Project:	04ME02062
File:	E172861
Date:	2/04/2004
Model:	GTM1089/GTM1096 & GTM1097 Series

Test Report

On

Electromagnetic Compatibility Testing

Underwriters Laboratories Inc.
1285 Walt Whitman Rd.
Melville, NY 11747

Tel: (631) 271-6200 Fax: (631) 439-6095

Test Report Details

Tests Performed By:	**Underwriters Laboratories Inc.** **1285 Walt Whitman Rd.** **Melville, NY 11747**
Tests Performed For:	**Globtek Inc.** **186 Veterans Drive** **Northvale , NJ 07647**
Applicant Contact:	**David Rakovsky**
Title:	**N/A**
Phone:	**(201) 784-1000**
Fax:	**(201) 784-0111**
E-mail:	**rokavskyd@globtek.com**
Test Report Date:	**2/02/2004**
Product Type:	**Power Supplies**
Model Number:	**GT (M) 21097-XXYY and GT (M) 21089-XXYY-A.B-CC,** **GT (M) 21096-YYZZ-A.B-FD Series**
Sample Serial Number:	**N/A**
Sample Tag Number:	**0544546001**
Sample Receive Date:	**1/9/04**
EUT Category:	**Medical Device/ITE**
Testing Start Date:	**13 January 2004**
Date Testing Complete:	**21 January 2004**

Underwriters Laboratories Inc. reports apply only to the specific samples tested under stated test conditions. All samples tested were in good operating condition throughout the entire test program. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. Underwriters Laboratories Inc. shall have no liability for any deductions, inferences or generalizations drawn by the client or others from Underwriters Laboratories Inc. issued reports. This report shall not be used to claim, constitute or imply product certification, approval, or endorsement by NVLAP, A2LA, or any agency of the US government.

This report may contain test results that are not covered by the NVLAP or A2LA accreditation. The scope of accreditation is limited to the specific tests that are listed on the NVLAP and/or A2LA certificates provided at the end of this report.

Report Directory

Report Revision History

Revision Date	Description	Revised By	Revision Reviewed By
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1.0 G E N E R A L - Product Description

The switching power supplies are desktop or wall plug in with universal input.

The model numbers depicted throughout the report were the actual samples that were tested. It is the manufacturers responsibility to assure all other model numbers within the 1089 and 1097 series perform as the samples actually tested.

In addition, based on the manufacturer the 1096 is identical to the 1089 except for the following differences:

1. The 1089 family is provided with an enclosure: the 1096 are open frame.
2. The 1096 family is provided with a Molex connector for input and output connections.

1.1 Device Configuration During Test

The power supplies were loaded with a resistive load based on the manufacturers specifications.

1.1.1 Equipment Used During Test:

Use*	Product Type	Manufacturer	Model	Comments
EUT	Power Supply	Globtek Inc.	GT-21097-5012	This was a 12 volt output supply
EUT	Power Supply	Globtek Inc.	GTM-21089-1512-T3	This was a 12 volt output supply
SIM	Load	UL	---------	Resistive load

* Use = EUT - Equipment Under Test, ACC - Accessory (Not Subjected to Test), or SIM - Simulator (Not Subjected to Test)

1.1.2 Input/Output Ports:

Port #	Name	Type*	Cable Max. >3m	Cable Shielded	Comments
0	Enclosure	N/E	-	-	None
1	Mains	AC	< 3M	No	Standard power cord
2	Output	DC	< 3M	No	---------

*AC = AC Power Port DC = DC Power Port N/E = Non-Electrical
I/O = Signal Input or Output Port (Not Involved in Process Control)
PMC = Process Measurement and Control Port

1.1.3 EUT Internal Operating Frequencies:

Frequency (MHz)	Description	Frequency (MHz)	Description
0.100	Power Supply Freq.	----	----
0.150	Power Supply Freq.	----	----

1.1.4 Power Interface:

Mode #	Voltage (V)	Current (A)	Power (W)	Frequency (DC/AC-Hz)	Phases (#)	Comments
Rated						
1	100	4.17	50	50	1	Note: GT-21097-5012 was the actual model number tested
2	240	4.17	50	50	1	Note: GT-21097-5012 was the actual model number tested
3	100	1.25	18	50	1	Note: GTM-21089-1512-T3 was the actual model number tested
4	240	1.25	18	50	1	Note: GTM-21089-1512-T3 was the actual model number tested
5	230	4.17	50	50	1	Note: GT-21097-5012 was the actual model number tested
6	230	4.17	18	50	1	Note: GTM-21089-1512-T3 was the actual model number tested

1.2 EUT Operation Modes:

Mode #	Description
1	Power Supplies Loaded

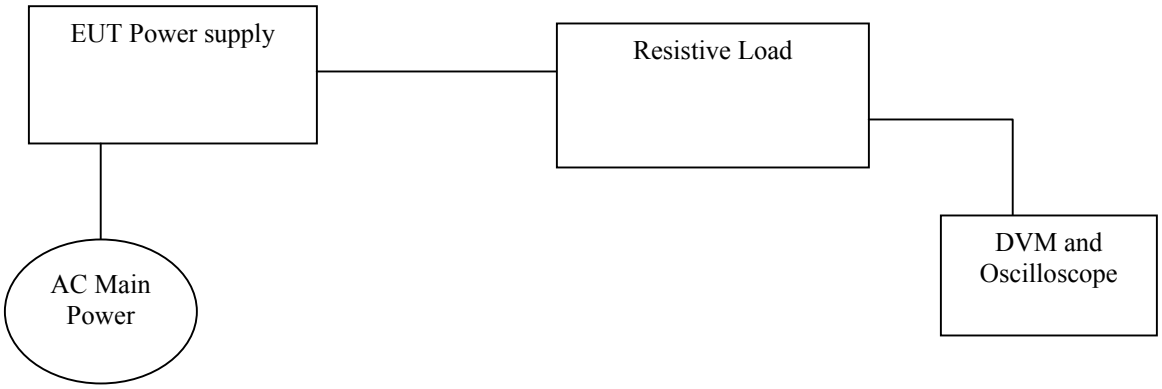
1.3 EUT Configuration Modes:

Mode #	Description
1	The power supplies were loaded with a resistive load

"The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report"

1.4 Block Diagram:

The diagram below illustrates the configuration of the equipment above.



1.5 Deviations from standard test methods.

Not Applicable

1.6 Device Modifications Necessary for Compliance

Not Applicable.

1.7 Test Summary

Test Name Test Requirement/Specification	Comply	Does Not Comply	See Remark
Radiated Disturbance Emissions - 30 to 1000 MHz Electric Field EN55011, Group 1, Class B	✓	-	1
EN5022 Class B	✓		1
Conducted Disturbance Emissions - Voltage		-	
EN5022 Class B	✓		1
EN55011, Group 1, Class B			
Radiated Disturbance Immunity EN55024 / EN60601-1-2 / IEC 61000-4-3:2002	✓	-	1
Conducted Disturbance Immunity EN55024 / EN60601-1-2 / IEC 61000-4-6:2001	✓	-	1
Power Frequency Magnetic Field Immunity EN55024 / EN60601-1-2 / IEC 61000-4-8:2001	✓	-	1
Voltage Dips and Sags Immunity EN55024 / EN60601-1-2 / IEC 61000-4-11:2001	✓	-	1
Electrical Fast Transient/Bursts Immunity EN55024 / EN60601-1-2 / IEC 61000-4-4:2001	✓	-	1
Electrostatic Discharge Immunity EN55024 / EN60601-1-2 / IEC 61000-4-2:2001	✓	-	1
Surge Immunity EN55024 / EN60601-1-2 / IEC 61000-4-5:2001	✓	-	1
Voltage Fluctuations/Flicker EN55024 / EN 61000-3-3 A1: 2001 / EN 61000-3-3 A1: 2001	✓	-	1
Harmonic Current Emissions EN55024 / EN 61000-3-2:2001 / EN 61000-3-2:2001	✓	-	1

Remarks:

1) No Modifications required for compliance.
2) Modifications required to comply as described in Section 1.5

2.0 Conclusion:

The tests listed in the Summary of Testing section of this report have been performed and the results recorded by Underwriters Laboratories Inc. in accordance with the procedures stated in each test requirement and specification. The Applicant as being applicable to the Equipment Under Test determined the test list. As a result, the subject product has been verified to comply or not comply as noted in the Summary of Testing with each test specification. The test results relate only to the items tested.

The equipment under test has met the technical requirements as defined under sections 5.0 and 6.0.

Test Start Date: 13 January 2004
Test Completion Date: 21 January 2004

Joseph Danisi (Ext.23055)
Senior Engineering Associate
International EMC Services
Conformity Assessment Services-3027EMEL

Robert DeLisi (Ext.22452)
Senior Staff Engineer
International EMC Services
Conformity Assessment Services-3027EMEL

3.0 FCC Labeling Information

Not required under this investigation.

4.0 Calibration of Equipment Used for Measurement

All test equipment and test accessories are calibrated on a regular basis. The maximum time between calibrations is the manufacturer recommends one year or what whichever is less.

All test equipment calibrations are traceable to the National Institute of Standards and Technology (NIST); therefore, all test data recorded in this report is traceable to NIST.

5.0 EMISSIONS TEST REGULATIONS

The emissions tests were performed according to following regulations:

---------- International ----------

EMC - Directive 89/336/EEC as amended by 92/31/EEC and 93/68/EEC

EN55011, Group 1, Class B	Industrial, scientific and medical (ISM) radio-frequency equipment - Radio disturbance characteristics - Limits and methods of measurement - Includes amendments A1: 1999 and A2: 2002; CISPR 11:1997 + A1: 1999 + A2: 2002, modified
EN55022, Class B	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement - Ratified European Text; CISPR 22: 1997/A2: 2002
EN61000-3-3:	Limitation of voltage change, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 amps per phase and not subject to conditional connection.
EN61000-3-2 Ed.2: 2001	Limits for Harmonic Current Emissions (equipment input current up to and including 16A per phase)

5.1.1 Conducted Emissions Tests

Test Applicable

Measurements were made on a ground plane that extends 1-meter minimum beyond all sides of the system under test. All power was connected to the system through Line Impedance Stabilization Networks (LISN). Conducted voltage measurements on mains lines were made at the output of the LISN.

Results

The system met the requirements for conducted emissions. Data Pages follow.

Temperature:	21.5 °C	20.5 °C
Humidity:	35 %RH	35 %RH
Pressure:	1004 mbar	1009 mbar
Date test performed:	13 January 2004	14 January 2004

1 fully configured sample was scanned over the following frequency range

Frequency range on each side of line	Measurement Point	Mode*	
		Power	Operation
150kHz to 30MHz	Voltage, Mains	5	1
150kHz to 30MHz	Voltage, Mains	6	1

*See Power Interface and EUT Operating Modes for details

Test equipment used for conducted emissions

HP 8574A **Hewlett-Packard** **EMI Receiver** **Equipment No.: ME5A-461**

Consisting of:

HP - 8566B **Hewlett-Packard** **Spectrum Analyzer, Resolution BW: 1MHz Video BW: 1MHz**

HP - 85662A **Hewlett-Packard** **Analyzer Display**

HP - 85650A **Hewlett-Packard** **Quasi-Peak Adapter, BW: 120kHz**

HP - 85685A **Hewlett-Packard** **Preselector**

Range: 150k-30MHz Last Calibration Date: 31 January 2003 Calibration Due Date: 31 January 2004

Test Accessories for Conducted Emissions

11947A **Hewlett Packard** **Transient Limiter** **Equipment No.: ME5A-443**

Range: 150k-30MHz Last Calibration Date: 31 January 2003 Calibration Due Date: 31 January 2004

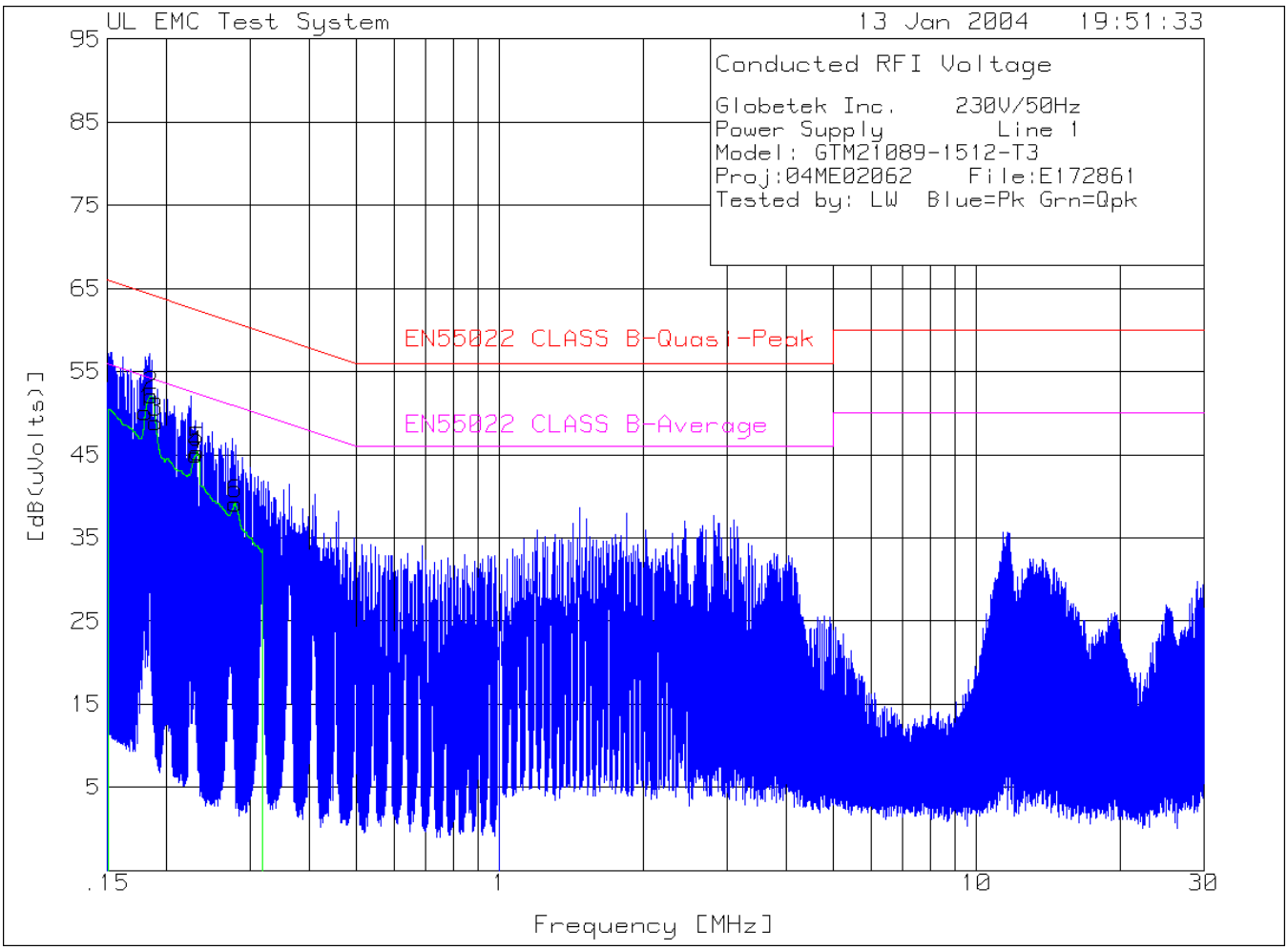
9252-50-R-24-BNC **Solar Electronics** **50Ω LISN** **Equipment No.: ME5A-637**

Range: 150k-30MHz Last Calibration Date: 25 March 2003 Calibration Due Date: 25 March 2004

99760-00 **Cole –Parmer** **Hygrometer/Temp/Barometer** **Equipment No.: ME4-268**

Ranges Temp: 0°C-55°C
Humidity: 25% to 95 %RH
Pressure: 795 to 1050 mbar

Last Calibration Date: 27 May 2003 Calibration Due Date: 27 May 2004


UL EMC Test System
13 Jan 2004 19:51:33
Conducted RFI Voltage
Globetek Inc. 230V/50Hz
Power Supply Line 1
Model: GTM21089-1512-T3
Proj:04ME02062 File:E172861
Tested by: LW Blue=Pk Grn=Qpk
EN55022 CLASS B-Quasi-Peak
EN55022 CLASS B-Average
[dB(uVolts)]
95
85
75
65
55
45
35
25
15
5
.15
1
10
30
Frequency [MHz]

Globtek Inc. 230V/50Hz
Power Supply Line 1
Model: GTM21089-1512-T3
Proj:04ME02062 File:E172861
Tested by: LW Blue=Pk Grn=Qpk

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz							
1	.18081	39.8 qp	10.3	0	50.1	64.4	54.4
				Margin [dB]		-14.3	-4.3
2	.18649	41.8 qp	10.3	0	52.1	64.2	54.2
				Margin [dB]		-12.1	-2.1
3	.19008	38.6 qp	10.3	0	48.9	64	54
				Margin [dB]		-15.1	-5.1
4	.23069	34.7 qp	10.3	0	45	62.4	52.4
				Margin [dB]		-17.4	-7.4
5	.23286	35 qp	10.3	0	45.3	62.3	52.3
				Margin [dB]		-17	-7
6	.27915	28.8 qp	10.3	0	39.1	60.8	50.8
				Margin [dB]		-21.7	-11.7

LIMIT 1: EN55022 CLASS B-Quasi-Peak
LIMIT 2: EN55022 CLASS B-Average

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection
tm - Trace Math Result

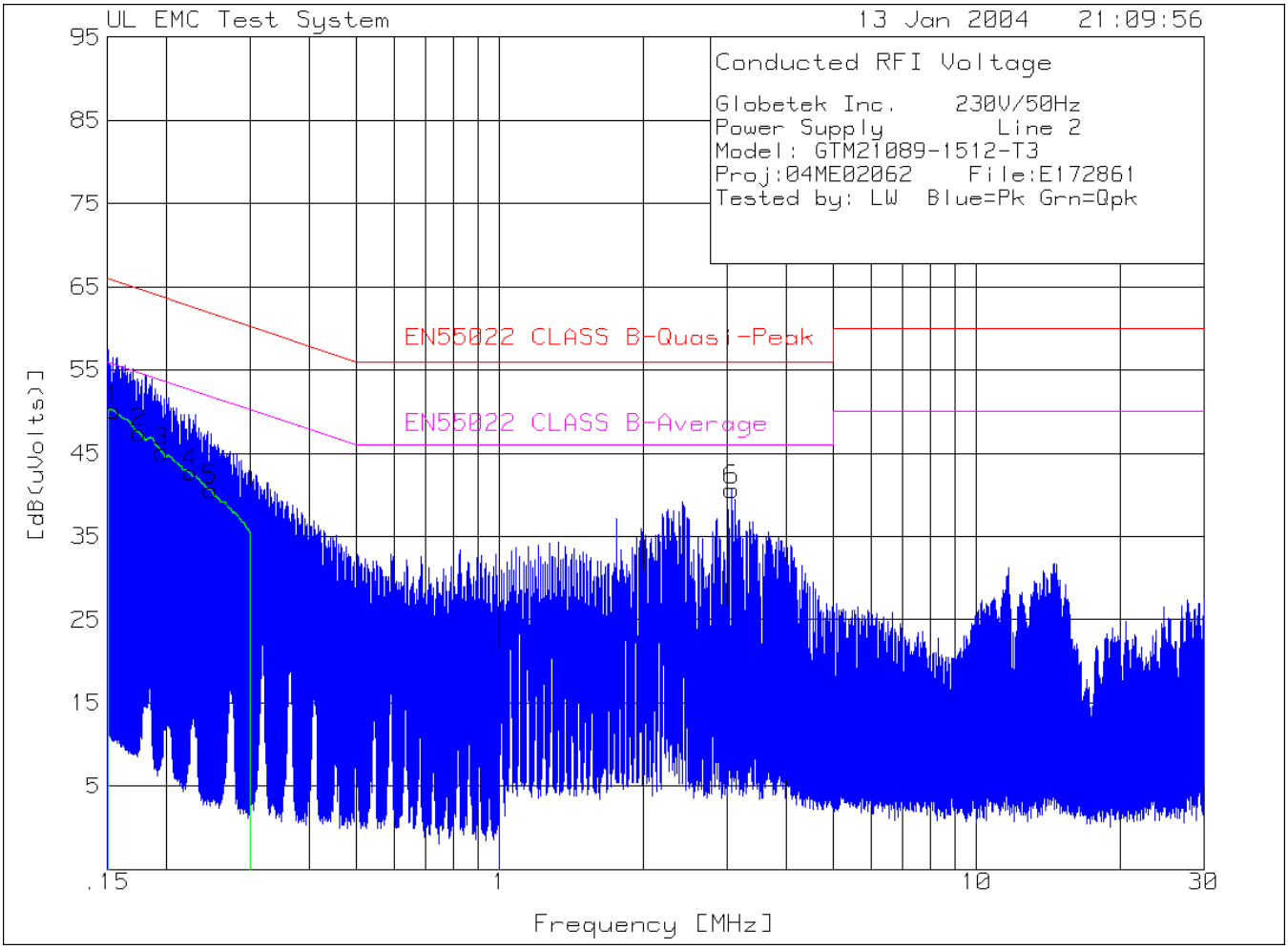
Globtek Inc. 230V/50Hz
Power Supply Line 1
Model: GTM21089-1512-T3
Proj:04ME02062 File:E172861
Tested by: LW Blue=Pk Grn=Qpk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz						
.18081	24.79 av	10.3	0	35.09	64.4	54.4
			Margin [dB]:		-29.31	-19.31
.18649	24.04 av	10.3	0	34.34	64.2	54.2
			Margin [dB]:		-29.86	-19.86
.19008	8.93 av	10.3	0	19.23	64	54
			Margin [dB]:		-44.77	-34.77
.23069	17.5 av	10.3	0	27.8	62.4	52.4
			Margin [dB]:		-34.6	-24.6
.23286	15.11 av	10.3	0	25.41	62.3	52.3
			Margin [dB]:		-36.89	-26.89
.27915	9.5 av	10.3	0	19.8	60.8	50.8
			Margin [dB]:		-41	-31

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: EN55022 CLASS B-Quasi-Peak
LIMIT 2: EN55022 CLASS B-Average


UL EMC Test System
13 Jan 2004 21:09:56
Conducted RFI Voltage
Globetek Inc. 230V/50Hz
Power Supply Line 2
Model: GTM21089-1512-T3
Proj:04ME02062 File:E172861
Tested by: LW Blue=Pk Grn=Qpk
EN55022 CLASS B-Quasi-Peak
EN55022 CLASS B-Average
dB(uVolts)
95
85
75
65
55
45
35
25
15
5
.15
1
10
30
Frequency [MHz]

Globtek Inc. 230V/50Hz
Power Supply Line 2
Model: GTM21089-1512-T3
Proj:04ME02062 File:E172861
Tested by: LW Blue=Pk Grn=Qpk

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz							
1	.15519	39.9 qp	10.3	0	50.2	65.7	55.7
				Margin [dB]		-15.5	-5.5
2	.17565	37.2 qp	10.3	0	47.5	64.7	54.7
				Margin [dB]		-17.2	-7.2
3	.19589	34.9 qp	10.3	0	45.2	63.8	53.8
				Margin [dB]		-18.6	-8.6
4	.22506	32.4 qp	10.3	0	42.7	62.6	52.6
				Margin [dB]		-19.9	-9.9
5	.24819	30.3 qp	10.3	0	40.6	61.8	51.8
				Margin [dB]		-21.2	-11.2
Range: 1 1 - 30MHz							
6	3.06627	30.2 pk	10.4	0	40.6	56	46
				Margin [dB]		-15.4	-5.4

LIMIT 1: EN55022 CLASS B-Quasi-Peak
LIMIT 2: EN55022 CLASS B-Average

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection
tm - Trace Math Result

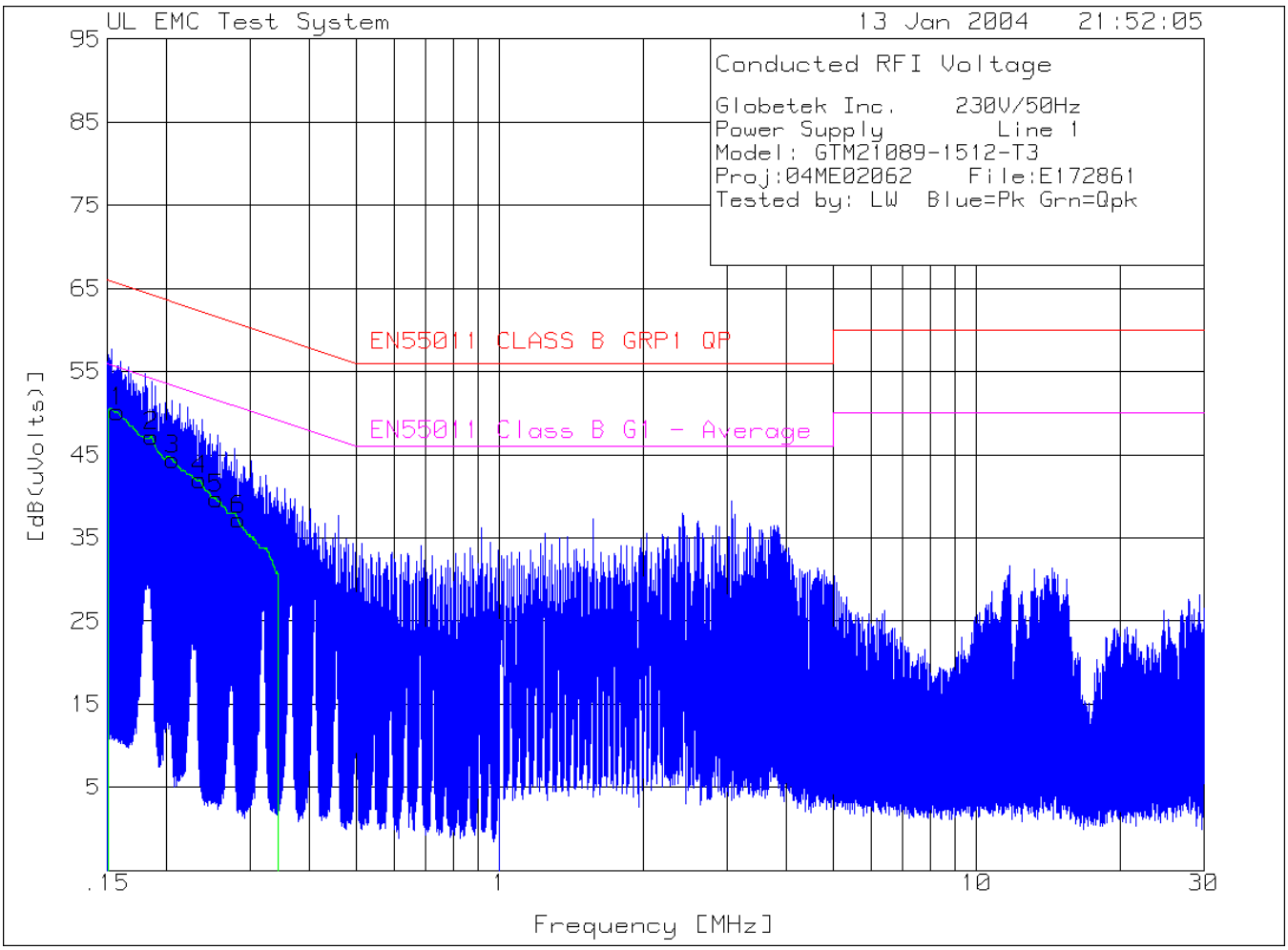
Globtek Inc. 230V/50Hz
Power Supply Line 2
Model: GTM21089-1512-T3
Proj:04ME02062 File:E172861
Tested by: LW Blue=Pk Grn=Qpk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz						
.15519	4.38 av	10.3	0	14.68	65.7	55.7
			Margin [dB]:		-51.02	-41.02
.17565	9.38 av	10.3	0	19.68	64.7	54.7
			Margin [dB]:		-45.02	-35.02
.19589	.44 av	10.3	0	10.74	63.8	53.8
			Margin [dB]:		-53.06	-43.06
.22506	10.79 av	10.3	0	21.09	62.6	52.6
			Margin [dB]:		-41.51	-31.51
.24819	-5.27 av	10.3	0	5.03	61.8	51.8
			Margin [dB]:		-56.77	-46.77
Range: 1 1 - 30MHz						
3.06627	18.04 av	10.4	0	28.44	56	46
			Margin [dB]:		-27.56	-17.56

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: EN55022 CLASS B-Quasi-Peak
LIMIT 2: EN55022 CLASS B-Average


UL EMC Test System
13 Jan 2004 21:52:05
Conducted RFI Voltage
Globetek Inc. 230V/50Hz
Power Supply Line 1
Model: GTM21089-1512-T3
Proj:04ME02062 File:E172861
Tested by: LW Blue=Pk Grn=Qpk
EN55011 CLASS B GRP1 QP
EN55011 Class B G1 - Average
dB(uVolts)
95
85
75
65
55
45
35
25
15
5
.15
1
10
30
Frequency [MHz]

Globtek Inc. 230V/50Hz
Power Supply Line 1
Model: GTM21089-1512-T3
Proj:04ME02062 File:E172861
Tested by: LW Blue=Pk Grn=Qpk

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz							
1	.15803	39.9 qp	10.3	0	50.2	65.6	55.6
				Margin [dB]		-15.4	-5.4
2	.18646	36.9 qp	10.3	0	47.2	64.2	54.2
				Margin [dB]		-17	-7
3	.20625	34.1 qp	10.3	0	44.4	63.4	53.4
				Margin [dB]		-19	-9
4	.23506	31.7 qp	10.3	0	42	62.3	52.3
				Margin [dB]		-20.3	-10.3
5	.25485	29.4 qp	10.3	0	39.7	61.6	51.6
				Margin [dB]		-21.9	-11.9
6	.28309	26.9 qp	10.3	0	37.2	60.7	50.7
				Margin [dB]		-23.5	-13.5

LIMIT 1: EN55011 CLASS B GRP1 QP
LIMIT 2: EN55011 Class B G1 - Average

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection
tm - Trace Math Result

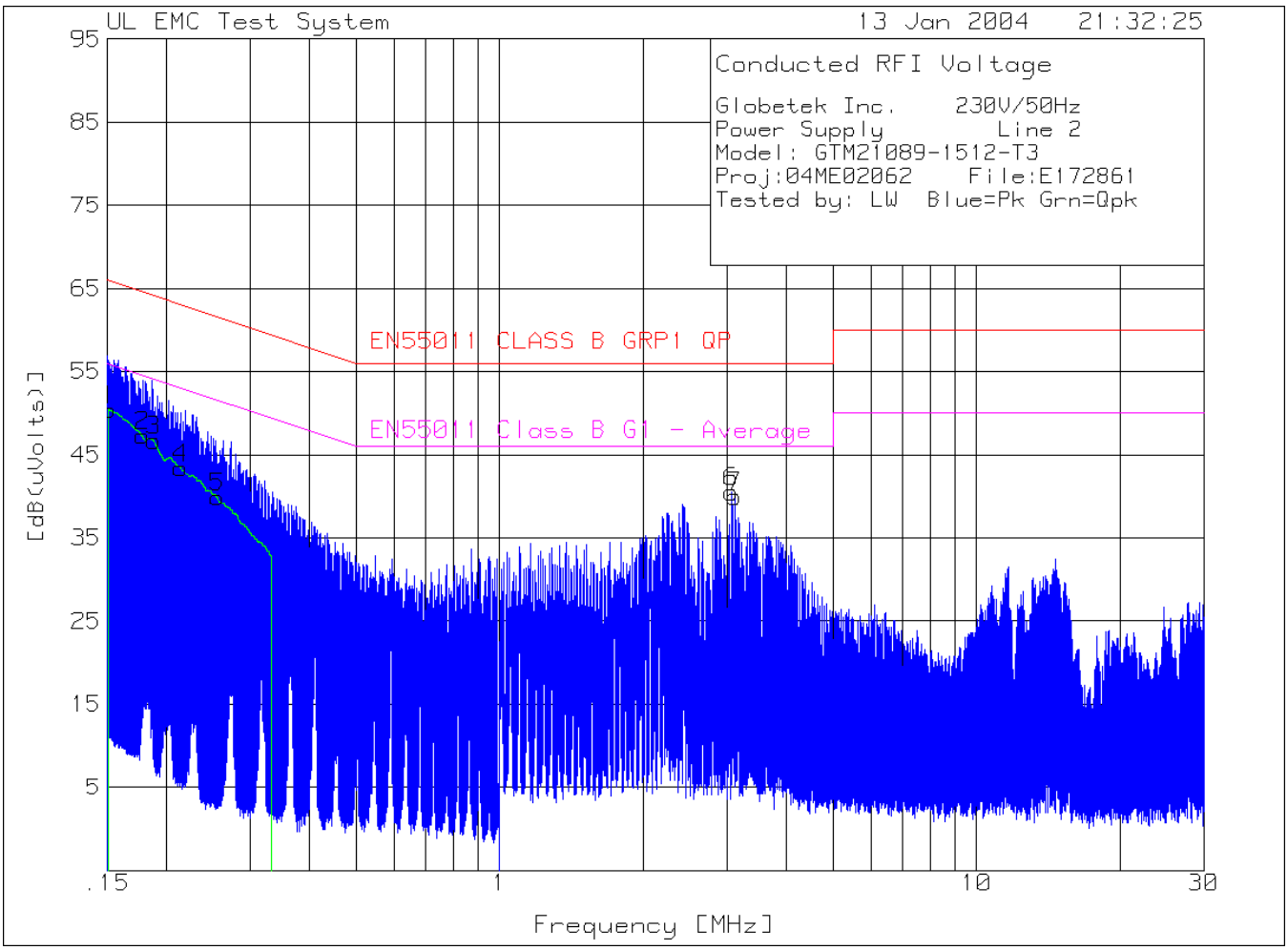
Globtek Inc. 230V/50Hz
Power Supply Line 1
Model: GTM21089-1512-T3
Proj:04ME02062 File:E172861
Tested by: LW Blue=Pk Grn=Qpk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz						
.15803	4.27 av	10.3	0	14.57	65.6	55.6
			Margin [dB]:		-51.03	-41.03
.18646	23.55 av	10.3	0	33.85	64.2	54.2
			Margin [dB]:		-30.35	-20.35
.20625	2.61 av	10.3	0	12.91	63.4	53.4
			Margin [dB]:		-50.49	-40.49
.23506	6.51 av	10.3	0	16.81	62.3	52.3
			Margin [dB]:		-45.49	-35.49
.25485	-5.13 av	10.3	0	5.17	61.6	51.6
			Margin [dB]:		-56.43	-46.43
.28309	-4.5 av	10.3	0	5.8	60.7	50.7
			Margin [dB]:		-54.9	-44.9

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: EN55011 CLASS B GRP1 QP
LIMIT 2: EN55011 Class B G1 - Average


UL EMC Test System
13 Jan 2004 21:32:25
Conducted RFI Voltage
Globetek Inc. 230V/50Hz
Power Supply Line 2
Model: GTM21089-1512-T3
Proj:04ME02062 File:E172861
Tested by: LW Blue=Pk Grn=Qpk
EN55011 CLASS B GRP1 QP
EN55011 Class B G1 - Average
dB(uVolts)
95
85
75
65
55
45
35
25
15
5
.15
1
10
30
Frequency [MHz]

Globtek Inc. 230V/50Hz
Power Supply Line 2
Model: GTM21089-1512-T3
Proj:04ME02062 File:E172861
Tested by: LW Blue=Pk Grn=Qpk

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz							
1	.15176	40.1 qp	10.3	0	50.4	65.9	55.9
				Margin [dB]		-15.5	-5.5
2	.17804	37 qp	10.3	0	47.3	64.6	54.6
				Margin [dB]		-17.3	-7.3
3	.18855	36.4 qp	10.3	0	46.7	64.1	54.1
				Margin [dB]		-17.4	-7.4
4	.21446	33.1 qp	10.3	0	43.4	63	53
				Margin [dB]		-19.6	-9.6
5	.25595	29.6 qp	10.3	0	39.9	61.6	51.6
				Margin [dB]		-21.7	-11.7
Range: 1 1 - 30MHz							
6	3.06483	30.1 pk	10.4	0	40.5	56	46
				Margin [dB]		-15.5	-5.5
7	3.11264	29.6 pk	10.4	0	40	56	46
				Margin [dB]		-16	-6

LIMIT 1: EN55011 CLASS B GRP1 QP
LIMIT 2: EN55011 Class B G1 - Average

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection
tm - Trace Math Result

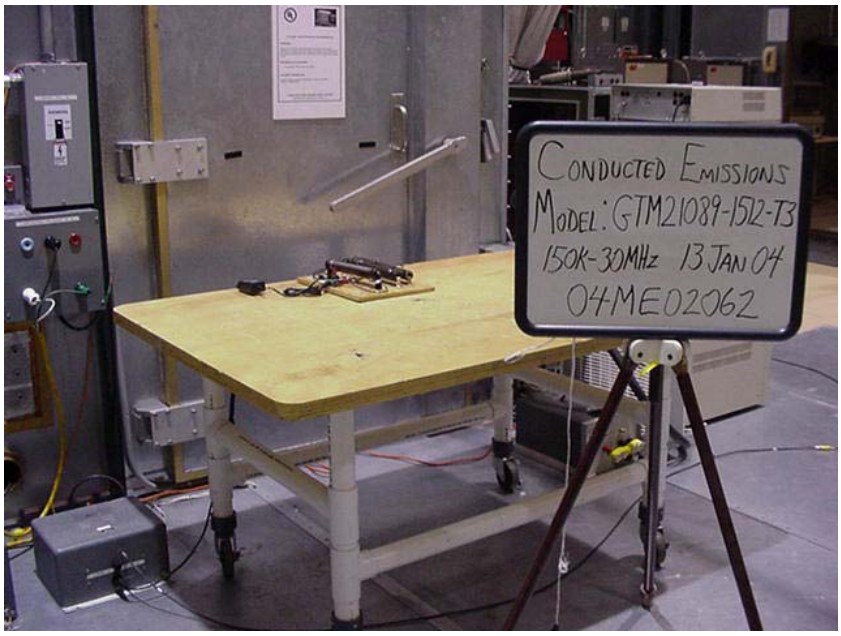
Globtek Inc. 230V/50Hz
Power Supply Line 2
Model: GTM21089-1512-T3
Proj:04ME02062 File:E172861
Tested by: LW Blue=Pk Grn=Qpk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz						
.15176	5 av	10.3	0	15.3	65.9	55.9
			Margin [dB]:		-50.6	-40.6
.17804	15.18 av	10.3	0	25.48	64.6	54.6
			Margin [dB]:		-39.12	-29.12
.18855	11.84 av	10.3	0	22.14	64.1	54.1
			Margin [dB]:		-41.96	-31.96
.21446	-.88 av	10.3	0	9.42	63	53
			Margin [dB]:		-53.58	-43.58
.25595	-5.4 av	10.3	0	4.9	61.6	51.6
			Margin [dB]:		-56.7	-46.7
Range: 1 1 - 30MHz						
3.06483	18.13 av	10.4	0	28.53	56	46
			Margin [dB]:		-27.47	-17.47
3.11264	16.76 av	10.4	0	27.16	56	46
			Margin [dB]:		-28.84	-18.84

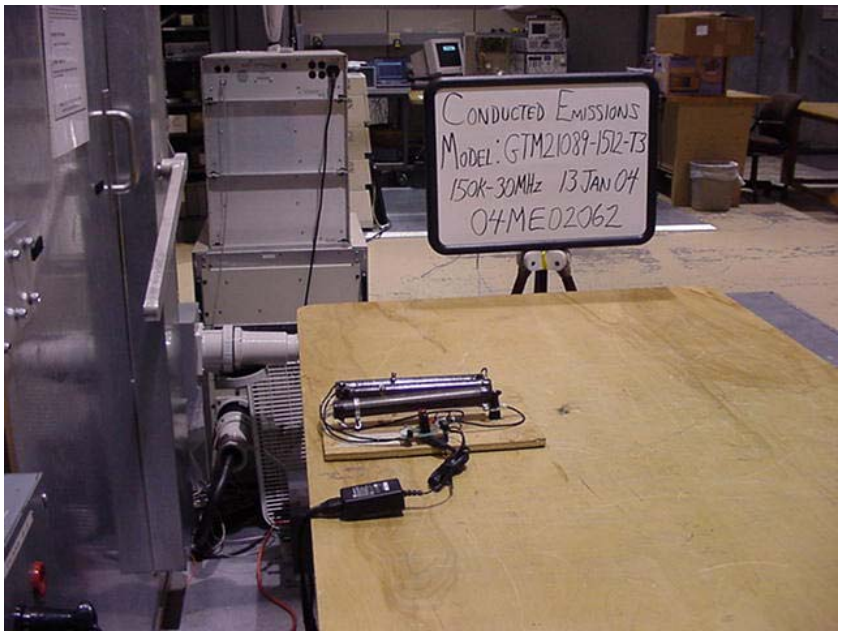
NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: EN55011 CLASS B GRP1 QP
LIMIT 2: EN55011 Class B G1 - Average

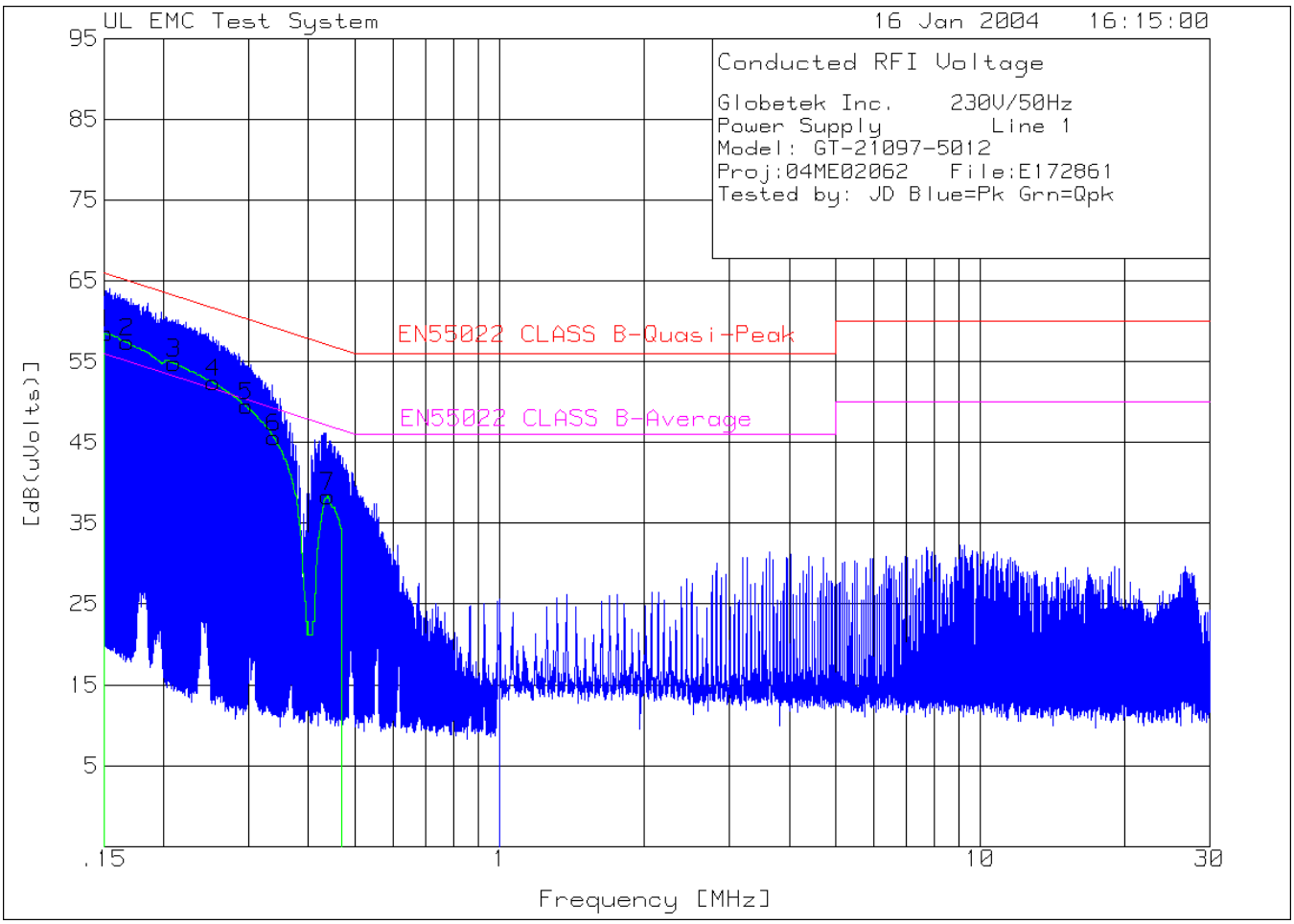


Front



Rear

Conducted Emissions Test Set-Up – GTM21089-1512-T3


UL EMC Test System
16 Jan 2004 16:15:00
Conducted RFI Voltage
Globetek Inc. 230V/50Hz
Power Supply Line 1
Model: GT-21097-5012
Proj:04ME02062 File:E172861
Tested by: JD Blue=Pk Grn=Qpk
EN55022 CLASS B-Quasi-Peak
EN55022 CLASS B-Average
[dB(uVolts)]
95
85
75
65
55
45
35
25
15
5
.15
1
10
30
Frequency [MHz]

Globtek Inc. 230V/50Hz
Power Supply Line 1
Model: GT-21097-5012
Proj:04ME02062 File:E172861
Tested by: JD Blue=Pk Grn=Qpk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz						
.15134	39.02 qp	10.3	10	59.32+	65.9	55.9
			Margin [dB]:		-6.58	3.42
.16782	36.88 qp	10.3	10	57.18+	65.1	55.1
			Margin [dB]:		-7.92	2.08
.20896	34.45 qp	10.3	10	54.75+	63.2	53.2
			Margin [dB]:		-8.45	1.55
.25313	32.07 qp	10.3	10	52.37+	61.7	51.7
			Margin [dB]:		-9.33	.67
.29621	29.74 qp	10.3	10	50.04	60.3	50.3
			Margin [dB]:		-10.26	-.26
.33809	25.64 qp	10.3	10	45.94	59.3	49.3
			Margin [dB]:		-13.36	-3.36
.43848	20.66 qp	10.3	10	40.96	57.1	47.1
			Margin [dB]:		-16.14	-6.14

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: EN55022 CLASS B GRP1 QP
LIMIT 2: EN55022 Class B G1 - Average

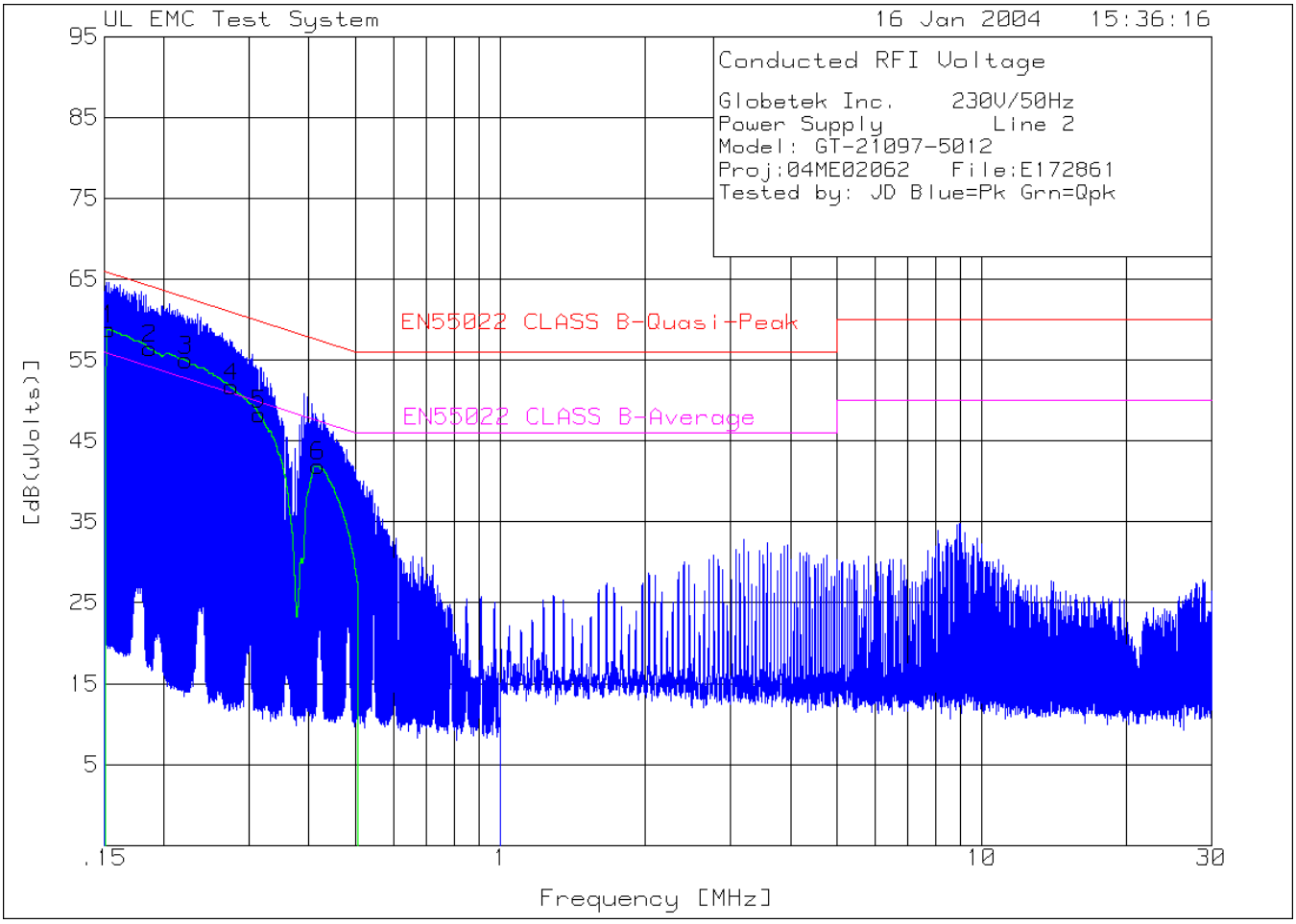
Globtek Inc. 230V/50Hz
Power Supply Line 1
Model: GT-21097-5012
Proj:04ME02062 File:E172861
Tested by: JD Blue=Pk Grn=Qpk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz						
.15178	2.55 av	10.3	10	22.85	65.9	55.9
			Margin [dB]:		-43.05	-33.05
.16805	1.3 av	10.3	10	21.6	65.1	55.1
			Margin [dB]:		-43.5	-33.5
.21001	-2.95 av	10.3	10	17.35	63.2	53.2
			Margin [dB]:		-45.85	-35.85
.25389	5.6 av	10.3	10	25.9	61.6	51.6
			Margin [dB]:		-35.7	-25.7
.29713	-6.86 av	10.3	10	13.44	60.3	50.3
			Margin [dB]:		-46.86	-36.86
.33909	-9.27 av	10.3	10	11.03	59.2	49.2
			Margin [dB]:		-48.17	-38.17
.43897	15.72 av	10.3	10	36.02	57.1	47.1
			Margin [dB]:		-21.08	-11.08

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: EN55022 CLASS B GRP1 QP
LIMIT 2: EN55022 Class B G1 - Average


UL EMC Test System
16 Jan 2004 15:36:16
Conducted RFI Voltage
Globetek Inc. 230V/50Hz
Power Supply Line 2
Model: GT-21097-5012
Proj:04ME02062 File:E172861
Tested by: JD Blue=Pk Grn=Qpk
EN55022 CLASS B-Quasi-Peak
EN55022 CLASS B-Average
dB(uVolts)
95
85
75
65
55
45
35
25
15
5
.15
1
10
30
Frequency [MHz]

Globtek Inc. 230V/50Hz
Power Supply Line 2
Model: GT-21097-5012
Proj:04ME02062 File:E172861
Tested by: JD Blue=Pk Grn=Qpk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz						
.15263	38.6 qp	10.3	10	58.9+	65.9	55.9
			Margin [dB]:		-7	3
.18612	36.13 qp	10.3	10	56.43+	64.2	54.2
			Margin [dB]:		-7.77	2.23
.22103	34.66 qp	10.3	10	54.96+	62.8	52.8
			Margin [dB]:		-7.84	2.16
.27517	31.54 qp	10.3	10	51.84+	61	51
			Margin [dB]:		-9.16	.84
.31449	28.6 qp	10.3	10	48.9	59.9	49.9
			Margin [dB]:		-11	-1
.41674	22.57 qp	10.3	10	42.87	57.5	47.5
			Margin [dB]:		-14.63	-4.63

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: EN55022 CLASS B GRP1 QP
LIMIT 2: EN55022Class B G1 - Average

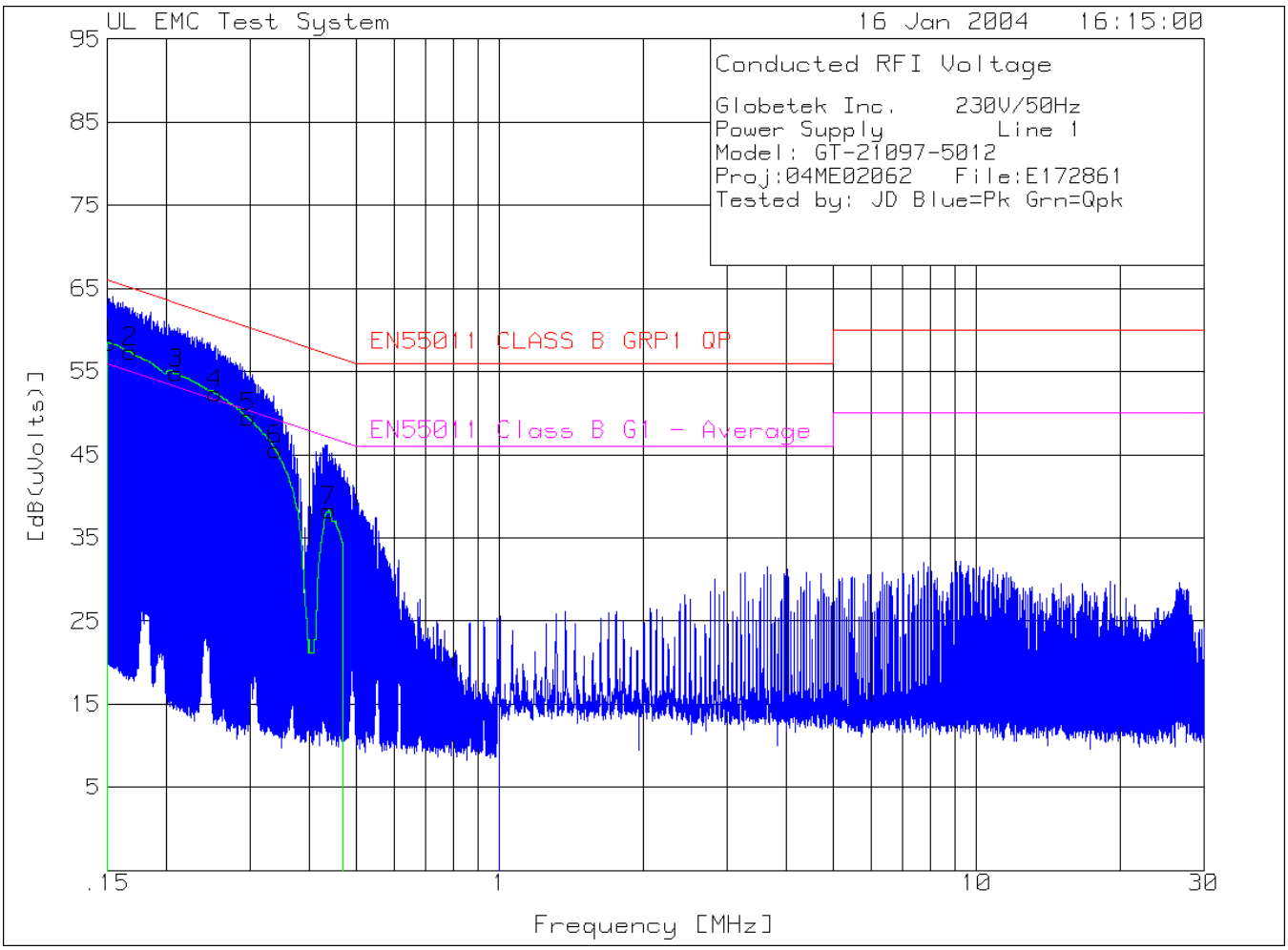
Globtek Inc. 230V/50Hz
Power Supply Line 2
Model: GT-21097-5012
Proj:04ME02062 File:E172861
Tested by: JD Blue=Pk Grn=Qpk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz						
.15371	2.1 av	10.3	10	22.4	65.8	55.8
			Margin [dB]:		-43.4	-33.4
.18672	5.21 av	10.3	10	25.51	64.2	54.2
			Margin [dB]:		-38.69	-28.69
.22205	-3.52 av	10.3	10	16.78	62.7	52.7
			Margin [dB]:		-45.92	-35.92
.27601	-6.48 av	10.3	10	13.82	60.9	50.9
			Margin [dB]:		-47.08	-37.08
.31523	-6.9 av	10.3	10	13.4	59.8	49.8
			Margin [dB]:		-46.4	-36.4
.41783	-7.81 av	10.3	10	12.49	57.5	47.5
			Margin [dB]:		-45.01	-35.01

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: EN55022 CLASS B GRP1 QP
LIMIT 2: EN55022 Class B G1 - Average


UL EMC Test System
16 Jan 2004 16:15:00
Conducted RFI Voltage
Globetek Inc. 230V/50Hz
Power Supply Line 1
Model: GT-21097-5012
Proj:04ME02062 File:E172861
Tested by: JD Blue=Pk Grn=Qpk
EN55011 CLASS B GRP1 QP
EN55011 Class B G1 - Average
dB(uVolts)
95
85
75
65
55
45
35
25
15
5
.15
1
10
30
Frequency [MHz]

Globtek Inc. 230V/50Hz
Power Supply Line 1
Model: GT-21097-5012
Proj:04ME02062 File:E172861
Tested by: JD Blue=Pk Grn=Qpk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz						
.15134	39.02 qp	10.3	10	59.32+	65.9	55.9
			Margin [dB]:		-6.58	3.42
.16782	36.88 qp	10.3	10	57.18+	65.1	55.1
			Margin [dB]:		-7.92	2.08
.20896	34.45 qp	10.3	10	54.75+	63.2	53.2
			Margin [dB]:		-8.45	1.55
.25313	32.07 qp	10.3	10	52.37+	61.7	51.7
			Margin [dB]:		-9.33	.67
.29621	29.74 qp	10.3	10	50.04	60.3	50.3
			Margin [dB]:		-10.26	-.26
.33809	25.64 qp	10.3	10	45.94	59.3	49.3
			Margin [dB]:		-13.36	-3.36
.43848	20.66 qp	10.3	10	40.96	57.1	47.1
			Margin [dB]:		-16.14	-6.14

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: EN55011 CLASS B GRP1 QP
LIMIT 2: EN55011 Class B G1 - Average

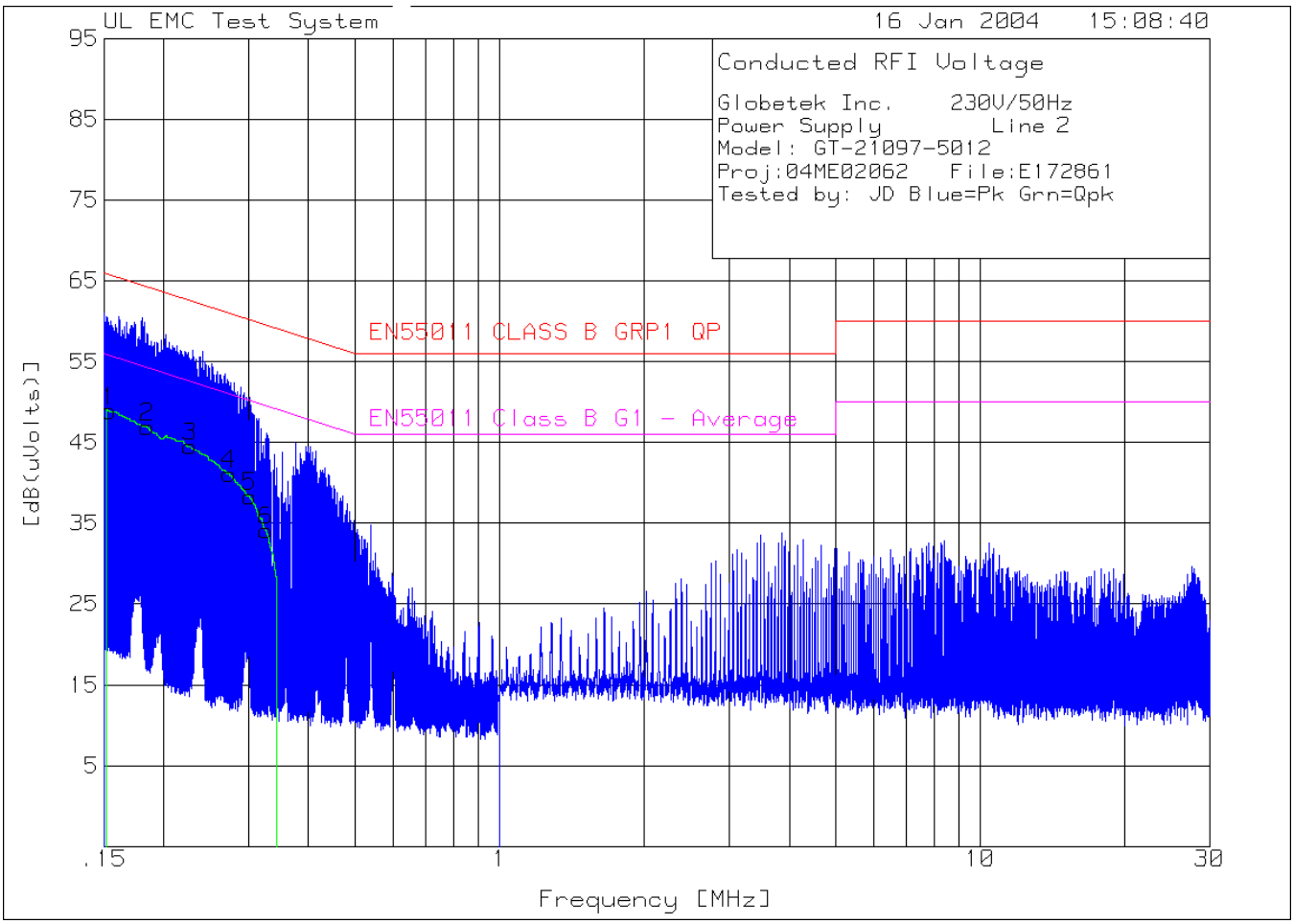
Globtek Inc. 230V/50Hz
Power Supply Line 1
Model: GT-21097-5012
Proj:04ME02062 File:E172861
Tested by: JD Blue=Pk Grn=Qpk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz						
.15178	2.55 av	10.3	10	22.85	65.9	55.9
			Margin [dB]:		-43.05	-33.05
.16805	1.3 av	10.3	10	21.6	65.1	55.1
			Margin [dB]:		-43.5	-33.5
.21001	-2.95 av	10.3	10	17.35	63.2	53.2
			Margin [dB]:		-45.85	-35.85
.25389	5.6 av	10.3	10	25.9	61.6	51.6
			Margin [dB]:		-35.7	-25.7
.29713	-6.86 av	10.3	10	13.44	60.3	50.3
			Margin [dB]:		-46.86	-36.86
.33909	-9.27 av	10.3	10	11.03	59.2	49.2
			Margin [dB]:		-48.17	-38.17
.43897	15.72 av	10.3	10	36.02	57.1	47.1
			Margin [dB]:		-21.08	-11.08

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: EN55011 CLASS B GRP1 QP
LIMIT 2: EN55011 Class B G1 - Average


UL EMC Test System
16 Jan 2004 15:08:40
Conducted RFI Voltage
Globetek Inc. 230V/50Hz
Power Supply Line 2
Model: GT-21097-5012
Proj:04ME02062 File:E172861
Tested by: JD Blue=Pk Grn=Qpk
EN55011 CLASS B GRP1 QP
EN55011 Class B G1 - Average
[dB(uVolts)]
95
85
75
65
55
45
35
25
15
5
.15
1
10
30
Frequency [MHz]

Globtek Inc. 230V/50Hz
Power Supply Line 2
Model: GT-21097-5012
Proj:04ME02062 File:E172861
Tested by: JD Blue=Pk Grn=Qpk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz						
.15263	38.6 qp	10.3	10	58.9+	65.9	55.9
			Margin [dB]:		-7	3
.18612	36.13 qp	10.3	10	56.43+	64.2	54.2
			Margin [dB]:		-7.77	2.23
.22103	34.66 qp	10.3	10	54.96+	62.8	52.8
			Margin [dB]:		-7.84	2.16
.27517	31.54 qp	10.3	10	51.84+	61	51
			Margin [dB]:		-9.16	.84
.31449	28.6 qp	10.3	10	48.9	59.9	49.9
			Margin [dB]:		-11	-1
.41674	22.57 qp	10.3	10	42.87	57.5	47.5
			Margin [dB]:		-14.63	-4.63

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: EN55011 CLASS B GRP1 QP
LIMIT 2: EN55011 Class B G1 - Average

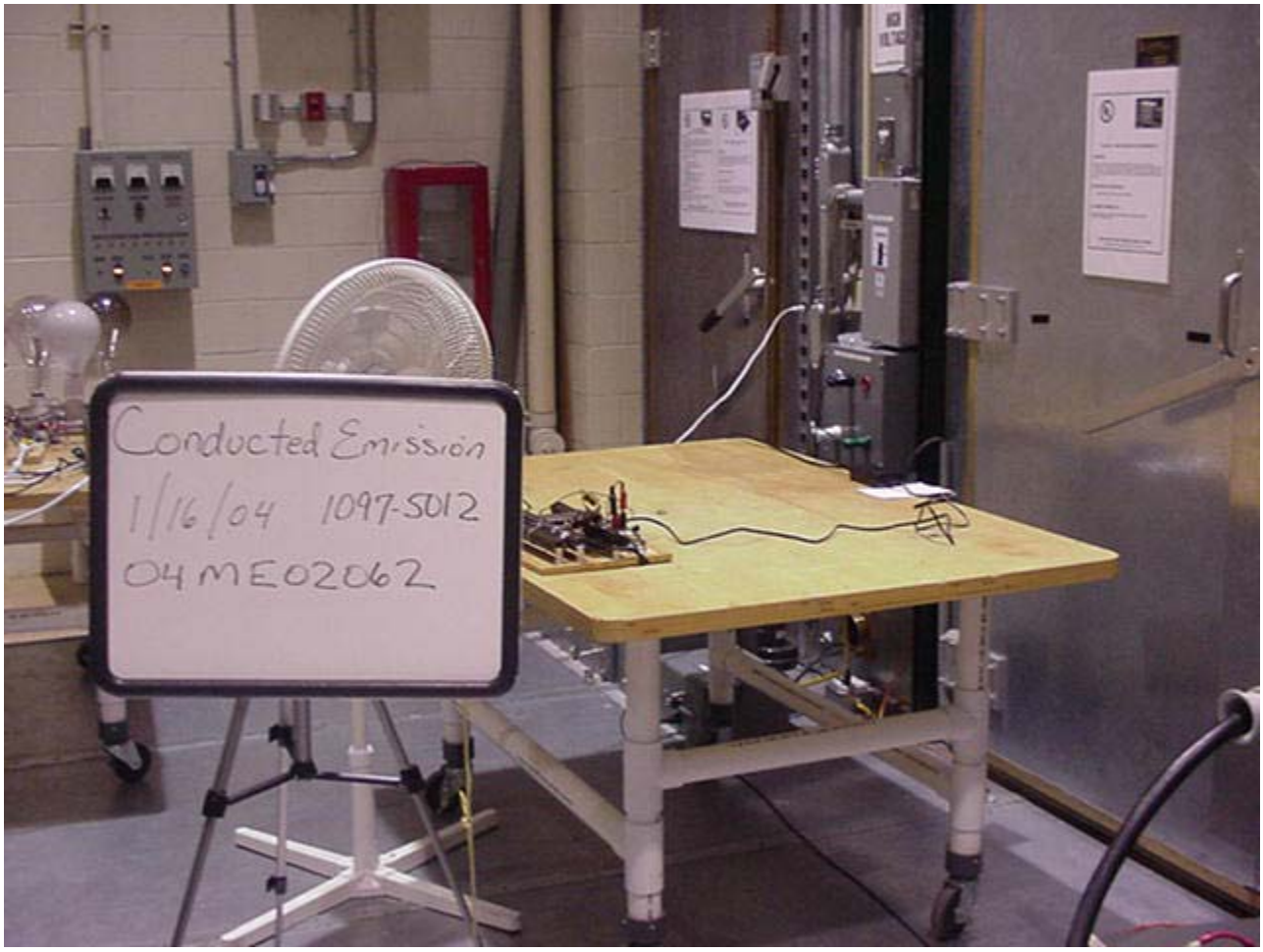
Globtek Inc. 230V/50Hz
Power Supply Line 2
Model: GT-21097-5012
Proj:04ME02062 File:E172861
Tested by: JD Blue=Pk Grn=Qpk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
Range: 1 .15 - 1MHz						
.15371	2.1 av	10.3	10	22.4	65.8	55.8
			Margin [dB]:		-43.4	-33.4
.18672	5.21 av	10.3	10	25.51	64.2	54.2
			Margin [dB]:		-38.69	-28.69
.22205	-3.52 av	10.3	10	16.78	62.7	52.7
			Margin [dB]:		-45.92	-35.92
.27601	-6.48 av	10.3	10	13.82	60.9	50.9
			Margin [dB]:		-47.08	-37.08
.31523	-6.9 av	10.3	10	13.4	59.8	49.8
			Margin [dB]:		-46.4	-36.4
.41783	-7.81 av	10.3	10	12.49	57.5	47.5
			Margin [dB]:		-45.01	-35.01

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: EN55011 CLASS B GRP1 QP
LIMIT 2: EN55011 Class B G1 - Average



Conducted Emissions Test Set-Up – GT-1097-5012

5.1.2 Conducted Click Emissions Tests

Test Not Applicable

The EUT does not contain devices that produce transient emissions as defined by the standard.

5.1.3 Radiated Emissions Test (10 Meter Semi-Anechoic Chamber)

Test Applicable

Measurements were made in a 10-meter semi-anechoic chamber that complies to ANSI C63.4. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable.

Results

The system met the requirements for radiated emissions. Data Pages follow.

Temperature:	20.0 °C
Humidity:	35.0 %RH
Pressure:	996 mbar
Date test performed:	14 January 2004

Mode*	
Power	**Operation**
2	1
4	1

1 fully configured sample was scanned over the following frequency range:

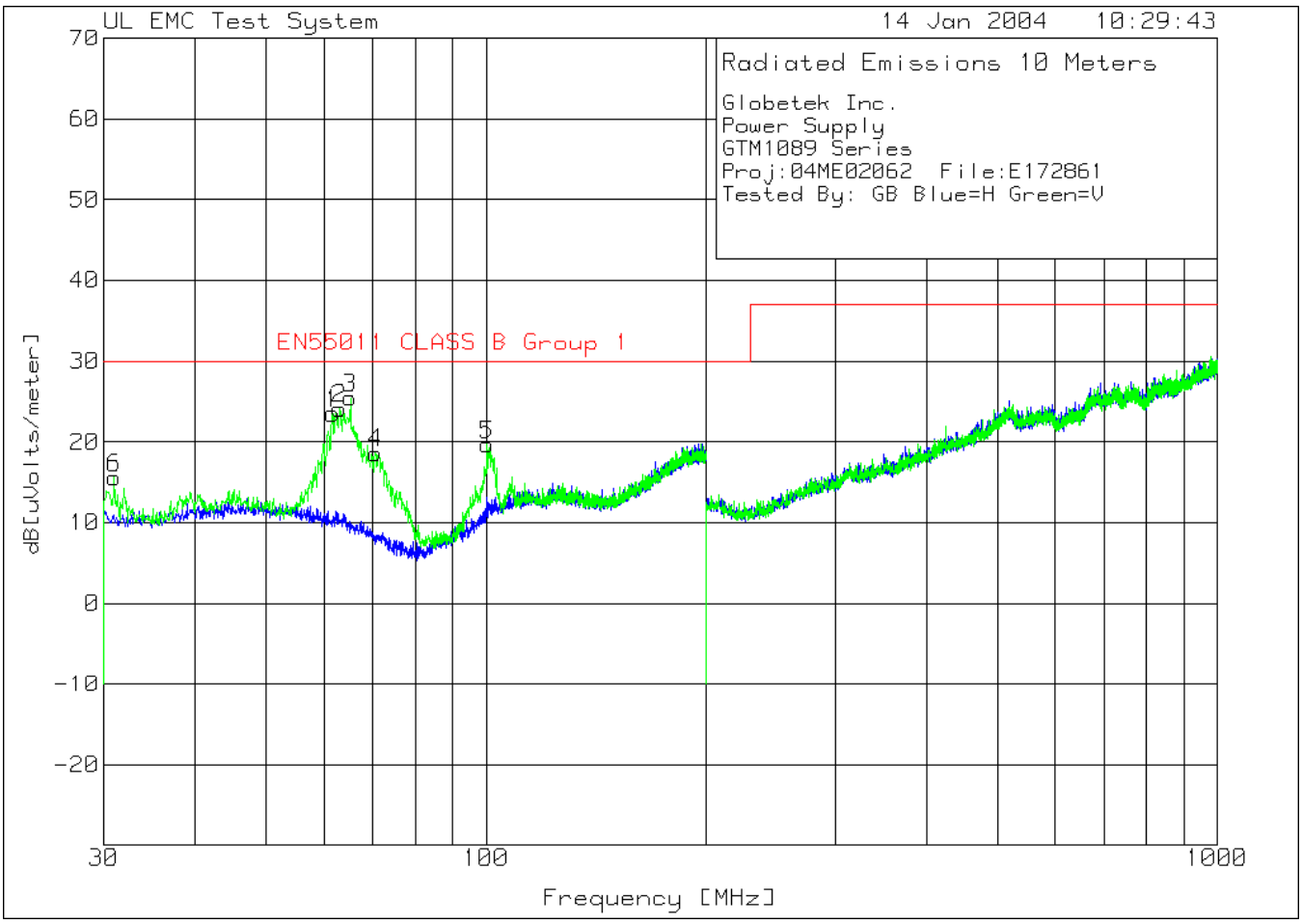
Electric fields:	30MHz - 1GHz	(10 meter measurement distance)

Test equipment used for radiated emissions

ESI26	**Rhode & Schwartz**	**EMI Receiver**	**Equipment No.: ME5B-081**
			Quasi Peak BW: 200Hz 9kHz to 150kHz RBW 10 KHz
			Quasi Peak BW: 9kHz 150kHz to 30MHz RBW 100 KHz
			Quasi Peak BW: 120 kHz 30 to 1000MHz RBW 1.0 MHz
Range: 30-1000MHz	Last Calibration Date: 28 August 2003		Calibration Due Date: 31 August 2004

Test Accessories for Radiated Emissions

3104C	**EMCO**	**Biconnical Antenna**	**Equipment No.: ME5-810**
Range: 30-200MHz	Last Calibration Date: 11 March 2003		Calibration Due Date: 11 March 2004
3146	**EMCO**	**Log Periodic Antenna**	**Equipment No.: ME5-811**
Range: 200-1000MHz	Last Calibration Date: 27 March 2003		Calibration Due Date: 27 March 2004
8447D	**Hewlett Packard**	**10k-1.3GHz Pre-Amp**	**Equipment No.: ME5A-652**
Range: 30-1000MHz			
99760-00	**Cole –Parmer**	**Hygrometer/Temp/Barometer**	**Equipment No.: ME4-268**
		Ranges	Temp: 0°C-55°C Humidity: 25% to 95 %RH Pressure: 795 to 1050 mbar
	Last Calibration Date: 27 May 2003		Calibration Due Date: 27 May 2004


UL EMC Test System
14 Jan 2004 10:29:43
Radiated Emissions 10 Meters
Globetek Inc.
Power Supply
GTM1089 Series
Proj:04ME02062 File:E172861
Tested By: GB Blue=H Green=V
EN55011 CLA$S B Group 1
dB[uVolts/meter]
70
60
50
40
30
20
10
0
-10
-20
30
100
1000
Frequency [MHz]

UL EMC Test System

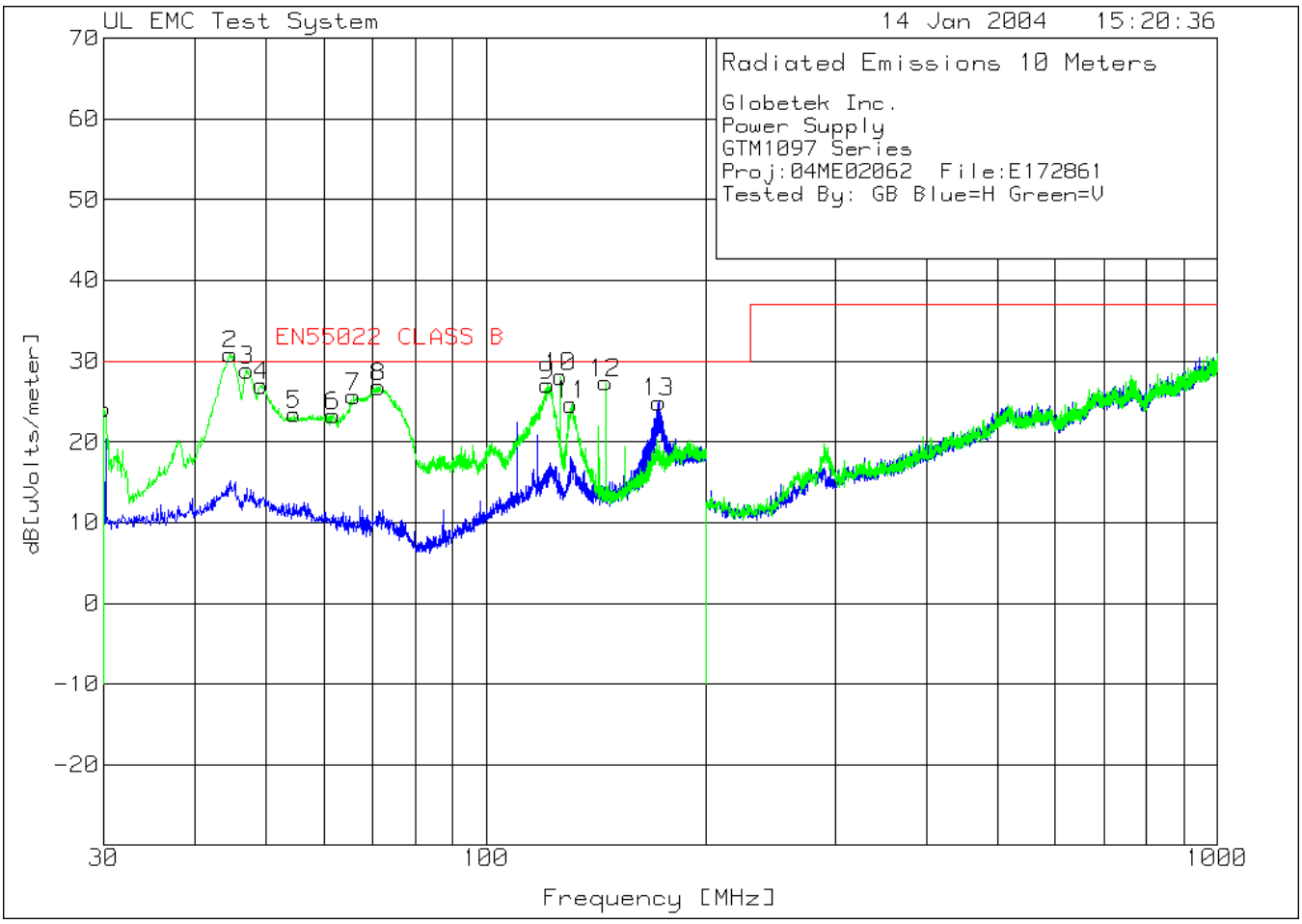
14 Jan 2004 10:29:43

Globetek Inc.
Power Supply
GTM1089 Series
Proj:04ME02062 File:E172861
Tested By: GB Blue=H Green=V

Test Frequency (MHz)	Meter Reading (dB(uV))	Gain/Loss Factor (dB)	Transducer Factor (dB)	Level dB(uVolts/meter)	Limit:1
Vertical 30 - 200MHz					
65.0501	32.16 qp	-26.8	9.8	15.16	30
Azimuth: 134 Height:258 Vert				Margin (dB):	-14.84
63	31.67 qp	-26.8	10.3	15.17	30
Azimuth: 193 Height:114 Vert				Margin (dB):	-14.83
61	26 qp	-26.9	10.7	9.8	30
Azimuth: 14 Height:318 Vert				Margin (dB):	-20.2

LIMIT 1: EN55011 CLASS B Group 1
LIMIT 2: NONE
LIMIT 3: NONE
LIMIT 4: NONE
LIMIT 5: NONE
LIMIT 6: NONE

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - Average log detector
avem - EMI Average detector

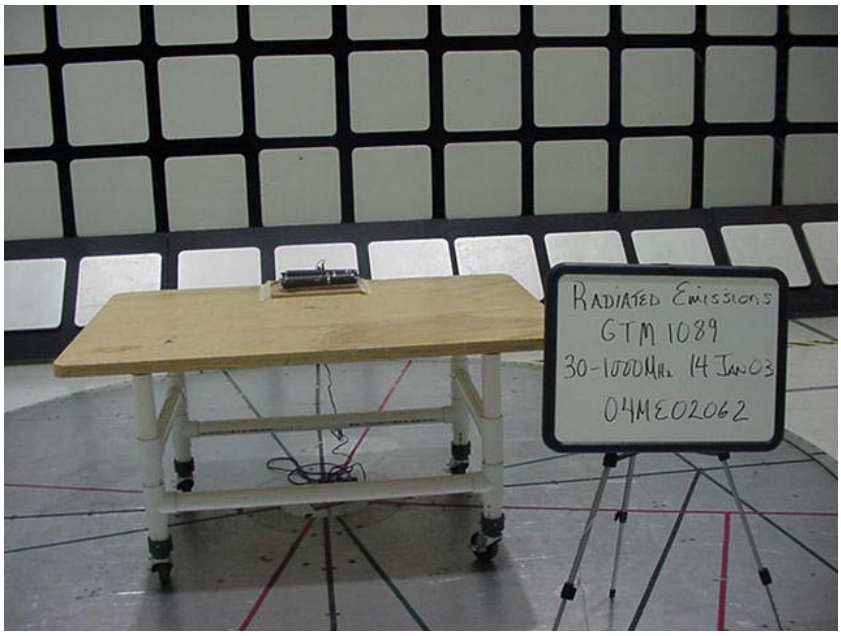

UL EMC Test System
14 Jan 2004 15:20:36
Radiated Emissions 10 Meters
Globetek Inc.
Power Supply
GTM1097 Series
Proj:04ME02062 File:E172861
Tested By: GB Blue=H Green=V
EN55022 CLASS B
dB[uVolts/meter]
Frequency [MHz]
70
60
50
40
30
20
10
0
-10
-20
30
100
1000
1
2
3
4
5
6
7
8
9
10
11
12
13

UL EMC Test System

14 Jan 2004 13:17:47

Globetek Inc.
Power Supply
GTM1097 Series
Proj:04ME02062 File:E172861
Tested By: GB Blue=H Green=V

Test Frequency (MHz)	Meter Reading (dB(uV))	Gain/Loss Factor (dB)	Transducer Factor (dB)	Level dB(uVolts/meter)	Limit:1
Vertical 30 - 200MHz					
30	26.16 qp	-27.3	11.7	10.56	30
Azimuth: 204 Height:100 Vert				Margin (dB):	-19.44
44.7	40.34 qp	-27.1	12.3	25.54	30
Azimuth: 111 Height:100 Vert				Margin (dB):	-4.46
47	22.39 qp	-27	12.4	7.79	30
Azimuth: 13 Height:215 Vert				Margin (dB):	-22.21
49.3	35.85 qp	-27	12.3	21.15	30
Azimuth: 85 Height:102 Vert				Margin (dB):	-8.85
54.6	32.53 qp	-26.9	11.8	17.43	30
Azimuth: 85 Height:102 Vert				Margin (dB):	-12.57
61.7	33.8 qp	-26.8	10.6	17.6	30
Azimuth: 127 Height:264 Vert				Margin (dB):	-12.4
65.88	36.56 qp	-26.8	9.6	19.36	30
Azimuth: 124 Height:244 Vert				Margin (dB):	-10.64
71.2	40.75 qp	-26.7	8.1	22.15	30
Azimuth: 153 Height:395 Vert				Margin (dB):	-7.85
121.25	35.27 qp	-26.2	12.6	21.67	30
Azimuth: 172 Height:103 Vert				Margin (dB):	-8.33
126.44	26.71 qp	-26.2	13.2	13.71	30
Azimuth: 174 Height:100 Vert				Margin (dB):	-16.29
130.6	22.71 qp	-26.1	12.9	9.51	30
Azimuth: 118 Height:146 Vert				Margin (dB):	-20.49
145.65	25.72 qp	-26	12.2	11.92	30
Azimuth: 52 Height:100 Vert				Margin (dB):	-18.08
172.27	22.5 qp	-25.8	15.5	12.2	30
Azimuth: 172 Height:231 Vert				Margin (dB):	-17.8

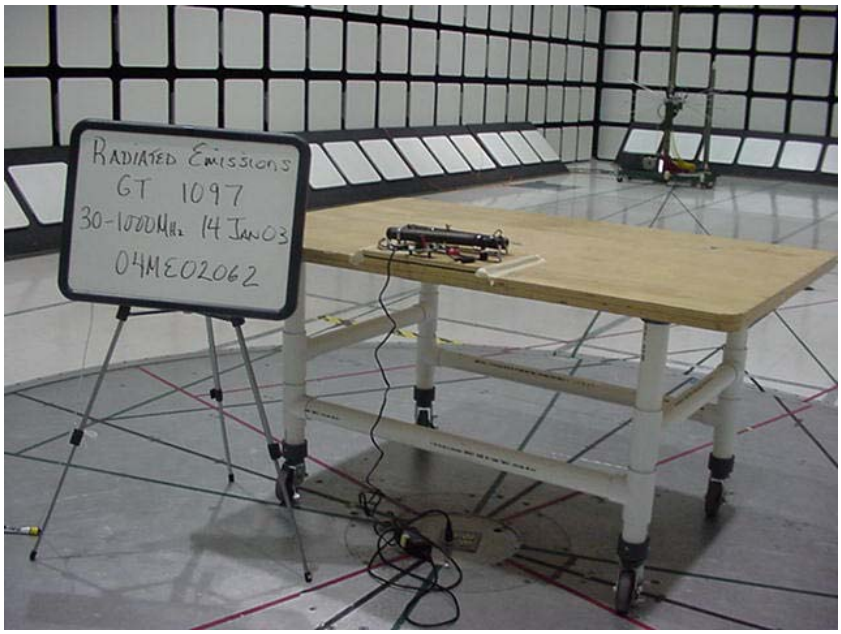


Front

Rear

Radiated Emissions Test Set-Up – GTM1089

Front



Rear

Radiated Emissions Test Set-Up – GT-1097

5.1.4 Fluctuating Harmonic Disturbances and Flicker

Test Applicable

Measurements were made with the product connected to a solid-state power source, which provides the proper voltage and frequency. The measurements of harmonics and flicker are made at the mains connection of the supply. For flicker the impedance network is included in the measurement path.

Results

The system met the requirements for fluctuating harmonic emissions and flicker. Data Pages follow.

Temperature:	20.5 °C
Humidity:	35 %RH
Pressure:	1009 mbar
Date test performed:	21 January 2004

Mode*	
Power	**Operation**
2	1
4	1

Equipment Class Multiplier (Fluctuating Harmonics)
1.0 (All other)

Test equipment used for Harmonic Disturbances

PM3000A	**Voltech**	**Power Analyzer**	**Equipment No.: ME5A-250**
Range: 0-230V	Last Calibration Date: 08 December 2003		Calibration Due Date: 08 December 2004
M6204	**Pacific Power**	**Impedance Network**	**Equipment No.: ME5B-294**
	Last Calibration Date: 17 December 2003		Calibration Due Date: 17 June 2004
99760-00	**Cole –Parmer**	**Hygrometer/Temp/Barometer**	**Equipment No.: ME4-268**
		Ranges	Temp: 0°C-55°C Humidity: 25% to 95 %RH Pressure: 795 to 1050 mbar
	Last Calibration Date: 27 May 2003		Calibration Due Date: 27 May 2004

Product:	GLOBETEK INC.	Jan 14 2004 9:30pm
Serial no:	None	Page 1 of 1
Description:	Power Supply - Model: 1089 Series	
Test Date:	Jan 14 2004 9:22pm	
Result Name:	FLUCT. HARMONICS	
Type of Test:	EN61000:2001 Harmonics	
Limits:	Class A	
Power Analyzer:	Voltech PM3000A v2.20 s/n 0000	
AC Source:	Mains / Manual Source	

Harmonic Results Against Chosen Limits:	**Notes:**
PASS	

Test Parameter Details	**User Entered**	**Measured**
Operating Frequency:	50	49.9922
Operating Voltage:	230	230.0000
Specified Power:	0.0000	21.8833
Fundamental Current:	0.0000	0.0999
Power Factor:	0.0000	0.4044
Average Input Current:		0.2374
Maximum POHC:		0.0427
POHC Limit:		0.2514
Maximum THC:		0.2155
Minimum Power:	75	
Class Multiplier:	1.0000	
Test Duration:	00:05:00	

Product:	GLOBETEK INC.	Jan 14 2004 9:30pm Page 1 of 1
Serial no:	None	
Description:	Power Supply - Model: 1089 Series	
Result Name:	FLUCT. HARMONICS	
Voltech IEC1000-3 Windows Software 3.09.06	Test Date:	Jan 14 2004 9:22pm
Type of Test:	Fluctuating Harmonics Test - Source Qualification (2001)	
Power Analyzer:	Voltech PM3000A v2.20 s/n 0000	
AC Source:	Mains / Manual Source	
Overall Result: PASS		

	Nominal	Measured	Deviation	Allowed Deviation	Result
Supply Voltage	230.00V	230.00V	0.00V	4.60V	Pass
Supply Frequency	50.00Hz	49.99Hz	0.01Hz	0.25Hz	Pass

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

Product:	GLOBETEK INC.	Jan 14 2004 9:30pm
Serial no:	None	Page 1 of 1
Description:	Power Supply - Model: 1089 Series	
Result Name:	FLUCT. HARMONICS	
Voltech IEC1000-3 Windows Software 3.09.06		Test Date: Jan 14 2004 9:22pm
Type of Test:	Fluctuating Harmonics Test - Worst Case Table (2001)	
Power Analyzer:	Voltech PM3000A v2.20 s/n 0000	
AC Source:	Mains / Manual Source	
Overall Result: PASS		

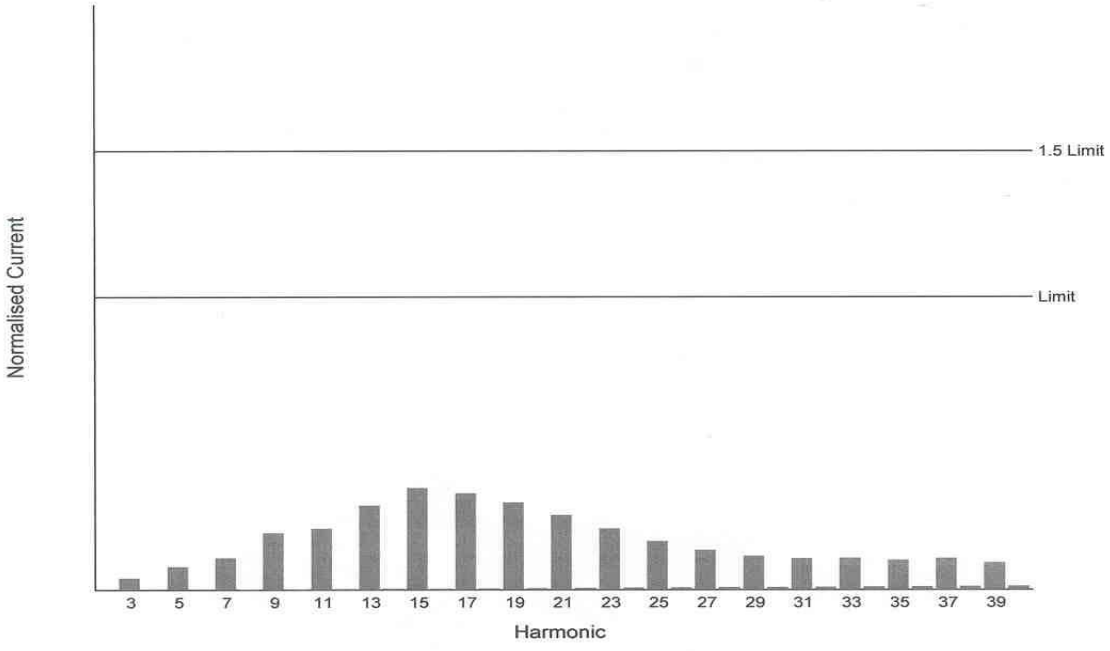
Class	Class A
Class Multiplier	1

Harm	Limit 1	Limit 2	Average Reading	<L1 <L2	Max Reading	<L2	Pass FAIL	Harm	Limit 1	Limit 2	Average Reading	<L1 <L2	Max Reading	<L2	Pass FAIL
2	1.0800A	1.6200A	0.597mA	✓ ✓	0.597mA	✓	N/A	3	2.3000A	3.4500A	94.65mA	✓ ✓	95.08mA	✓	Pass
4	430.0mA	645.0mA	0.597mA	✓ ✓	0.597mA	✓	N/A	5	1.1400A	1.7100A	90.27mA	✓ ✓	90.29mA	✓	Pass
6	300.0mA	450.0mA	0.597mA	✓ ✓	0.597mA	✓	N/A	7	770.0mA	1.1550A	84.43mA	✓ ✓	84.67mA	✓	Pass
8	230.0mA	345.0mA	0.598mA	✓ ✓	0.660mA	✓	N/A	9	400.0mA	600.0mA	77.36mA	✓ ✓	77.61mA	✓	Pass
10	184.0mA	276.0mA	0.598mA	✓ ✓	0.660mA	✓	N/A	11	330.0mA	495.0mA	68.78mA	✓ ✓	68.90mA	✓	Pass
12	153.3mA	230.0mA	0.598mA	✓ ✓	0.660mA	✓	N/A	13	210.0mA	315.0mA	60.39mA	✓ ✓	60.39mA	✓	Pass
14	131.4mA	197.1mA	0.597mA	✓ ✓	0.597mA	✓	N/A	15	150.0mA	225.0mA	52.03mA	✓ ✓	52.12mA	✓	Pass
16	115.0mA	172.5mA	0.597mA	✓ ✓	0.597mA	✓	N/A	17	132.3mA	198.5mA	43.65mA	✓ ✓	43.65mA	✓	Pass
18	102.2mA	153.3mA	0.597mA	✓ ✓	0.597mA	✓	N/A	19	118.4mA	177.6mA	35.28mA	✓ ✓	35.28mA	✓	Pass
20	92.00mA	138.0mA	0.597mA	✓ ✓	0.597mA	✓	N/A	21	107.1mA	160.7mA	27.14mA	✓ ✓	27.35mA	✓	Pass
22	83.63mA	125.4mA	0.597mA	✓ ✓	0.597mA	✓	N/A	23	97.82mA	146.7mA	20.23mA	✓ ✓	20.42mA	✓	Pass
24	76.66mA	115.0mA	0.597mA	✓ ✓	0.597mA	✓	N/A	25	90.00mA	135.0mA	14.94mA	✓ ✓	14.94mA	✓	Pass
26	70.76mA	106.1mA	0.597mA	✓ ✓	0.597mA	✓	N/A	27	83.33mA	125.0mA	11.34mA	✓ ✓	11.36mA	✓	Pass
28	65.71mA	98.57mA	0.597mA	✓ ✓	0.597mA	✓	N/A	29	77.58mA	116.3mA	8.969mA	✓ ✓	8.969mA	✓	Pass
30	61.33mA	92.00mA	0.597mA	✓ ✓	0.597mA	✓	N/A	31	72.58mA	108.8mA	7.773mA	✓ ✓	7.773mA	✓	Pass
32	57.50mA	86.25mA	0.597mA	✓ ✓	0.597mA	✓	N/A	33	68.18mA	102.2mA	7.124mA	✓ ✓	7.409mA	✓	Pass
34	54.11mA	81.17mA	0.597mA	✓ ✓	0.597mA	✓	N/A	35	64.28mA	96.42mA	6.577mA	✓ ✓	6.577mA	✓	Pass
36	51.11mA	76.66mA	0.597mA	✓ ✓	0.597mA	✓	N/A	37	60.81mA	91.21mA	6.565mA	✓ ✓	6.577mA	✓	Pass
38	48.42mA	72.63mA	0.597mA	✓ ✓	0.597mA	✓	N/A	39	57.69mA	86.53mA	5.381mA	✓ ✓	5.381mA	✓	Pass
40	46.00mA	69.00mA	0.597mA	✓ ✓	0.597mA	✓	N/A								

<L1 : Reading is below limit 1.
<L2 : Reading is below limit 2.
N/A : Harmonic current below 0.6% of rated current or 5mA, whichever is greater, are disregarded.

Product:	GLOBETEK INC.	Jan 14 2004 9:30pm
Serial no:	None	Page 1 of 1
Description:	Power Supply - Model: 1089 Series	
Result Name:	FLUCT. HARMONICS	
Voltech IEC1000-3 Windows Software 3.09.06		Test Date: Jan 14 2004 9:22pm
Type of Test:	Fluctuating Harmonics Test - Normalised Worst Case Bar Chart (2001)	
Power Analyzer:	Voltech PM3000A v2.20 s/n 0000	
AC Source:	Mains / Manual Source	
Overall Result:		
PASS		

Class	Class A
Class Multiplier	1

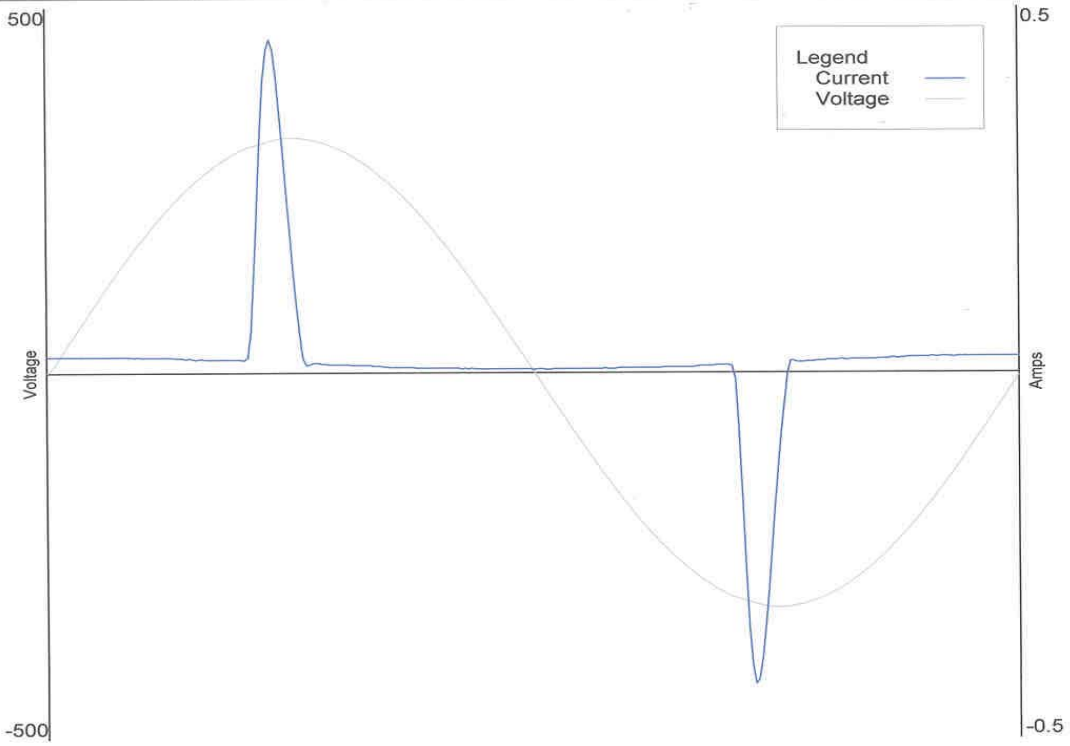


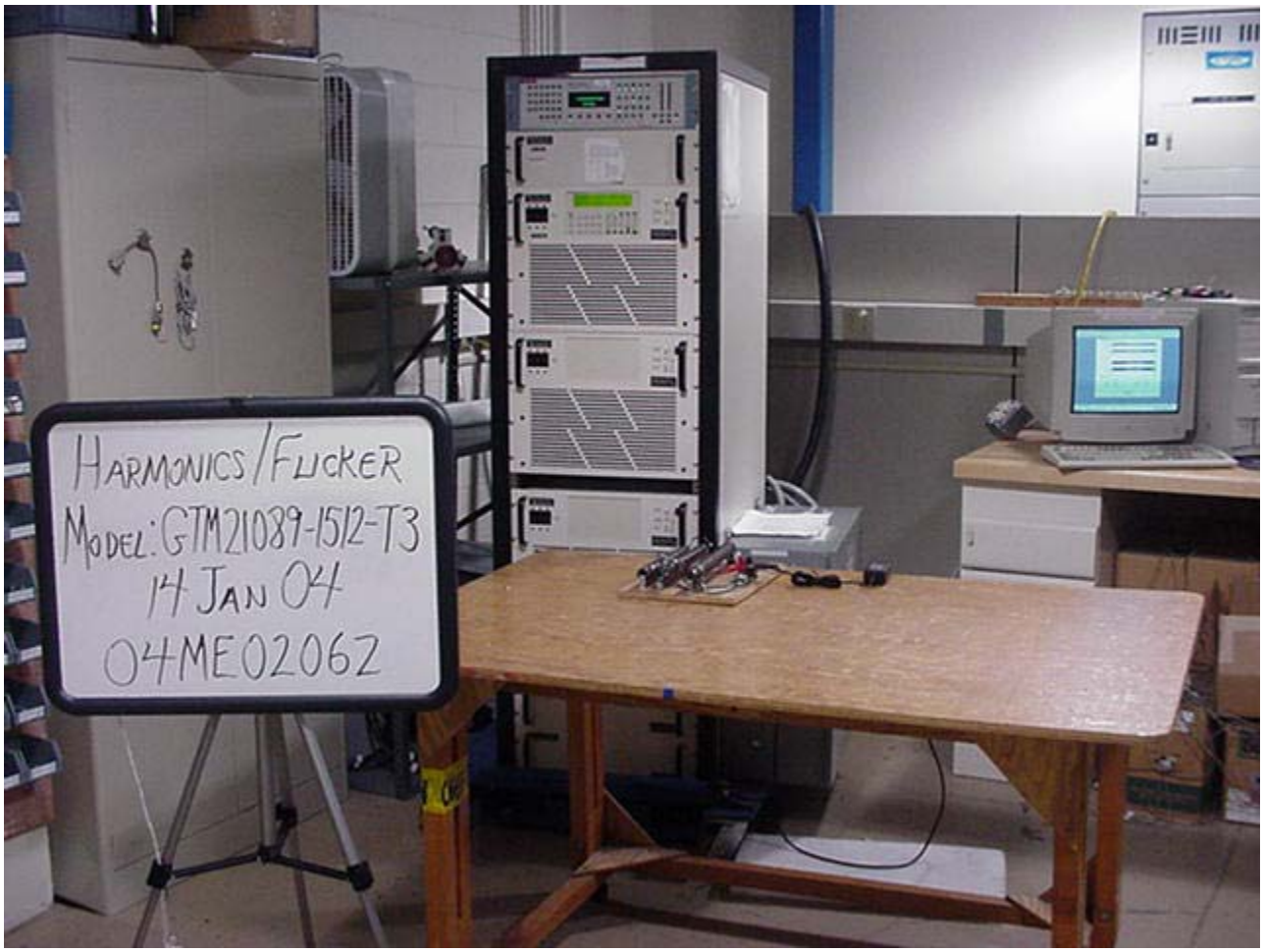
Product:	GLOBETEK INC.	Jan 14 2004 9:19pm Page 1 of 1
Serial no:	None	
Description:	Power Supply - Model: 1089 Series	
Result Name:	FLICKER	
Voltech IEC1000-3 Windows Software 3.09.06		Test Date: Jan 14 2004 7:16pm
Type of Test:	Flickermeter Test - Table	
Power Analyzer:	Voltech PM3000A v2.20 s/n 0000	
AC Source:	Mains / Manual Source	
Overall Result: **PASS**	Notes: Plt test duration 120 minutes Measurement method - Voltage	

	Plt
Limit	0.650
Reading	0.071

	Pst	dc (%)	dmax (%)	d(t) > 3.3%(ms)
Limit	1.000	3.300	4.000	500
Reading 1	0.071	0.017	0.046	0
Reading 2	0.071	0.017	0.046	0
Reading 3	0.071	0.017	0.038	0
Reading 4	0.071	0.017	0.038	0
Reading 5	0.071	0.017	0.038	0
Reading 6	0.071	0.017	0.046	0
Reading 7	0.071	0.017	0.038	0
Reading 8	0.071	0.017	0.038	0
Reading 9	0.071	0.017	0.038	0
Reading 10	0.071	0.017	0.038	0
Reading 11	0.071	0.017	0.038	0
Reading 12	0.071	0.017	0.038	0

Product:	GLOBETEK INC.	Jan 14 2004 9:22pm Page 1 of 1
Serial no:	None	
Description:	Power Supply - Model: 1089 Series	
Result Name:	WAVEFORM VERIF.	
Voltech IEC1000-3 Windows Software 3.09.06	Test Date:	Jan 14 2004 9:20pm
Type of Test:	Waveform	
Power Analyzer:	Voltech PM3000A v2.20 s/n 0000	
AC Source:	Mains / Manual Source	
	Notes: FAIL. Use normal limits only	





Harmonic Disturbances and Flicker Test Set-Up – GTM21089-1512-T3

Product:	MODEL 1097	Jan 22 2004 9:43am Page 1 of 1
Serial no:		
Description:	Power Supply	
Test Date:	Jan 22 2004 9:39am	
Result Name:	1097 SUPPLY_HARM	
Type of Test:	EN61000:2001 Harmonics	
Limits:	Class A	
Power Analyzer:	Voltech PM3000A v2.20 s/n 0000	
AC Source:	Mains / Manual Source	

Harmonic Results Against Chosen Limits:	**Notes:**
PASS	

Test Parameter Details	**User Entered**	**Measured**
Operating Frequency:	50	49.9922
Operating Voltage:	230	230.0000
Specified Power:	0.0000	57.0459
Fundamental Current:	0.0000	0.2578
Power Factor:	0.0000	0.4744
Average Input Current:		0.5289
Maximum POHC:		0.0465
POHC Limit:		0.2514
Maximum THC:		0.4678
Minimum Power:	75	
Class Multiplier:	1.0000	
Test Duration:	00:02:30	

Product:	MODEL 1097	Jan 22 2004 9:43am
Serial no:		Page 1 of 1
Description:	Power Supply	
Result Name:	1097 SUPPLY_HARM	
Voltech IEC1000-3 Windows Software 3.09.06	Test Date:	Jan 22 2004 9:39am
Type of Test:	Fluctuating Harmonics Test - Source Qualification (2001)	
Power Analyzer:	Voltech PM3000A v2.20 s/n 0000	
AC Source:	Mains / Manual Source	
Overall Result: PASS		

	Nominal	Measured	Deviation	Allowed Deviation	Result
Supply Voltage	230.00V	230.00V	0.00V	4.60V	Pass
Supply Frequency	50.00Hz	49.99Hz	0.01Hz	0.25Hz	Pass

Harmonic	Reading	Limit	Result	Harmonic	Reading	Limit	Result
2	0.03%	0.20%	Pass	3	0.08%	0.90%	Pass
4	0.03%	0.20%	Pass	5	0.08%	0.40%	Pass
6	0.03%	0.20%	Pass	7	0.08%	0.30%	Pass
8	0.03%	0.20%	Pass	9	0.08%	0.20%	Pass
10	0.03%	0.20%	Pass	11	0.08%	0.10%	Pass
12	0.03%	0.10%	Pass	13	0.08%	0.10%	Pass
14	0.03%	0.10%	Pass	15	0.08%	0.10%	Pass
16	0.03%	0.10%	Pass	17	0.03%	0.10%	Pass
18	0.03%	0.10%	Pass	19	0.03%	0.10%	Pass
20	0.03%	0.10%	Pass	21	0.03%	0.10%	Pass
22	0.03%	0.10%	Pass	23	0.03%	0.10%	Pass
24	0.03%	0.10%	Pass	25	0.03%	0.10%	Pass
26	0.03%	0.10%	Pass	27	0.03%	0.10%	Pass
28	0.03%	0.10%	Pass	29	0.03%	0.10%	Pass
30	0.03%	0.10%	Pass	31	0.03%	0.10%	Pass
32	0.03%	0.10%	Pass	33	0.03%	0.10%	Pass
34	0.03%	0.10%	Pass	35	0.03%	0.10%	Pass
36	0.03%	0.10%	Pass	37	0.03%	0.10%	Pass
38	0.03%	0.10%	Pass	39	0.03%	0.10%	Pass
40	0.03%	0.10%	Pass				

Product:	MODEL 1097	Jan 22 2004 9:44am
Serial no:		Page 1 of 1
Description:	Power Supply	
Result Name:	1097 SUPPLY_HARM	
Voltech IEC1000-3 Windows Software 3.09.06	Test Date:	Jan 22 2004 9:39am
Type of Test:	Fluctuating Harmonics Test - Worst Case Table (2001)	
Power Analyzer:	Voltech PM3000A v2.20 s/n 0000	
AC Source:	Mains / Manual Source	
Overall Result: PASS		

Class	Class A
Class Multiplier	1

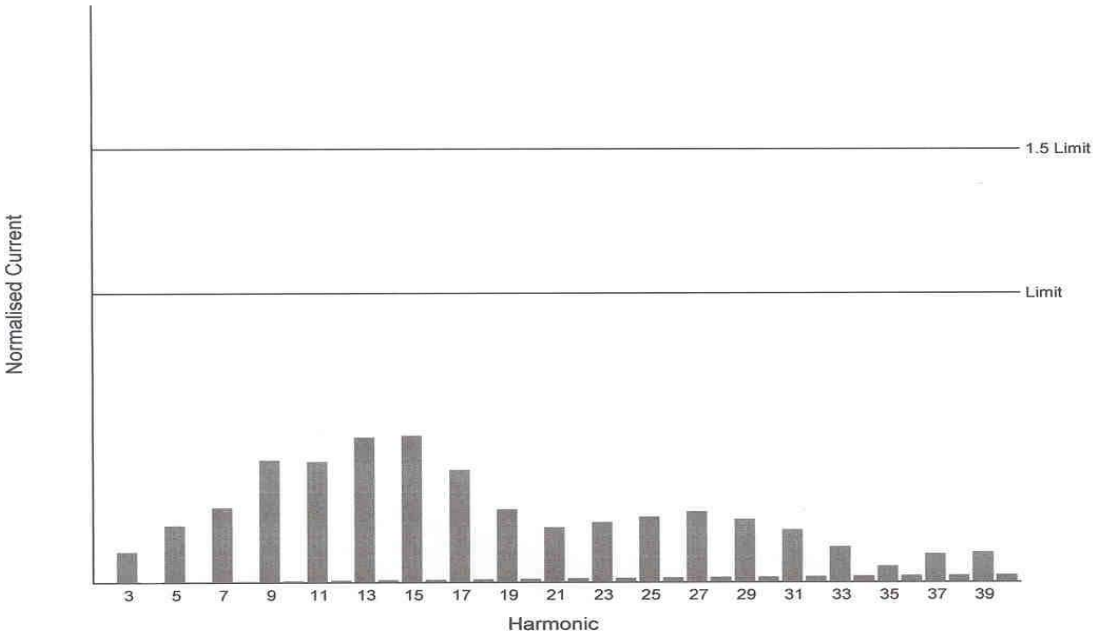
Harm	Limit 1	Limit 2	Average Reading	<L1	<L2	Max Reading	<L2	Pass FAIL	Harm	Limit 1	Limit 2	Average Reading	<L1	<L2	Max Reading	<L2	Pass FAIL
2	1.0800A	1.6200A	1.198mA	✓	✓	1.198mA	✓	N/A	3	2.3000A	3.4500A	241.9mA	✓	✓	243.3mA	✓	Pass
4	430.0mA	645.0mA	1.198mA	✓	✓	1.198mA	✓	N/A	5	1.1400A	1.7100A	224.1mA	✓	✓	224.1mA	✓	Pass
6	300.0mA	450.0mA	1.198mA	✓	✓	1.198mA	✓	N/A	7	770.0mA	1.1550A	198.0mA	✓	✓	199.1mA	✓	Pass
8	230.0mA	345.0mA	1.198mA	✓	✓	1.198mA	✓	N/A	9	400.0mA	600.0mA	167.1mA	✓	✓	169.0mA	✓	Pass
10	184.0mA	276.0mA	1.198mA	✓	✓	1.198mA	✓	N/A	11	330.0mA	495.0mA	134.7mA	✓	✓	137.7mA	✓	Pass
12	153.3mA	230.0mA	1.198mA	✓	✓	1.198mA	✓	N/A	13	210.0mA	315.0mA	102.8mA	✓	✓	105.4mA	✓	Pass
14	131.4mA	197.1mA	1.198mA	✓	✓	1.198mA	✓	N/A	15	150.0mA	225.0mA	73.61mA	✓	✓	76.26mA	✓	Pass
16	115.0mA	172.5mA	1.198mA	✓	✓	1.198mA	✓	N/A	17	132.3mA	198.5mA	48.04mA	✓	✓	51.52mA	✓	Pass
18	102.2mA	153.3mA	1.198mA	✓	✓	1.198mA	✓	N/A	19	118.4mA	177.6mA	28.72mA	✓	✓	29.97mA	✓	Pass
20	92.00mA	138.0mA	1.198mA	✓	✓	1.198mA	✓	N/A	21	107.1mA	160.7mA	19.35mA	✓	✓	20.38mA	✓	Pass
22	83.63mA	125.4mA	1.198mA	✓	✓	1.198mA	✓	N/A	23	97.82mA	146.7mA	18.54mA	✓	✓	20.38mA	✓	Pass
24	76.66mA	115.0mA	1.198mA	✓	✓	1.198mA	✓	N/A	25	90.00mA	135.0mA	20.38mA	✓	✓	20.38mA	✓	Pass
26	70.76mA	106.1mA	1.198mA	✓	✓	1.198mA	✓	N/A	27	83.33mA	125.0mA	20.38mA	✓	✓	20.38mA	✓	Pass
28	65.71mA	98.57mA	1.198mA	✓	✓	1.198mA	✓	N/A	29	77.58mA	116.3mA	15.84mA	✓	✓	16.90mA	✓	Pass
30	61.33mA	92.00mA	1.198mA	✓	✓	1.198mA	✓	N/A	31	72.58mA	108.8mA	12.11mA	✓	✓	13.18mA	✓	Pass
32	57.50mA	86.25mA	1.198mA	✓	✓	1.198mA	✓	N/A	33	68.18mA	102.2mA	7.034mA	✓	✓	8.392mA	✓	Pass
34	54.11mA	81.17mA	1.198mA	✓	✓	1.198mA	✓	N/A	35	64.28mA	96.42mA	3.596mA	✓	✓	3.596mA	✓	N/A
36	51.11mA	76.66mA	1.198mA	✓	✓	1.198mA	✓	N/A	37	60.81mA	91.21mA	3.960mA	✓	✓	5.994mA	✓	N/A
38	48.42mA	72.63mA	1.198mA	✓	✓	1.198mA	✓	N/A	39	57.69mA	86.53mA	5.994mA	✓	✓	5.994mA	✓	Pass
40	46.00mA	69.00mA	1.198mA	✓	✓	1.198mA	✓	N/A									

<L1 : Reading is below limit 1.
<L2 : Reading is below limit 2.
N/A : Harmonic current below 0.6% of rated current or 5mA, whichever is greater, are disregarded.

Product:	MODEL 1097	Jan 22 2004 9:44am Page 1 of 1
Serial no:		
Description:	Power Supply	
Result Name:	1097 SUPPLY_HARM	
Voltech IEC1000-3 Windows Software 3.09.06		Test Date: Jan 22 2004 9:39am
Type of Test:	Fluctuating Harmonics Test - Normalised Worst Case Bar Chart (2001)	
Power Analyzer:	Voltech PM3000A v2.20 s/n 0000	
AC Source:	Mains / Manual Source	
Overall Result:		

PASS

Class	Class A
Class Multiplier	1

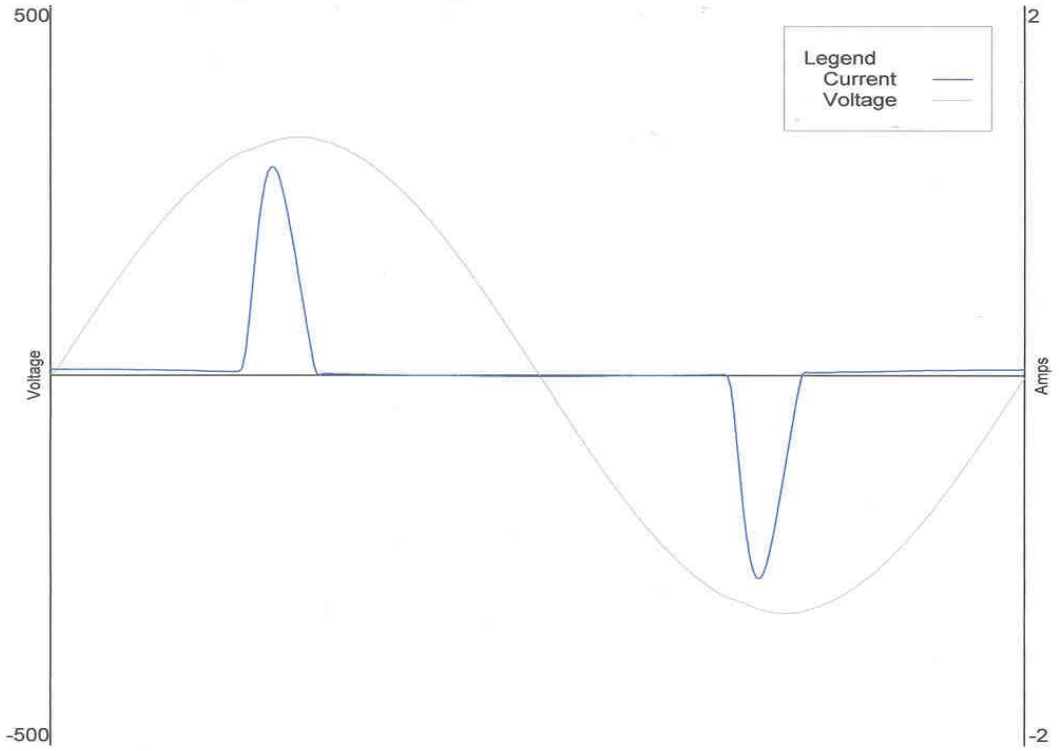


Product:	MODEL 1097	Jan 22 2004 1:09pm Page 1 of 1
Serial no:		
Description:	Power Supply	
Result Name:	FLICKER 1097	
Voltech IEC1000-3 Windows Software 3.09.06		Test Date: Jan 22 2004 9:48am
Type of Test:	Flickermeter Test - Table	
Power Analyzer:	Voltech PM3000A v2.20 s/n 0000	
AC Source:	Mains / Manual Source	
Overall Result: **PASS**	Notes: Plt test duration 120 minutes Measurement method - Voltage	

	Plt
Limit	0.650
Reading	0.071

	Pst	dc (%)	dmax (%)	d(t) > 3.3%(ms)
Limit	1.000	3.300	4.000	500
Reading 1	0.071	0.017	0.046	0
Reading 2	0.071	0.017	0.046	0
Reading 3	0.071	0.017	0.046	0
Reading 4	0.071	0.017	0.053	0
Reading 5	0.071	0.017	0.046	0
Reading 6	0.071	0.017	0.053	0
Reading 7	0.071	0.017	0.046	0
Reading 8	0.071	0.017	0.046	0
Reading 9	0.071	0.017	0.046	0
Reading 10	0.071	0.017	0.046	0
Reading 11	0.071	0.017	0.046	0
Reading 12	0.071	0.017	0.046	0

Product:	Globetek Inc.	Jan 19 2004 10:33am
Serial no:		Page 1 of 1
Description:	1097 Power Supply	
Result Name:	1097 SUPPLY_WAV	
Voltech IEC1000-3 Windows Software 3.09.06		Test Date: Jan 19 2004 10:16am
Type of Test:	Waveform	
Power Analyzer:	Voltech PM3000A v2.20 s/n 0000	
AC Source:	Mains / Manual Source	
	Notes: FAIL. Use normal limits only	



Harmonic Disturbances and Flicker Test Set-Up – GTM21097

6.0 IMMUNITY TEST REGULATIONS

The immunity tests were performed according to following regulations:

---------- Europe ----------

EN60601-1-2	Medical Electrical Equipment Part 1-2: General Requirements for Safety - Collateral Standard: Electromagnetic Compatibility - Requirements and Tests - IEC 60601-1-2: 2001
EN55024	Information Technology Equipment-Immunity Characteristics- Limits and Methods of Measurements.

In accordance with:

EN 61000-4-2	1995	(Electrostatic Discharge) including A1: 1998 and A2: 2001
IEC 61000-4-2	1995	(Electrostatic Discharge) including A1: 1998 and A2: 2000
EN 61000-4-3	1996	(Radiated) including A1: 1998 and A2: 2000)
IEC 61000-4-3	1995	(Radiated) including A1: 1998 and A2: 2000)
EN 61000-4-4	1995	(Electrical Fast Transient/Burst) including A1: 2001 and A2: 2001
IEC 61000-4-4	1995	(Electrical Fast Transient/Burst) including A1: 2000 and A2: 2001
EN 61000-4-5	1995	(Surge) including A1: 2001
IEC 61000-4-5	1995	(Surge) including A1: 2000
EN 61000-4-6	1996	(Conducted) including A1: 2001
IEC 61000-4-6	1996	(Conducted) including A1: 2000
EN 61000-4-11	1994	(Voltage Dips and Interrupts) including A1: 2001
IEC 61000-4-11	1994	(Voltage Dips and Interrupts) including A1: 2002

6.1 Immunity Performance Criteria

Performance Criteria A: The apparatus shall continue to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. If the manufacturer does not specify the minimum performance level or the permissible performance loss then either of these may be derived from the product description and documentation and what the user may reasonable expect from the apparatus if used as intended.

Performance Criteria B: The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed. No change of actual operating state or stored data is allowed. If the manufacturer does not specify the minimum performance level or the permissible performance loss then either of these may be derived from the product description and documentation and what the user may reasonable expect from the apparatus if used as intended.

Performance Criteria C: Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls.

6.1.1 Manufacturer's Criteria for Immunity

(Supporting above criteria for each test)

The power supplies are monitored for the DC output voltage to not exceed +/- 5% and +/- 1% ripple change from the start readings

6.1.2 Electrostatic Discharge (ESD) Test

Test Applicable

Performance Criteria A

Measurements were made on a ground plane that extends 1-meter minimum beyond all sides of the system under test. Air discharges were applied to non-metallic parts of the system. Contact discharges were applied to all accessible metallic parts. Each discharge was applied at a rate of one (1) discharge per second.

Results

The system met the requirements for ESD. Data Pages follow.

Temperature:	20.5 °C	21.5 °C
Humidity:	34 %RH	32 %RH
Pressure:	1001 mbar	1005 mbar
Date test performed:	19 January 2004	21 January 2004

WAVEFORM VERIFICATION PERFORMED

1 fully configured sample was subjected to the following discharge levels.

Discharge Type	Discharge Level/Polarity (KV)	Number of Discharges per level and location	Mode*	
			Power	Operation
Air	±2, ±4, ±8	10	2	1
Contact	±2, ±4	50	2	1
Contact	±6	10	2	1

*See Power Interface and EUT Operating Modes for details

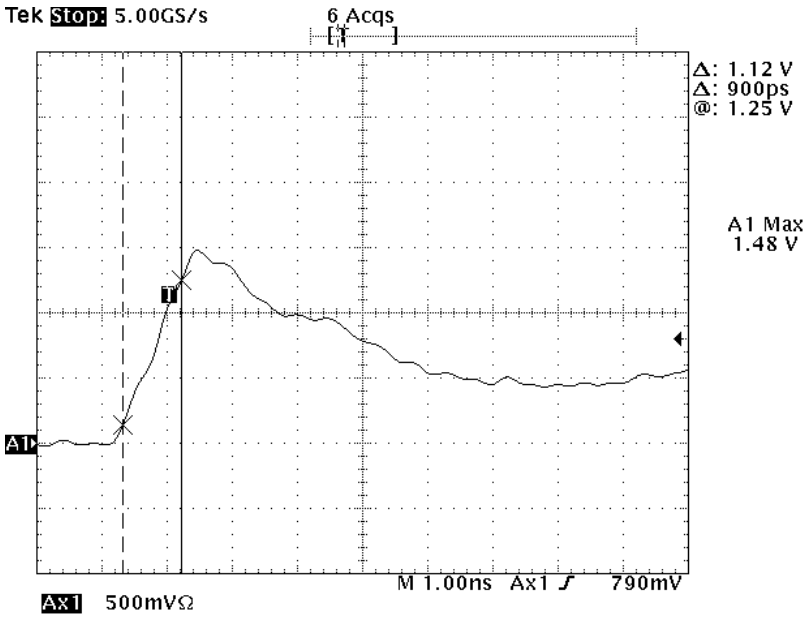
Discharge Type	Discharge Level/Polarity (KV)	Number of Discharges per level and location	Mode*	
			Power	Operation
Air	±2, ±4, ±8	10	4	1
Contact	±2, ±4	50	4	1
Contact	±6	10	4	1

*See Power Interface and EUT Operating Modes for details

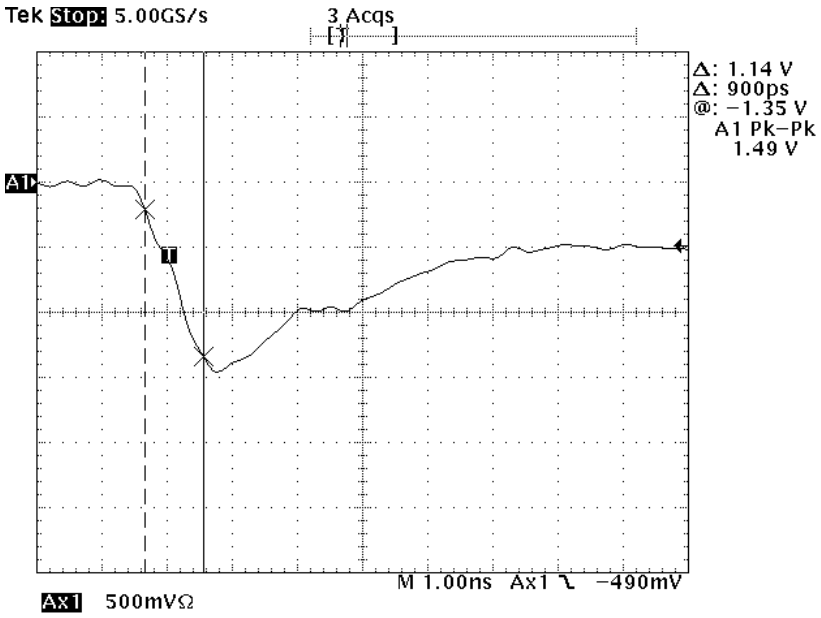
Test equipment for ESD

MZ-15/EC	**Keytek**	**ESD Simulator**	**Equipment No.: ME5A-143**
Range: 2-8kV	Last Calibration Date: 30 September 2003		Calibration Due Date: 30 September 2004
TPC-2A	**Tektronix**	**IEC Omni-Tip**	**Equipment No.: ME5A-143A**
Range: 2-8kV	Last Calibration Date: 30 September 2003		Calibration Due Date: 30 September 2004
99760-00	**Cole –Parmer**	**Hygrometer/Temp/Barometer**	**Equipment No.: ME4-268**
		Ranges	Temp: 0^{o}C-55^{o}C Humidity: 25% to 95 %RH Pressure: 795 to 1050 mbar
	Last Calibration Date: 27 May 2003		Calibration Due Date: 27 May 2004

Test accessories for ESD
Horizontal Ground Reference Plane
Vertical Ground Reference Plane



ESD Positive 4kV Amplitude and Rise Time



ESD Negative 4kV Amplitude and Rise Time

ESD WAVEFORM VERIFICATIONS

GTM21089

Discharge Method: **Air**

Discharge Polarity: **Positive / Negative**

Discharge Potential: **2kV, 4kV, 8kV**

Test Point **Observations**

	Number of Discharge/Results	Observations
Discharge Location	10 Per Location	
A1 Side Enclosure	Pass	1
A2 AC Power Cord	Pass	1
A3 Front Enclosure	Pass	1
A4 Rear Enclosure	Pass	1
A5 Cord Output	Pass	1

OBSERVATIONS:

1. No Discharge Observed, No Observed Response.
2. Discharge Observed, No Observed Response.

GTM21089

Discharge Method: **Contact**

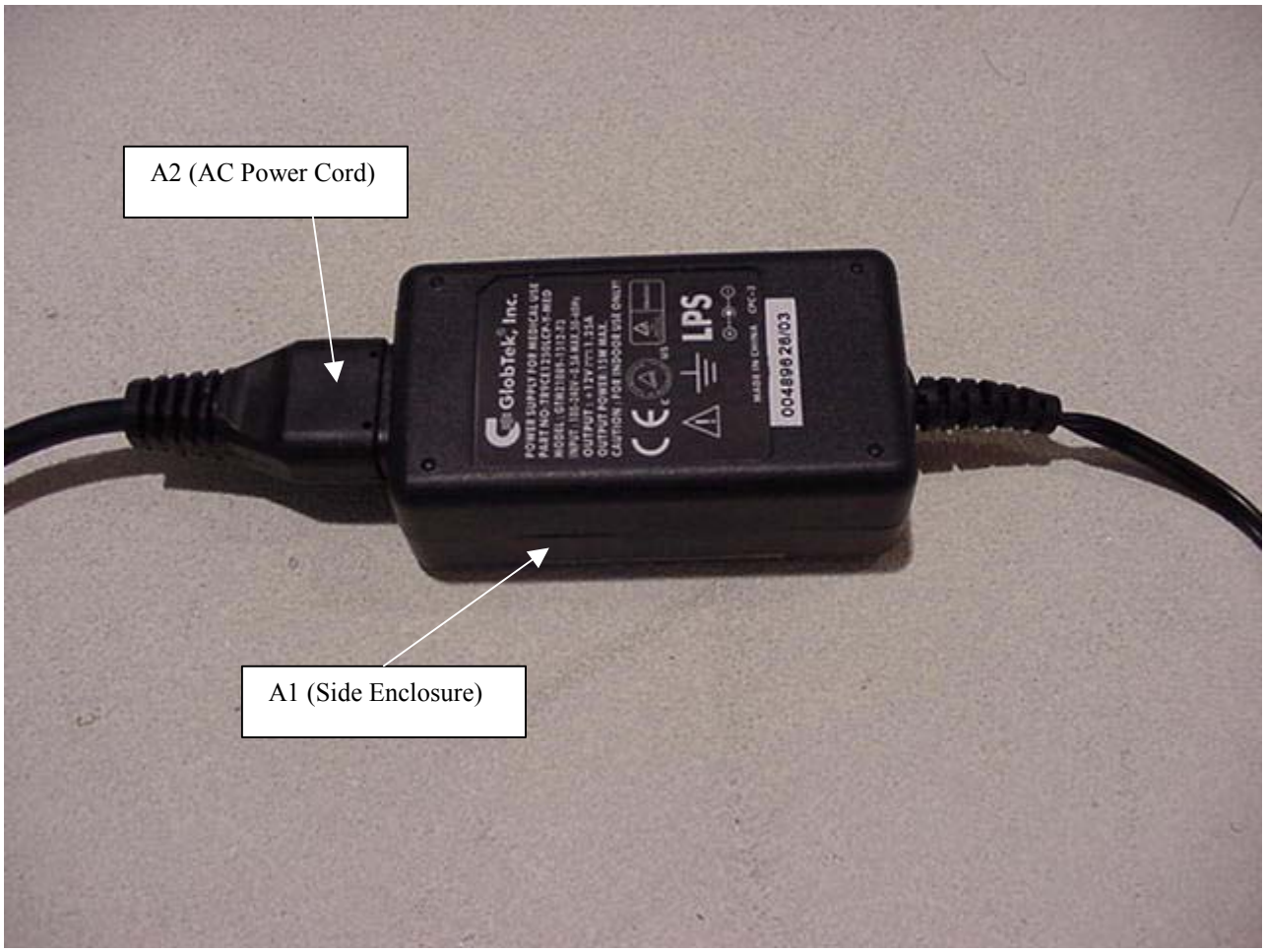
Discharge Polarity: **Positive / Negative**

Discharge Potential: **2kV, 4kV, 6kV**

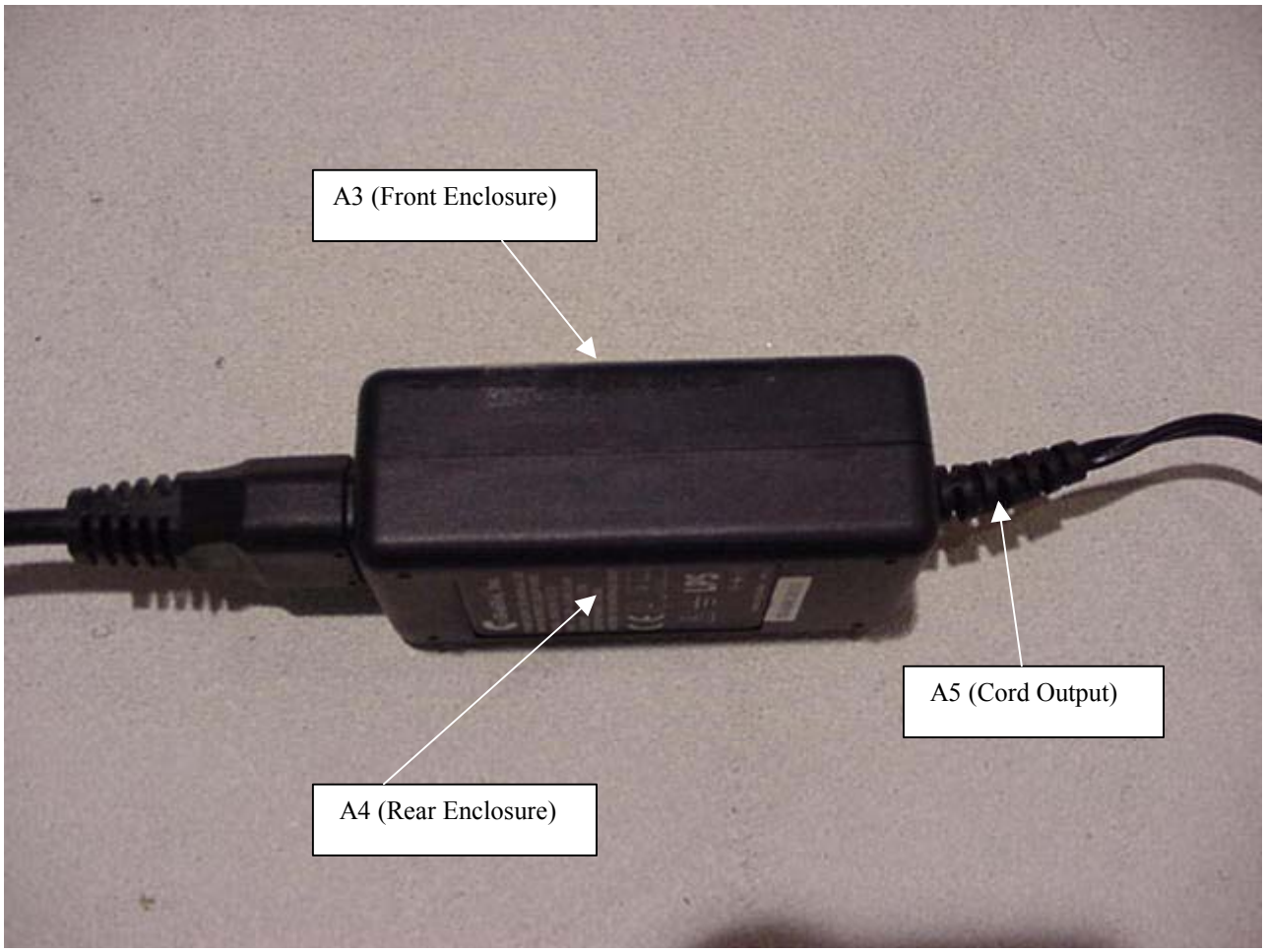
Test Point **Observations**

	Number of Discharge/Results		Observations
Discharge Location	10 Per Location	50 Per Location	
HCP	Pass	Pass	2
VCP	Pass	Pass	2

OBSERVATIONS:
1. No Discharge Observed, No Observed Response.
2. Discharge Observed, No Observed Response.



ESD Test Points



ESD Test Points

ESD Test Set-Up – GTM21089

GT-21097

Discharge Method: **Air**

Discharge Polarity: **Positive / Negative**

Discharge Potential: **2kV, 4kV, 8kV**

Test Point **Observations**

	Number of Discharge/Results	Observations
Discharge Location	10 Per Location	
A1 Power Cord	Pass	1
A2 Rear Enclosure	Pass	1
A3 Output Cord	Pass	1
A4 Side Enclosure	Pass	1
A5 Front Enclosure	Pass	1
A6 LED	Pass	1

OBSERVATIONS:

1. No Discharge Observed, No Observed Response.
2. Discharge Observed, No Observed Response.

GT-21097

Discharge Method: **Contact**

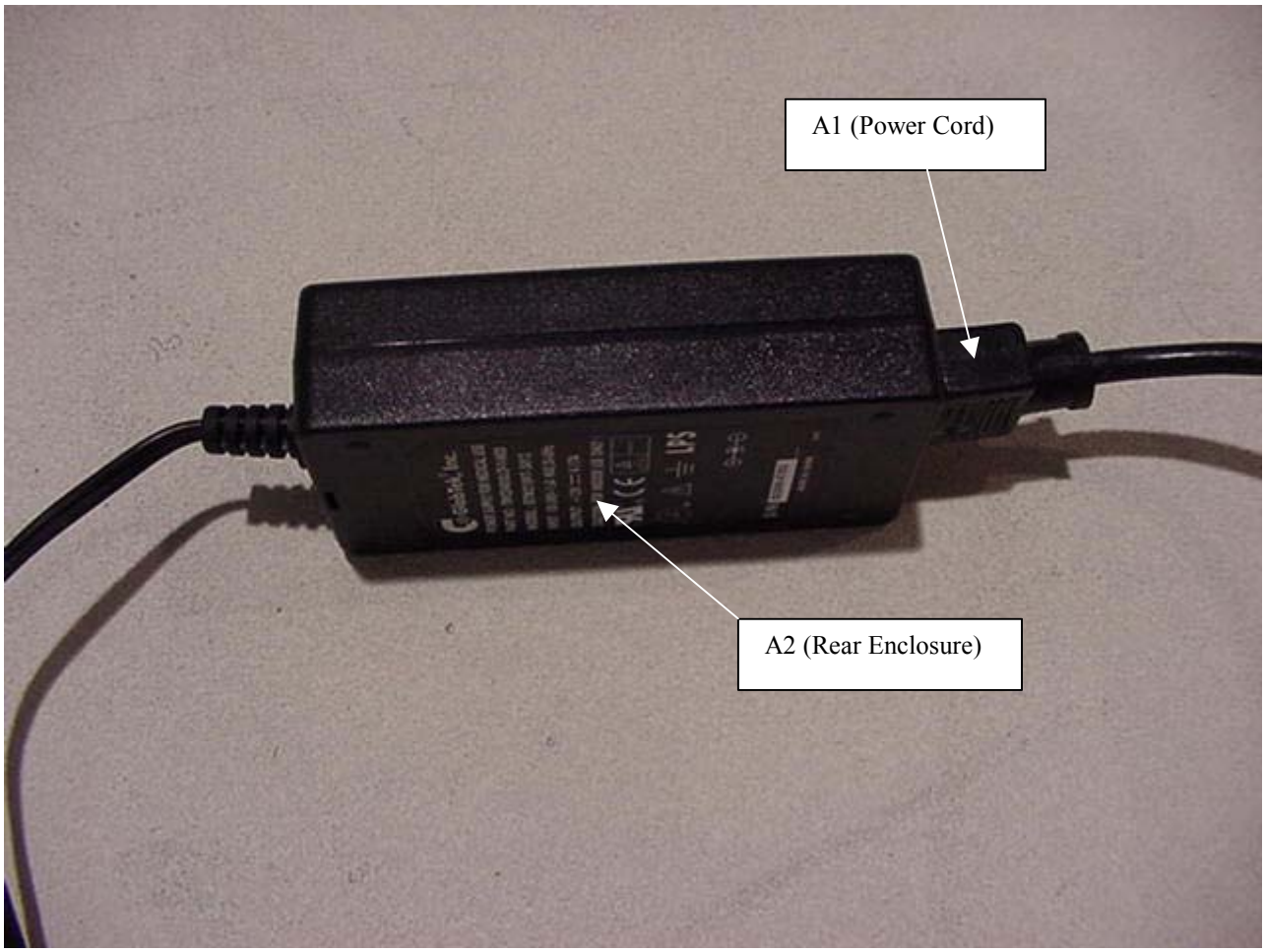
Discharge Polarity: **Positive / Negative**

Discharge Potential: **2kV, 4kV, 6kV**

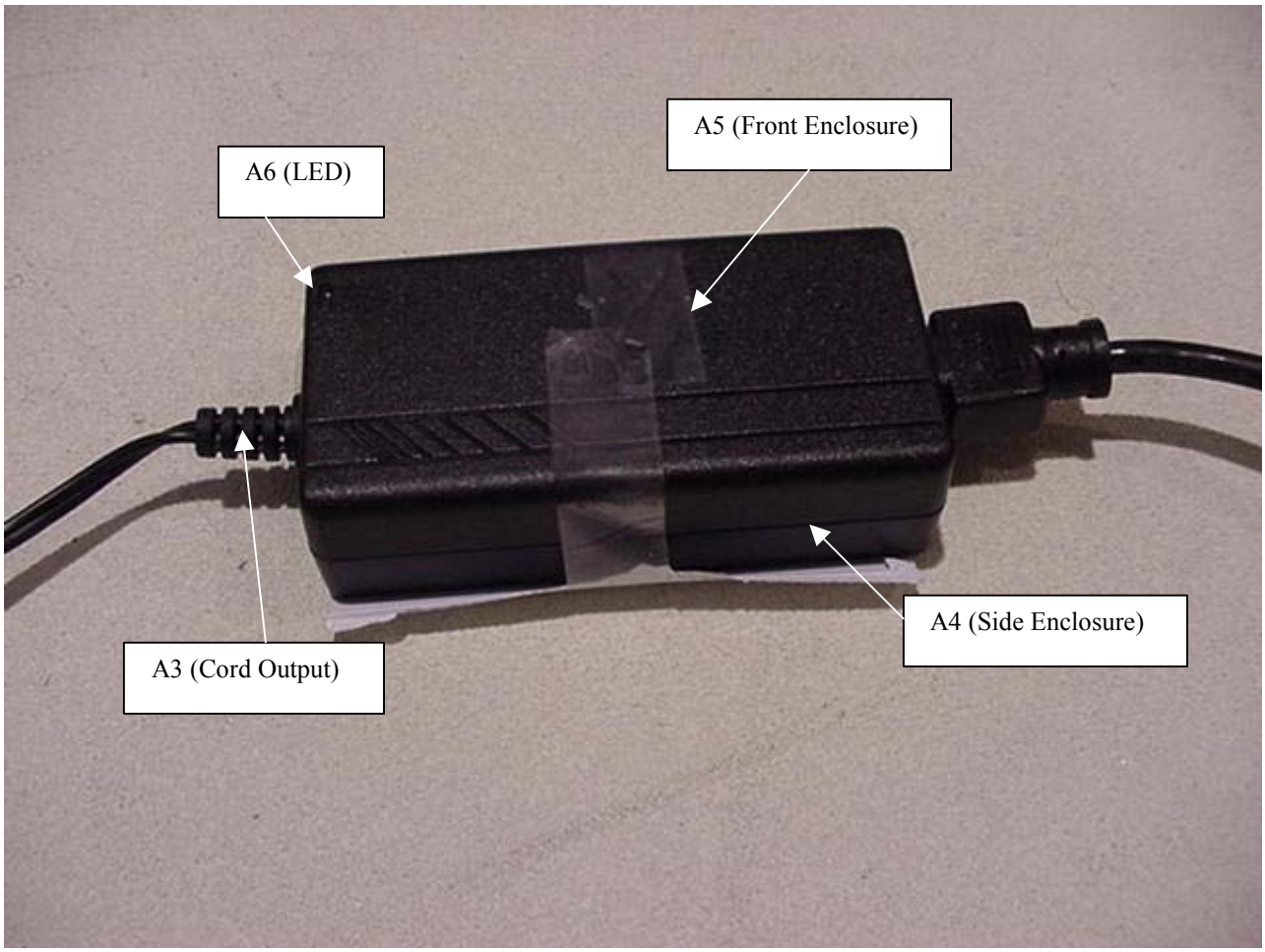
Test Point **Observations**

	Number of Discharge/Results		Observations
Discharge Location	10 Per Location	50 Per Location	
HCP	Pass	Pass	2
VCP	Pass	Pass	2

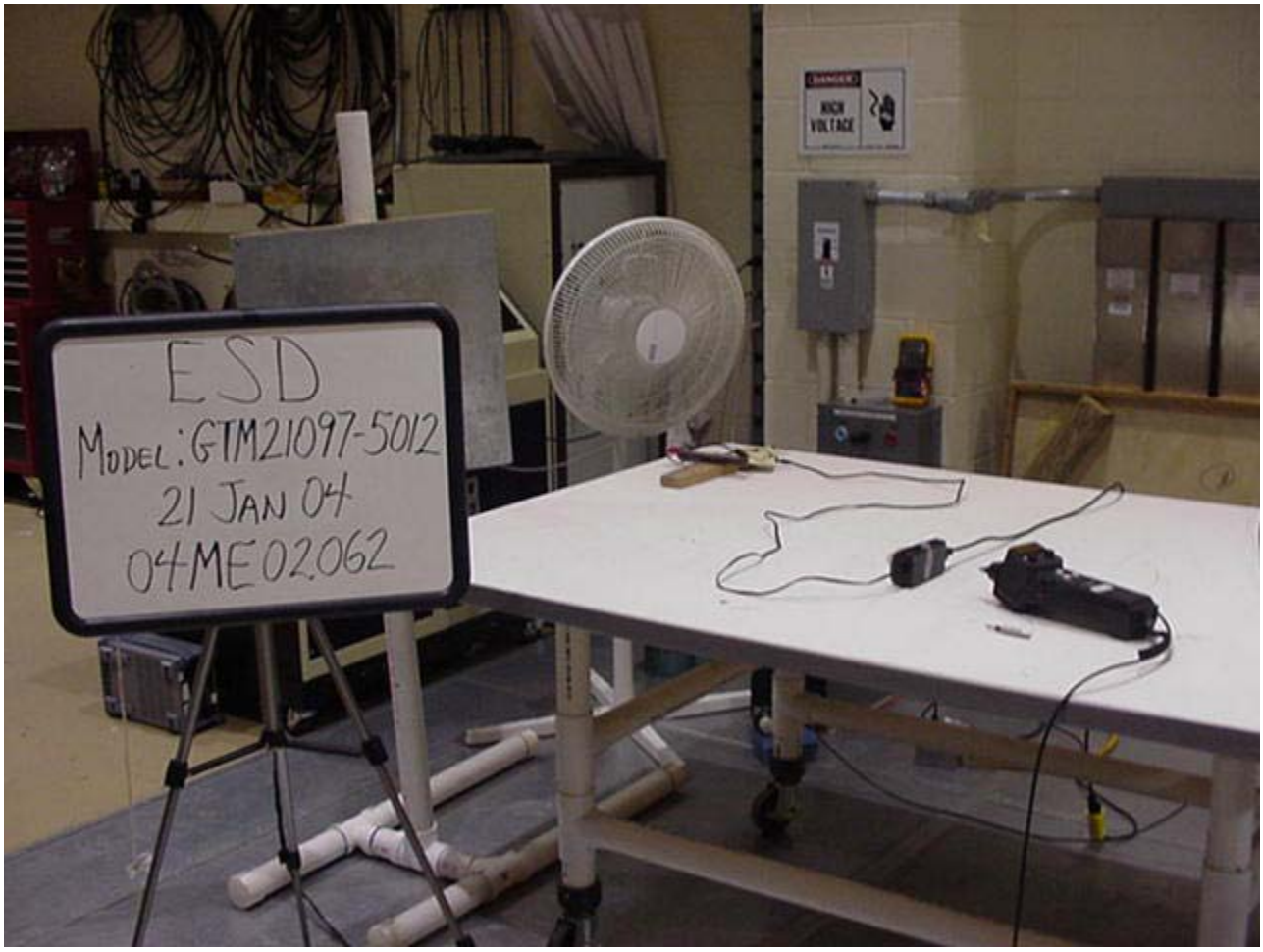
OBSERVATIONS:
1. No Discharge Observed, No Observed Response.
2. Discharge Observed, No Observed Response.



ESD Test Points



ESD Test Points



ESD Test Set-Up – GTM21097-5012

6.1.3 Radiated Field (RF Immunity) Test

Test Applicable

Performance Criteria A

Measurements were made in a fully anechoic chamber and the indicated field strength was pre-calibrated prior to placement of the system under test. Tests were performed in both the horizontal and vertical polarities, where applicable. The antenna was placed 3 meters from the product under test. All sides of the EUT were investigated for anomalies.

Results

The system met the requirements for RF Immunity. Data Pages follow.

Temperature:	19.5 °C	20.5 °C
Humidity:	35 %RH	35 %RH
Pressure:	1007 mbar	998 mbar
Date test performed:	15 January 2004	20 January 2004

1 fully configured sample was scanned over the following frequency range

Frequency Range	Field Strength	Modulation	Mode*	
			Power	Operation
80 MHz to 2500MHz	10V/m	AM 1kHz, 80% depth	2	1
900MHz ± 5MHz	10V/m	AM 1kHz, 80% depth	2	1
80MHz to 2500MHz	10V/m	AM 1kHz, 80% depth	4	1
900MHz ± 5MHz	10V/m	AM 1kHz, 80% depth	4	1

*See Power Interface and EUT Operating Modes for details

Observations during Testing: GTM 21089

Side	Polarity	Observations
Front	Horizontal	EUT operated normally.
Rear	Horizontal	EUT operated normally.
Front	Vertical	EUT operated normally.
Rear	Vertical	EUT operated normally.

Observations during Testing: GT 21097

Side	Polarity	Observations
Front	Horizontal	EUT operated normally.
Rear	Horizontal	EUT operated normally.
Front	Vertical	EUT operated normally.
Rear	Vertical	EUT operated normally.

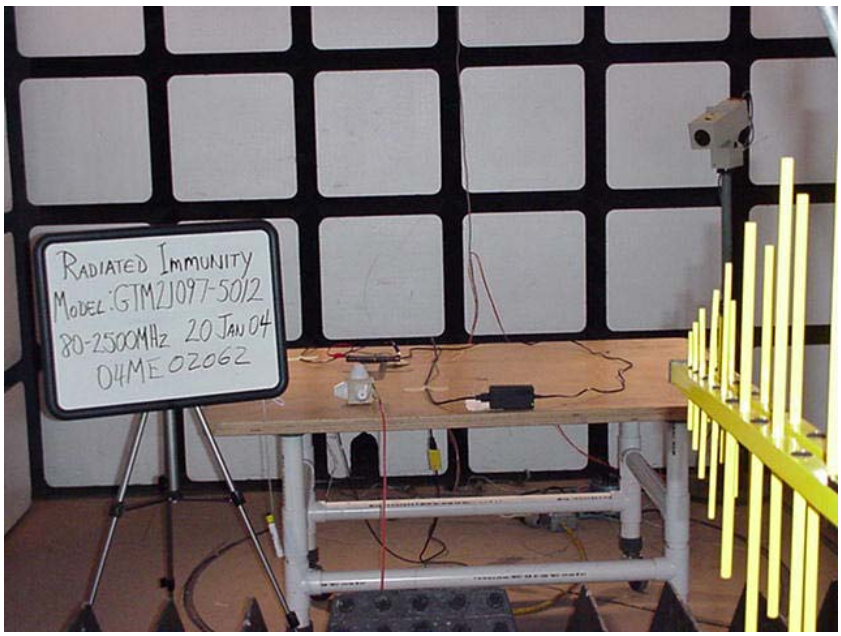
Test equipment for Radiated Immunity

SMT03	**Rhode &Schwarz**	**Signal Generator**	**Equipment No.: ME5A-285**
Range: 10k-3GHz	Last Calibration Date: 16 January 2003		Calibration Due Date: 31 January 2004
HI-4422	**Holaday**	**Isotropic Field Probe**	**Equipment No.: ME5A-346**
Range:	Last Calibration Date:		Calibration Due Date:

Test Accessories for Radiated Immunity

CBL6140A	**Chase**	**BiconiLog Antenna**	**Equipment No.: ME7A-559**
Range:	Last Calibration Date:		Calibration Due Date:
500W100A	**Amplifier Research**	**80-1000 MHz Amplifier**	**Equipment No.: ME7A-798**
25S1G4A	**Amplifier Research**	**0.8-4.2 GHz Amplifier**	**Equipment No.: ME7A-492**
NRVD	**Rhode & Schwarz**	**Power Meter**	**Equipment No.: ME5B-132**
Range: 10k-3GHz	Last Calibration Date: 11 September 2003		Calibration Due Date: 11 September 2004
NRV-Z51	**Rhode & Schwarz**	**Power Meter Sensor**	**Equipment No.: ME5B-133**
Range: 10k-3GHz	Last Calibration Date: 11 September 2003		Calibration Due Date: 11 September 2004
NRV-Z51	**Rhode & Schwarz**	**Power Meter Sensor**	**Equipment No.: ME5B-134**
Range: 10k-3GHz	Last Calibration Date: 11 September 2003		Calibration Due Date: 11 September 2004
260	**Simpson**	**Meter**	**Equipment No.: ME7-865**
Range: 0-250V			
99760-00	**Cole –Parmer**	**Hygrometer/Temp/Barometer**	**Equipment No.: ME4-268**
		Ranges	Temp: 0°C-55°C Humidity: 25% to 95 %RH Pressure: 795 to 1050 mbar
	Last Calibration Date: 27 May 2003		Calibration Due Date: 27 May 2004

GTM21089-1512-T3



GTM21097-5012

Radiated Immunity Test Set-Up

6.1.4 Electrical Fast Transient (EFT)/Burst Test

Test Applicable

Performance Criteria A

Measurements were made on a ground plane that extends 1-meter minimum beyond all sides of the system under test. Mains power tests were conducted with the product connected to a Coupling/Decoupling Network (CDN) and signal lines were tested, individually, in a capacitive coupling clamp. One of each unique interface was tested for a period of one (1) minute per polarity.

Results

The system met the requirements for EFT. Data Pages follow.

Temperature:	20.0 °C
Humidity:	35 %RH
Pressure:	995 mbar
Date test performed:	15 January 2004

1 fully configured sample subjected to the levels indicated.

Application Point	Level	Frequency	Mode*	
			Power	Operation
AC Mains	±0.5kV, ±1kV, ±2kV	5.0 kHz	1	1
AC Mains	±0.5kV, ±1kV, ±2kV	5.0 kHz	2	1
AC Mains	±0.5kV, ±1kV, ±2kV	5.0 kHz	3	1
AC Mains	±0.5kV, ±1kV, ±2kV	5.0 kHz	4	1

*See Power Interface and EUT Operating Modes for details

Observations during Testing: GTM21089 100 VOLTS 50Hz

Coupling	Polarity	Observations
L-PE	Positive	EUT operated normally.
L-PE	Negative	EUT operated normally.
N-PE	Positive	EUT operated normally.
N-PE	Negative	EUT operated normally.
PE	Positive	EUT operated normally.
PE	Negative	EUT operated normally.

Coupling	Polarity	Description of degradation in performance.
L-PE	Positive	No change at the ripple output, but the EFT was showed at the display.

Observations during Testing: GTM21089 240VOLTS 50Hz

Coupling	Polarity	Observations
L-PE	Positive	EUT operated normally.
L-PE	Negative	EUT operated normally.
N-PE	Positive	EUT operated normally.
N-PE	Negative	EUT operated normally.
PE	Positive	EUT operated normally.
PE	Negative	EUT operated normally.

Observations during Testing: GT21097 100 VOLTS 50Hz

Coupling	Polarity	Observations
L-PE	Positive	EUT operated normally.
L-PE	Negative	EUT operated normally.
N-PE	Positive	EUT operated normally.
N-PE	Negative	EUT operated normally.
PE	Positive	EUT operated normally.
PE	Negative	EUT operated normally.

Coupling	Polarity	Description of degradation in performance.
L-PE	Positive	No change at the ripple output, but the EFT was showed at the display.

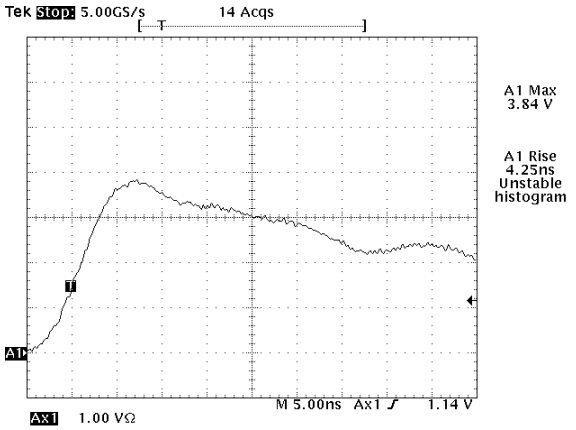
Observations during Testing: GT21097 240VOLTS 50Hz

Coupling	Polarity	Observations
L-PE	Positive	EUT operated normally.
L-PE	Negative	EUT operated normally.
N-PE	Positive	EUT operated normally.
N-PE	Negative	EUT operated normally.
PE	Positive	EUT operated normally.
PE	Negative	EUT operated normally.

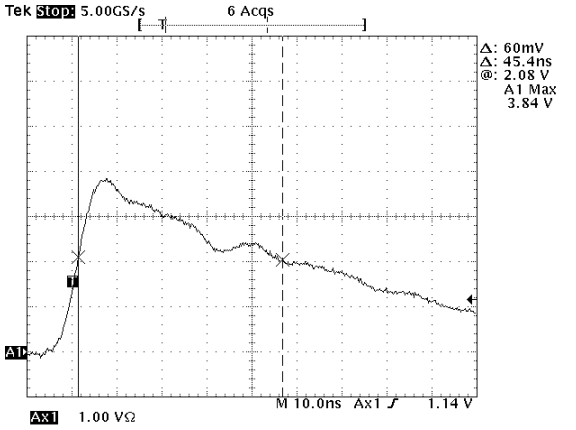
Coupling	Polarity	Description of degradation in performance.
L-PE	Positive	No change at the ripple output, but the EFT was showed at the display.

Test equipment used for EFT

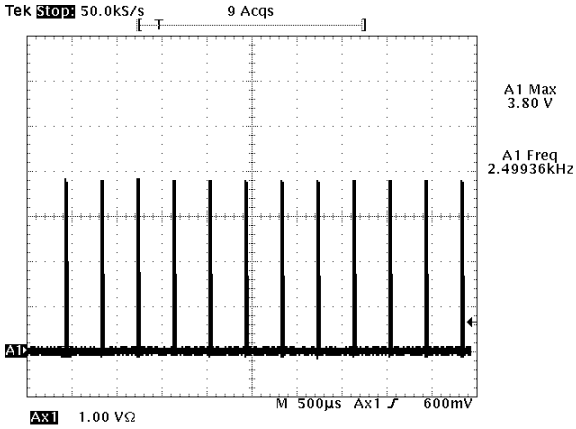
E4554	**Keytek**	**Mains Coupler/Decoupler(32A)**	**Equipment No.: ME5B-328**
Range: 500V-2kV	Last Calibration Date: 31 July 2003		Calibration Due Date: 31 July 2004
E411	**Keytek**	**EFT/Burst Generator**	**Equipment No.: ME5B-326**
Range: 500V-2kV	Last Calibration Date: 29 July 2003		Calibration Due Date: 29 July 2004
99760-00	**Cole –Parmer**	**Hygrometer/Temp/Barometer**	**Equipment No.: ME4-268**
		Ranges	Temp: 0°C-55°C Humidity: 25% to 95 %RH Pressure: 795 to 1050 mbar
	Last Calibration Date: 27 May 2003		Calibration Due Date: 27 May 2004



EFT 4000V Amplitude and Rise Time

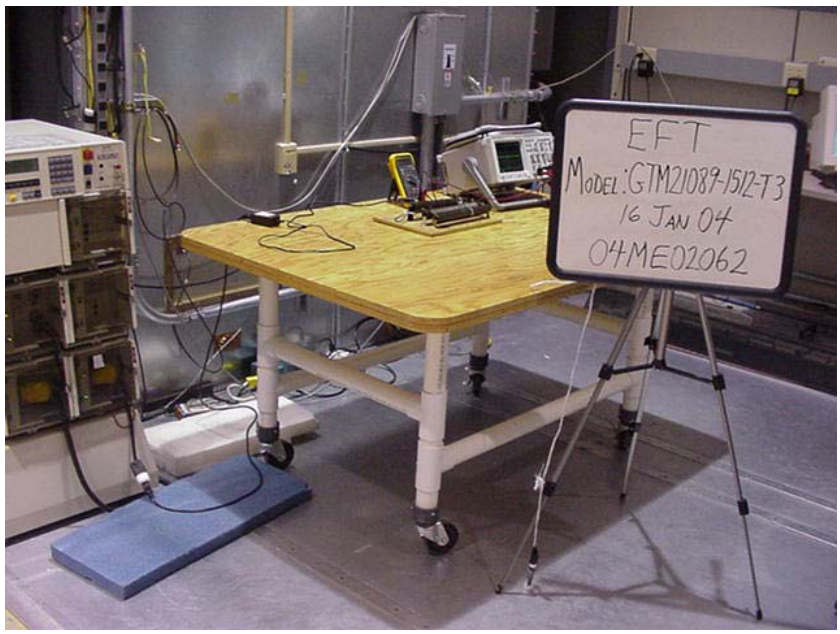


EFT 4000V Duration at 50% Amplitude



EFT 4000V Repetition Frequency

EFT WAVEFORM VERIFICAITONS



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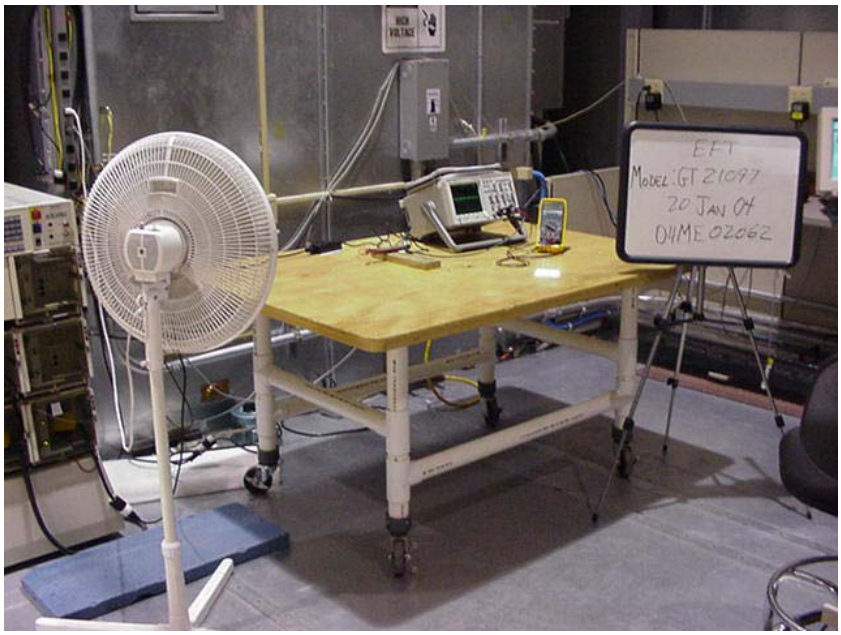


GT21097

EFT Test Set-Up

6.1.5 Conducted Immunity Test

Test Applicable

Performance Criteria A

Measurements were made on a ground plane that extends 1-meter minimum beyond all sides of the system under test. The EUT was located 10cm above the reference ground plane and the indicated field was pre-calibrated prior to placement of the system under test. All unique I/O lines that leave the EUT were investigated for anomalies.

Results

The system met the requirements for Conducted Immunity. Data Pages follow.

Temperature:	19.5 °C	20.5 °C
Humidity:	35 %RH	34 %RH
Pressure:	1007 mbar	1000 mbar
Date test performed:	15 January 2004	21 January 2004

1 fully configured sample was scanned over the following frequency range and test levels.

Frequency Range	Field	Modulation	Mode*	
			Power	Operation
150kHz to 80MHz	10Vrms	AM 1kHz, 80% depth	2	1

*See Power Interface and EUT Operating Modes for details

In addition to the scanned frequencies, the following internal system frequencies were investigated and dwelled on for 60 seconds.

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)
0.2	13.56	----	----	----	----
1	21	----	----	----	----
7.1	40.68	----	----	----	----

Observations during Testing: GTM-21089

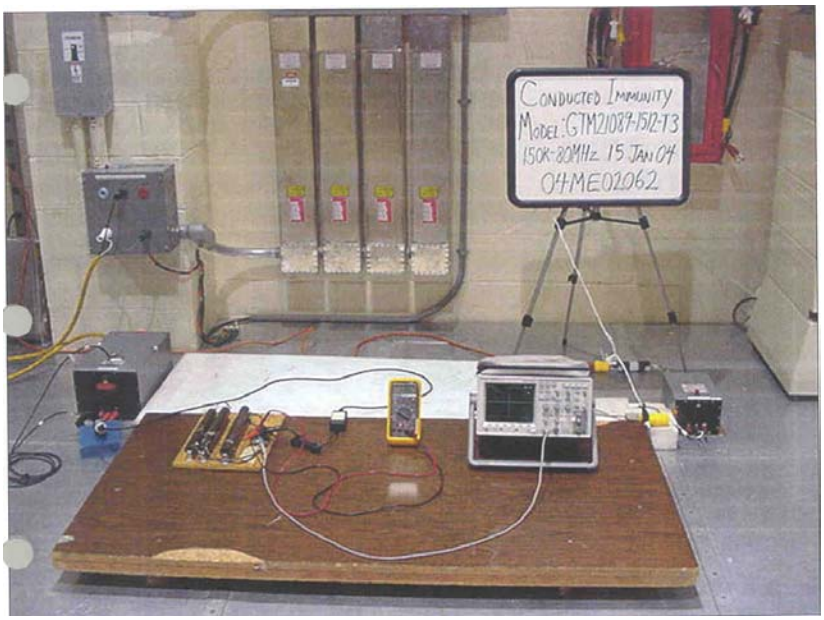
Point of application	Observations
Mains	EUT operated normally.

Observations during Testing: GTM-21097

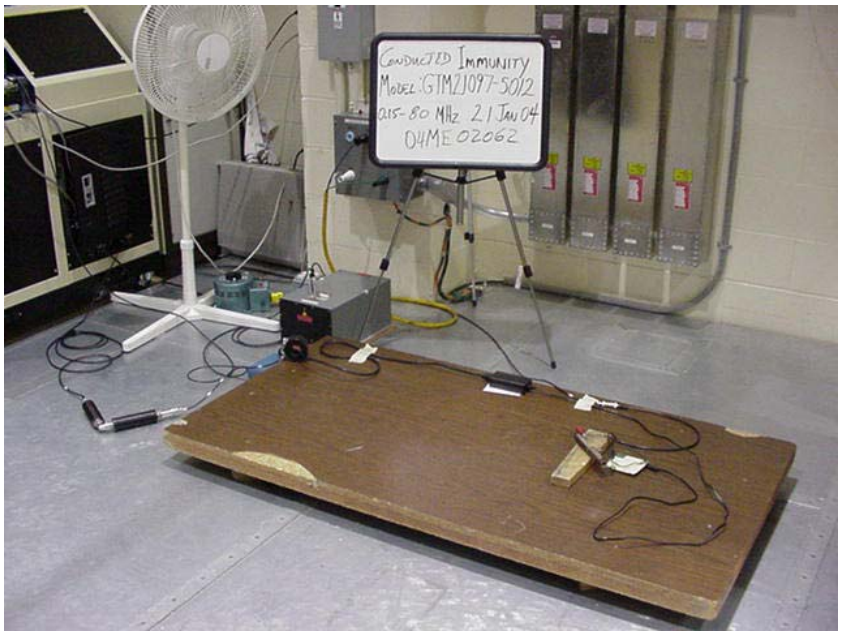
Point of application	Observations
Mains	EUT operated normally.

Test equipment for Radiated Immunity

2031	**IFR**	**Signal Generator**	**Equipment No.: ME5A-775**
Range: 10k-2GHz	Last Calibration Date: 17 October 2003		Calibration Due Date: 17 October 2004
M75	**IFI**	**Amplifier**	**Equipment No.: ME7A-669**
801- M3-50	**FCC**	**CDN**	**Equipment No.: ME5A-221**
Range: 10k-2GHz	Last Calibration Date: 04 September 2003		Calibration Due Date: 04 September 2004
G5100	**Werlatone**	**Directional Coupler**	**Equipment No.: ME7A-539**
NRVD	**Rhode & Schwarz**	**Power Meter**	**Equipment No.: ME5B-080**
Range: 18GHz	Last Calibration Date: 16 January 2003		Calibration Due Date: 31 January 2004
NRV-Z51	**Rhode & Schwarz**	**Power Meter Sensor**	**Equipment No.: ME5A-079**
Range: 18GHz	Last Calibration Date: 29 May 2003		Calibration Due Date: 29 May 2004
NRV-Z51	**Rhode & Schwarz**	**Power Meter Sensor**	**Equipment No.: ME5A-078**
Range: 18GHz	Last Calibration Date: 29 May 2003		Calibration Due Date: 29 May 2004
99760-00	**Cole –Parmer**	**Hygrometer/Temp/Barometer**	**Equipment No.: ME4-268**
		Ranges	Temp: 0°C-55°C Humidity: 25% to 95 %RH Pressure: 795 to 1050 mbar
	Last Calibration Date: 27 May 2003		Calibration Due Date: 27 May 2004



GT21089-1512-T3



GTM21097-5012

Conducted Immunity Test Set-Up

6.1.6 Voltage Surge Test

Test Applicable

Performance Criteria A

Mains power tests were conducted with the product connected to a Coupling/Decoupling Network (CDN). The test voltage was increased from the lowest indicated level up to the maximum level. Signal lines were tested, individually through a coupling network for unshielded cables and shielded cables were connected to the generator by a capacitor. The capacitor was connected between the cables shield and the generator output to ground. Each surge was applied 60 seconds after the previous surge.

Results

The system met the requirements for Surge. Data Pages follow.

Temperature:	21.0 °C	21.0 °C
Humidity:	34 %RH	34 %RH
Pressure:	988 mbar	1006 mbar
Date test performed:	19 January 2004	21 January 2004

1 fully configured sample was subjected to the levels indicated.

Application Point	Level				Coupling Mode	Mode*	
						Power	Operation
AC Mains	±0.5kV	±1kV	----	----	Differential	1,2	1
AC Mains	±0.5kV	±1kV	±2kV	----	Common	1,2	1
AC Mains	±0.5kV	±1kV	----	----	Differential	3,4	1
AC Mains	±0.5kV	±1kV	±2kV	----	Common	3,4	1

*See Power Interface and EUT Operating Modes for details

Waveform Applied			Source Impedance	Coupling Mode	Sync Angle	Surges/ Polarity
	Voltage	Current				
	1.2µS x 50µS	8µS x 20µS	2Ω + 18µF	Differential	0º, 90º, 180º, 270º	5
	1.2µS x 50µS	8µS x 20µS	12Ω + 9µF	Common	0º, 90º, 180º, 270º	5

Observations during Testing: GTM21089 100Vac, 50Hz

Coupling	Polarity	Observations
L-N	Positive	EUT operated normally.
L-N	Negative	EUT operated normally.
L-PE	Positive	EUT operated normally.
L-PE	Negative	EUT operated normally.
N-PE	Positive	EUT operated normally.
N-PE	Negative	EUT operated normally.

Observations during Testing: GTM21097 100Vac, 50Hz

Coupling	Polarity	Observations
L-N	Positive	EUT operated normally.
L-N	Negative	EUT operated normally.
L-PE	Positive	EUT operated normally.
L-PE	Negative	EUT operated normally.
N-PE	Positive	EUT operated normally.
N-PE	Negative	EUT operated normally.

Observations during Testing: GTM21089 240Vac, 50Hz

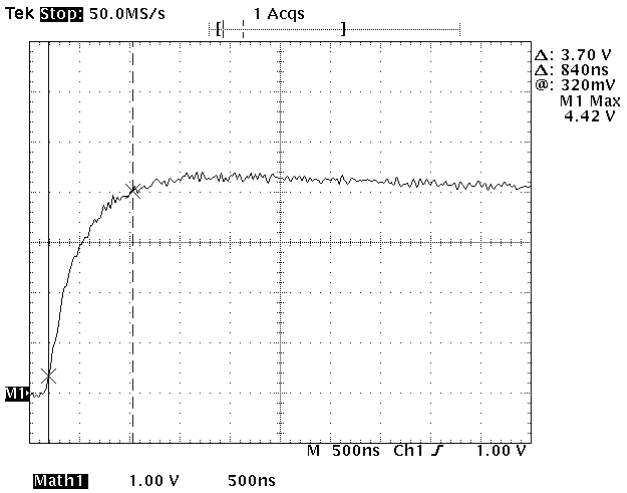
Coupling	Polarity	Observations
L-N	Positive	EUT operated normally.
L-N	Negative	EUT operated normally.
L-PE	Positive	EUT operated normally.
L-PE	Negative	EUT operated normally.
N-PE	Positive	EUT operated normally.
N-PE	Negative	EUT operated normally.

Observations during Testing: GTM21097 240Vac, 50Hz

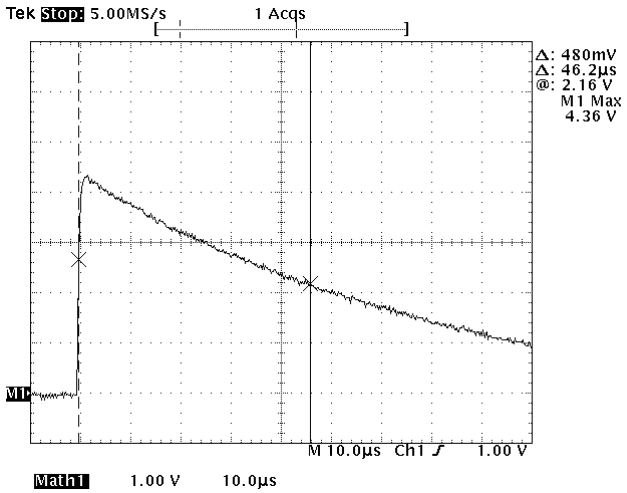
Coupling	Polarity	Observations
L-N	Positive	EUT operated normally.
L-N	Negative	EUT operated normally.
L-PE	Positive	EUT operated normally.
L-PE	Negative	EUT operated normally.
N-PE	Positive	EUT operated normally.
N-PE	Negative	EUT operated normally.

Test equipment used for Surge

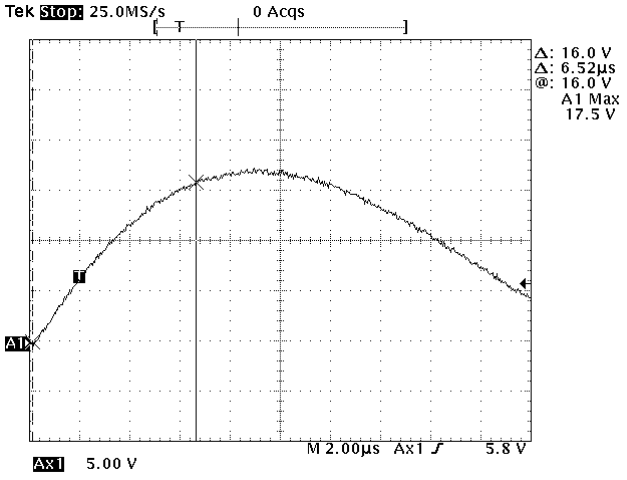
E4554	**Keytek**	**Mains Coupler/Decoupler(32A)**	**Equipment No.: ME5B-328**
Range: 500V-2kV	Last Calibration Date: 31 July 2003		Calibration Due Date: 31 July 2004
E501A	**Keytek**	**Surge Generator**	**Equipment No.: ME5B-327**
Range: 500V-2kV	Last Calibration Date: 01 August 2003		Calibration Due Date: 01 August 2004
99760-00	**Cole –Parmer**	**Hygrometer/Temp/Barometer**	**Equipment No.: ME4-268**
		Ranges	Temp: 0^{o}C-55^{o}C Humidity: 25% to 95 %RH Pressure: 795 to 1050 mbar
	Last Calibration Date: 27 May 2003		Calibration Due Date: 27 May 2004



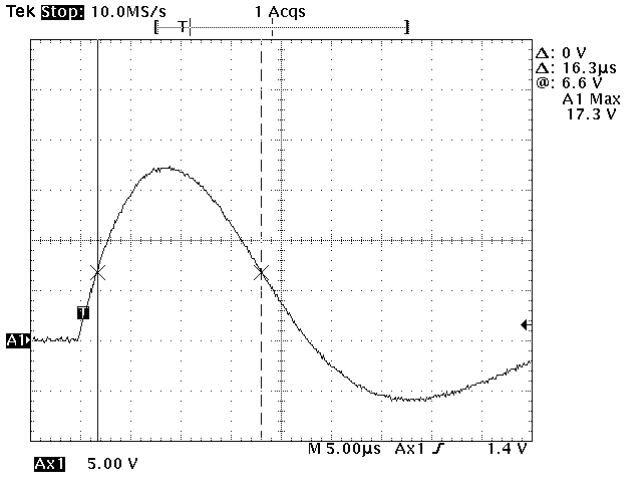
Surge Voltage Amplitude and Rise Time 4kV



Surge Voltage Duration at 50% Amplitude 4kV



Surge Current Amplitude and Rise Time 4kV



Surge Current Duration at 50% Amplitude 4kV

SURGE WAVEFORM VERIFICATIONS

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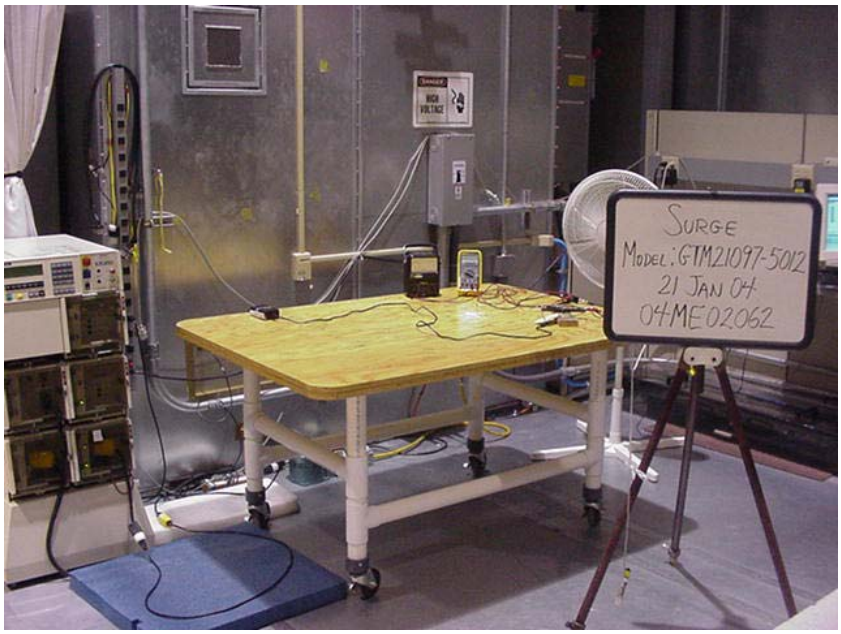

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Voltage Surge Test Set-Up

6.1.7 Voltage Dips and Interruptions

Test Applicable

Performance Criteria C

The product was subjected to voltage dips and interruptions.

Results

The system met the requirements for Voltage Dips and Interruptions. Data Pages follow.

Temperature:	21.5 °C
Humidity:	34%RH
Pressure:	9 97mbar
Date test performed:	20 January 2004

1 fully configured sample subjected to the levels indicated.

Interrupt	Period (Cycles)	Sync Angle
100%	0.5	All angles with 45º delta
100%	250	All angles with 45º delta
60%	5	All angles with 45º delta
30%	25	All angles with 45º delta

Observations during Testing: GTM-21089 100Vac, 50Hz

Interrupt	Observations
100%@ 0.5	EUT operated normally.
100%@ 250	Degradation in performance. See note below.
60%@ 5	Degradation in performance. See note below.
30%@ 25	Degradation in performance. See note below.

Interrupt	Description of degradation in performance.
100%	DUT shut off during dips then powered on normally during test. DUT was ok after test.
30%	Slight deviation to ripple voltage. The output voltage was stable during dips. DUT was ok after test.
30%	Slight deviation to ripple voltage. The output voltage was stable during dips. DUT was ok after test.

Observations during Testing: GT-21097 100Vac, 50Hz

Interrupt	Observations
100%@ 0.5	EUT operated normally.
100%@ 250	Degradation in performance. See note below.
60%@ 5	Degradation in performance. See note below.
30%@ 25	Degradation in performance. See note below.

Interrupt	Description of degradation in performance.
100%	DUT shut off during dips then powered on normally during test. DUT was ok after test.
30%	Slight deviation to ripple voltage. The output voltage was stable during dips. DUT was ok after test.
30%	Slight deviation to ripple voltage. The output voltage was stable during dips. DUT was ok after test.

Observations during Testing: GT-21089 240Vac, 50Hz

Interrupt	Observations
100%@ 0.5	EUT operated normally.
100%@ 250	Degradation in performance. See note below.
60%@ 5	EUT operated normally.
30%@ 25	Degradation in performance. See note below.

Interrupt	Description of degradation in performance.
100%	DUT shut off during dips then powered on normally during test. DUT was ok after test.
30%	Slight deviation to ripple voltage. The output voltage was stable during dips. DUT was ok after test.

Observations during Testing: GTM-21097 240Vac, 50Hz

Interrupt	Observations
100%@ 0.5	EUT operated normally.
100%@ 250	Degradation in performance. See note below.
60%@ 5	EUT operated normally.
30%@ 25	Degradation in performance. See note below.

Interrupt	Description of degradation in performance.
100%	DUT shut off during dips then powered on normally during test. DUT was ok after test.
30%	Slight deviation to ripple voltage. The output voltage was stable during dips. DUT was ok after test.

In-Rush Current:
Test Not Applicable

Test equipment used for Voltage Dips and Interruptions tests

PLINE 1610	**Haefley**	**VDS Generator**	**Equipment No.: ME5A-118**
Range: 100V/240V@50Hz	Last Calibration Date: 05 September 2003		Calibration Due Date: 05 September 2004
TDS3054	**Tektroniz**	**Oscilloscope**	**Equipment No.: ME5B-173**
Range: 2V/Div.	Last Calibration Date: 26 February 2003		Calibration Due Date: 26 February 2004
99760-00	**Cole –Parmer**	**Hygrometer/Temp/Barometer**	**Equipment No.: ME4-268**
		Ranges	Temp: 0^{o}C-55^{o}C Humidity: 25% to 95 %RH Pressure: 795 to 1050 mbar
	Last Calibration Date: 27 May 2003		Calibration Due Date: 27 May 2004

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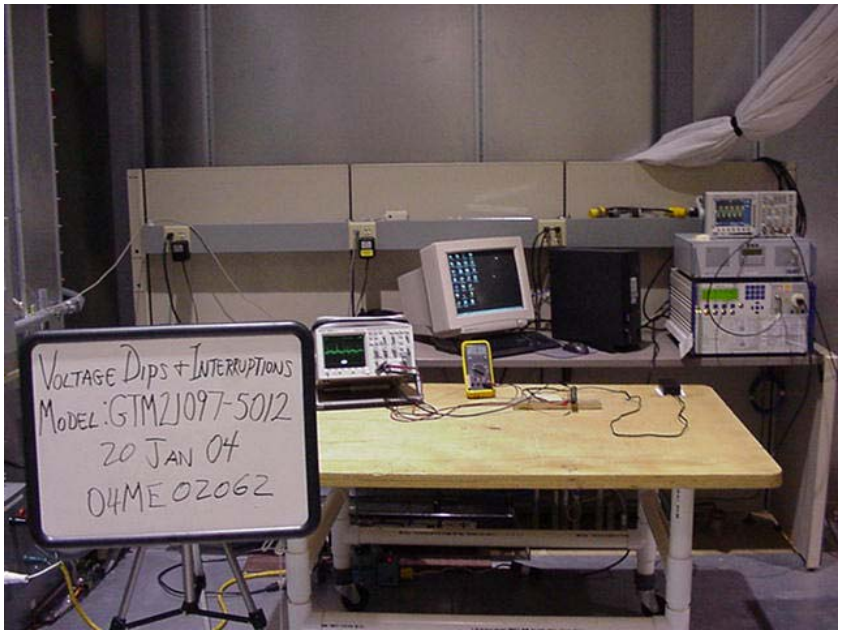

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Voltage Dips and Interruptions Test Set-Up

6.1.8 Magnetic Field Immunity Test

Test Applicable

Performance Criteria A

Measurements were made on a ground plane that extends 1-meter minimum beyond all sides of the system under test. The field was applied in 3 orthogonal axis for a period of one (1) minute in each direction.

Results

The system met the requirements for Magnetic Field Immunity. Data Pages follow.

Temperature:	21.0 °C
Humidity:	33 %RH
Pressure:	987 mbar
Date test performed:	19 January 2004

1 fully configured sample was subjected to the following levels.

Test Frequency	Field Strength	Application Axis	Mode*	
			Power	Operation
50Hz, 60Hz	3 A/m	X, Y, Z	2	1

*See Power Interface and EUT Operating Modes for details

Observations during Testing: GTM-21089, 50Hz

Axis	Observations
X	EUT operated normally.
Y	EUT operated normally.
Z	EUT operated normally.

Observations during Testing: GTM-21089, 60Hz

Axis	Observations
X	EUT operated normally.
Y	EUT operated normally.
Z	EUT operated normally.

Observations during Testing: GTM-21097, 50Hz

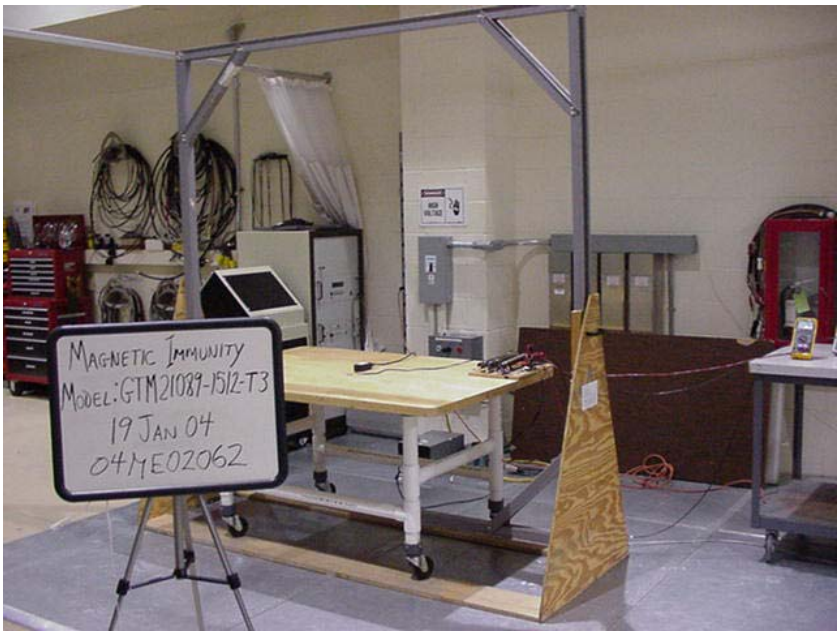
Axis	Observations
X	EUT operated normally.
Y	EUT operated normally.
Z	EUT operated normally.

Observations during Testing: GTM-21097, 60Hz

Axis	Observations
X	EUT operated normally.
Y	EUT operated normally.
Z	EUT operated normally.

Test equipment used for Magnetic Immunity

83III	**Fluke**	**Multimeter**	**Equipment No.: ME5B-305**
Range: 12Vdc	Last Calibration Date: 12 July 2003		Calibration Due Date: 12 July 2004
8010A	**Weston**	**AC Ammeter**	**Equipment No.: ME5-462**
Range: 2000mA	Last Calibration Date: 28 August 2003		Calibration Due Date: 28 August 2004
PM3000A	**Voltech**	**Power Analyzer**	**Equipment No.: ME5A-250**
	Last Calibration Date: 08 December 2003		Calibration Due Date: 08 December 2004
116BT	**Power Stat**	**Variac**	**Equipment No.: ME7-988**
99760-00	**Cole –Parmer**	**Hygrometer/Temp/Barometer**	**Equipment No.: ME4-268**
		Ranges	Temp: 0°C-55°C Humidity: 25% to 95 %RH Pressure: 795 to 1050 mbar
	Last Calibration Date: 27 May 2003		Calibration Due Date: 27 May 2004



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Magnetic Field Immunity Test Set-Up

Appendix A

Accreditations and Authorizations

NVLAP: Recognized under the National Voluntary Laboratory Accreditation Program (NVLAP) for satisfactory compliance with criteria established in Title 15, Part 285 Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC EN17025 and the relevant requirements of ISO 9002 (ANSI/ASQC Q92-1987) as suppliers of calibration or test results. The specific scope includes IEC/CISPR 22:1997, Amendment 1:1995, Amendment 2:1997, EN 55022:1998, AS/NZS 1044, CNS 13438:1997, ANSI C63.4, FCC Method - 47 CFR Part 15, FCC Method –47 CFR Part 68, AS/NZS 3548, IEC 61000-3-2, EN 61000-3-2, CISPR 14-1, EN 55014-1, AS/NZS 1044, CNS 13783-1, CISPR 22, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, and IEC 61000-4-11 testing. NVLAP Lab code: 100255-0.

FCC: Details of the measurement facilities used for these tests have been filed with the Federal Communications Commission's Laboratory in Columbia, Maryland and accepted in a letter dated September 24, 1997 (Ref. No. 91040).

Industry Canada: Accredited by Industry Canada for performance of radiated measurements. Our test site complies with RSP 100, Issue 7, Section 3.3. File #: IC 2181

VCCI: Accepted as an Associate Member to the VCCI. The measurement facilities detailed in this test report have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. Registration Nos.: (Radiated Emissions) R-797, (Conducted Emissions) C-832, C-833, C-834 and (Conducted Emissions - Telecommunications Ports) T-160.

ICASA: ICASA (Independent Communications Authority of South Africa) has appointed UL as a Designated Test Laboratory to test Telecommunications equipment for type approval in compliance with CISPR 22 to assist in fulfilling its mandate under section 54(1) of the Telecommunications Act, 1996 (Act 103 of 1996).

NIST/CAB: Validated by the European Commission as a U.S. Conformity Assessment Body (CAB) of the U.S.-EU Mutual Recognition Agreement (MRA) for the Electromagnetic Compatibility - Council Directive 89/336/EEC, Article 10 (2). Also validated for the Telecommunication Equipment-Council Directive 99/5/EC, Annex III and IV, Identification Number: 0983.
NIST/CAB: Provisioned to act as a U.S. Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the Asia Pacific Economic Cooperation (APEC) MRA between the American Institute in Taiwan (AIT) and the United States. Our laboratory is considered qualified to test equipment subject to the applicable EMC regulations of the Chinese Taipei Bureau of Standards, Metrology and Inspection (BSMI) which require testing to CNS 13438 (CISPR 22).
NIST/CAB: Recognized by the Infocomm Development Authority of Singapore (IDA) under the Asia Pacific Economic Cooperation Mutual Recognition Agreement (APEC MRA). Our laboratory is provisionally designated to act as a Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the APEC MRA. Our scope of designation includes IDA TS EMC (CISPR 22), IEC 61000-4-2, -4-3, -4-4, -4-5, and -4-6.
U.S. Identifier Number: US0113