FCC Part 15B

Measurement and Test Report

For

Shenzhen Shenchuang Electronics Co., Ltd.

7th Floor, West Tower, Hengfanglaobing Industrial Park, Xingye Road, Xixiang Town, Bao An District, Shenzhen, China

FCC ID: ZIEM709

Report Concerns: Original Report	**Equipment Type:** MID Touch Pad

Model:	M709
Report No.:	STR11048071I-2
Test Date:	2011-04-08 to 2011-05-12
Issue Date:	2011-05-12
Tested By:	Jason Chen / Engineer
Reviewed By:	Lahm Peng / EMC Manager
Approved & Authorized By:	Jandy so / PSQ Manager

Prepared By:

SEM.Test Compliance Service Co., Ltd
3/F, Jinbao Commerce Building, Xin'an Fanshen Road,
Bao'an District, Shenzhen, P.R.C.（518101）
Tel.: +86-755-33663308 Fax.: +86-755-33663309 Website: www.semtest.com.cn

TABLE OF CONTENTS

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	Shenzhen Shenchuang Electronics Co., Ltd.
Address of applicant:	7th Floor, West Tower, Hengfanglaobing Industrial Park, Xingye Road, Xixiang Town, Bao An District, Shenzhen, China
Manufacturer:	Shenzhen Shenchuang Electronics Co., Ltd.
Address of manufacturer:	7th Floor, West Tower, Hengfanglaobing Industrial Park, Xingye Road, Xixiang Town, Bao An District, Shenzhen, China

General Description of E.U.T

Items	Description
EUT Description:	MID Touch Pad
Trade Name:	/
Model No.:	M709
Add Models:	M701, M702
Rated Voltage:	DC 5V
Rated Current:	2A
Size:	20.3X13.3X1.5cm

The test data is gathered from a production sample, provided by the manufacturer. The others models listed in the report have different appearance only of M709 without circuit and electronic construction changed, declared by the manufacturer.

1.2 Test Standards

The following report is prepared on behalf of the Shenzhen Shenchuang Electronics Co., Ltd. in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart B, and section 15.205, 15.107, and 15.109 rules.

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

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2009, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The equipment under test (EUT) was configured to measure its highest possible susceptibility against the tested phenomena. The test modes were adapted accordingly in reference to the Operating Instructions.

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 Exercise Software

The EUT exercise program used during the testing was designed to exercise the system components.

1.6 Accessories Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook PC	ASUS	X51R	/
LCD Monitor	Samsung	B2230H	YDG7HVJZ800050N
Headphone	PHILIPS	SHM1500	/

1.7 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	1.5	Shielded	Without Core
HDMI Cable	1	Shielded	Without Core

2. SUMMARY OF TEST RESULTS

Description of Test	Result
§15.107 (a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

3. §15.107 (a) CONDUCTED EMISSIONS

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

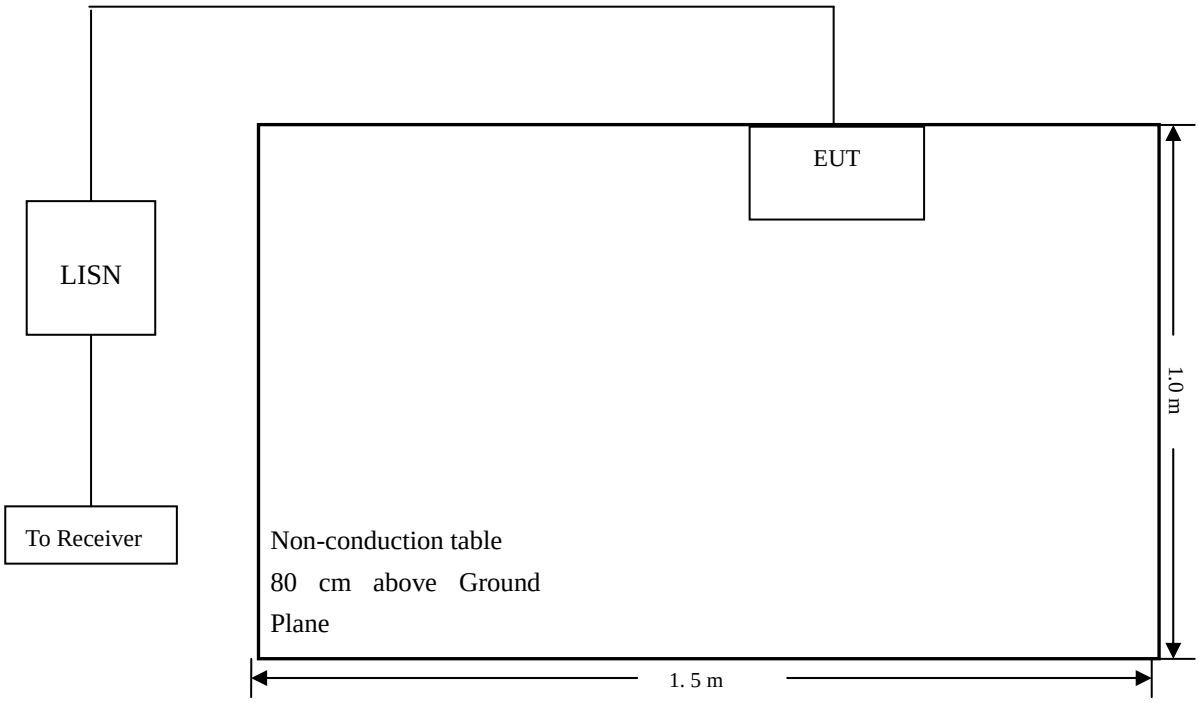
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2010-12-20	2011-12-19
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2010-12-20	2011-12-19
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2010-12-20	2011-12-19

Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

3.3 Test Procedure

Test is conducting under the description of ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

3.6 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the FCC 15.107 Conducted margin for a Class B device, with the *worst* margin reading of:

-5.48 dBμV at **0.162 MHz** in the **Line**, **Ave** detector, 0.15-30MHz

3.7 Conducted Emissions Test Data

LINE CONDUCTED EMISSIONS				FCC 15.107	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dBμV	QP/Ave/Pk	Line/Neutral	dBμV	dB
0.162	49.87	Ave	Line	55.35	-5.48
0.178	48.08	Ave	Line	54.57	-6.49
0.194	57.19	Pk	Neutral	63.85	-6.66
0.182	46.23	Ave	Neutral	54.38	-8.15
0.578	37.57	Ave	Neutral	46.00	-8.43
0.186	55.74	Pk	Line	64.21	-8.47
0.154	56.96	Pk	Line	65.77	-8.81
0.578	44.57	Pk	Neutral	56.00	-11.43

Emission attenuated more than 20dB of the limit is not reported.

Plot of Conducted Emissions Test Data

Conducted Disturbance

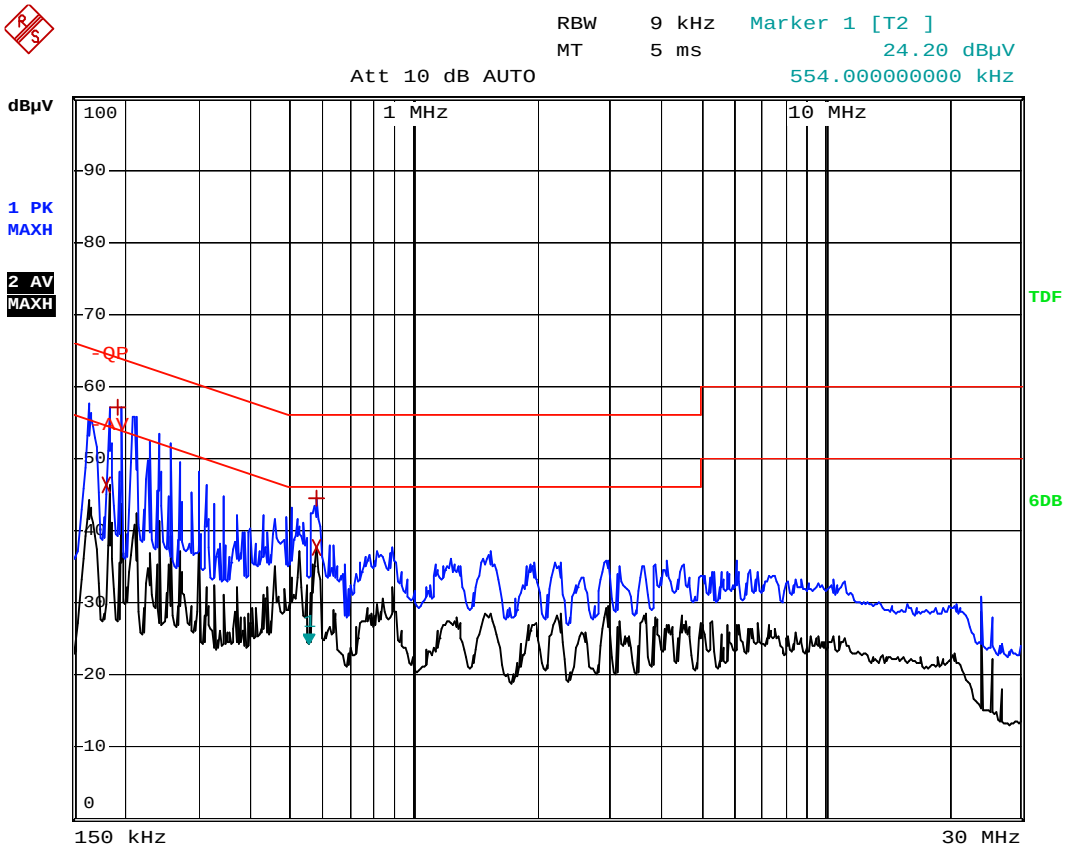
EUT: MID Touch Pad

M/N: M709

Operating Condition: Playing&Charging

Test Specification: N

Comment: 120V/60Hz;



Date: 5.MAY.2011 10:46:18

Plot of Conducted Emissions Test Data

Conducted Disturbance

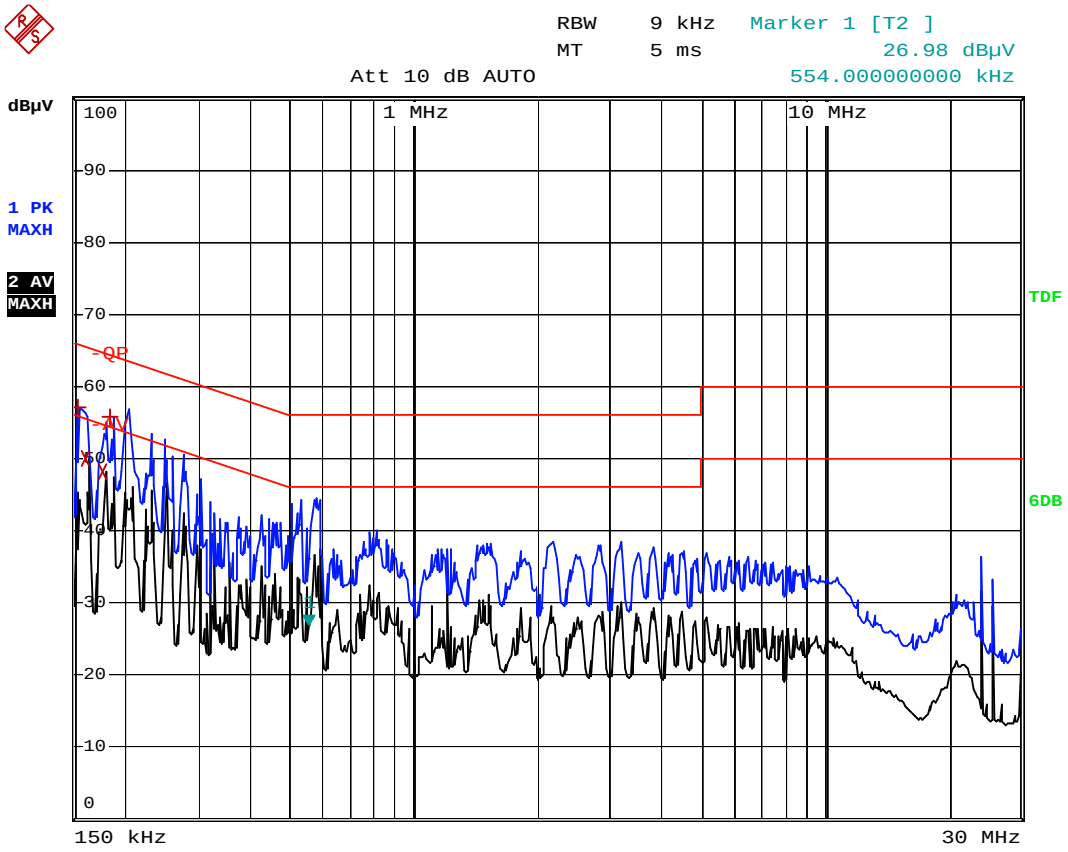
EUT: MID Touch Pad

M/N: M709

Operating Condition: Playing&Charging

Test Specification: L

Comment: 120V/60Hz;



Date: 5.MAY.2011 10:44:53

4. §15.109(a)- RADIATED EMISSION

4.1 Measurement Uncertainty

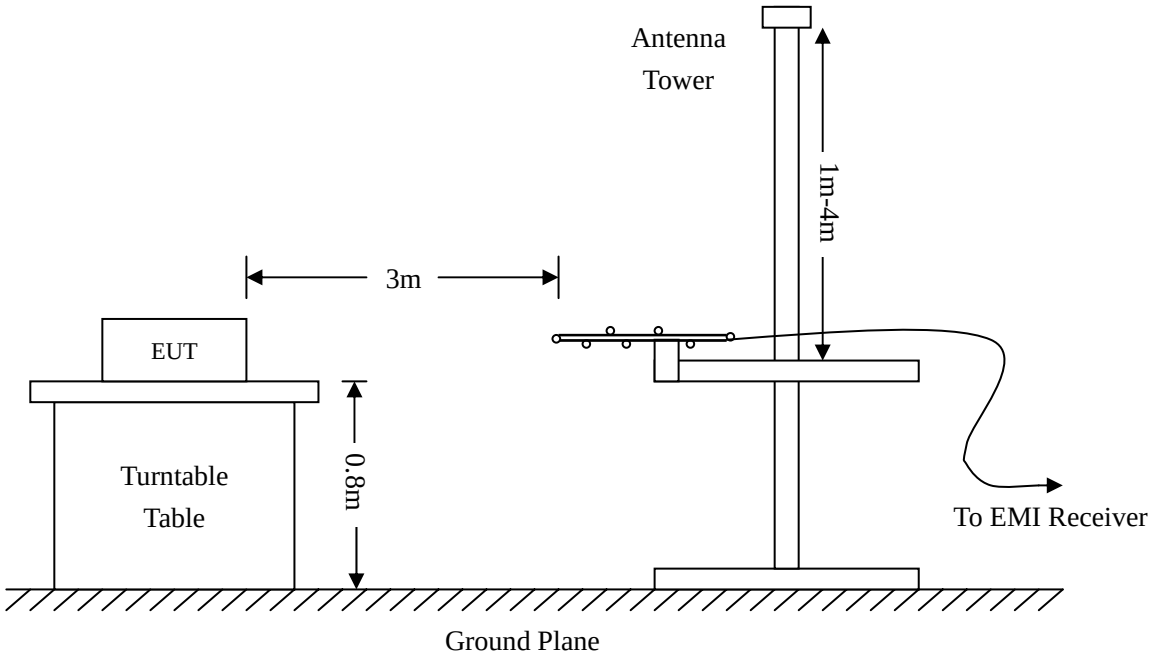
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

4.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2010-12-20	2011-12-19
EMI Test Receiver	R&S	ESVB	825471/005	2010-12-20	2011-12-19
Positioning Controller	C&C	CC-C-1F	N/A	2010-12-20	2011-12-19
RF Switch	EM	EMSW18	SW060023	2010-12-20	2011-12-19
Pre-amplifier	Agilent	8447F	3113A06717	2010-12-20	2011-12-19
Pre-amplifier	Compliance Direction	PAP-0118	24002	2010-12-20	2011-12-19
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2011-01-09	2012-01-08
Horn Antenna	ETS	3117	00086197	2011-01-09	2012-01-08

4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.109 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.



4.4 Test Receiver Setup

During the radiated emission test for above 1GHz, the test receiver was set with the following configurations:

For peak detector:
RBW = 1000kHz, VBW = 3000kHz, Sweep Time = Auto

For average detector:
RBW = 1000kHz, VBW = 10Hz, Sweep Time = Auto

4.5 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 – Corr. Factor

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. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 15B Limit

4.6 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

4.7 Summary of Test Results/Plots

According to the data, the EUT complied with the FCC 15B Class B standards, and had the worst margin of:

-2.99 dBμV at **32.8637 MHz** in the **Vertical** polarization, **Playing** mode, **30 MHz to 1 GHz, 3Meters**
-2.01 dBμV at **462.3455 MHz** in the **Horizontal** polarization, **Reading and Writing** mode, **30 MHz to 1 GHz, 3Meters**

-2.66 dBμV at **744.8660 MHz** in the **Vertical** polarization, **HDMI OUT** mode, **30 MHz to 1 GHz, 3Meters**

Plot of Radiation Emissions Test

Radiated Disturbance

EUT: MID Touch Pad

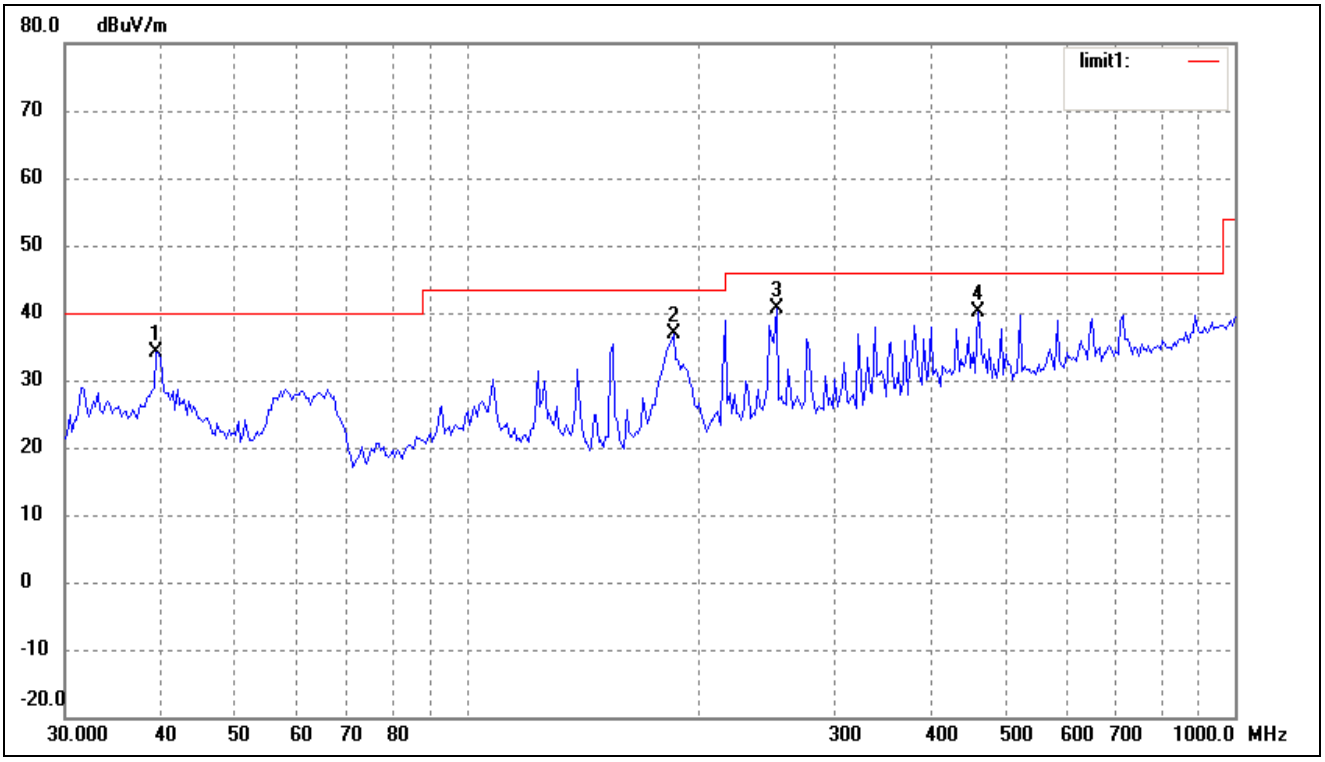
M/N: M709

Operating Condition: Playing&Charging

Test Specification: Horizontal & Vertical

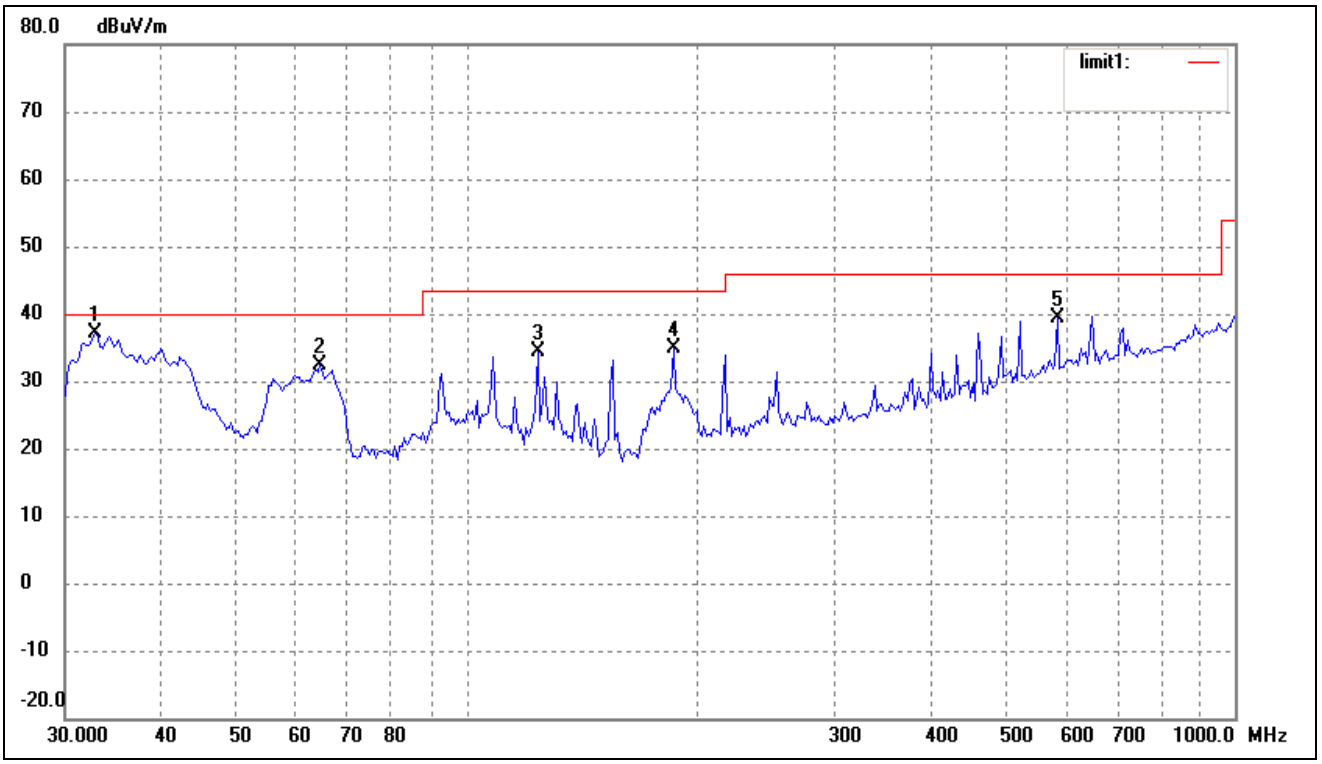
Comment: AC 120V/60Hz

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	39.4372	26.07	7.99	34.06	40.00	-5.94	236	114	QP
2	185.7882	30.65	6.16	36.81	43.50	-6.69	360	100	peak
3	252.9482	31.77	8.77	40.54	46.00	-5.46	223	120	QP
4	462.3455	28.26	11.83	40.09	46.00	-5.91	125	105	QP

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	32.8637	30.24	6.77	37.01	40.00	-2.99	236	118	QP
2	64.4331	26.48	5.81	32.29	40.00	-7.71	360	100	peak
3	123.6985	28.82	5.44	34.26	43.50	-9.24	0	200	peak
4	185.7882	28.79	6.16	34.95	43.50	-8.55	0	200	peak
5	586.8437	23.07	16.38	39.45	46.00	-6.55	0	200	peak

Radiated Disturbance

EUT: MID Touch Pad

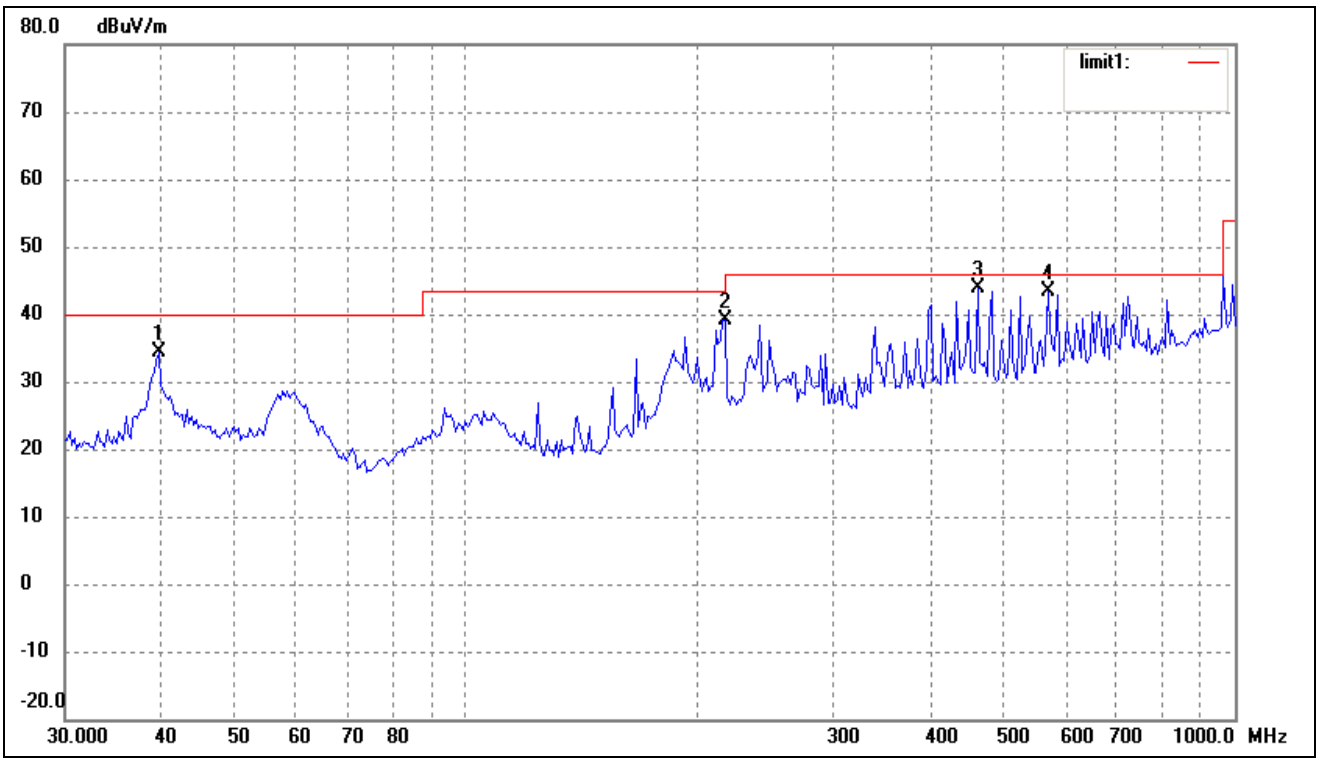
M/N: M709

Operating Condition: Reading and Writing

Test Specification: Horizontal & Vertical

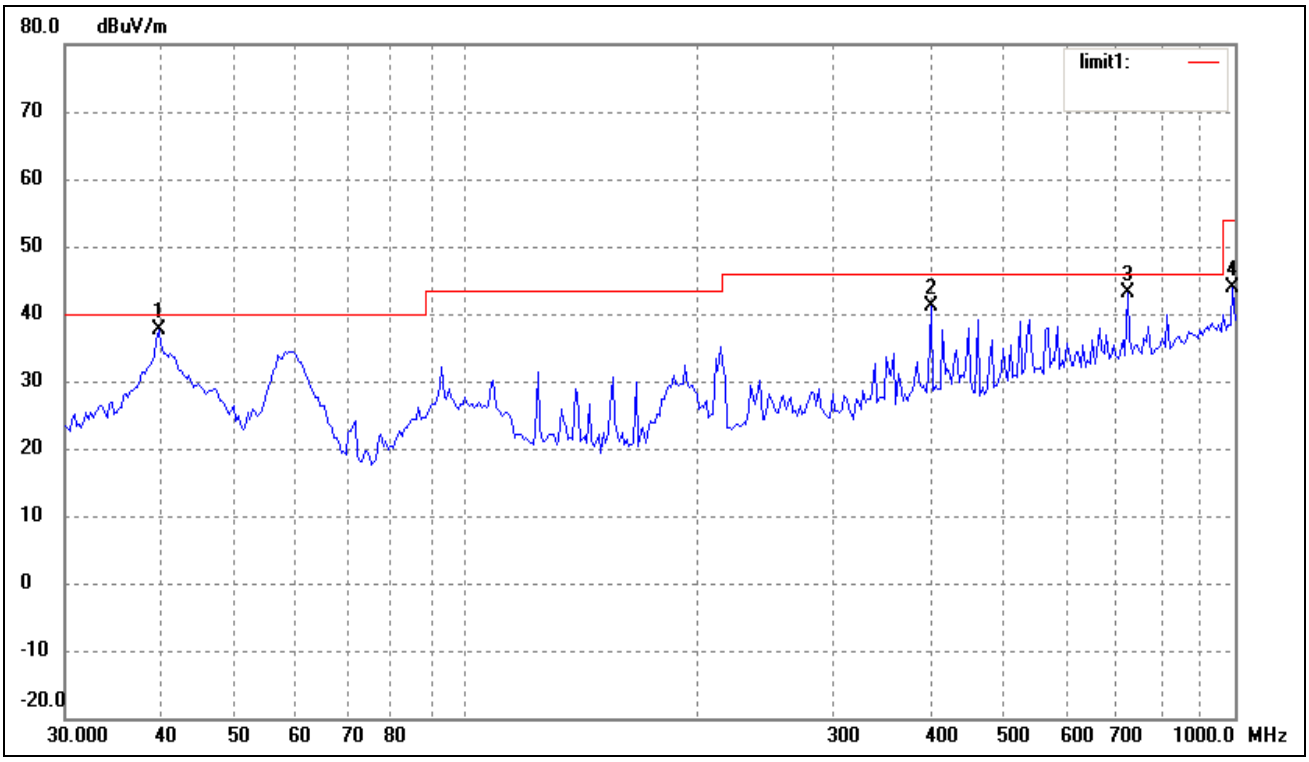
Comment: AC120V/60Hz; Connect to PC,

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	39.7147	26.37	8.07	34.44	40.00	-5.56	209	117	QP
2	216.7828	32.02	7.17	39.19	46.00	-6.81	360	200	peak
3	462.3455	32.16	11.83	43.99	46.00	-2.01	226	150	QP
4	570.6100	27.46	16.01	43.47	46.00	-2.53	108	100	QP

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	39.7146	29.50	8.07	37.57	40.00	-2.43	230	100	QP
2	401.8385	29.63	11.40	41.03	46.00	-4.97	223	118	QP
3	724.2611	25.26	17.86	43.12	46.00	-2.88	109	120	QP
4	993.0114	21.24	22.61	43.85	54.00	-10.15	360	200	peak

Radiated Disturbance

EUT: MID Touch Pad

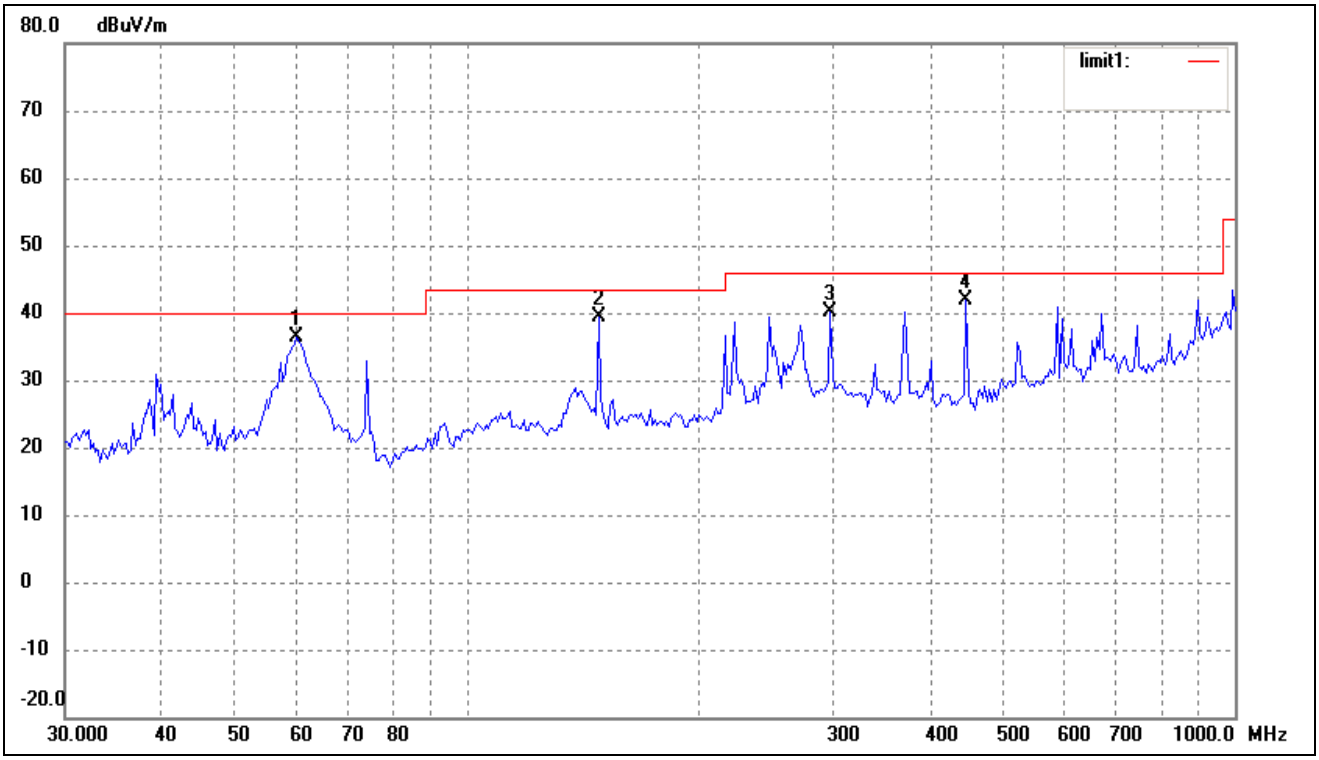
M/N: M709

Operating Condition: HDMI OUT

Test Specification: Horizontal & Vertical

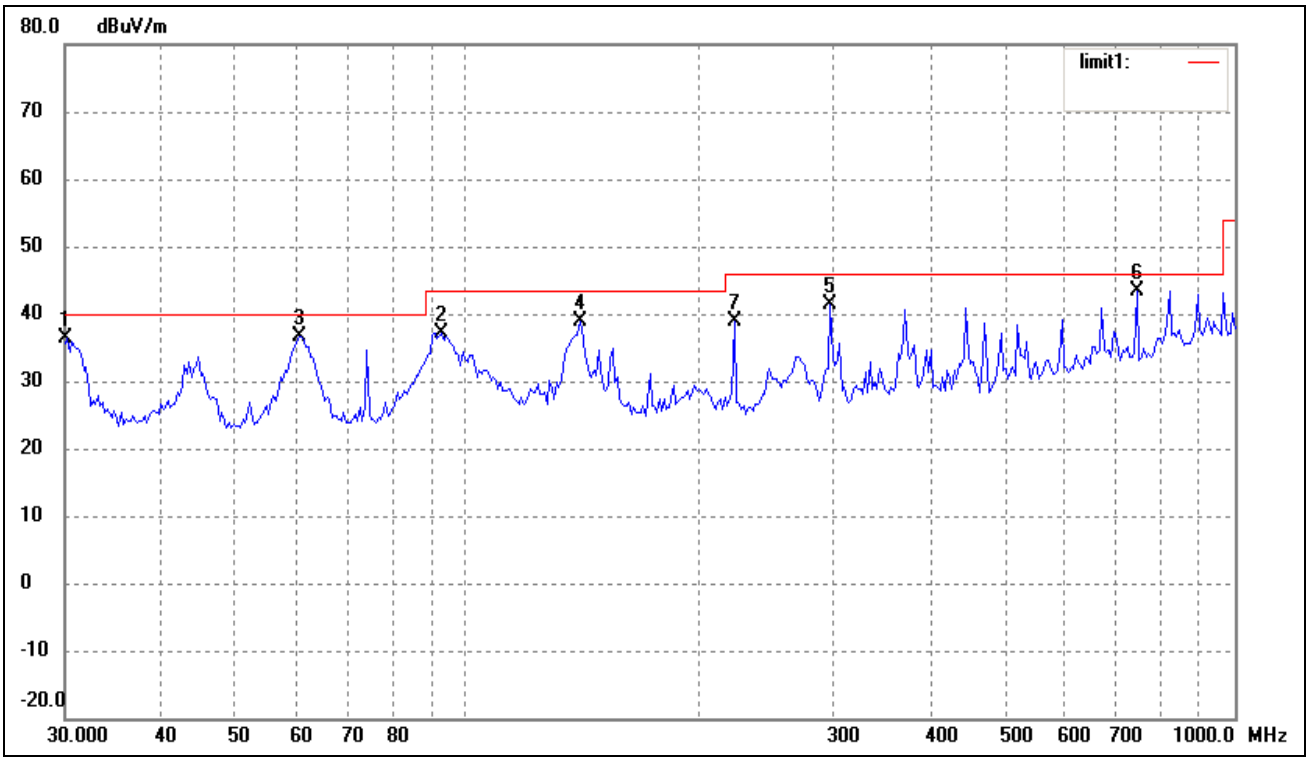
Comment: AC120V/60Hz; Connect to Monitor

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	60.0691	28.98	7.50	36.48	40.00	-3.52	253	150	QP
2	148.4410	35.38	4.07	39.45	43.50	-4.05	229	150	QP
3	297.2241	30.41	9.73	40.14	46.00	-5.86	136	200	QP
4	446.4141	29.83	12.05	41.88	46.00	-4.12	205	100	QP

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	30.2110	29.55	6.77	36.32	40.00	-3.68	360	200	QP
2	92.7871	29.54	7.62	37.16	43.50	-6.34	0	100	peak
3	60.4919	29.38	7.33	36.71	40.00	-3.29	153	109	QP
4	140.3420	34.89	3.96	38.85	43.50	-4.65	149	122	QP
5	297.2241	31.76	9.73	41.49	46.00	-4.51	0	150	peak
6	744.8660	25.16	18.18	43.34	46.00	-2.66	236	150	QP
7	222.9501	31.31	7.46	38.77	46.00	-7.23	360	200	QP

Radiated Disturbance From 1GHz to 5GHz

EUT: MID Touch Pad

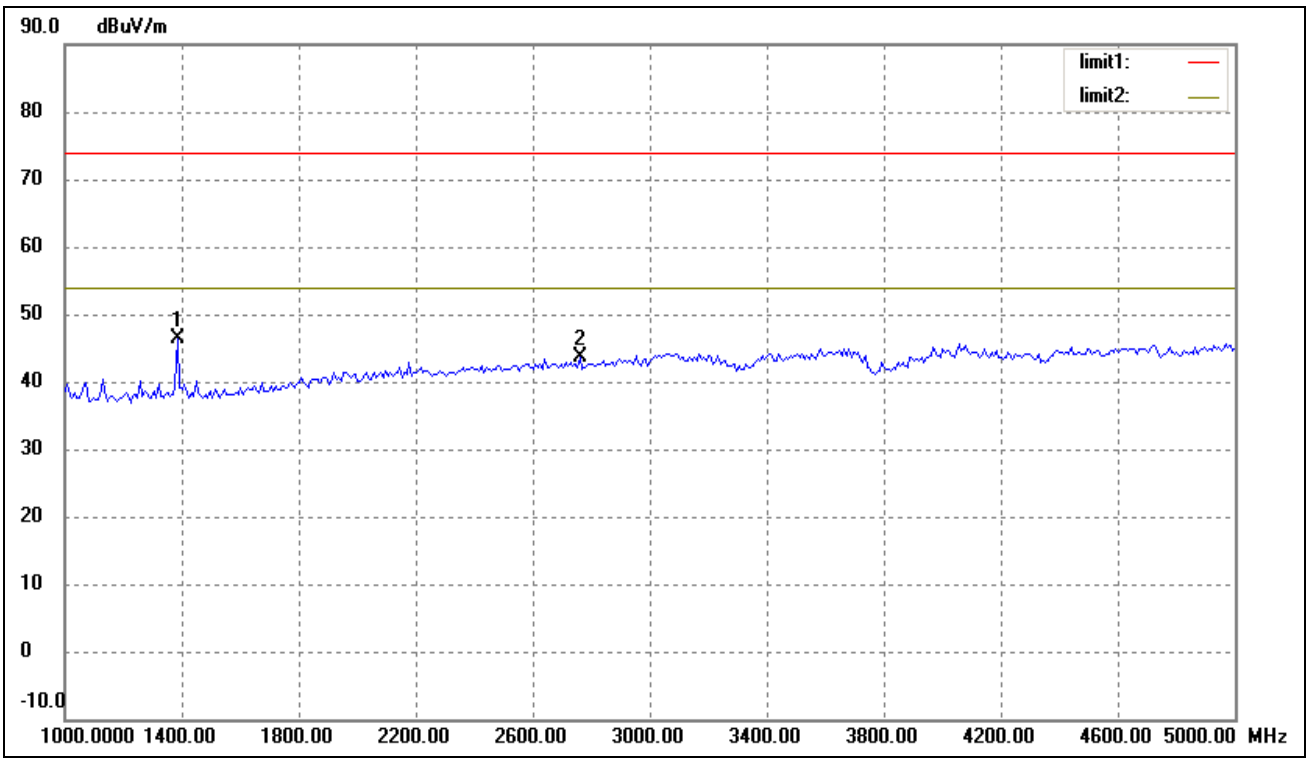
M/N: M709

Operating Condition:Playing

Test Specification: Horizontal & Vertical

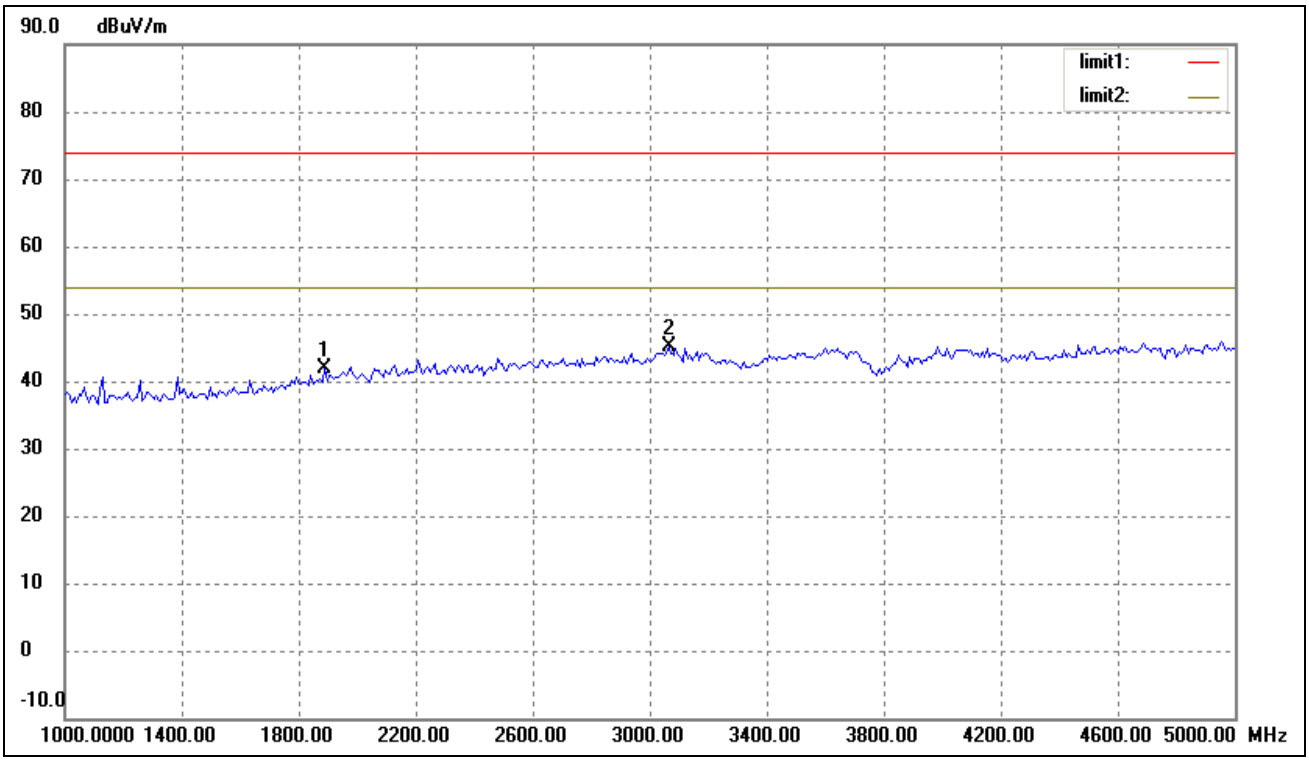
Comment: AC120V/60Hz

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1384.000	57.75	-11.43	46.32	54.00	-7.68	360	100	peak
2	2760.000	50.37	-6.64	43.73	54.00	-10.27	360	100	peak

Vertical:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1888.000	50.82	-8.89	41.93	74.00	-12.07	360	100	peak
2	3064.000	51.42	-6.19	45.23	74.00	-8.77	360	100	peak

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