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 55024:2010
Product Description:	Power supply
Tested Model:	GT-81085-WWVV-X.X-W2Z
Report No.:	STR13118096E
Tested Date:	2013-11-07 to 2013-11-18
Issued Date:	2013-11-18
Tested By:	Damon Ma / 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 Shenzhen SEM.Test Technology Co., Ltd.

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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 manufacturer:	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.:	GT-81085-WWVV-X.X-W2Z
Adding Model(s):	/
Note: The test data is gathered from a production sample, provided by the manufacturer. *"WW" is output power in Watts (Max. 15 W),* *"VV" designates Standard Output Voltage in Volts and can be 7.5, 13.5, 16.6 or 24* *"-X.X" is optional or blank and designates voltage differentiator (subtracting* *"X,X" Volts from standard output voltage "VV" in 0,1 V increments)* *"Z" designates type of plug and can be E for European plug, U for UK plug, A for Australian/NZ plug, blank for North American / Japan plug, K for Korean plug, C for China plug and R for Argentina plug.* *GT-81085-1307.5-X.X-W2Z for models with output voltages 5,0 to 7,5 V (max.13 W)* *GT-81085-1513.5-X.X-W2Z for models with output voltages 9,0 to 13,5 V (max.15 W)* *GT-81085-1516.6-X.X-W2Z for models with output voltages 13,6 to 16,6 V (max.15 W)* *GT-81085-1224-X.X-W2Z for models with output voltage 16.7 to 24 V (max. 12 W)*	

Technical Characteristics of EUT	
Rated Voltage:	AC 100-240V
Rated Current:	0.5A
Rated Power:	Max. 15W
Power Adaptor Model:	/
Highest Internal Frequency:	Below 108MHz
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 intentional standards.

1.4 Test Facility

FCC – Registration No.: 934118

Shenzhen SEM.Test Technology 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 934118.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

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 Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
Power Cable	1.8	Unshielded	Without Core

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Resistance	/	48Ω	/
Resistance	/	2Ω	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without 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	Conducted Disturbance	Compliant
	Radiated Disturbance	Compliant
EN61000-3-2	Harmonic Current Emission	Compliant
EN61000-3-3	Voltage Fluctuation and Flicker	Compliant
EN55024	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.

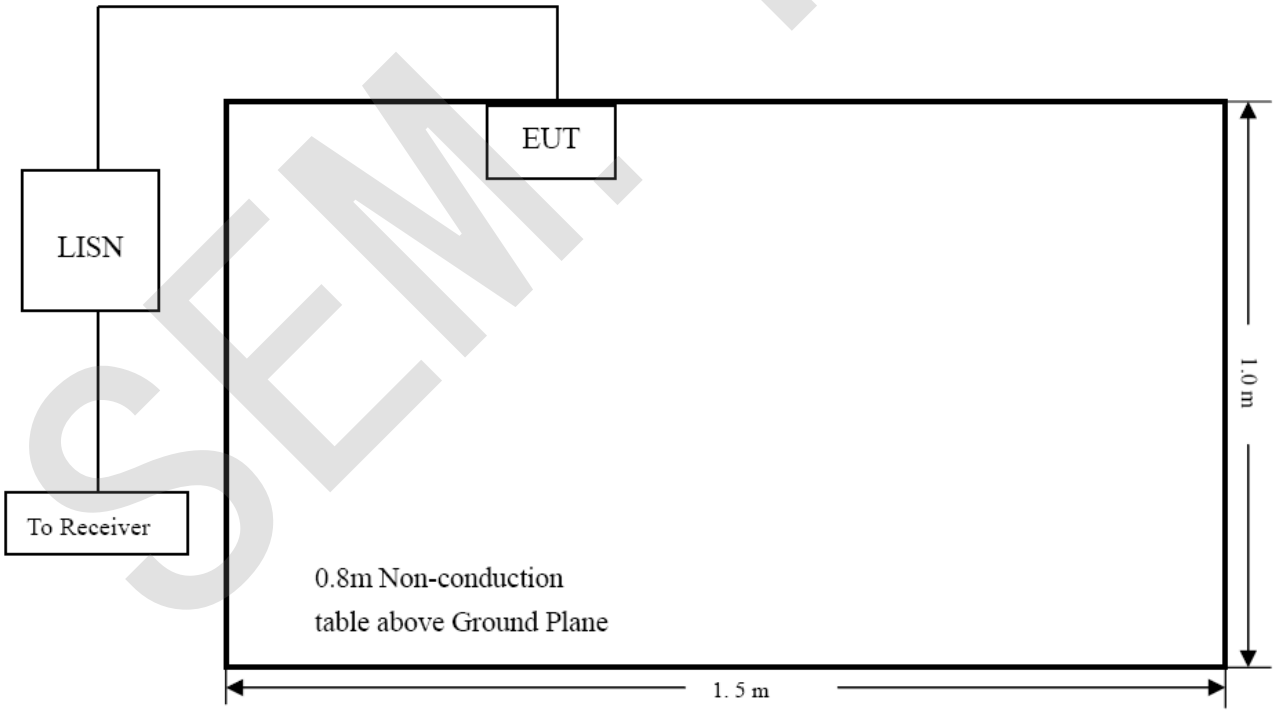
3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	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:

-5.69 dB at **0.15 MHz** in the **Line** mode, **QP** detector, **GT-81085-1224-W2E** Model, **0.15-30MHz**

3.7 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

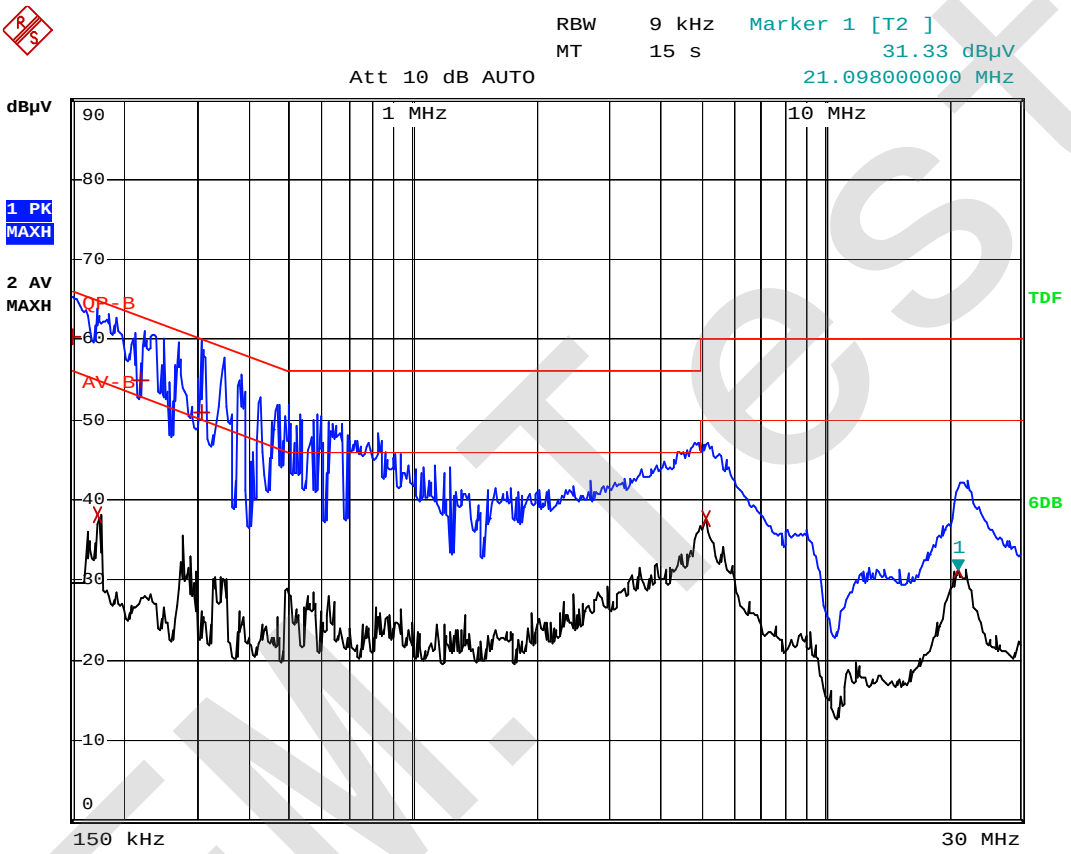
EUT: *Power supply*

Tested Model: *GT-81085-1224-W2E*

Operating Condition: *TM1*

Comment: *AC 230V/50Hz*

Test Specification: *Line*

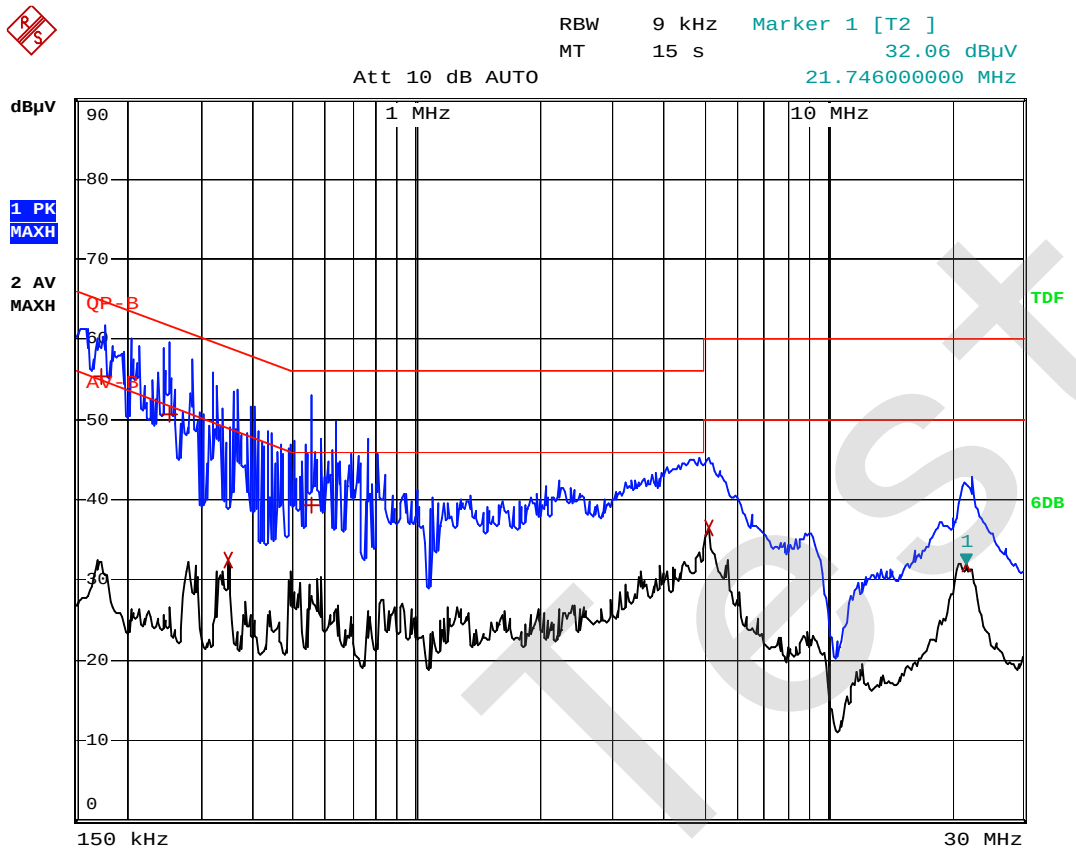


EDIT PEAK LIST (Prescan Results)

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

	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	150 kHz	60.30	-5.69
2	Average	174 kHz	38.18	-16.58
1	Quasi Peak	222 kHz	54.99	-7.74
1	Quasi Peak	306 kHz	50.90	-9.17
2	Average	5.138 MHz	37.65	-12.34
2	Average	21.098 MHz	31.33	-18.66

Test Specification: *Neutral*



EDIT PEAK LIST (Prescan Results)

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

	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	174 kHz	55.28	-9.48
1	Quasi Peak	250 kHz	50.64	-11.11
2	Average	346 kHz	32.49	-16.56
1	Quasi Peak	554 kHz	39.31	-16.68
2	Average	5.15 MHz	36.58	-13.41
2	Average	21.746 MHz	32.05	-17.94

Plot of Conducted Emissions Test Data

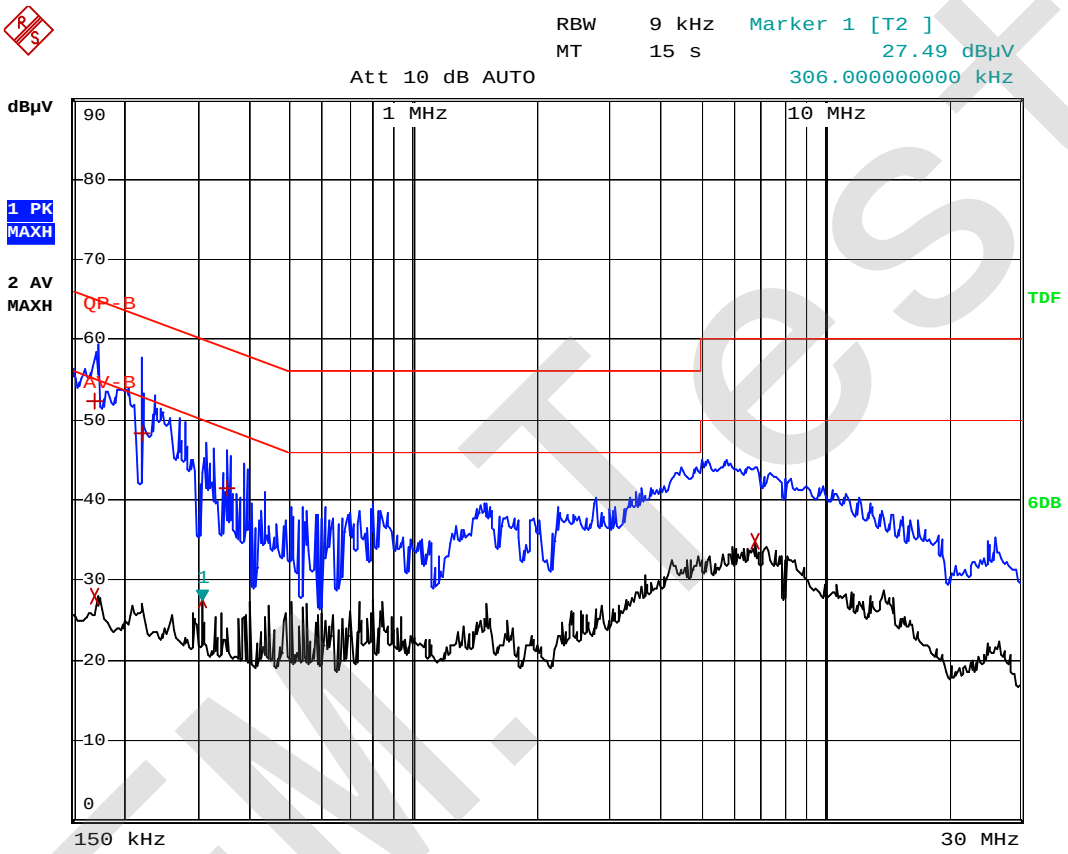
EUT: *Power supply*

Tested Model: *GT-81085-1307.5-2.5-W2E*

Operating Condition: *TM1*

Comment: *AC 230V/50Hz*

Test Specification: *Line*

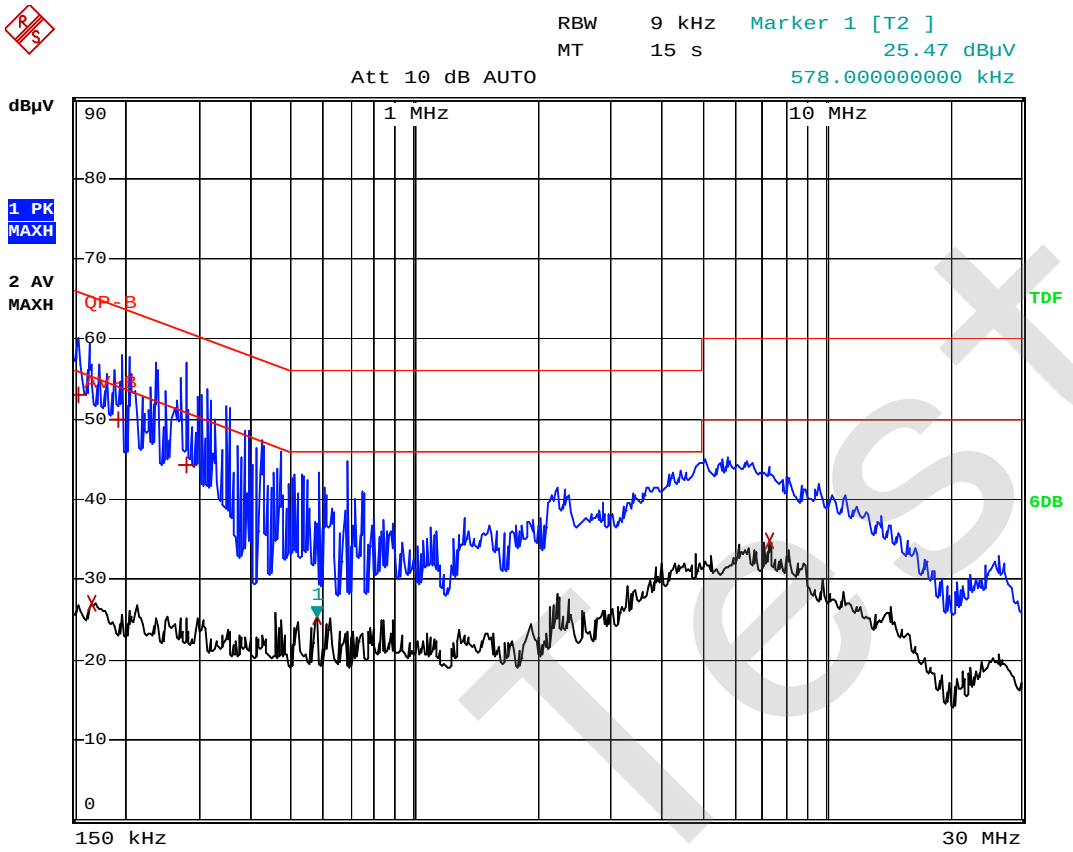


EDIT PEAK LIST (Prescan Results)

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

	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	170 kHz	52.39	-12.56
2	Average	170 kHz	28.06	-26.90
1	Quasi Peak	218 kHz	48.31	-14.58
2	Average	306 kHz	27.49	-22.58
1	Quasi Peak	350 kHz	41.43	-17.53
2	Average	6.782 MHz	34.74	-15.25

Test Specification: *Neutral*



EDIT PEAK LIST (Prescan Results)

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

	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	154 kHz	52.99	-12.78
2	Average	166 kHz	26.94	-28.21
1	Quasi Peak	194 kHz	50.02	-13.84
1	Quasi Peak	278 kHz	44.25	-16.62
2	Average	578 kHz	25.47	-20.52
2	Average	7.29 MHz	34.93	-15.07

4. Radiated Disturbance

4.1 Measurement Uncertainty

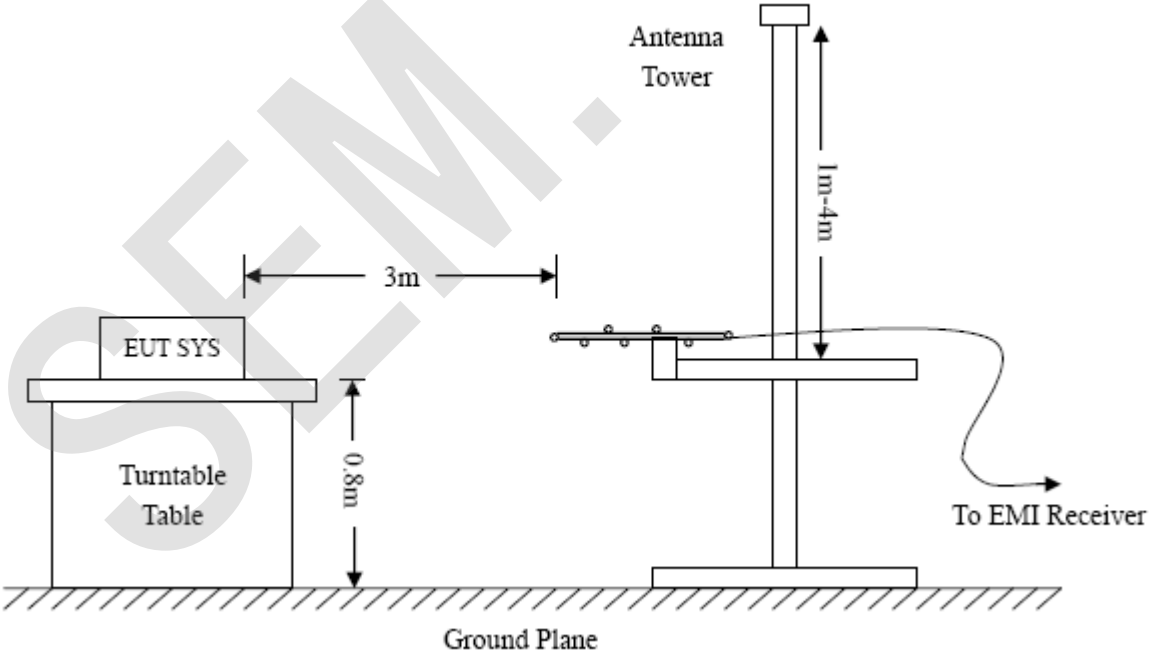
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

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

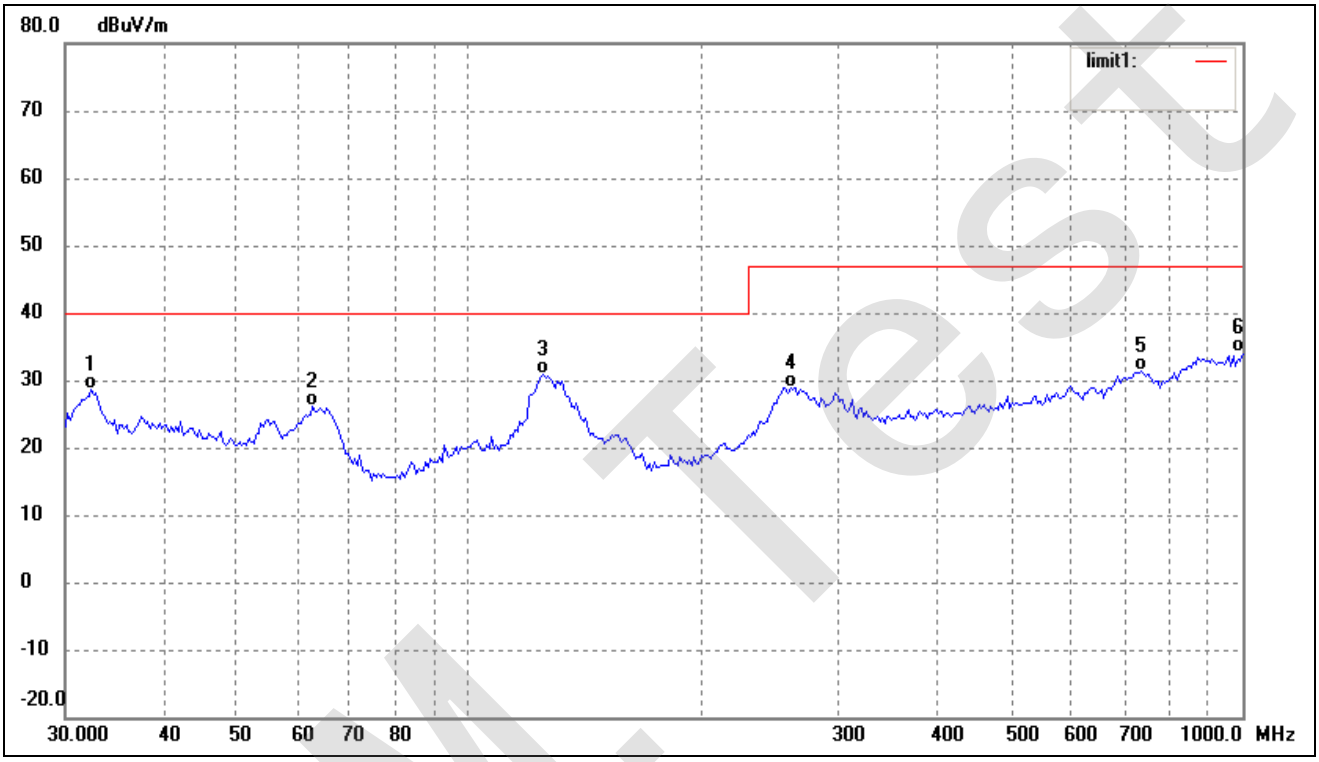
According to the data in section 4.6, the EUT complied with the EN55022 Class B standards, and had the worst margin is:

-4.81 dB at **123.6985 MHz** in the **Vertical** polarization, **GT-81085-1224-W2E** Model, **30 MHz to 1 GHz, 3Meters**

Plot of Radiated Emissions Test Data

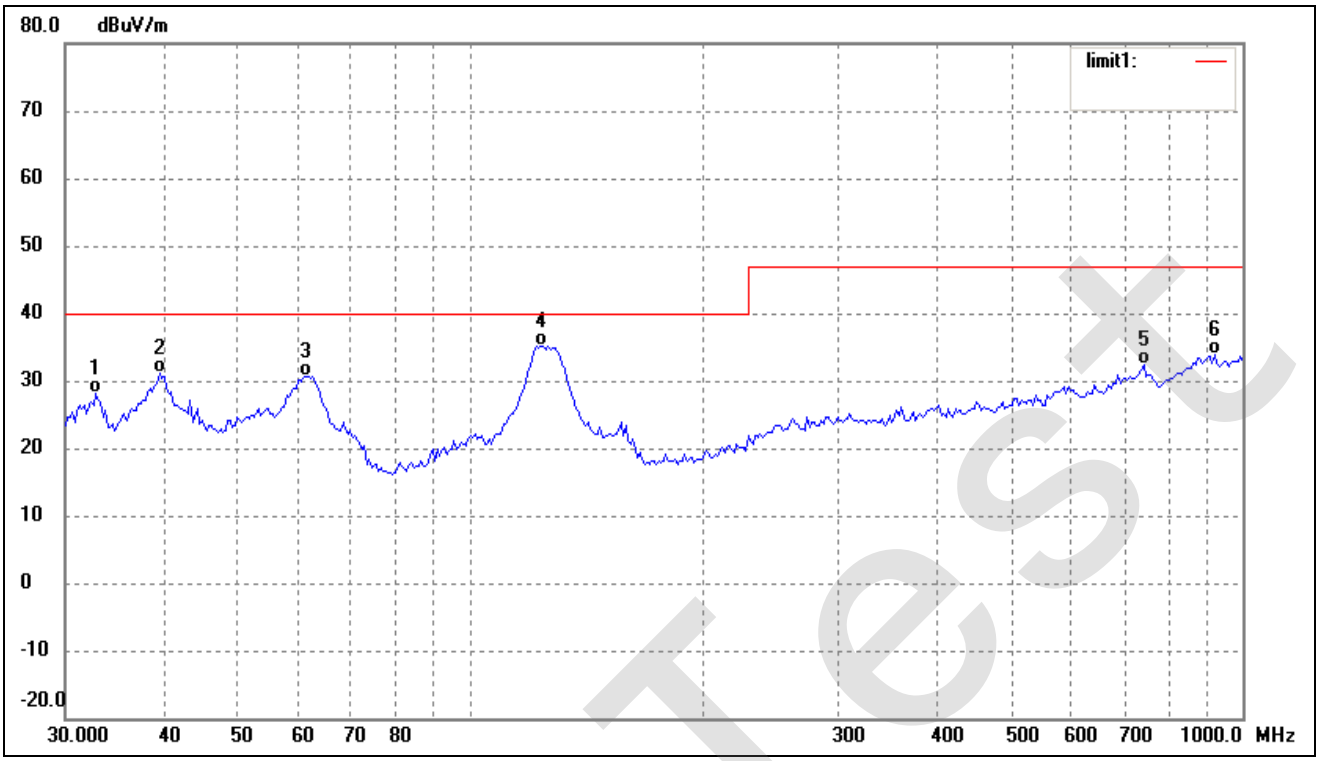
EUT: *Power supply*
Tested Model: *GT-81085-1224-W2E*
Operating Condition: *TM1*
Comment: *AC 230V/50Hz*

Test Specification: *Horizontal*



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	32.4059	20.62	8.00	28.62	40.00	-11.38	210	100	QP
2	62.6507	21.54	4.53	26.07	40.00	-13.93	250	100	QP
3	124.5690	27.32	3.65	30.97	40.00	-9.03	240	100	QP
4	260.1444	21.87	7.04	28.91	47.00	-18.09	290	100	QP
5	739.6605	15.89	15.53	31.42	47.00	-15.58	190	100	QP
6	1000.0000	16.74	17.41	34.15	47.00	-12.85	210	100	QP

Test Specification: *Vertical*

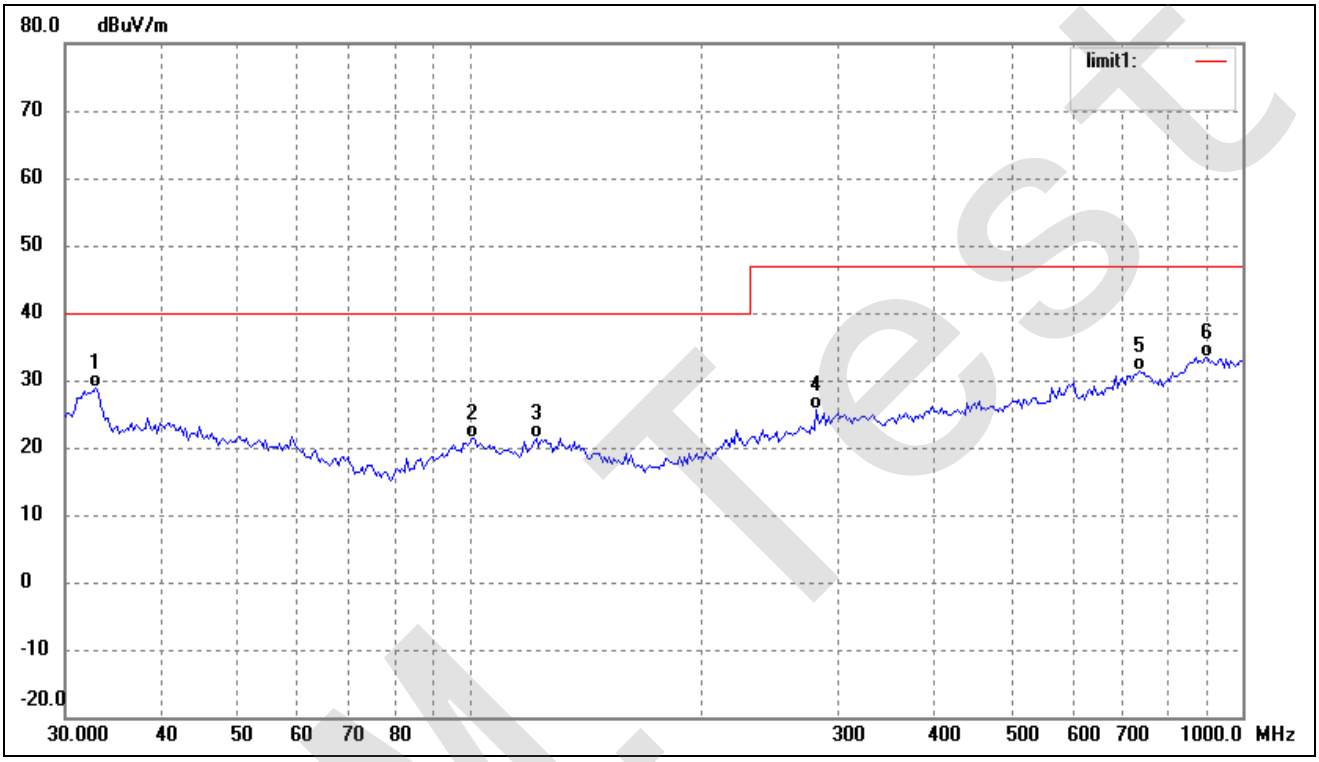


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	32.8637	19.97	8.07	28.04	40.00	-11.96	260	100	QP
2	39.7147	21.85	9.20	31.05	40.00	-8.95	250	100	QP
3	61.3463	25.76	4.95	30.71	40.00	-9.29	240	100	QP
4	123.6985	31.46	3.73	35.19	40.00	-4.81	240	100	QP
5	744.8661	17.08	15.33	32.41	47.00	-14.59	190	100	QP
6	919.2866	17.32	16.50	33.82	47.00	-13.18	230	100	QP

Plot of Radiated Emissions Test Data

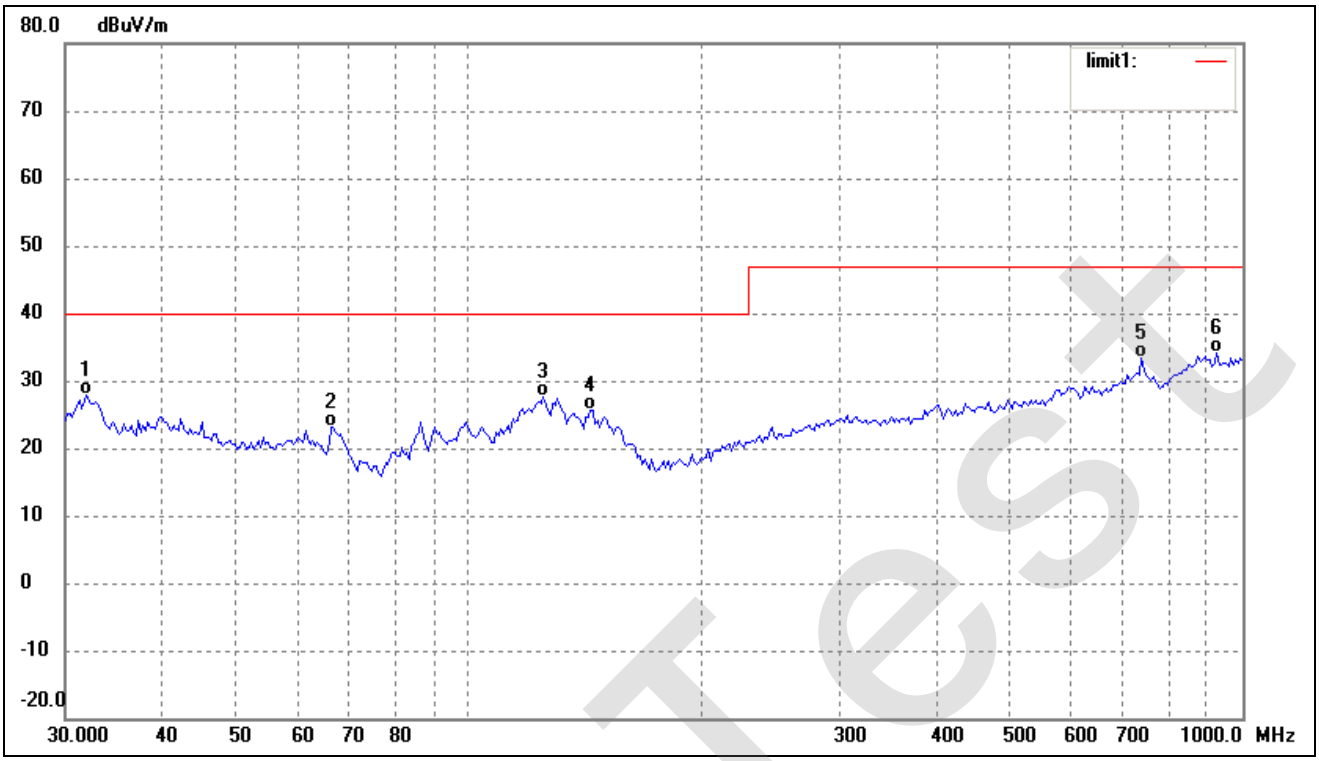
EUT: *Power supply*
Tested Model: *GT-81085-1307.5-2.5-W2E*
Operating Condition: *TM1*
Comment: *AC 230V/50Hz*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	32.8637	20.73	8.07	28.80	40.00	-11.20	120	100	QP
2	100.9340	15.29	6.03	21.32	40.00	-18.68	150	100	QP
3	121.9755	17.50	3.85	21.35	40.00	-18.65	110	100	QP
4	281.0075	17.25	8.44	25.69	47.00	-21.31	130	100	QP
5	734.4913	16.09	15.22	31.31	47.00	-15.69	150	100	QP
6	900.1474	16.52	16.85	33.37	47.00	-13.63	140	100	QP

Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	31.9546	19.96	7.93	27.89	40.00	-12.11	140	100	QP
2	66.2662	19.77	3.38	23.15	40.00	-16.85	150	100	QP
3	124.5690	23.89	3.65	27.54	40.00	-12.46	120	100	QP
4	143.3261	23.28	2.45	25.73	40.00	-14.27	130	100	QP
5	739.6605	17.79	15.53	33.32	47.00	-13.68	150	100	QP
6	925.7563	17.70	16.40	34.10	47.00	-12.90	170	100	QP

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 rated power of the EUT is less than 75W, belong to ‘equipment with a rated power of Max. 15W 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

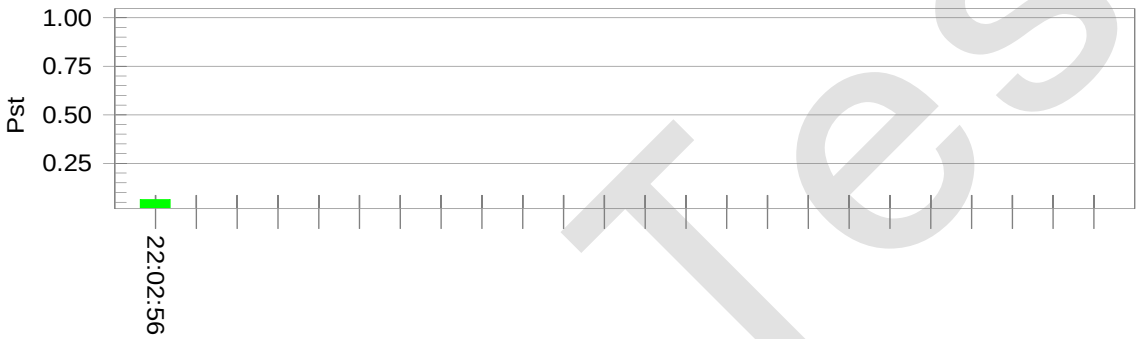
6.4 Voltage Fluctuation and Flicker Test Data

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

EUT: GT-81085-1224-W2E **Tested by: Damon**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2013-11-8 **Start time: 09:52:36 PM** **End time: 10:02:57 PM**
Test duration (min): 10 **Data file name: F-000648.cts_data**
Comment: TM1
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:

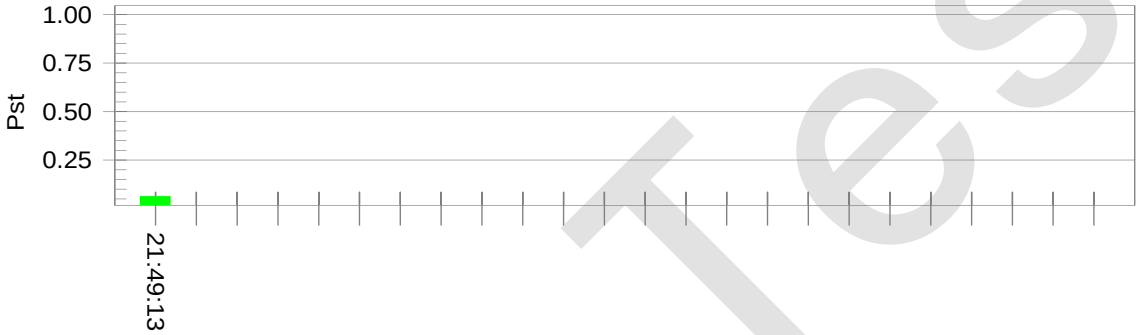
Vrms at the end of test (Volt):	**230.99**			
Highest dt (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Time(mS) > dt:	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest 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)

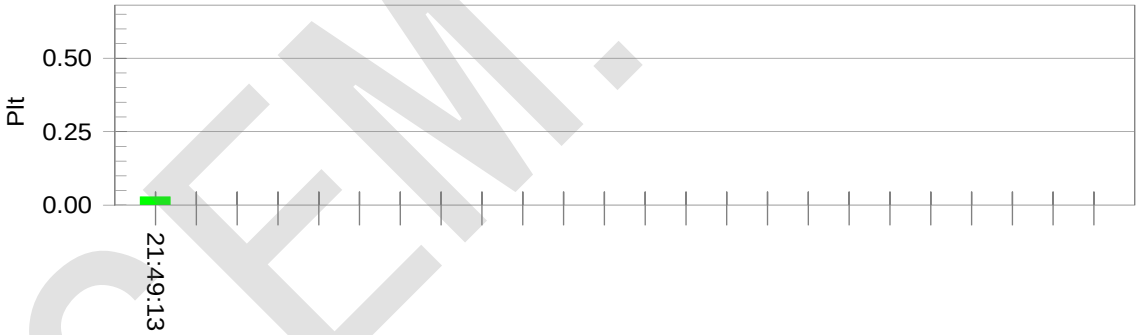
EUT: GT-81085-1307.5-2.5-W2E **Tested by: Damon**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2013-11-8 **Start time: 09:38:53 PM** **End time: 09:49:14 PM**
Test duration (min): 10 **Data file name: F-000647.cts_data**
Comment: TM1
Customer: GlobTek, Inc.

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

Pst and limit line **European Limits**



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	**230.99**			
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

Tested Model: GT-81085-1224-W2E / GT-81085-1307.5-2.5-W2E

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
Surface	A	A	A	A	A	A	A	A		
Crack	A	A	A	A	A	A	A	A		
Power Cable	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

Tested Model: GT-81085-1224-W2E / GT-81085-1307.5-2.5-W2E

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

Tested Model: GT-81085-1224-W2E / GT-81085-1307.5-2.5-W2E

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

Tested Model: GT-81085-1224-W2E / GT-81085-1307.5-2.5-W2E

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

Tested Model: GT-81085-1224-W2E / GT-81085-1307.5-2.5-W2E

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

Tested Model: GT-81085-1224-W2E / GT-81085-1307.5-2.5-W2E

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

Tested Model: GT-81085-1224-W2E / GT-81085-1307.5-2.5-W2E

Level	U	T	Phase Angle	N	Pass	Fail
1	100%	10ms	0/90/180/270	3	A	/
2	30%	500ms	0/90/180/270	3	A	/
3	100%	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

Tested Model: GT-81085-1224-W2E

CE Label Location

Tested Model: GT-81085-1307.5-2.5-W2E

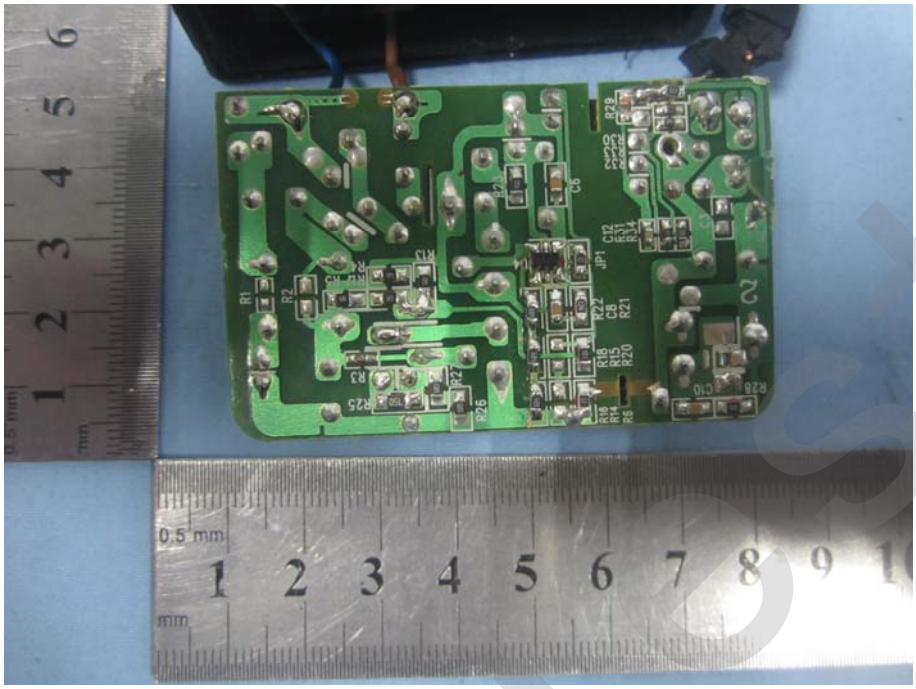
EXHIBIT 2 - EUT PHOTOGRAPHS

Tested Model: GT-81085-1224-W2E

EUT View 1

Solder Board-Component View 1

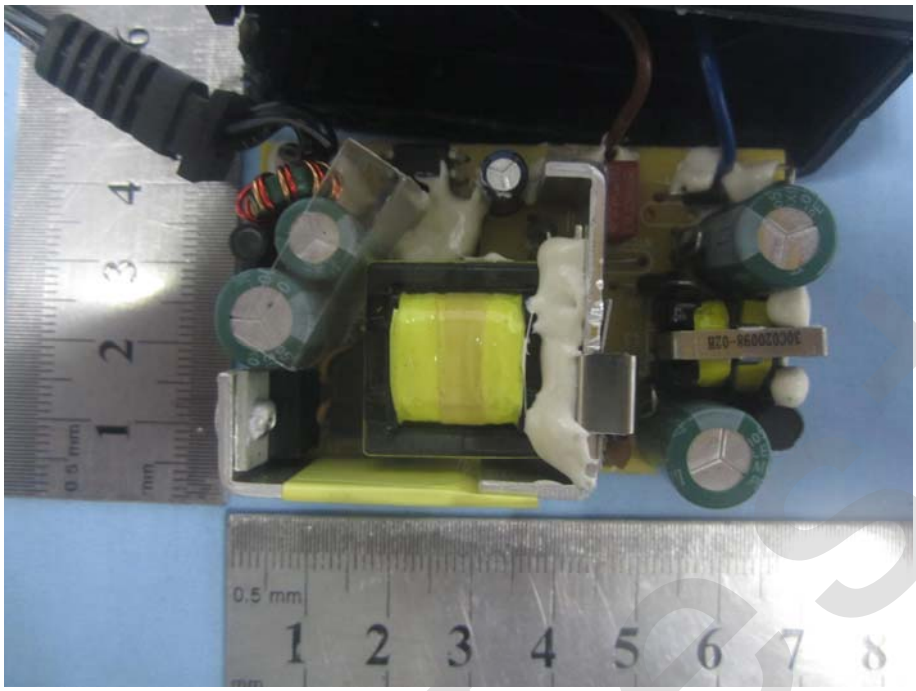
Solder Board-Component View 2



Tested Model: GT-81085-1307.5-2.5-W2E

EUT View 1

Solder Board-Component View 1



Solder Board-Component View 2

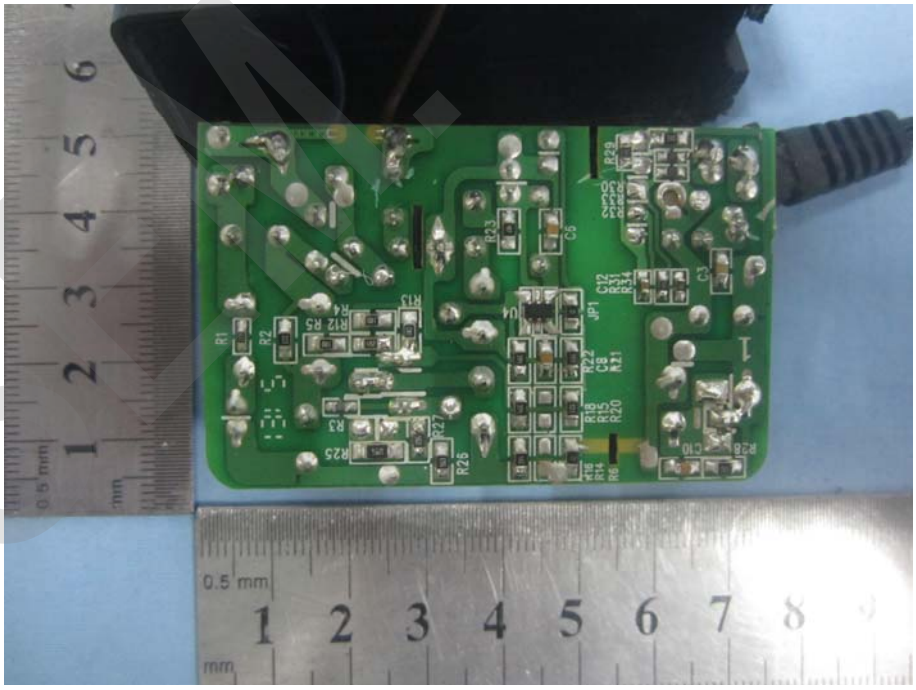
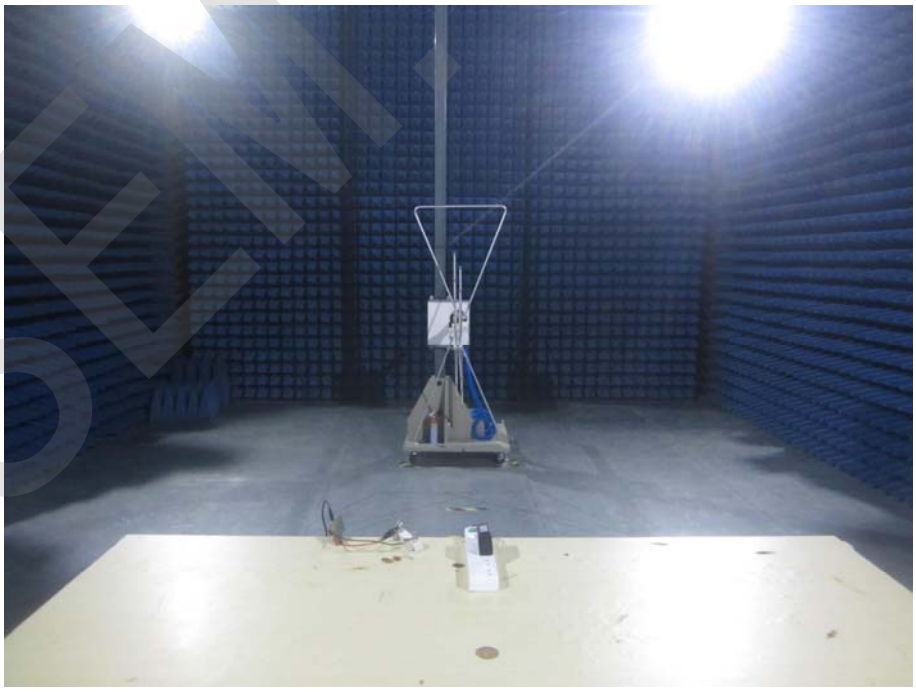


EXHIBIT 3 - TEST SETUP PHOTOGRAPHS

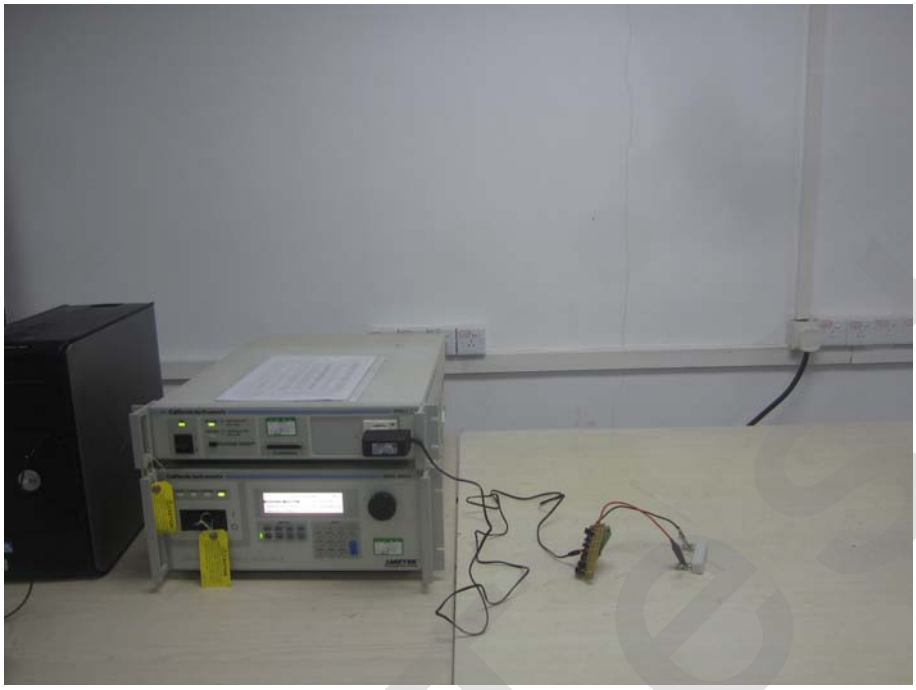
Tested Model: GT-81085-1224-W2E

Conduction Emission Test View

Radiation Emission Test View

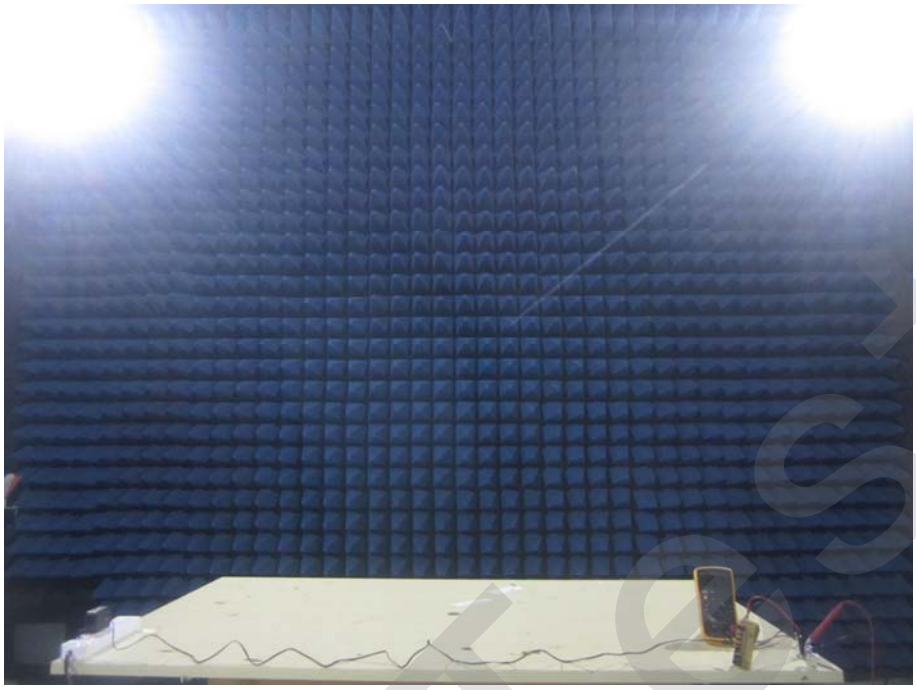


Flicker Test View

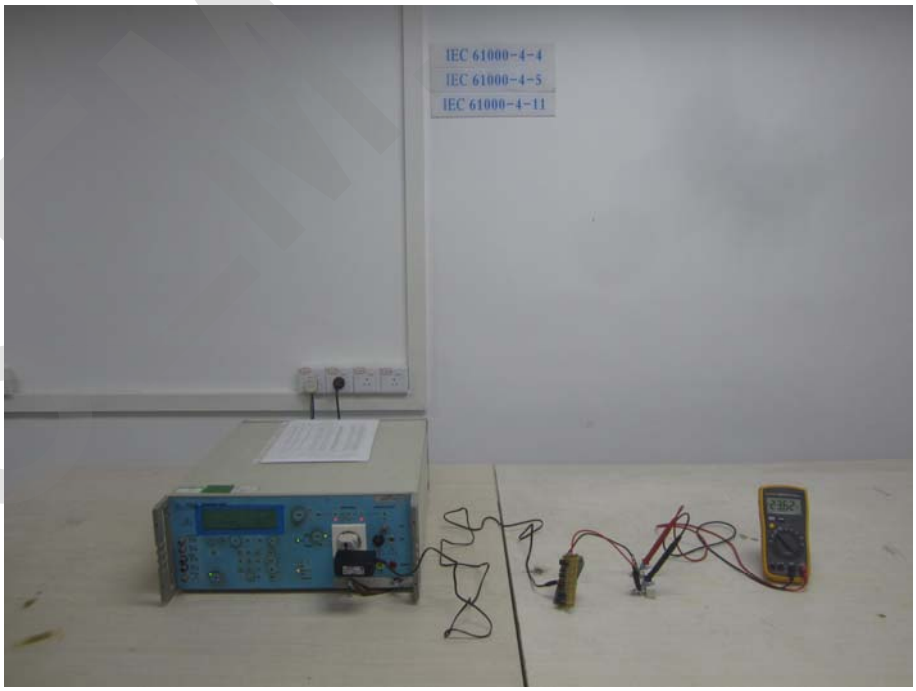


IEC61000-4-2 Test View

IEC61000-4-3 Test View



IEC61000-4-4/5/11 Test View

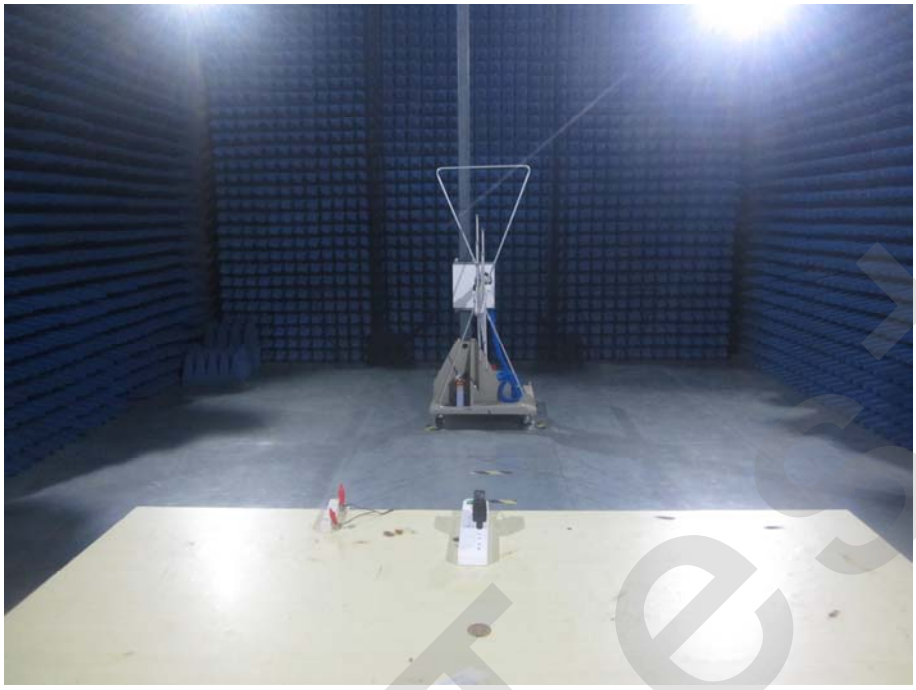


IEC61000-4-6 Test View

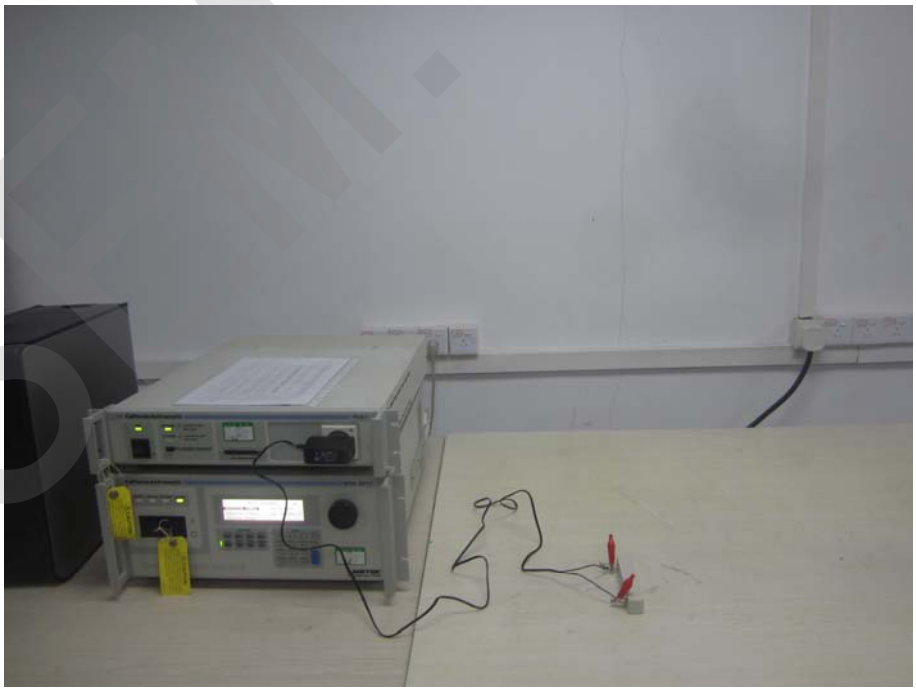
Tested Model: GT-81085-1307.5-2.5-W2E

Conduction Emission Test View

Radiation Emission Test View

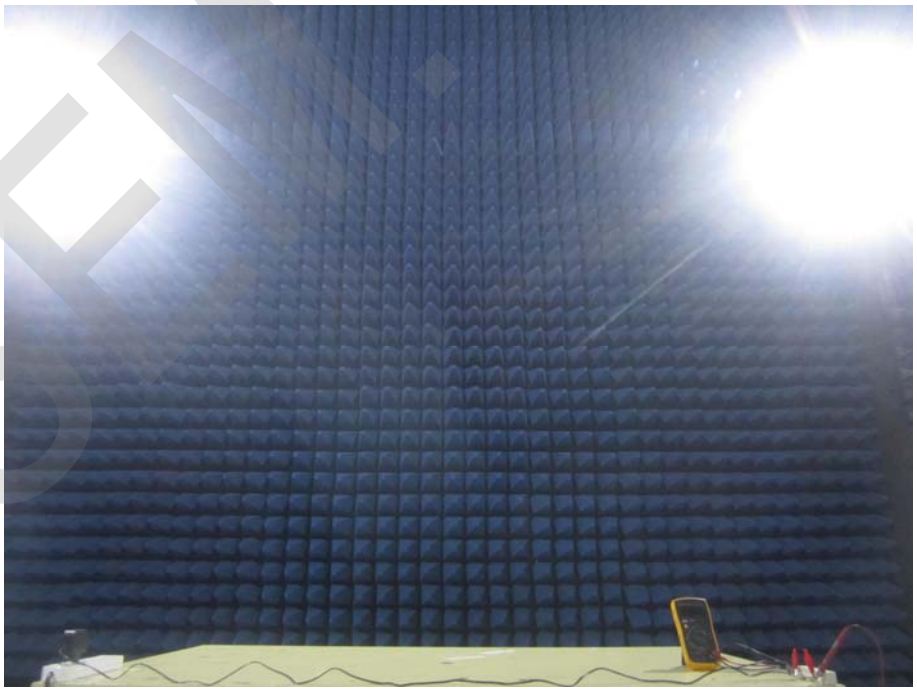


Flicker Test View

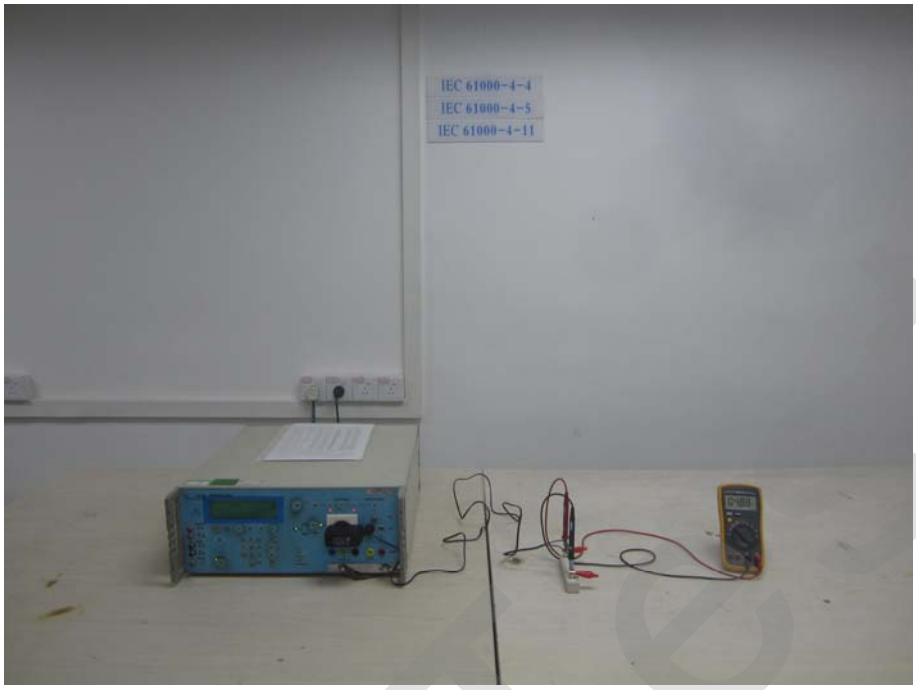


IEC61000-4-2 Test View

IEC61000-4-3 Test View



IEC61000-4-4/5/11 Test View



IEC61000-4-6 Test View

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