

**FCC PART 15B**  
**MEASUREMENT AND TEST REPORT**  
**FOR**

**Shenzhen G-Link Digital Technology Co., Ltd.**

**4F, E building Huachuangda Technology Park, Hangcheng Road, Gushu,**

**Xixiang, Bao An District, Shenzhen, China**

**FCC ID: YRZ66688**

<b>Report Concerns:</b> Original Report	<b>Equipment Type:</b> Netbook
<b>Model:</b>	<u>MA200</u>
<b>Report No.:</b>	<u>STR10088186I-2</u>
<b>Test Date:</b>	<u>2010-09-01 to 2010-09-13</u>
<b>Issue Date:</b>	<u>2010-09-13</u>
<b>Tested By:</b>	<u>Seven Song / Engineer</u> <i>Seven Song</i>
<b>Reviewed By:</b>	<u>Lahm Peng / EMC Manager</u> <i>Lahm peng</i>
<b>Approved &amp; Authorized By:</b>	<u>Jandy so / PSQ Manager</u> <i>Jandyso</i>
<b>Prepared By:</b>	<b>SEM.Test Compliance Service Co., Ltd</b> 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

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., Ltd.

**TABLE OF CONTENTS**

<b>1. GENERAL INFORMATION.....</b>	<b>3</b>
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....	3
1.2 TEST STANDARDS.....	3
1.3 RELATED SUBMITTAL(S)/GRANT(S) .....	3
1.4 TEST METHODOLOGY .....	3
1.5 TEST FACILITY .....	4
1.6 EUT EXERCISE SOFTWARE .....	4
1.7 ACCESSORIES EQUIPMENT LIST AND DETAILS .....	5
1.8 EUT CABLE LIST AND DETAILS .....	5
1.9 BASIC TEST SETUP BLOCK DIAGRAM.....	5
<b>2. SUMMARY OF TEST RESULTS .....</b>	<b>6</b>
<b>3. CONDUCTED EMISSIONS .....</b>	<b>7</b>
3.1 MEASUREMENT UNCERTAINTY .....	7
3.2 TEST EQUIPMENT LIST AND DETAILS .....	7
3.3 TEST PROCEDURE.....	7
3.4 BASIC TEST SETUP BLOCK DIAGRAM.....	7
3.5 ENVIRONMENTAL CONDITIONS .....	8
3.6 SUMMARY OF TEST RESULTS/PLOTS .....	8
3.7 CONDUCTED EMISSIONS TEST DATA.....	8
<b>4. §15.109(A)- RADIATED EMISSION .....</b>	<b>14</b>
4.1 MEASUREMENT UNCERTAINTY .....	14
4.2 TEST EQUIPMENT LIST AND DETAILS .....	14
4.3 TEST PROCEDURE.....	14
4.4 TEST RECEIVER SETUP .....	15
4.5 CORRECTED AMPLITUDE & MARGIN CALCULATION.....	15
4.6 ENVIRONMENTAL CONDITIONS .....	15
4.7 SUMMARY OF TEST RESULTS/PLOTS .....	15

## 1. GENERAL INFORMATION

### 1.1 Product Description for Equipment Under Test (EUT)

#### Client Information

Applicant: Shenzhen G-link Digital Technology Co., Ltd.  
Address of applicant: 4F, E building Huachuangda Technology Park, Hangcheng Road, Gushu, Xixiang, Bao An District, Shenzhen, China

Manufacturer: Shenzhen G-link Digital Technology Co., Ltd.  
Address of manufacturer: 4F, E building Huachuangda Technology Park, Hangcheng Road, Gushu, Xixiang, Bao An District, Shenzhen, China

#### General Description of E.U.T

Items	Description
EUT Description:	Netbook
Trade Name:	/
Model No.:	MA200
Add Model:	MA2XX(XX=0-9.A-Z)
Rated Current:	1.5A
Rated Power:	13.5W
Packaging Size:	21.5X14.5X3.5cm
For more information refer to the circuit diagram form and the user's manual.	

*Note: The test data is gathered from a production sample, provided by the manufacture. The others models listed in the report have different appearance only of MA200 without circuit and electronic construction changed, declared by the manufacturer.*

### 1.2 Test Standards

The following report is prepared on behalf of the Shenzhen G-link Digital Technology 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 15.107, and 15.109 rules.

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

### 1.3 Related Submittal(s)/Grant(s)

No Related Submittal(s).

### 1.4 Test Methodology

All measurements contained in this report were conducted with 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.

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.

## 1.5 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.

## 1.6 EUT Exercise Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the system components. The test software, provided by the customer, is started while the EUT is on to simulate the normal work. under the Windows CE6.0 terminal, the exercise software includes the following features:

- \* With a file read and write function for all hard drives or external USB/SD disk,
- \* A exercise video function that fill the character “H” in the LCD display.
- \* Run all I/O port, for exaxmple the USB mouse and keyboard, RJ45 ethernet port etc.

*LCD display setup information:*

- \* *Set the contrast control to maximum*
- \* *Set the brightness control to maximum or at raster extinction if raster extinction occurs at less than maximum brightness.*
- \* *Use white letters on a black background to represent all colors.*
- \* *Select the worse case of positive or negative video if both alternatives are available*
- \* *Set character size and number of characters per line so that the typical maximum number of characters per screen is displayed.*

In addition, the EUT playing the standard 1kHz audio signal, and plug in the mircophone and headphone so that the microphone and audio port is running.

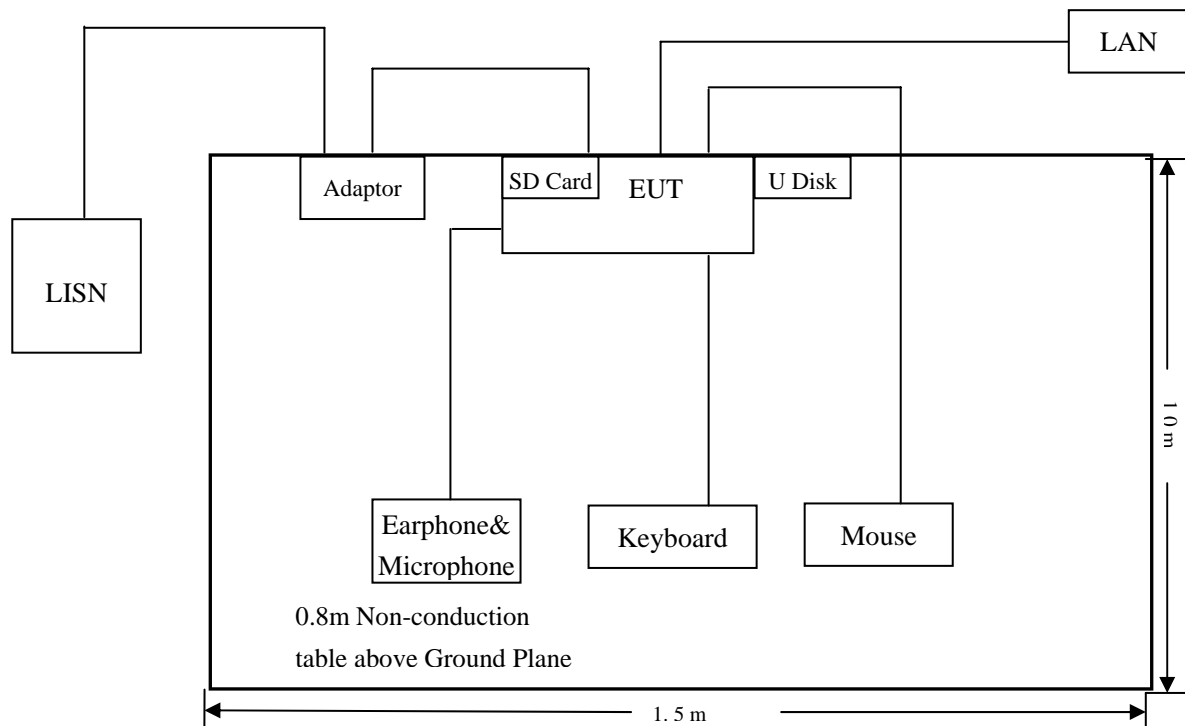
### 1.7 Accessories Equipment List and Details

Description	Manufacturer	Model	Serial Number
Headphone	Philips	SHM1500	/
Keyboard	Dell	SK-8115	/
Mouse	Dell	MOC5UO	/

### 1.8 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
RJ45	1.5	Unshielded	Without Core
DC Power Cable	1.5	Unshielded	Without Core

### 1.9 Basic Test Setup Block Diagram



2. SUMMARY OF TEST RESULTS

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

### 3. 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  $\pm 2.88$  dB.

#### 3.2 Test Equipment List and Details

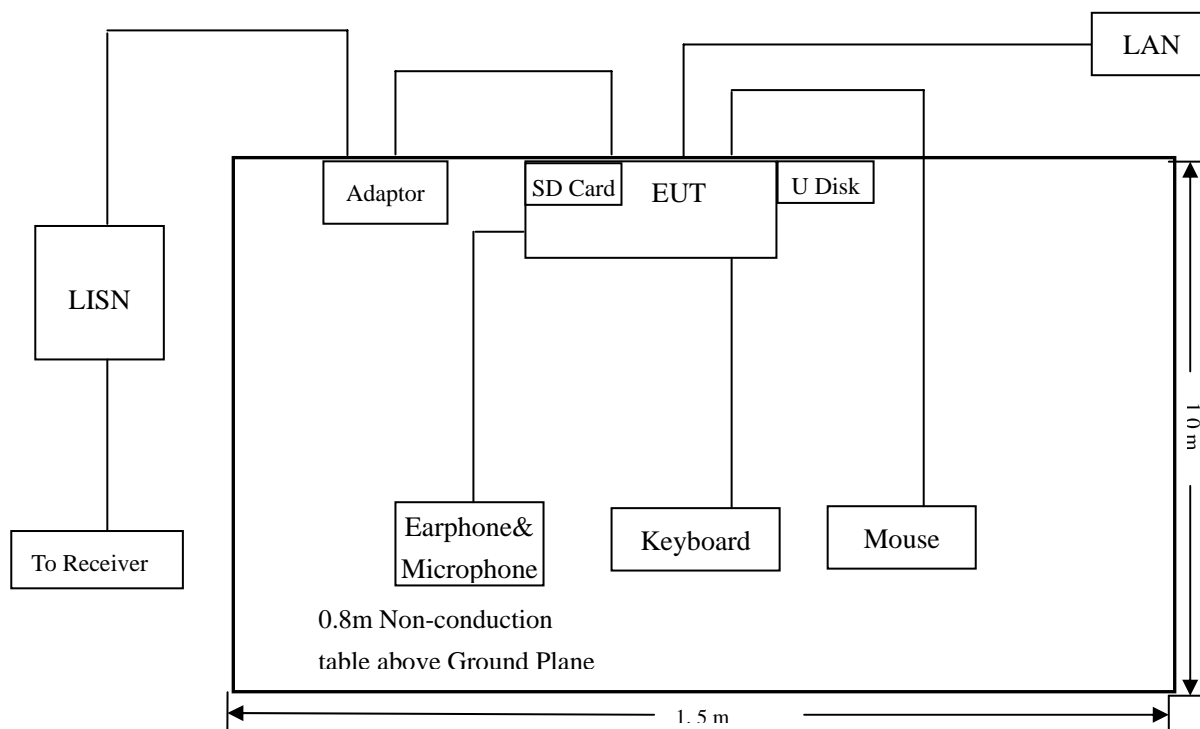
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2010-08-12	2011-08-11
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2010-08-12	2011-08-11
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2010-08-12	2011-08-11

**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:	20° 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 15.207 Conducted margin for a Class B device, with the *worst* margin reading of:

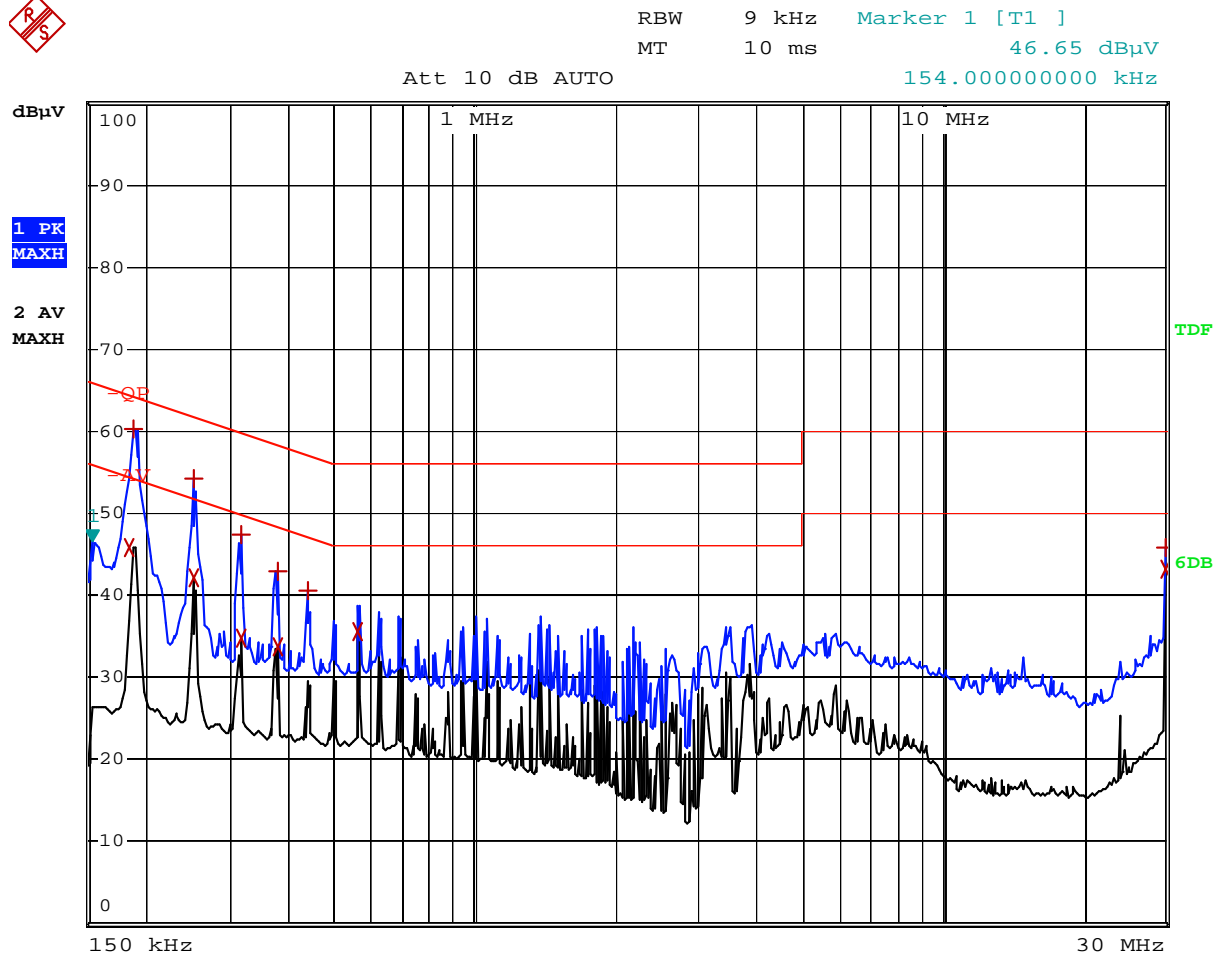
**-2.9 dB $\mu$ V at 0.214 MHz** in the **Line Pk** Detector (with adapter Model: AK15G-0900150U), 0.15-30MHz

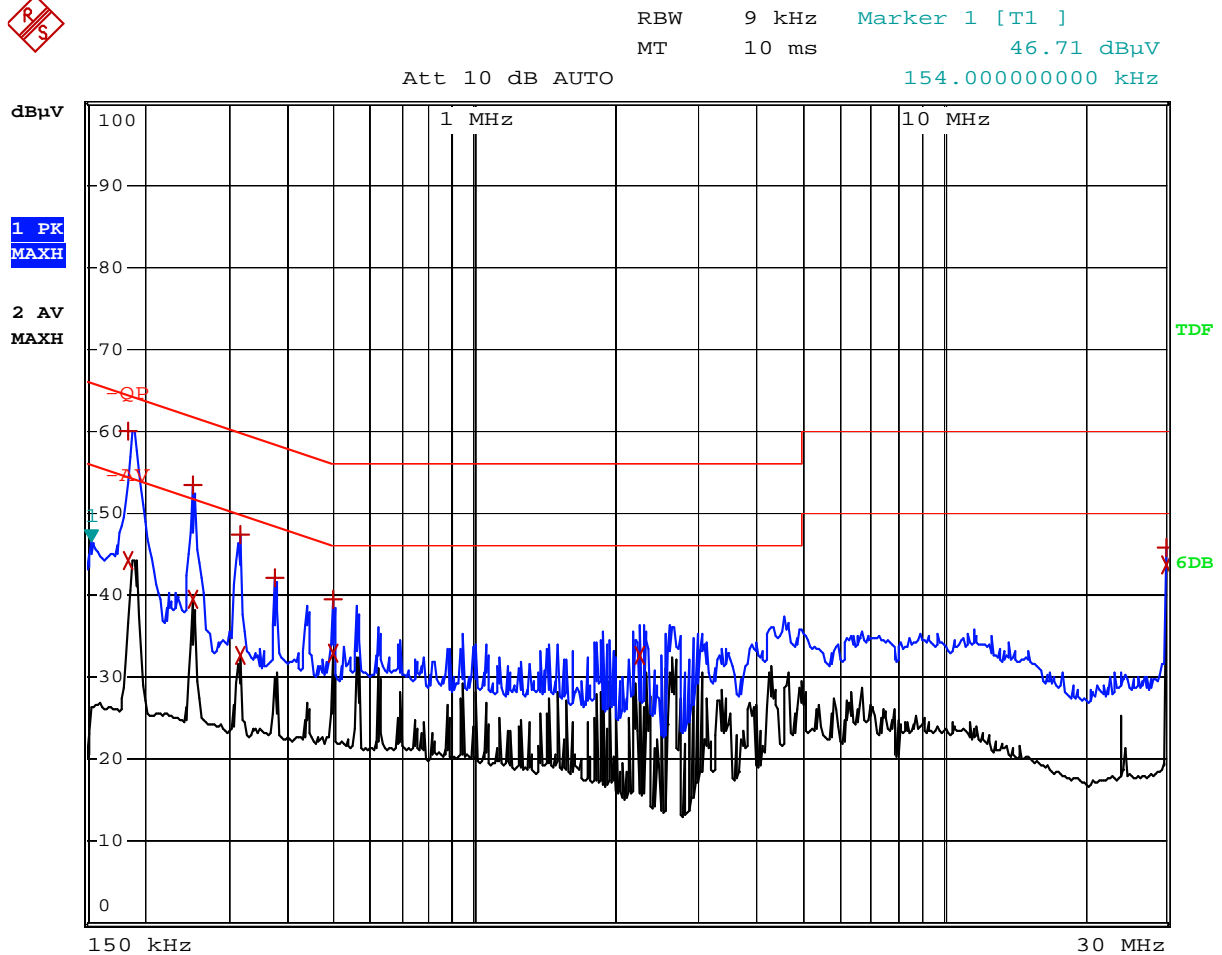
### 3.7 Conducted Emissions Test Data

Adapter Model: SFF0900150A1BA

LINE CONDUCTED EMISSIONS				FCC 15.207	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dB $\mu$ V	QP/Ave/Pk	Line/Neutral	dB $\mu$ V	dB
0.190	60.31	Pk	Neutral	64.04	-3.7
0.186	59.98	Pk	Line	64.21	-4.2
30.000	43.77	Ave	Line	50.00	-6.2
30.000	43.16	Ave	Neutral	50.00	-6.8
0.250	54.22	Pk	Neutral	61.76	-7.5
0.250	53.53	Pk	Line	61.76	-8.2
0.186	45.72	Ave	Neutral	54.21	-8.5
0.250	42.13	Ave	Neutral	51.76	-9.6
0.186	44.31	Ave	Line	54.21	-9.9
0.562	35.51	Ave	Neutral	46.00	-10.5
0.250	39.50	Ave	Line	51.76	-12.3
0.314	47.44	Pk	Line	59.86	-12.4
0.314	47.43	Pk	Neutral	59.86	-12.4
0.498	32.99	Ave	Line	46.03	-13.0
2.258	32.65	Ave	Line	46.00	-13.4
30.00	45.81	Pk	Line	60.00	-14.2
30.00	45.74	Pk	Neutral	60.00	-14.3
0.378	33.66	Ave	Neutral	48.32	-14.7
0.314	34.67	Ave	Neutral	49.86	-15.2
0.378	42.97	Pk	Neutral	58.32	-15.4
0.374	42.06	Pk	Line	58.41	-16.4
0.498	39.55	Pk	Line	56.03	-16.5
0.438	40.42	Pk	Neutral	57.10	-16.7
0.314	32.80	Ave	Line	49.86	-17.1

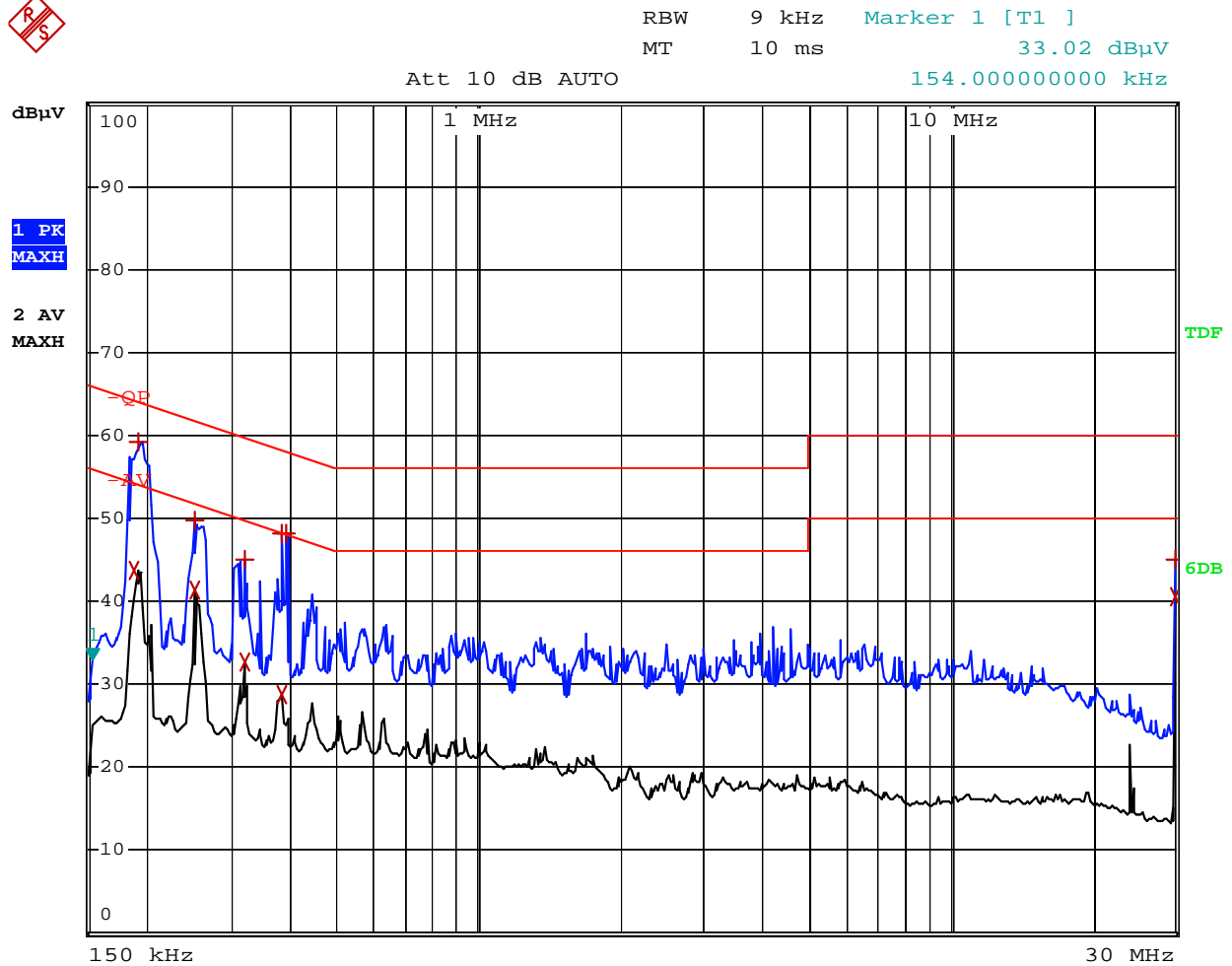


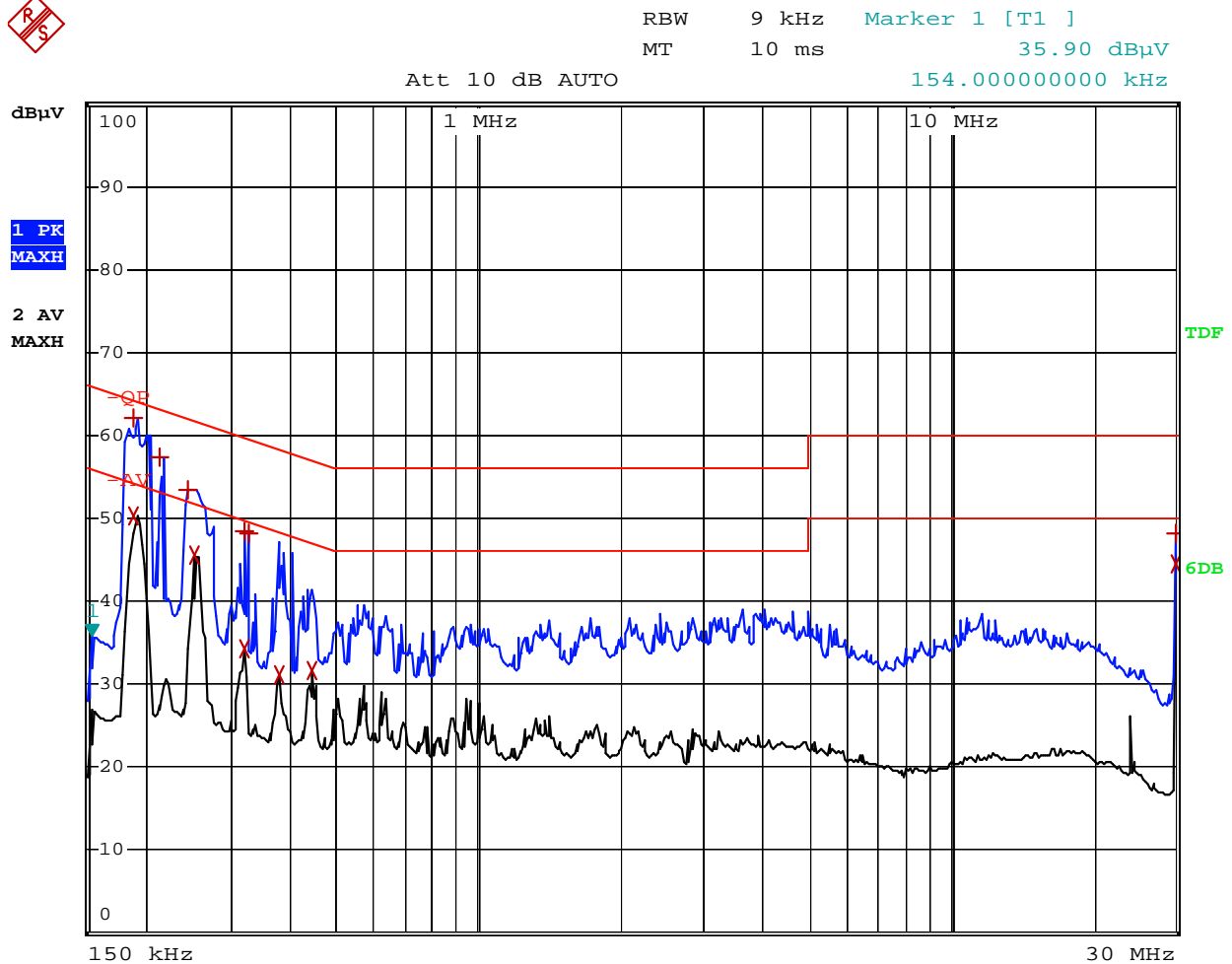
**Plot of Conducted Emissions Test Data***Conducted Disturbance**EUT: Netbook**M/N: MA200**Operating Condition: Running with program**Test Specification: N**Comment: AC 120V/60Hz/Adapter 9V (Adapter Model: SFF0900150A1BA)*

**Plot of Conducted Emissions Test Data***Conducted Disturbance**EUT: Netbook**M/N: MA200**Operating Condition: Running with program**Test Specification: L**Comment: AC 120V/60Hz/Adapter 9V (Adapter Model: SFF0900150A1BA)*

Adapter Model: AK15G-0900150U

LINE CONDUCTED EMISSIONS				FCC 15.207	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dB $\mu$ V	QP/Ave/Pk	Line/Neutral	dB $\mu$ V	dB
0.214	57.40	Pk	Line	64.96	-2.9
0.190	50.33	Ave	Line	54.04	-3.7
0.194	59.29	Pk	Neutral	63.86	-4.6
30.00	44.52	Ave	Line	50.00	-5.5
0.246	53.49	Pk	Line	63.05	-5.6
0.250	45.51	Ave	Line	51.76	-6.2
0.318	48.34	Pk	Line	61.89	-8.4
0.390	48.18	Pk	Neutral	58.06	-9.9
30.00	40.03	Ave	Neutral	50.00	-10.0
0.382	48.07	Pk	Neutral	58.24	-10.2
0.190	43.82	Ave	Neutral	54.04	-10.2
0.170	62.02	Pk	Neutral	54.04	-10.2
0.250	41.45	Ave	Neutral	51.76	-10.3
0.326	48.16	Pk	Line	59.76	-11.4
30.00	48.26	Pk	Line	59.55	-11.4
0.250	49.86	Pk	Neutral	61.76	-11.9
0.318	44.90	Pk	Neutral	59.76	-14.9
30.00	44.94	Pk	Neutral	60.00	-15.1
0.318	34.28	Ave	Line	49.76	-15.5
0.442	31.57	Pk	Line	47.02	-15.5
0.318	32.71	Ave	Neutral	49.76	-17.0
0.378	31.14	Pk	Line	48.32	-17.2
0.382	28.71	Ave	Neutral	48.24	-19.5

**Plot of Conducted Emissions Test Data***Conducted Disturbance**EUT: Netbook**M/N: MA200**Operating Condition: Running with program**Test Specification: N**Comment: AC 120V/60Hz/Adapter 9V (Adapter Model: AK15G-0900150U)*

**Plot of Conducted Emissions Test Data***Conducted Disturbance**EUT: Netbook**M/N: MA200**Operating Condition: Running with program**Test Specification: L**Comment: AC 120V/60Hz/Adapter 9V (Adapter Model: AK15G-0900150U)*

## 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  $\pm 5.10$  dB.

### 4.2 Test Equipment List and Details

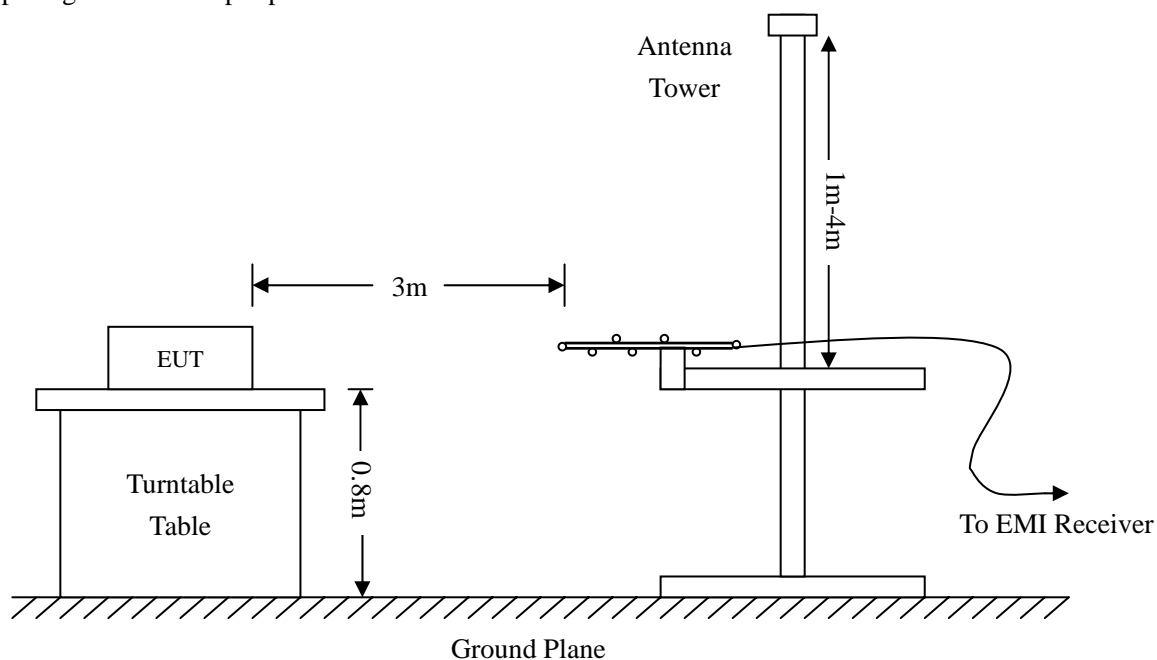
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2010-04-16	2011-04-15
EMI Test Receiver	R&S	ESVB	825471/005	2010-08-12	2011-08-11
Positioning Controller	C&C	CC-C-1F	N/A	2010-08-12	2011-08-11
RF Switch	EM	EMSW18	SW060023	2010-08-12	2011-08-11
Pre-amplifier	Agilent	8447F	3113A06717	2010-08-12	2011-08-11
Pre-amplifier	Compliance Direction	PAP-0118	24002	2010-08-12	2011-08-11
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2010-07-21	2011-07-20
Horn Antenna	ETS	3117	00086197	2010-07-21	2011-07-20

### 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 15.205 and 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 conducted emission test, the test receiver was set with the following configurations:

Measurement From 30MHz to 1000MHz:

Sweep Speed ..... Auto  
 IF Bandwidth..... 100 kHz  
 Video Bandwidth..... 300 kHz

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:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

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:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15B Limit}$$

#### 4.6 Environmental Conditions

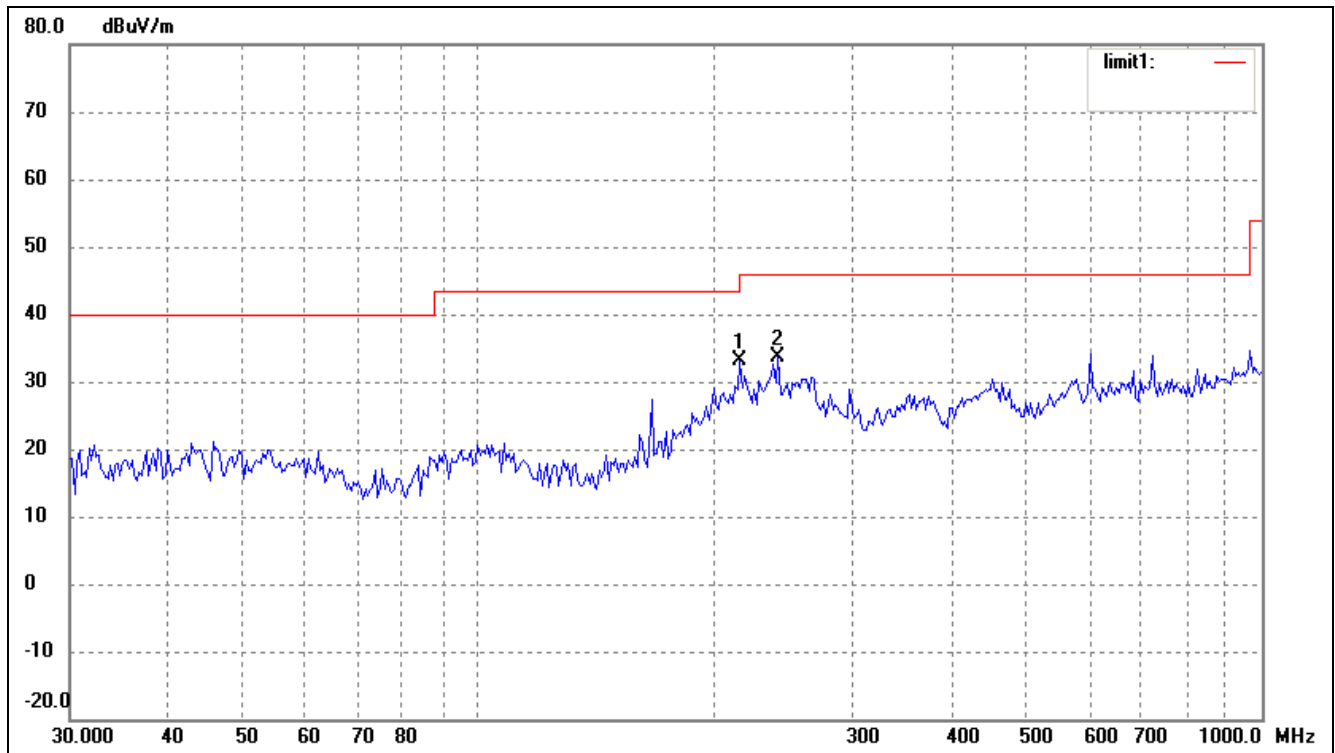
Temperature:	25 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

#### 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:

*Note: The highest clock frequency is 667MHz, so the frequency range of radiated measurements is from 30MHz to 5GHz.*

**-10.28 dBμV at 215.2678MHz in the Horizontal polarization (with Adapter Model: AK15G-0900150U), 30 MHz to 5 GHz, 3Meters**

**Plot of Radiation Emissions Test Data****Radiated Disturbance***EUT: Mouse**M/N: H3D3E13**Operating Condition: Running with Program**Test Specification: Horizontal & Vertical**Comment: AC 120V/60Hz/Adapter 9V (Adapter Model: AK15G-0900150U)***Horizontal**

No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( ° )	Height (cm)	Remark
1	215.2678	27.04	6.18	33.22	43.50	-10.28	137	100	peak
2	240.8304	26.18	7.46	33.64	46.00	-12.36	229	100	peak

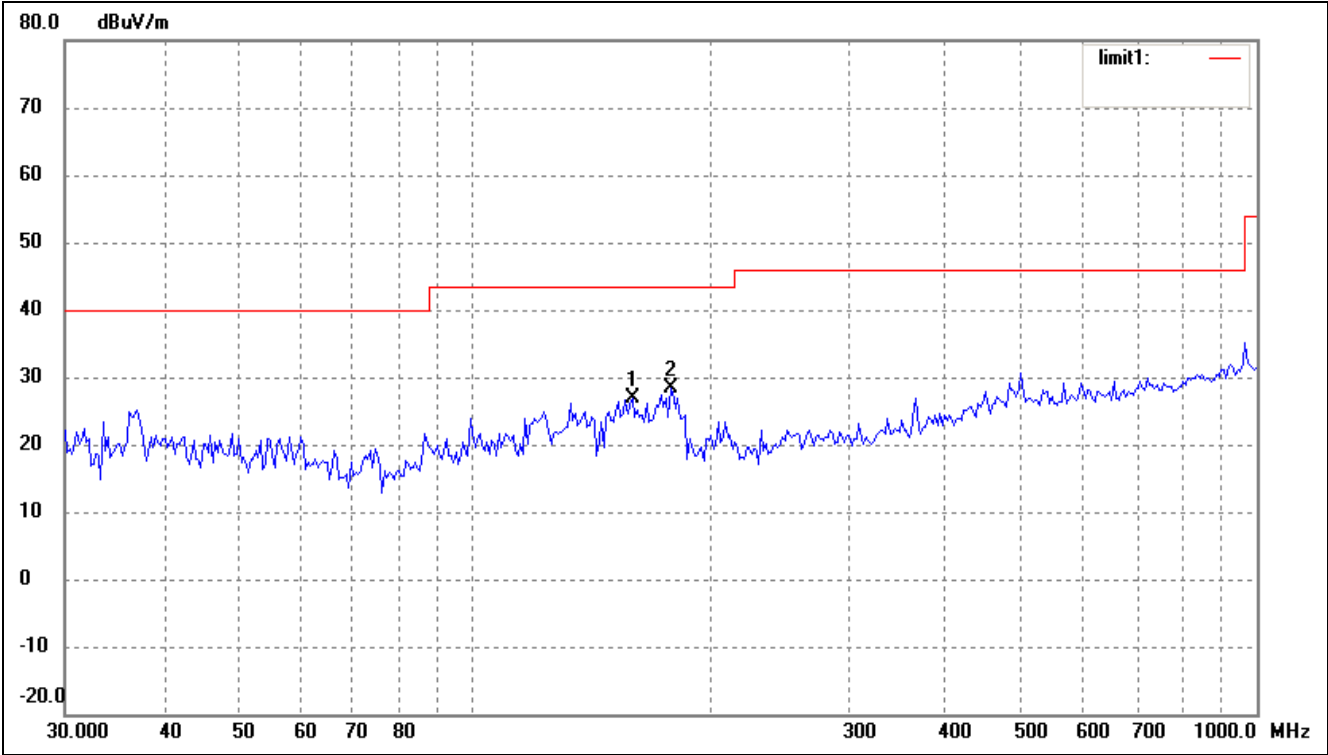
**For above 1G**

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( ° )	Height (cm)	Remark
1	1322.34	57.03	-7.68	49.35	74.00	-24.65	360	100	peak
	1322.34	45.01	-7.68	37.33	54.00	-16.67	360	100	Ave.
2	1680.52	55.13	-6.85	48.28	74.00	-25.72	360	100	peak
	1680.52	44.67	-6.85	37.82	54.00	-16.18	360	100	Ave.

Emissions attenuated more than 20 dB below the permissible value are not reported. There is only the base noise in frequency 1GHz to 5GHz.



Vertical

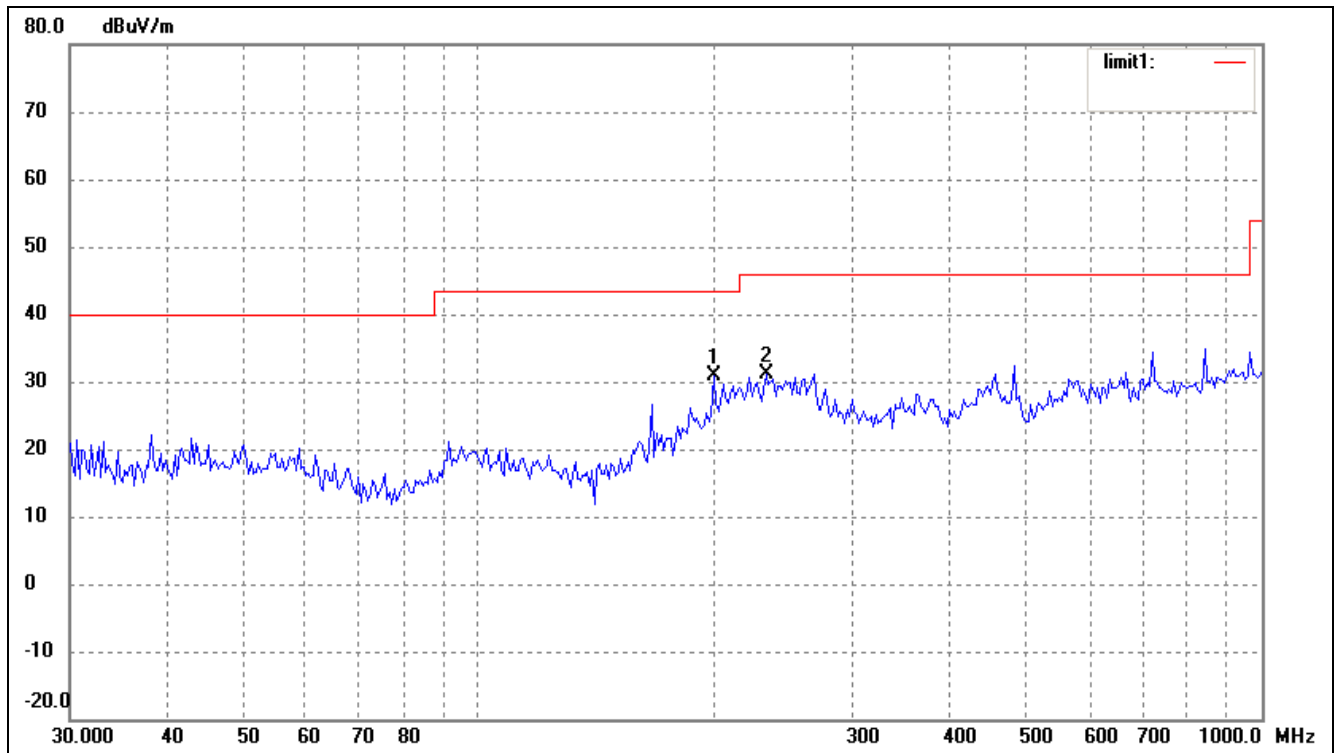


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( ° )	(cm)	
1	159.2251	23.07	3.71	26.78	43.50	-16.72	64	100	peak
2	178.1327	23.66	4.65	28.31	43.50	-15.19	341	100	peak

For above 1G

No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( ° )	(cm)	
1	1322.34	58.95	-7.68	51.27	74.00	-22.73	360	100	peak
	1322.34	46.20	-7.68	38.52	54.00	-15.48	360	100	Ave.
2	1680.52	56.53	-6.85	49.68	74.00	-24.32	360	100	peak
	1680.52	45.18	-6.85	38.33	54.00	-15.67	360	100	Ave.

Emissions attenuated more than 20 dB below the permissible value are not reported. There is only the base noise in frequency 1GHz to 5GHz.

*Radiated Disturbance**EUT: Mouse**M/N: H3D3E13**Operating Condition: Running with Program**Test Specification: Horizontal & Vertical**Comment: Comment: AC 120V/60Hz/Adapter 9V (Adapter Model: SFF0900150A1BA)**Horizontal*

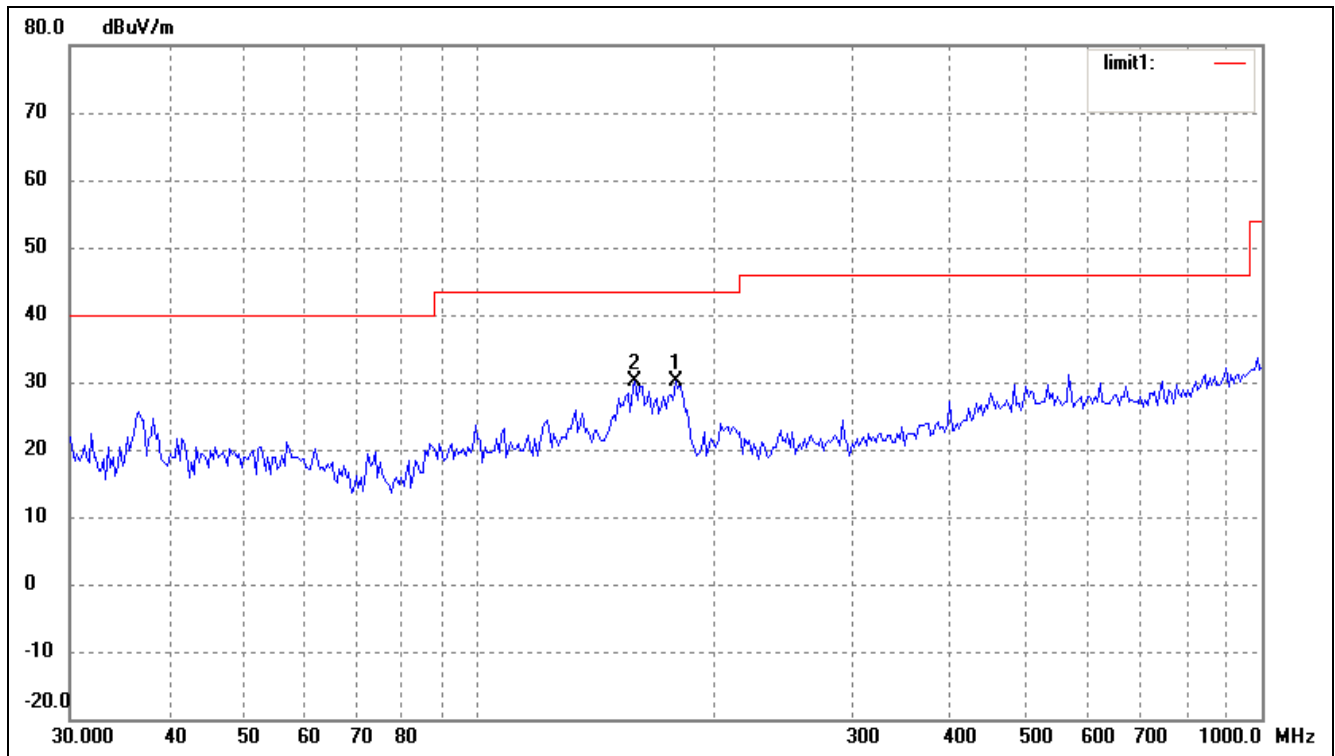
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( ° )	Height (cm)	Remark
1	199.2855	25.29	5.68	30.97	43.50	-12.53	285	100	peak
2	232.5318	24.12	7.03	31.15	46.00	-14.85	194	100	peak

*For above 1G*

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( ° )	Height (cm)	Remark
1	1322.34	56.1	-7.68	48.42	74.00	-25.6	360	100	peak
	1322.34	45.35	-7.68	37.67	54.00	-16.3	360	100	Ave.
2	1680.52	54.48	-6.85	47.63	74.00	-26.4	360	100	peak
	1680.52	44.34	-6.85	37.49	54.00	-16.5	360	100	Ave.

*Emissions attenuated more than 20 dB below the permissible value are not reported. There is only the base noise in frequency 1GHz to 5GHz.*

Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( ° )	Height (cm)	Remark
1	178.1327	25.52	4.65	30.17	43.50	-13.33	264	100	peak
2	158.1123	26.51	3.66	30.17	43.50	-13.33	138	100	peak

For above 1G

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( ° )	Height (cm)	Remark
1	1322.34	59.82	-7.68	52.14	74.00	-21.9	360	100	peak
	1322.34	48.23	-7.68	40.55	54.00	-13.5	360	100	Ave.
2	1680.52	55.6	-6.85	48.75	74.00	-25.3	360	100	peak
	1680.52	46.12	-6.85	39.27	54.00	-14.7	360	100	Ave.

Emissions attenuated more than 20 dB below the permissible value are not reported. There is only the base noise in frequency 1GHz to 5GHz.

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