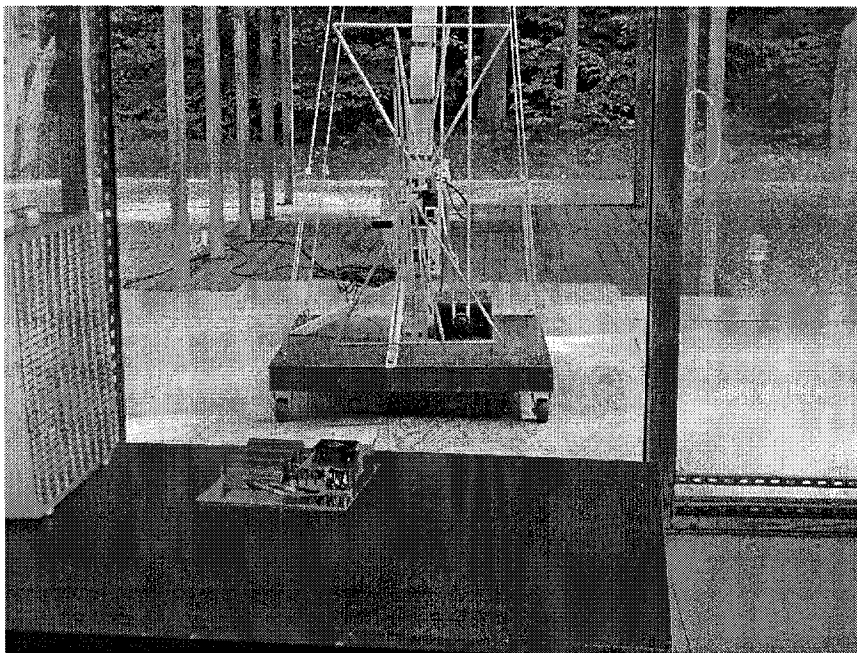
Test Report Number R-4455N2

**Test Photographs
Radiated Emissions**

EUT 1



EUT 2

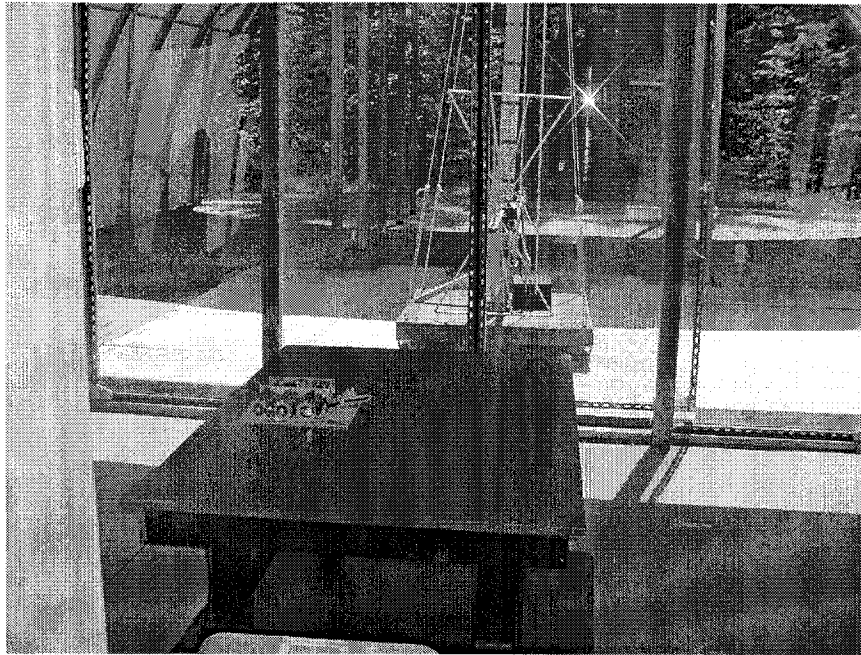


Retlif Testing Laboratories

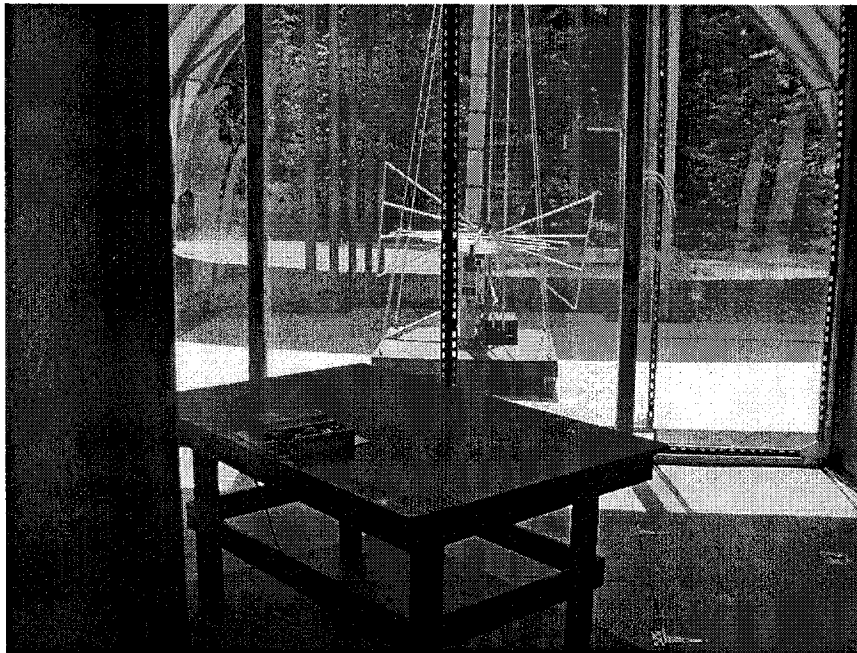
Test Report Number R-4455N2

**Test Photographs
Radiated Emissions**

EUT 3



EUT 4

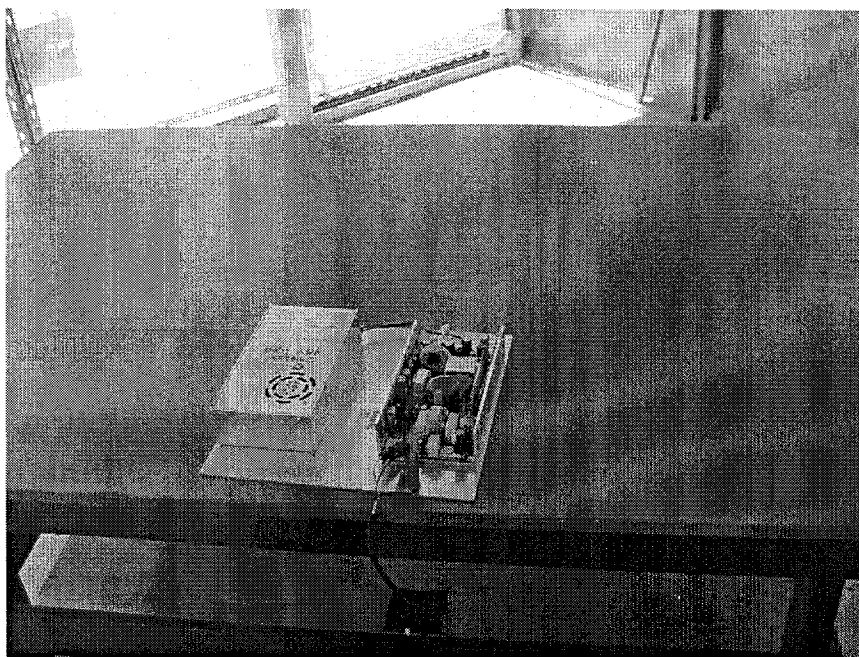


Retlif Testing Laboratories

Test Report Number R-4455N2

**Test Photograph
Radiated Emissions**

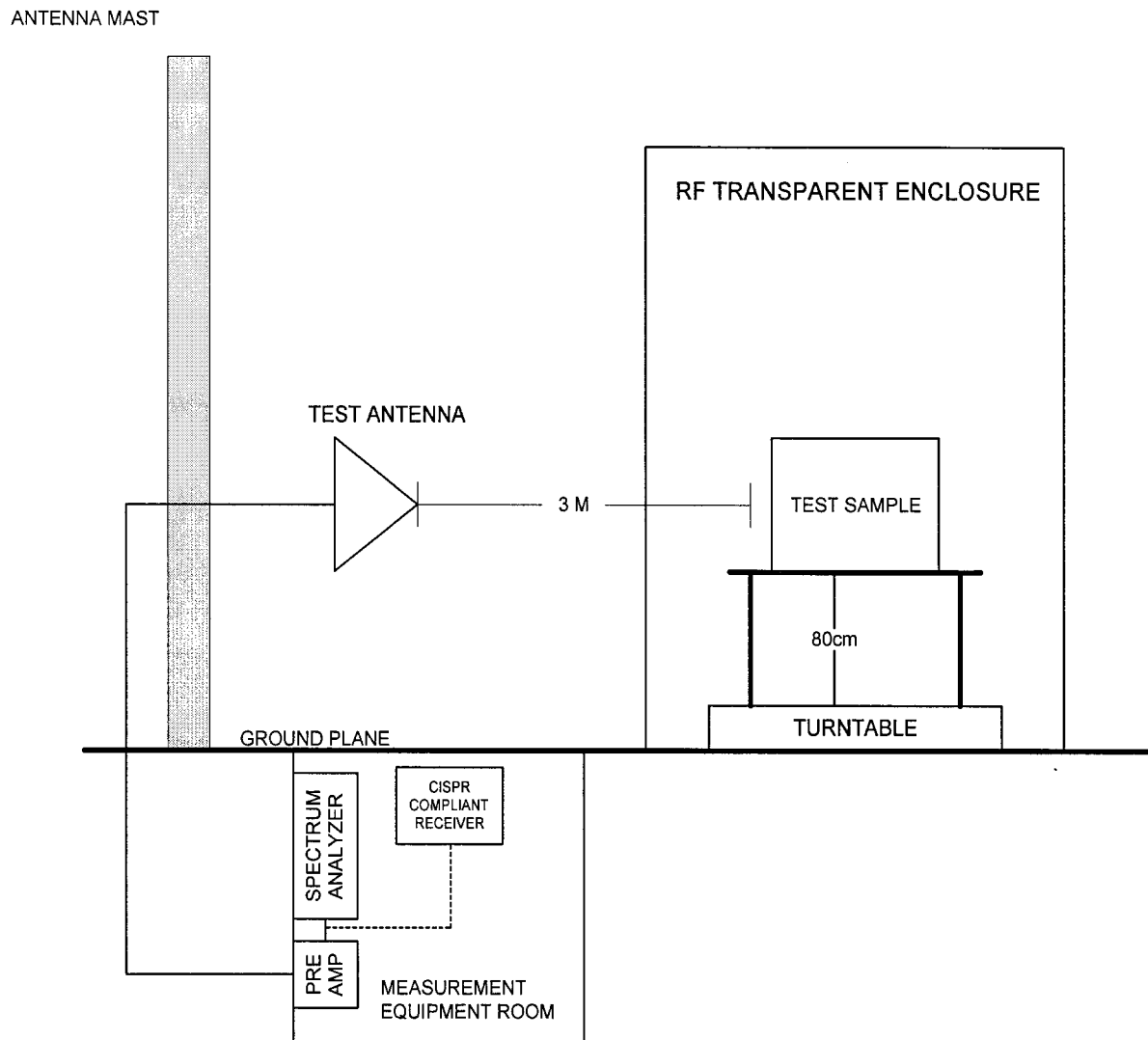
EUT 4



Retlif Testing Laboratories

Test Report Number R-4455N2

Figure R15109A-RE
Radiated Emissions



Retlif Testing Laboratories

Test Report Number R-4455N2

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:

Radiated Emissions 30 MHz to 1 GHz

Customer

TUV America

Job No.

R-4455N2

Test Sample

Globtek AC-DC Power Supply

Model No.

GTM9200P35048

Serial No.

1

Test Specification:

FCC Part 15 Subpart B Class B

Paragraph: 15.109 (a)

Operating Mode:

Output 48VDC, 7.3A

Technician:

T. Hannemann

Date:

June 8, 2005

Notes:

Test Distance: 3 Meters

Detector: Quasi-Peak

[illegible]

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet.

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:

Radiated Emissions 30 MHz to 1 GHz

Customer

TUV America

Job No.

R-4455N2

Test Sample

Globtek AC-DC Power Supply

Model No.

GTM9200P20048

Serial No.

2

Test Specification:

FCC Part 15 Subpart B Class B

Paragraph: 15.109 (a)

Operating Mode:

Output 48VDC, 4.17A

Technician:

T. Hannemann

Date:

June 8, 2005

Notes:

Test Distance: 3 Meters

Detector: Quasi-Peak

[illegible]

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet.

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Radiated Emissions 30 MHz to 1 GHz		
Customer	TUV America	Job No.	R-4455N2
Test Sample	Globtek AC-DC Power Supply		
Model No.	GTM9200P1503.3	Serial No.	2
Test Specification:	FCC Part 15 Subpart B Class B Paragraph: 15.109 (a)		
Operating Mode:	Output 3.3VDC, 45.45A		
Technician:	T. Hannemann	Date:	June 8, 2005
Notes:	Test Distance: 3 Meters Detector: Quasi-Peak		

[illegible]

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet.

**Equipment List
Radiated Emissions**

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
3119A	Pre-Amplifier	Retlif	10 kHz - 1 GHz	RET-PA-SW	07/23/2004	07/23/2005
4029B	Test Site Attenuation	Retlif	3 / 10 Meters	RNH	12/03/2004	12/03/2005
4202	Biconilog	EMCO	26 MHz - 2 GHz	3142	12/13/2004	12/13/2005
713	EMI Test Receiver	Rohde & Schwarz	20 Hz - 26.5 GHz	ESL26	03/22/2005	03/22/2006



Retlif Testing Laboratories

Test Report Number R-4455N2

Appendix A: FCC Rules - Verification



Retlif Testing Laboratories

Test Report Number R-4455N2

Appendix A

Sec. 2.902 Verification.

(a) Verification is a procedure where the manufacturer makes measurements or takes the necessary steps to insure that the equipment complies with the appropriate technical standards. Submittal of a sample unit or representative data to the Commission demonstrating compliance is not required unless specifically requested by the Commission pursuant to Sec. 2.957, of this part.

(b) Verification attaches to all items subsequently marketed by the manufacturer or importer which are identical as defined in Sec. 2.908 to the sample tested and found acceptable by the manufacturer.

Sec. 2.908 Identical defined.

As used in this subpart, the term identical means identical within the variation that can be expected to arise as a result of quantity production techniques.

Sec. 2.909 Responsible party.

The following parties are responsible for the compliance of radio frequency equipment with the applicable standards:

(b) In the case of equipment subject to authorization under the verification procedure, the manufacturer or, in the case of imported equipment, the importer. If subsequent to manufacture and importation, the radio frequency equipment is modified by any party not working under the authority of the responsible party, the party performing the modification becomes the new responsible party.

(d) If, because of modifications performed subsequent to authorization, a new party becomes responsible for ensuring that a product complies with the technical standards and the new party does not obtain a new equipment authorization, the equipment shall be labeled, following the specifications in Sec. 2.925(d), with the following:

"This product has been modified by [insert name, address and telephone number of the party performing the modifications]."

Sec. 2.952 Limitation on verification.

(a) Verification signifies that the manufacturer or importer has determined that the equipment has been shown to be capable of compliance with the applicable technical standards if no unauthorized change is made in the equipment and if the equipment is properly maintained and operated. Compliance with these standards shall not be construed to be a finding by the manufacturer or importer with respect to matters not encompassed by the Commission's rules.

(b) Verification of the equipment by the manufacturer or importer is effective until a termination date is otherwise established by the Commission.

(c) No person shall, in any advertising matter, brochure, etc., use or make reference to a verification in a deceptive or misleading manner or convey the impression that such verification reflects more than a determination by the manufacturer or importer that the device or product has been shown to be capable of compliance with the applicable technical standards of the Commission's rules.



Retlif Testing Laboratories

Test Report Number R-4455N2

Sec. 2.953 Responsibility for compliance.

(a) In verifying compliance, the responsible party, as defined in Sec. 2.909 warrants that each unit of equipment marketed under the verification procedure will be identical to the unit tested and found acceptable with the standards and that the records maintained by the responsible party continue to reflect the equipment being produced under such verification within the variation that can be expected due to quantity production and testing on a statistical basis.

(b) The importer of equipment subject to verification may upon receiving a written statement from the manufacturer that the equipment complies with the appropriate technical standards rely on the manufacturer or independent testing agency to verify compliance. The test records required by Sec. 2.955 however should be in the English language and made available to the Commission upon a reasonable request, in accordance with Sec. 2.956.

(c) In the case of transfer of control of equipment, as in the case of sale or merger of the grantee, the new manufacturer or importer shall bear the responsibility of continued compliance of the equipment.

(d) Verified equipment shall be reverified if any modification or change adversely affects the emanation characteristics of the modified equipment. The party designated in Sec. 2.909 bears responsibility for continued compliance of subsequently produced equipment.



Retlif Testing Laboratories

Test Report Number R-4455N2

Appendix B: FCC Rules - Retention of records



Retlif Testing Laboratories

Test Report Number R-4455N2

Appendix B

Sec. 2.955 Retention of records.

(a) For each equipment subject to verification, the responsible party, as shown in Sec. 2.909 shall maintain the records listed as follows:

- (1) A record of the original design drawings and specifications and all changes that have been made that may affect compliance with the requirements of Sec. 2.953.
- (2) A record of the procedures used for production inspection and testing (if tests were performed) to insure the conformance required by Sec. 2.953. (Statistical production line emission testing is not required.)

(3) A record of the measurements made on an appropriate test site that demonstrates compliance with the applicable regulations in this chapter. The record shall:

- (i) Indicate the actual date all testing was performed;
- (ii) State the name of the test laboratory, company, or individual performing the verification testing. The Commission may request additional information regarding the test site, the test equipment or the qualifications of the company or individual performing the verification tests;
- (iii) Contain a description of how the device was actually tested, identifying the measurement procedure and test equipment that was used;
- (iv) Contain a description of the equipment under test (EUT) and support equipment connected to, or installed within, the EUT;
- (v) Identify the EUT and support equipment by trade name and model number and, if appropriate, by FCC Identifier and serial number;
- (vi) Indicate the types and lengths of connecting cables used and how they were arranged or moved during testing;
- (vii) Contain at least two drawings or photographs showing the test set-up for the highest line conducted emission and showing the test set-up for the highest radiated emission. These drawings or photographs must show enough detail to confirm other information contained in the test report. Any photographs used must be focused originals without glare or dark spots and must clearly show the test configuration used;
- (viii) List all modifications, if any, made to the EUT by the testing company or individual to achieve compliance with the regulations in this chapter;
- (ix) Include all of the data required to show compliance with the appropriate regulations in this chapter; and
- (x) Contain, on the test report, the signature of the individual responsible for testing the product along with the name and signature of an official of the responsible party, as designated in Sec. 2.909.

(4) For equipment subject to the provisions in part 15 of this chapter, the records shall indicate if the equipment was verified pursuant to the transition provisions contained in Sec. 15.37 of this chapter.

(b) The records listed in paragraph (a) of this section shall be retained for two years after the manufacture of said equipment item has been permanently discontinued, or until the conclusion of an investigation or a proceeding if the manufacturer or importer is officially notified that an investigation or any other administrative proceeding involving his equipment has been instituted.



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Appendix C: FCC Rules - Identification / Labeling



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Appendix C

Sec. 2.954 Identification.

Devices subject only to verification shall be uniquely identified by the person responsible for marketing or importing the equipment within the United States. However, the identification shall not be of a format which could be confused with the FCC Identifier required on certified, notified or type accepted equipment. The importer or manufacturer shall maintain adequate identification records to facilitate positive identification for each verified device.

Sec. 15.19 Labeling requirements.

- (b) In addition to the requirements in part 2 of this chapter, a device subject to certification, or verification shall be labeled as follows:

- (3) All other devices shall bear the following statement in a conspicuous location on the device:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

- (4) Where a device is constructed in two or more sections connected by wires and marketed together, the statement specified under paragraph (a) of this section is required to be affixed only to the main control unit.

- (5) When the device is so small or for such use that it is not practicable to place the statement specified under paragraph (a) of this section on it, the information required by this paragraph shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed. However, the FCC identifier or the unique identifier, as appropriate, must be displayed on the device.



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Appendix D: FCC Rules - Information to user



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Appendix D

Sec. 15.21 Information to user.

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In cases where the manual is only available electronically through the Internet or other computer network, the information required by this section may be included in the electronic manual.

Sec. 15.105 Information to the user.

(b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

(c) The provisions of paragraphs (a) and (b) of this section do not apply to digital devices exempted from the technical standards under the provisions of Sec. 15.103.

(d) For systems incorporating several digital devices, the statement shown in paragraph (a) or (b) of this section needs to be contained only in the instruction manual for the main control unit.

(e) In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.



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