

Prüfbericht - Nr.: 17019147 001 <i>Test Report No.:</i>			Seite 1 von 24 <i>Page 1 of 24</i>		
Auftraggeber: <i>Client:</i>			Primax Electronics Ltd. No. 669, Ruey Kuang Rd. Neihu, Taipei 114, Taiwan		
Gegenstand der Prüfung: <i>Test item:</i>			Lenovo Wireless Mouse		
Bezeichnung: <i>Identification:</i>		MORFFHL	Serien-Nr.: <i>Serial No.:</i>		n.a.
Wareneingangs-Nr.: <i>Receipt No.:</i>		163072199	Eingangsdatum: <i>Date of receipt:</i>		2010-12-23
Prüfort: <i>Testing location:</i>			Neutron Engineering Inc. No. 3. Jinshagang 1st Road, ShiXia, DaLang Town, Dong Guan, China FCC Registration No.: 319330 Industry Canada Test Site No.: 4428B-1		
Prüfgrundlage: <i>Test specification:</i>			FCC CFR47 Part 15: Subpart C Section 15.249 FCC CFR47 Part 15: Subpart C Section 15.209 RSS-210 Issue 8 December 2010 RSS-Gen Issue 3 December 2010 RSS-102 Issue 4 March 2010		
Prüfergebnis: <i>Test Result:</i>			Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). <i>The test item passed the test specification(s).</i>		
Prüflaboratorium: <i>Testing Laboratory:</i>			TÜV Rheinland (Shenzhen) Co., Ltd.		
geprüft/ tested by:			kontrolliert/ reviewed by:		
 2011-03-01 Sam Lin/ Project Manager			 2011-03-01 Shawn Peng/ Manager		
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>
Sonstiges/ Other Aspects:					
Abkürzungen: P(ass) = entspricht Prüfgrundlage F(ail) = entspricht nicht Prüfgrundlage NIA = nicht anwendbar NIT = nicht getestet			Abbreviations: P(ass) = passed F(ail) = failed NIA = not applicable NIT = not tested		
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i>					

TEST SUMMARY

5.1.1 FIELD STRENGTH OF FUNDAMENTAL AND HARMONICS

RESULT: Passed

5.1.2 RADIATED EMISSIONS

RESULT: Passed

5.1.3 99% BANDWIDTH

RESULT: Passed

5.1.4 BAND EDGE

RESULT: Passed

6.1.1 ELECTROMAGNETIC FIELDS

RESULT: Passed

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1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix 1: Test Result of Radiated Emissions

2. Test Sites

2.1 Test Facilities

Neutron Engineering Inc.

No. 3. Jinshagang 1st Road, ShiXia, Dalang Town, Dong Guan, China

FCC Registration No.: 319330

Industry Canada Test site No.: 4428B-1

The tests at the test site have been conducted under the supervision of a TÜV engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Radiated emissions				
Antenna	Schwarbeck	VULB9160	9160-3232	Jun.08.2011
Triple Loop Antenna	R&S	HFH2-Z2	830749/020	May.27.2011
Amplifier	HP	8447D	2944A09673	May.26.2011
Test Receiver	R&S	ESCI	100382	May.26.2011
Test Cable	N/A	C-01_CB03	N/A	Jul.06.2011
Controller	CT	SC100	N/A	N/A
Antenna	ETS	3115	00075789	May.27.2011
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170340	Dec.16.2011
Amplifier	Agilent	8449B	3008A02274	May.26.2011
Spectrum	Agilent	E4408B	US39240143	Nov.26.2011
Test Cable	HUBER+SUHNER	SUCOFLEX_8m	313794/4	Apr.12.2011
Controller	CT	SC100	N/A	N/A

2.3 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO/IEC 17025 are:

Table 2: Measurement Uncertainty

Items		Extended Uncertainty
CE	Disturbance Voltage (dBuV)	$U=\pm 1.94\text{dB}$, $k=2$, $\sigma=95\%$
RE (30-200MHz)	Field strength (dBuV/m)	$U=\pm 3.82\text{dB}$, $k=2$, $\sigma=95\%$
RE (200-1000MHz)	Field strength (dBuV/m)	$U=\pm 3.94\text{dB}$, $k=2$, $\sigma=95\%$
RE (1-18GHz)	Field strength (dBuV/m)	$U=\pm 1.47\text{dB}$, $k=2$, $\sigma=95\%$
RE (18-30GHz)	Field strength (dBuV/m)	$U=\pm 1.53\text{dB}$, $k=2$, $\sigma=95\%$

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached in this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The Neutron Engineering Inc. facility located at No. 3. Jinshagang 1st Road, ShiXia, Dalang Town, Dong Guan, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3. General Product Information

3.1 Product Function and Intended Use

The EUT is a wireless laser mouse used together with personal computer for domestic use.
 For details refer to the User Manual, technical description and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Information of EUT

Kind of Equipment:	Lenovo Wireless Mouse
Type Designation:	MORFFHL
FCC ID	EMJMMORFFHL
IC	4251A-MMORFFHL

Table 4: Technical Specification of EUT

Technical Specification	Value
Operating Frequency	2402-2479 MHz
Operation Voltage	DC 3V (via AA size ALKALINE battery)
Modulation	GFSK
Antenna Type	Internal Chip Antenna, Non-User Replaceable
External Ports	None
Antenna Gain	0.5dBi
RF Output Power	0.853mW (-0.69dBm)
Number of channels	70
Channel frequency (MHz)	2402, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2479

3.3 Independent Operation Modes

The basic operation modes are:

- A. Transmitting
 - 1. Low channel
 - 2. Middle channel
 - 3. High channel
- B. Standby
- C. Receiving
- D. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- | | |
|-------------------------|----------------------|
| - Bill of Material | - Circuit Diagram |
| - PCB Layout | - Instruction Manual |
| - Photo Document | - Rating Label |
| - Technical Description | |

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5.
All testing were performed according to the procedures in ANSI C63.10: 2009.

4.3 Special Accessories and Auxiliary Equipment

None.

4.4 Countermeasures to achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test

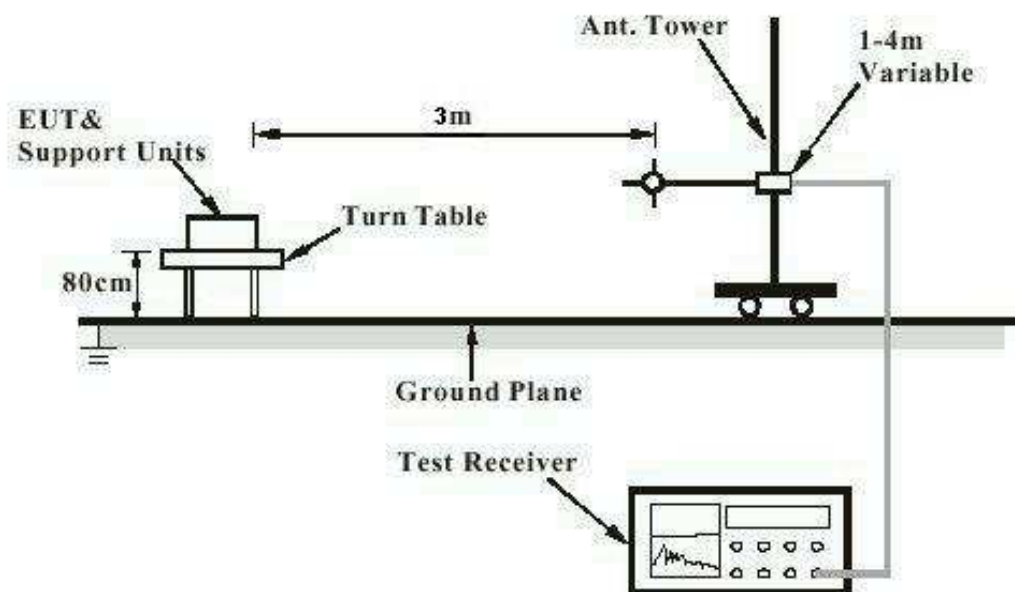


Diagram of Measurement Equipment Configuration for Mains Conduction Measurement

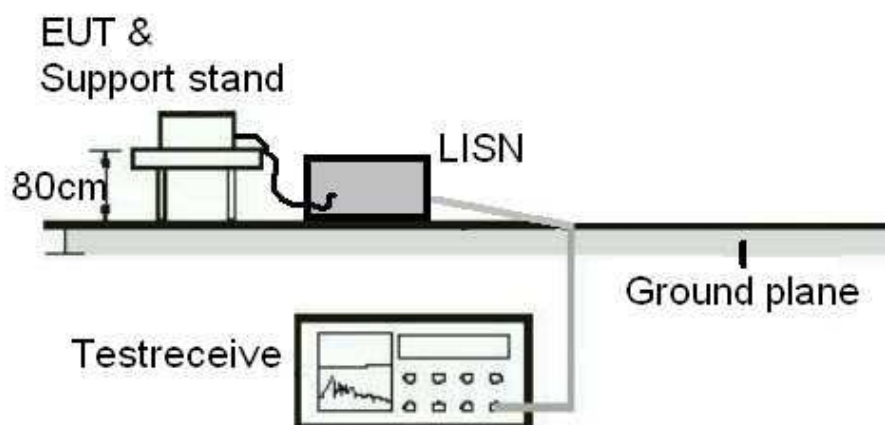
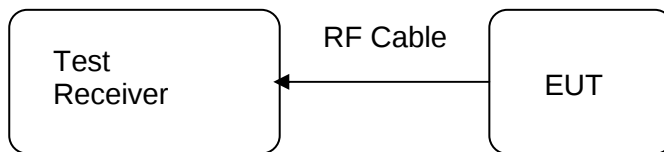


Diagram of Measurement Equipment Configuration for Conducted Transmitter Measurement



5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Field strength of fundamental and harmonics

RESULT:
Passed

Test date : 2011-01-19
 Test standard : FCC Part 15.249(a)
 Clause A2.9 of RSS-210
 Basic standard : ANSI C63.10: 2009
 Limit : FCC Part 15.249(a)
 Clause A2.9(a) of RSS-210
 Kind of test site : 3m Semi-Anechoic Chamber

Test setup

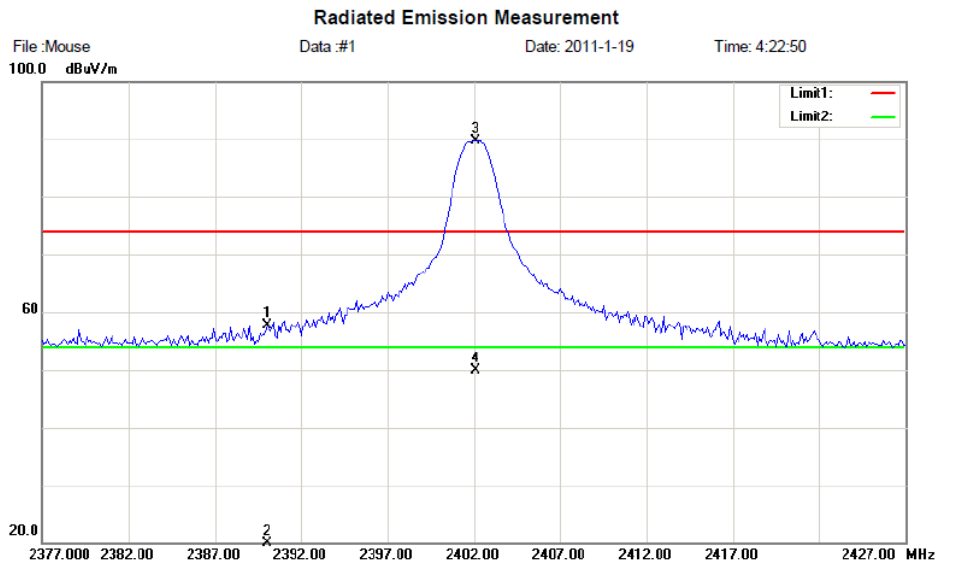
Operation Mode : A
 Ambient temperature : 23°C
 Relative humidity : 58%
 Atmospheric pressure : 101.0 kPa

Table 5: Test results of Field strength of fundamental

Frequency (MHz)	Field Strength of Fundamental					
	Reading Level (dBuV/m)		Limit (dBuV/m)		Antenna Polarization	Verdict
	Average	Peak	Average	Peak		
2402	59.36	99.10	94	114	Horizontal	Pass
	49.99	89.73	94	114	Vertical	Pass
2441	60.72	99.86	94	114	Horizontal	Pass
	47.59	87.33	94	114	Vertical	Pass
2479	60.76	100.50	94	114	Horizontal	Pass
	51.51	91.25	94	114	Vertical	Pass

Test Plots of Field strength of fundamental

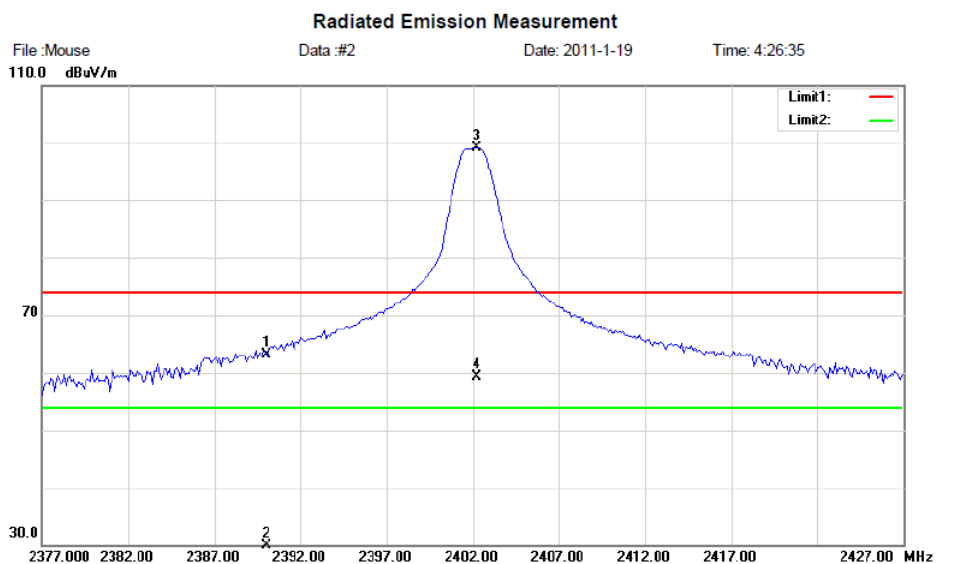
Low Channel



Site DG-CB03
 Limit: FCC_RF_1G-40G_(Peak)
 EUT: Mouse
 M/N:
 Mode: TX
 Note: TX 2402MHz

Polarization: **Vertical**
 Power: DC 3V
 Distance: 3m

Temperature: 23
 Humidity: 58 %

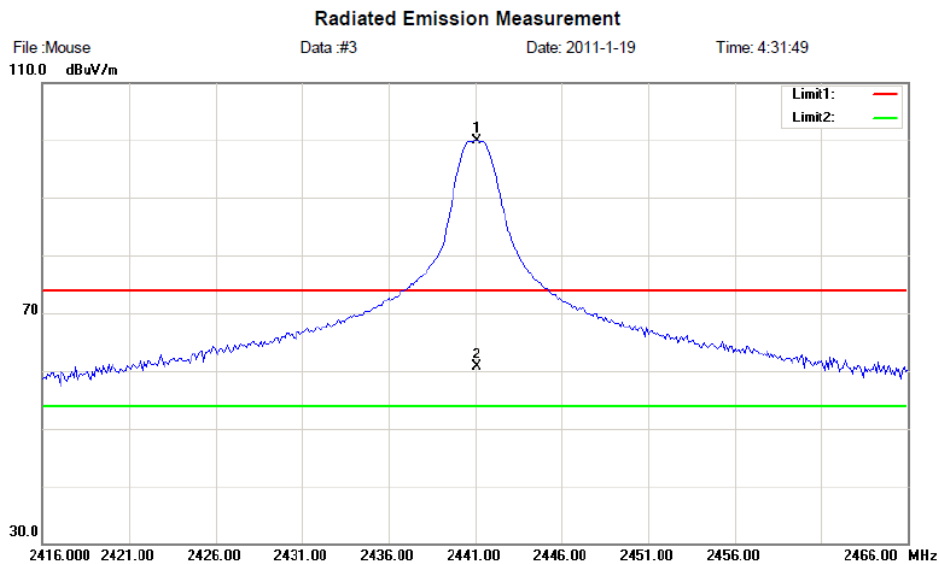


Site DG-CB03
 Limit: FCC_RF_1G-40G_(Peak)
 EUT: Mouse
 M/N:
 Mode: TX
 Note: TX 2402MHz

Polarization: **Horizontal**
 Power: DC 3V
 Distance: 3m

Temperature: 23
 Humidity: 58 %

Middle Channel



Site DG-CB03

Limit: FCC_RF_1G-40G_(Peak)

EUT: Mouse

M/N:

Mode: TX

Note: TX 2441MHz

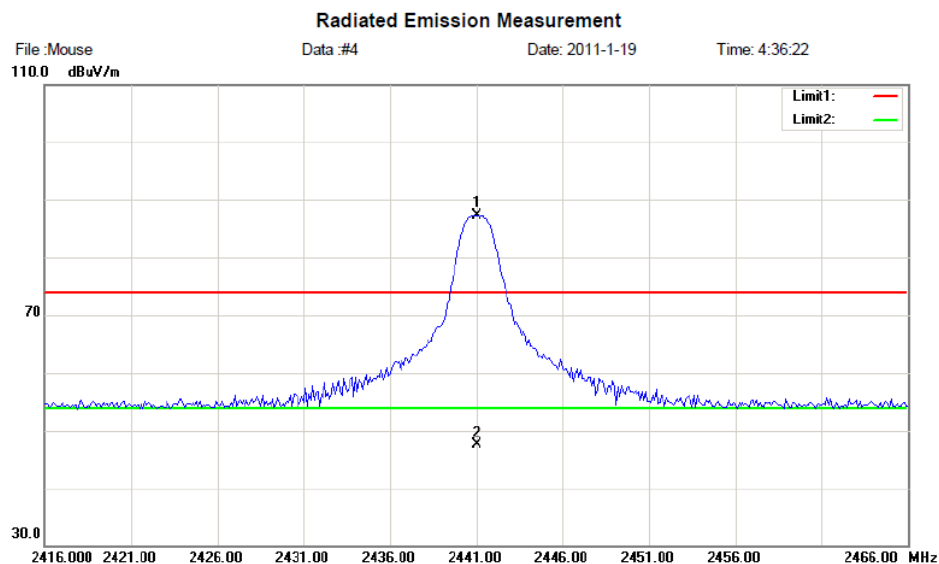
Polarization: **Horizontal**

Power: DC 3V

Distance: 3m

Temperature: 23

Humidity: 58 %



Site DG-CB03

Limit: FCC_RF_1G-40G_(Peak)

EUT: Mouse

M/N:

Mode: TX

Note: TX 2441MHz

Polarization: **Vertical**

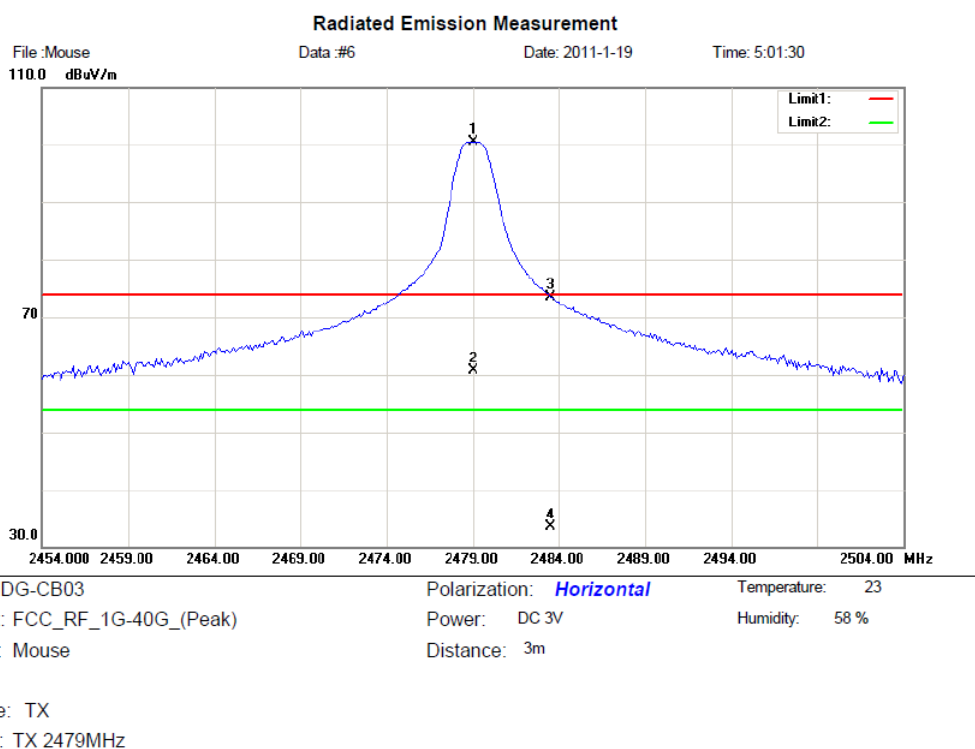
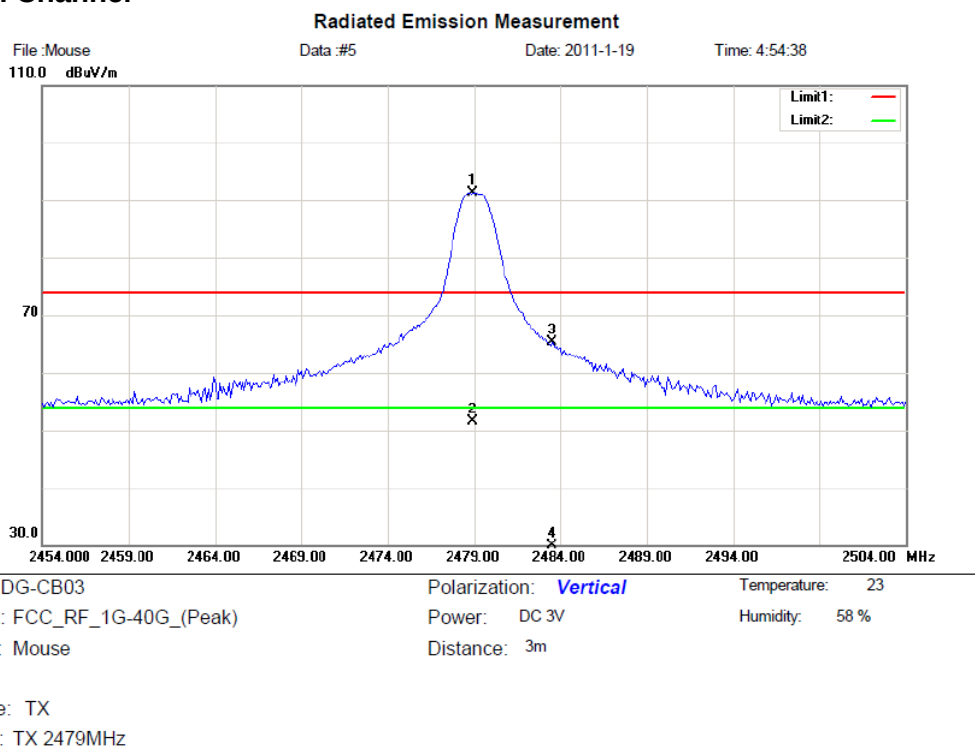
Power: DC 3V

Distance: 3m

Temperature: 23

Humidity: 58 %

High Channel



5.1.2 Radiated Emissions

RESULT:**Passed**

Test date	:	2011-01-19 to 2011-01-24
Test standard	:	FCC Part 15.249(a) & (d), (e) Clause A2.9 of RSS-210
Basic standard	:	ANSI C63.10: 2009
Limit	:	FCC Part 15.249(a) & FCC Part 15.209 (a) Clause A2.9(a) & (b) of RSS-210
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Operation Mode	:	A, C
Ambient temperature	:	23°C
Relative humidity	:	58%
Atmospheric pressure	:	101.0 kPa

The range from 9 kHz to 26 GHz was investigated, and except for the range shown in the attached appendix no emissions were found. The test was applied on both horizontal and vertical orientation. Refer to Appendix 1 for detailed test plot.

5.1.3 99% Bandwidth

RESULT:**Passed**

Date of testing : 2011-01-20
Test standard : RSS-Gen clause 4.6.1
Basic standard : ANSI C63.10: 2009
Kind of test site : Shielded room

Test setup

Test Channel : Low/ Middle/ High
Operation Mode : A
Ambient temperature : 20°C
Relative humidity : 58%
Atmospheric pressure : 101.0 kPa

Table 6: Test result of 99% Bandwidth

Channel	Channel Frequency (MHz)	99% Bandwidth (MHz)	Limit (MHz)
Low Channel	2402	1.83	/
Mid Channel	2441	1.85	/
High Channel	2479	1.75	/

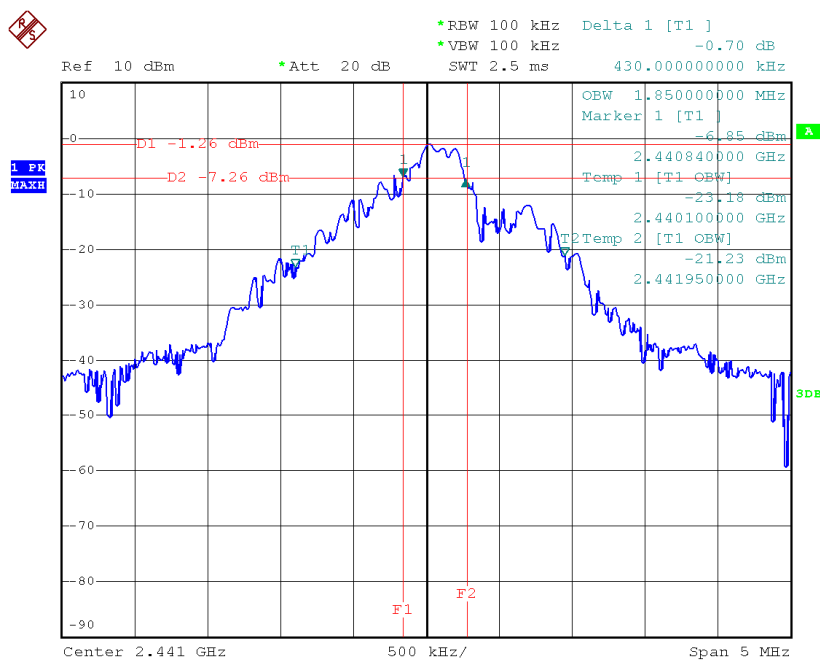
Test Plots of 99% Bandwidth

Low Channel



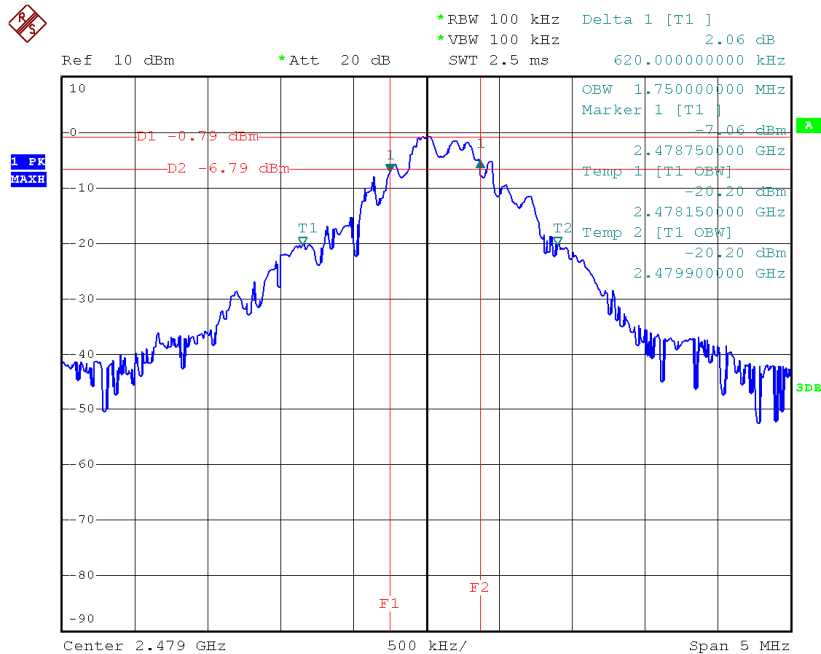
Date: 20.JAN.2011 18:50:33

Middle Channel



Date: 20.JAN.2011 19:11:48

High Channel



Date: 20.JAN.2011 19:18:16

Frequency (MHz)	Field Strength of Band Edge					
	Reading Level (dBuV/m)		Limit (dBuV/m)		Antenna Polarization	Verdict
	Average	Peak	Average	Peak		
2390	10.26	63.18	54	74	Horizontal	Pass
	17.87	57.61	54	74	Vertical	Pass
2483.5	33.51	73.51	54	74	Horizontal	Pass
	25.58	65.32	54	74	Vertical	Pass

6. Safety Human exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

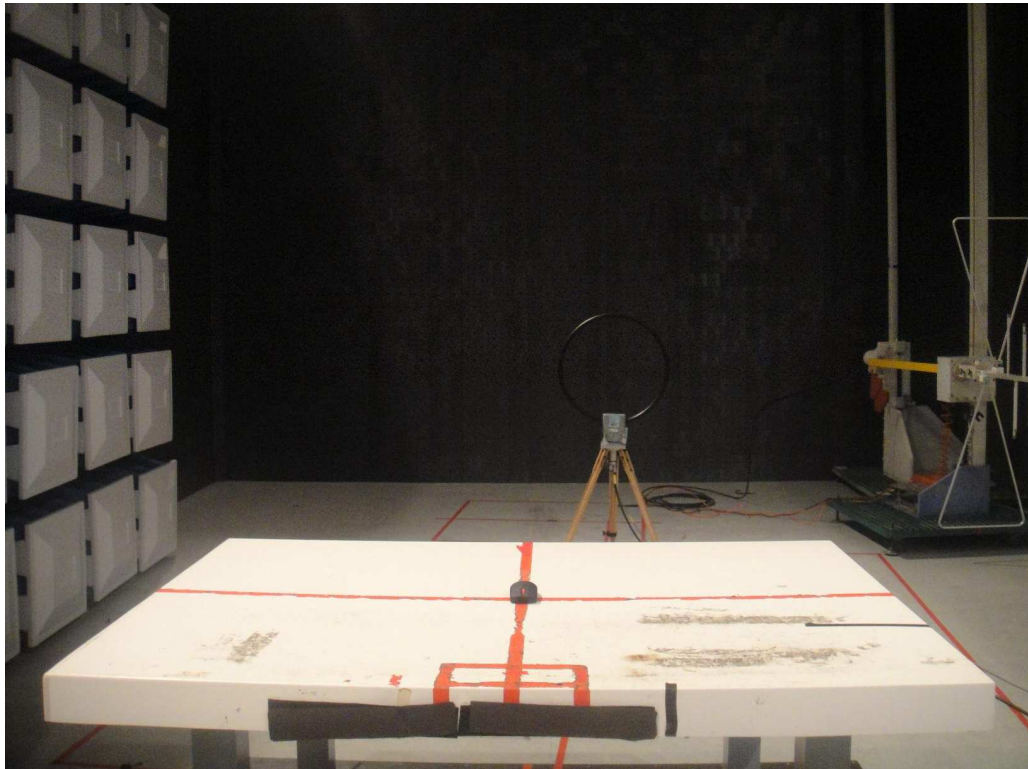
RESULT:**Passed**

Since maximum peak output power of the transmitter is $<60/f_{\text{(GHz)}}\text{mW}$, i.e. $0.853\text{mW} < 25(=60/2.4)\text{mW}$, hence the EUT is excluded from SAR evaluation according to FCC KDB publication 447498 D01: Mobile Portable RF Exposure.

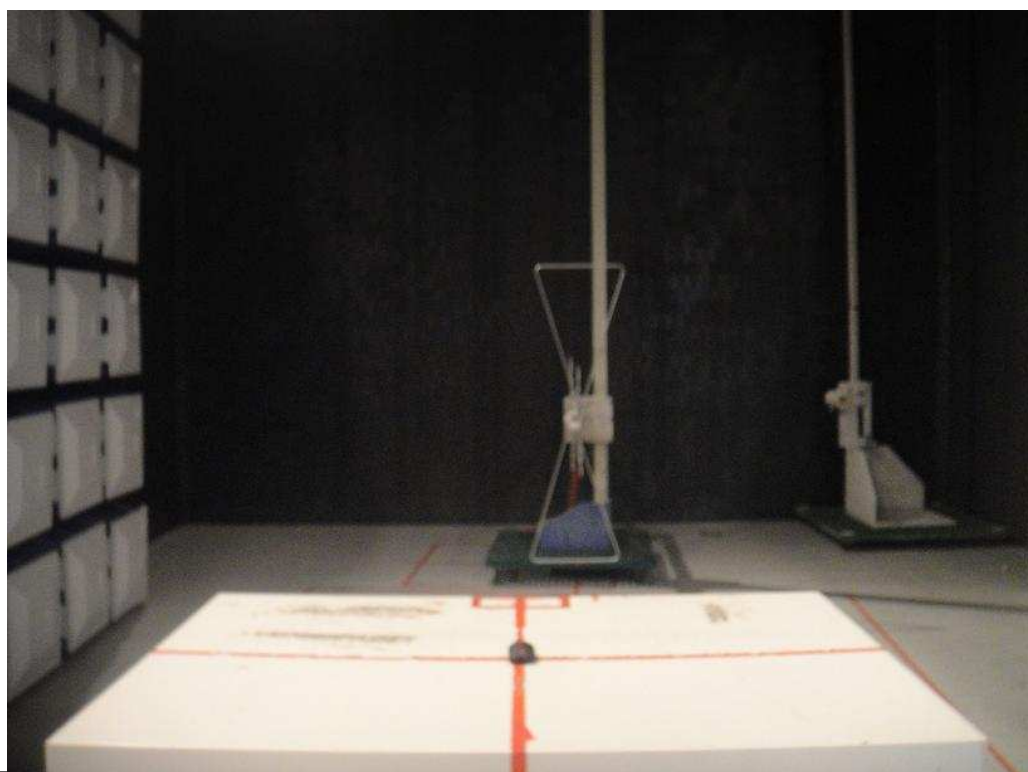
The measured peak output power of the transmitter is only 0.853mW. According to RSS-102 Issue 4 March 2010 clause 2.5, from 2.2 GHz up to 3 GHz inclusively and if the output power (i.e. the higher of the conducted or effective isotropic radiated power (e.i.r.p.) source-based time-averaged output power) is less than, or equal to 20 mW for General Public Use and 100 mW for Controlled Use, then the transmitters are exempt from routine SAR and RF exposure evaluations, therefore the EUT is deemed to fulfill the requirement without additional test.

7. Photographs of the Test Set-Up

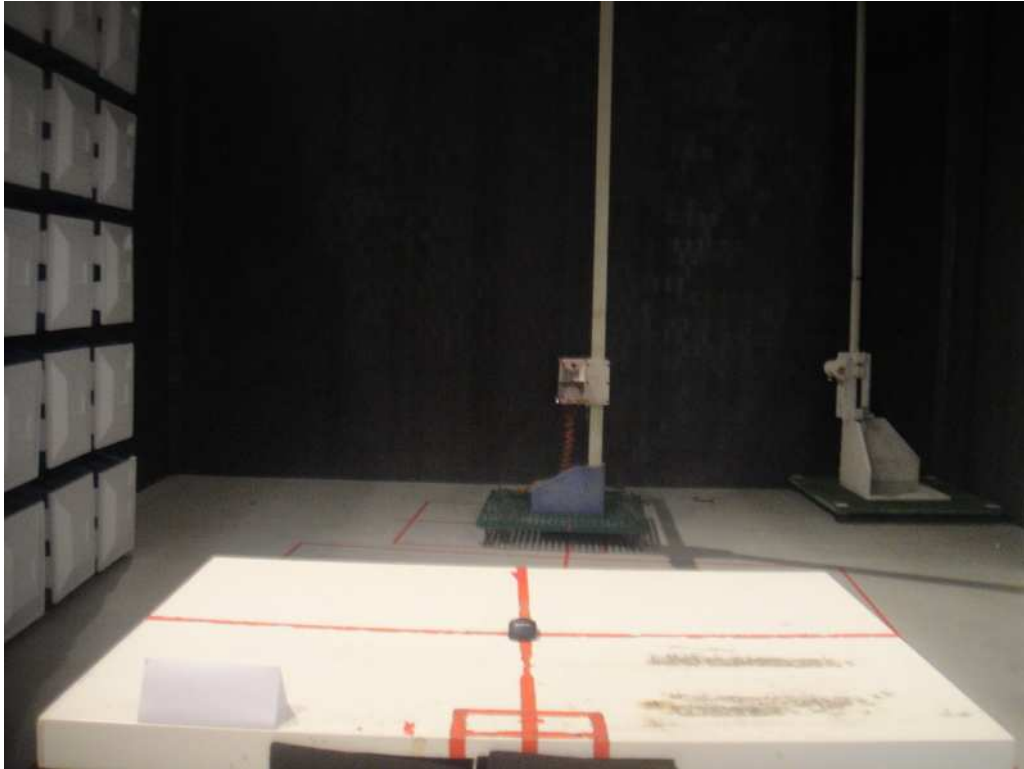
Photograph 1: Set-up for Radiated Emissions (9kHz - 30MHz)



Photograph 2: Set-up for Radiated Emissions (30MHz-1GHz)



Photograph 3: Set-up for Radiated Emissions (1GHz-18GHz)



Photograph 4: Set-up for Radiated Emissions (18GHz-26GHz)



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Test Plots of Radiated emissions, mode A
 Neutron
 Engineering Inc.

 No.3.JinShaGang 1st Road,ShiXia,DaLang Town,DongGuan,China.
 Tel: (0769)-8318-3000 Fax:(0769)-8319-6000 Post Code: 523792
<http://www.btl.org.cn>
Radiated Emission Measurement

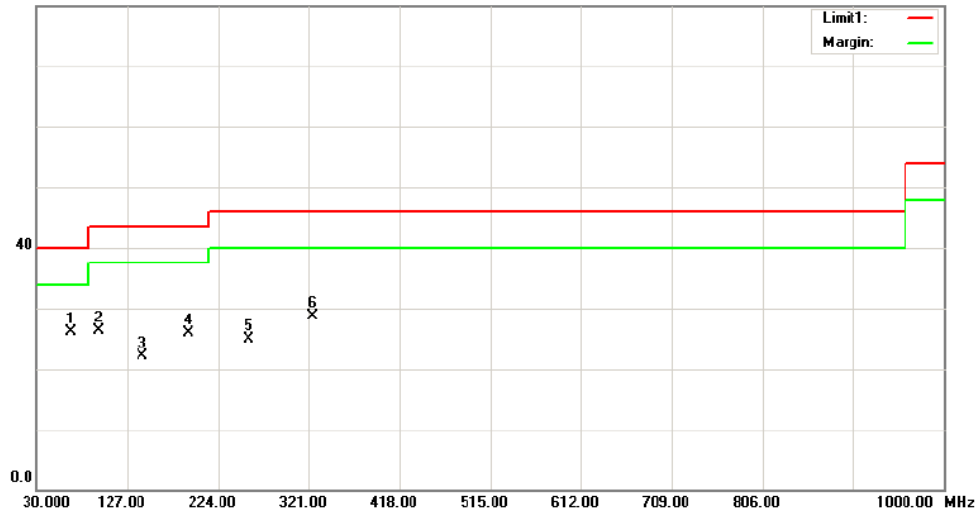
File :Mouse

Data :#13

Date: 2011-1-24

Time: 16:11:15

80.0 dBuV/m



Site DG-CB03

Polarization: **Vertical**

Temperature: 23

Limit: FCC Class B 3M Radiation

Power: DC 3V

Humidity: 58 %

EUT: Mouse

Distance: 3m

M/N:

Mode: TX

Note: TX 2402MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	67.0900	43.99	-17.90	26.09	40.00	-13.91	peak	
2		97.2100	44.78	-18.45	26.33	43.50	-17.17	peak	
3		143.0800	39.69	-17.68	22.01	43.50	-21.49	peak	
4		192.1100	42.59	-16.70	25.89	43.50	-17.61	peak	
5		257.4300	38.97	-14.03	24.94	46.00	-21.06	peak	
6		325.9800	40.19	-11.43	28.76	46.00	-17.24	peak	

*:Maximum data x:Over limit l:over margin

(Reference Only)

File :Mouse\Data :#13

Page: 1

Engineer Signature:



Neutron
Engineering Inc.

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Tel: (0769)-8318-3000 Fax:(0769)-8319-6000 Post Code: 523792
<http://www.btl.org.cn>

Radiated Emission Measurement

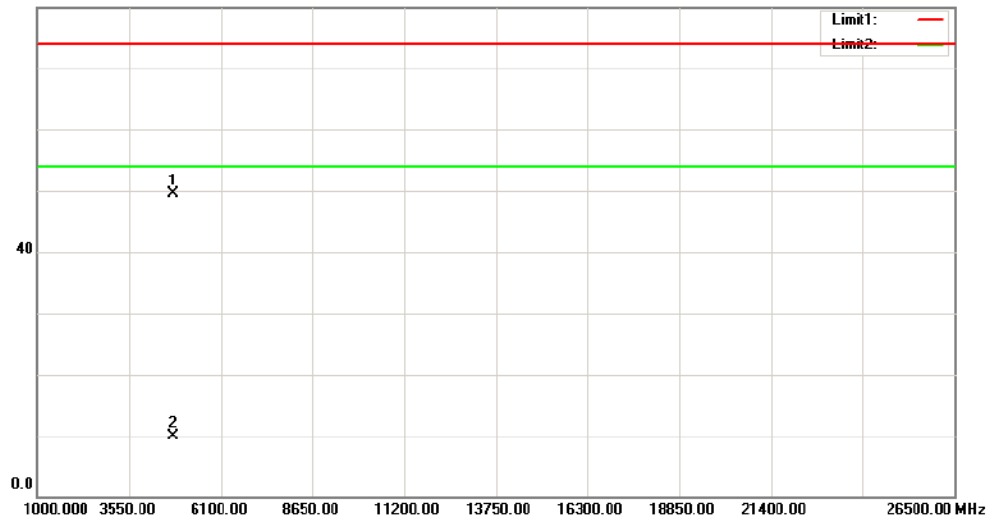
File :Mouse

Data :#12

Date: 2011-1-19

Time: 5:09:11

80.0 dBuV/m



Site DG-CB03

Limit: FCC_RF_1G-40G_(Peak)

EUT: Mouse

M/N:

Mode: TX

Note: TX 2402MHz

Polarization: **Vertical**

Power: DC 3V

Distance: 3m

Temperature: 23

Humidity: 58 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	4804.370	44.35	5.21	49.56	74.00	-24.44	peak	
2		4804.370	4.61	5.21	9.82	54.00	-44.18	AVG	

*:Maximum data x:Over limit !:over margin

(Reference Only)

File :Mouse\Data :#12

Page: 1

Engineer Signature:


 Neutron
 Engineering Inc.

 No.3.JinShaGang 1st Road,ShiXia,DaLang Town,DongGuan,China.
 Tel: (0769)-8318-3000 Fax:(0769)-8319-6000 Post Code: 523792
<http://www.btl.org.cn>
Radiated Emission Measurement

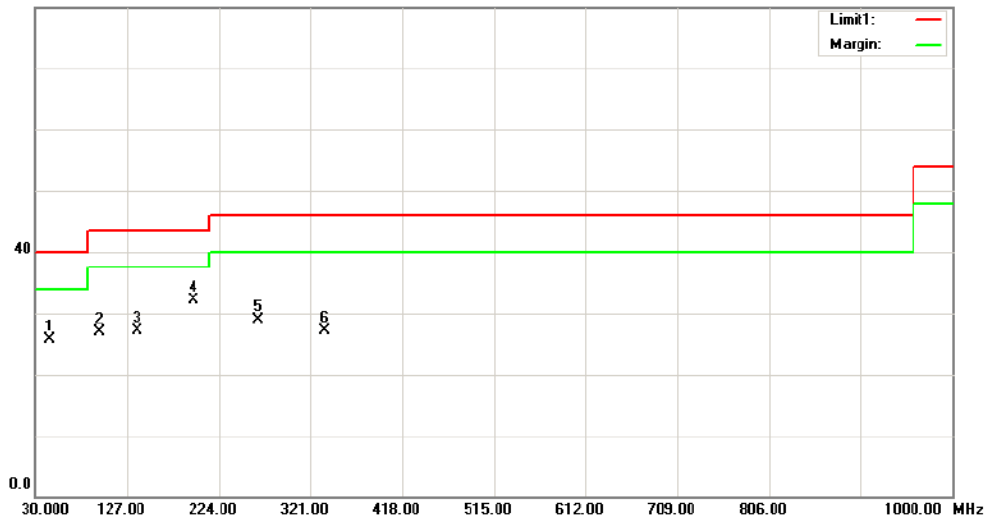
File :Mouse

Data :#14

Date: 2011-1-24

Time: 16:16:50

80.0 dBuV/m



Site DG-CB03

Polarization: **Horizontal**

Temperature: 23

Limit: FCC Class B 3M Radiation

Power: DC 3V

Humidity: 58 %

EUT: Mouse

Distance: 3m

M/N:

Mode: TX

Note: TX 2402MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		45.1200	42.80	-17.03	25.77	40.00	-14.23	peak	
2		98.2900	45.42	-18.44	26.98	43.50	-16.52	peak	
3		137.9800	44.93	-17.81	27.12	43.50	-16.38	peak	
4	*	198.0700	48.62	-16.61	32.01	43.50	-11.49	peak	
5		265.4400	42.51	-13.54	28.97	46.00	-17.03	peak	
6		336.1700	38.34	-11.18	27.16	46.00	-18.84	peak	

*:Maximum data x:Over limit !:over margin

(Reference Only)

File :Mouse\Data :#14

Page: 1

Engineer Signature:



Neutron
Engineering Inc.

No.3.JinShaGang 1st Road,ShiXia,DaLang Town,DongGuan,China.
Tel: (0769)-8318-3000 Fax:(0769)-8319-6000 Post Code: 523792
<http://www.btl.org.cn>

Radiated Emission Measurement

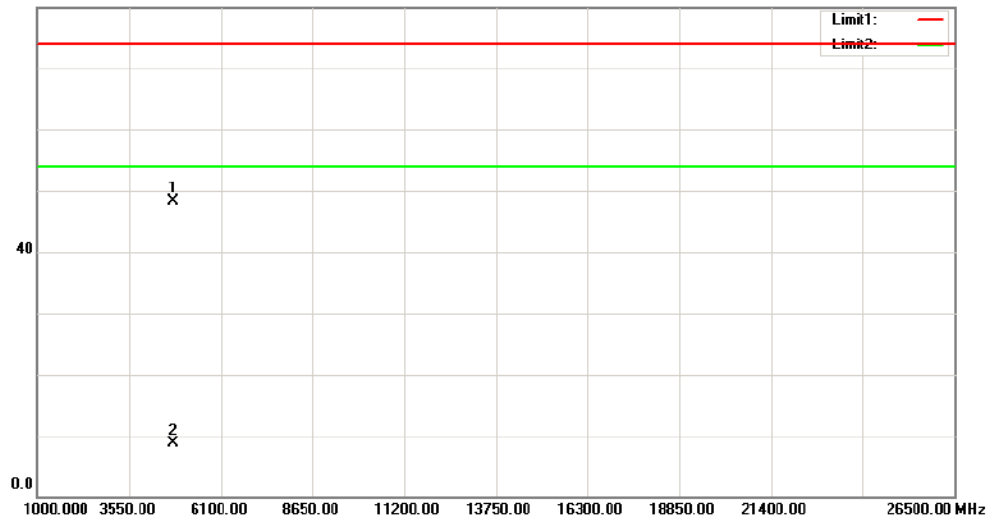
File :Mouse

Data :#11

Date: 2011-1-19

Time: 5:08:35

80.0 dBuV/m



Site DG-CB03

Polarization: **Horizontal**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: DC 3V

Humidity: 58 %

EUT: Mouse

Distance: 3m

M/N:

Mode: TX

Note: TX 2402MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	4804.370	43.16	5.21	48.37	74.00	-25.63	peak	
2		4804.370	3.42	5.21	8.63	54.00	-45.37	AVG	

*:Maximum data x:Over limit !:over margin

(Reference Only)

File :Mouse\Data :#11

Page: 1

Engineer Signature:



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<http://www.btl.org.cn>

Radiated Emission Measurement

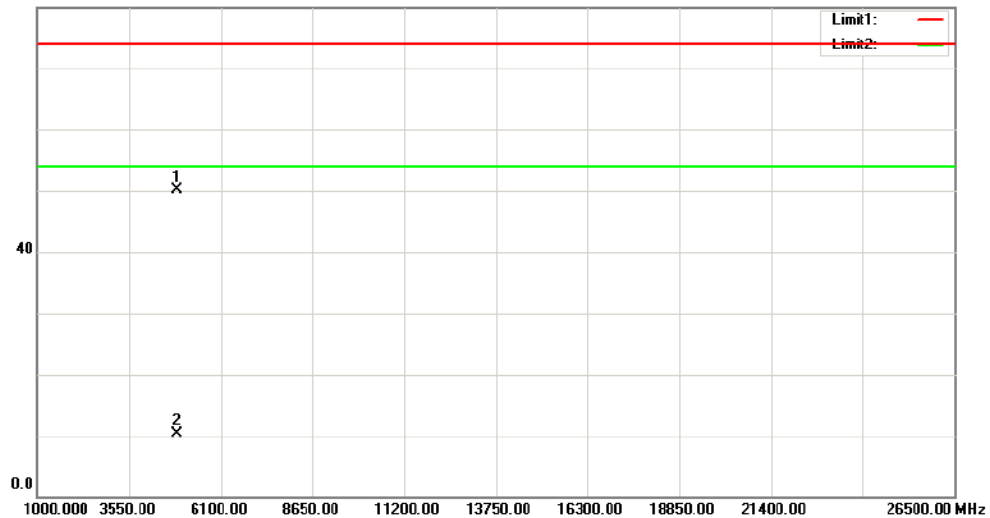
File :Mouse

Data :#10

Date: 2011-1-19

Time: 5:08:06

80.0 dBuV/m



Site DG-CB03

Limit: FCC_RF_1G-40G_(Peak)

EUT: Mouse

M/N:

Mode: TX

Note: TX 2441MHz

Polarization: **Horizontal**

Power: DC 3V

Distance: 3m

Temperature: 23

Humidity: 58 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	4882.470	44.52	5.50	50.02	74.00	-23.98	peak	
2		4882.470	4.78	5.50	10.28	54.00	-43.72	AVG	

*:Maximum data x:Over limit !:over margin

(Reference Only)

File :Mouse\Data :#10

Page: 1

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Radiated Emission Measurement

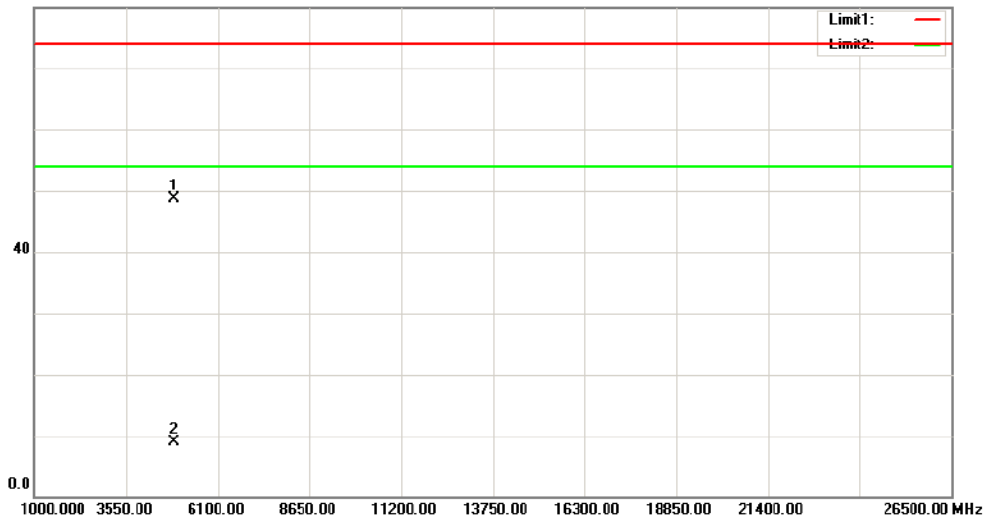
File :Mouse

Data :#9

Date: 2011-1-19

Time: 5:07:15

80.0 dBuV/m



Site DG-CB03

Polarization: **Vertical**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: DC 3V

Humidity: 58 %

EUT: Mouse

Distance: 3m

M/N:

Mode: TX

Note: TX 2441MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	4882.630	43.19	5.50	48.69	74.00	-25.31	peak	
2		4882.630	3.45	5.50	8.95	54.00	-45.05	AVG	

*:Maximum data x:Over limit l:over margin

(Reference Only)

File :Mouse\Data :#9

Page: 1

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Radiated Emission Measurement

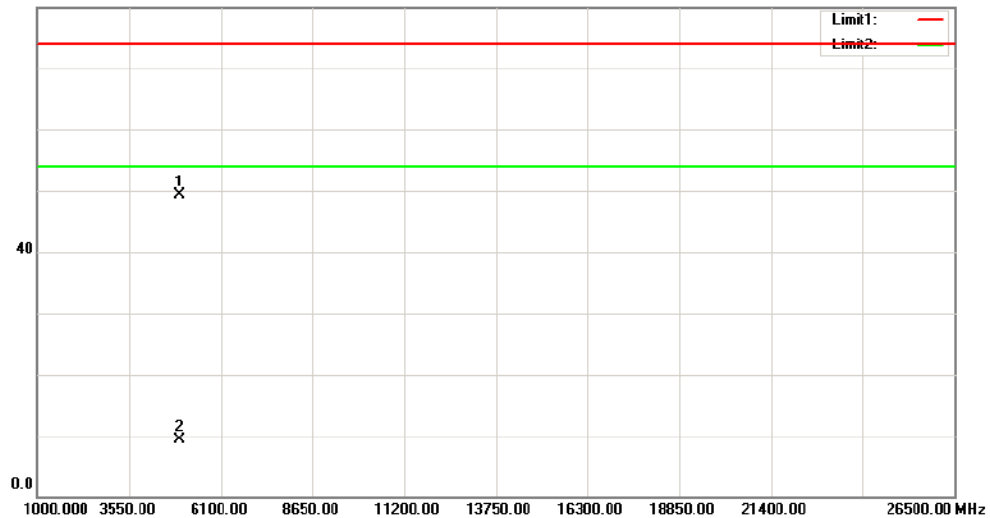
File :Mouse

Data :#8

Date: 2011-1-19

Time: 5:06:06

80.0 dBuV/m



Site DG-CB03

Limit: FCC_RF_1G-40G_(Peak)

EUT: Mouse

M/N:

Mode: TX

Note: TX 2479MHz

Polarization: **Vertical**

Power: DC 3V

Distance: 3m

Temperature: 23

Humidity: 58 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	4958.440	43.59	5.78	49.37	74.00	-24.63	peak	
2		4958.440	3.58	5.78	9.36	54.00	-44.64	AVG	

*:Maximum data x:Over limit l:over margin

(Reference Only)

File :Mouse\Data :#8

Page: 1

Engineer Signature:



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Radiated Emission Measurement

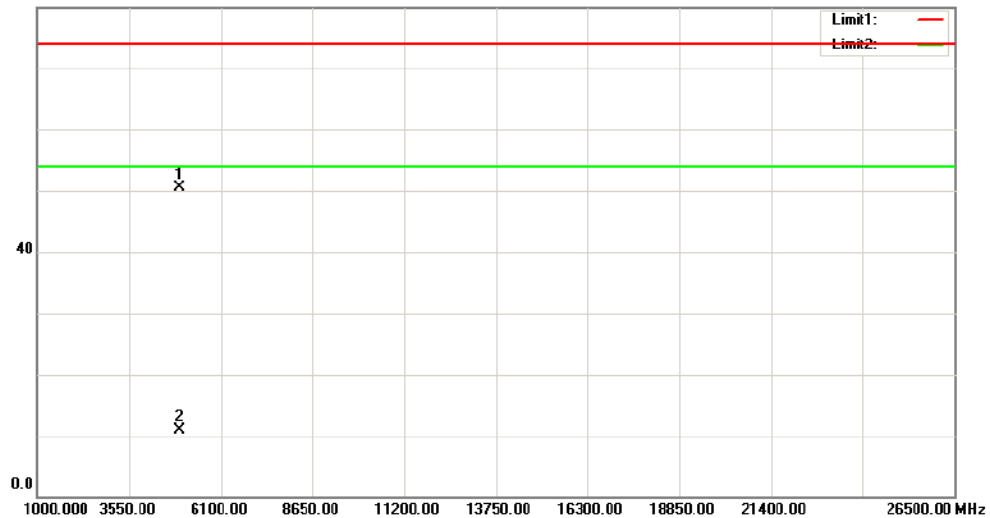
File :Mouse

Data :#7

Date: 2011-1-19

Time: 5:03:58

80.0 dBuV/m



Site DG-CB03

Limit: FCC_RF_1G-40G_(Peak)

EUT: Mouse

M/N:

Mode: TX

Note: TX 2479MHz

Polarization: **Horizontal**

Power: DC 3V

Distance: 3m

Temperature: 23

Humidity: 58 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	4958.360	44.79	5.78	50.57	74.00	-23.43	peak	
2		4958.360	5.05	5.78	10.83	54.00	-43.17	AVG	

*:Maximum data x:Over limit l:over margin

(Reference Only)

File :Mouse\Data :#7

Page: 1

Engineer Signature:

Test Plots of Spurious radiations, mode C
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Radiated Emission Measurement

File :MOUSE

Data :#13

Date: 2011-1-21

Time: 14:29:01

80.0 dBuV/m



Site DG-CB03

Polarization: **Vertical**

Temperature: 23

Limit: FCC Class B 3M Radiation

Power: DC 3V

Humidity: 51 %

EUT: Lenovo 2.4G Wireless Mouse

Distance: 3m

M/N:

Mode: RX

Note: RX 2402

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Comment
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	33.1200	46.87	-16.66	30.21	40.00	-9.79	peak	
2	94.5600	50.12	-18.54	31.58	43.50	-11.92	peak	
3 *	168.1200	52.31	-17.37	34.94	43.50	-8.56	peak	
4	187.6500	50.97	-16.76	34.21	43.50	-9.29	peak	
5	256.1400	51.32	-14.12	37.20	46.00	-8.80	peak	
6	321.5700	45.65	-11.54	34.11	46.00	-11.89	peak	

*:Maximum data x:Over limit !:over margin

(Reference Only)



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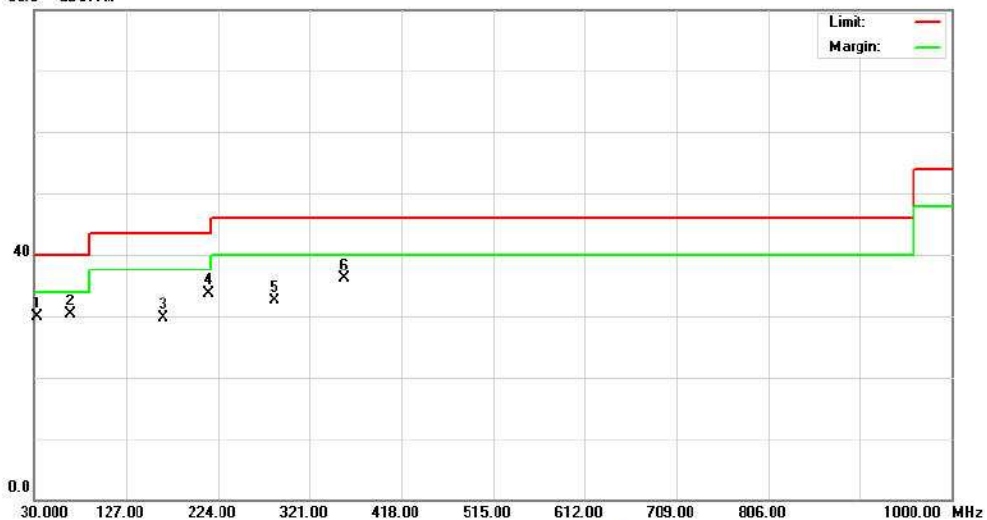
Radiated Emission Measurement

File :MOUSE
80.0 dBuV/m

Data :#14

Date: 2011-1-21

Time: 14:33:52



Site DG-CB03

Limit: FCC Class B 3M Radiation

EUT: Lenovo 2.4G Wireless Mouse

M/N:

Mode: RX

Note: RX 2402

Polarization: **Horizontal**

Power: DC 3V

Distance: 3m

Temperature: 23

Humidity: 51 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		32.6500	46.40	-16.54	29.86	40.00	-10.14	peak	
2	*	66.8700	48.14	-17.89	30.25	40.00	-9.75	peak	
3		165.8300	47.18	-17.45	29.73	43.50	-13.77	peak	
4		213.6500	49.78	-16.13	33.65	43.50	-9.85	peak	
5		283.9500	44.95	-12.41	32.54	46.00	-13.46	peak	
6		357.8600	46.71	-10.56	36.15	46.00	-9.85	peak	

*:Maximum data x:Over limit l:over margin

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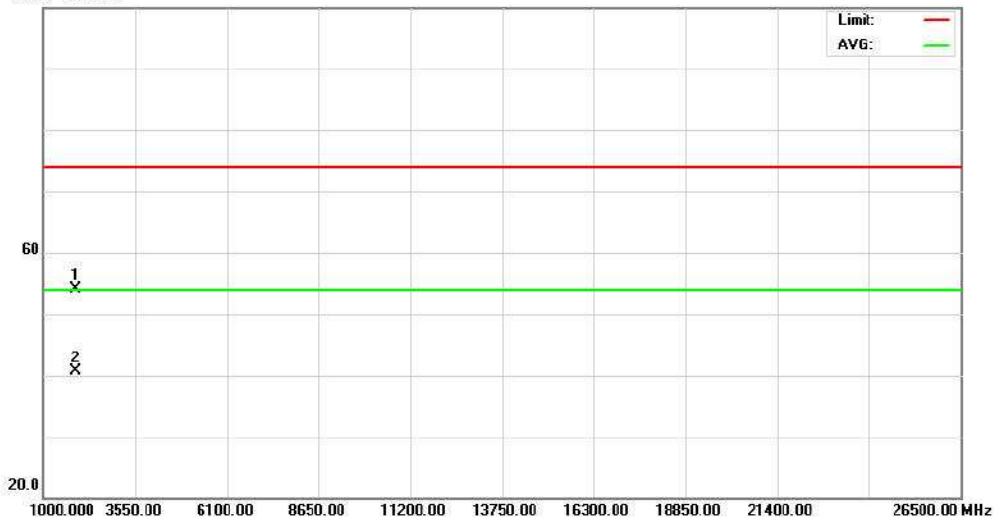
Radiated Emission Measurement

File :MOUSE
100.0 dBuV/m

Data :#15

Date: 2011-1-21

Time: 14:35:31



Site DG-CB03

Polarization: **Vertical**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: DC 3V

Humidity: 58 %

EUT: Lenovo 2.4G Wireless Mouse

Distance: 3m

M/N:

Mode: RX

Note: RX 2402

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		1832.500	56.98	-2.86	54.12	74.00	-19.88	peak	
2	*	1832.500	43.58	-2.86	40.72	54.00	-13.28	AVG	

*:Maximum data x:Over limit !:over margin

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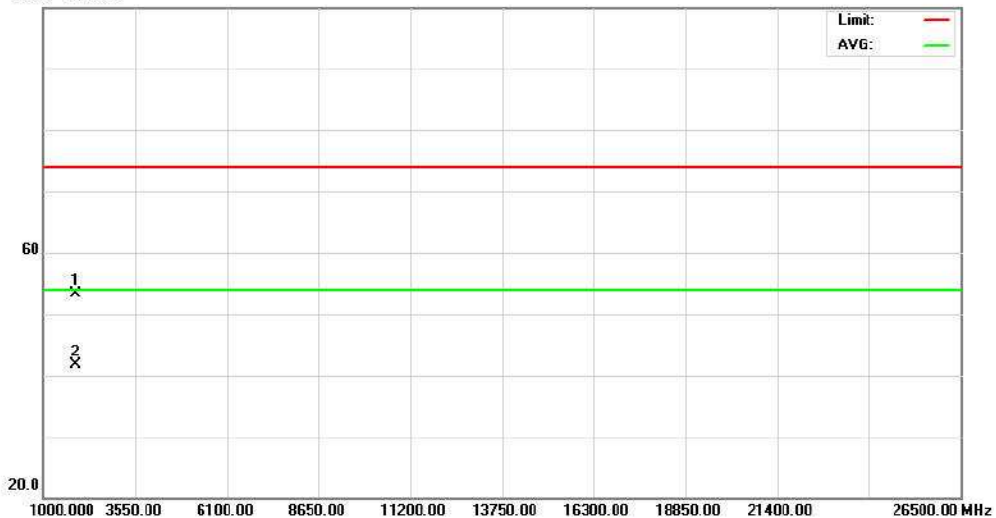
Radiated Emission Measurement

File :MOUSE
100.0 dBuV/m

Data :#16

Date: 2011-1-21

Time: 14:37:25



Site DG-CB03

Limit: FCC_RF_1G-40G_(Peak)

EUT: Lenovo 2.4G Wireless Mouse

M/N:

Mode: RX

Note: RX 2402

Polarization: **Horizontal**

Power: DC 3V

Distance: 3m

Temperature: 23

Humidity: 58 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1832.500	56.07	-2.86	53.21	74.00	-20.79	peak	
2	*	1832.500	44.51	-2.86	41.65	54.00	-12.35	AVG	

*:Maximum data x:Over limit !:over margin

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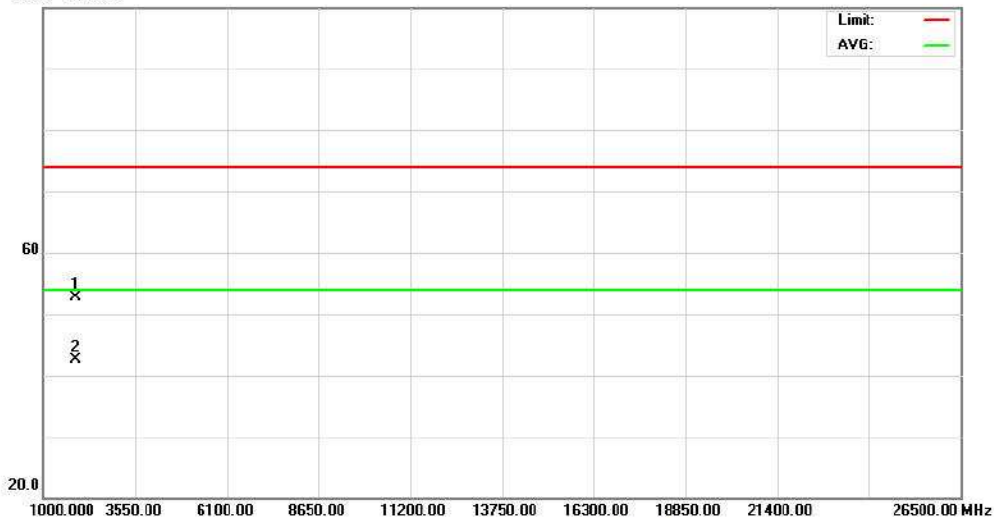
Radiated Emission Measurement

File :MOUSE
100.0 dBuV/m

Data :#17

Date: 2011-1-21

Time: 14:39:23



Site DG-CB03

Limit: FCC_RF_1G-40G_(Peak)

EUT: Lenovo 2.4G Wireless Mouse

M/N:

Mode: RX

Note: RX 2441

Polarization: **Vertical**

Power: DC 3V

Distance: 3m

Temperature: 23

Humidity: 58 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		1867.010	55.36	-2.69	52.67	74.00	-21.33	peak	
2	*	1867.010	45.26	-2.69	42.57	54.00	-11.43	AVG	

*:Maximum data x:Over limit !:over margin

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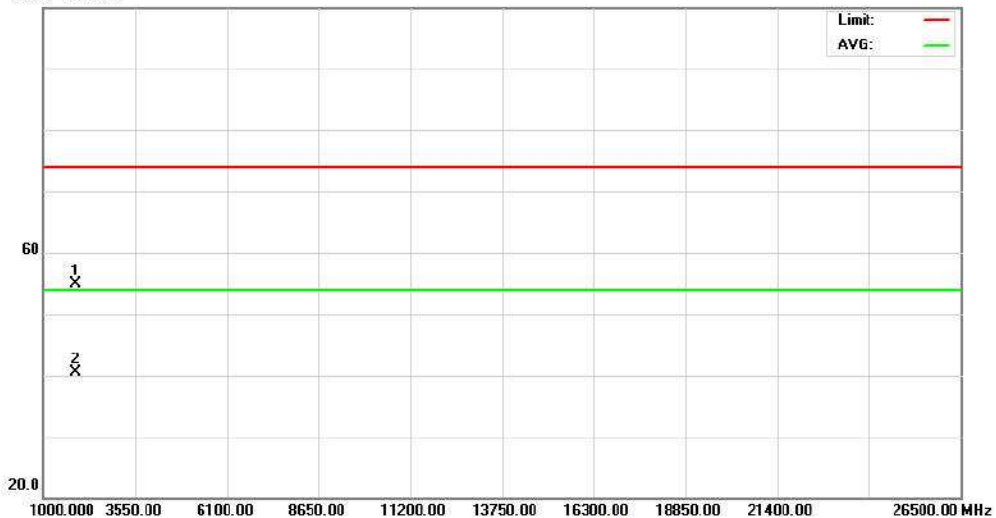
Radiated Emission Measurement

File :MOUSE
100.0 dBuV/m

Data :#18

Date: 2011-1-21

Time: 14:41:51



Site DG-CB03

Limit: FCC_RF_1G-40G_(Peak)

EUT: Lenovo 2.4G Wireless Mouse

M/N:

Mode: RX

Note: RX 2441

Polarization: **Horizontal**

Power: DC 3V

Distance: 3m

Temperature: 23

Humidity: 58 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		1867.010	57.52	-2.69	54.83	74.00	-19.17	peak	
2	*	1867.010	43.21	-2.69	40.52	54.00	-13.48	AVG	

*:Maximum data x:Over limit !:over margin

(Reference Only)



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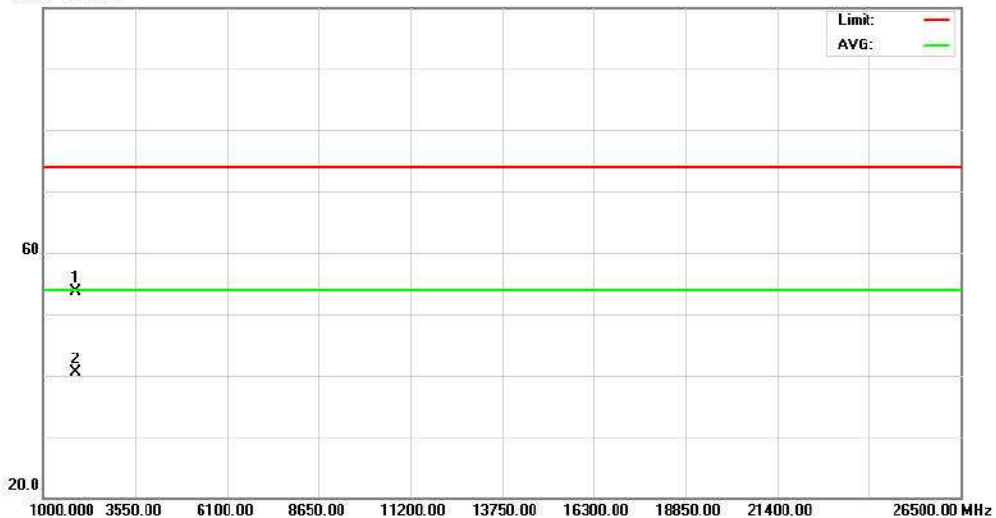
Radiated Emission Measurement

File :MOUSE
100.0 dBuV/m

Data :#19

Date: 2011-1-21

Time: 14:42:55



Site DG-CB03

Limit: FCC_RF_1G-40G_(Peak)

EUT: Lenovo 2.4G Wireless Mouse

M/N:

Mode: RX

Note: RX 2479

Polarization: **Vertical**

Power: DC 3V

Distance: 3m

Temperature: 23

Humidity: 58 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		1889.670	56.35	-2.57	53.78	74.00	-20.22	peak	
2	*	1889.670	43.02	-2.57	40.45	54.00	-13.55	AVG	

*:Maximum data x:Over limit !:over margin

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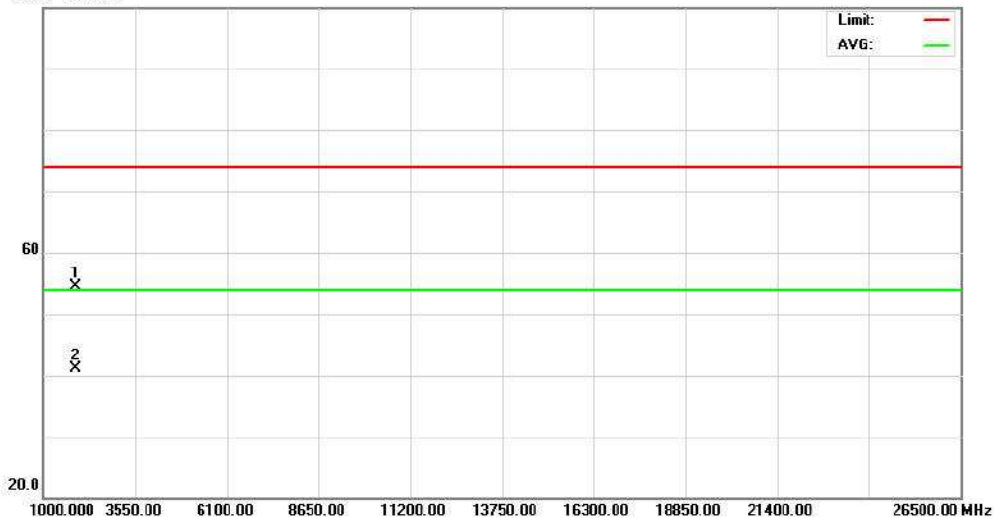
Radiated Emission Measurement

File :MOUSE
100.0 dBuV/m

Data :#20

Date: 2011-1-21

Time: 14:45:31



Site DG-CB03

Limit: FCC_RF_1G-40G_(Peak)

EUT: Lenovo 2.4G Wireless Mouse

M/N:

Mode: RX

Note: RX 2479

Polarization: **Horizontal**

Power: DC 3V

Distance: 3m

Temperature: 23

Humidity: 58 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		1889.670	57.12	-2.57	54.55	74.00	-19.45	peak	
2	*	1889.670	43.62	-2.57	41.05	54.00	-12.95	AVG	

*:Maximum data x:Over limit !:over margin

(Reference Only)