EMC
Measurement and Test Report

For

GlobTek, Inc.

186 Veterans Dr. Northvale, NJ 07647 USA

Test Standards:	EN 55022:2010 EN 61000-3-2:2006+A1:2009+A2:2009 EN 61000-3-3:2008 EN 60601-1-2:2013(Ed4) EN 55024:2010
Product Description:	Power supply
Tested Model:	GTM91099-WWVV-X.X-AB series
Report No.:	STR13108270E
Tested Date:	2013-10-25 to 2013-10-28
Issued Date:	2013-10-29
Tested By:	Daniel Liu / Engineer
Reviewed By:	Lahm Peng / EMC Manager
Approved & Authorized By:	Jandy so / PSQ Manager

Prepared By:

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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by SEM.Test Compliance Service Co.

TABLE OF CONTENTS

1.GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	GlobTek, Inc.
Address of applicant:	186 Veterans Dr. Northvale, NJ 07647 USA
Manufacturer:	1) GlobTek, Inc. 2) GlobTek (Suzhou) Co., Ltd
Address of applicant:	1.186 Veterans Dr. Northvale, NJ 07647 USA 2.Building 4, No. 76, Jin Ling East Rd., Suzhou Industrial Park, Suzhou, JiangSu 215021, China

General Description of EUT	
Product Name:	Power supply
Trade Name:	GlobTek
Model No.:	GTM91099-WWVV-X.X-AB series

Adding Model(s):	GTM91099-WWVV-X.X-AB series
	M can be "M" or "-" for market identification and not related to saftey
	WW is the rated output wattage designation, with a maximum value of "60";
	VV is the standard rated output voltage designation, with a maximum value of "48";
	-X.X denotes the optional deviation, subtracted or added from standard output voltage in 0.1 volt increments or blank to indicate the no voltage different;
	VV-X.X together denotes the voltage rang 5V to 48V;
	A:T is External/Desktop model, F is Open Frame, P is Encapsulated;
	when A=T, B can be 2 or 3A, 2 presents Class II, 3A presents Class I;
	when A=F, B can be Blank or W, W means class II equipment, Blank means class I;
	when A=P, B can be 2 or 3, 2 means class II equipment, 3 means class I equipment.

Note: The test data is gathered from a production sample, provided by the manufacturer. The other model listed in the report has different appearance only of GTM91099-WWVV-X.X-AB series without circuit and electronic construction changed, declared by the manufacturer	

Technical Characteristics of EUT	
Rated Voltage:	100-240Vac
Rated Current:	1.5A
Rated Power:	Max.60W
Power Adaptor Model:	/
Highest Internal Frequency:	/
Classification of ITE:	Class B

1.2 Test Standards

The following report is prepared on behalf of the GlobTek, Inc. in accordance with EN55022, Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement, and EN61000-3-2, Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase), and EN61000-3-3, Electromagnetic compatibility (EMC) -- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current <= 16 A per phase and not subject to conditional connection, and EN55024, Immunity characteristics Limits and methods of measurement.

The objective of the manufacturer is to demonstrate compliance with the standards EN55022, EN61000-3-2, EN61000-3-3, and EN55024 for Information Technology Equipment.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product maybe which result in lowering the emission/immunity should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with the standards EN55022, EN61000-3-2, EN61000-3-3, and EN55024 for Information Technology Equipment, and all related testing and measurement techniques intertional standards.

1.4 Test Facility

- **FCC – Registration No.: 994117**
  SEM.Test Compliance Services Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 994117.

- **Industry Canada (IC) Registration No.: 7673A**
  The 3m Semi-anechoic chamber of SEM.Test Compliance Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 7673A.

- **CNAS Registration No.: L4062**

Shenzhen SEM.Test Electronics Service Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C (518101)

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission/immunity level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

Test Mode	Description	Remark
TM1	Full Load	EUT Model: GTM91099-6048-T3A
TM2	Full Load	EUT Model: GTM91099-6012-T2
TM3	Full Load	EUT Model: GTM91099-6048-FW Class II 48V
TM4	Full Load	EUT Model: GTM91099-3009-4.0-FW Class II 5V
TM5	Full Load	EUT Model: GTM91099-6048-F Class I 48V
TM6	Full Load	EUT Model: GTM91099-3009-4.0-F Class I 5V
TM7	Full Load	EUT Model: GTM91099-3009-4.0-P2

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
DC Cable(TM1)	1.9	Unshielded	Without Core
DC Cable(TM2)	1.9	Unshielded	With Core

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Load(TM3)	/	38.4Ω	/
Load(TM4)	/	0.85Ω	/
Load(TM5)	/	38.5Ω	/
Load(TM6)	/	0.85Ω	/
Load(TM7)	/	0.85Ω	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
AC Cable(TM3)	1.2	Unshielded	With Core
AC Cable(TM4)	1.2	Unshielded	With Core
AC Cable(TM5)	1.2	Unshielded	With Core
AC Cable(TM6)	1.2	Unshielded	With Core

1.6 Performance Criteria for EMS

All the test data has been collected, reduced, and analyzed within this report in accordance with Immunity requires the following as specific performance criteria:

A. The apparatus shall continue to operate as intended during and after the test. The manufacturer specifies some minimum performance level. The performance level may be specified by the manufacturer as a permissible loss of performance.

B. The apparatus shall continue to operate as intended after the test. This indicates that the EUT does not need to function at normal performance levels during the test, but must recover. Again some minimal performance is defined by the manufacture. No change in operating state or loss or data is permitted.

C. Temporary loss of function is allowed. Operation of the EUT may stop as long as it is either automatically reset or can be manually restored by operation of the controls.

2. SUMMARY OF TEST RESULTS

Standards	Description of Test Item	Result
EN55022 EN60601	Conducted Disturbance	Compliant
	Radiated Disturbance	Compliant
EN61000-3-2	Harmonic Current Emission	Compliant
EN61000-3-3	Voltage Fluctuation and Flicker	Compliant
EN55024 EN60601	Electrostatic Discharge Immunity in accordance with IEC 61000-4-2	Compliant
	Continuous Radiated Disturbances Immunity in accordance with IEC 61000-4-3	Compliant
	Electrical Fast Transient/Burst Immunity in accordance with IEC 61000-4-4	Compliant
	Surges Immunity in accordance with IEC 61000-4-5	Compliant
	Continuous Conducted Disturbances Immunity in accordance with IEC 61000-4-6	Compliant
	Power-frequency Magnetic Fields Immunity in accordance with IEC 61000-4-8	Compliant
	Voltage Dips/Interruptions Immunity in accordance with IEC 61000-4-11	Compliant

N/A: not applicable

3. Conducted Disturbance

3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

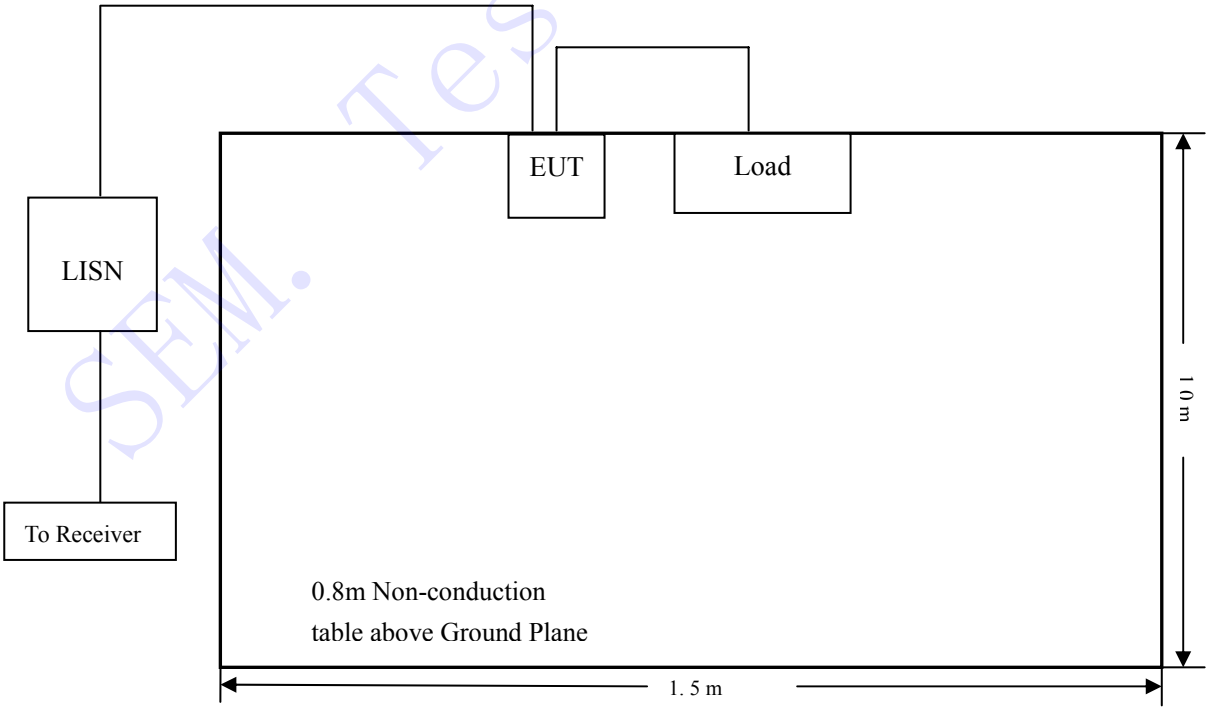
3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2013-05-07	2014-05-06
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2013-05-07	2014-05-06
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2013-05-07	2014-05-06
Current Probe	FCC	F-33-4	091684	2013-05-07	2014-05-06

3.3 Test Procedure

Test is conducting under the description of EN55022 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	22 ° C
Relative Humidity:	55 %
ATM Pressure:	1015 mbar

3.6 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the EN55022 Conducted margin for a Class B device, with the *worst* margin reading of:

-1.67 dBµV at **0.194 MHz** in the **Neutral** mode, **Peak** detector, **GTM91099-6048-T3A** Model, **0.15-30MHz**

3.7 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

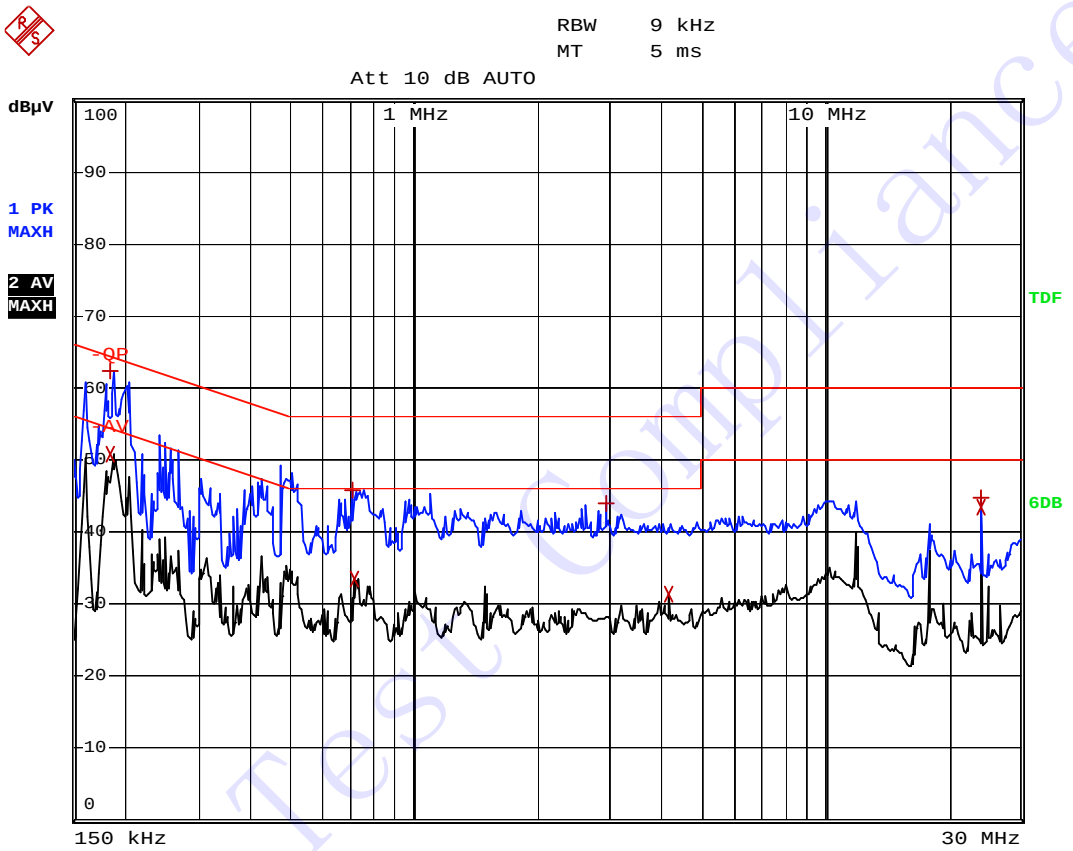
EUT: *Power supply*

Tested Model: *GTM91099-6048-T3A*

Operating Condition: *Full Load*

Comment: *230V/50Hz*

Test Specification: *Line*

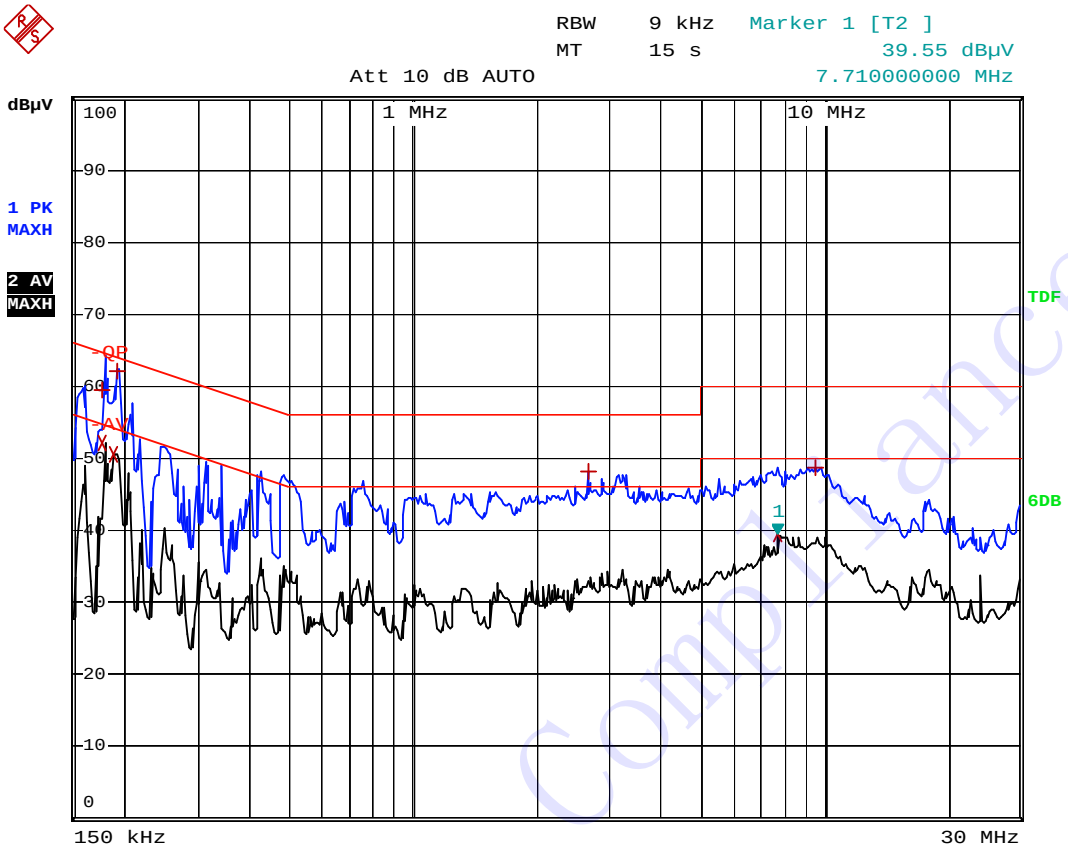


EDIT PEAK LIST (Prescan Results)

Trace1: -QP
Trace2: -AV
Trace3: ---

	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Max Peak	186 kHz	62.46	-1.74
2	Average	186 kHz	50.72	-3.48
1	Max Peak	710 kHz	45.88	-10.11
2	Average	714 kHz	33.49	-12.50
1	Max Peak	2.954 MHz	43.93	-12.06
2	Average	4.154 MHz	31.41	-14.58
1	Max Peak	23.982 MHz	44.76	-15.24
2	Average	23.982 MHz	43.40	-6.59

Test Specification: *Neutral*



EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	178 kHz	51.99	-2.58
1 Quasi Peak	178 kHz	59.49	-5.08
2 Average	190 kHz	50.62	-3.41
1 Max Peak	194 kHz	62.18	-1.67
1 Max Peak	2.674 MHz	48.22	-7.77
2 Average	7.71 MHz	39.54	-10.45
1 Max Peak	9.55 MHz	48.81	-11.18

Plot of Conducted Emissions Test Data

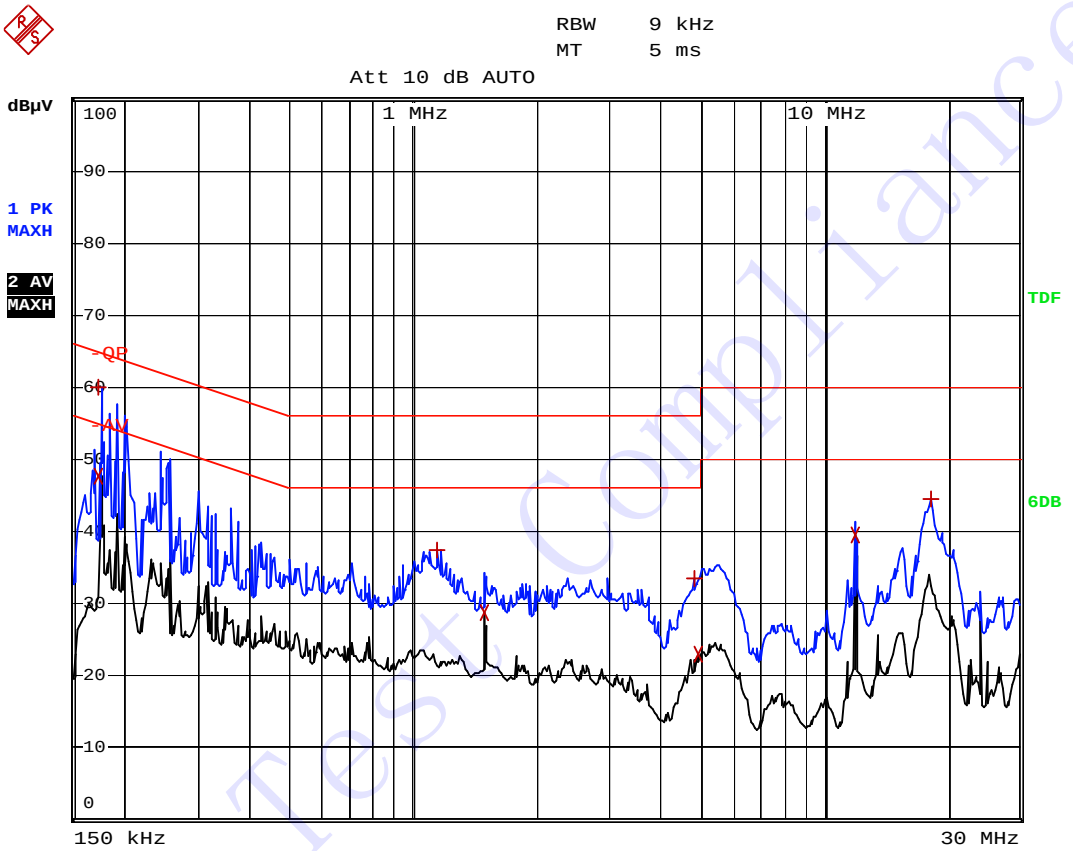
EUT: *Power supply*

Tested Model: *GTM91099-6012-T2*

Operating Condition: *Full Load*

Comment: *230V/50Hz*

Test Specification: *Line*

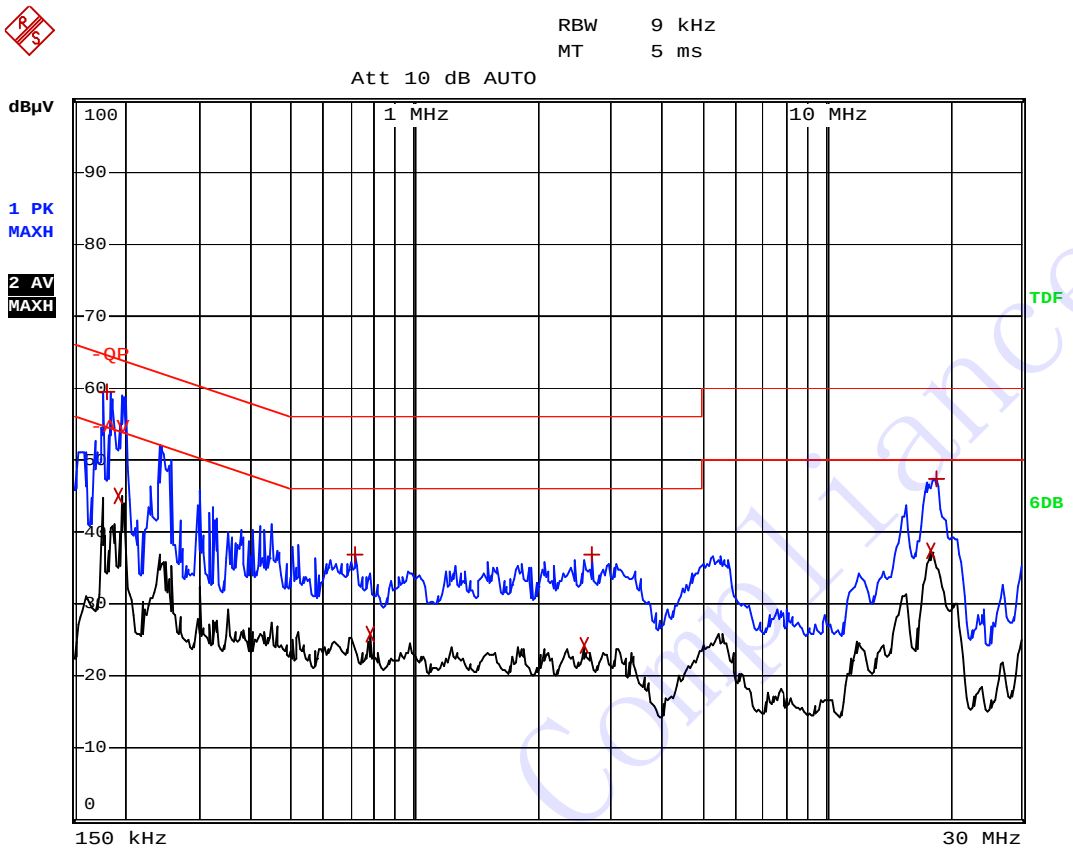


EDIT PEAK LIST (Prescan Results)

Trace1: -QP
Trace2: -AV
Trace3: ---

TRACE		FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Max Peak	174 kHz	59.96	-4.80
2	Average	174 kHz	47.57	-7.19
1	Max Peak	1.138 MHz	37.50	-18.49
2	Average	1.498 MHz	28.87	-17.12
1	Max Peak	4.83 MHz	33.53	-22.46
2	Average	4.974 MHz	22.92	-23.07
2	Average	11.99 MHz	39.45	-10.55
1	Max Peak	18.158 MHz	44.37	-15.62

Test Specification: *Neutral*



EDIT PEAK LIST (Prescan Results)

Trace1:	-QP	
Trace2:	-AV	
Trace3:	---	

	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Max Peak	182 kHz	59.55	-4.83
2	Average	194 kHz	44.95	-8.90
1	Max Peak	718 kHz	36.87	-19.12
2	Average	778 kHz	25.97	-20.02
2	Average	2.594 MHz	24.24	-21.75
1	Max Peak	2.71 MHz	36.93	-19.06
2	Average	18.078 MHz	37.40	-12.59
1	Max Peak	18.526 MHz	47.34	-12.65

Plot of Conducted Emissions Test Data

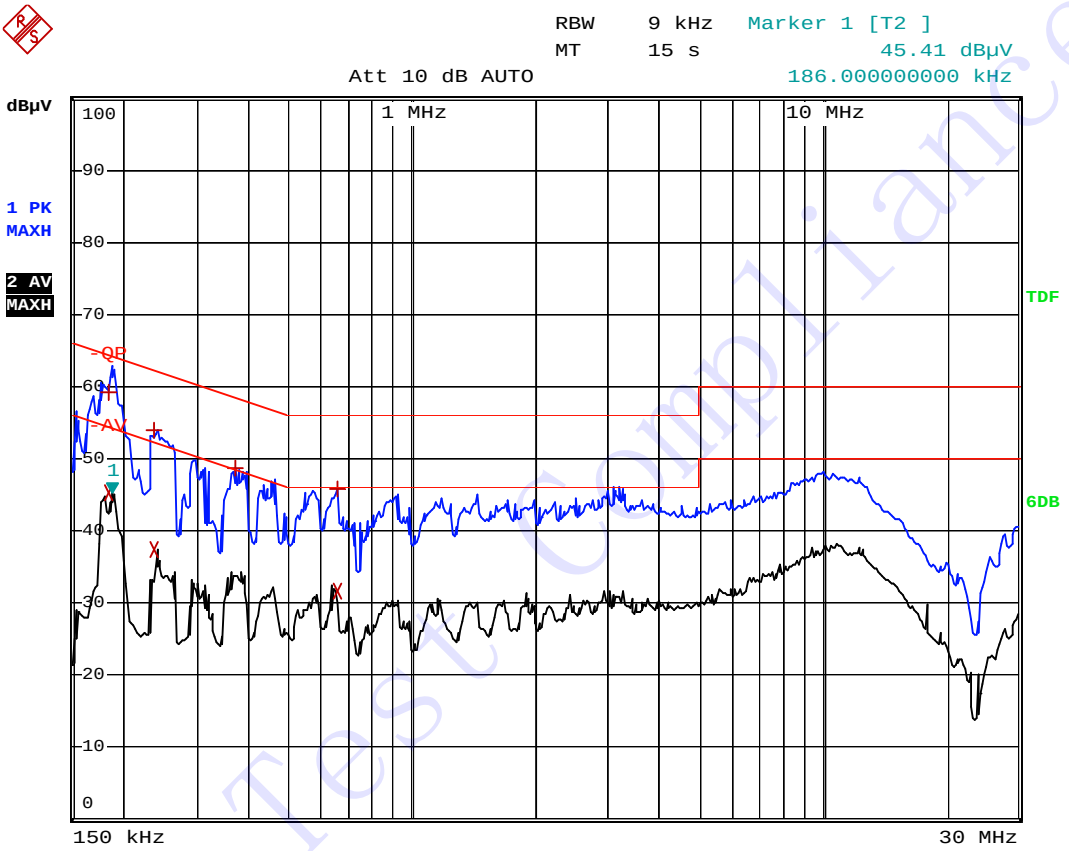
EUT: *Power supply*

Tested Model: *GTM91099-6048-FW Class II 48V*

Operating Condition: *Full Load*

Comment: *230V/50Hz*

Test Specification: *Line*

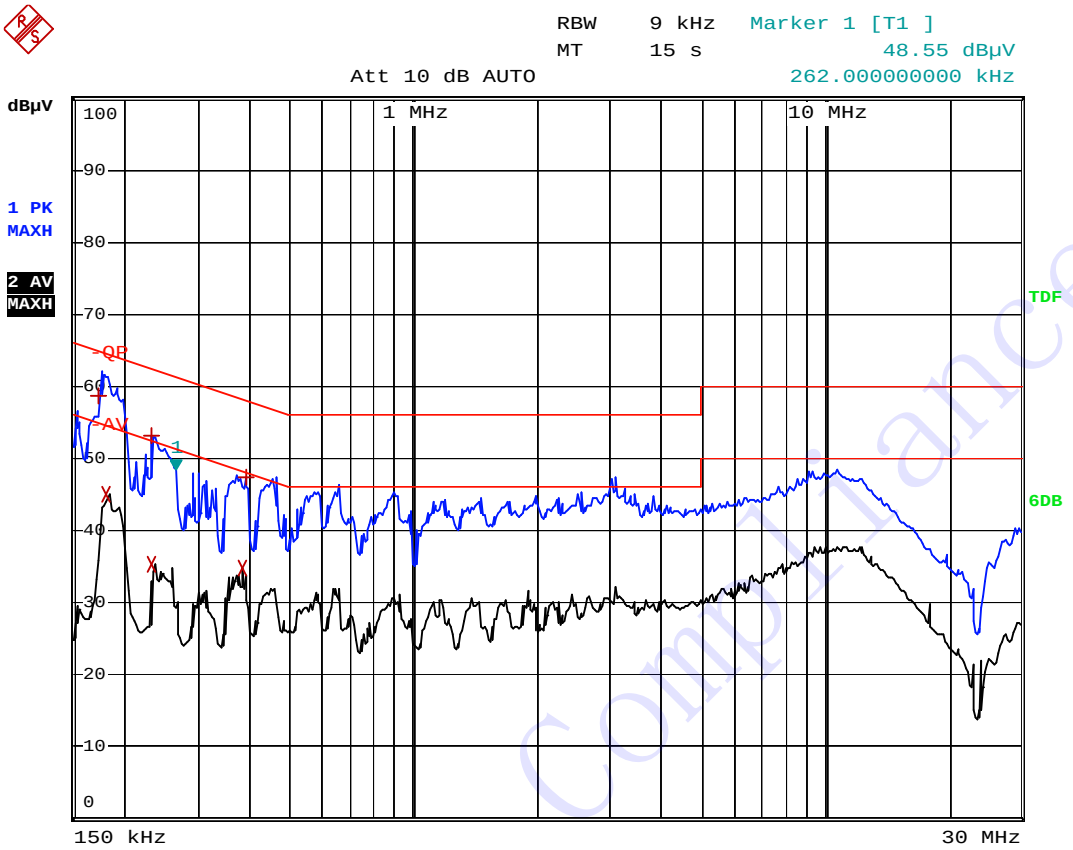


EDIT PEAK LIST (Prescan Results)

Trace1: -QP
Trace2: -AV
Trace3: ---

	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	186 kHz	59.09	-5.12
2	Average	186 kHz	45.40	-8.80
2	Average	238 kHz	37.39	-14.76
1	Max Peak	238 kHz	53.86	-8.29
1	Max Peak	370 kHz	48.62	-9.87
2	Average	654 kHz	31.72	-14.27
1	Max Peak	658 kHz	45.88	-10.11

Test Specification: *Neutral*



EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	174 kHz	58.67	-6.09
2 Average	182 kHz	45.12	-9.26
1 Max Peak	230 kHz	53.12	-9.32
2 Average	234 kHz	35.25	-17.04
2 Average	382 kHz	34.90	-13.33
1 Max Peak	390 kHz	47.49	-10.56

Plot of Conducted Emissions Test Data

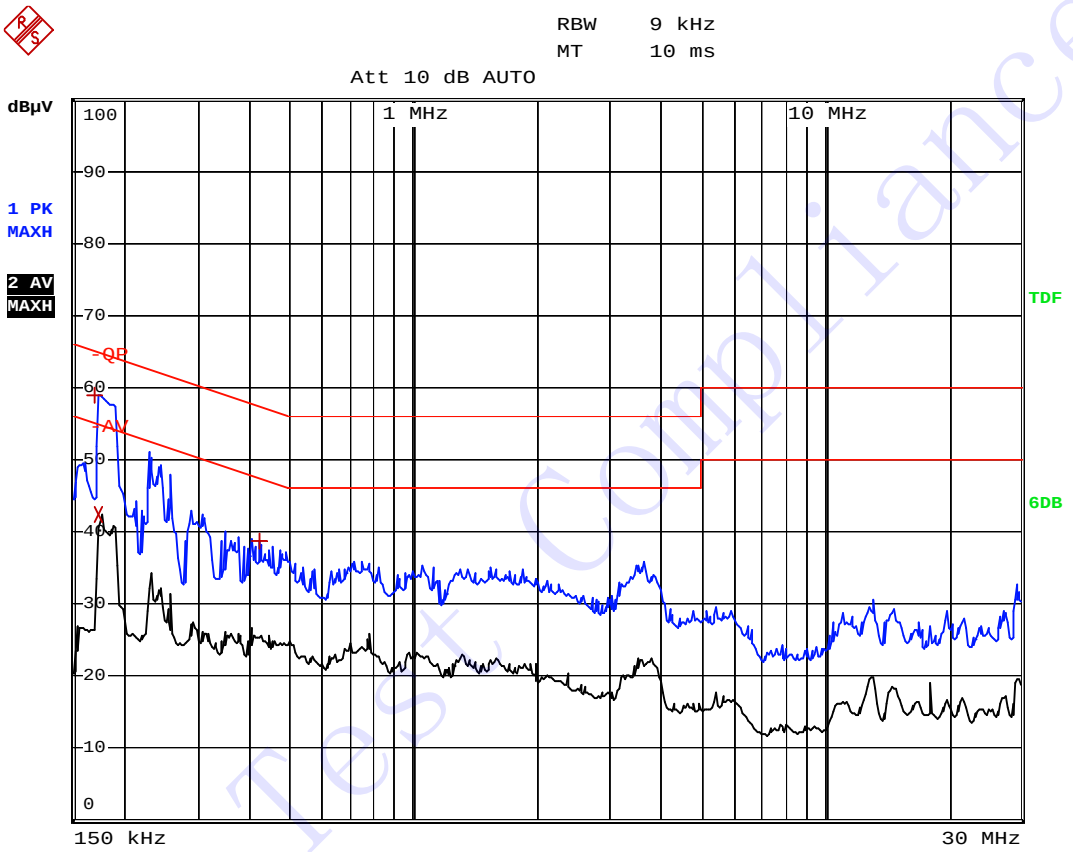
EUT: *Power supply*

Tested Model: *GTM91099-3009-4.0-FW Class II 5V*

Operating Condition: *Full Load*

Comment: *230V/50Hz*

Test Specification: *Line*

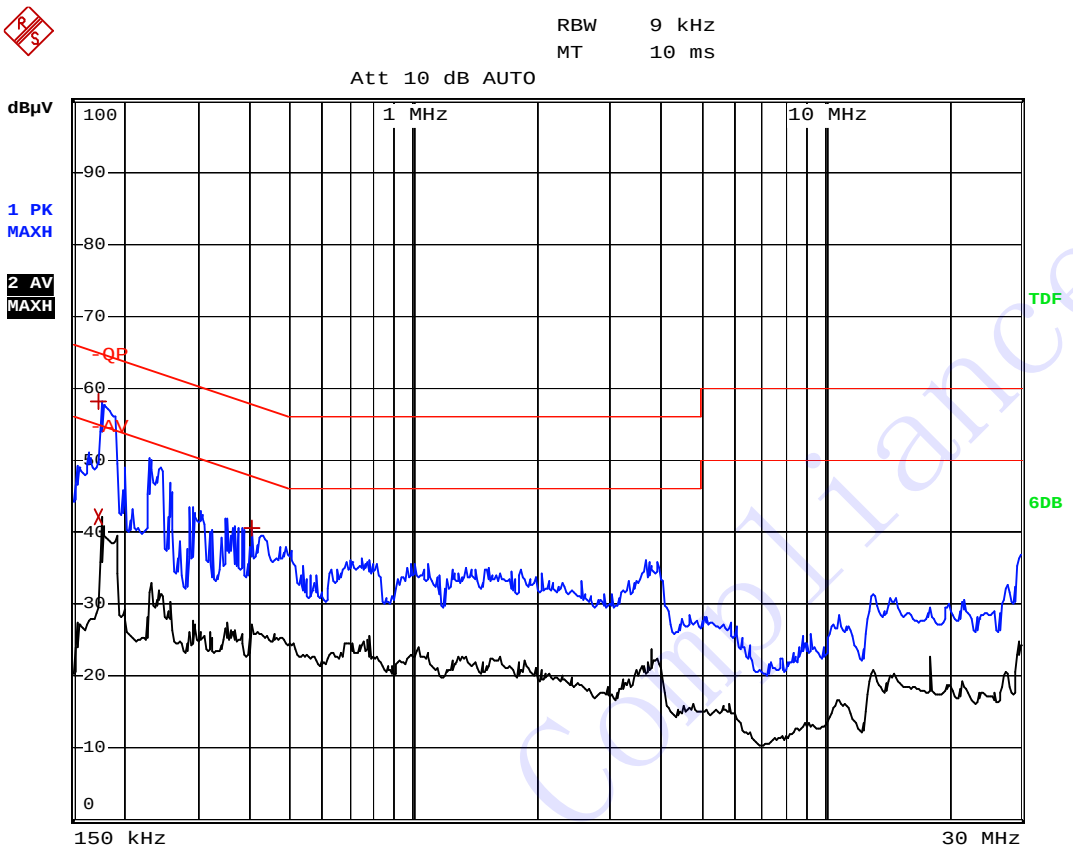


EDIT PEAK LIST (Prescan Results)

Trace1: -QP
Trace2: -AV
Trace3: ---

TRACE		FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Max Peak	170 kHz	59.04	-5.91
2	Average	174 kHz	42.38	-12.38
1	Max Peak	418 kHz	38.78	-18.70

Test Specification: *Neutral*



EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Max Peak	174 kHz	58.05	-6.71
2 Average	174 kHz	42.18	-12.58
1 Max Peak	402 kHz	40.61	-17.19

Plot of Conducted Emissions Test Data

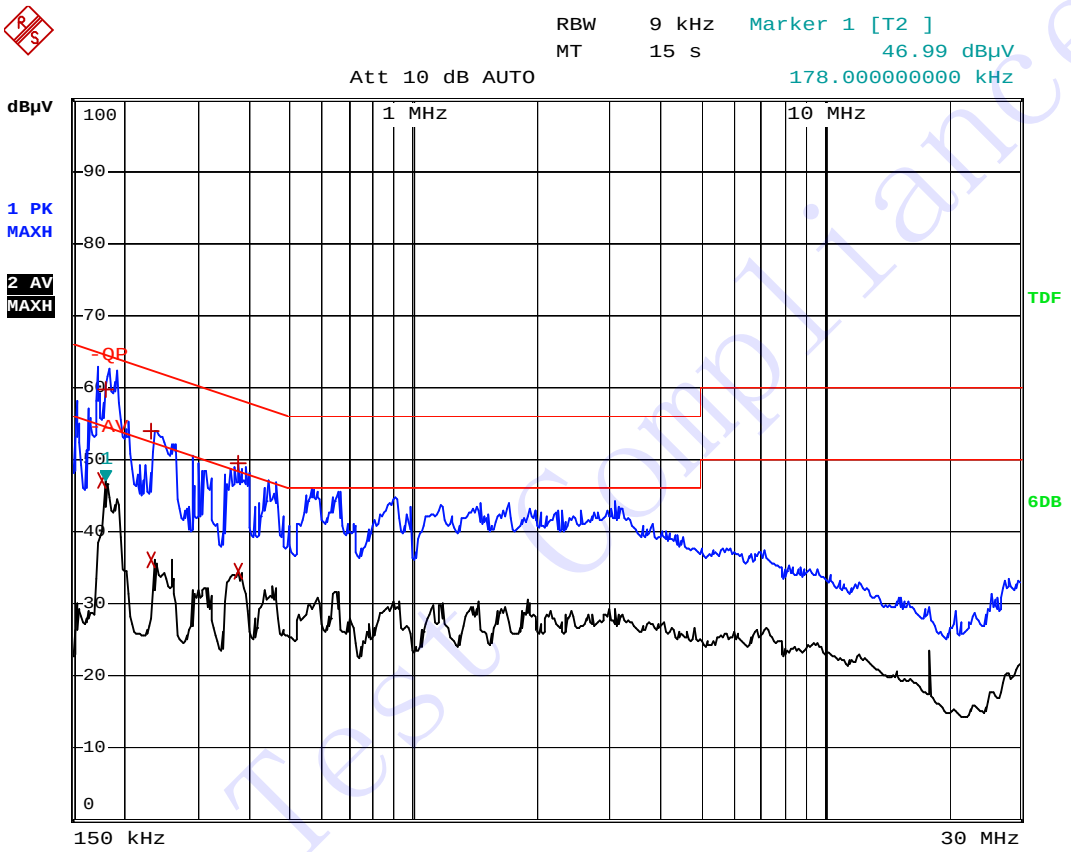
EUT: *Power supply*

Tested Model: *GTM91099-6048-F Class I 48V*

Operating Condition: *Full Load*

Comment: *230V/50Hz*

Test Specification: *Line*

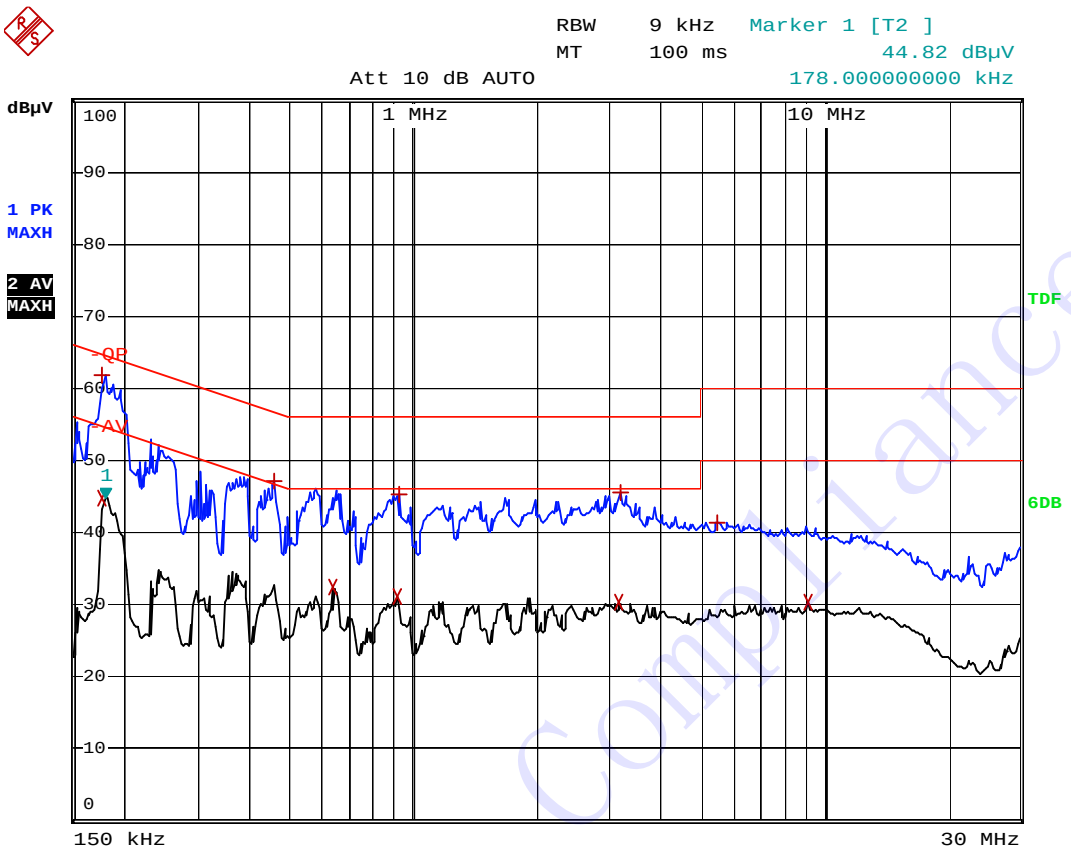


EDIT PEAK LIST (Prescan Results)

Trace1: -QP
Trace2: -AV
Trace3: ---

	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2	Average	178 kHz	46.99	-7.58
1	Quasi Peak	182 kHz	59.69	-4.69
2	Average	234 kHz	36.05	-16.24
1	Max Peak	234 kHz	53.98	-8.32
2	Average	374 kHz	34.45	-13.95
1	Max Peak	374 kHz	49.54	-8.86

Test Specification: *Neutral*



EDIT PEAK LIST (Prescan Results)

Trace1: -QP
Trace2: -AV
Trace3: ---

	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Max Peak	178 kHz	61.87	-2.70
2	Average	178 kHz	44.81	-9.76
1	Max Peak	458 kHz	47.14	-9.58
2	Average	638 kHz	32.40	-13.59
2	Average	910 kHz	31.03	-14.96
1	Max Peak	926 kHz	45.28	-10.71
2	Average	3.154 MHz	30.33	-15.66
1	Max Peak	3.19 MHz	45.46	-10.53
1	Max Peak	5.526 MHz	41.45	-18.54
2	Average	9.19 MHz	30.37	-19.62

Plot of Conducted Emissions Test Data

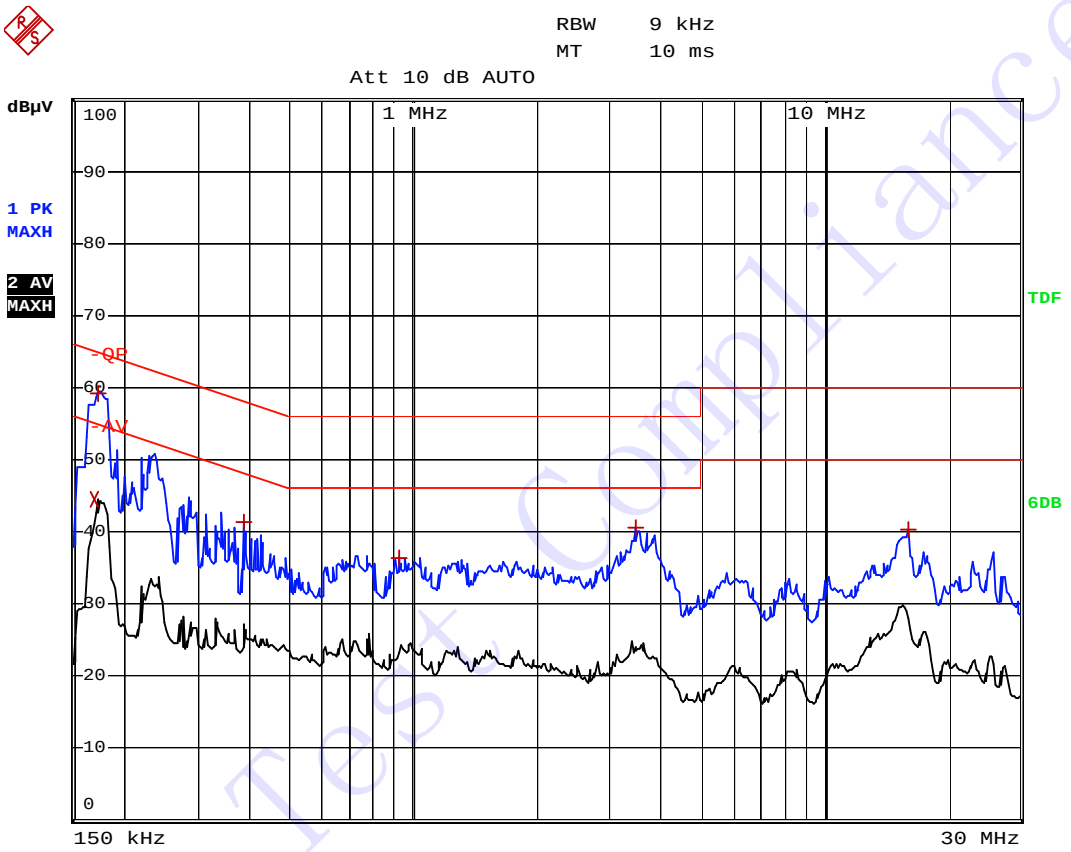
EUT: *Power supply*

Tested Model: *GTM91099-3009-4.0-F Class I 5V*

Operating Condition: *Full Load*

Comment: *230V/50Hz*

Test Specification: *Line*

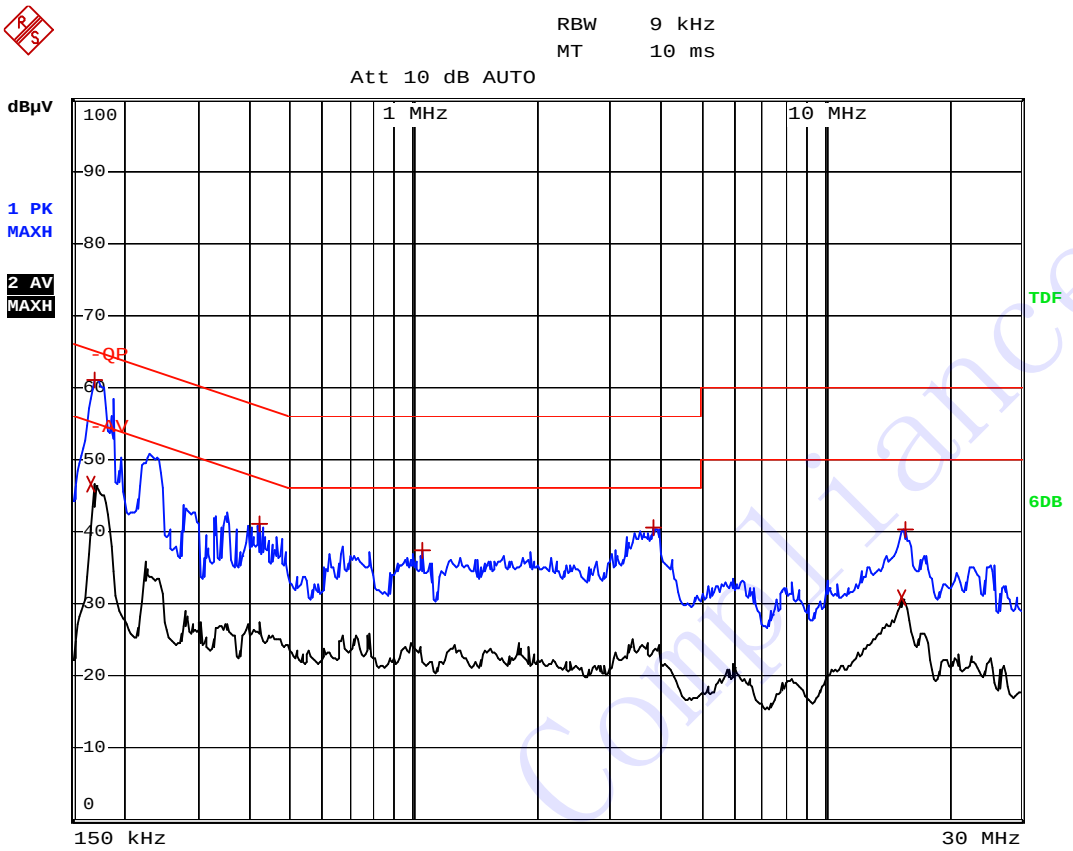


EDIT PEAK LIST (Prescan Results)

Trace1: -QP
Trace2: -AV
Trace3: ---

TRACE		FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2	Average	170 kHz	44.50	-10.45
1	Max Peak	174 kHz	59.28	-5.48
1	Max Peak	386 kHz	41.31	-16.83
1	Max Peak	926 kHz	36.45	-19.54
1	Max Peak	3.474 MHz	40.44	-15.55
1	Max Peak	15.97 MHz	40.19	-19.80

Test Specification: *Neutral*



EDIT PEAK LIST (Prescan Results)

Trace1:	-QP
Trace2:	-AV
Trace3:	---

	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2	Average	166 kHz	46.53	-8.62
1	Max Peak	170 kHz	60.97	-3.98
1	Max Peak	418 kHz	41.10	-16.38
1	Max Peak	1.05 MHz	37.28	-18.72
1	Max Peak	3.846 MHz	40.47	-15.52
2	Average	15.462 MHz	30.93	-19.06
1	Max Peak	15.658 MHz	40.37	-19.62

Plot of Conducted Emissions Test Data

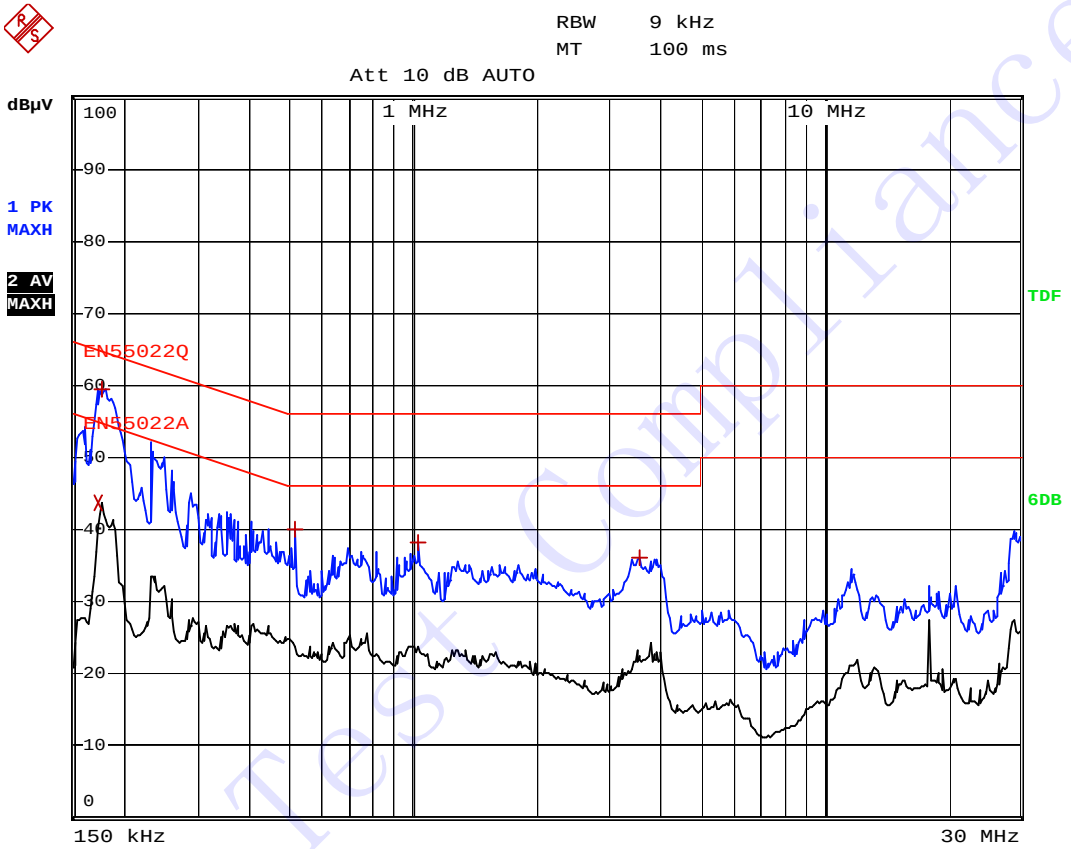
EUT: *Power supply*

Tested Model: *GTM91099-3009-4.0-P2*

Operating Condition: *Full Load*

Comment: *230V/50Hz*

Test Specification: *Line*

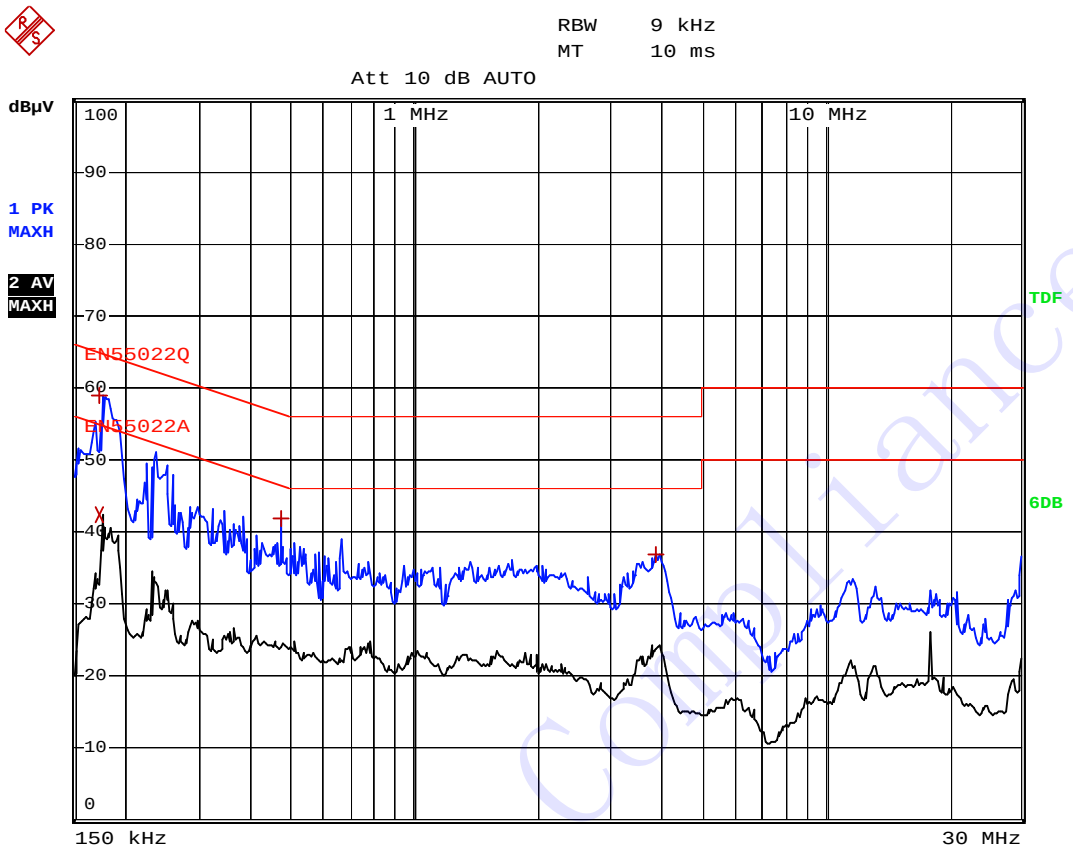


EDIT PEAK LIST (Prescan Results)

Trace1:	EN55022Q
Trace2:	EN55022A
Trace3:	---

TRACE		FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2	Average	174 kHz	43.67	-11.09
1	Max Peak	178 kHz	59.46	-5.11
1	Max Peak	514 kHz	39.90	-16.09
1	Max Peak	1.03 MHz	38.30	-17.69
1	Max Peak	3.562 MHz	36.17	-19.82

Test Specification: *Neutral*



EDIT PEAK LIST (Prescan Results)			
Trace1:	EN55022Q		
Trace2:	EN55022A		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Max Peak	174 kHz	58.85	-5.90
2 Average	174 kHz	42.32	-12.44
1 Max Peak	474 kHz	41.92	-14.52
1 Max Peak	3.858 MHz	36.94	-19.05

4. Radiated Disturbance

4.1 Measurement Uncertainty

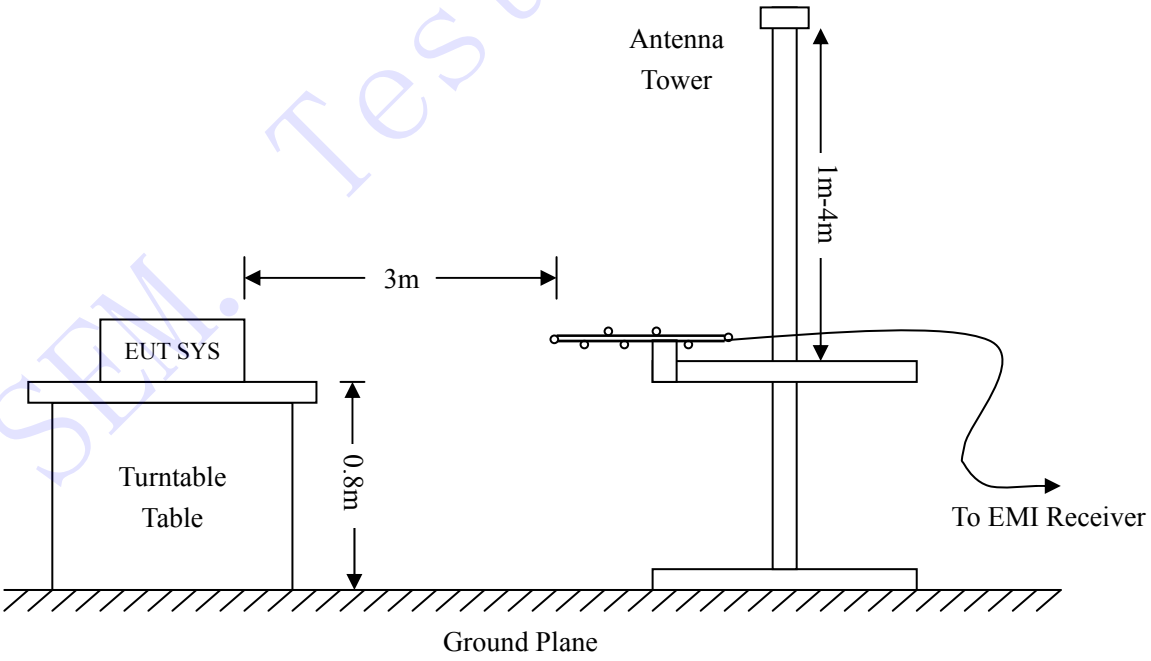
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

4.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
EMI Test Receiver	R&S	ESVB	825471/005	2013-05-07	2014-05-06
Pre-amplifier	Agilent	8447F	3113A06717	2013-05-07	2014-05-06
Pre-amplifier	Compliance Direction	PAP-0118	24002	2013-05-07	2014-05-06
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2013-04-20	2014-04-19
Horn Antenna	ETS	3117	00086197	2013-04-20	2014-04-19

4.3 Test Procedure

Test is conducting under the description of EN55022 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.



4.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for Class B device. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – EN55022 Class B Limit

4.5 Environmental Conditions

Temperature:	23° C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

4.6 Summary of Test Results/Plots

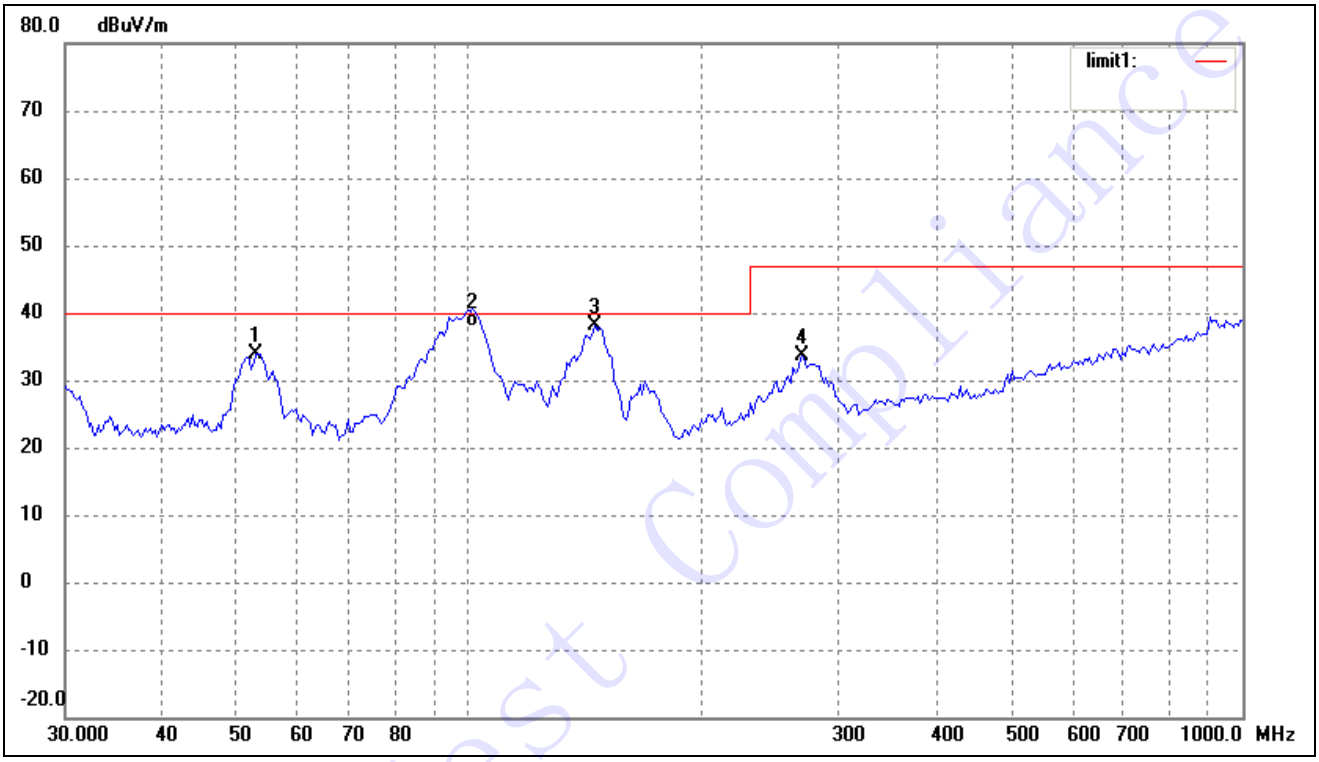
According to the data in section 4.6, the EUT complied with the EN55022 Class B standards, and had the worst margin is:

-1.14 dBμV at **33.0950 MHz** in the, **Vertical** polarization **GTM91099-6048-FW Class II 48V** Model, **30 MHz to 1 GHz, 3Meters**

Plot of Radiated Emissions Test Data

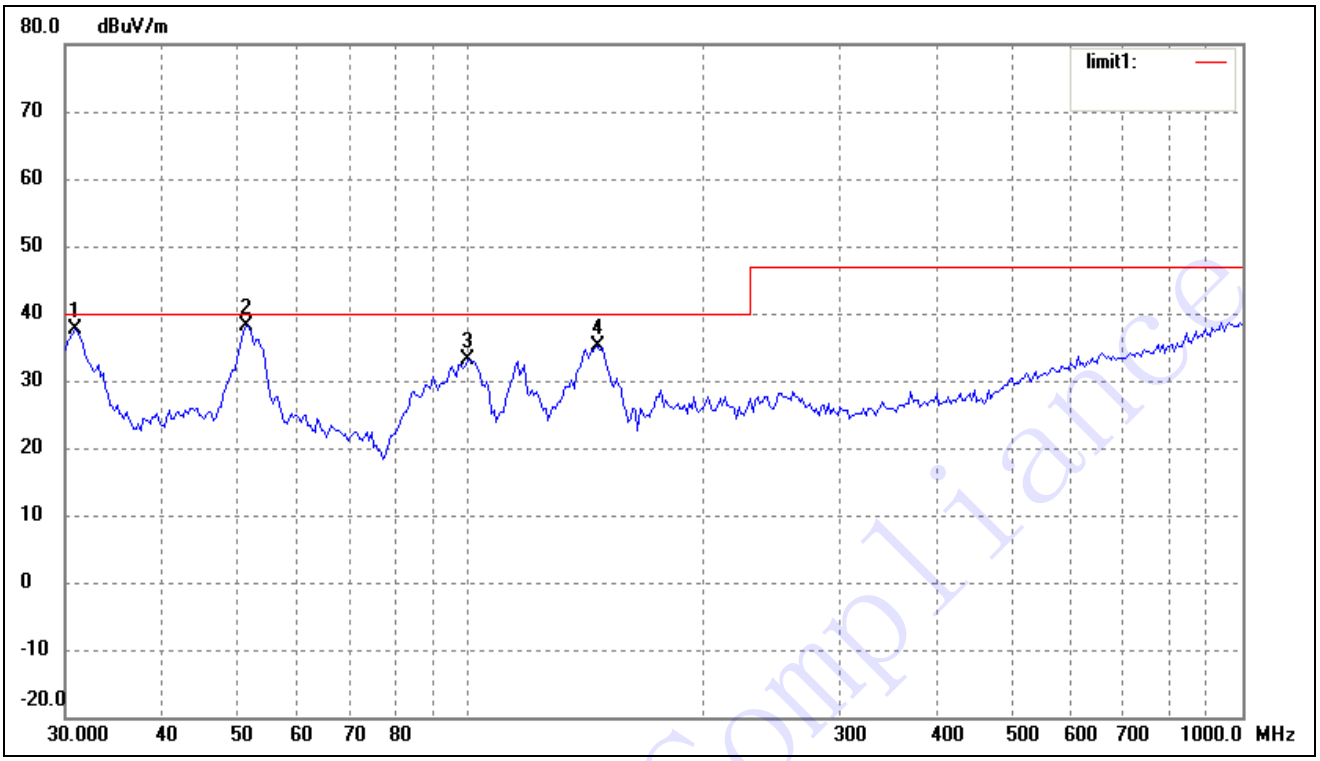
EUT: *Power supply*
Tested Model: *GTM91099-6048-T3A*
Operating Condition: *Full Load*
Comment: *230V/50Hz*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	52.9453	26.03	7.85	33.88	40.00	-6.12	359	200	peak
2	100.9340	29.60	8.34	37.94	40.00	-2.06	359	200	QP
3	145.3506	34.08	4.03	38.11	40.00	-1.89	359	200	peak
4	269.4284	24.50	9.22	33.72	47.00	-13.28	359	200	peak

Test Specification: *Vertical*

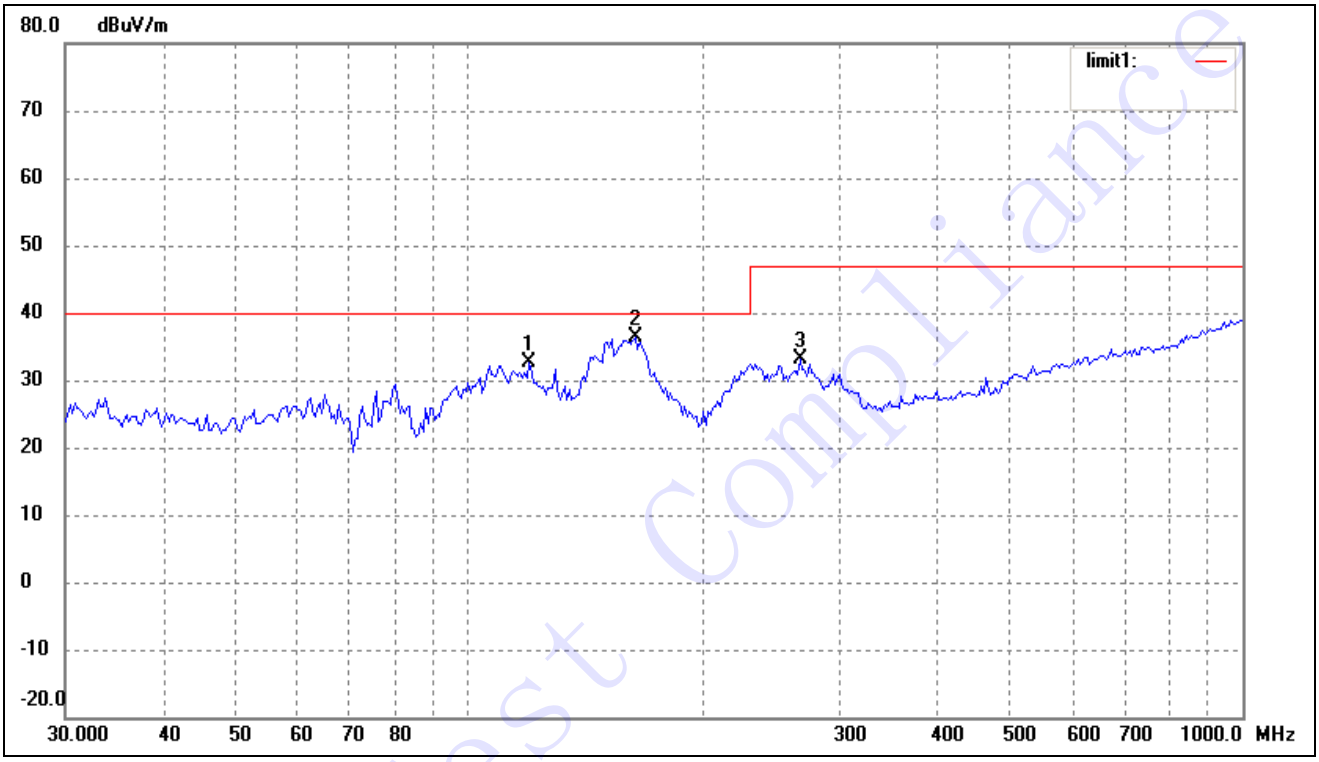


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	30.8535	30.77	6.77	37.54	40.00	-2.46	359	100	peak
2	51.4807	30.25	7.91	38.16	40.00	-1.84	359	100	peak
3	99.5281	24.68	8.40	33.08	40.00	-6.92	359	200	peak
4	146.3735	31.14	4.04	35.18	40.00	-4.82	359	200	peak

Plot of Radiated Emissions Test Data

EUT: *Power supply*
Tested Model: *GTM91099-6012-T2*
Operating Condition: *Full Load*
Comment: *230V/50Hz*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	119.4361	26.57	6.04	32.61	40.00	-7.39	359	200	peak
2	163.7550	31.60	4.67	36.27	40.00	-3.73	359	200	peak
3	267.5455	23.95	9.17	33.12	47.00	-13.88	359	200	peak

Test Specification: *Vertical*

No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	30.2111	25.60	6.77	32.37	40.00	-7.63	359	100	QP
2	64.8865	30.50	5.63	36.13	40.00	-3.87	359	100	peak
3	78.9652	32.76	3.46	36.22	40.00	-3.78	359	100	peak
4	93.4402	30.60	7.76	38.36	40.00	-1.64	359	100	QP
5	103.0800	29.80	8.18	37.98	40.00	-2.02	359	100	QP
6	218.3085	28.46	7.23	35.69	40.00	-4.31	359	100	peak

Plot of Radiated Emissions Test Data

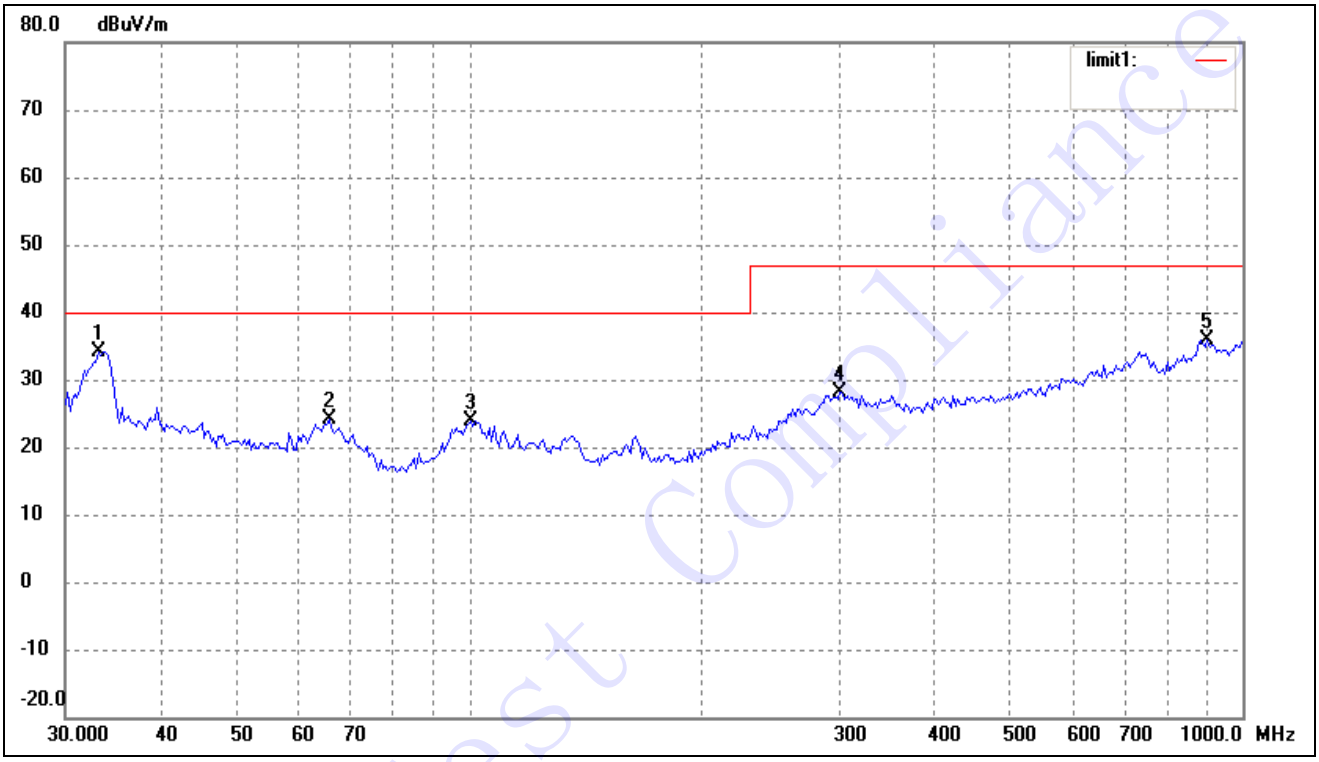
EUT: *Power supply*

Tested Model: *GTM91099-6048-FW Class II 48V*

Operating Condition: *Full Load*

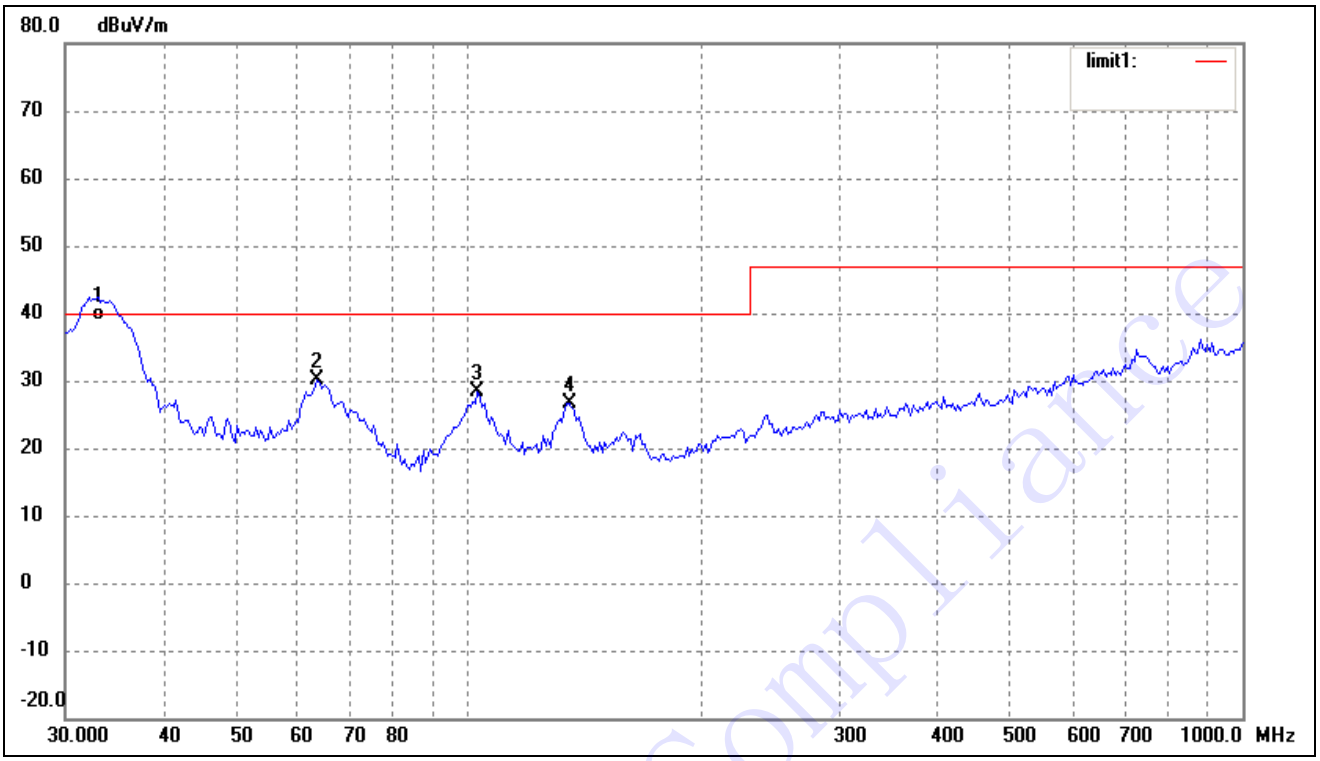
Comment: *230V/50Hz*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0950	25.63	8.56	34.19	40.00	-5.81	360	100	peak
2	65.8031	20.39	3.85	24.24	40.00	-15.76	360	100	peak
3	100.2286	17.03	6.81	23.84	40.00	-16.16	360	100	peak
4	301.4224	18.04	10.20	28.24	47.00	-18.76	360	100	peak
5	900.1474	16.61	19.38	35.99	47.00	-11.01	360	100	peak

Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0950	30.30	8.56	38.86	40.00	-1.14	360	100	QP
2	63.5356	25.48	4.57	30.05	40.00	-9.95	360	100	peak
3	102.3597	21.76	6.61	28.37	40.00	-11.63	360	100	peak
4	134.5592	22.95	3.78	26.73	40.00	-13.27	360	100	peak

Plot of Radiated Emissions Test Data

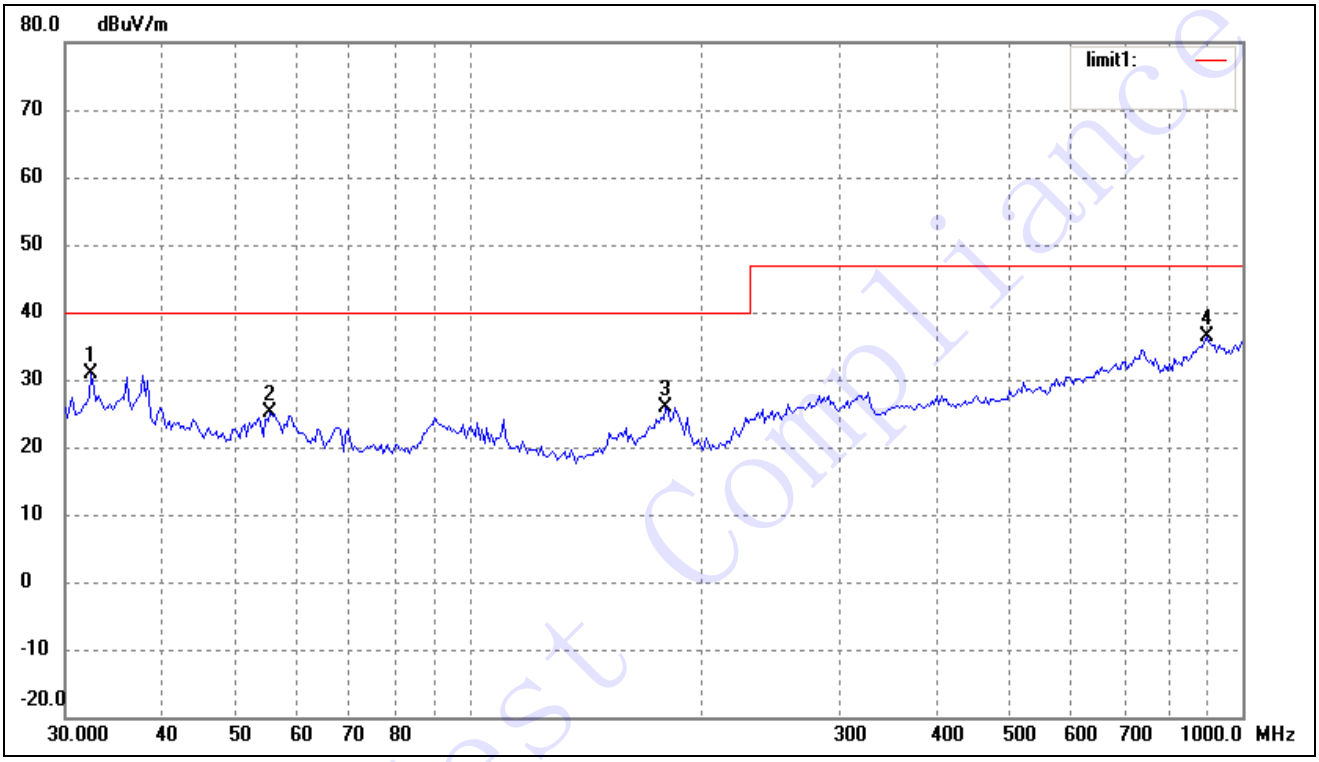
EUT: *Power supply*

Tested Model: *GTM91099-3009-4.0-FW Class II 5V*

Operating Condition: *Full Load*

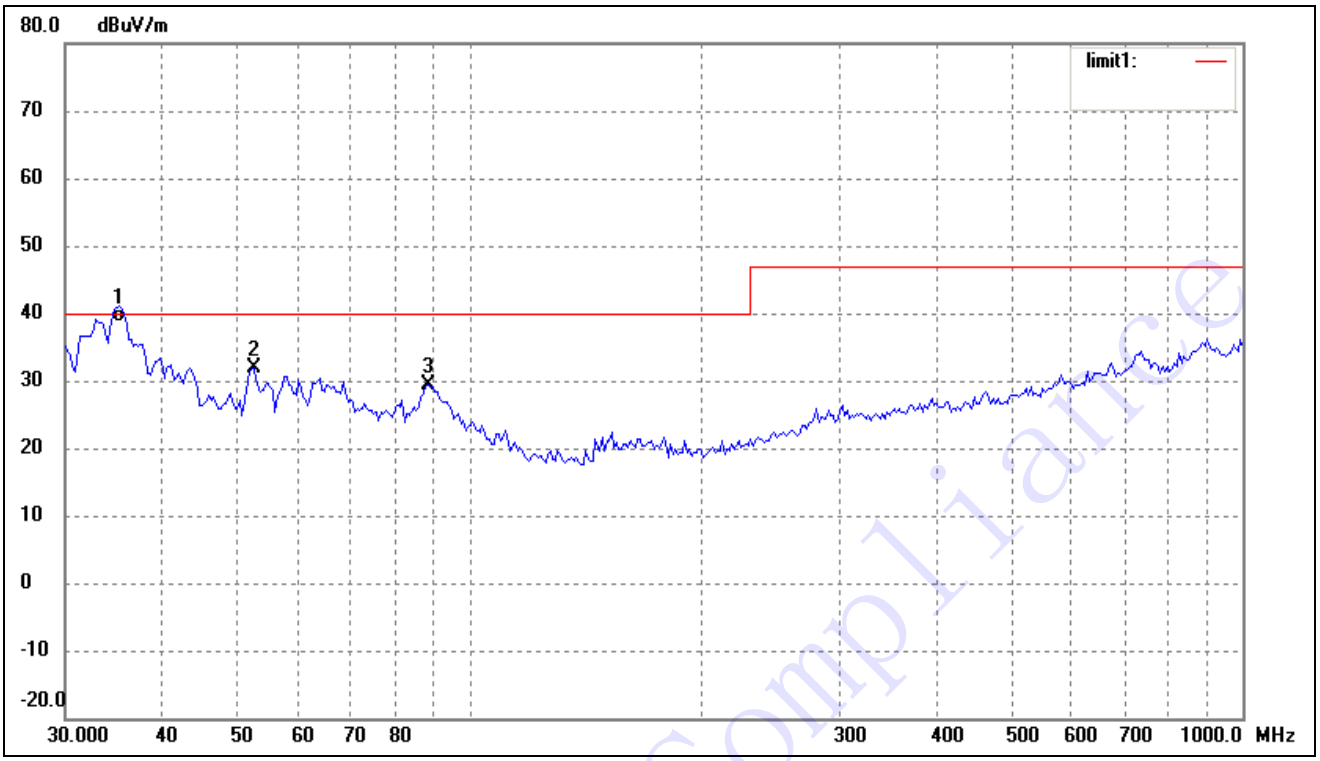
Comment: *230V/50Hz*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	32.4059	22.39	8.44	30.83	40.00	-9.17	360	100	peak
2	55.2207	18.89	6.14	25.03	40.00	-14.97	360	100	peak
3	179.3864	22.24	3.74	25.98	40.00	-14.02	360	100	peak
4	900.1474	16.92	19.38	36.30	47.00	-10.70	360	100	peak

Test Specification: *Vertical*

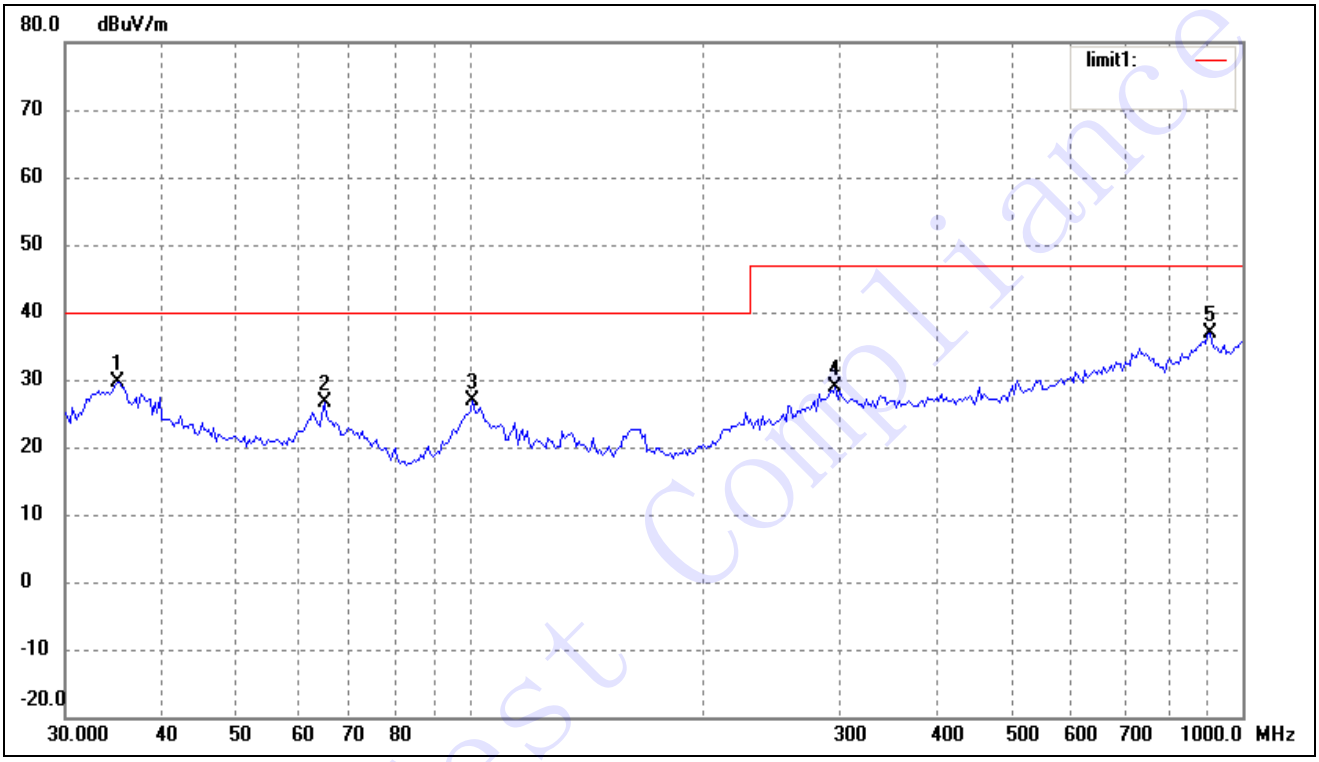


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	35.2512	29.60	8.92	38.52	40.00	-1.48	360	100	QP
2	52.5753	25.50	6.38	31.88	40.00	-8.12	360	100	peak
3	88.3421	25.34	3.94	29.28	40.00	-10.72	360	100	peak

Plot of Radiated Emissions Test Data

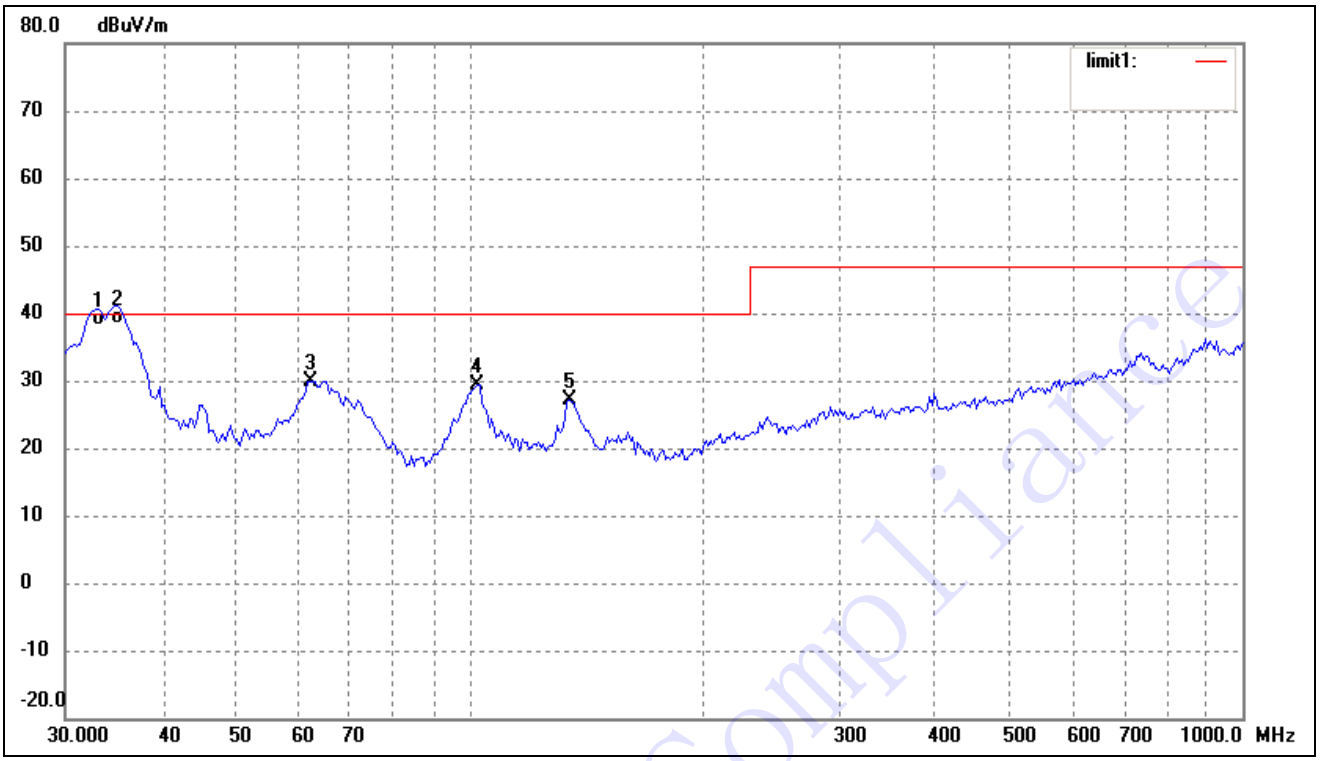
EUT: *Power supply*
Tested Model: *GTM91099-6048-F Class I 48V*
Operating Condition: *Full Load*
Comment: *230V/50Hz*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	35.0048	20.67	8.88	29.55	40.00	-10.45	360	100	peak
2	64.8865	22.45	4.15	26.60	40.00	-13.40	360	100	peak
3	100.9340	20.19	6.75	26.94	40.00	-13.06	360	100	peak
4	297.2241	18.93	10.04	28.97	47.00	-18.03	360	100	peak
5	906.4824	17.81	19.15	36.96	47.00	-10.04	360	100	peak

Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0950	29.50	8.56	38.06	40.00	-1.94	360	100	QP
2	35.0048	29.40	8.88	38.28	40.00	-1.72	360	100	QP
3	62.2128	25.00	4.99	29.99	40.00	-10.01	360	100	peak
4	102.3597	22.89	6.61	29.50	40.00	-10.50	360	100	peak
5	134.5592	23.25	3.78	27.03	40.00	-12.97	360	100	peak

Plot of Radiated Emissions Test Data

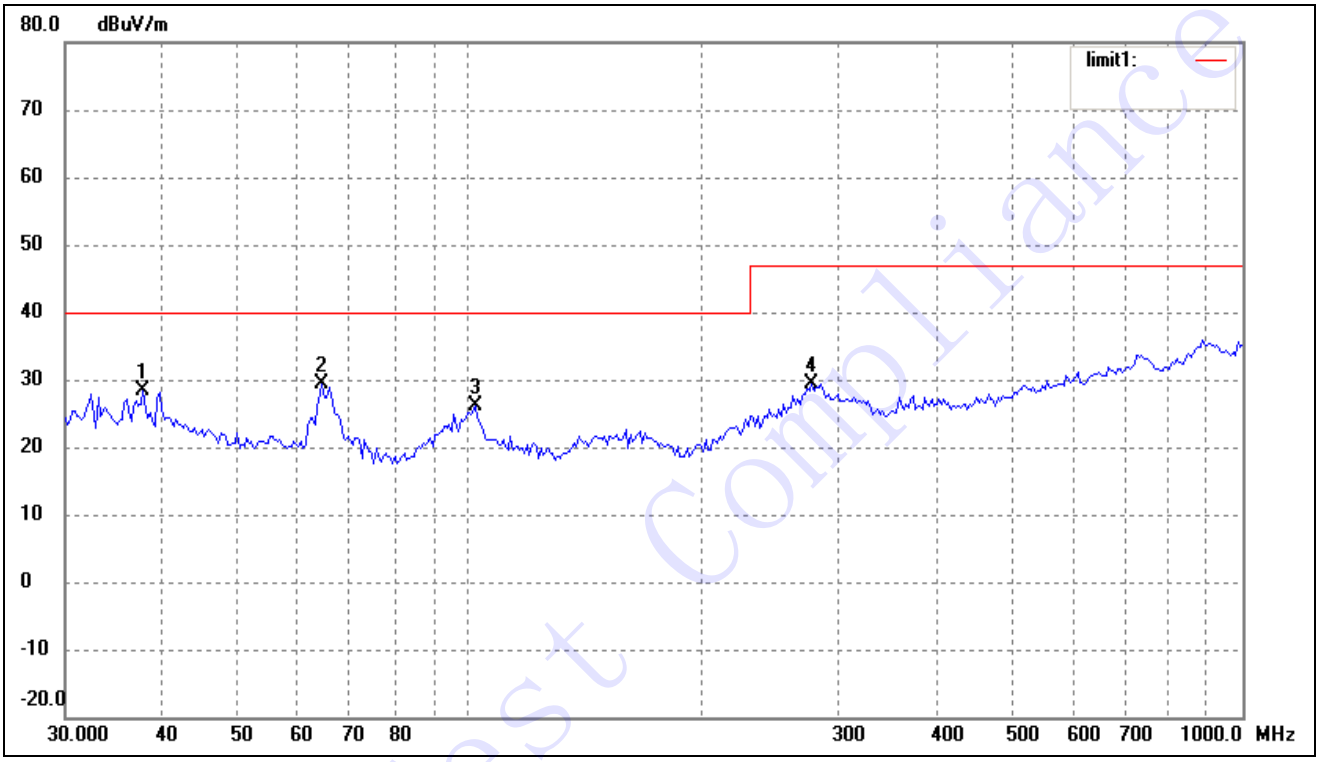
EUT: *Power supply*

Tested Model: *GTM91099-3009-4.0-F Class I 5V*

Operating Condition: *Full Load*

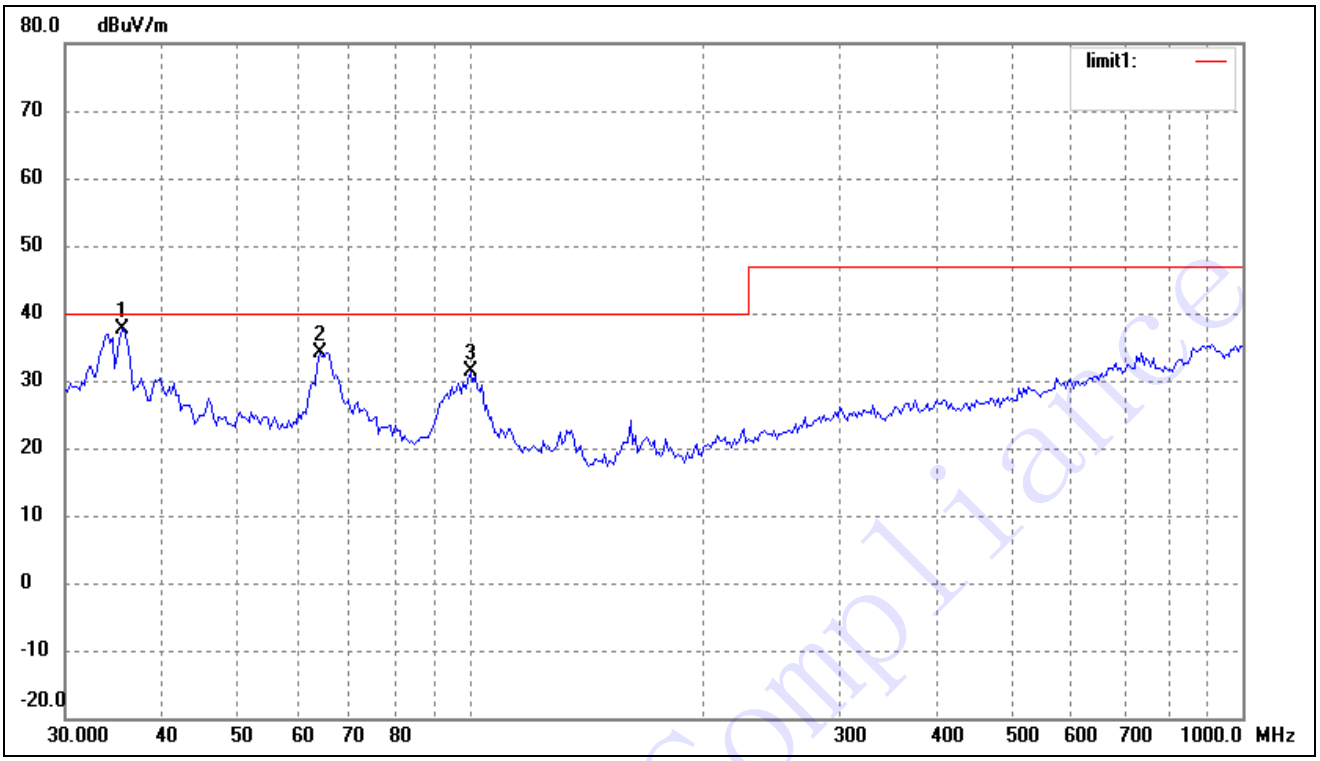
Comment: *230V/50Hz*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	37.8121	19.11	9.33	28.44	40.00	-11.56	360	100	peak
2	64.4331	25.07	4.29	29.36	40.00	-10.64	360	100	peak
3	101.6443	19.37	6.67	26.04	40.00	-13.96	360	100	peak
4	277.0935	20.37	9.01	29.38	47.00	-17.62	360	100	peak

Test Specification: *Vertical*

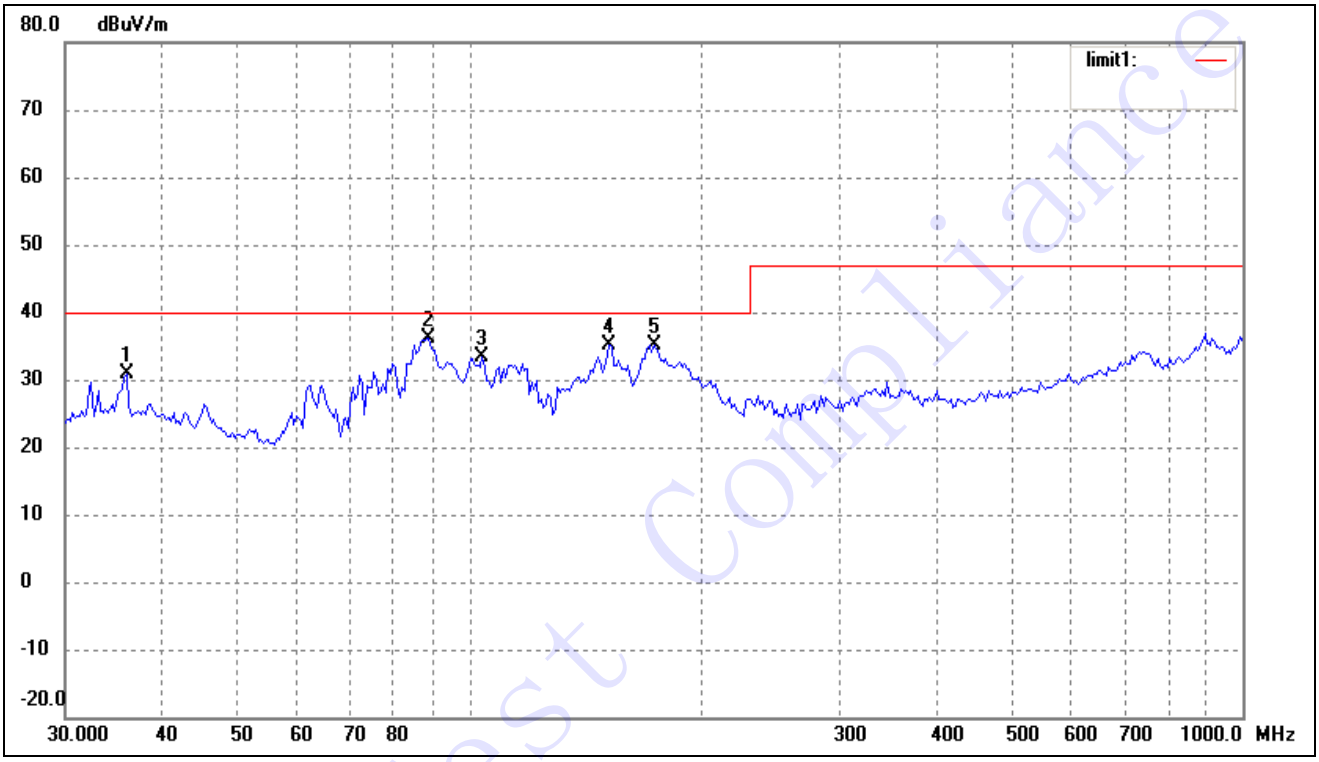


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	35.4993	28.73	8.95	37.68	40.00	-2.32	360	100	peak
2	63.9828	29.77	4.44	34.21	40.00	-5.79	360	100	peak
3	100.2286	24.62	6.81	31.43	40.00	-8.57	360	100	peak

Plot of Radiated Emissions Test Data

EUT: *Power supply*
Tested Model: *GTM91099-3009-4.0-P2*
Operating Condition: *Full Load*
Comment: *230V/50Hz*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	36.0007	21.81	9.04	30.85	40.00	-9.15	360	100	peak
2	88.3421	32.08	3.94	36.02	40.00	-3.98	360	100	peak
3	103.8055	27.01	6.46	33.47	40.00	-6.53	360	100	peak
4	151.5972	31.47	3.57	35.04	40.00	-4.96	360	100	peak
5	173.2051	31.51	3.72	35.23	40.00	-4.77	360	100	peak

Test Specification: *Vertical*

No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	30.0000	30.04	8.04	38.08	40.00	-1.92	360	100	peak
2	38.3462	28.15	9.42	37.57	40.00	-2.43	360	100	peak
3	49.0145	24.73	6.92	31.65	40.00	-8.35	360	100	peak
4	88.3421	29.80	3.94	33.74	40.00	-6.26	360	100	peak
5	149.4857	29.45	3.55	33.00	40.00	-7.00	360	100	peak

5. Harmonic Current Emissions

5.1 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Digital Power Analyzer	California Instrument	CTS	72831	2013-05-07	2014-05-06
Power Source	California Instrument	5001IX-CTS-400	60077	2013-05-07	2014-05-06

5.2 Test Procedure

Test is conducting under the description of EN61000-3-2.

5.3 Test Standards

EN61000-3-2, Clause 7.1 Limits for Class A equipment.

Environmental Conditions

Temperature:	22 °C
Relative Humidity:	48%
ATM Pressure:	1022 mbar

5.4 Harmonic Current Emissions Test Data

According to Clause 7 of EN61000-3-2, the EUT rated power is less than 75W, belong to ‘equipment with a rated power of 75W or less’, therefore ‘limits are not specified in this edition of the standards’. It is deem to full fit the requirements of the standards.

Result: The EUT is compliance with the requirements of this section.

6. Voltage Fluctuation and Flicker

6.1 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Digital Power Analyzer	California Instrument	CTS	72831	2013-05-07	2014-05-06
Power Source	California Instrument	5001IX-CTS-400	60077	2013-05-07	2014-05-06

6.2 Test Procedure

Test is conducting under the description of EN61000-3-3.

6.3 Test Standards

EN61000-3-3, Limit: Clause 5.

Environmental Conditions

Temperature:	22 °C
Relative Humidity:	48%
ATM Pressure:	1022 mbar

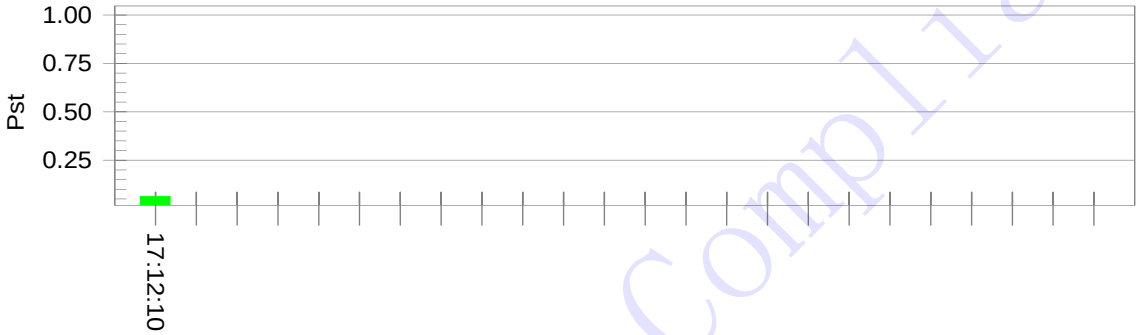
6.4 Voltage Fluctuation and Flicker Test Data

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

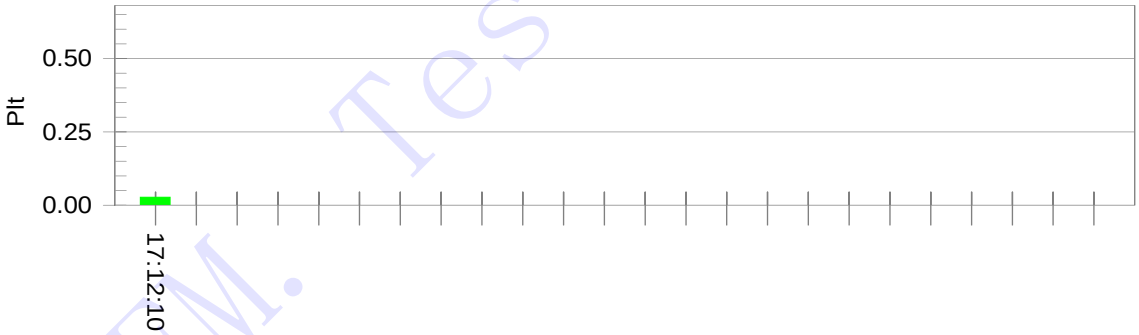
EUT: GTM91099-6048-T3A **Tested by: Daniel Liu**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2013-10-26 **Start time: 05:01:56 PM** **End time: 05:12:12 PM**
Test duration (min): 10 **Data file name: F-000039.cts_data**
Comment: Full load
Customer: GlobTek, Inc

Test Result: Pass **Status: Test Completed**

Pst_i and limit line **European Limits**



Plt and limit line



Parameter values recorded during the test:

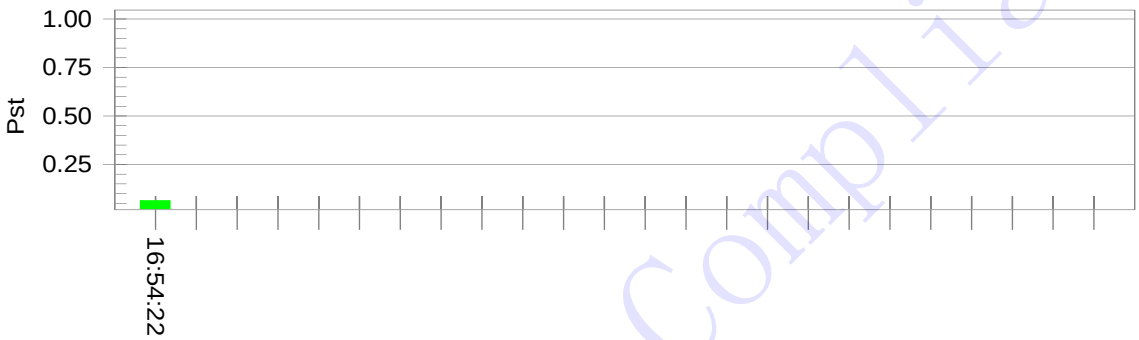
Vrms at the end of test (Volt):	**230.27**			
Highest dt (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Time(mS) > dt:	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.064**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.028**	**Test limit:**	**0.650**	**Pass**

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

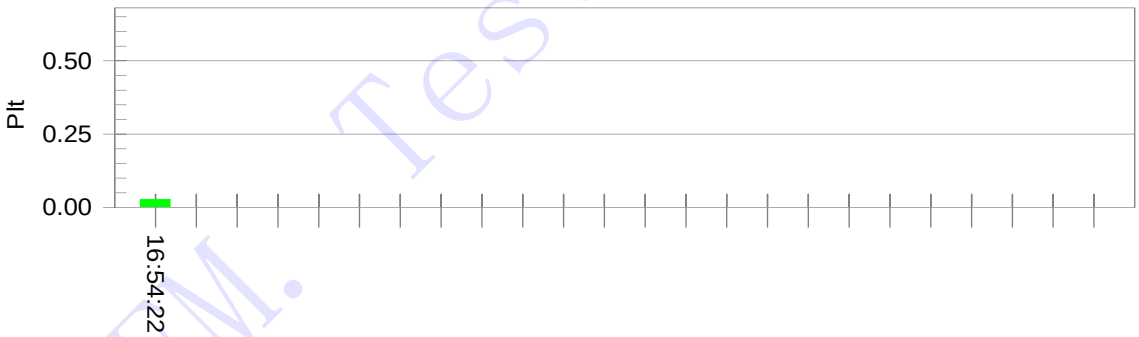
EUT: GTM91099-6012-T2 **Tested by: Daniel Liu**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2013-10-26 **Start time: 04:44:07 PM** **End time: 04:54:23 PM**
Test duration (min): 10 **Data file name: F-000038.cts_data**
Comment: Full load
Customer: GlobTek, Inc

Test Result: Pass **Status: Test Completed**

Pst_i and limit line **European Limits**



Plt and limit line



Parameter values recorded during the test:

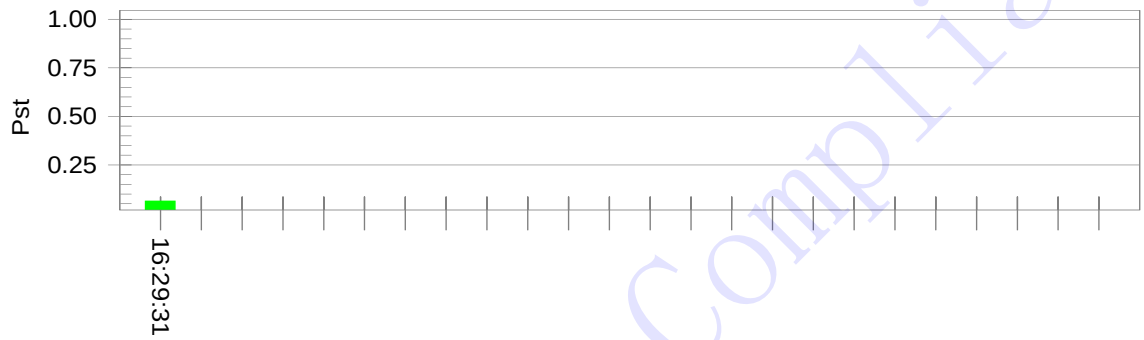
Vrms at the end of test (Volt):	**230.28**			
Highest dt (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Time(mS) > dt:	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.064**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.028**	**Test limit:**	**0.650**	**Pass**

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

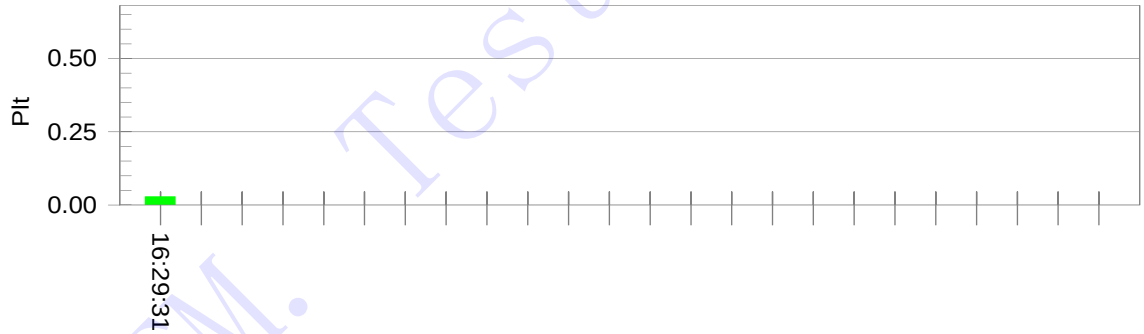
EUT: GTM91099-6048-FW Class II 48V **Tested by: Daniel Liu**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2013-10-26 **Start time: 04:19:18 PM** **End time: 04:29:32 PM**
Test duration (min): 10 **Data file name: F-000515.cts_data**
Comment: Full load
Customer: GlobTek, Inc

Test Result: Pass **Status: Test Completed**

Pst_i and limit line **European Limits**



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	**231.02**			
Highest dt (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Time(mS) > dt:	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.064**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.028**	**Test limit:**	**0.650**	**Pass**

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

EUT: GTM91099-3009-4.0-FW Class II 5V **Tested by: Daniel Liu**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2013-10-26 **Start time: 08:49:48 PM** **End time: 09:00:02 PM**
Test duration (min): 10 **Data file name: F-000528.cts_data**
Comment: Full load
Customer: GlobTek, Inc

Test Result: Pass **Status: Test Completed**

Pst_i and limit line **European Limits**

Plt and limit line

Parameter values recorded during the test:

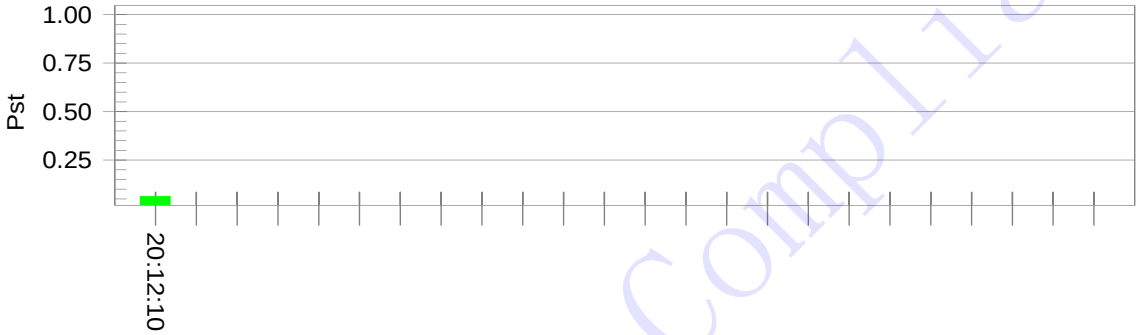
Vrms at the end of test (Volt):	**231.16**			
Highest dt (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Time(mS) > dt:	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.064**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.028**	**Test limit:**	**0.650**	**Pass**

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

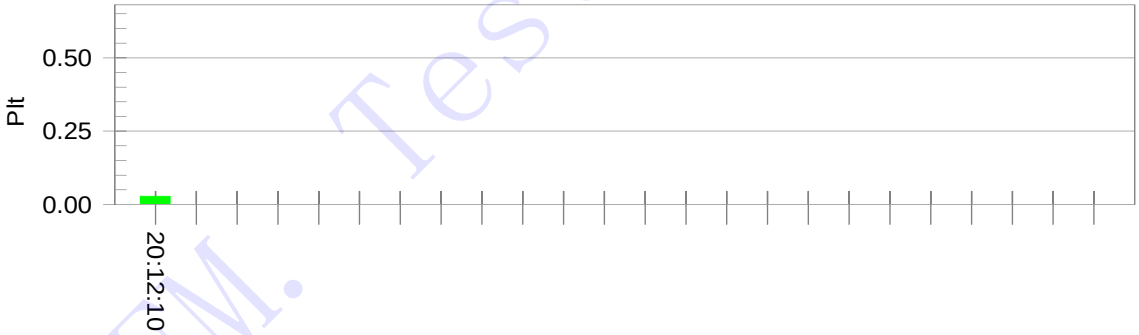
EUT: GTM91099-6048-F Class I 48V **Tested by: Daniel Liu**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2013-10-26 **Start time: 08:01:57 PM** **End time: 08:12:11 PM**
Test duration (min): 10 **Data file name: F-000526.cts_data**
Comment: Full load
Customer: GlobTek, Inc

Test Result: Pass **Status: Test Completed**

Pst_i and limit line **European Limits**



Plt and limit line



Parameter values recorded during the test:

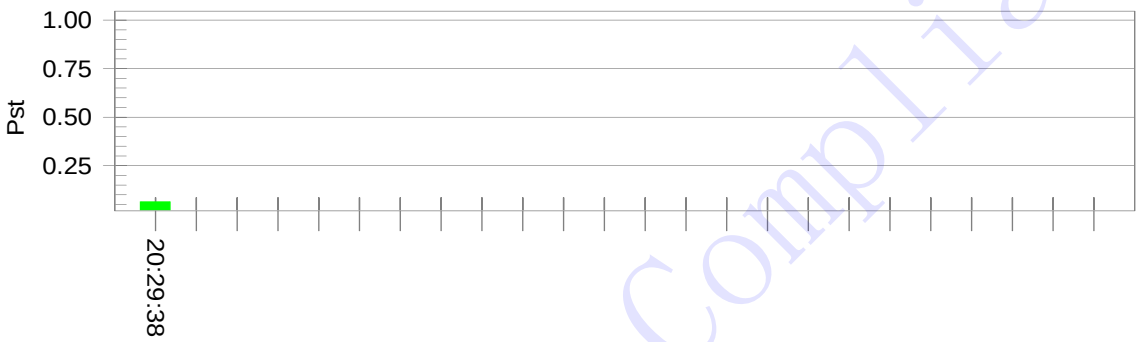
Vrms at the end of test (Volt):	**230.80**			
Highest dt (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Time(mS) > dt:	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.064**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.028**	**Test limit:**	**0.650**	**Pass**

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

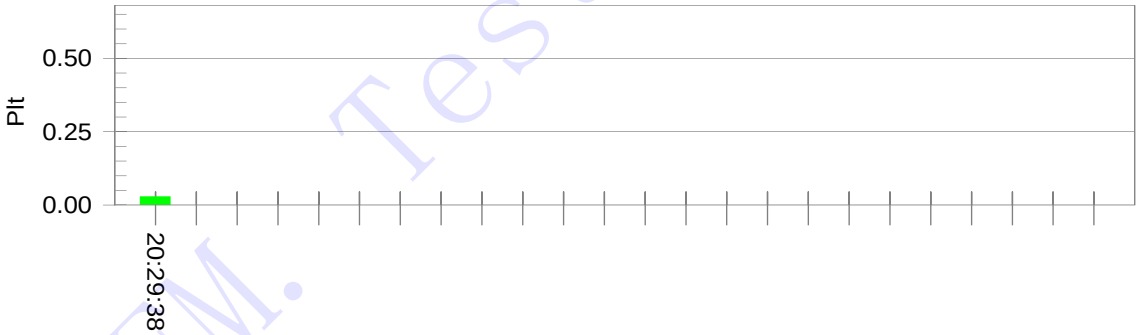
EUT: GTM91099-3009-4.0-F Class I 5V **Tested by: Daniel Liu**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2013-10-26 **Start time: 08:19:25 PM** **End time: 08:29:39 PM**
Test duration (min): 10 **Data file name: F-000527.cts_data**
Comment: Full load
Customer: GlobTek, Inc

Test Result: Pass **Status: Test Completed**

Pst_i and limit line **European Limits**



Plt and limit line



Parameter values recorded during the test:

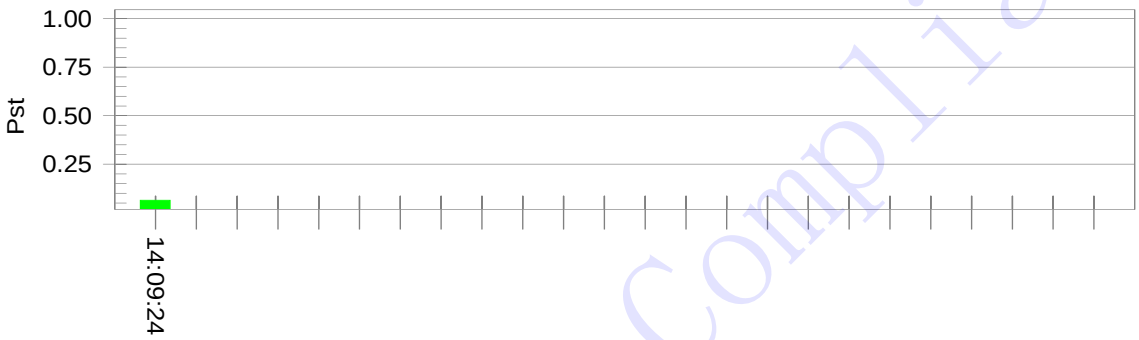
Vrms at the end of test (Volt):	**231.20**			
Highest dt (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Time(mS) > dt:	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.064**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.028**	**Test limit:**	**0.650**	**Pass**

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

EUT: GTM91099-3009-4.0-P2 **Tested by: Daniel Liu**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2013-10-26 **Start time: 01:59:11 PM** **End time: 02:09:25 PM**
Test duration (min): 10 **Data file name: F-000565.cts_data**
Comment: Full load
Customer: GlobTek, Inc

Test Result: Pass **Status: Test Completed**

Pst_i and limit line **European Limits**



Plt and limit line

Parameter values recorded during the test:

Vrms at the end of test (Volt):	**231.10**			
Highest dt (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Time(mS) > dt:	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.064**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.028**	**Test limit:**	**0.650**	**Pass**

7. Electrostatic Discharges (ESD)

7.1 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
ESD Generator	TESQ AG	NSG 437	161	2013-05-07	2014-05-06

7.2 Test Procedure

Test is conducting under the description of IEC61000-4-2.

Test Performance

Performance Criterion: B

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	55%
ATM Pressure:	1011 mbar

7.3 Electrostatic Discharge Immunity Test Data

EUT Model: GTM91099-6048-T3A

Table 1: Electrostatic Discharge Immunity (Air Discharge)

EN 61000-4-2 Test Points	Test Levels (kV)									
	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
Slot	A	A	A	A	A	A	A	A		

Table 2: Electrostatic Discharge Immunity (Direct Contact)

EN 61000-4-2 Test Points	Test Levels (kV)									
	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
/	/	/	/	/						

Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP)

EN 61000-4-2 Test Points	Test Levels (kV)									
	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
Front Side	A	A	A	A						
Top Side	A	A	A	A						
Back Side	A	A	A	A						
Left Side	A	A	A	A						
Right Side	A	A	A	A						

Table 4: Electrostatic Discharge Immunity (Indirect Contact VCP)

EN 61000-4-2 Test Points	Test Levels (kV)									
	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
Front Side	A	A	A	A						
Top Side	A	A	A	A						
Back Side	A	A	A	A						
Left Side	A	A	A	A						
Right Side	A	A	A	A						

EUT Model: GTM91099-6012-T2

Table 1: Electrostatic Discharge Immunity (Air Discharge)

EN 61000-4-2 Test Points	Test Levels (kV)									
	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
Slot	A	A	A	A	A	A	A	A		

Table 2: Electrostatic Discharge Immunity (Direct Contact)

EN 61000-4-2 Test Points	Test Levels (kV)									
	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
/	/	/	/	/						

Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP)

EN 61000-4-2 Test Points	Test Levels (kV)									
	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
Front Side	A	A	A	A						
Top Side	A	A	A	A						
Back Side	A	A	A	A						
Left Side	A	A	A	A						
Right Side	A	A	A	A						

Table 4: Electrostatic Discharge Immunity (Indirect Contact VCP)

EN 61000-4-2 Test Points	Test Levels (kV)									
	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
Front Side	A	A	A	A						
Top Side	A	A	A	A						
Back Side	A	A	A	A						
Left Side	A	A	A	A						
Right Side	A	A	A	A						

EUT Model: GTM91099-3009-4.0-P2

Table 1: Electrostatic Discharge Immunity (Air Discharge)

EN 61000-4-2 Test Points	Test Levels (kV)									
	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
Slot	A	A	A	A	A	A	A	A		

Table 2: Electrostatic Discharge Immunity (Direct Contact)

EN 61000-4-2 Test Points	Test Levels (kV)									
	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
/	/	/	/	/						

Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP)

EN 61000-4-2 Test Points	Test Levels (kV)									
	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
Front Side	A	A	A	A						
Top Side	A	A	A	A						
Back Side	A	A	A	A						
Left Side	A	A	A	A						
Right Side	A	A	A	A						

Table 4: Electrostatic Discharge Immunity (Indirect Contact VCP)

EN 61000-4-2 Test Points	Test Levels (kV)									
	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
Front Side	A	A	A	A						
Top Side	A	A	A	A						
Back Side	A	A	A	A						
Left Side	A	A	A	A						
Right Side	A	A	A	A						

Test Result: Pass

8. Continuous Radiated Disturbances (R/S)

8.1 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Signal Generator	Rohde & Schwarz	SMT03	100059	2013-05-07	2014-05-06
Voltage Probe	Rohde & Schwarz	URV5-Z2	100013	2013-05-07	2014-05-06
Power Amplifier	AR	150W1000	300999	2013-05-07	2014-05-06
Power Amplifier	AR	25S1G4AM1	305993	2013-05-07	2014-05-06
Trilog Antenna	SCHWARZBECK	VULB9163	9163-333	2013-04-20	2014-04-19
Anechoic chamber	Albatross Projects	MCDC	----	2013-03-20	2014-03-19

8.2 Test Procedure

Test is conducting under the description of IEC61000-4-3.

Test Performance

Performance Criterion: A

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1010 mbar

8.3 Continuous Radiated Disturbances Test Data

Frequency step: 1% of fundamental
Dwell time: 1 second
Modulation: AM by 1kHz sine wave with 80% modulation depth

EUT Model: GTM91099-6048-T3A

Frequency Range(MHz)	Field (V/m)	Front		Rear		Left Side		Right Side	
		VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	3	A	A	A	A	A	A	A	A

EUT Model: GTM91099-6012-T2

Frequency Range(MHz)	Field (V/m)	Front		Rear		Left Side		Right Side	
		VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	3	A	A	A	A	A	A	A	A

EUT Model: GTM91099-6048-FW Class II 48V

Frequency Range(MHz)	Field (V/m)	Front		Rear		Left Side		Right Side	
		VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	3	A	A	A	A	A	A	A	A

EUT Model: GTM91099-3009-4.0-FW Class II 5V

Frequency Range(MHz)	Field (V/m)	Front		Rear		Left Side		Right Side	
		VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	3	A	A	A	A	A	A	A	A

EUT Model: GTM91099-6048-F Class I 48V

Frequency Range(MHz)	Field (V/m)	Front		Rear		Left Side		Right Side	
		VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	3	A	A	A	A	A	A	A	A

EUT Model: GTM91099-3009-4.0-F Class I 5V

Frequency Range(MHz)	Field (V/m)	Front		Rear		Left Side		Right Side	
		VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	3	A	A	A	A	A	A	A	A

EUT Model: GTM91099-3009-4.0-P2

Frequency Range(MHz)	Field (V/m)	Front		Rear		Left Side		Right Side	
		VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	3	A	A	A	A	A	A	A	A

Test Result: Pass

9. Electrical Fast Transients (EFT)

9.1 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Transient 2000	EMC PARTNER	TRA2000	863	2013-05-07	2014-05-06
Couple Clamp	EMC PARTNER	CN-EFT1000	513	2013-05-07	2014-05-06

9.2 Test Procedure

Test is conducting under the description of IEC61000-4-4.

Test Performance

Performance Criterion: B

Environmental Conditions

Temperature:	22 °C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

9.3 Electrical Fast Transients Test Data

EUT Model: GTM91099-6048-T3A

EN 61000-4-4 Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
Power Supply Power Port of EUT	L1	A	A	A	A	/	/	/	/
	L2	A	A	A	A	/	/	/	/
	PE	A	A	A	A	/	/	/	/
	L1+L2	A	A	A	A	/	/	/	/
	L1 + PE	A	A	A	A	/	/	/	/
	L2 + PE	A	A	A	A	/	/	/	/
	L1+L2+PE	A	A	A	A	/	/	/	/
Signal ports		/	/	/	/	/	/	/	/

EUT Model: GTM91099-6012-T2

EN 61000-4-4 Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
Power Supply Power Port of EUT	L1	A	A	A	A	/	/	/	/
	L2	A	A	A	A	/	/	/	/
	PE	/	/	/	/	/	/	/	/
	L1+L2	A	A	A	A	/	/	/	/
	L1 + PE	/	/	/	/	/	/	/	/
	L2 + PE	/	/	/	/	/	/	/	/
	L1+L2+PE	/	/	/	/	/	/	/	/
Signal ports		/	/	/	/	/	/	/	/

EUT Model: GTM91099-6048-FW Class II 48V

EN 61000-4-4 Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
Power Supply Power Port of EUT	L1	A	A	A	A	/	/	/	/
	L2	A	A	A	A	/	/	/	/
	PE	/	/	/	/	/	/	/	/
	L1+L2	A	A	A	A	/	/	/	/
	L1 + PE	/	/	/	/	/	/	/	/
	L2 + PE	/	/	/	/	/	/	/	/
	L1+L2+PE	/	/	/	/	/	/	/	/
Signal ports		/	/	/	/	/	/	/	/

EUT Model: GTM91099-3009-4.0-FW Class II 5V

EN 61000-4-4 Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
Power Supply Power Port of EUT	L1	A	A	A	A	/	/	/	/
	L2	A	A	A	A	/	/	/	/
	PE	/	/	/	/	/	/	/	/
	L1+L2	A	A	A	A	/	/	/	/
	L1 + PE	/	/	/	/	/	/	/	/
	L2 + PE	/	/	/	/	/	/	/	/
	L1+L2+PE	/	/	/	/	/	/	/	/
Signal ports		/	/	/	/	/	/	/	/

EUT Model: GTM91099-6048-F Class I 48V

EN 61000-4-4 Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
Power Supply Power Port of EUT	L1	A	A	A	A	/	/	/	/
	L2	A	A	A	A	/	/	/	/
	PE	A	A	A	A	/	/	/	/
	L1+L2	A	A	A	A	/	/	/	/
	L1 + PE	A	A	A	A	/	/	/	/
	L2 + PE	A	A	A	A	/	/	/	/
	L1+L2+PE	A	A	A	A	/	/	/	/
Signal ports		/	/	/	/	/	/	/	/

EUT Model: GTM91099-3009-4.0-F Class I 5V

EN 61000-4-4 Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
Power Supply Power Port of EUT	L1	A	A	A	A	/	/	/	/
	L2	A	A	A	A	/	/	/	/
	PE	A	A	A	A	/	/	/	/
	L1+L2	A	A	A	A	/	/	/	/
	L1 + PE	A	A	A	A	/	/	/	/
	L2 + PE	A	A	A	A	/	/	/	/
	L1+L2+PE	A	A	A	A	/	/	/	/
Signal ports		/	/	/	/	/	/	/	/

EUT Model: GTM91099-3009-4.0-P2

EN 61000-4-4 Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
Power Supply Power Port of EUT	L1	A	A	A	A	/	/	/	/
	L2	A	A	A	A	/	/	/	/
	PE	/	/	/	/	/	/	/	/
	L1+L2	A	A	A	A	/	/	/	/
	L1 + PE	/	/	/	/	/	/	/	/
	L2 + PE	/	/	/	/	/	/	/	/
	L1+L2+PE	/	/	/	/	/	/	/	/
Signal ports		/	/	/	/	/	/	/	/

Test Result: Pass

10. Surges

10.1 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Transient 2000	EMC PARTNER	TRA2000	863	2013-05-07	2014-05-06

10.2 Test Procedure

Test is conducting under the description of IEC 61000-4-5.

Test Performance

Performance Criterion: B

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

10.3 Surge Test Data

EUT Model: GTM91099-6048-T3A

Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	L-N, L-PE, N-PE	A	/
2	1kV	±	L-N, L-PE, N-PE	A	/
3	2kV	±	L-PE, N-PE	A	/
4	4kV	±	L-N, L-PE, N-PE	/	/

EUT Model: GTM91099-6012-T2

Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	L-N	A	/
2	1kV	±	L-N	A	/
3	2kV	±	L-N, L-PE, N-PE	/	/
4	4kV	±	L-N, L-PE, N-PE	/	/

EUT Model: GTM91099-6048-FW Class II 48V

Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	L-N	A	/
2	1kV	±	L-N	A	/
3	2kV	±	L-N, L-PE, N-PE	/	/
4	4kV	±	L-N, L-PE, N-PE	/	/

EUT Model: GTM91099-3009-4.0-FW Class II 5V

Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	L-N	A	/
2	1kV	±	L-N	A	/
3	2kV	±	L-N, L-PE, N-PE	/	/
4	4kV	±	L-N, L-PE, N-PE	/	/

EUT Model: GTM91099-6048-F Class I 48V

Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	L-N, L-PE, N-PE	A	/
2	1kV	±	L-N, L-PE, N-PE	A	/
3	2kV	±	L-PE, N-PE	A	/
4	4kV	±	L-N, L-PE, N-PE	/	/

EUT Model: GTM91099-3009-4.0-F Class I 5V

Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	L-N, L-PE, N-PE	A	/
2	1kV	±	L-N, L-PE, N-PE	A	/
3	2kV	±	L-PE, N-PE	A	/
4	4kV	±	L-N, L-PE, N-PE	/	/

EUT Model: GTM91099-3009-4.0-P2

Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	L-N	A	/
2	1kV	±	L-N	A	/
3	2kV	±	L-N, L-PE, N-PE	/	/
4	4kV	±	L-N, L-PE, N-PE	/	/

Test Result: Pass

11. Continuous Conducted Disturbances (C/S)

11.1 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
CS Immunity Tester	EMTEST	CWS500	0900-03	2013-05-07	2014-05-06
Attenuator	EMTEST	MA-500	1009	2013-05-07	2014-05-06
CDN	Luthi	L-801M2/M3	2665	2013-05-07	2014-05-06

11.2 Test Procedure

Test is conducting under the description of IEC 61000-4-6.

Test Performance

Performance Criterion: A

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

11.3 Continuous Conducted Disturbances Test Data

Sweep frequency range: 150kHz~80MHz
Frequency step: 1% of fundamental
Dwell time: 1 second

EUT Model: GTM91099-6048-T3A

Level	Voltage Level (e.m.f.) U_0	Modulation:	Pass	Fail
1	1	AM 80%, 1kHz sinewave	/	/
2	3	AM 80%, 1kHz sinewave	A	/
3	10	AM 80%, 1kHz sinewave	/	/
X	Special	/	/	/

EUT Model: GTM91099-6012-T2

Level	Voltage Level (e.m.f.) U_0	Modulation:	Pass	Fail
1	1	AM 80%, 1kHz sinewave	/	/
2	3	AM 80%, 1kHz sinewave	A	/
3	10	AM 80%, 1kHz sinewave	/	/
X	Special	/	/	/

EUT Model: GTM91099-6048-FW Class II 48V

Level	Voltage Level (e.m.f.) U_0	Modulation:	Pass	Fail
1	1	AM 80%, 1kHz sinewave	/	/
2	3	AM 80%, 1kHz sinewave	A	/
3	10	AM 80%, 1kHz sinewave	/	/
X	Special	/	/	/

EUT Model: GTM91099-3009-4.0-FW Class II 5V

Level	Voltage Level (e.m.f.) U_0	Modulation:	Pass	Fail
1	1	AM 80%, 1kHz sinewave	/	/
2	3	AM 80%, 1kHz sinewave	A	/
3	10	AM 80%, 1kHz sinewave	/	/
X	Special	/	/	/

EUT Model: GTM91099-6048-F Class I 48V

Level	Voltage Level (e.m.f.) U_0	Modulation:	Pass	Fail
1	1	AM 80%, 1kHz sinewave	/	/
2	3	AM 80%, 1kHz sinewave	A	/
3	10	AM 80%, 1kHz sinewave	/	/
X	Special	/	/	/

EUT Model: GTM91099-3009-4.0-F Class I 5V

Level	Voltage Level (e.m.f.) U_0	Modulation:	Pass	Fail
1	1	AM 80%, 1kHz sinewave	/	/
2	3	AM 80%, 1kHz sinewave	A	/
3	10	AM 80%, 1kHz sinewave	/	/
X	Special	/	/	/

EUT Model: GTM91099-3009-4.0-P2

Level	Voltage Level (e.m.f.) U_0	Modulation:	Pass	Fail
1	1	AM 80%, 1kHz sinewave	/	/
2	3	AM 80%, 1kHz sinewave	A	/
3	10	AM 80%, 1kHz sinewave	/	/
X	Special	/	/	/

Test Result: Pass

12. Power-Frequency Magnetic Fields (PFMF)

12.1 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMCPRO	KEYTEK	EMCPro	0509124	2013-05-07	2014-05-06
Coil	KEYTEK	F-1000-4-8	0533	2013-05-07	2014-05-06

12.2 Test Procedure

Test is conducting under the description of IEC 61000-4-8.

Test Performance

Performance Criterion: A

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	50%
ATM Pressure:	1011 mbar

12.3 Power-Frequency Magnetic Field Test Data

EUT Model: GTM91099-6048-T3A

Level	Magnetic Field Strength (r.m.s) A/m	Frequency Hz	Induction Coil Postion	Pass	Fail
1	1	50	X, Y, Z	A	/
2	3	50	X, Y, Z	/	/
3	10	50	X, Y, Z	/	/
X	Special	/		/	/

EUT Model: GTM91099-6012-T2

Level	Magnetic Field Strength (r.m.s) A/m	Frequency Hz	Induction Coil Postion	Pass	Fail
1	1	50	X, Y, Z	A	/
2	3	50	X, Y, Z	/	/
3	10	50	X, Y, Z	/	/
X	Special	/		/	/

EUT Model: GTM91099-6048-FW Class II 48V

Level	Magnetic Field Strength (r.m.s) A/m	Frequency Hz	Induction Coil Postion	Pass	Fail
1	1	50	X, Y, Z	A	/
2	3	50	X, Y, Z	/	/
3	10	50	X, Y, Z	/	/
X	Special	/		/	/

EUT Model: GTM91099-3009-4.0-FW Class II 5V

Level	Magnetic Field Strength (r.m.s) A/m	Frequency Hz	Induction Coil Postion	Pass	Fail
1	1	50	X, Y, Z	A	/
2	3	50	X, Y, Z	/	/
3	10	50	X, Y, Z	/	/
X	Special	/		/	/

EUT Model: GTM91099-6048-F Class I 48V

Level	Magnetic Field Strength (r.m.s) A/m	Frequency Hz	Induction Coil Postion	Pass	Fail
1	1	50	X, Y, Z	A	/
2	3	50	X, Y, Z	/	/
3	10	50	X, Y, Z	/	/
X	Special	/		/	/

EUT Model: GTM91099-3009-4.0-F Class I 5V

Level	Magnetic Field Strength (r.m.s) A/m	Frequency Hz	Induction Coil Postion	Pass	Fail
1	1	50	X, Y, Z	A	/
2	3	50	X, Y, Z	/	/
3	10	50	X, Y, Z	/	/
X	Special	/		/	/

EUT Model: GTM91099-3009-4.0-P2

Level	Magnetic Field Strength (r.m.s) A/m	Frequency Hz	Induction Coil Postion	Pass	Fail
1	1	50	X, Y, Z	A	/
2	3	50	X, Y, Z	/	/
3	10	50	X, Y, Z	/	/
X	Special	/		/	/

Test Result: Pass

13. Voltage Dips and Interruptions

13.1 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Transient 2000	EMC PARTNER	TRA2000	863	2013-05-07	2014-05-06

13.2 Test Procedure

Test is conducting under the description of IEC 61000-4-11.

Test Performance

Performance Criterion: B/C

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	50%
ATM Pressure:	1011 mbar

13.3 Voltage Dips And Interruptions Test Data

U: Vlotage dips in % U_T (U_T is rated voltage for the EUT)
T: Test duration

EUT Model: GTM91099-6048-T3A

Level	U	T	Phase Angle	N	Pass	Fail
1	>95%	10ms	0/90/180/270	3	A	/
2	30%	500ms	0/90/180/270	3	B	/
3	>95%	5000ms	0/90/180/270	3	B	/

EUT Model: GTM91099-6012-T2

Level	U	T	Phase Angle	N	Pass	Fail
1	>95%	10ms	0/90/180/270	3	A	/
2	30%	500ms	0/90/180/270	3	B	/
3	>95%	5000ms	0/90/180/270	3	B	/

EUT Model: GTM91099-6048-FW Class II 48V

Level	U	T	Phase Angle	N	Pass	Fail
1	>95%	10ms	0/90/180/270	3	A	/
2	30%	500ms	0/90/180/270	3	A	/
3	>95%	5000ms	0/90/180/270	3	B	/

EUT Model: GTM91099-3009-4.0-FW Class II 5V

Level	U	T	Phase Angle	N	Pass	Fail
1	>95%	10ms	0/90/180/270	3	A	/
2	30%	500ms	0/90/180/270	3	A	/
3	>95%	5000ms	0/90/180/270	3	B	/

EUT Model: GTM91099-6048-F Class I 48V

Level	U	T	Phase Angle	N	Pass	Fail
1	>95%	10ms	0/90/180/270	3	A	/
2	30%	500ms	0/90/180/270	3	A	/
3	>95%	5000ms	0/90/180/270	3	B	/

EUT Model: GTM91099-3009-4.0-F Class I 5V

Level	U	T	Phase Angle	N	Pass	Fail
1	>95%	10ms	0/90/180/270	3	A	/
2	30%	500ms	0/90/180/270	3	B	/
3	>95%	5000ms	0/90/180/270	3	C	/

EUT Model: GTM91099-3009-4.0-P2

Level	U	T	Phase Angle	N	Pass	Fail
1	>95%	10ms	0/90/180/270	3	A	/
2	30%	500ms	0/90/180/270	3	A	/
3	>95%	5000ms	0/90/180/270	3	B	/

Test Result: Pass

EXHIBIT 1- PRODUCT LABELING

Proposed CE Label Format

Specifications: Text is Black in color and is justified. Labels are printed in indelible ink on permanent adhesive backing or silk-screened onto the EUT or shall be affixed at a conspicuous location on the EUT. The 'CE' marking must be affixed to the EUT or to its data plate. Where this is not possible or not warranted on account of the nature of the apparatus, it must be affixed to the packaging, if any, and to the accompanying documents. The 'CE' marking must have a height of at least 5 mm. If the 'CE' marking is reduced or enlarged the proportions given in the above graduated drawing must be respected.

Proposed Label Location on EUT

CE Label Location

EXHIBIT 2 - EUT PHOTOGRAPHS

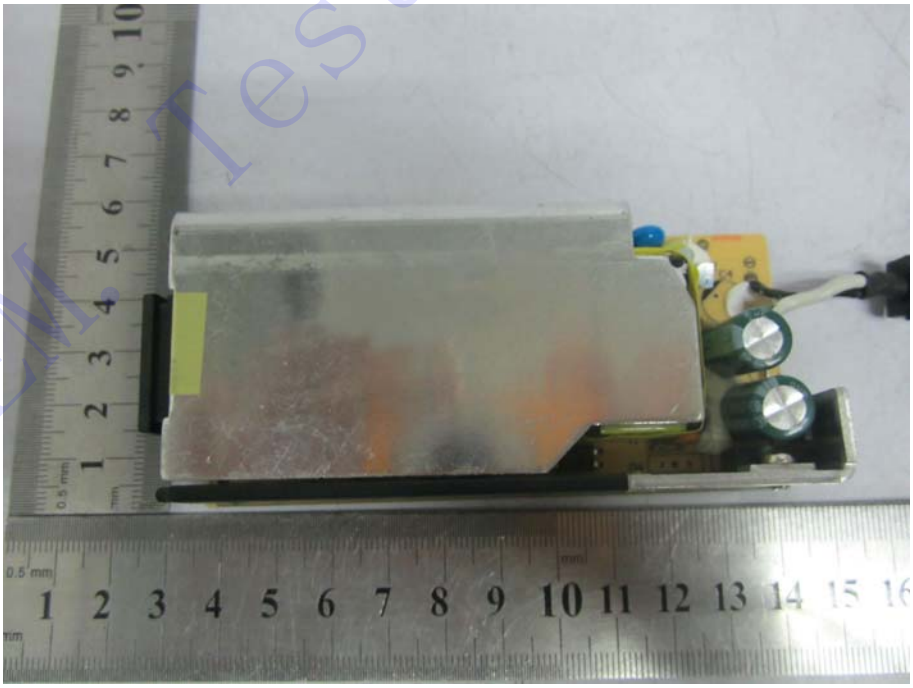
EUT Model: GTM91099-6048-T3A

EUT View 1

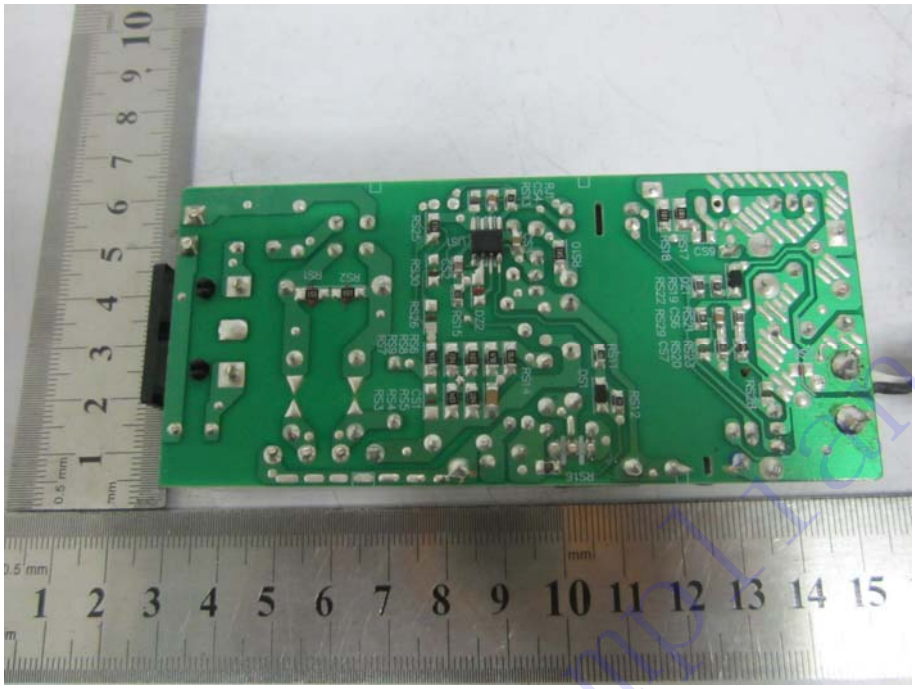
EUT View 2

EUT Housing and Board View 1

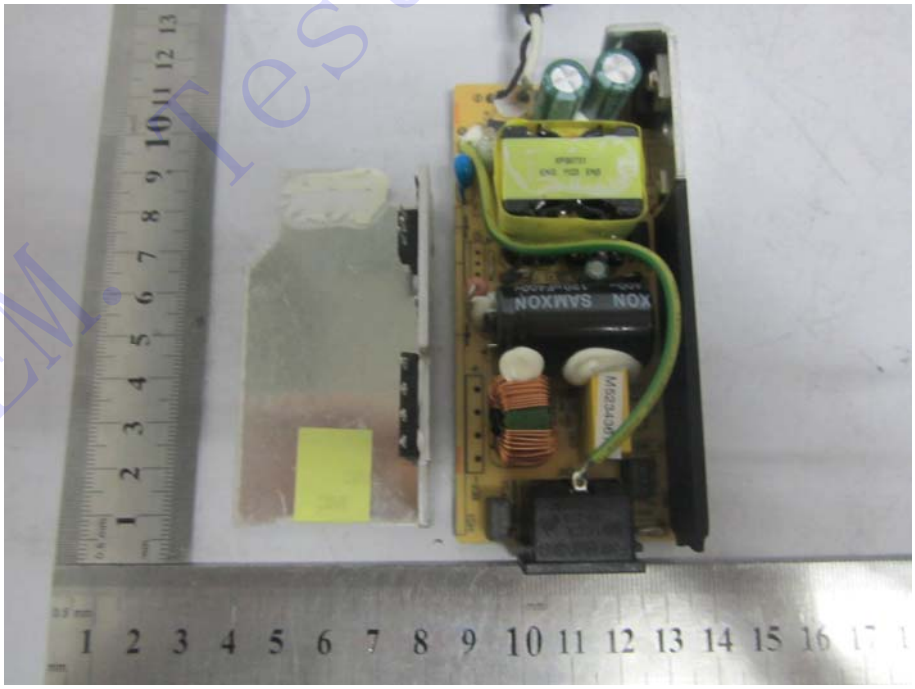
Solder Board-Component View 1



Solder Board-Component View 2



Solder Board-Component View 3



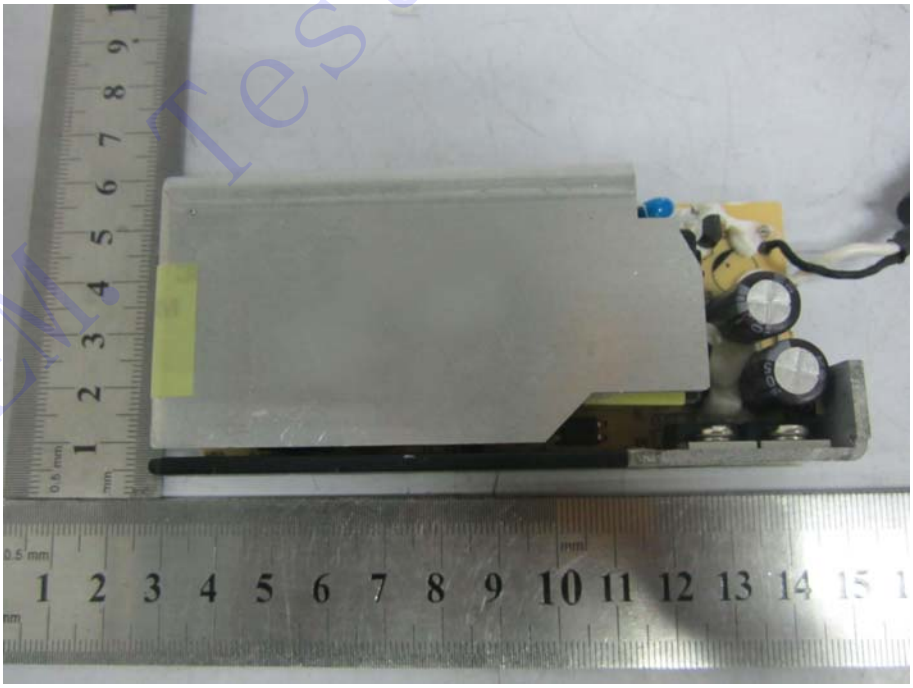
EUT Model: GTM91099-6012-T2

EUT View 1

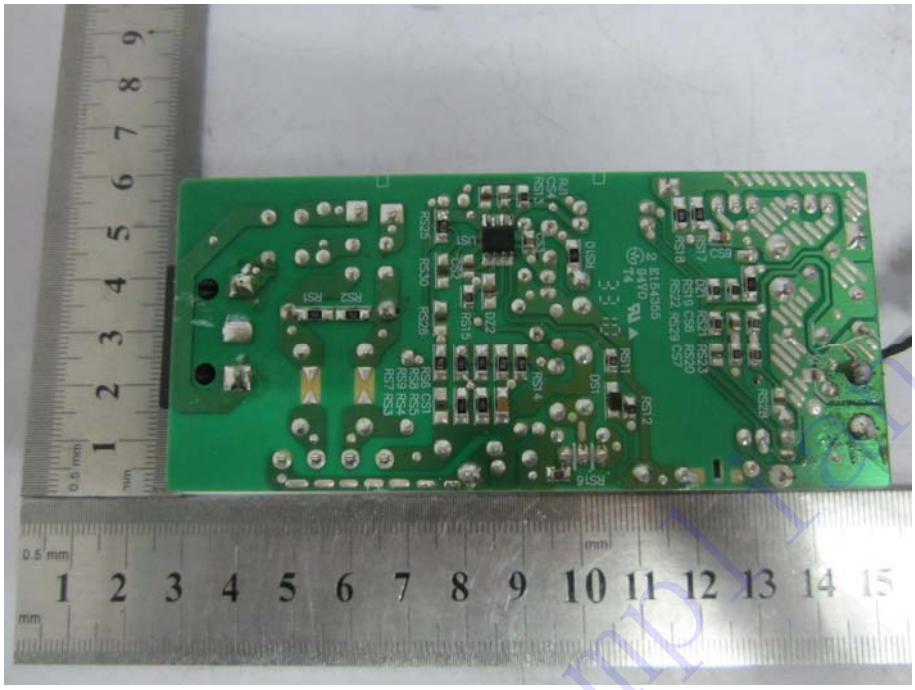
EUT View 2

EUT Housing and Board View 1

Solder Board-Component View 1



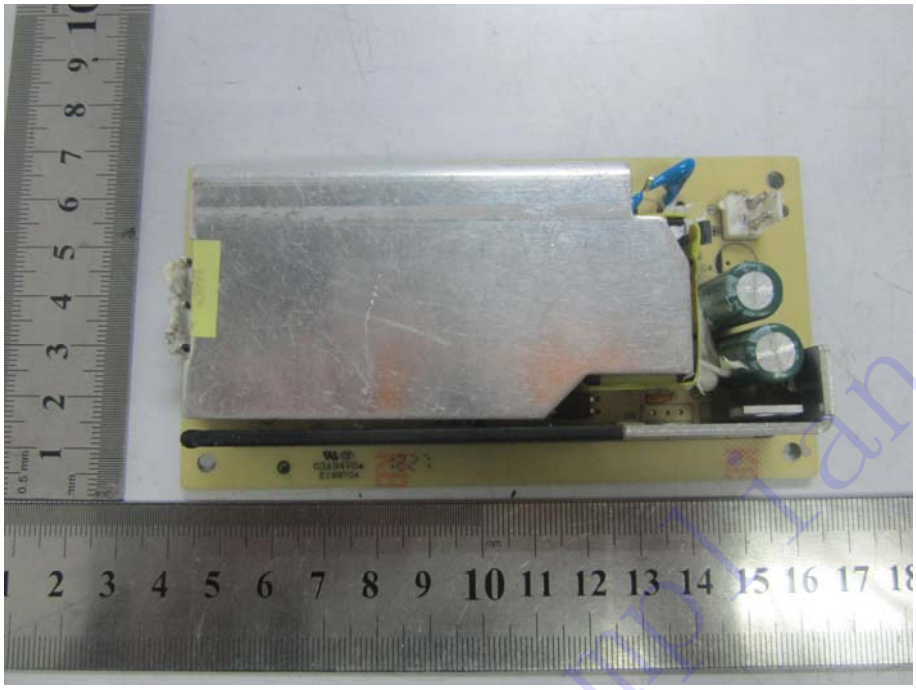
Solder Board-Component View 2



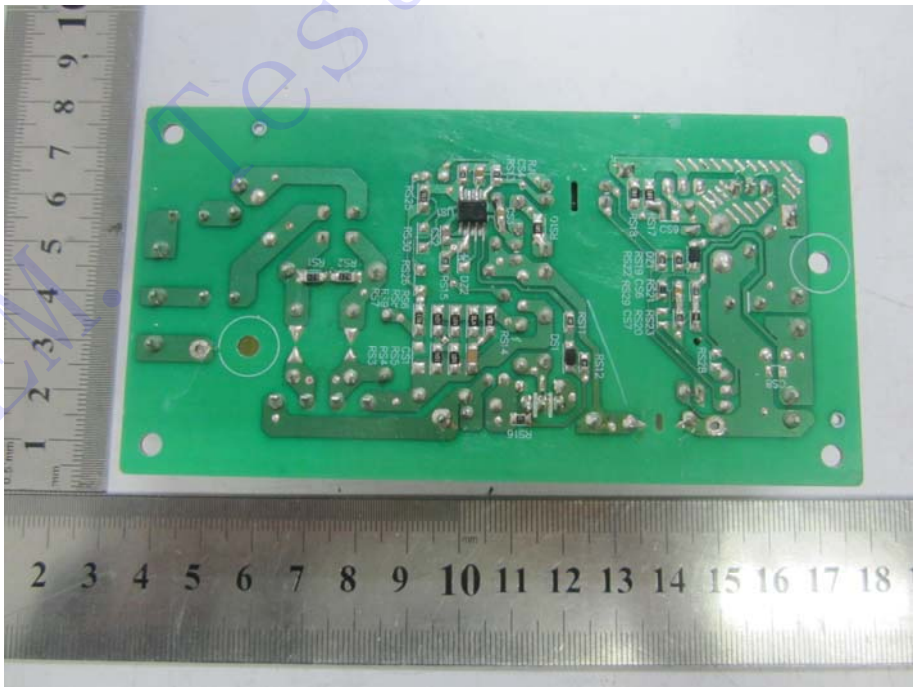
Solder Board-Component View 3

EUT Model: GTM91099-6048-FW Class II 48V

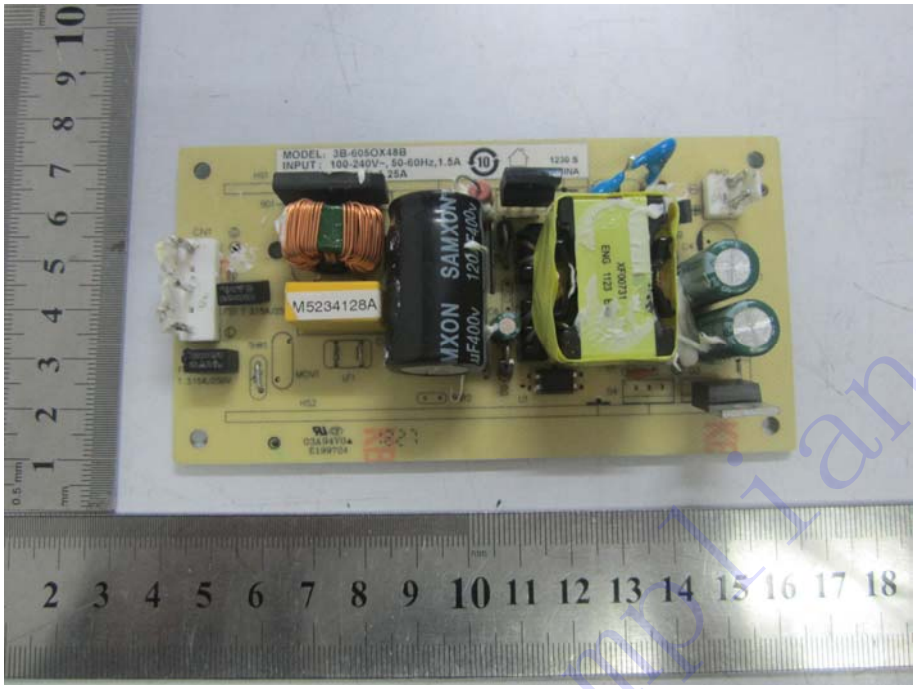
EUT View 1



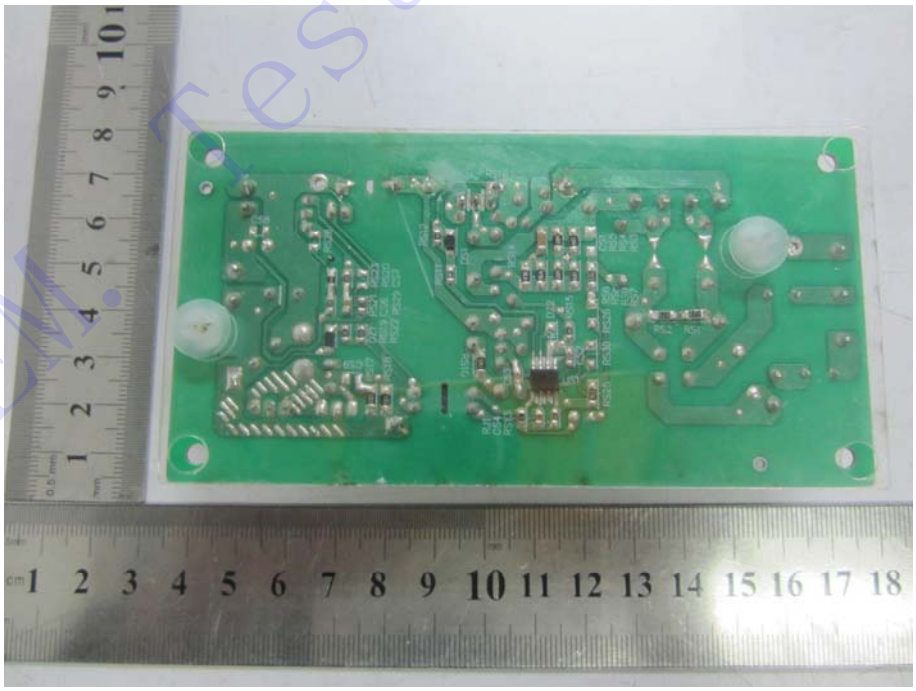
Solder Board-Component View 1



Solder Board-Component View 2

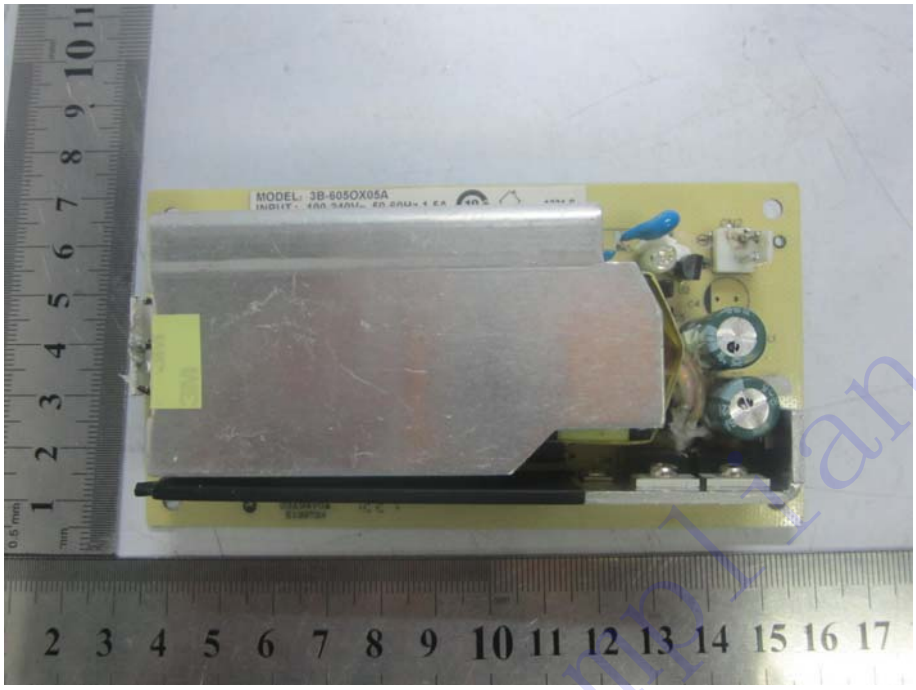


Solder Board-Component View 3

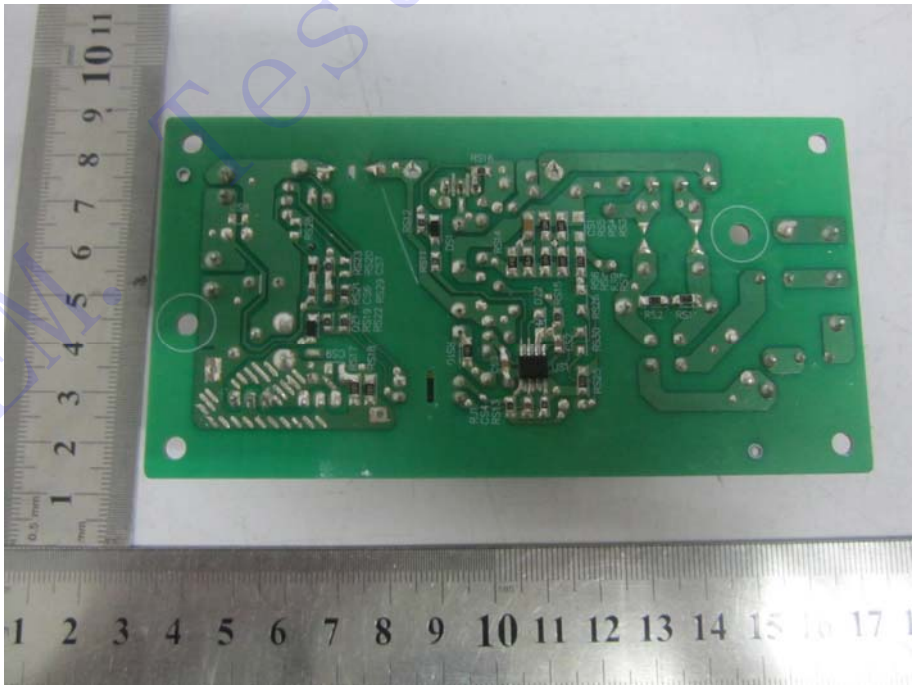


EUT Model: GTM91099-3009-4.0-FW Class II 5V

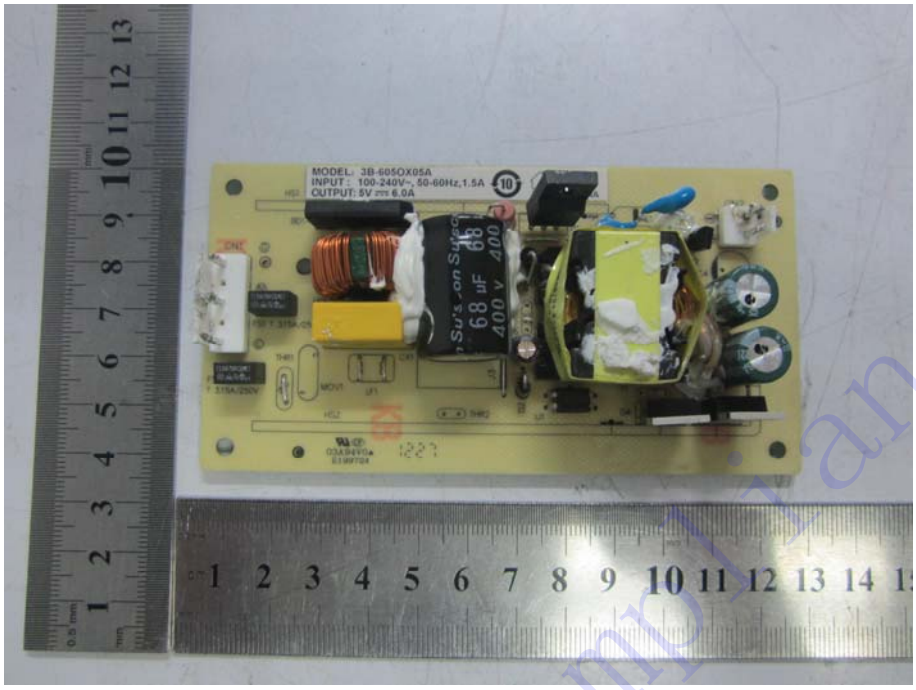
EUT View 1



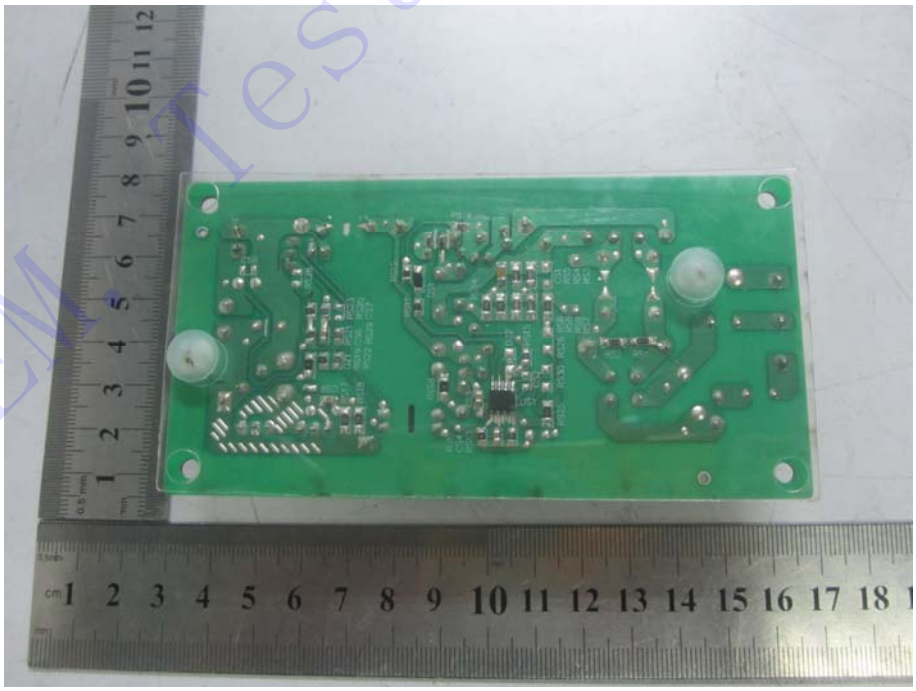
Solder Board-Component View 1



Solder Board-Component View 2

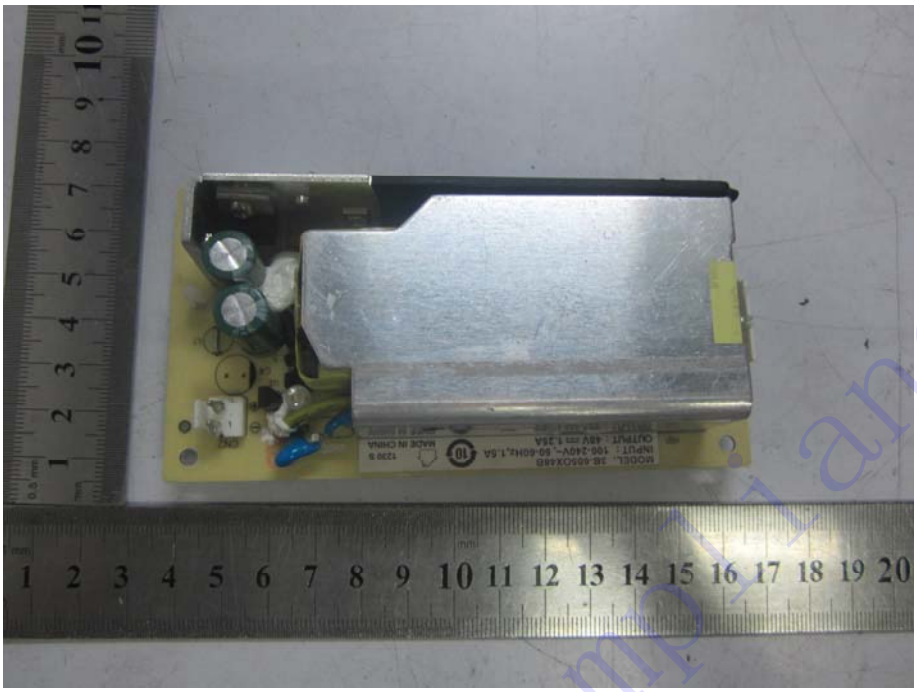


Solder Board-Component View 3

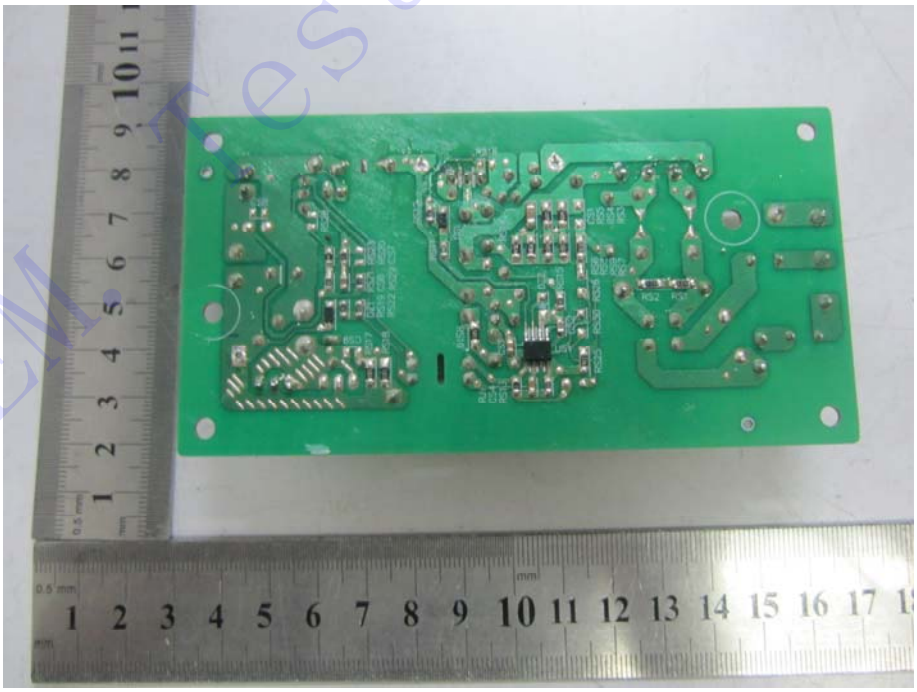


EUT Model: GTM91099-6048-F Class I 48V

EUT View 1

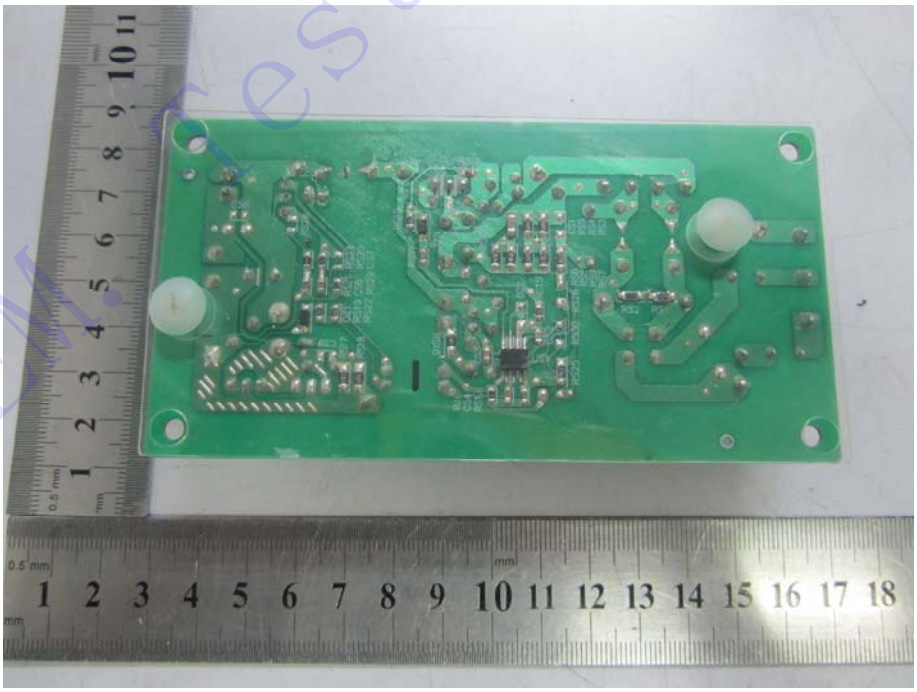


Solder Board-Component View 1



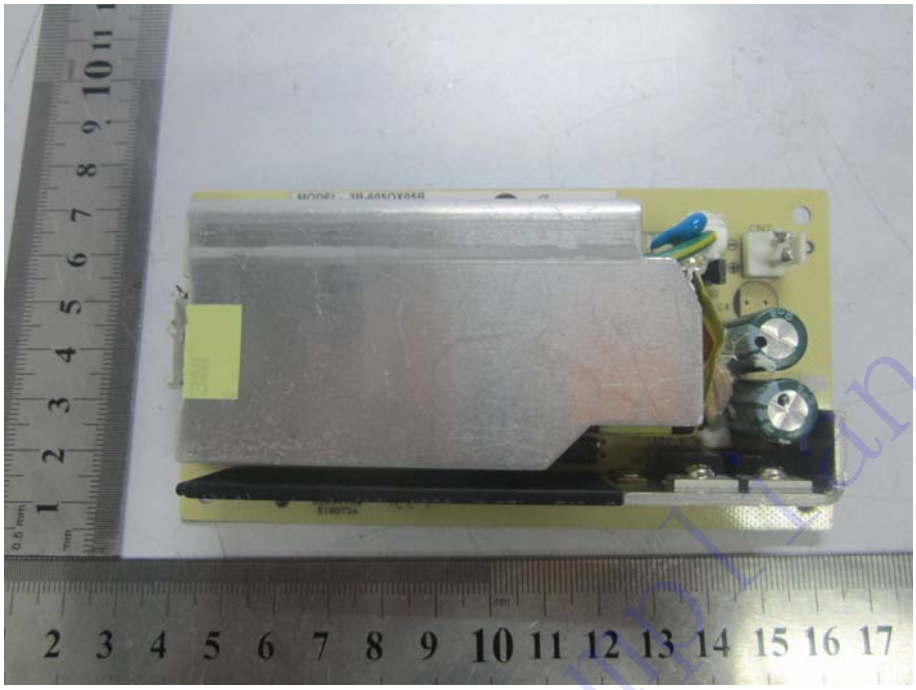
Solder Board-Component View 2

Solder Board-Component View 3

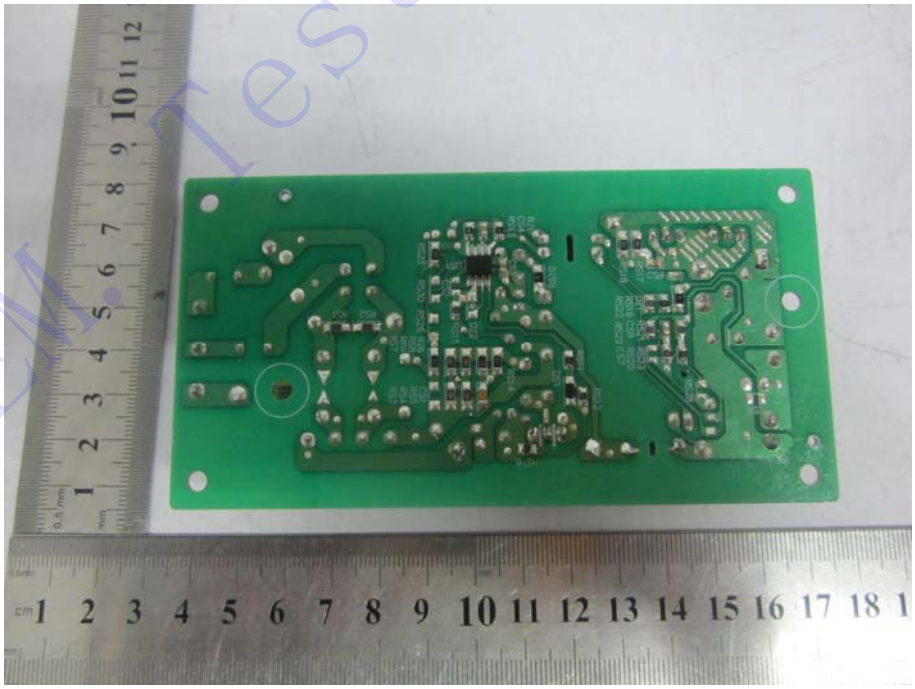


EUT Model: GTM91099-3009-4.0-F Class I 5V

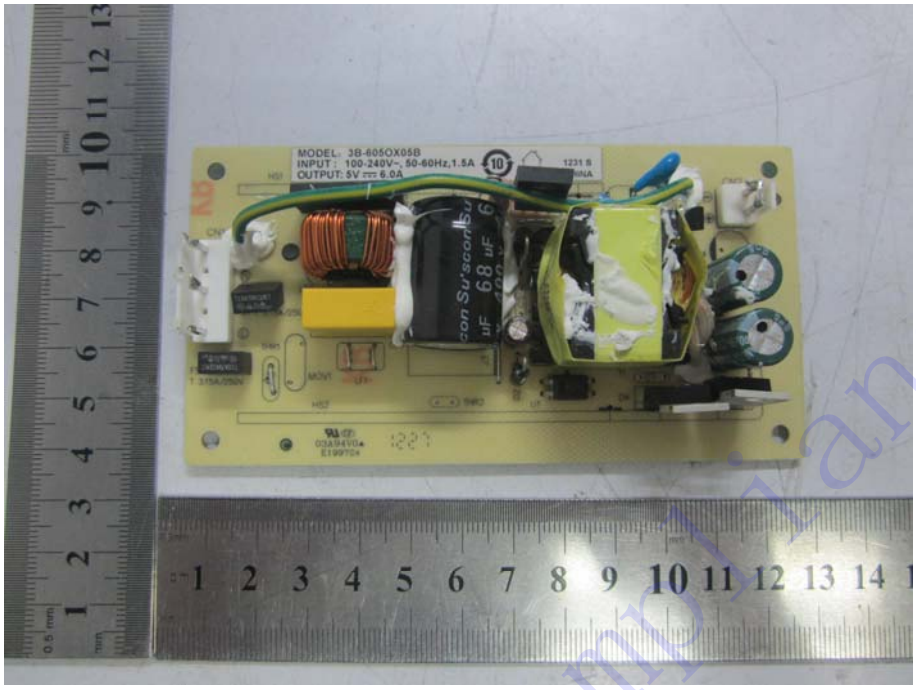
EUT View 1



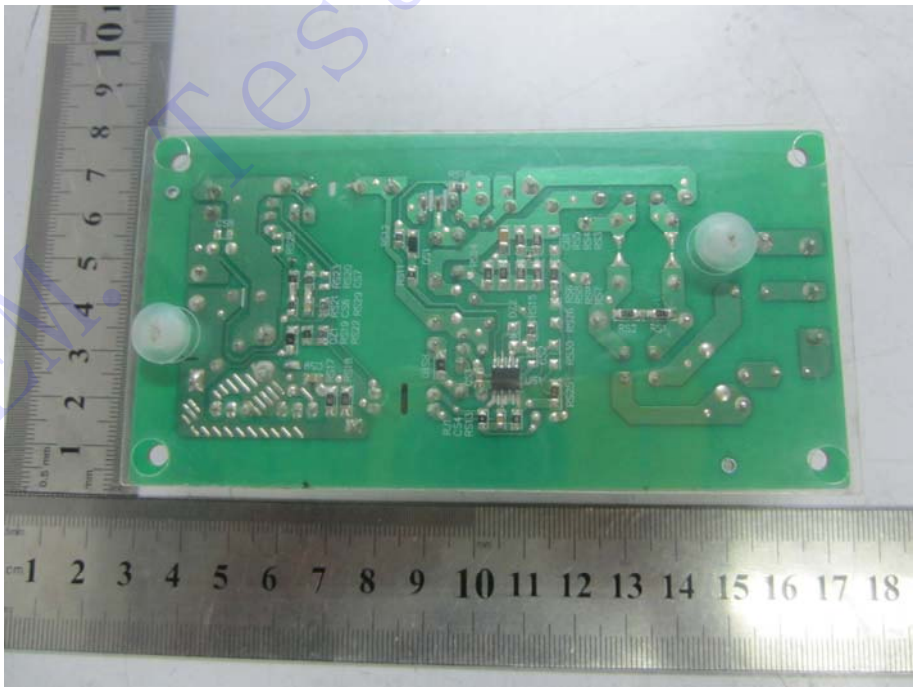
Solder Board-Component View 1



Solder Board-Component View 2

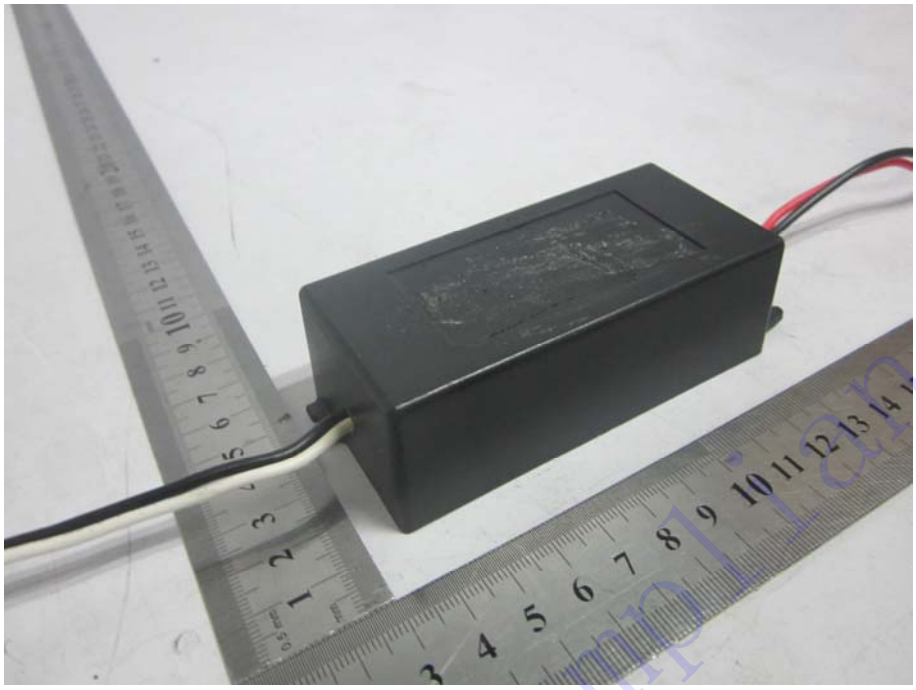


Solder Board-Component View 3

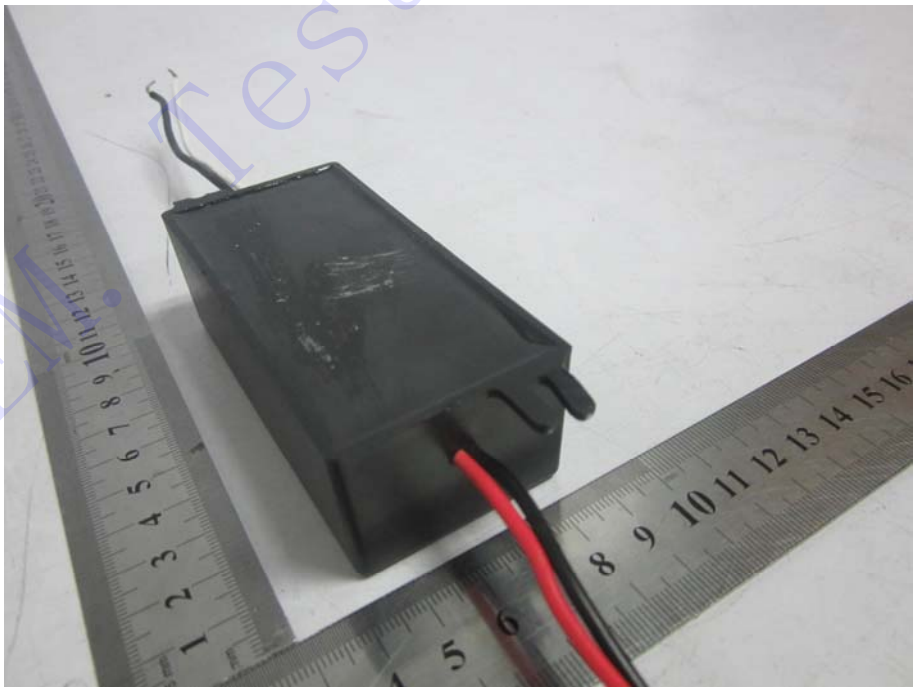


EUT Model: GTM91099-3009-4.0-P2

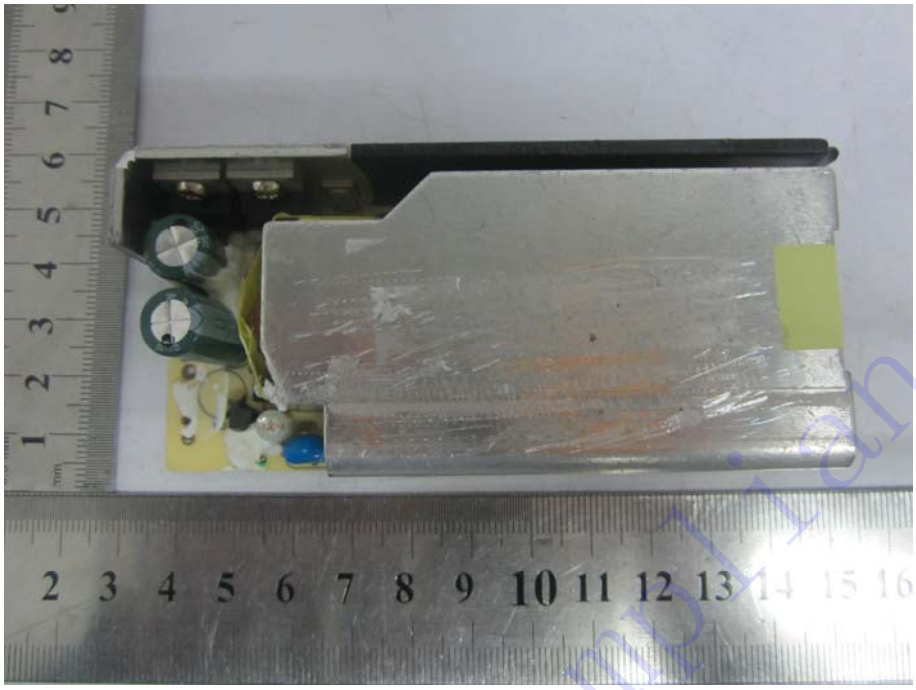
EUT View 1



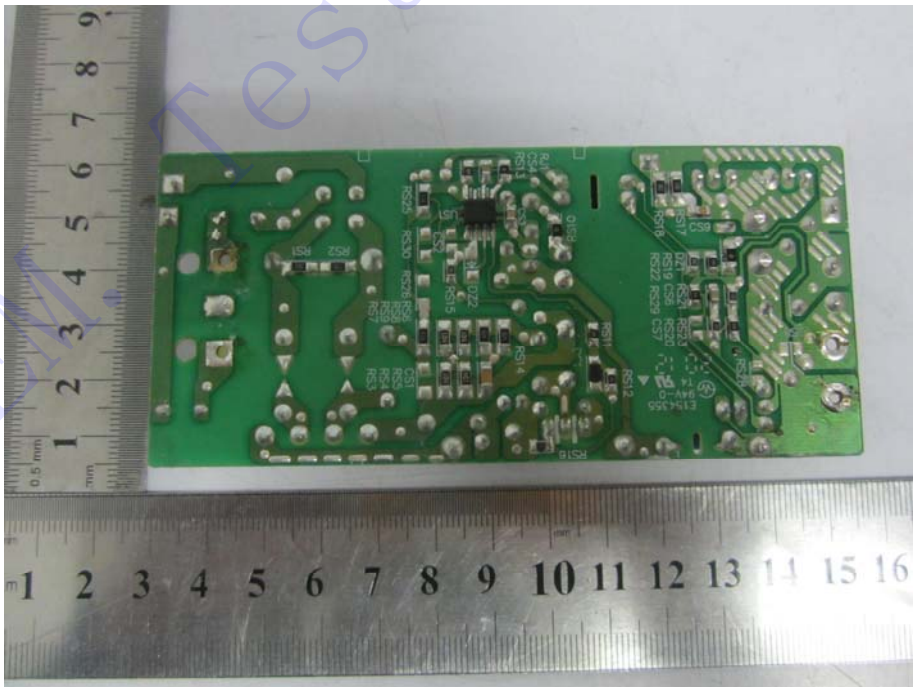
EUT View 2



Solder Board-Component View 1



Solder Board-Component View 2



Solder Board-Component View 3

Solder Board-Component View 4

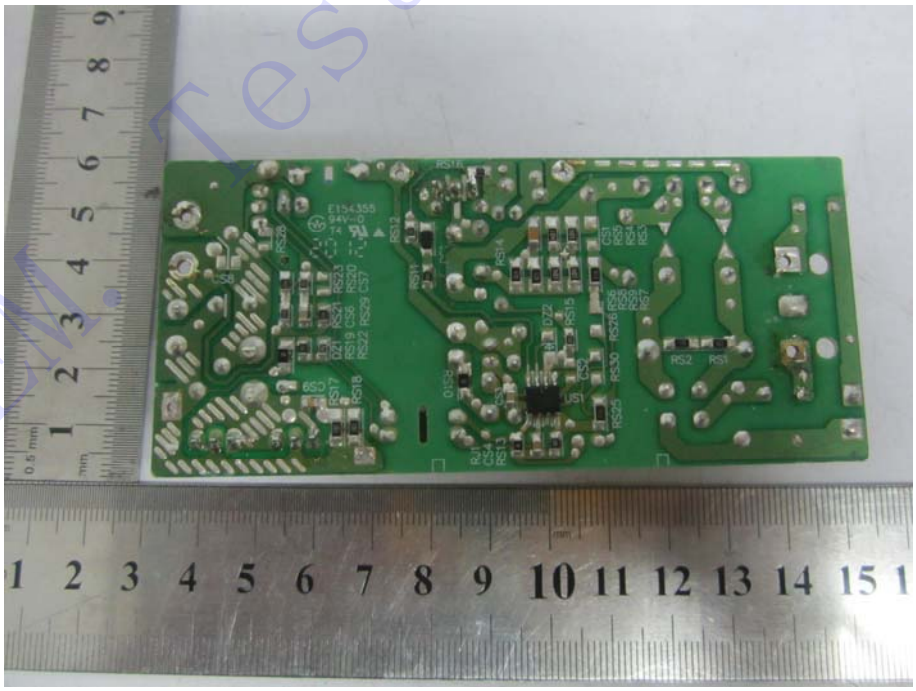
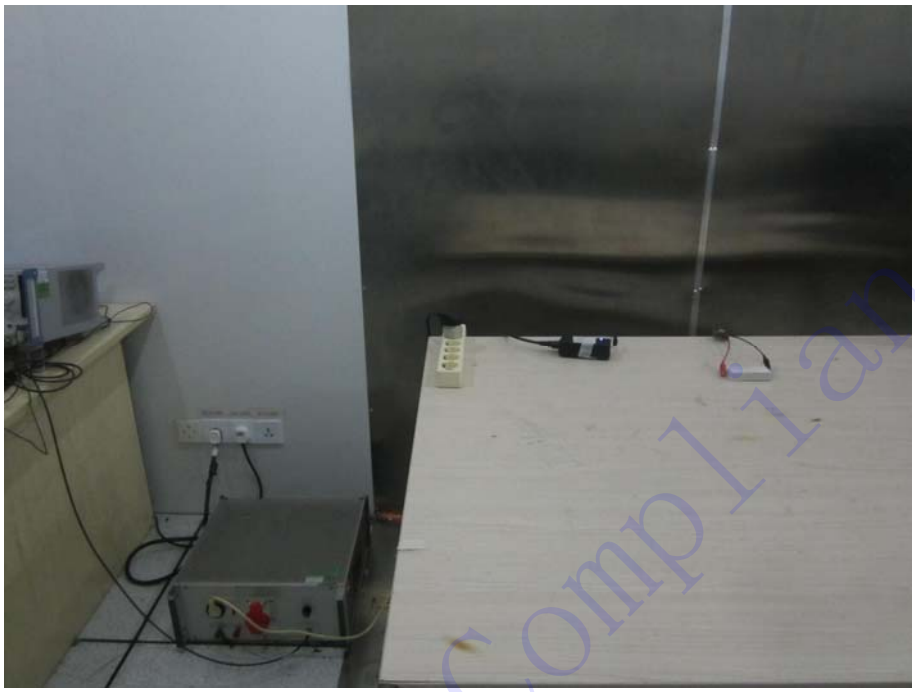


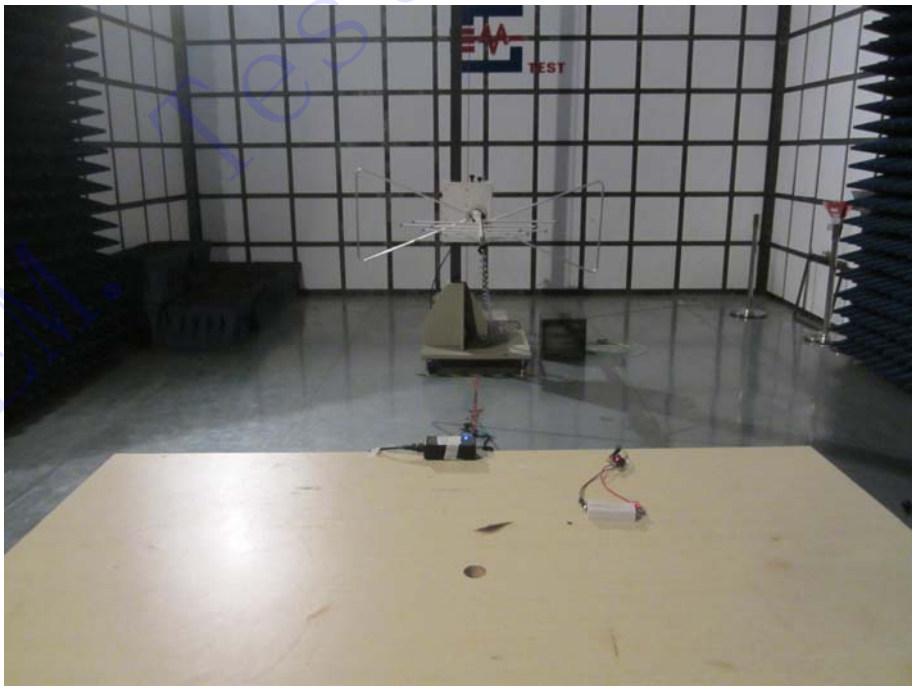
EXHIBIT 3 - TEST SETUP PHOTOGRAPHS

EUT Model: GTM91099-6048-T3A

Conduction Emission Test View



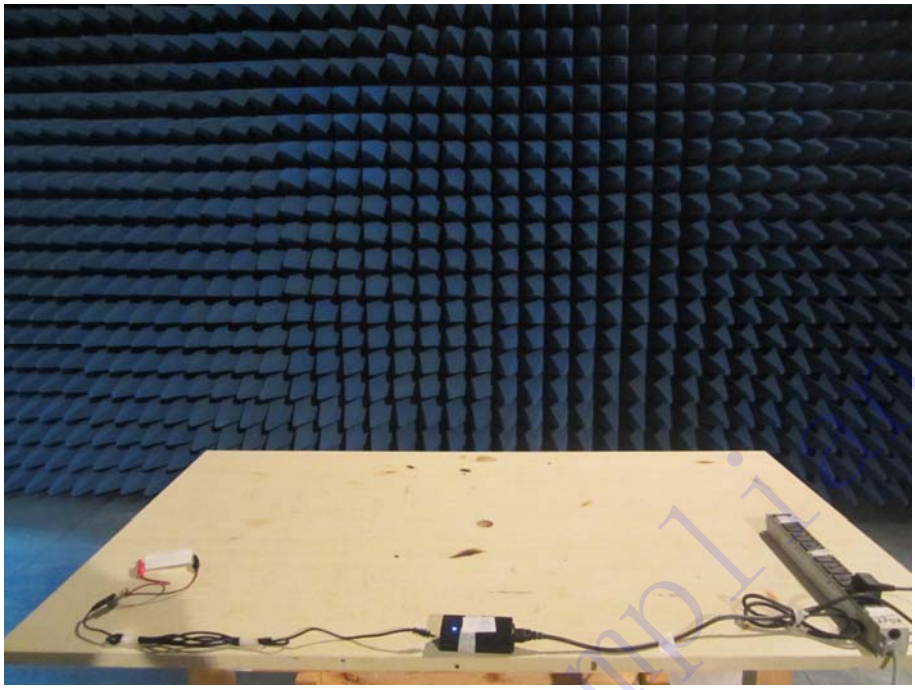
Radiation Emission Test View



Harmonic/Flicker Test View

IEC61000-4-2 Test View

IEC61000-4-3 Test View

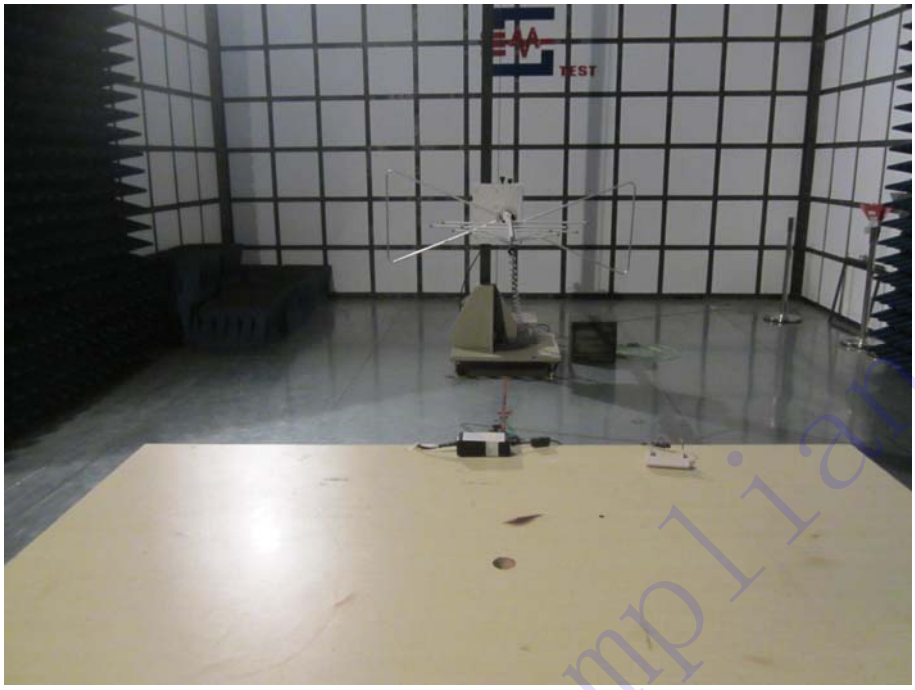


IEC61000-4-4/5/11 Test View

IEC61000-4-6 Test View

EUT Model: GTM91099-6012-T2
Conduction Emission Test View

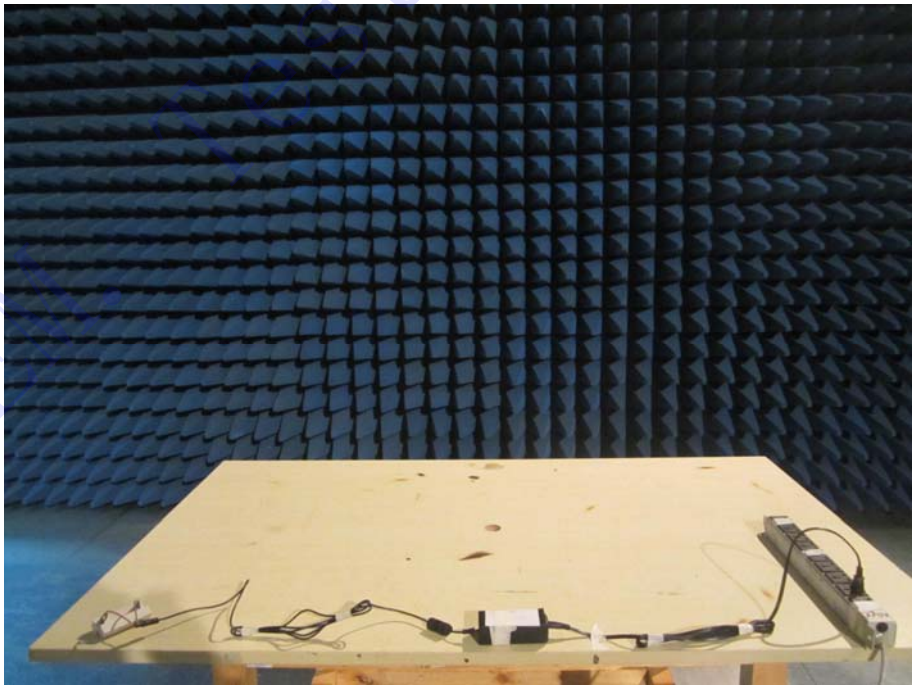
Radiation Emission Test View



Harmonic/Flicker Test View

IEC61000-4-2 Test View

IEC61000-4-3 Test View



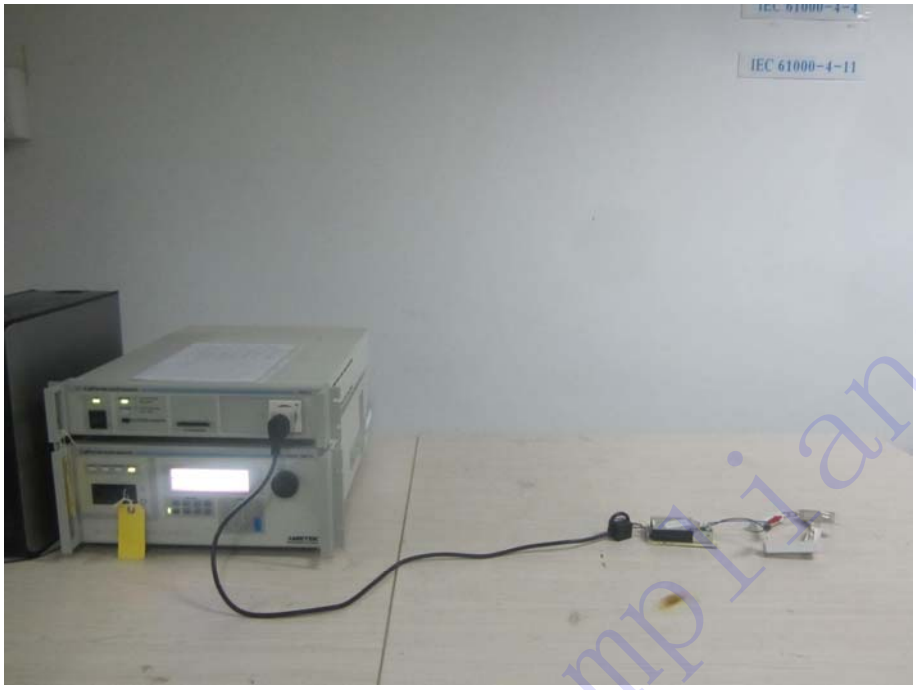
IEC61000-4-4/5/11 Test View

IEC61000-4-6 Test View

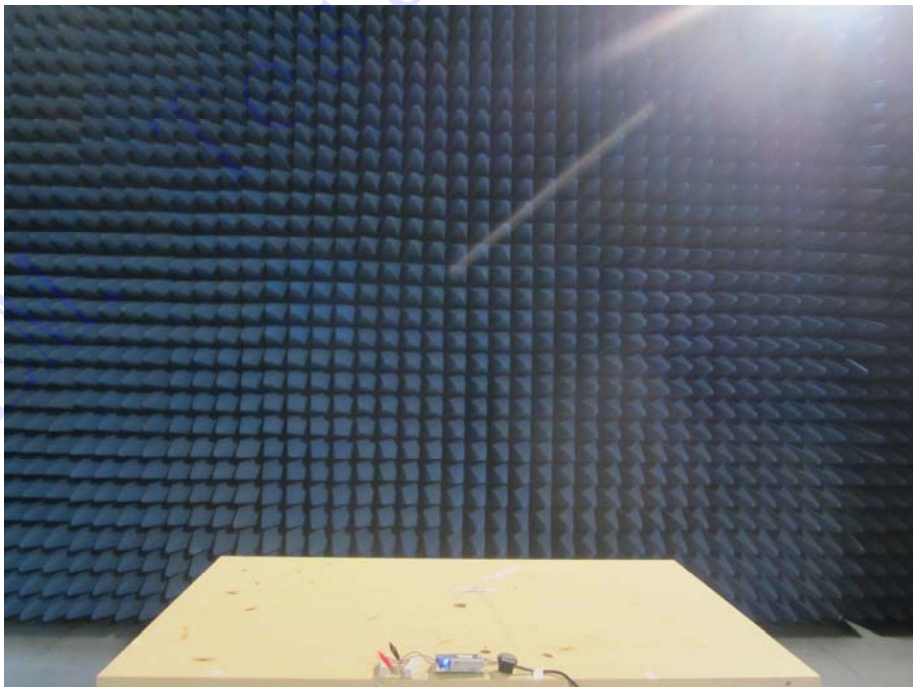
EUT Model: GTM91099-6048-FW Class II 48V
Conduction Emission Test View

Radiation Emission Test View

Harmonic/Flicker Test View



IEC61000-4-3 Test View



IEC61000-4-4/5/11 Test View

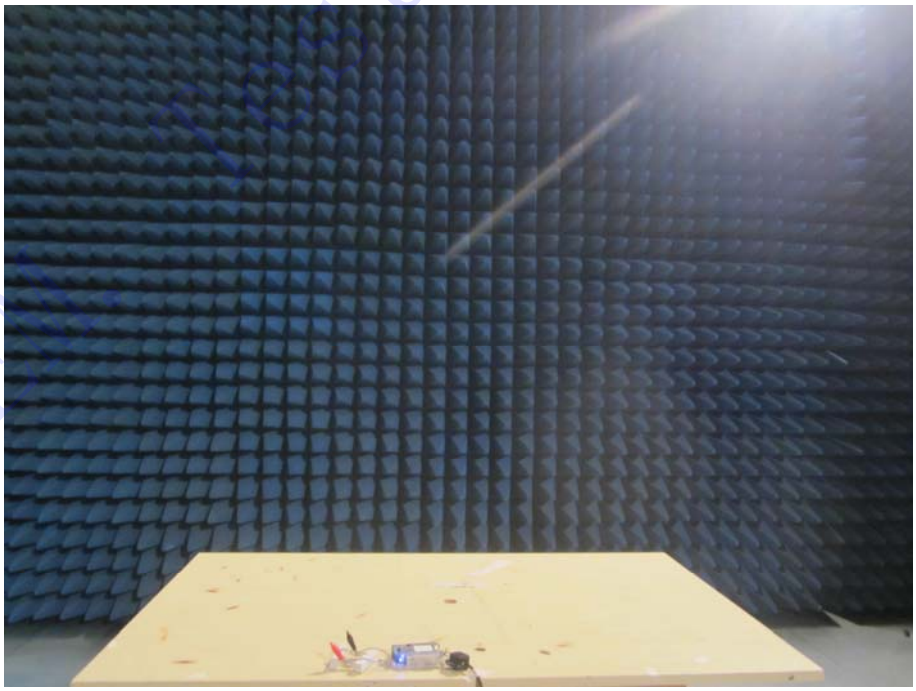
IEC61000-4-6 Test View

EUT Model: GTM91099-3009-4.0-FW Class II 5V
Conduction Emission Test View

Radiation Emission Test View

Harmonic/Flicker Test View

IEC61000-4-3 Test View



IEC61000-4-4/5/11 Test View

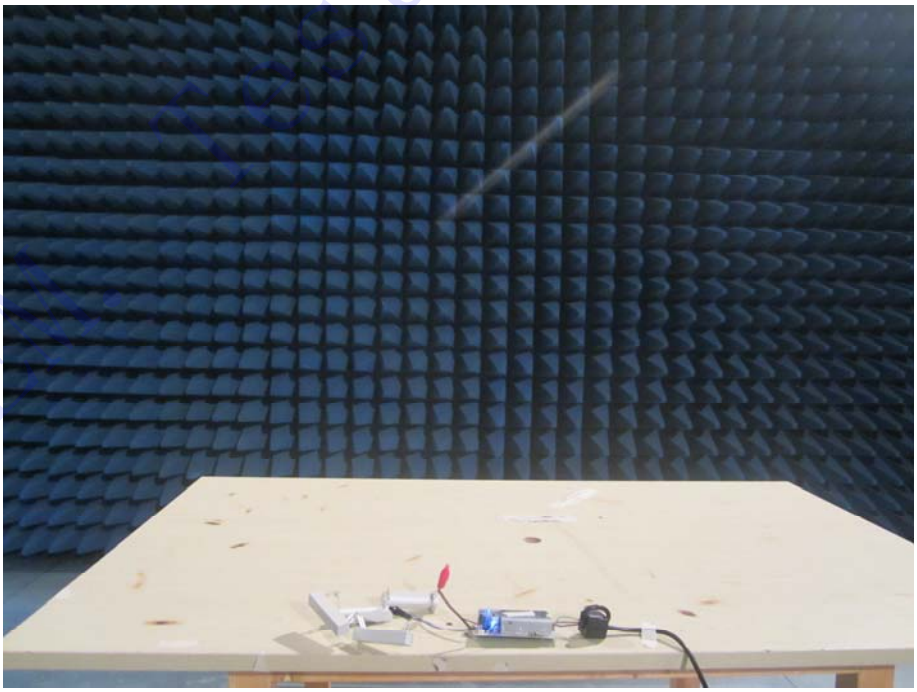
IEC61000-4-6 Test View

EUT Model: GTM91099-6048-F Class I 48V
Conduction Emission Test View

Radiation Emission Test View

Harmonic/Flicker Test View

IEC61000-4-3 Test View



IEC61000-4-4/5/11 Test View

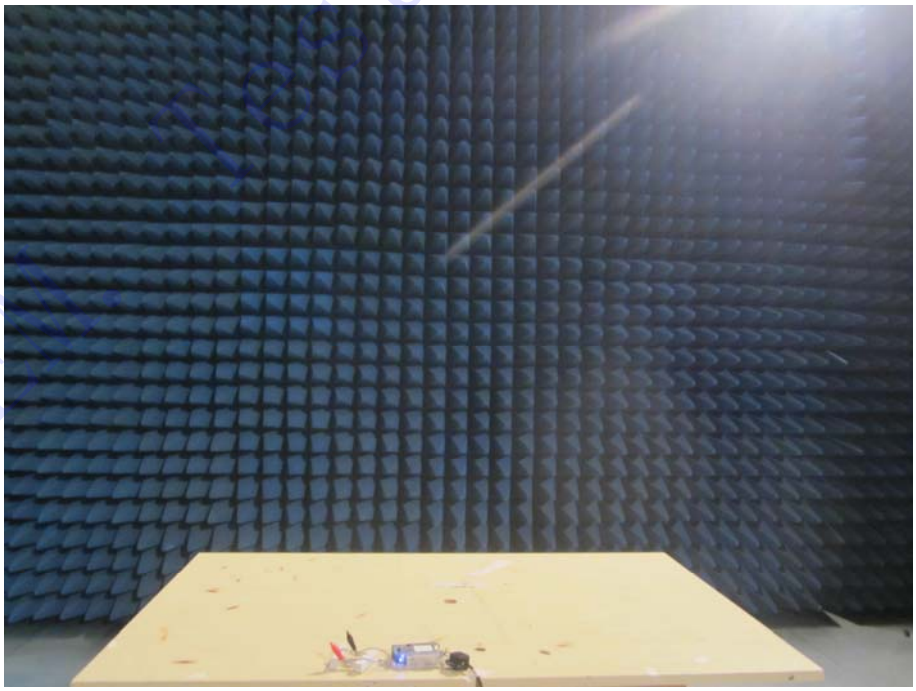
IEC61000-4-6 Test View

EUT Model: GTM91099-3009-4.0-F Class I 5V
Conduction Emission Test View

Radiation Emission Test View

Harmonic/Flicker Test View

IEC61000-4-3 Test View



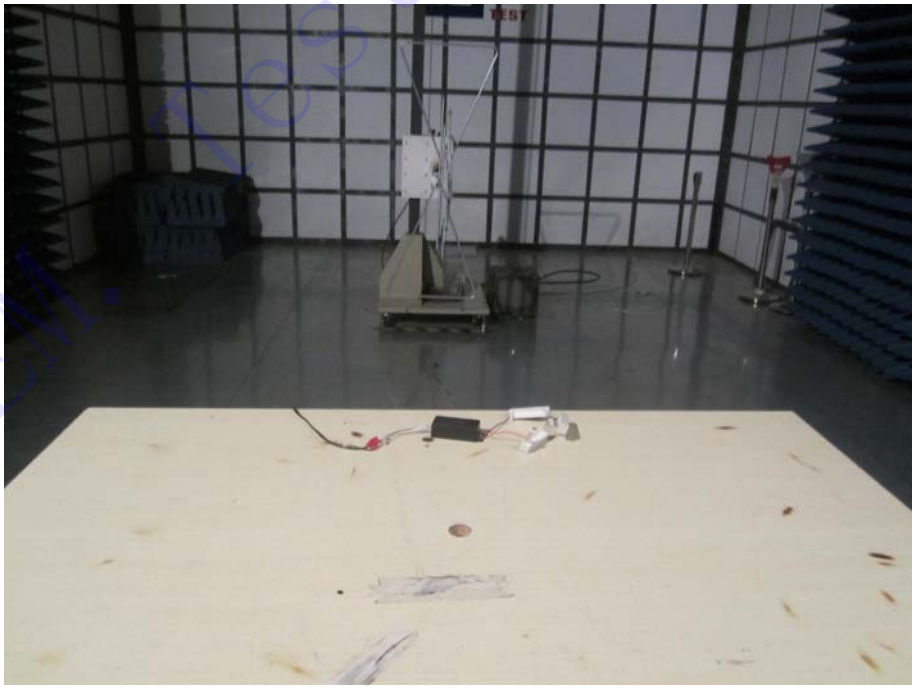
IEC61000-4-4/5/11 Test View

IEC61000-4-6 Test View

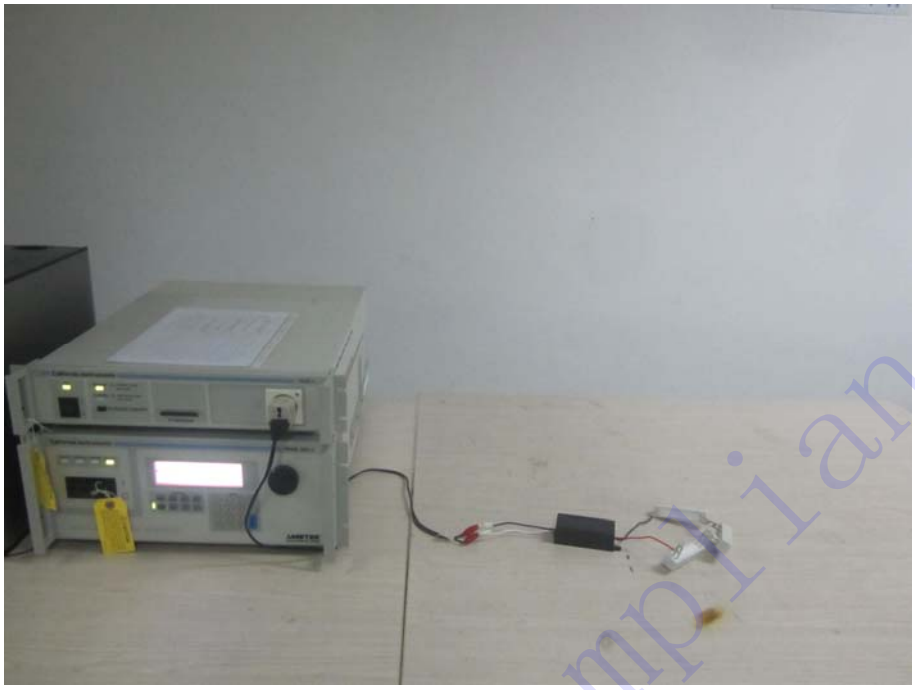
EUT Model: GTM91099-3009-4.0-P2

Conduction Emission Test View

Radiation Emission Test View

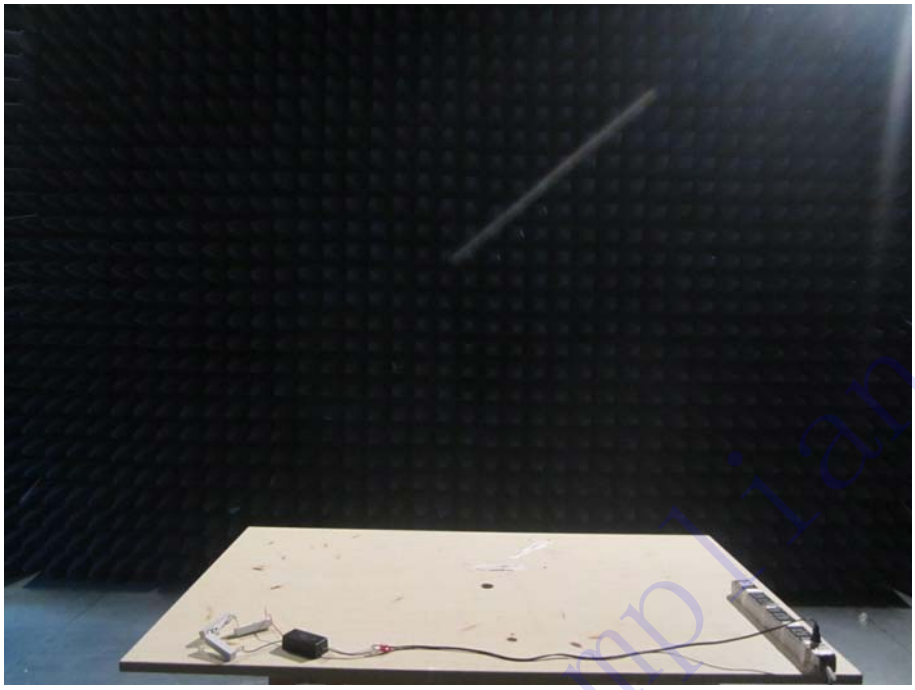


Harmonic/Flicker Test View



IEC61000-4-2 Test View

IEC61000-4-3 Test View



IEC61000-4-4/5/11 Test View

IEC61000-4-6 Test View

******* END OF REPORT *******