

CE/EMC TEST REPORT

For

GlobTek, Inc.

ITE POWER SUPPLY

Prepared for : GlobTek, Inc.

Address : 186 Veterans Dr. Northvale, NJ 07647 USA

Prepared by : EST Technology Co., Ltd.

Address : Chilingxiang, Qishantou, Santun, Houjie, Dongguan,
Guangdong, China

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Report No. : ESTE-E1504021

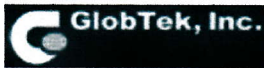



Date of Report : Apr. 13, 2015



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EST Technology Co., Ltd.

Applicant/ Manufacturer: Address:	GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647 USA		
Factory 1: Address:	GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647 USA		
Factory 2: Address:	GlobTek (Suzhou) Co., Ltd Building 4, No.76, Jin Ling East Rd., Suzhou Industrial Park, Suzhou, JiangSu 215021, China		
E.U.T:	ITE POWER SUPPLY		
Model Number:	GT-83080-WW05-USB-W2Z (WW, Z are variables, Refer to section 1.3)		
Trade Name:		Serial No:	-----
Date of Receipt:	Apr. 09, 2015	Date of Test:	Apr. 09-13, 2015
Test Specification:	EN 55022:2010 CISPR 22:2008 EN 61000-3-2:2014 EN 61000-3-3:2013 EN 55024:2010 CISPR 24:2010		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied. <div style="text-align: right;">Issue Date: Apr. 13, 2015</div>		
Prepared by:	Tested by:	Approved by:	
 _____ Amy / Assistant	 _____ Dick / Engineer	 Iceman Hu / Manager	
Other Aspects:	None.		
Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested			
This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.			

1. GENERAL PRODUCT INFORMATION

1.1. Product Function

Refer to Technical Construction Form and User Manual.

1.2. Description of Device (EUT)

Description : ITE POWER SUPPLY
Model No. : GT-83080-0505-USB-W2E
System Input Voltage : AC 100-240V, 50/60Hz, 0.2A
Output : DC 5V/1A
USB Line : Unshielded, Detachable 0.5m

1.3. Difference between Model Numbers

Model Name	Output Voltage	Output Current	Output Watt
GT-83080-WW05-USB-W2Z WW is the standard output wattage, with a maximum value of "05" Z designates type of plug and can be E for European plug, U for British plug, blank for North American / Japan plug/Taiwan plug, C for Chinese plug, I for India plug, A for Australia plug, K for Korea plug, AR for Argentina plug, BR for Brazilian plug, SA for South African plug.			
GT-83080-WW05-USB-W2Z	5V	Max.1.0A	Max.5W

1.4. Independent Operation Modes

The basic operation modes are:

1.4.1. Full Load

1.4.2. Half Load

1.4.3. No Load

2. TEST STANDARDS AND SITES

2.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION(EN 55022:2010)				
Description of Test Item	Standard	Limits		Results
Conducted disturbance at mains terminals	EN 55022:2010	Class B		PASS
		Minimum passing margin is 5.86dB at 0.41MHz		
Radiated disturbance	EN 55022:2010	Class B		PASS
		Minimum passing margin is 6.28dB at 30.00MHz		
Harmonic current emissions	EN 61000-3-2:2014	Class A		N/A
Voltage fluctuations & flicker	EN 61000-3-3:2013	Section 4.4		PASS
IMMUNITY (EN 55024:2010)				
Description of Test Item	Basic Standard	Performance Criteria	Observation Criteria	Results
Electrostatic discharge (ESD)	EN 61000-4-2:2009	B	A	PASS
Radio-frequency, Continuous radiated disturbance	EN 61000-4-3:2006+A1:2008+A2:2010	A	A	PASS
Electrical fast transient (EFT)	EN 61000-4-4:2012	B	A	PASS
Surge (Input a.c. power port)	EN 61000-4-5:2006	B	A	PASS
Radio-frequency,Continuous conducted disturbance	EN 61000-4-6:2009	A	A	PASS
Power frequency magnetic field	EN 61000-4-8:2010	A	A	PASS
Voltage dips, >95% reduction	EN 61000-4-11:2004	B	A	PASS
Voltage dips, 30% reduction		C	B	PASS
Voltage interruptions		C	B	PASS
N/A is an abbreviation for Not Applicable.				

2.2. Test Facilities

EMC Lab : Certificated by CNAS, CHINA
 Registration No.: L5288
 Date of registration: November 13, 2014

 Certificated by FCC, USA
 Registration No.: 989591
 Date of registration: November 20, 2013

 Certificated by Industry Canada
 Registration No.: 9405A
 Date of registration: January 03, 2013

 Certificated by VCCI, Japan
 Registration No.: R-3663 & C-4103
 Date of registration: July 25, 2014

 Certificated by TUV Rheinland, Germany
 Registration No.: UA 50195514 0001
 Date of registration: January 07, 2011

 Certificated by TUV/PS, Shenzhen
 Registration No.: SCN1017
 Date of registration: January 27, 2011

 Certificated by Intertek ETL SEMKO
 Registration No.: 2011-RTL-L1-18
 Date of registration: April 28, 2011

 Certificated by Nemko, Hong Kong
 Registration No.: 175193
 Date of registration: May 4, 2011

Name of Firm : EST Technology Co., Ltd.

Site Location : Chilingxiang, Qishantou, Santun, Houjie, Dongguan,
 Guangdong, China

2.3.List of Test and Measurement Instruments

2.3.1. For conducted emission at the mains terminals test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESHS30	832354	June 28,14	1 Year
Artificial Mains Networ	Rohde & Schwarz	ENV216	101260	June 28,14	1 Year
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	101100	June 28,14	1 Year

2.3.2. For radiated emission test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESVS10	100004	June 28,14	1 Year
Spectrum Analyzer	Agilent	E4411B	MY50140697	June 28,14	1 Year
Bilog Antenna	Teseq	CBL 6111D	25872	June 28,14	1.5 Year
Signal Amplifier	Agilent	310N	187037	June 28,14	1 Year

2.3.3. For harmonic current emissions and voltage fluctuations/flicker test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Analyzer	Chroma	6630	663000002099	June 28,14	1 Year
Voltage Source	Chroma	6530	653000007115	N/A	N/A

2.3.4. For electrostatic discharge immunity test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
ESD Generator	HAEFELY	ONYX16	174153	June 28,14	1 Year

2.3.5. Radio Frequency Electromagnetic Field Immunity (R/S) Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Signal Generator	HP	8648A	3426A01263	June 28,14	1 Year
Amplifier	A&R	500A100	17034	June 28,14	1 Year
Amplifier	A&R	100W	17028	June 28,14	1 Year
Isotropic Field Monitor	A&R	FM2000	16829	June 28,14	1 Year
Isotropic Field Probe	A&R	FP2000	16755	June 28,14	1 Year
Biconic Antenna	EMCO	3108	9507-2534	June 28,14	1 Year
Log-periodic Antenna	A&R	AT1080	16812	June 28,14	1 Year

2.3.6. For electrical fast transient/burst immunity test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EFT Generator	HAEFELY	ECOMPACT 4	173659	June 28,14	1 Year

2.3.7. For surge immunity test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Surge Controller	HAEFELY	PSURGE8000	174034	June 28,14	1 Year
Surge Impulse Module	HAEFELY	PIM100	174125	June 28,14	1 Year
Surge Coupling Module	HAEFELY	PCD100	174134	June 28,14	1 Year

2.3.8. For injected currents susceptibility test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
CS Test System	FRANKONIA	CIT-10	126A1163	June 28,14	1 Year
CDN	FRANKONIA	CDN-M2+M3	A2210150	June 28,14	1 Year

2.3.9.For power frequency magnetic field immunity test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Magnetic Field Tester	HEAFELY	MFS 100	-----	June 28,14	1 Year

2.3.10.For voltage dips and short interruptions immunity test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
DIPS Tester	HAEFELY	ECOMPACT 4	173659	June 28,14	1 Year

3. TEST SET-UP AND OPERATION MODES

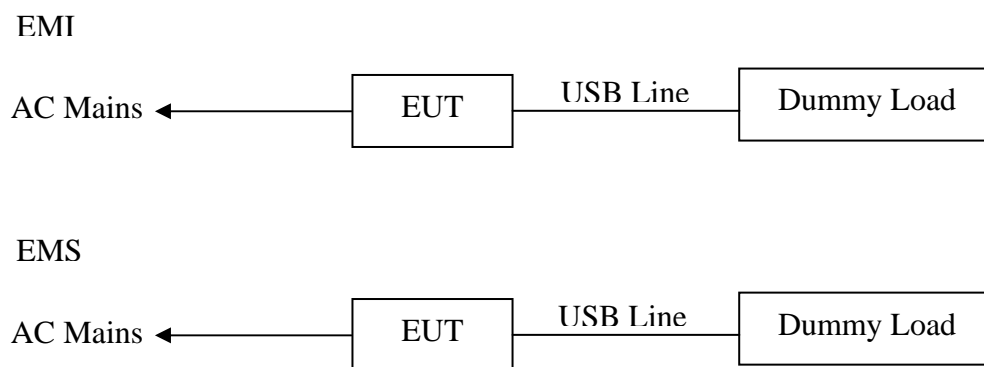
3.1. Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

Immunity: The equipment under test (EUT) was configured to the representative operating mode and conditions.

3.2. Block Diagram of Test Set-up

System Diagram of Connections Between EUT and Simulators



(EUT: ITE POWER SUPPLY)

3.3. Test Operation Mode and Test Software

Refer to Test Setup in clause 4 & 5.

3.4. Special Accessories and Auxiliary Equipment

None.

3.5. Countermeasures to Achieve EMC Compliance

None.

4. EMISSION TEST RESULTS

4.1. Conducted Emission at The Mains Terminals Test

RESULT : **Pass**
Test procedure : EN 55022:2010
Frequency range : 0.15 ~ 30MHz
Test Site : Shielded Room
Limits : EN 55022:2010 Class B

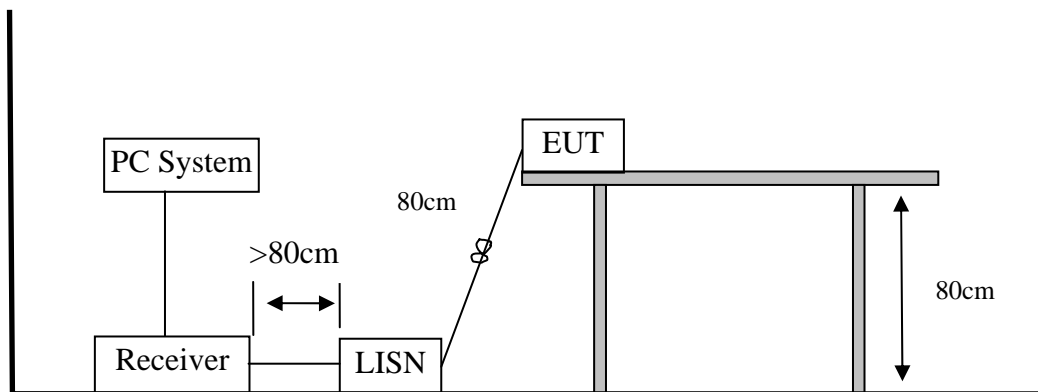
Test Setup

Date of test : Apr. 12, 2015
Model No. : GT-83080-0505-USB-W2E
Input Voltage : AC 100V/60Hz, AC 240V/50Hz
Operation Mode : Full/ Half/ No Load

The frequency range from 150 kHz to 30 MHz was investigated.

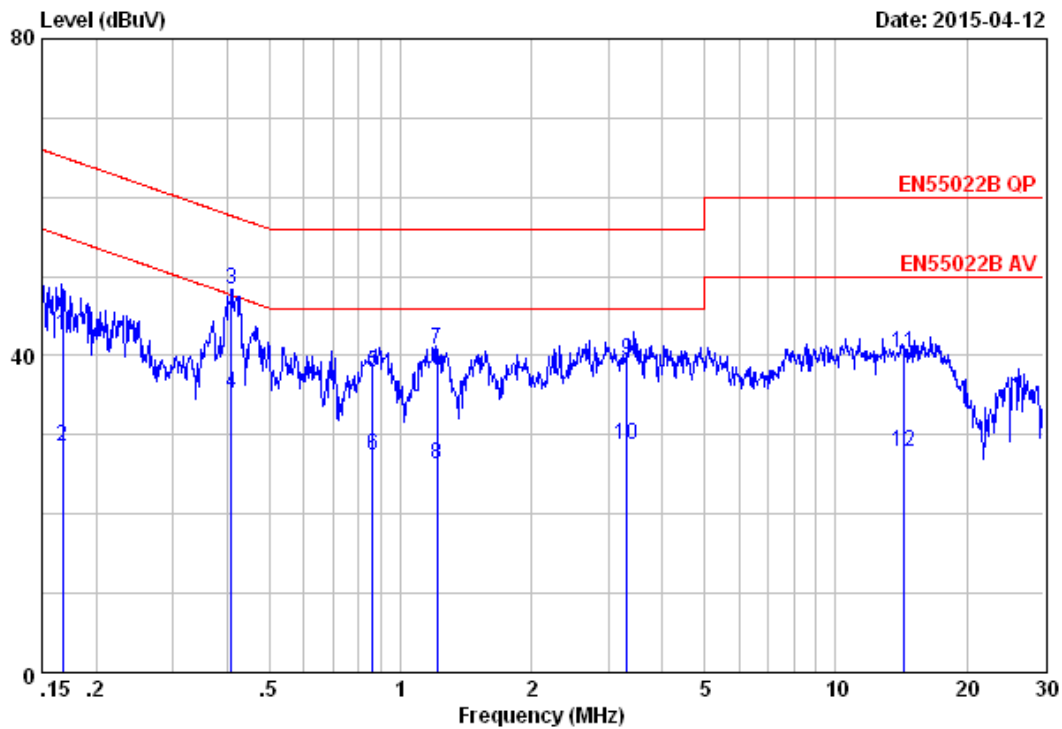
The bandwidth of the test receiver was set at 9 kHz.

The test data of the worst case condition(s) was reported on the following page.



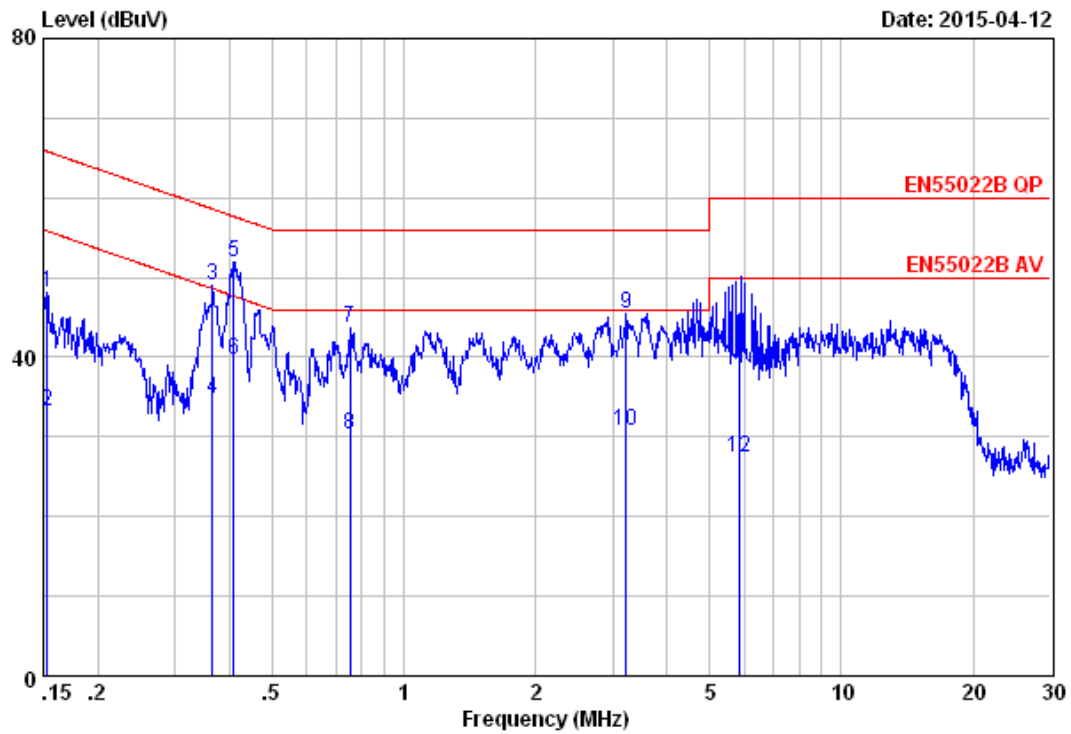
Note: Test uncertainty: $\pm 2.54\text{dB}$ at a level of confidence of 95%.

Test Data



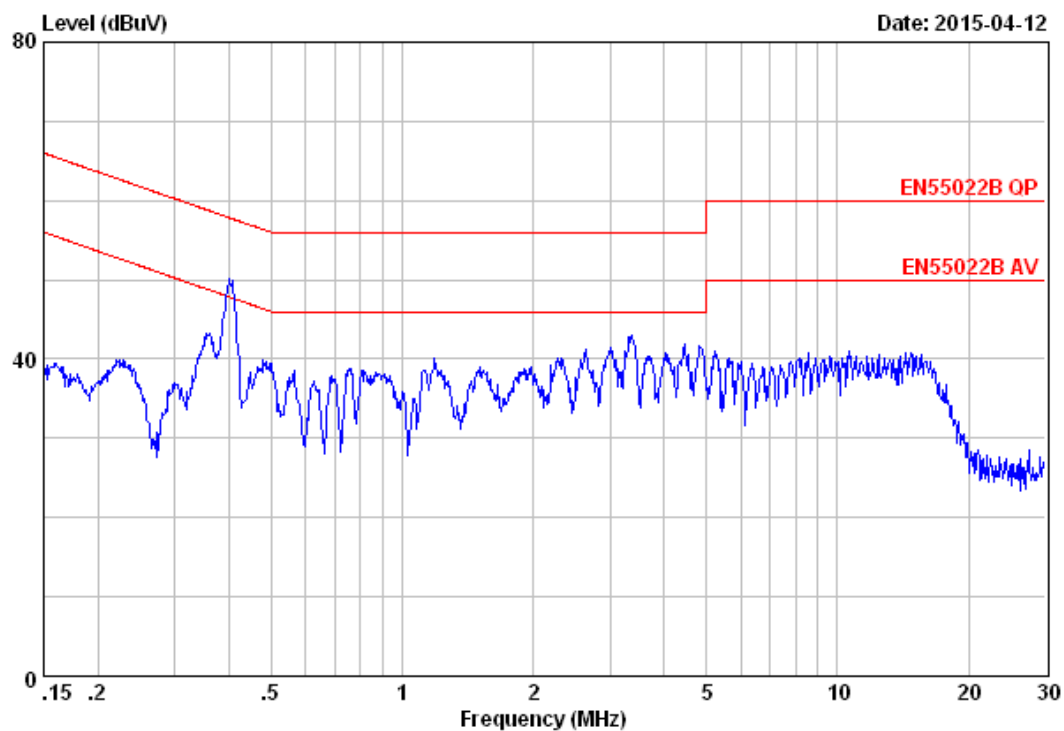
Site no. : EST Conduction Shielded RoomData no. : 773
 Limit : EN55022B QP LINE Phase : NEUTRAL
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa
 Engineer : Dick
 EUT : ITE POWER SUPPLY
 Power : AC 240V/50Hz
 M/N : GT-83080-0505-USB-W2E
 Test Mode : Full Load

	Freq.	LISN	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dB)	
1	0.17	9.52	9.81	23.20	42.53	65.08	22.55	QP
2	0.17	9.52	9.81	9.17	28.50	55.08	26.58	Average
3	0.41	9.59	9.82	28.99	48.40	57.68	9.28	QP
4	0.41	9.59	9.82	15.79	35.20	47.68	12.48	Average
5	0.86	9.62	9.82	18.36	37.80	56.00	18.20	QP
6	0.86	9.62	9.82	7.96	27.40	46.00	18.60	Average
7	1.22	9.61	9.82	21.33	40.76	56.00	15.24	QP
8	1.22	9.61	9.82	6.87	26.30	46.00	19.70	Average
9	3.31	9.64	9.84	20.04	39.52	56.00	16.48	QP
10	3.31	9.64	9.84	9.32	28.80	46.00	17.20	Average
11	14.29	9.74	9.90	20.60	40.24	60.00	19.76	QP
12	14.29	9.74	9.90	8.16	27.80	50.00	22.20	Average

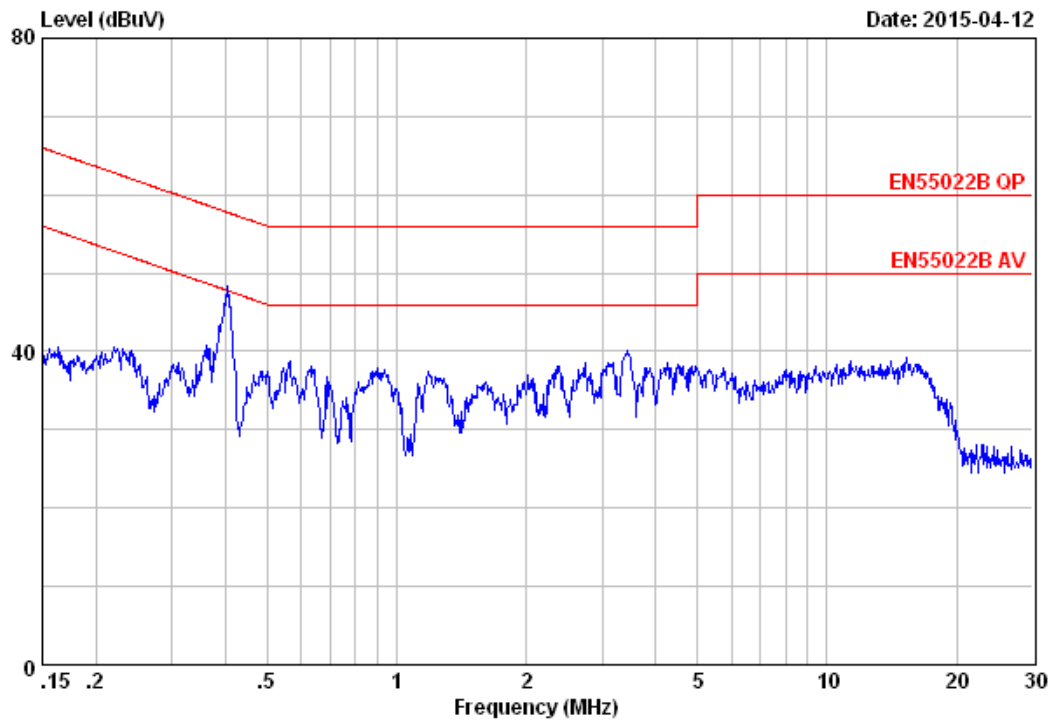


Site no. : EST Conduction Shielded Room
 Limit : EN55022B QP
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa
 Engineer : Dick
 EUT : ITE POWER SUPPLY
 Power : AC 240V/50Hz
 M/N : GT-83080-0505-USB-W2E
 Test Mode : Full Load

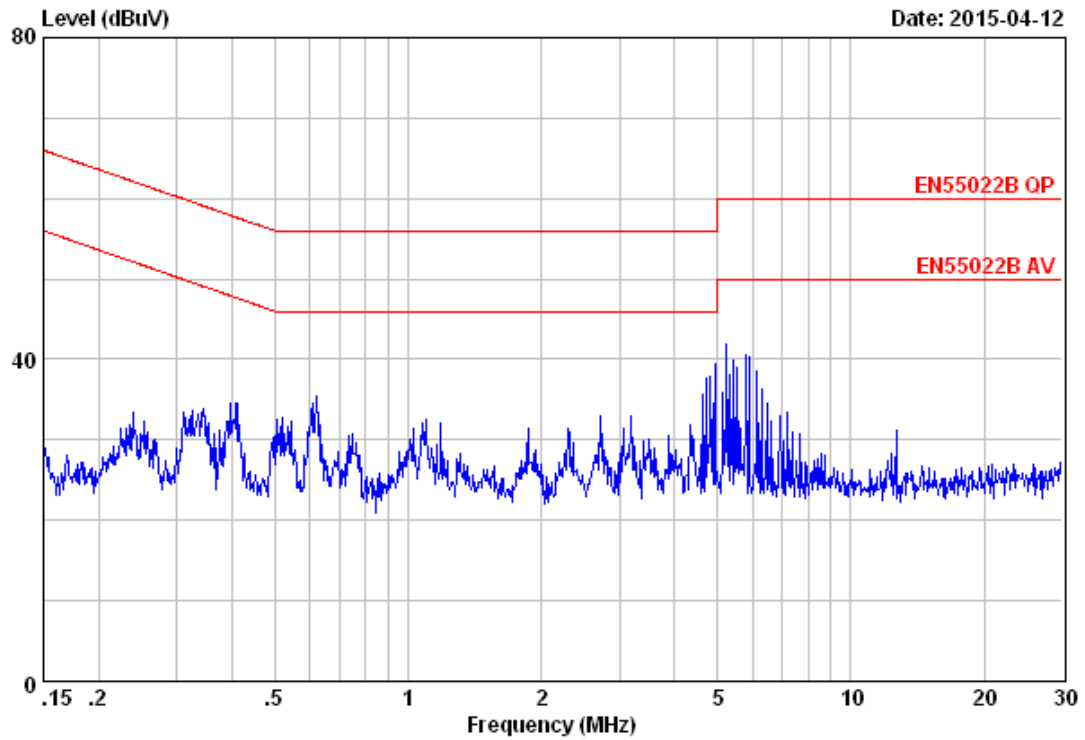
	Freq.	LISN	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dB)	
1	0.15	9.61	9.81	28.71	48.13	65.82	17.69	QP
2	0.15	9.61	9.81	13.78	33.20	55.82	22.62	Average
3	0.37	9.61	9.82	29.52	48.95	58.61	9.66	QP
4	0.37	9.61	9.82	15.37	34.80	48.61	13.81	Average
5	0.41	9.61	9.82	32.39	51.82	57.68	5.86	QP
6	0.41	9.61	9.82	20.17	39.60	47.68	8.08	Average
7	0.75	9.60	9.81	24.16	43.57	56.00	12.43	QP
8	0.75	9.60	9.81	10.79	30.20	46.00	15.80	Average
9	3.22	9.63	9.84	26.04	45.51	56.00	10.49	QP
10	3.22	9.63	9.84	11.33	30.80	46.00	15.20	Average
11	5.84	9.65	9.85	20.34	39.84	60.00	20.16	QP
12	5.84	9.65	9.85	7.90	27.40	50.00	22.60	Average



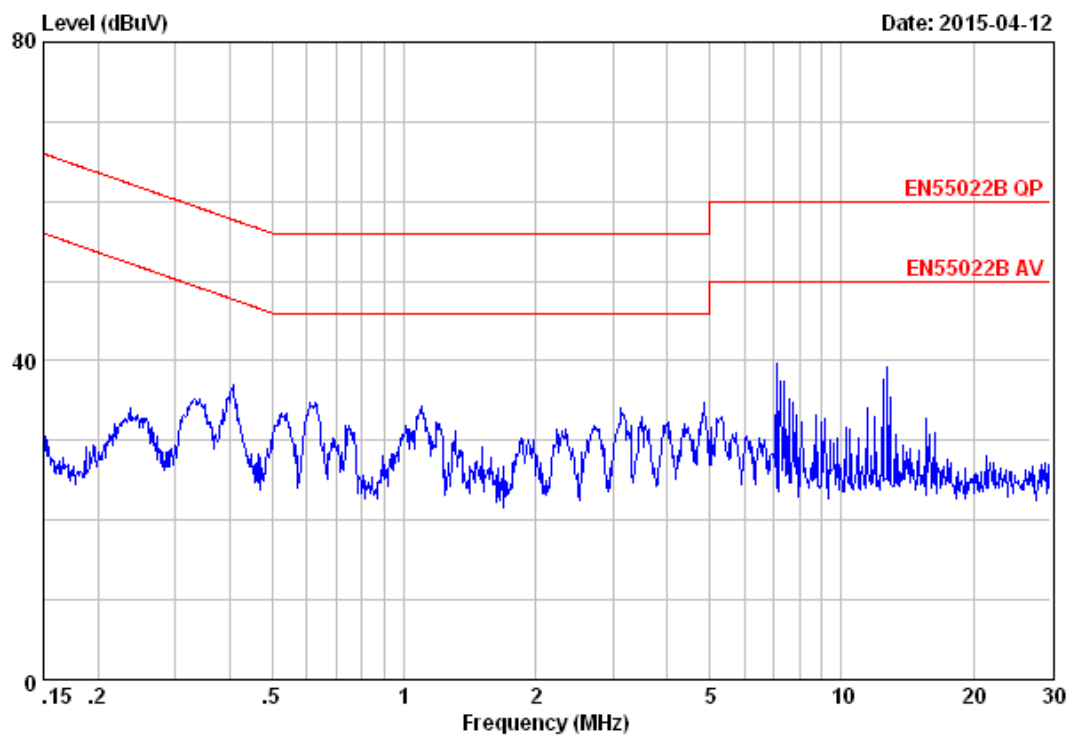
Site no. : EST Conduction Shielded RoomData no. : 777
 Limit : EN55022B QP LINE Phase : LINE
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa
 Engineer : Dick
 EUT : ITE POWER SUPPLY
 Power : AC 240V/50Hz
 M/N : GT-83080-0505-USB-W2E
 Test Mode : Half Load



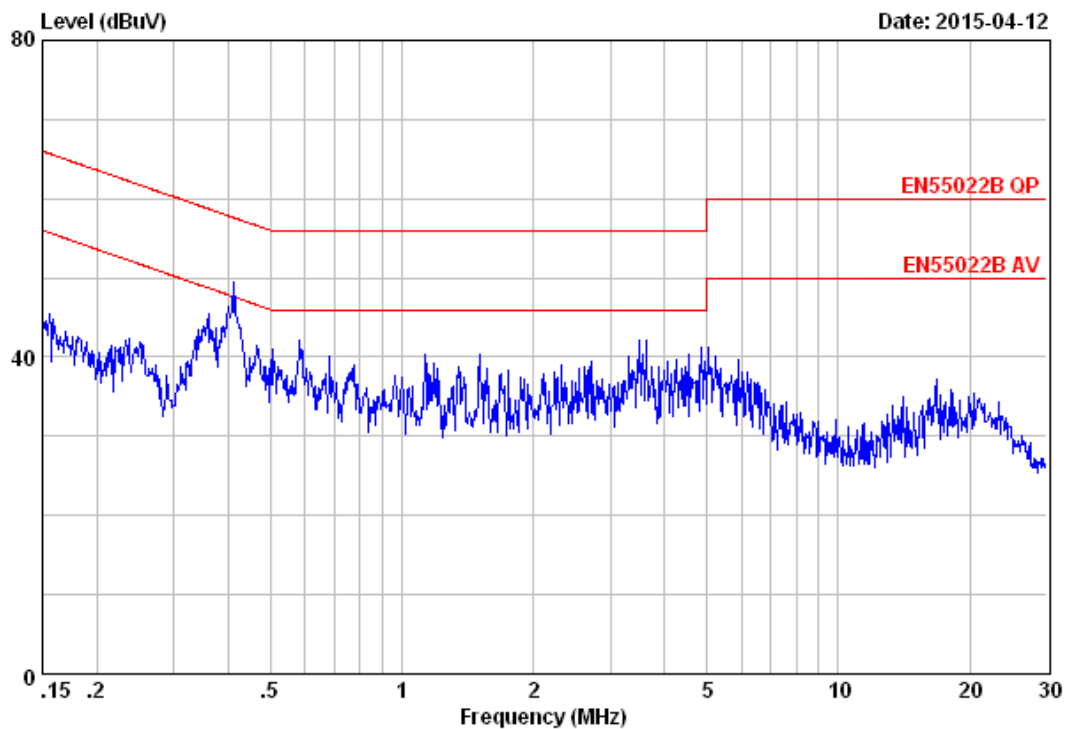
Site no. : EST Conduction Shielded RoomData no. : 779
 Limit : EN55022B QP LINE Phase : NEUTRAL
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa
 Engineer : Dick
 EUT : ITE POWER SUPPLY
 Power : AC 240V/50Hz
 M/N : GT-83080-0505-USB-W2E
 Test Mode : Half Load



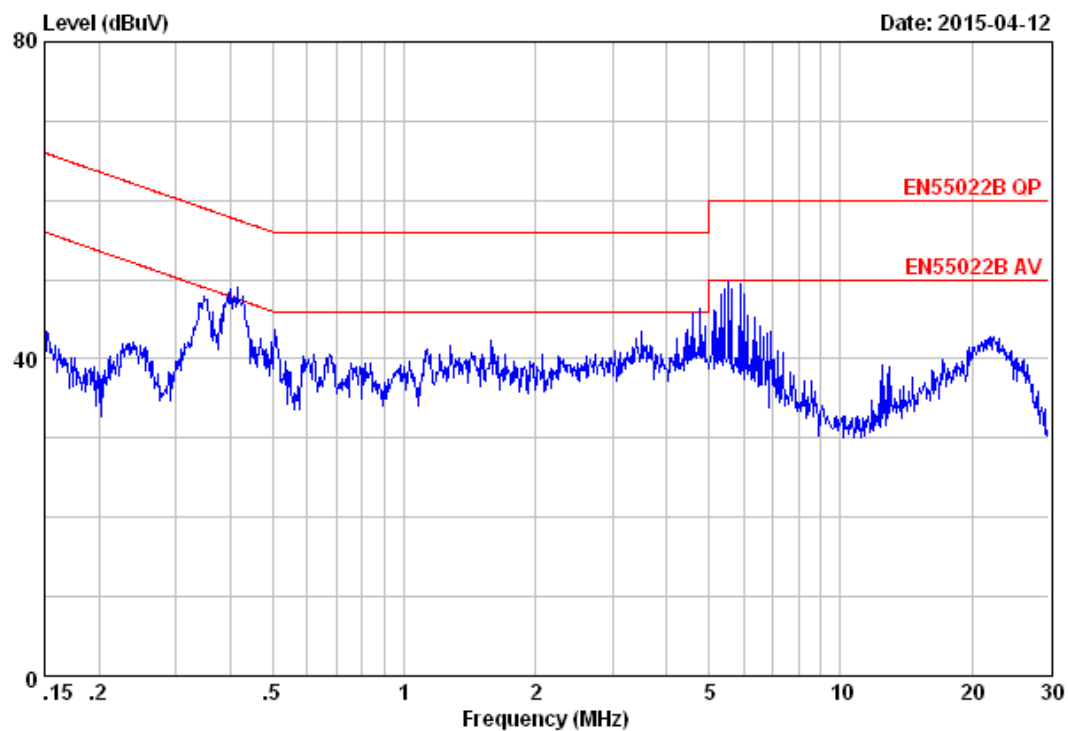
Site no. : EST Conduction Shielded RoomData no. : 781
Limit : EN55022B QP LINE Phase : LINE
Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa
Engineer : Dick
EUT : ITE POWER SUPPLY
Power : AC 240V/50Hz
M/N : GT-83080-0505-USB-W2E
Test Mode : No Load



Site no. : EST Conduction Shielded RoomData no. : 783
 Limit : EN55022B QP LINE Phase : NEUTRAL
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa
 Engineer : Dick
 EUT : ITE POWER SUPPLY
 Power : AC 240V/50Hz
 M/N : GT-83080-0505-USB-W2E
 Test Mode : No Load



Site no. : EST Conduction Shielded RoomData no. : 789
 Limit : EN55022B QP LINE Phase : LINE
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa
 Engineer : Dick
 EUT : ITE POWER SUPPLY
 Power : AC 100V/60Hz
 M/N : GT-83080-0505-USB-W2E
 Test Mode : Full Load



Site no. : EST Conduction Shielded RoomData no. : 791
 Limit : EN55022B QP LINE Phase : NEUTRAL
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa
 Engineer : Dick
 EUT : ITE POWER SUPPLY
 Power : AC 100V/60Hz
 M/N : GT-83080-0505-USB-W2E
 Test Mode : Full Load

4.2. Radiated Emission Test

RESULT : **Pass**
Test procedure : EN 55022:2010
Frequency range : 30~1000MHz
Test Site : 966 Chamber
Limits : EN 55022:2010 Class B

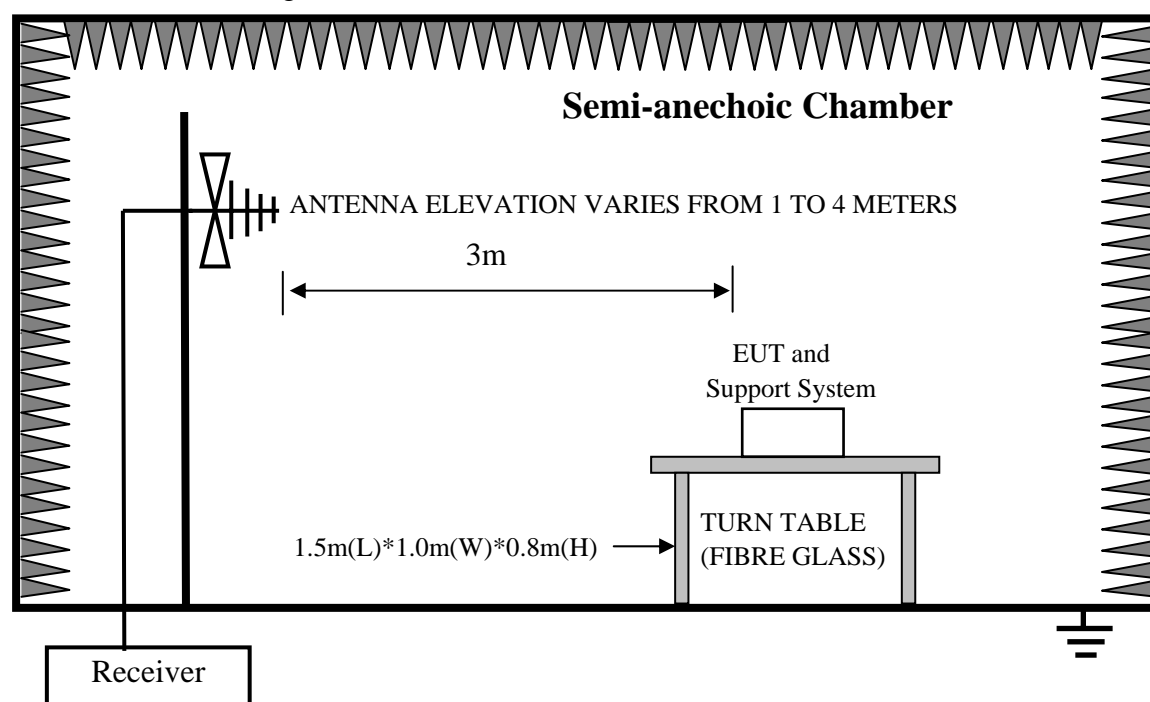
Test Setup

Date of test : Apr. 13, 2015
Model No. : GT-83080-0505-USB-W2E
Input Voltage : AC 100V/60Hz, AC 240V/50Hz
Operation Mode : Full/ Half/ No Load

The EUT was placed on a turn table which was 0.8 m above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 m distance from the receiving antenna which was mounted on an antenna tower. The measuring antenna moved up and down to find out the maximum emission level. It moved from 1 m to 4 m for both horizontal and vertical polarizations.

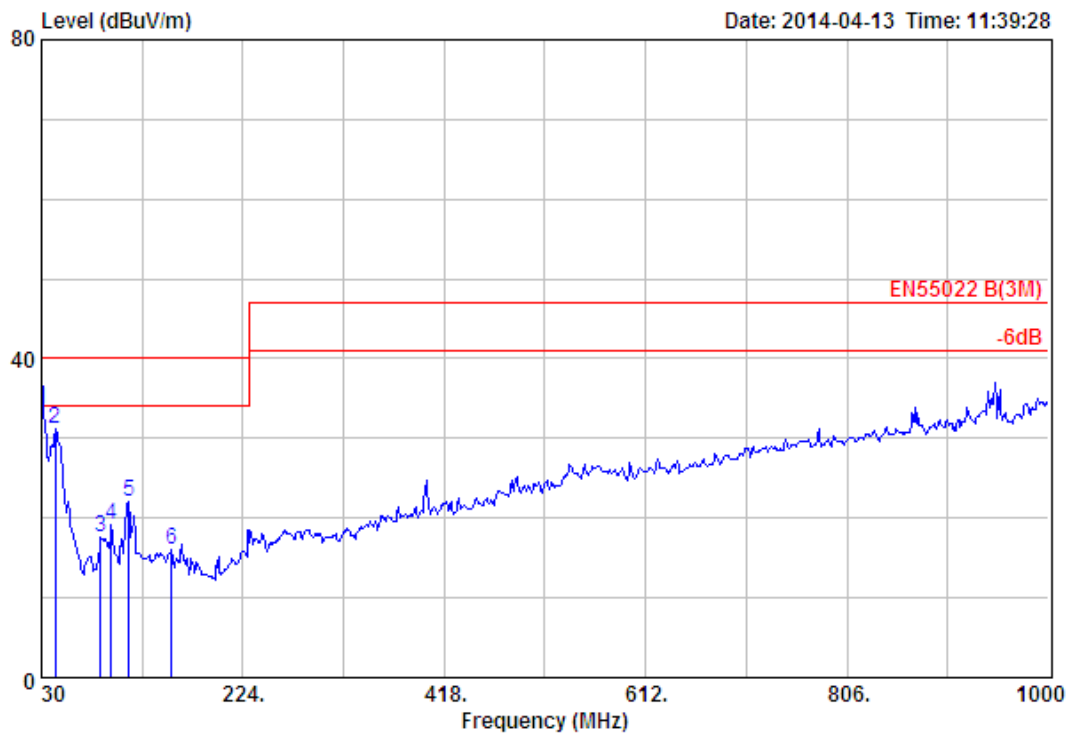
The EUT was tested in the Chamber Site. It was pre-scanned with a Peak detector from the spectrum, and all the final readings from the test receiver were measured with the Quasi-Peak detector.

The bandwidth setting on the test receiver was 120 kHz.



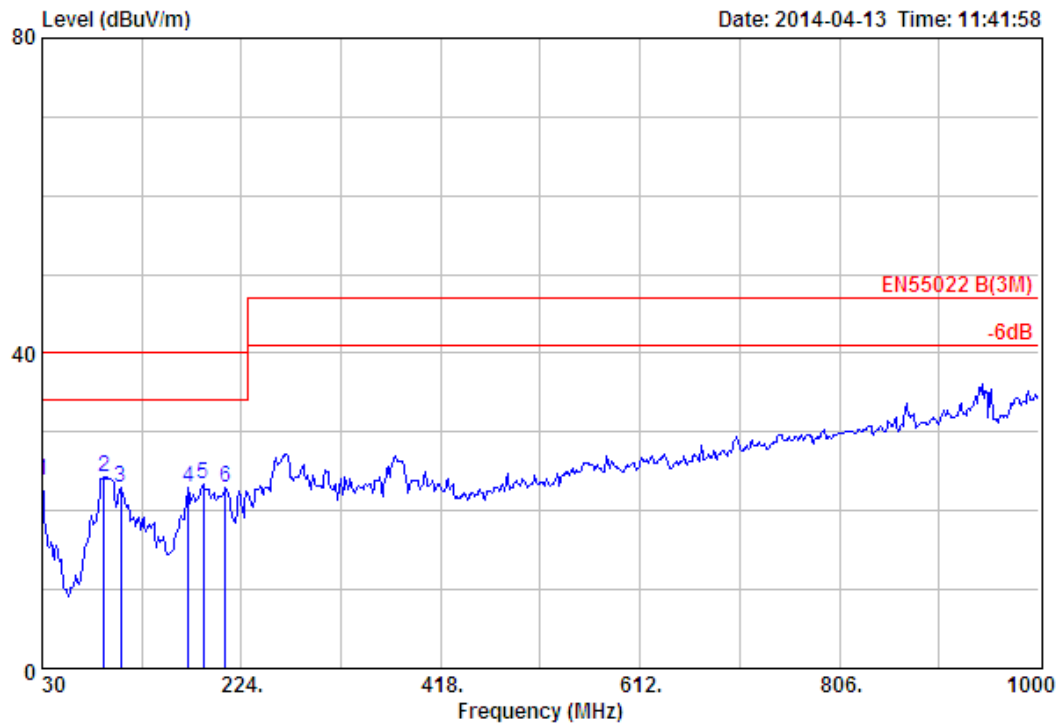
Note: Test uncertainty: $\pm 3.62\text{dB}$ at a level of confidence of 95%

Test Data



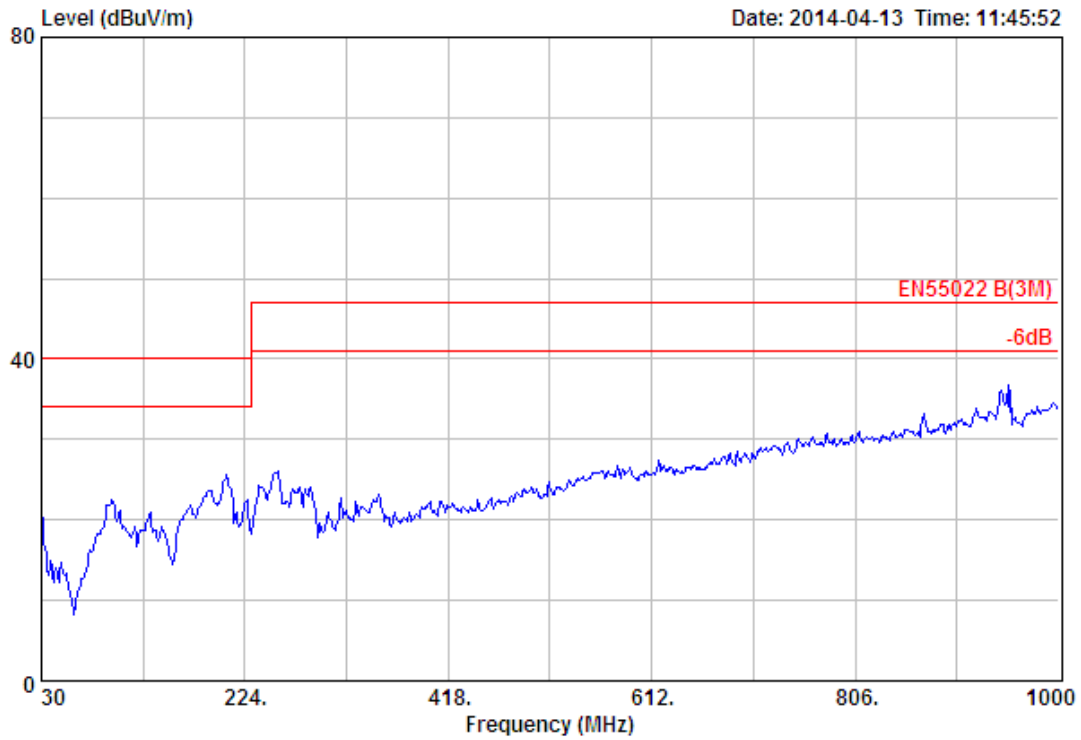
Site no. : 3m Chamber Data no. : 835
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : EN55022 B(3M)
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Dick
 EUT : ITE POWER SUPPLY
 Power : AC 240V/50Hz
 M/N : GT-83080-0505-USB-W2E
 Test Mode : Full Load 5V/1A
 Ant high:1.3m;Table angle:152'

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.00	18.51	1.91	13.30	33.72	40.00	6.28	QP
2	43.58	10.52	1.83	18.88	31.23	40.00	8.77	QP
3	87.23	7.97	2.78	6.82	17.57	40.00	22.43	QP
4	96.93	8.92	2.92	7.32	19.16	40.00	20.84	QP
5	114.39	10.85	3.15	8.04	22.04	40.00	17.96	QP
6	155.13	10.67	3.68	1.61	15.96	40.00	24.04	QP

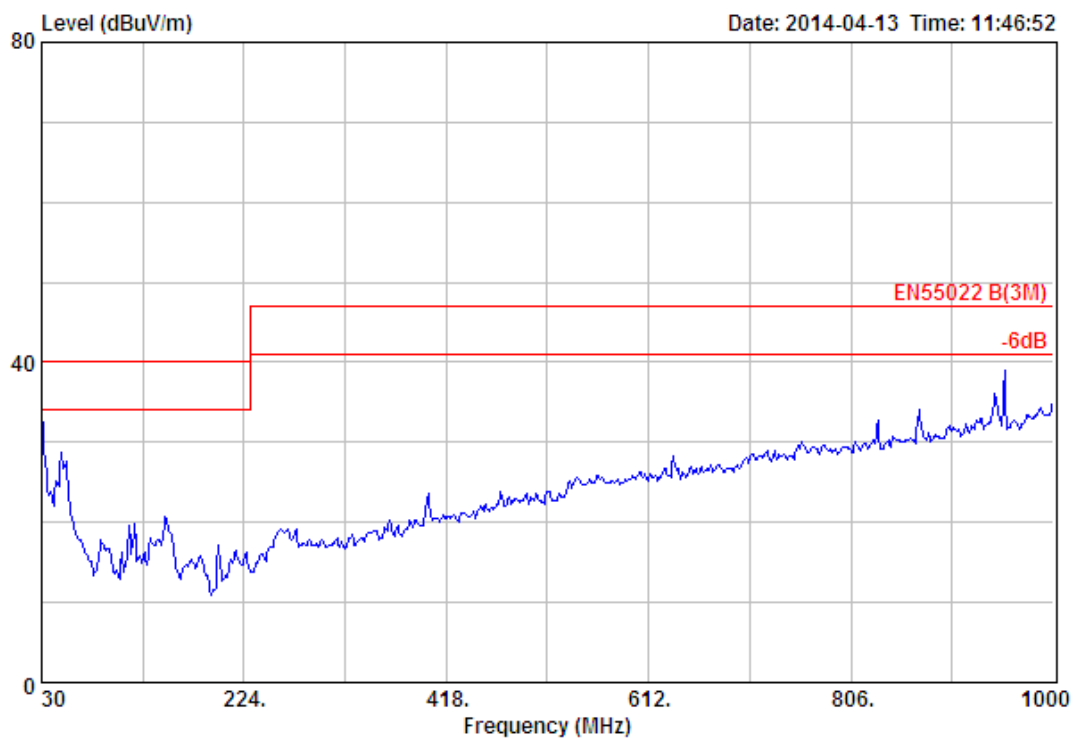


Site no. : 3m Chamber Data no. : 836
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : EN55022 B(3M)
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Dick
 EUT : ITE POWER SUPPLY
 Power : AC 240V/50Hz
 M/N : GT-83080-0505-USB-W2E
 Test Mode : Full Load 5V/1A
 Ant high:1.2m;Table angle:214'

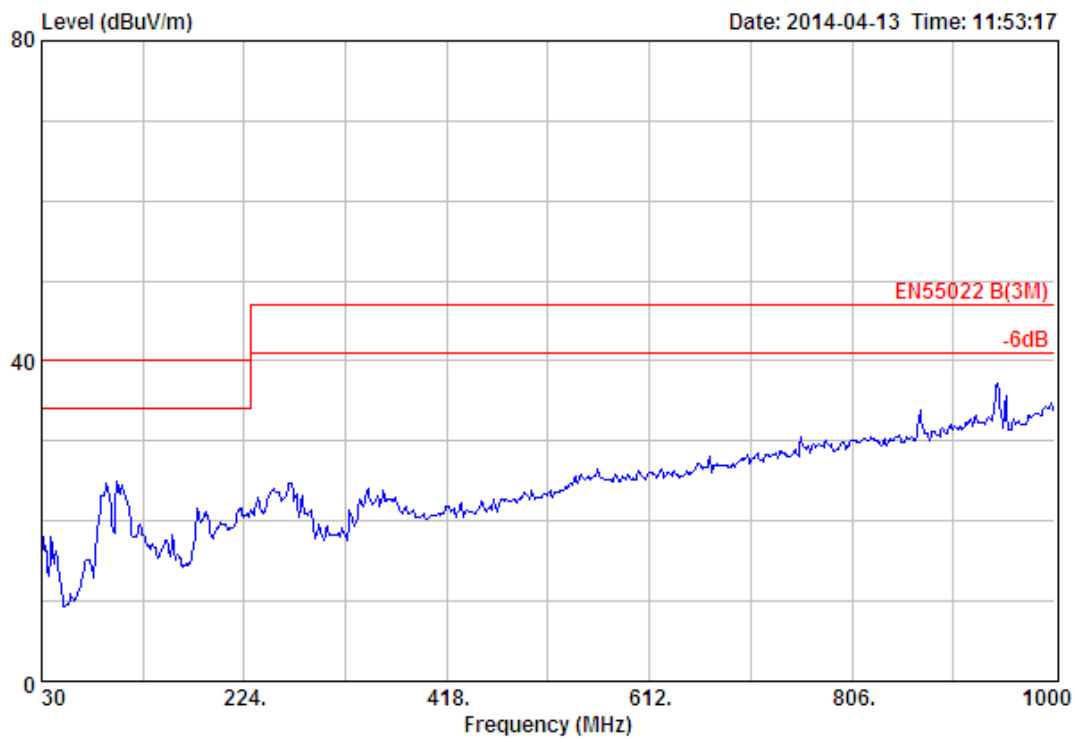
	Freq.	Ant.	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	30.00	18.51	1.49	3.87	23.87	40.00	16.13	QP
2	90.14	8.38	2.84	13.14	24.36	40.00	15.64	QP
3	106.63	10.15	3.06	9.66	22.87	40.00	17.13	QP
4	172.59	9.07	3.88	10.01	22.96	40.00	17.04	QP
5	187.14	8.26	4.02	11.18	23.46	40.00	16.54	QP
6	208.48	8.28	4.29	10.39	22.96	40.00	17.04	QP



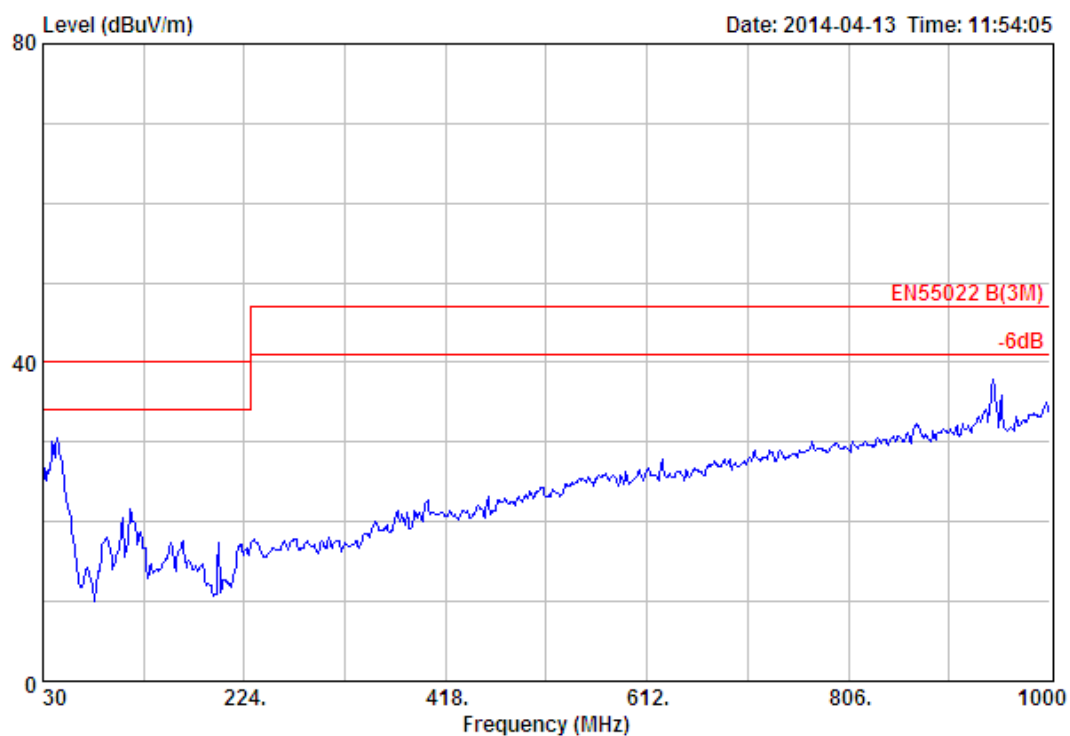
Site no.	: 3m Chamber	Data no.	: 837
Dis. / Ant.	: 3m 27137	Ant. pol.	: HORIZONTAL
Limit	: EN55022 B(3M)		
Env. / Ins.	: Temp:25.6';Humi:56%;Press:101.52kPa		
Engineer	: Dick		
EUT	: ITE POWER SUPPLY		
Power	: AC 100V/60Hz		
M/N	: GT-83080-0505-USB-W2E		
Test Mode	: Full Load 5V/1A		



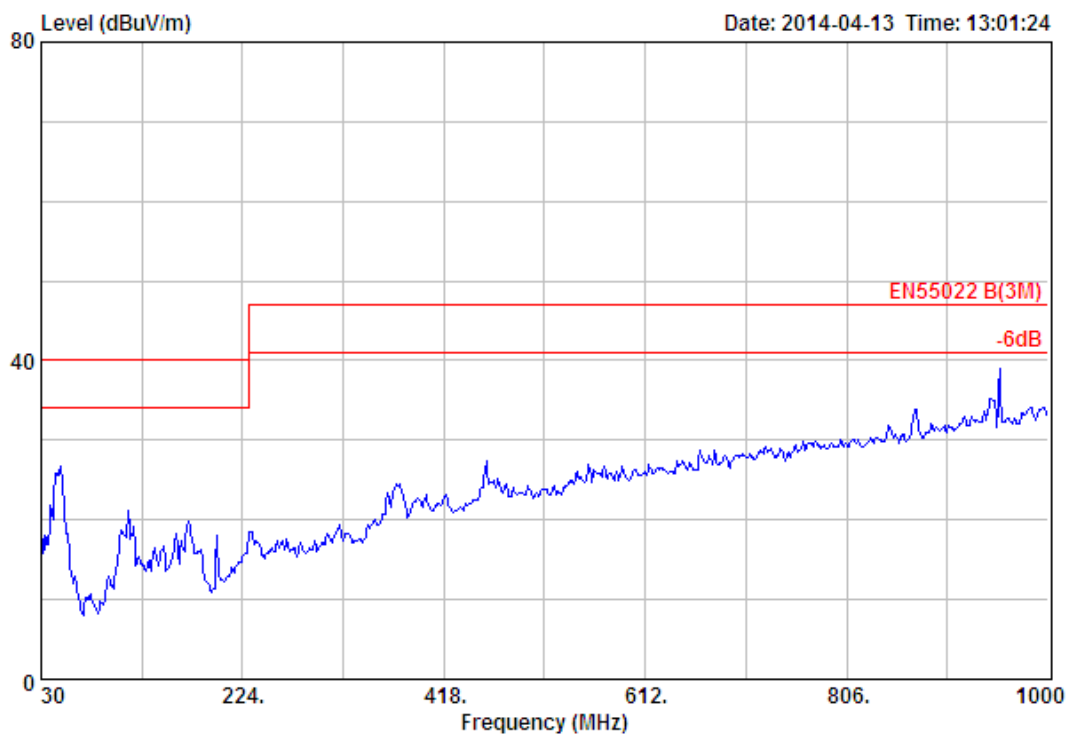
Site no.	: 3m Chamber	Data no.	: 838
Dis. / Ant.	: 3m 27137	Ant. pol.	: VERTICAL
Limit	: EN55022 B(3M)		
Env. / Ins.	: Temp:25.6';Humi:56%;Press:101.52kPa		
Engineer	: Dick		
EUT	: ITE POWER SUPPLY		
Power	: AC 100V/60Hz		
M/N	: GT-83080-0505-USB-W2E		
Test Mode	: Full Load 5V/1A		



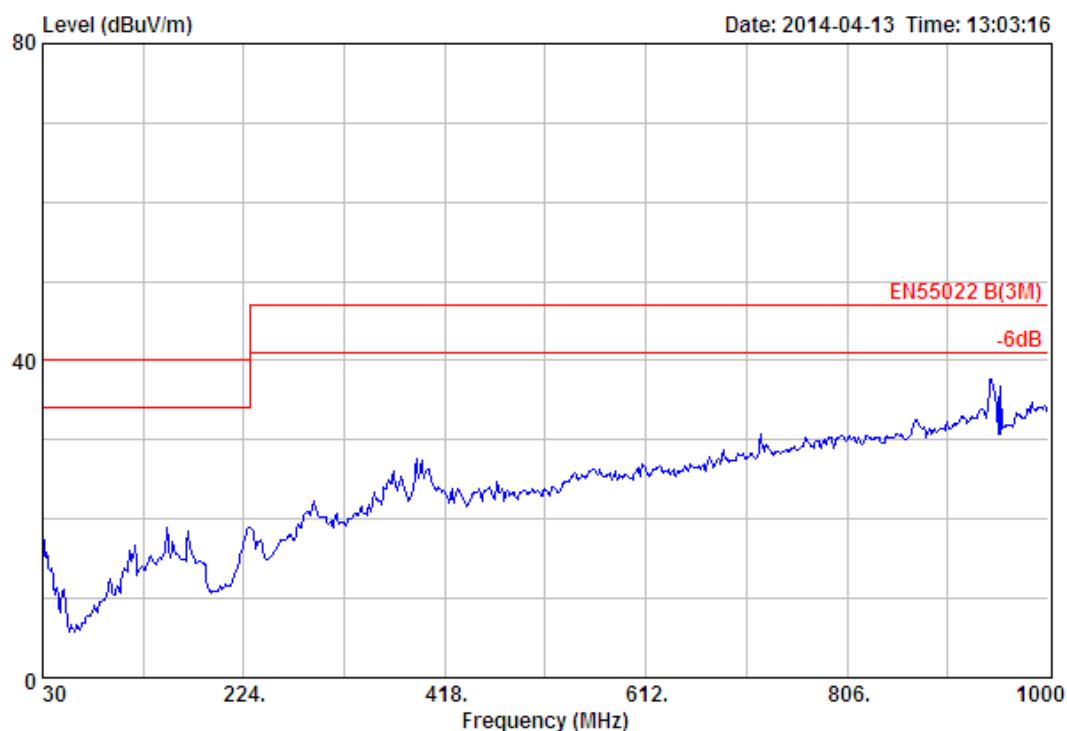
Site no.	: 3m Chamber	Data no.	: 841
Dis. / Ant.	: 3m 27137	Ant. pol.	: HORIZONTAL
Limit	: EN55022 B(3M)		
Env. / Ins.	: Temp:25.6';Humi:56%;Press:101.52kPa		
Engineer	: Dick		
EUT	: ITE POWER SUPPLY		
Power	: AC 240V/50Hz		
M/N	: GT-83080-0505-USB-W2E		
Test Mode	: Half Load 5V/0.5A		



Site no.	: 3m Chamber	Data no. :	842
Dis. / Ant.	: 3m 27137	Ant. pol. :	VERTICAL
Limit	: EN55022 B(3M)		
Env. / Ins.	: Temp:25.6';Humi:56%;Press:101.52kPa		
Engineer	: Dick		
EUT	: ITE POWER SUPPLY		
Power	: AC 240V/50Hz		
M/N	: GT-83080-0505-USB-W2E		
Test Mode	: Half Load 5V/0.5A		



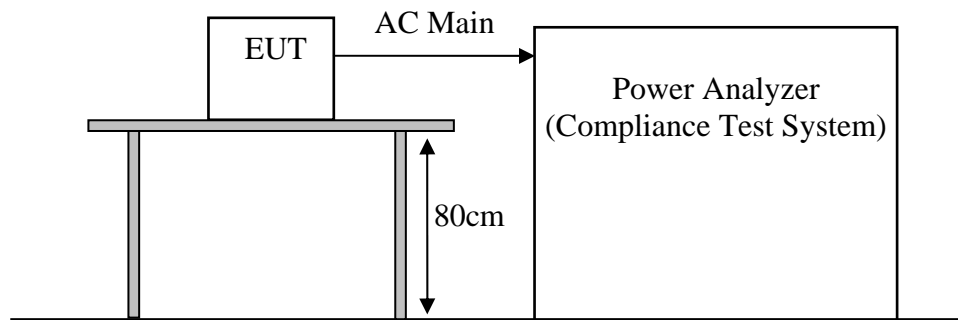
Site no.	: 3m Chamber	Data no. :	845
Dis. / Ant.	: 3m 27137	Ant. pol. :	VERTICAL
Limit	: EN55022 B(3M)		
Env. / Ins.	: Temp:25.6°;Humi:56%;Press:101.52kPa		
Engineer	: Dick		
EUT	: ITE POWER SUPPLY		
Power	: AC 240V/50Hz		
M/N	: GT-83080-0505-USB-W2E		
Test Mode	: No Load		



Site no.	: 3m Chamber	Data no. :	846
Dis. / Ant.	: 3m 27137	Ant. pol. :	HORIZONTAL
Limit	: EN55022 B(3M)		
Env. / Ins.	: Temp:25.6';Humi:56%;Press:101.52kPa		
Engineer	: Dick		
EUT	: ITE POWER SUPPLY		
Power	: AC 240V/50Hz		
M/N	: GT-83080-0505-USB-W2E		
Test Mode	: No Load		

4.3. Harmonic Current Emissions on AC Mains Test

RESULT : **Pass**
Test procedure : EN 61000-3-2:2014
Measured harmonics : 1~40th
Limits : EN 61000-3-2:2014



There is no need for Harmonics test to be performed on this product (rated power is less than 75W) in accordance with EN 61000-3-2:2014.

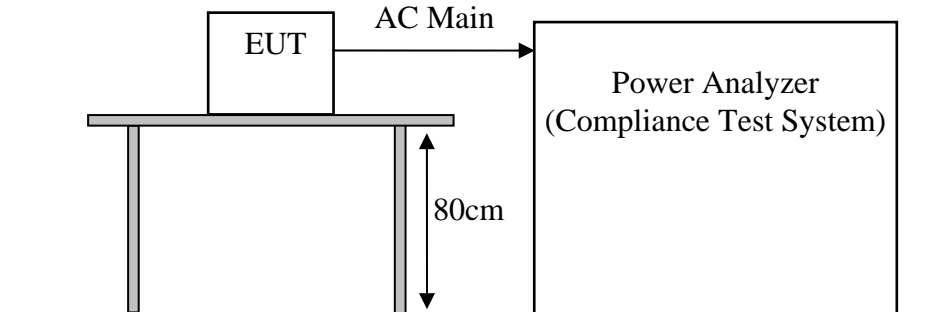
For further details, please refer to Clause 7 of EN 61000-3-2:2014 which states:

“For the following categories of equipment, limits are not specified in this edition of the standard:

- equipment with a rated power of 75W or less, other than lighting equipment.”

4.4. Voltage Fluctuations and Flicker on AC Mains Test

RESULT : **Pass**(Please refer to the following page)
 Test procedure : EN 61000-3-3:2013
 Limits : EN 61000-3-3:2013



Test Conditions

EUT:	ITE POWER SUPPLY	Temperature:	24.8°C
Model No.:	GT-83080-0505-USB-W2E	Humidity:	56%
Test Mode :	Full Load	Pressure	101.50kPa
Date of test	Apr. 13, 2015	Test Engineer:	Dick
Operation Mode	Full Load	Input Voltage	AC 230V/50Hz

Chroma
ANALYZER 6630
2015.04.13 15:20:04

Extreme Flicker-I M1

Note: MN:GT-83080-0505-USB-W2E OP:FULL LOAD
 Numerical Reference Impedance
 U: 230.4 V I: 49.80 mA f: 49.998 Hz PF: 0.443

EVALUATION:-----

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

Based on 1 (1) short term cycles

PASSED

Measurement completed

Next measure

Extreme time graph

Change to histogram

Write to disk

Select module

Appl: DEFAULT
(1311_04)

5. IMMUNITY TEST RESULT

5.1. Description of Performance Criteria:

Performance criteria A

During and after the test the EUT shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a minimum performance level specified by the manufacturer when the EUT is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the EUT if used as intended.

Performance criteria B

After the test, the EUT shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the EUT is used as intended. The performance level may be replaced by a permissible loss of performance.

During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test.

If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance criteria C

During and after testing, a temporary loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls or cycling of the power to the EUT by the user in accordance with the manufacturer's instructions. Functions, and/or information stored in non-volatile memory, or protected by a backup, shall not be lost.

5.2. Electrostatic Discharge Immunity Test

RESULT : **Pass**

Test procedure : EN 55024:2010

Basic standard : EN 61000-4-2:2009

Test specification : +/-2.0kV ; +/-4.0kV(Contact discharge)
+/-2.0kV ; +/-4.0kV ; +/-6.0kV ; +/-8.0kV(Air discharge)

Number of discharges : ≥ 10 (Air discharge for single polarity discharge)
 ≥ 25 (Contact discharge for single polarity discharge)

Polarity : Positive/Negative

Performance criterion : B

Test Setup

Date of test : Apr. 13, 2015

Model No. : GT-83080-0505-USB-W2E

Input Voltage : AC 230V/50Hz

Operation Mode : Full/ Half/ No Load

Temperature : 24.8°C

Humidity : 56%

Pressure : 101.50kPa

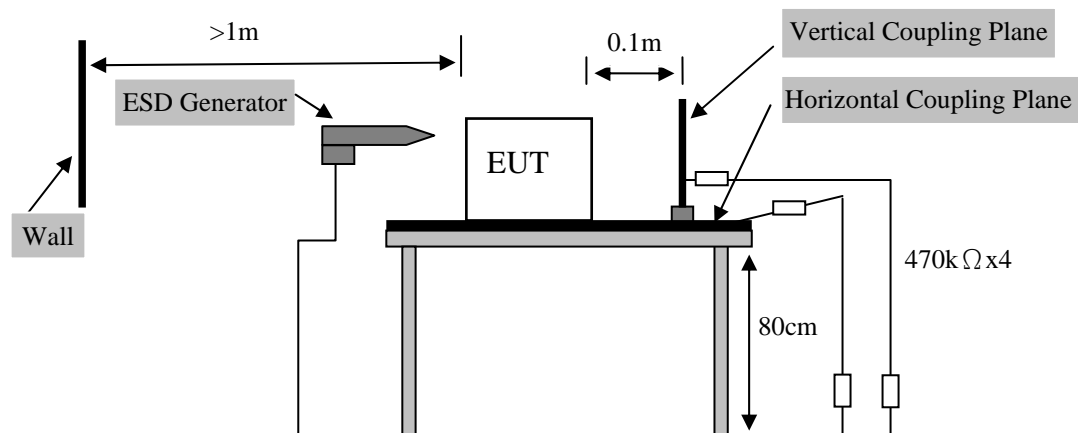


Table 1: Electrostatic Discharge Immunity Test Result

Discharge Location		Type of discharge	Result
HCP	4 points	Contact	Pass
VCP	4 points	Contact	Pass
Slot	2 points	Air	Pass
USB Port	1 point	Contact	Pass

*Remark: 1. There was no change compared with initial operation during the test.
2. Discharge should be considered on Contact and Air and Horizontal Coupling Plane (HCP) and Vertical Coupling Plane (VCP).*

5.3. Radio Frequency Electromagnetic Field Immunity Test

RESULT : **Pass**
Test procedure : EN 55024:2010
Basic standard : EN 61000-4-3:2006+A1;2008+A2:2010
Performance criterion : A
Test site : ITS

Test Setup

Date of test : Apr. 13, 2015
Model No. : GT-83080-0505-USB-W2E
Input Voltage : AC 230V/50Hz
Operation Mode : Full/ Half/ No Load
Temperature : 24.8°C
Humidity : 56%
Pressure : 101.50kPa

The EUT and its simulators were placed on a turn table which was 0.8 meter above the ground. The EUT was set 3 m away from the transmitting antenna which was mounted on an antenna tower. Both horizontal and vertical polarization of the antenna were set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually.

In order to judge the EUT performance, a CCD camera was used to monitor EUT screen.

All the scanning conditions were as follows:

Condition of Test	Remarks
1. Field Strength	3 V/m (Severity Level 2)
2. Radiated Signal	Modulated
3. Scanning Frequency	80 - 1000 MHz
4. Sweeping time of radiated	0.0015 decade/s
5. Dwell Time	3 Sec.

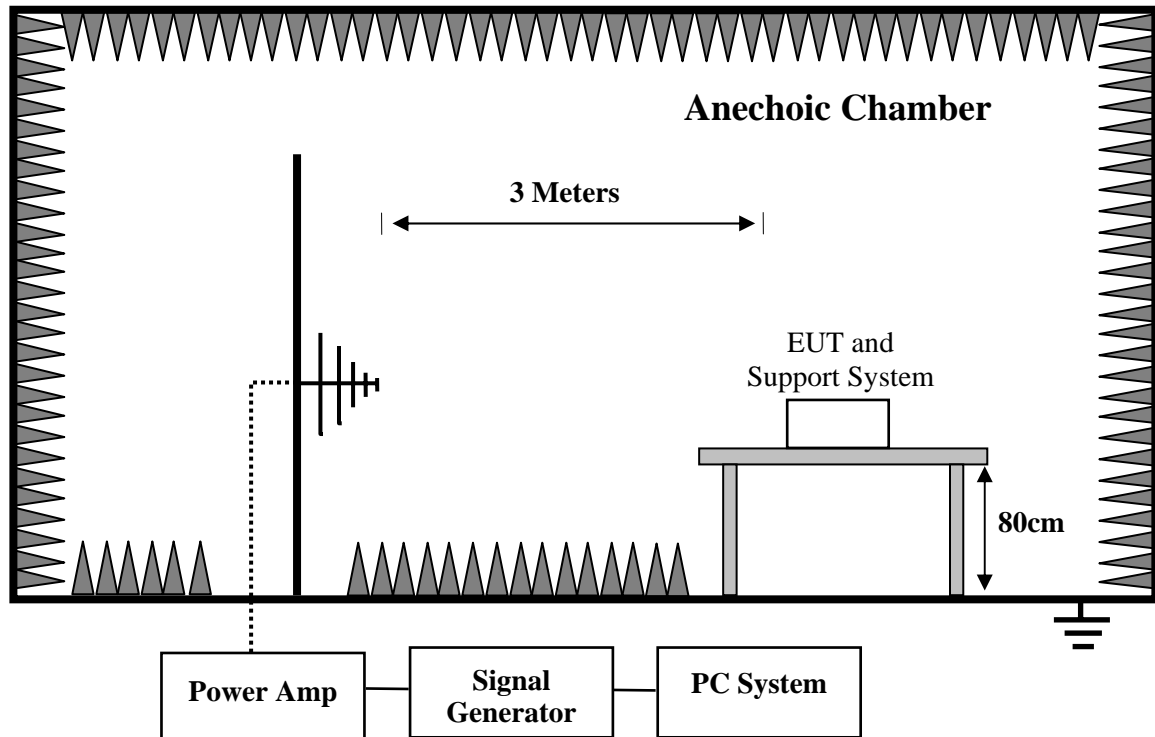


Table 2: Radio Frequency Electromagnetic Field Immunity Test Result

Position	Modulated signal	Test level	Step	Result
Front	AM 80% 1kHz	3 V/m	1%	Pass
Right				Pass
Rear				Pass
Left				Pass

Remark: There was no change compared with initial operation during the test.

5.4. Electrical Fast Transient/Burst Immunity Test

RESULT	: Pass
Test procedure	: EN 55024:2010
Basic standard	: EN 61000-4-4:2012
Pulseform	: Tr/Th = 5/50ns
Repetition Frequency	: 5kHz
Test Duration	: 120s
Performance criterion	: B

Test Setup

Date of test	: Apr. 13, 2015
Model No.	: GT-83080-0505-USB-W2E
Input Voltage	: AC 230V/50Hz
Operation Mode	: Full/ Half/ No Load
Temperature	: 24.8°C
Humidity	: 56%
Pressure	: 101.50kPa

The EUT and its simulators were placed 0.1m high above the ground reference plane which was a min. 2m*2m metallic sheet with 0.65mm minimum thickness. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

1. For input and AC power ports:

The EUT was connected to the power mains by using a coupling device which coupled the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test can't less than 2 mains.

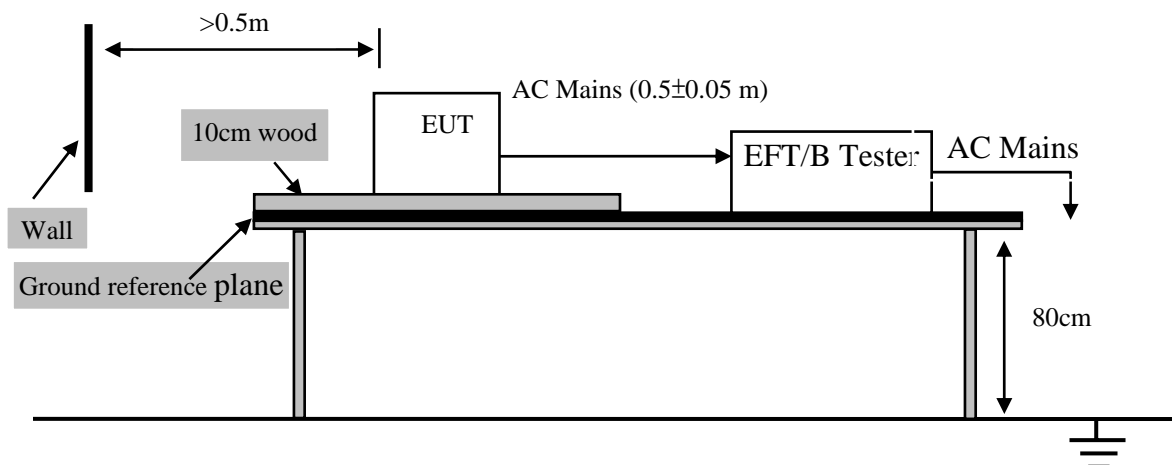


Table 3: Electrical Fast Transient/Burst Immunity Test Result

Coupling Ports		Coupling Voltage	Inject Method	Result
AC Power Ports	L-N	+/-1kV	Direct	Pass

Remark: There was no change compared with initial operation during the test.

5.5. Surge Immunity Test

RESULT : **Pass**
Test procedure : EN 55024:2010
Basic standard : EN 61000-4-5:2006
Pulseform : $Tr/Td = 1.2/50\mu s$
Test Duration : 60s
Performance criterion : B

Test Setup

Date of test : Apr. 13, 2015
Model No. : GT-83080-0505-USB-W2E
Input Voltage : AC 230V/50Hz
Operation Mode : Full/ Half/ No Load
Temperature : 24.8°C
Humidity : 56%
Pressure : 101.50kPa

$2\ \Omega$ effective output impedance of the generator was used for L-N test. $12\ \Omega$ effective output impedance of the generator was used for L-PE, N-PE test.

5 positive and 5 negative (polarity) tests were applied successively synchronized to the voltage phase 0° , 90° , 180° , 270° to L-N respectively. The repetition rate was 1 per minute during test.

1. For input and AC power ports:

The EUT was connected to the power mains by using a coupling device which coupled the surge interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration was 1 minute.

2. For signal lines and control lines ports:

None.

3. For DC input and DC output power ports:

None.

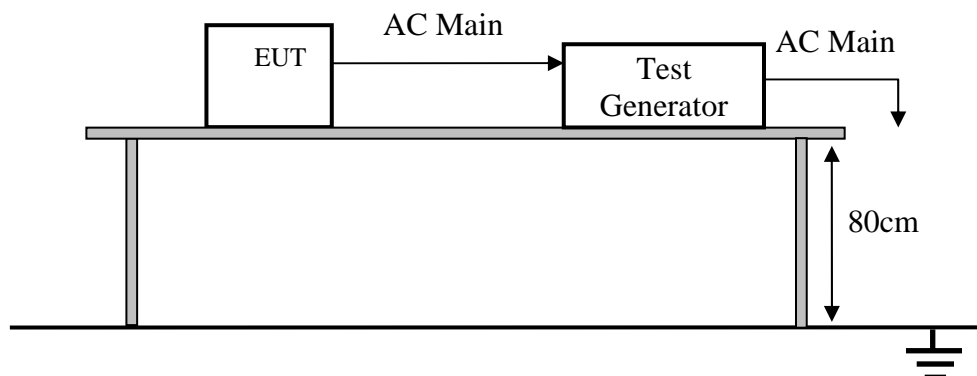


Table 4: Surge Immunity Test Result

Coupling Ports		Coupling Voltage	Coupling Phase / Result			
			0°	90°	180°	270°
AC power ports	L-N	+/-1kV Direct	Pass	Pass	Pass	Pass

Remark: There was no change compared with initial operation during the test

5.6. Injected Currents Susceptibility Test

RESULT	: Pass
Test procedure	: EN 55024:2010
Basic standard	: EN 61000-4-6:2009
Test specification	: 3V(r.m.s) unmodulated,1kHz sinusoidal signal, AM 80%, 0.15MHz ~ 80MHz
Performance criterion	: A

Test Setup

Date of test	: Apr. 13, 2015
Model No.	: GT-83080-0505-USB-W2E
Input Voltage	: AC 230V/50Hz
Operation Mode	: Full/ Half/ No Load
Temperature	: 24.8°C
Humidity	: 56%
Pressure	: 101.50kPa

The EUT were placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) was placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT were as short as possible, and their height above the ground reference plane were between 30 and 50 mm (where possible).

The frequency range was swept from 150KHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1KHz sine wave.

The rate of sweep shall not exceed 1.5×10^{-3} decades/s. Where the frequency was swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.

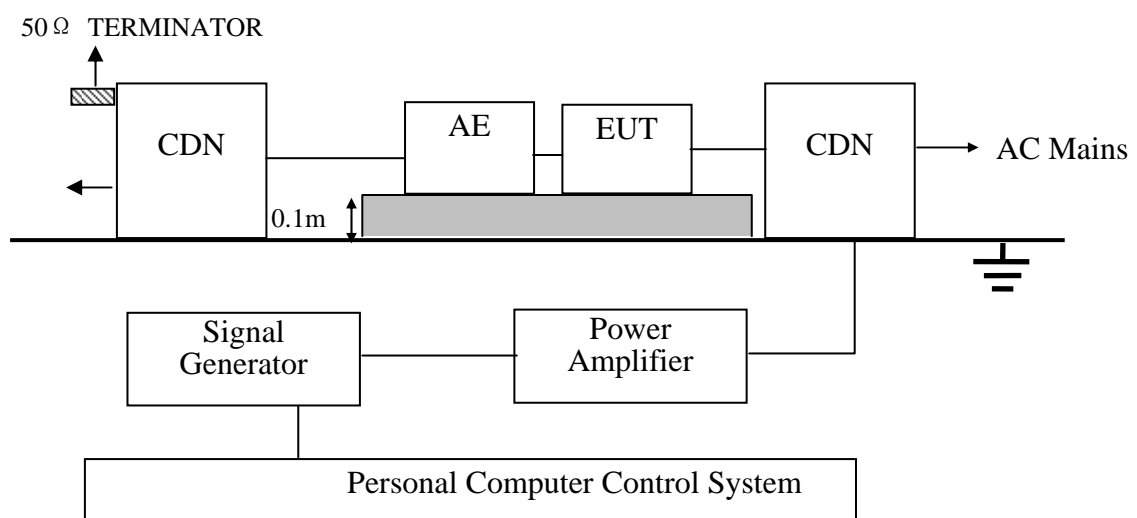


Table 5: Injected Currents Susceptibility Test Result

Coupling ports	Voltage (r.m.s)	Modulation	Freq. step	Dwell time	Coupling method	Result
AC power ports	3V	1kHz AM 80%	1%	1.5s	CDN	Pass
DC power ports	/		/	/	EM Clamp	/
Signal/control	/		/	/	EM Clamp	/

Remark: There was no change compared with initial operation during the test

5.7. Power Frequency Magnetic Field Immunity Test

RESULT : **Pass**
Test procedure : EN 55024:2010
Basic standard : EN 61000-4-8:2010
Test specification : 1 A/m
Performance criterion : A

Test Setup

Date of test : Apr. 13, 2015
Model No. : GT-83080-0505-USB-W2E
Input Voltage : AC 230V/50Hz
Operation Mode : Full/ Half/ No Load
Temperature : 24.8°C
Humidity : 56%
Pressure : 101.50kPa

The EUT was subjected to the test magnetic field by using the induction coil of standard dimensions (1m*1m). The induction coil then was rotated by 90° in order to expose the EUT to the test field with different orientations.

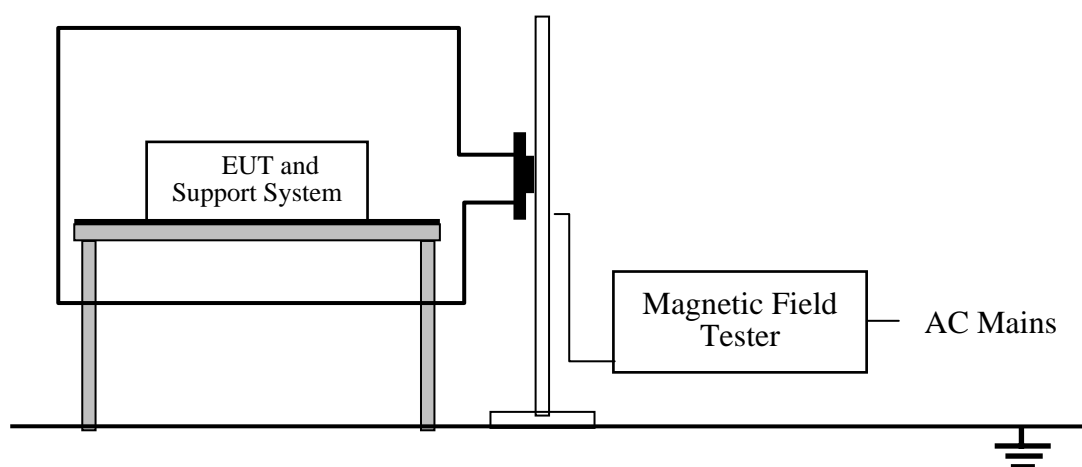


Table 6: Power Frequency Magnetic Field Immunity Test Result

Test Level	Testing Duration	Coil Orientation	Criterion	Result
1A/m	5 mins	X	A	Pass
1A/m	5 mins	Y	A	Pass
1A/m	5 mins	Z	A	Pass

Remark: There was no change compared with initial operation during the test

5.8. Voltage Dips and Short Interruptions Immunity Test

RESULT : **Pass**
Test procedure : EN 55024:2010
Basic standard : EN 61000-4-11:2004
Test specification : 0% U_T / 0.5P, Criterion: B
70% U_T / 25P, Criterion: C
0% U_T / 250P, Criterion: C

Test Setup

Date of test : Apr. 13, 2015
Model No. : GT-83080-0505-USB-W2E
Input Voltage : AC 230V/50Hz
Operation Mode : Full/ Half/ No Load
Temperature : 24.8°C
Humidity : 56%
Pressure : 101.50kPa

The interruptions was introduced at selected phase angles with specified duration.
Recorded any degradation of performance.

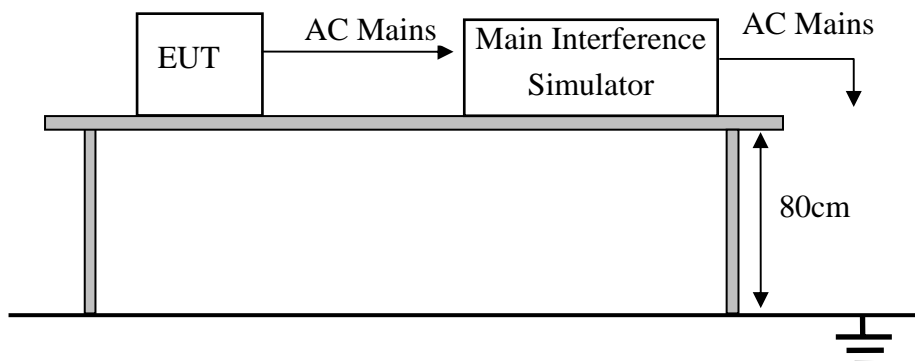


Table 7: Voltage Dips and Short Interruptions Immunity Test Result

Test Level % U_T	Voltage Dips & Short Interruptions % U_T	Duration (in period)	Criterion	Result
0	100	0.5P	B	PASS
70	30	25P	C	PASS
0	100	250P	C	PASS

Remark: The EUT was Stopped during the test, but self-recoverable after the test.

6. PHOTOGRAPHS OF THE EUT

Figure 1
General Appearance of the EUT



Figure 2
General Appearance of the EUT

