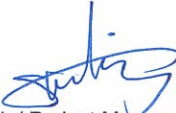



Prüfbericht - Nr.: 17019146 001		Seite 1 von 24		
<i>Test Report No.:</i>		<i>Page 1 of 24</i>		
Auftraggeber:	Primax Electronics Ltd.			
<i>Client:</i>	No. 669, Ruey Kuang Rd. Neihu, Taipei 114, Taiwan			
Gegenstand der Prüfung:	Lenovo Wireless Keyboard			
<i>Test item:</i>				
Bezeichnung:	KBRF3971	Serien-Nr.:	n.a.	
<i>Identification:</i>		<i>Serial No.:</i>		
Wareneingangs-Nr.:	163072199	Eingangsdatum:	2010-12-23	
<i>Receipt No.:</i>		<i>Date of receipt:</i>		
Prüfart:	Neutron Engineering Inc.			
<i>Testing location:</i>	No. 3. Jinshagang 1st Road, ShiXia, DaLang Town, Dong Guan, China			
	FCC Registration No.: 319330			
	Industry Canada Test Site No.: 4428B-1			
Prüfgrundlage:	FCC CFR47 Part 15: Subpart C Section 15.249			
<i>Test specification:</i>	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			
Prüfresultat:	Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).			
<i>Test Result:</i>	<i>The test item passed the test specification(s).</i>			
Prüflaboratorium:	TÜV Rheinland (Shenzhen) Co., Ltd.			
<i>Testing Laboratory:</i>				
geprüft/ tested by:	kontrolliert/ reviewed by:			
				
2011-03-01	Sam Lin/ Project Manager	2011-03-04	Shawn Peng/ Manager	
Datum	Name/Stellung	Unterschrift	Datum	Name/Stellung
<i>Date</i>	<i>Name/Position</i>	<i>Signature</i>	<i>Date</i>	<i>Name/Position</i>
Sonstiges/ Other Aspects:				
Abkürzungen:	<i>P(ass) = entspricht Prüfgrundlage</i>	Abbreviations:	<i>P(ass) = passed</i>	
	<i>F(ail) = entspricht nicht Prüfgrundlage</i>		<i>F(ail) = failed</i>	
	<i>N/A = nicht anwendbar</i>		<i>N/A = not applicable</i>	
	<i>NIT = nicht getestet</i>		<i>NIT = not tested</i>	
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

Contents

1.	GENERAL REMARKS	4
1.1	COMPLEMENTARY MATERIALS	4
2.	TEST SITES	4
2.1	TEST FACILITIES	4
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS.....	5
2.3	TRACEABILITY	5
2.4	CALIBRATION	6
2.5	MEASUREMENT UNCERTAINTY.....	6
2.6	LOCATION OF ORIGINAL DATA.....	6
2.7	STATUS OF FACILITY USED FOR TESTING.....	6
3.	GENERAL PRODUCT INFORMATION	7
3.1	PRODUCT FUNCTION AND INTENDED USE.....	7
3.2	RATINGS AND SYSTEM DETAILS	7
3.3	INDEPENDENT OPERATION MODES	8
3.4	NOISE GENERATING AND NOISE SUPPRESSING PARTS	8
3.5	SUBMITTED DOCUMENTS	8
4.	TEST SET-UP AND OPERATION MODES	9
4.1	PRINCIPLE OF CONFIGURATION SELECTION.....	9
4.2	TEST OPERATION AND TEST SOFTWARE	9
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	9
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE.....	9
4.5	TEST SETUP DIAGRAM	10
5.	TEST RESULTS	12
5.1	TRANSMITTER REQUIREMENT & TEST SUITES	12
5.1.1	<i>Field strength of fundamental and harmonics.....</i>	12
5.1.2	<i>Radiated Emissions</i>	16
5.1.3	<i>99% Bandwidth</i>	17
5.1.4	<i>Band Edge.....</i>	20
6.	SAFETY HUMAN EXPOSURE	21
6.1	RADIO FREQUENCY EXPOSURE COMPLIANCE.....	21
6.1.1	<i>Electromagnetic Fields.....</i>	21
7.	PHOTOGRAPHS OF THE TEST SET-UP	22
8.	LIST OF TABLES	24
9.	LIST OF PHOTOGRAPHS	24

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	Schwarzbeck	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 keyboard 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 Keyboard
Type Designation:	KBRF3971
FCC ID	EMJKKBRF3971
IC	4251A-KBRF3971

Table 4: Technical Specification of EUT

Technical Specification	Value
Operating Frequency	2402-2479 MHz
Operation Voltage	DC 3V (via AAA size ALKALINE battery)
Modulation	GFSK
Antenna Type	Internal PCB Antenna, Non-User Replaceable
External Ports	None
Antenna Gain	0.5dBi
RF Output Power	0.989mW (-0.05dBm)
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
- PCB Layout
- Photo Document
- Technical Description
- Circuit Diagram
- Instruction Manual
- Rating Label

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

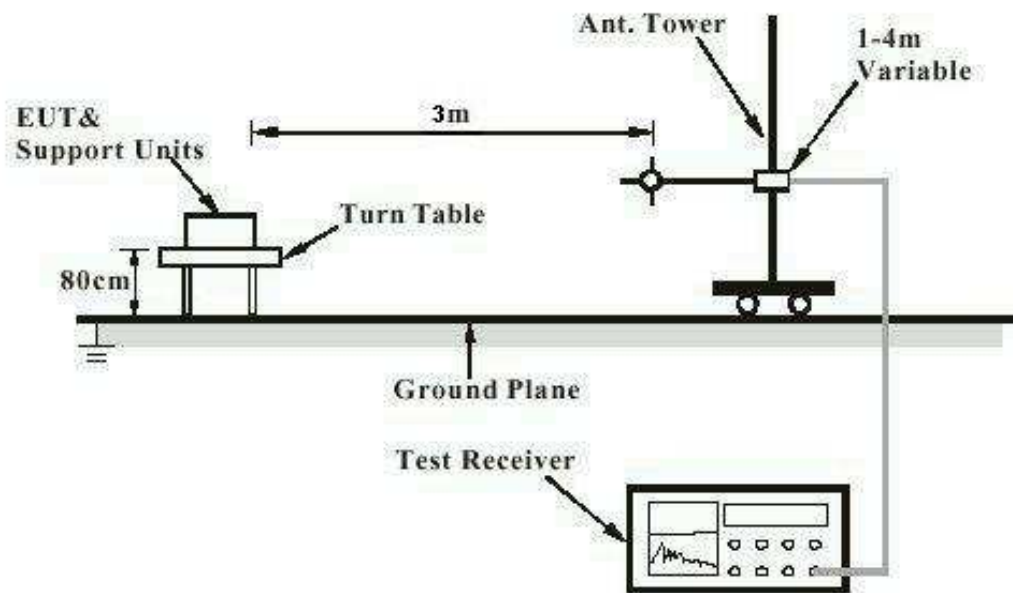


Diagram of Measurement Equipment Configuration for Mains Conduction Measurement

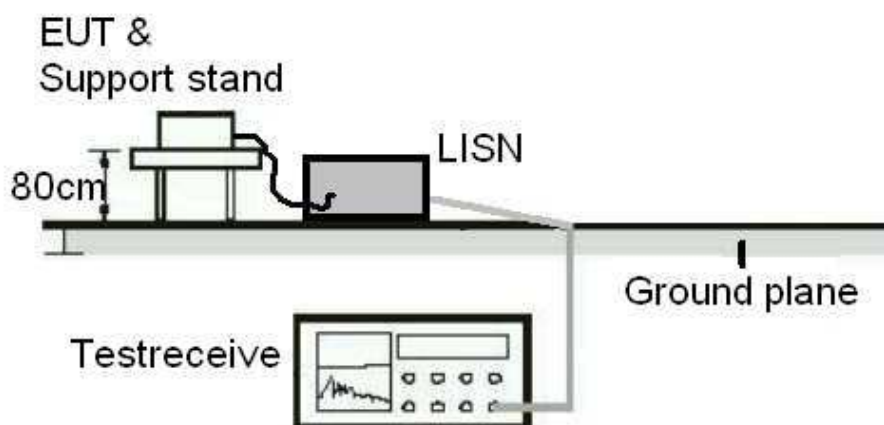
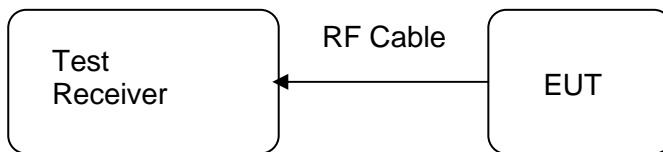


Diagram of Measurement Equipment Configuration for Conducted Transmitter Measurement



5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Field strength of fundamental and harmonics

RESULT:
Passed

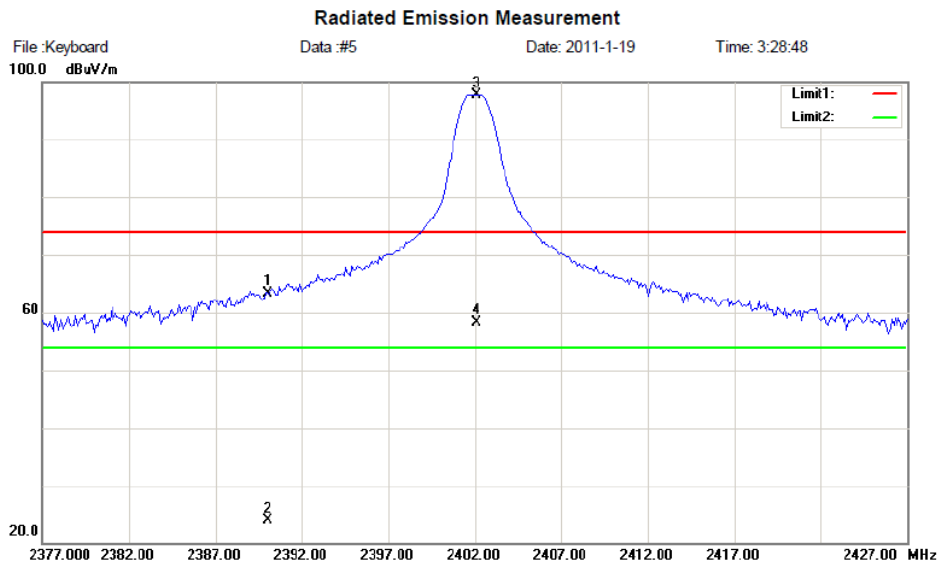
Test date : 2011-01-19
 Test standard : FCC Part 15.249(a)
 Clause A2.9 of RSS-210
 Basic standard : ANSI C63.10: 2009
 Limit : FCC Part 15.249(a)
 Clause A2.9(a) of RSS-210
 Kind of test site : 3m Semi-Anechoic Chamber

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					Verdict
	Reading Level (dBuV/m)		Limit (dBuV/m)		Antenna Polarization	
	Average	Peak	Average	Peak		
2402	58.22	97.76	94	114	Horizontal	Pass
	53.95	93.46	94	114	Vertical	Pass
2441	53.94	93.48	94	114	Horizontal	Pass
	55.98	95.52	94	114	Vertical	Pass
2479	54.34	93.88	94	114	Horizontal	Pass
	55.45	94.99	94	114	Vertical	Pass

Test Plots of Field strength of fundamental
Low Channel


Site DG-CB03

 Polarization: **Horizontal**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: DC 3V

Humidity: 58 %

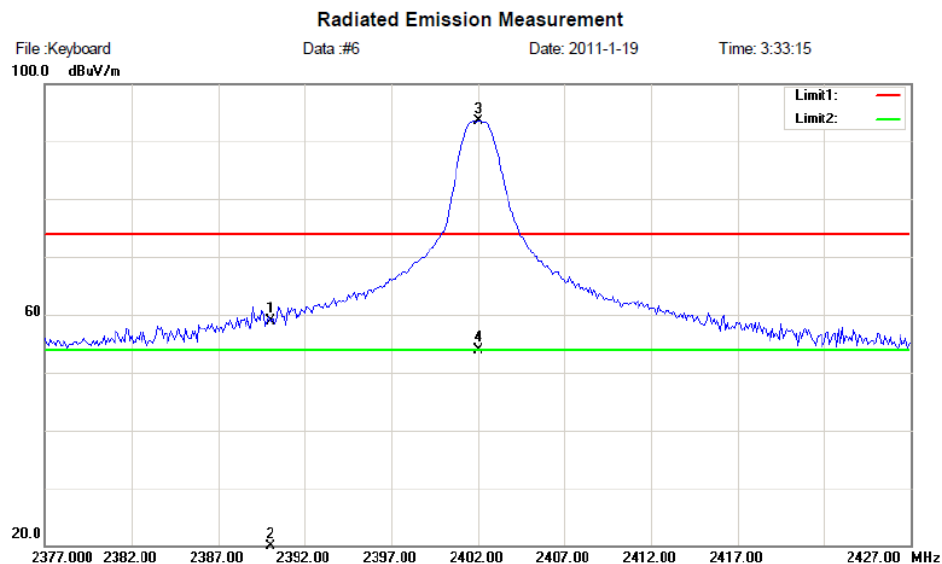
EUT: Keyboard

Distance: 3m

M/N:

Mode: TX

Note: TX 2402MHz



Site DG-CB03

 Polarization: **Vertical**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: DC 3V

Humidity: 58 %

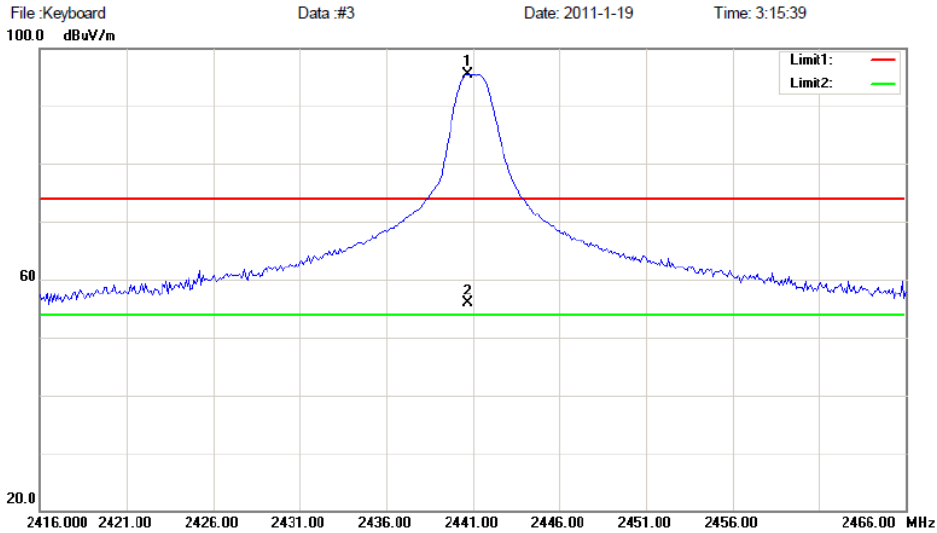
EUT: Keyboard

Distance: 3m

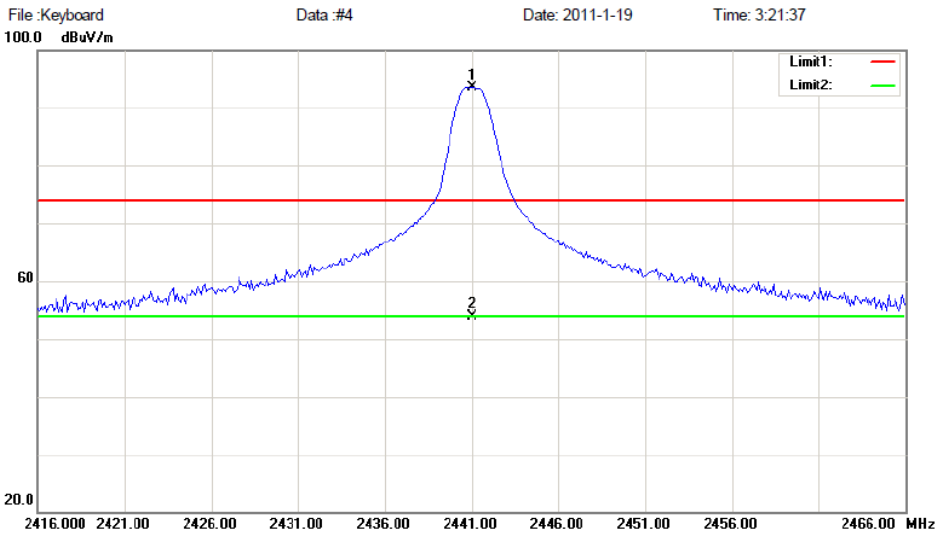
M/N:

Mode: TX

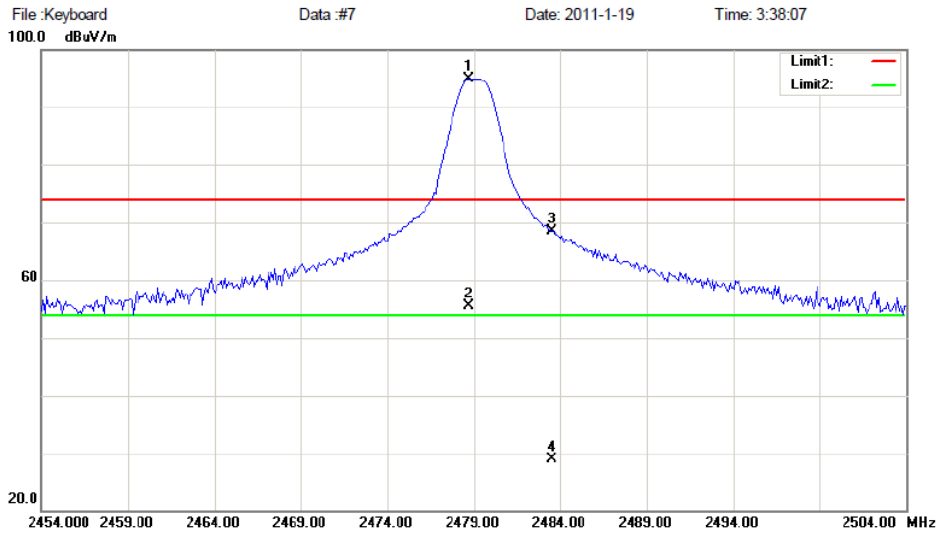
Note: TX 2402MHz

Middle Channel
Radiated Emission Measurement


Site DG-CB03	Polarization: Vertical	Temperature: 23
Limit: FCC_RF_1G-40G_(Peak)	Power: DC 3V	Humidity: 58 %
EUT: Keyboard	Distance: 3m	
M/N:		
Mode: TX		
Note: TX 2441MHz		

Radiated Emission Measurement


Site DG-CB03	Polarization: Horizontal	Temperature: 23
Limit: FCC_RF_1G-40G_(Peak)	Power: DC 3V	Humidity: 58 %
EUT: Keyboard	Distance: 3m	
M/N:		
Mode: TX		
Note: TX 2441MHz		

High Channel
Radiated Emission Measurement


Site DG-CB03

 Polarization: **Vertical**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: DC 3V

Humidity: 58 %

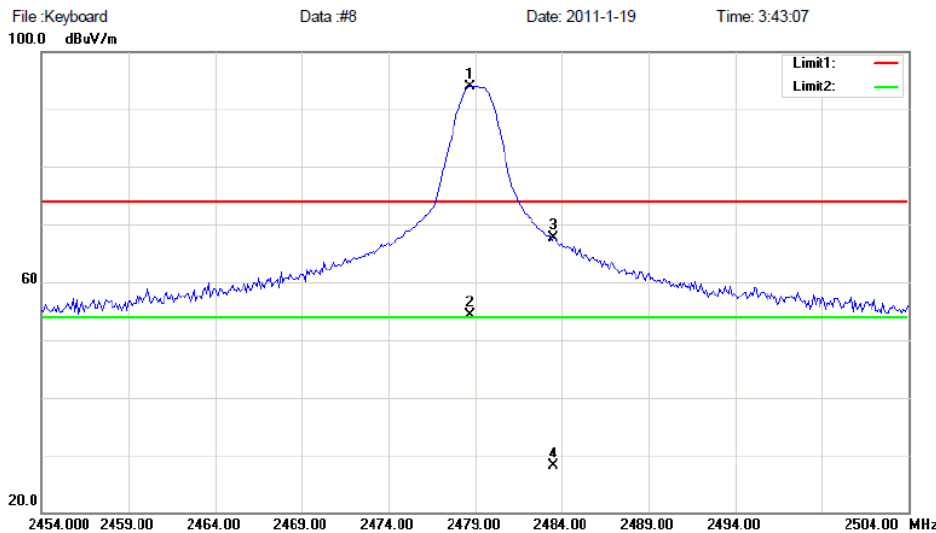
EUT: Keyboard

Distance: 3m

M/N:

Mode: TX

Note: TX 2479MHz

Radiated Emission Measurement


Site DG-CB03

 Polarization: **Horizontal**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: DC 3V

Humidity: 58 %

EUT: Keyboard

Distance: 3m

M/N:

Mode: TX

Note: TX 2479MHz

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**

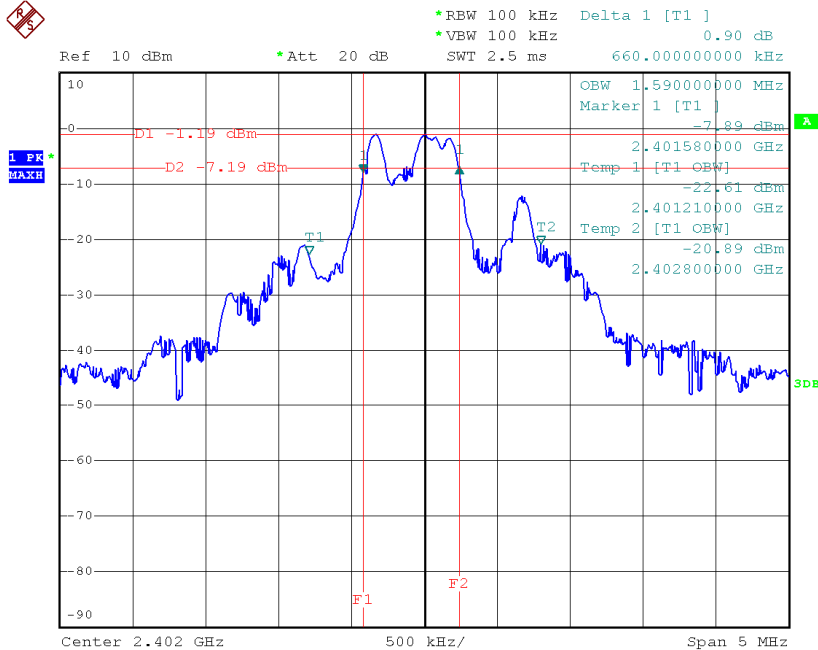
Date of testing : 2011-01-20
Test standard : RSS-Gen clause 4.6.1
Basic standard : ANSI C63.10: 2009
Kind of test site : Shielded room

Test setup

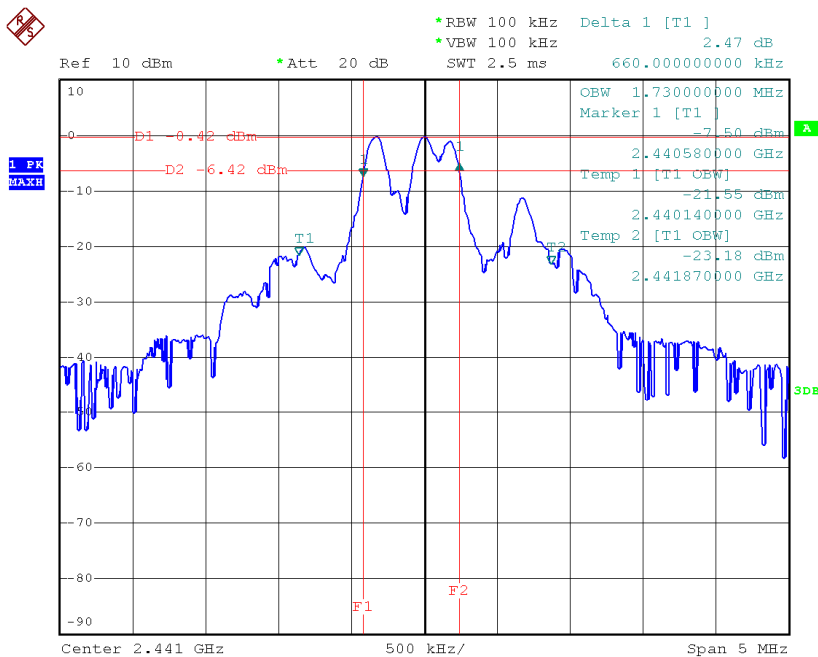
Test Channel : Low/ Middle/ High
Operation Mode : A
Ambient temperature : 20°C
Relative humidity : 58%
Atmospheric pressure : 101.0 kPa

Table 6: Test result of 99% Bandwidth

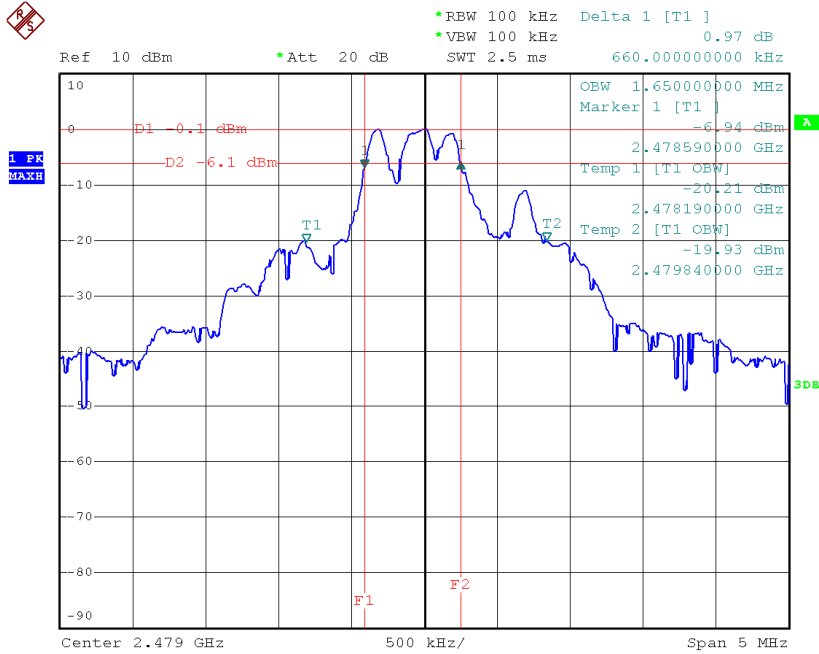
Channel	Channel Frequency (MHz)	99% Bandwidth (MHz)	Limit (MHz)
Low Channel	2402	1.59	/
Mid Channel	2441	1.73	/
High Channel	2479	1.65	/

Test Plots of 99% Bandwidth
Low Channel


Date: 20.JAN.2011 19:44:26

Middle Channel


Date: 20.JAN.2011 20:22:20

High Channel


Date: 20.JAN.2011 20:32:52

5.1.4 Band Edge

RESULT:
Passed

Date of testing : 2011-01-20
 Test standard : FCC part 15.249(d)
 : RSS-210 A2.9(b)
 Basic standard : ANSI C63.10: 2009
 Limit : FCC part 15.249(d)
 : RSS-210 A2.9(b)
 Kind of test site : 3m Semi-Anechoic Chamber

Test setup

Test Channel : Low/ High
 Operation mode : A
 Ambient temperature : 23°C
 Relative humidity : 50%
 Atmospheric pressure : 101 kPa

Table 7: Test results of Band Edge

Frequency (MHz)	Field Strength of Band Edge					
	Reading Level (dBuV/m)		Limit (dBuV/m)		Antenna Polarization	Verdict
	Average	Peak	Average	Peak		
2390	23.86	63.40	54	74	Horizontal	Pass
	19.43	58.97	54	74	Vertical	Pass
2483.5	28.12	67.66	54	74	Horizontal	Pass
	28.93	68.47	54	74	Vertical	Pass

6. Safety Human exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

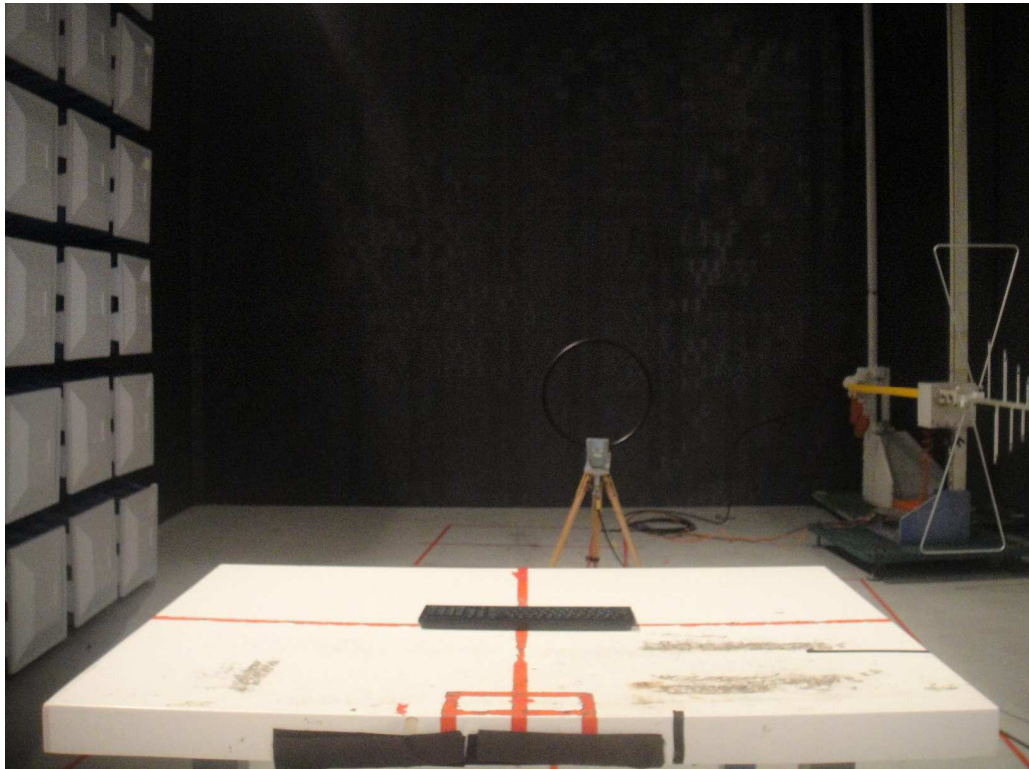
RESULT:**Passed**

Since maximum peak output power of the transmitter is $<60/f_{(\text{GHz})}\text{mW}$, i.e. $0.989\text{mW} < 25 (=60/2.4)\text{mW}$, hence the EUT is excluded from SAR evaluation according to FCC KDB publication 447498 D01: Mobile Portable RF Exposure.

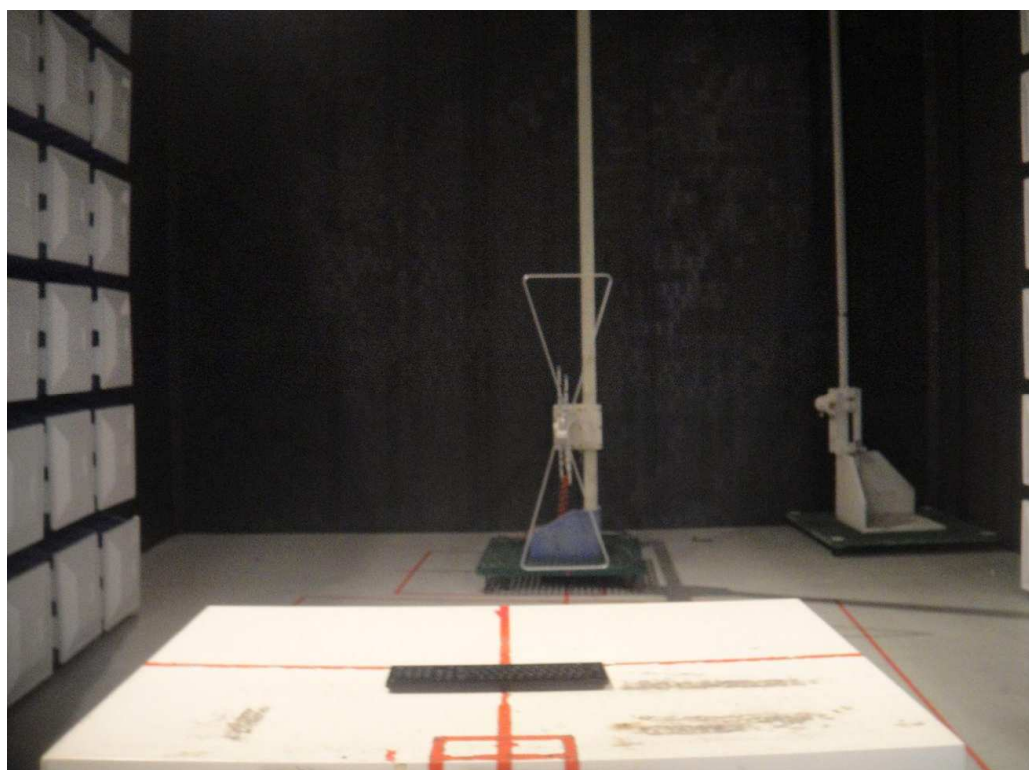
The measured peak output power of the transmitter is only 0.989mW. According to RSS-102 Issue 4 March 2010 clause 2.5, from 2.2 GHz up to 3 GHz inclusively and if the output power (i.e. the higher of the conducted or effective isotropic radiated power (e.i.r.p.) source-based time-averaged output power) 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

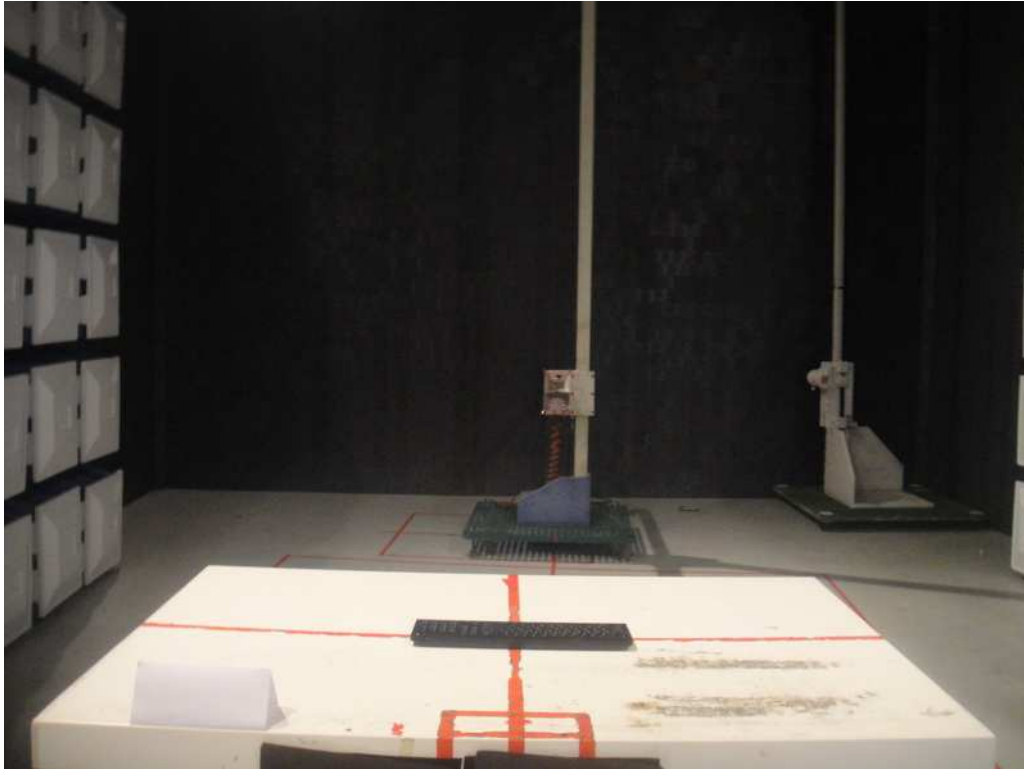
Photograph 1: Set-up for Radiated Emissions (9kHz - 30MHz)



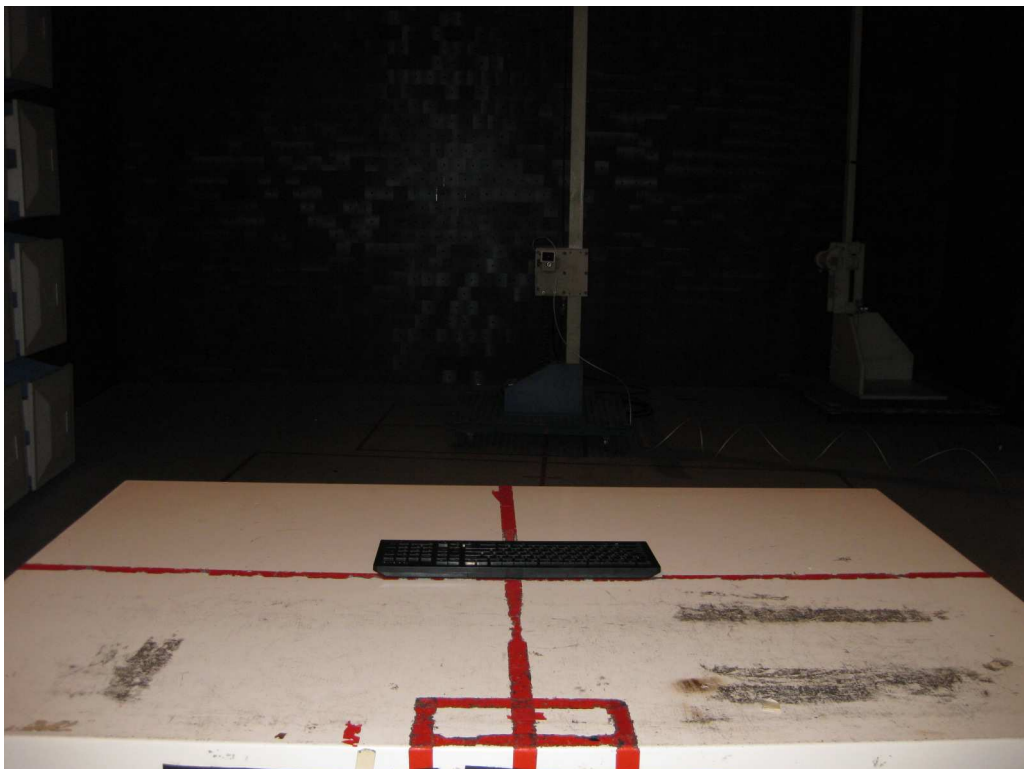
Photograph 2: Set-up for Radiated Emissions (30MHz-1GHz)



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



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



8. List of Tables

Table 1: List of Test and Measurement Equipment	5
Table 2: Measurement Uncertainty	6
Table 3: Information of EUT	7
Table 4: Technical Specification of EUT	7
Table 5: Test results of Field strength of fundamental	12
Table 6: Test result of 99% Bandwidth.....	17
Table 7: Test results of Band Edge	20

9. List of Photographs

Photograph 1: Set-up for Radiated Emissions (9kHz - 30MHz).....	22
Photograph 2: Set-up for Radiated Emissions (30MHz-1GHz).....	22
Photograph 3: Set-up for Radiated Emissions (1GHz-18GHz).....	23
Photograph 4: Set-up for Radiated Emissions (18GHz-26GHz).....	23

Produkte
 Products

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

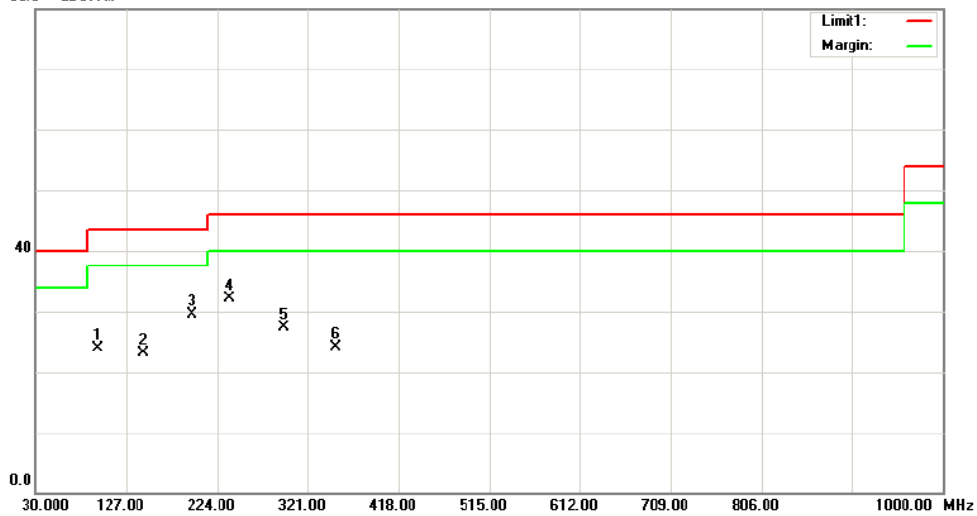
Radiated Emission Measurement

File :Keyboard
 80.0 dBuV/m

Data :#15

Date: 2011-1-24

Time: 16:25:46



Site DG-CB03

Polarization: *Horizontal*

Temperature: 23

Limit: FCC Class B 3M Radiation

Power: DC 3V

Humidity: 58 %

EUT: Keyboard

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		97.2100	42.32	-18.45	23.87	43.50	-19.63	peak	
2		145.9800	40.72	-17.63	23.09	43.50	-20.41	peak	
3		198.0100	46.06	-16.61	29.45	43.50	-14.05	peak	
4	*	237.1900	47.48	-15.29	32.19	46.00	-13.81	peak	
5		295.4500	39.29	-12.06	27.23	46.00	-18.77	peak	
6		351.1500	34.94	-10.79	24.15	46.00	-21.85	peak	

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

(Reference Only)

File :Keyboard\Data :#15

Page: 1

Engineer Signature:

Produkte
 Products



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>

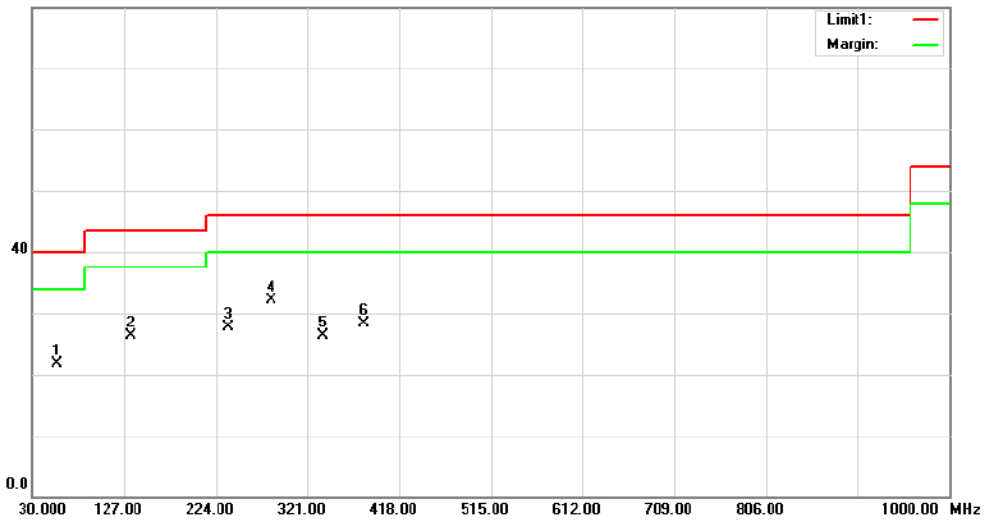
Radiated Emission Measurement

File :Keyboard
 80.0 dBuV/m

Data :#16

Date: 2011-1-24

Time: 16:32:06



Site DG-CB03

Polarization: **Vertical**

Temperature: 23

Limit: FCC Class B 3M Radiation

Power: DC 3V

Humidity: 58 %

EUT: Keyboard

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		56.9800	39.29	-17.59	21.70	40.00	-18.30	peak	
2		134.0900	44.29	-17.96	26.33	43.50	-17.17	peak	
3		237.1900	43.08	-15.29	27.79	46.00	-18.21	peak	
4	*	283.1800	44.47	-12.46	32.01	46.00	-13.99	peak	
5		336.7000	37.38	-11.17	26.21	46.00	-19.79	peak	
6		381.0100	37.93	-9.71	28.22	46.00	-17.78	peak	

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

<Reference Only

File :Keyboard\Data :#16

Page: 1

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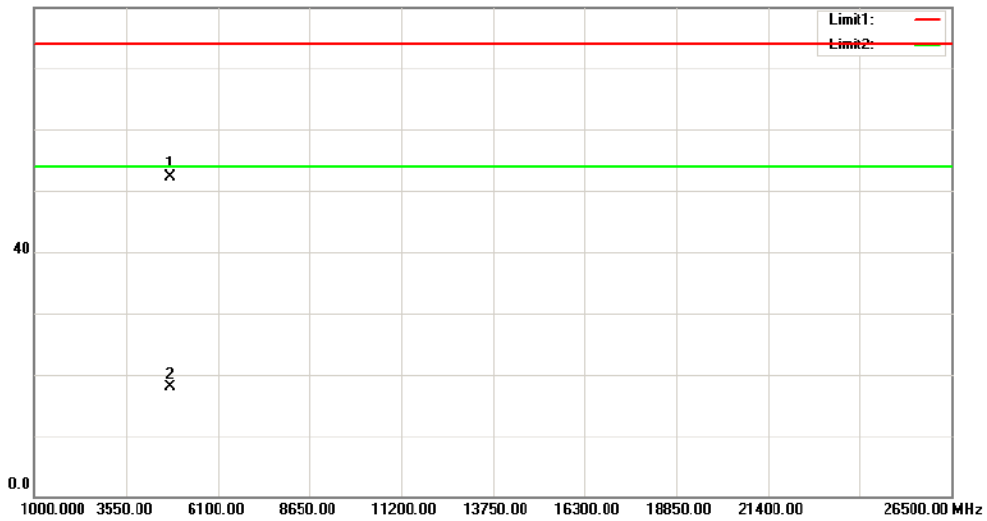
Radiated Emission Measurement

File :Keyboard
80.0 dBuV/m

Data :#14

Date: 2011-1-19

Time: 4:00:09



Site DG-CB03

Polarization: **Vertical**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: DC 3V

Humidity: 58 %

EUT: Keyboard

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	*	4804.000	47.10	5.21	52.31	74.00	-21.69	peak	
2		4804.000	12.77	5.21	17.98	54.00	-36.02	AVG	

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

<Reference Only

File :Keyboard\Data :#14

Page: 1

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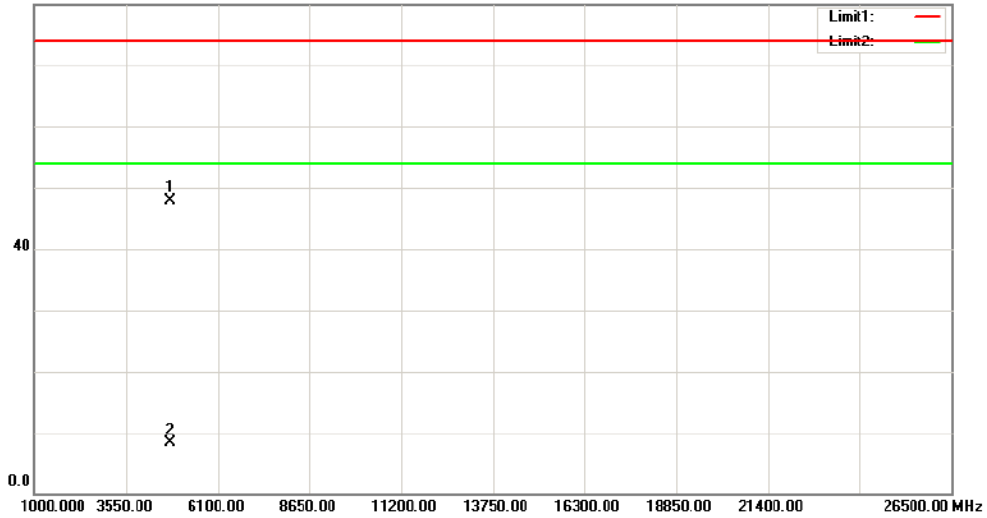
Radiated Emission Measurement

File :Keyboard
80.0 dBuV/m

Data :#13

Date: 2011-1-19

Time: 3:59:40



Site DG-CB03

Polarization: **Horizontal**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: DC 3V

Humidity: 58 %

EUT: Keyboard

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	*	4804.560	42.60	5.21	47.81	74.00	-26.19	peak	
2		4804.560	3.06	5.21	8.27	54.00	-45.73	AVG	

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

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File :Keyboard\Data :#13

Page: 1

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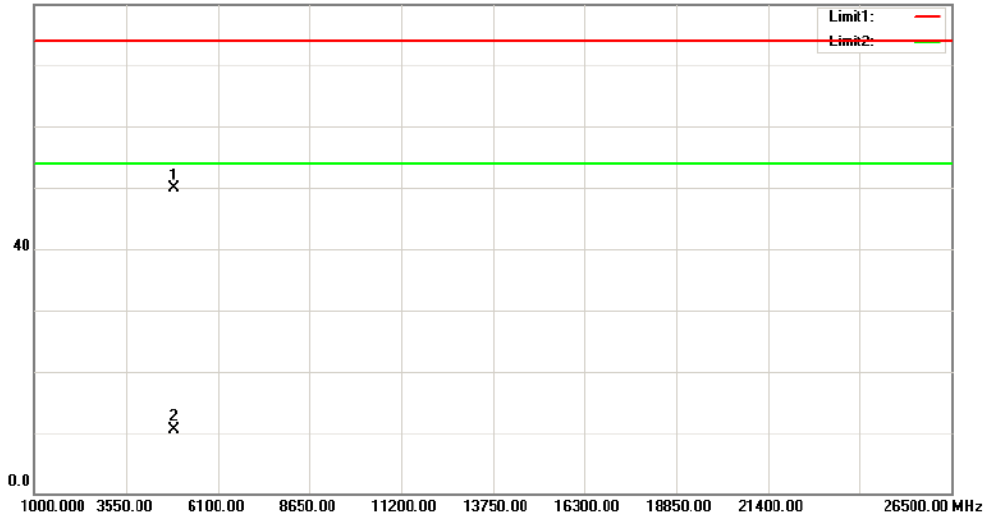
Radiated Emission Measurement

File :Keyboard
80.0 dBuV/m

Data :#12

Date: 2011-1-19

Time: 3:54:38



Site DG-CB03

Polarization: **Horizontal**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: DC 3V

Humidity: 58 %

EUT: Keyboard

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	*	4881.740	44.50	5.50	50.00	74.00	-24.00	peak	
2		4881.740	4.96	5.50	10.46	54.00	-43.54	AVG	

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

<Reference Only

File :Keyboard\Data :#12

Page: 1

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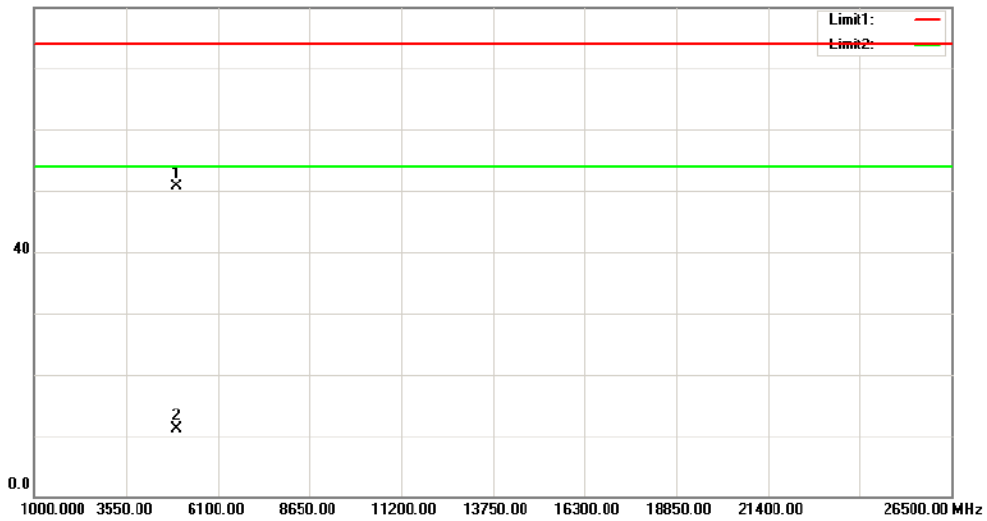
Radiated Emission Measurement

File :Keyboard
80.0 dBuV/m

Data :#10

Date: 2011-1-19

Time: 3:48:50



Site DG-CB03

Polarization: **Vertical**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: DC 3V

Humidity: 58 %

EUT: Keyboard

Distance: 3m

M/N:

Mode: TX

Note: TX 2479MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	4958.860	44.87	5.78	50.65	74.00	-23.35	peak	
2		4958.860	5.33	5.78	11.11	54.00	-42.89	AVG	

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

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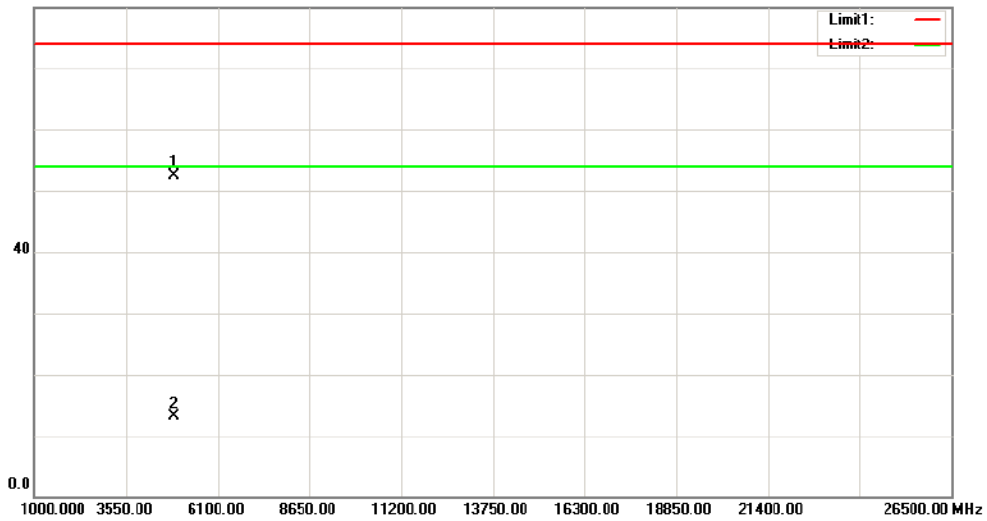
Radiated Emission Measurement

File :Keyboard
80.0 dBuV/m

Data :#11

Date: 2011-1-19

Time: 3:51:37



Site DG-CB03

Polarization: **Vertical**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: DC 3V

Humidity: 58 %

EUT: Keyboard

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	*	4881.440	47.08	5.50	52.58	74.00	-21.42	peak	
2		4881.440	7.54	5.50	13.04	54.00	-40.96	AVG	

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

<Reference Only

File :Keyboard\Data :#11

Page: 1

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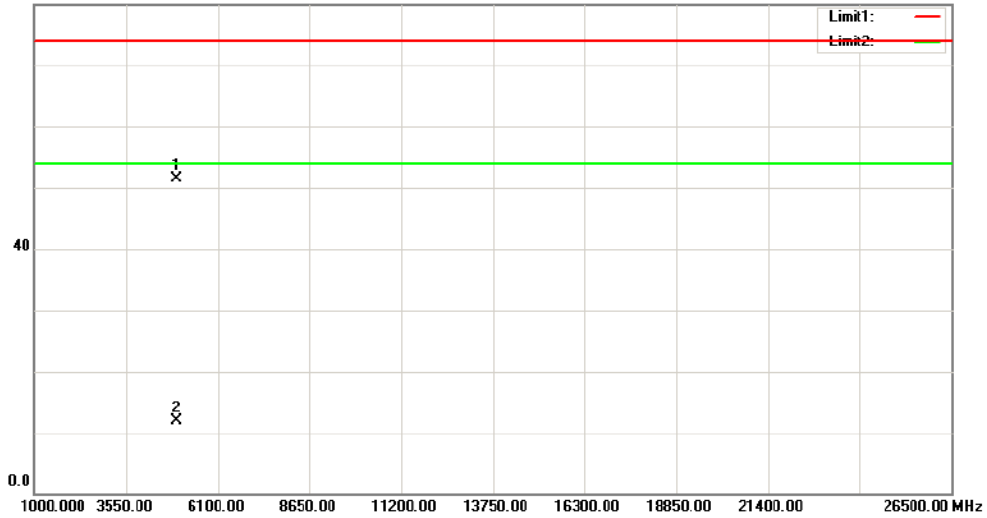
Radiated Emission Measurement

File :Keyboard
80.0 dBuV/m

Data :#9

Date: 2011-1-19

Time: 3:45:45



Site DG-CB03

Polarization: **Horizontal**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: DC 3V

Humidity: 58 %

EUT: Keyboard

Distance: 3m

M/N:

Mode: TX

Note: TX 2479MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	4958.036	45.75	5.78	51.53	74.00	-22.47	peak	
2		4958.036	6.21	5.78	11.99	54.00	-42.01	AVG	

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

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File :Keyboard\Data :#9

Page: 1

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Test Plots of Spurious radiations, mode C



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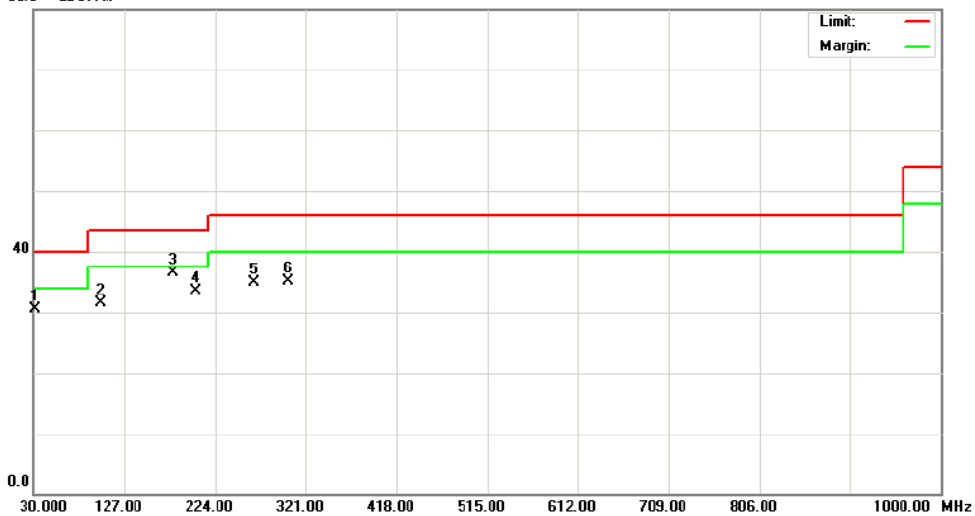
Radiated Emission Measurement

File :KEYBOARD
80.0 dBuV/m

Data :#13

Date: 2011-1-21

Time: 15:09:11



Site DG-CB03
Limit: FCC Class B 3M Radiation
EUT: Lenovo 2.4G Wireless keyboard
M/N:
Mode: RX
Note: RX 2402

Polarization: **Vertical**
Power: AC 120V/60Hz
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	31.2500	46.82	-16.25	30.57	40.00	-9.43	peak	
2	101.5700	49.97	-18.40	31.57	43.50	-11.93	peak	
3 *	178.6500	53.48	-16.94	36.54	43.50	-6.96	peak	
4	203.5700	50.04	-16.47	33.57	43.50	-9.93	peak	
5	265.3400	48.41	-13.54	34.87	46.00	-11.13	peak	
6	302.5400	47.15	-12.01	35.14	46.00	-10.86	peak	

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

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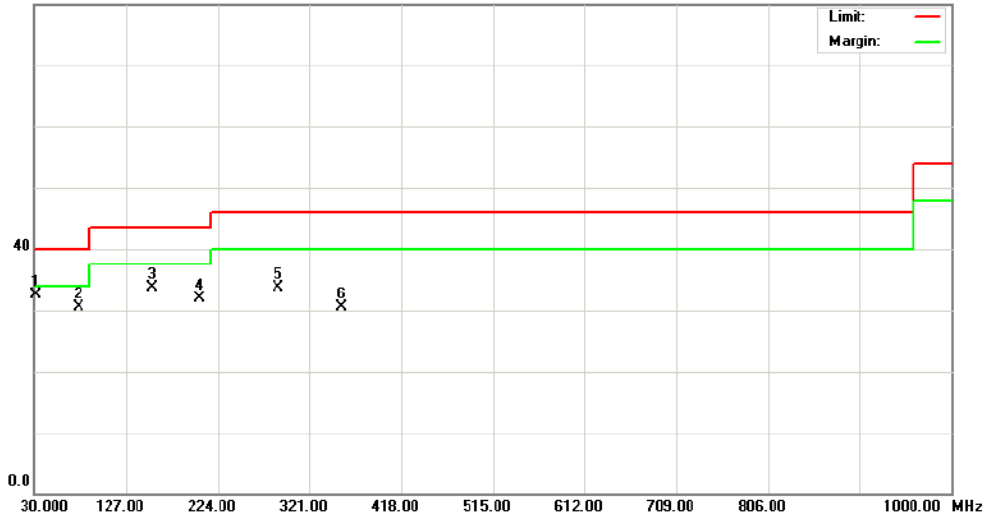
Radiated Emission Measurement

File :KEYBOARD
 80.0 dBuV/m

Data :#14

Date: 2011-1-21

Time: 15:11:23



Site DG-CB03

Polarization: **Horizontal**

Temperature: 23

Limit: FCC Class B 3M Radiation

Power: AC 120V/60Hz

Humidity: 51 %

EUT: Lenovo 2.4G Wireless keyboard

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	*	31.5700	48.89	-16.31	32.58	40.00	-7.42	peak	
2		76.2400	49.44	-18.87	30.57	40.00	-9.43	peak	
3		154.8600	51.26	-17.61	33.65	43.50	-9.85	peak	
4		205.3400	48.40	-16.43	31.97	43.50	-11.53	peak	
5		287.5800	45.84	-12.19	33.65	46.00	-12.35	peak	
6		354.1400	41.27	-10.69	30.58	46.00	-15.42	peak	

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

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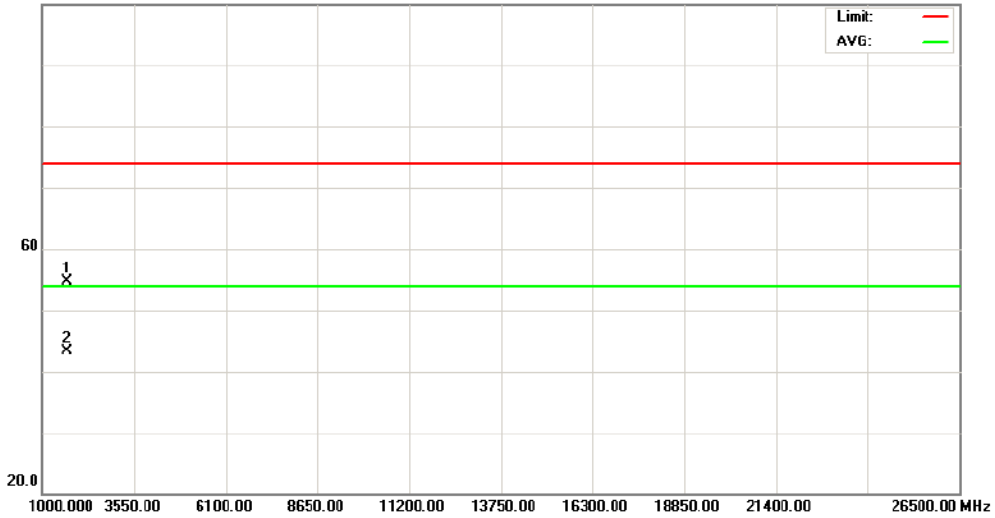
Radiated Emission Measurement

File :KEYBOARD
 100.0 dBuV/m

Data :#15

Date: 2011-1-21

Time: 15:12:58



Site DG-CB03

Polarization: **Vertical**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: AC 120V/60Hz

Humidity: 58 %

EUT: Lenovo 2.4G Wireless keyboard

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		1687.140	58.37	-3.62	54.75	74.00	-19.25	peak	
2	*	1687.140	46.87	-3.62	43.25	54.00	-10.75	AVG	

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

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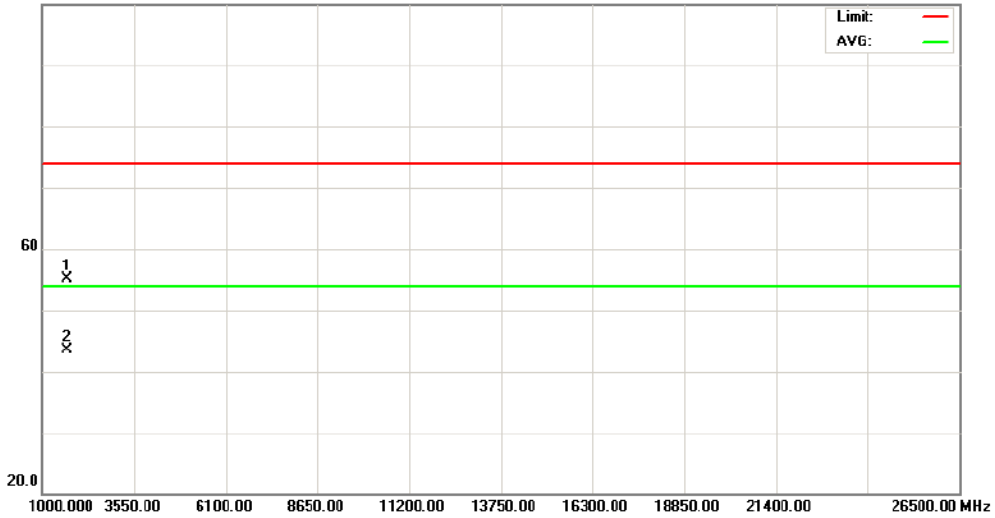
Radiated Emission Measurement

File :KEYBOARD
 100.0 dBuV/m

Data :#16

Date: 2011-1-21

Time: 15:13:52



Site DG-CB03

Polarization: **Horizontal**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: AC 120V/60Hz

Humidity: 58 %

EUT: Lenovo 2.4G Wireless keyboard

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		1687.140	58.74	-3.62	55.12	74.00	-18.88	peak	
2	*	1687.140	47.15	-3.62	43.53	54.00	-10.47	AVG	

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

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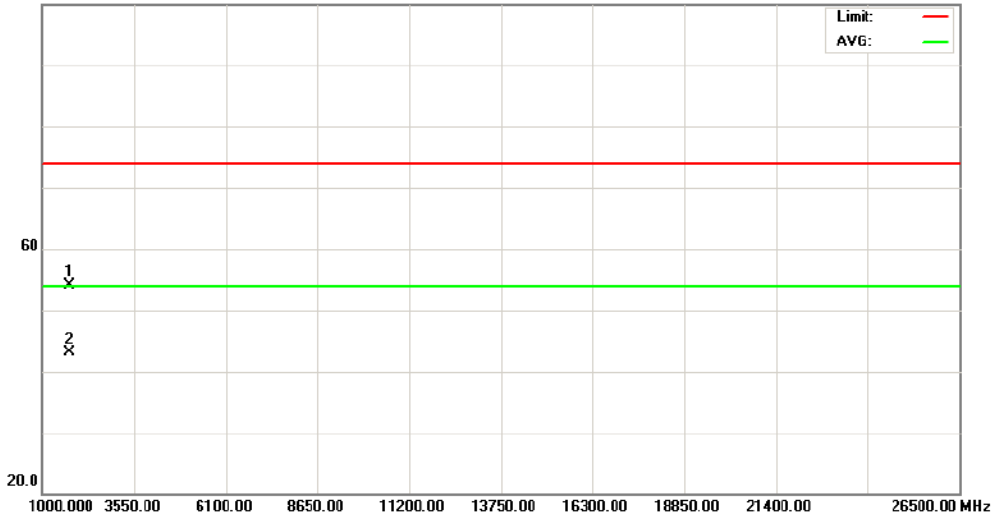
Radiated Emission Measurement

File :KEYBOARD
 100.0 dBuV/m

Data :#17

Date: 2011-1-21

Time: 15:15:34



Site DG-CB03

Polarization: **Vertical**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: AC 120V/60Hz

Humidity: 58 %

EUT: Lenovo 2.4G Wireless keyboard

Distance: 3m

M/N:

Mode: RX

Note: RX 2441

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		1702.590	57.55	-3.53	54.02	74.00	-19.98	peak	
2	*	1702.590	46.67	-3.53	43.14	54.00	-10.86	AVG	

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

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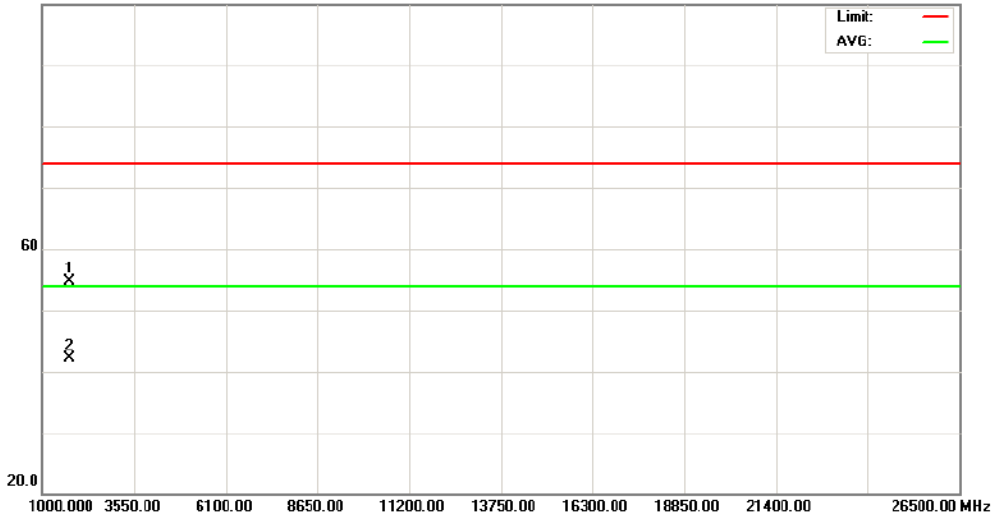
Radiated Emission Measurement

File :KEYBOARD
100.0 dBuV/m

Data :#18

Date: 2011-1-21

Time: 15:17:25



Site DG-CB03

Polarization: **Horizontal**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: AC 120V/60Hz

Humidity: 58 %

EUT: Lenovo 2.4G Wireless keyboard

Distance: 3m

M/N:

Mode: RX

Note: RX 2441

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		1702.590	58.15	-3.53	54.62	74.00	-19.38	peak	
2	*	1702.590	45.68	-3.53	42.15	54.00	-11.85	AVG	

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

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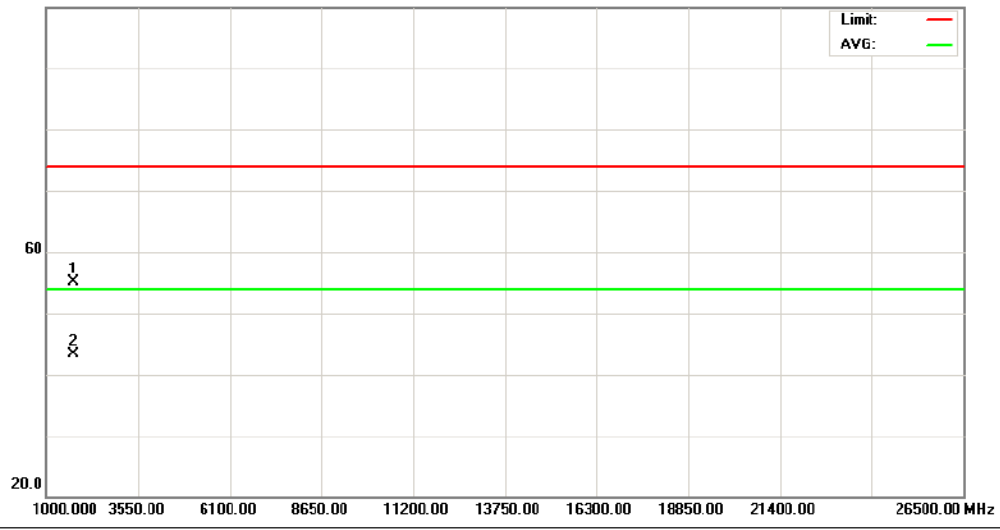


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Radiated Emission Measurement

File :KEYBOARD Data :#19 Date: 2011-1-21 Time: 15:19:53
 100.0 dBuV/m



Site DG-CB03 Polarization: **Vertical** Temperature: 23
 Limit: FCC_RF_1G-40G_(Peak) Power: AC 120V/60Hz Humidity: 58 %
 EUT: Lenovo 2.4G Wireless keyboard Distance: 3m
 M/N:
 Mode: RX
 Note: RX 2479

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		1723.510	58.56	-3.42	55.14	74.00	-18.86	peak	
2	*	1723.510	46.63	-3.42	43.21	54.00	-10.79	AVG	

*:Maximum data x:Over limit !:over margin (Reference Only)

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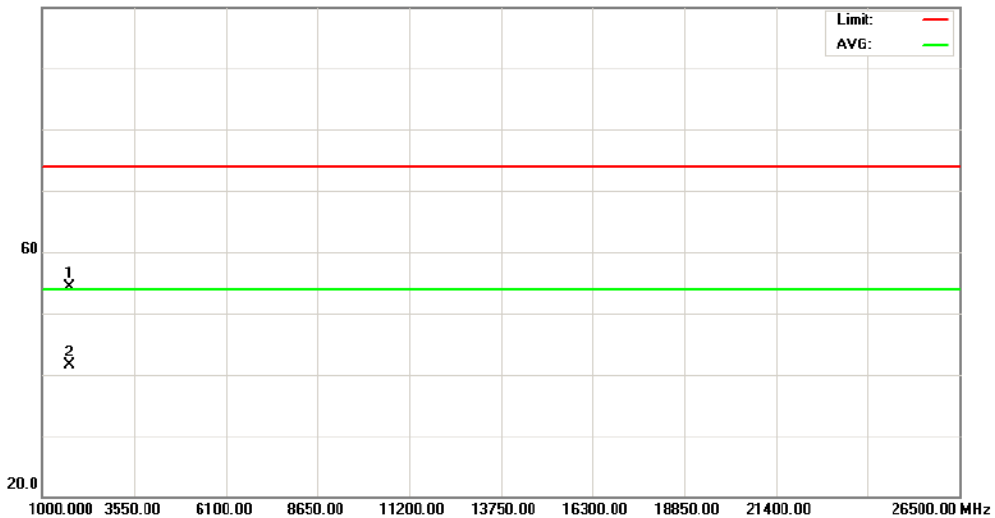
Radiated Emission Measurement

File :KEYBOARD
 100.0 dBuV/m

Data :#20

Date: 2011-1-21

Time: 15:21:46



Site DG-CB03

Polarization: **Horizontal**

Temperature: 23

Limit: FCC_RF_1G-40G_(Peak)

Power: AC 120V/60Hz

Humidity: 58 %

EUT: Lenovo 2.4G Wireless keyboard

Distance: 3m

M/N:

Mode: RX

Note: RX 2479

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		1723.510	57.68	-3.42	54.26	74.00	-19.74	peak	
2	*	1723.510	44.92	-3.42	41.50	54.00	-12.50	AVG	

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

⟨Reference Only