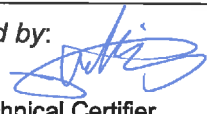


Prüfbericht-Nr.: <i>Test Report No.:</i>	17054928 001	Auftrags-Nr.: <i>Order No.:</i>	164044393	Seite 1 von 43 <i>Page 1 of 43</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	08.09.2015	
Auftraggeber: <i>Client:</i>	Lenovo (Beijing) Limited, No. 6, Chuang Ye Road, Shangdi Information Industry Base, Haidian District, Beijing 100085, P.R. China			
Prüfgegenstand: <i>Test item:</i>	ThinkPad X1 Wireless Touch Mouse			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	MOBTJNL			
Auftrags-Inhalt: <i>Order content:</i>	FCC approval			
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.249 CFR47 FCC Part 15: Subpart C Section 15.209 CFR47 FCC Part 15: Subpart B Section 15.107 CFR47 FCC Part 15: Subpart B Section 15.109 FCC KDB publication 447498 D01 v06			
Wareneingangsdatum: <i>Date of receipt:</i>	29.11.2015	Refer to photo document		
Prüfmuster-Nr.: <i>Test sample No.:</i>	A000286304-002, A000286304-016			
Prüfzeitraum: <i>Testing period:</i>	01.12.2015 - 12.12.2015			
Ort der Prüfung: <i>Place of testing:</i>	Accurate Technology Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
04.01.2016 Owen Tian / Senior Project Manager 		04.01.2016 Sam Lin / Technical Certifier 		
Datum <i>Date</i>	Name / Stellung <i>Name / Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name / Stellung <i>Name / Position</i>
Sonstiges / Other:				
This report is for DTS and DXX equipment class.				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(all) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend N/A = nicht anwendbar	4 = ausreichend N/T = nicht getestet
Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(all) = failed a.m. test specification(s)	3 = satisfactory N/A = not applicable	4 = sufficient N/T = 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 only 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 test mark.</i>				

TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT*RESULT: Pass***5.1.2 PEAK OUTPUT POWER***RESULT: Pass***5.1.3 6dB BANDWIDTH AND 99% BANDWIDTH***RESULT: Pass***5.1.4 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH***RESULT: Pass***5.1.5 POWER SPECTRAL DENSITY***RESULT: Pass***5.1.6 SPURIOUS EMISSIONS***RESULT: Pass***5.2.1 ANTENNA REQUIREMENT***RESULT: Pass***5.2.2 FIELD STRENGTH OF FUNDAMENTAL AND HARMONICS***RESULT: Pass***5.2.3 20dB BANDWIDTH AND 99% BANDWIDTH***RESULT: Pass***5.2.4 OUT-OF-BAND EMISSIONS***RESULT: Pass***5.3.1 RADIATED EMISSIONS***RESULT: Pass***5.3.2 CONDUCTED EMISSIONS***RESULT: Pass*

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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 A: Test Results of Bluetooth 4.0 Low Energy mode

Appendix B: Test Results of RF Exposure - Bluetooth 4.0 Low Energy mode

Appendix C: Test Results of 2.4 GHz Wireless mode

Appendix D: Test Results of RF Exposure - 2.4 GHz Wireless mode

Appendix E: Test Results of Battery Charging mode

2. Test Sites

2.1 Test Facilities

Accurate Technology Co., Ltd.

(FCC Registration No.: 752051 & IC Registration Number: 5077A-2)

F1, Bldg A, Changyuan New Material Port, Keyuan Rd., Science & Industry Park,
Nanshan District, Shenzhen, 518057, P.R. China

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
Radio Spectrum Test				
Spectrum Analyzer	Rohde&Schwarz	FSV40	101495	Jan.11, 2016
Test Receiver	Rohde& Schwarz	ESR	101817	Jul. 30, 2016
Spectrum Analyzer	Rohde&Schwarz	FSP30	100220	Jan.21, 2016
Conducted emissions				
Test Receiver	Rohde & Schwarz	ESCS30	100307	Jan.11, 2016
L.I.S.N.	Schwarzbeck	NLSK8126	8126431	Jan.11, 2016
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100305	Jan.11, 2016
Radiated emissions				
Spectrum Analyzer	Rohde&Schwarz	FSV40	101495	Jan.11, 2016
Test Receiver	Rohde& Schwarz	ESR	101817	Jul. 30, 2016
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan.15, 2016
Bilog Antenna	Schwarzbeck	VULB9163	9163-194	Jan.15, 2016
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan.15, 2016
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan.11, 2016
RF Switching Unit+PreAMP	Compliance Direction	RSU-M2	38322	Jan.11, 2016
Pre-Amplifier	Agilent	8447D	294A10619	Jan.11, 2016
Pre-Amplifier	Rohde&Schwarz	CBLU1183540-01	3791	Jan.11, 2016

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

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table,

Items		Extended Uncertainty
CE	Disturbance Voltage (dBuV)	U=1.94dB, k=2, σ =95%
RE (9kHz-30MHz)	Field strength (dBuV/m)	U=3.08dB, k=2, σ =95%
RE (30-1000MHz)	Field strength (dBuV/m)	U=4.42dB, k=2, σ =95%
RE (above 1000MHz)	Field strength (dBuV/m)	U=4.06dB, k=2, σ =95%

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A of 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 Accurate Technology Co., Ltd. facility located at F1, Bldg A, Changyuan New Material Port, Keyuan Rd., Science & Industry Park, Nanshan District, Shenzhen, 518057, P.R. 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 wireless mouse. It supports Bluetooth 4.0 Low Energy and 2.4 GHz wireless technology.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

Technical Specification	Value
Kind of Equipment:	ThinkPad X1 Wireless Touch Mouse
Type Designation:	MOBTJNL
FCC ID:	A5MMOBTJNL
IC:	5903G-MOBTJNL
Type of Equipment:	Class B digital equipment
Equipment Class:	DTS and DXX
Wireless Technology:	Bluetooth 4.0 Low Energy and 2.4 GHz Wireless
Rated output power:	-2 dBm (Max.)
Operating Frequency Range:	2402-2480 MHz for Bluetooth 2402-2479 MHz for 2.4 GHz Wireless
Channel Number:	40 channels for Bluetooth 4.0 Low Energy 78 channels for 2.4 GHz Wireless
Channel Separation:	2 MHz for Bluetooth 4.0 Low Energy 1 MHz for 2.4 GHz Wireless
Type of Modulation:	GFSK
Operating Voltage:	DC 5V via USB port DC 3.7V via Internal Lithium-ion Battery
Operating Temperature Range:	0°C to 40°C
Antenna Type:	Chip Antenna for Bluetooth and 2.4 GHz
Smart Antenna Systems:	Not Applicable
Number of Antenna:	1
Antenna Gain:	Max. 0.5dBi for Bluetooth and 2.4 GHz

Table 3: List of Radio Frequency Channel, Bluetooth 4.0 Low Energy

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402.00	11	2424.00	22	2446.00	33	2468.00
1	2404.00	12	2426.00	23	2448.00	34	2470.00
2	2406.00	13	2428.00	24	2450.00	35	2472.00
3	2408.00	14	2430.00	25	2452.00	36	2474.00
4	2410.00	15	2432.00	26	2454.00	37	2476.00
5	2412.00	16	2434.00	27	2456.00	38	2478.00
6	2414.00	17	2436.00	28	2458.00	39	2480.00
7	2416.00	18	2438.00	29	2460.00	--	--
8	2418.00	19	2440.00	30	2462.00	--	--
9	2420.00	20	2442.00	31	2464.00	--	--
10	2422.00	21	2444.00	32	2466.00	--	--

Table 4: List of Radio Frequency Channel, 2.4 GHz Wireless

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402.00	21	2423.00	42	2444.00	63	2465.00
1	2403.00	22	2424.00	43	2445.00	64	2466.00
2	2404.00	23	2425.00	44	2446.00	65	2467.00
3	2405.00	24	2426.00	45	2447.00	66	2468.00
4	2406.00	25	2427.00	46	2448.00	67	2469.00
5	2407.00	26	2428.00	47	2449.00	68	2470.00
6	2408.00	27	2429.00	48	2450.00	69	2471.00
7	2409.00	28	2430.00	49	2451.00	70	2472.00
8	2410.00	29	2431.00	50	2452.00	71	2473.00
9	2411.00	30	2432.00	51	2453.00	72	2474.00
10	2412.00	31	2433.00	52	2454.00	73	2475.00
11	2413.00	32	2434.00	53	2455.00	74	2476.00
12	2414.00	33	2435.00	54	2456.00	75	2477.00
13	2415.00	34	2436.00	55	2457.00	76	2478.00
14	2416.00	35	2437.00	56	2458.00	77	2479.00
15	2417.00	36	2438.00	57	2459.00	--	--
16	2418.00	37	2439.00	58	2460.00	--	--
17	2419.00	38	2440.00	59	2461.00	--	--
18	2420.00	39	2441.00	60	2462.00	--	--
19	2421.00	40	2442.00	61	2463.00	--	--
20	2422.00	41	2443.00	62	2464.00	--	--

3.3 Independent Operation Modes

The basic operation modes are:

- A. 2.4GHz Wireless operating
 - 1. Transmitting
 - i. Low channel
 - ii. Middle channel
 - iii. High channel
 - 2. Receiving
 - i. Low channel
 - ii. Middle channel
 - iii. High channel
- B. Bluetooth Low Energy operating
 - 1. Transmitting
 - i. Low channel
 - ii. Middle channel
 - iii. High channel
 - 2. Receiving
 - i. Low channel
 - ii. Middle channel
 - iii. High channel
- C. Battery charging via PC
- D. Standby
- E. 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

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

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

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5.

Table 5: List of Frequencies under Test, 2.4 GHz Wireless operation

RF channel of 2.4 GHz Wireless			
Test Channel	Channel Number	Frequency (MHz)	Remark
Low	0	2402.00	Max. output power level
Middle	39	2441.00	Max. output power level
High	77	2479.00	Max. output power level

Table 6: List of Frequencies under Test, Bluetooth 4.0 Low Energy operation

RF Channel of Bluetooth 4.0 Low Energy			
Test Channel	Channel number	Frequency (MHz)	Remark
Low	0	2402.00	Max. output power level
Middle	19	2440.00	Max. output power level
High	39	2480.00	Max. output power level

4.3 Special Accessories and Auxiliary Equipment

Table 7: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating
Notebook PC	Lenovo	X240	PD-01UAM3	Input: DC 20V, 3.25A
iPad	APPLE	MD513CH/A	DMTK58A5F185	---

Table 8: List of Accessories and Cables

Interface(s) / Port (s)	Max. cable length, Shielding	Cable classification
USB	60cm, un-shielded	USB cable

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 below 1 GHz

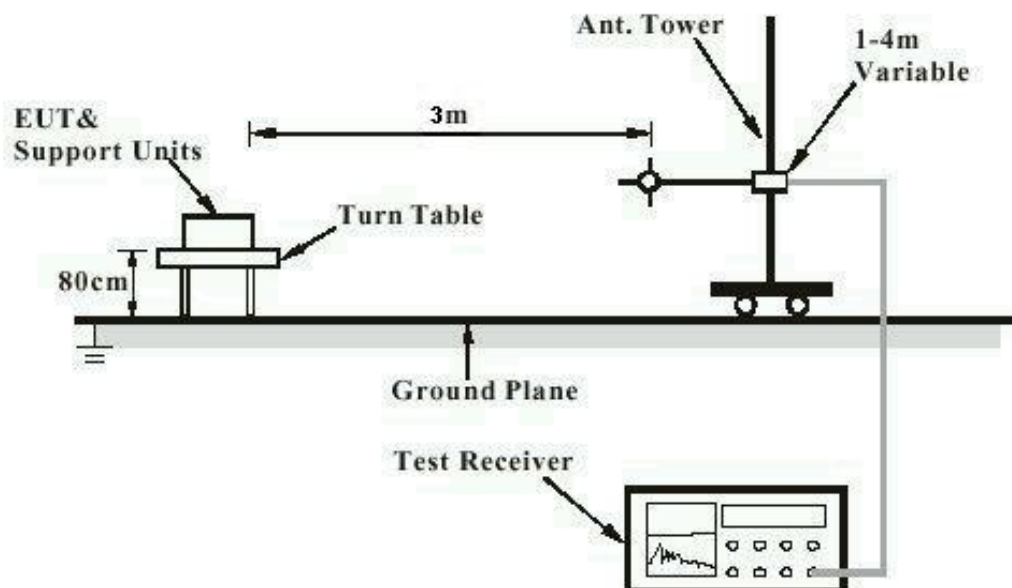


Diagram of Measurement Configuration for Radiation Test above 1 GHz

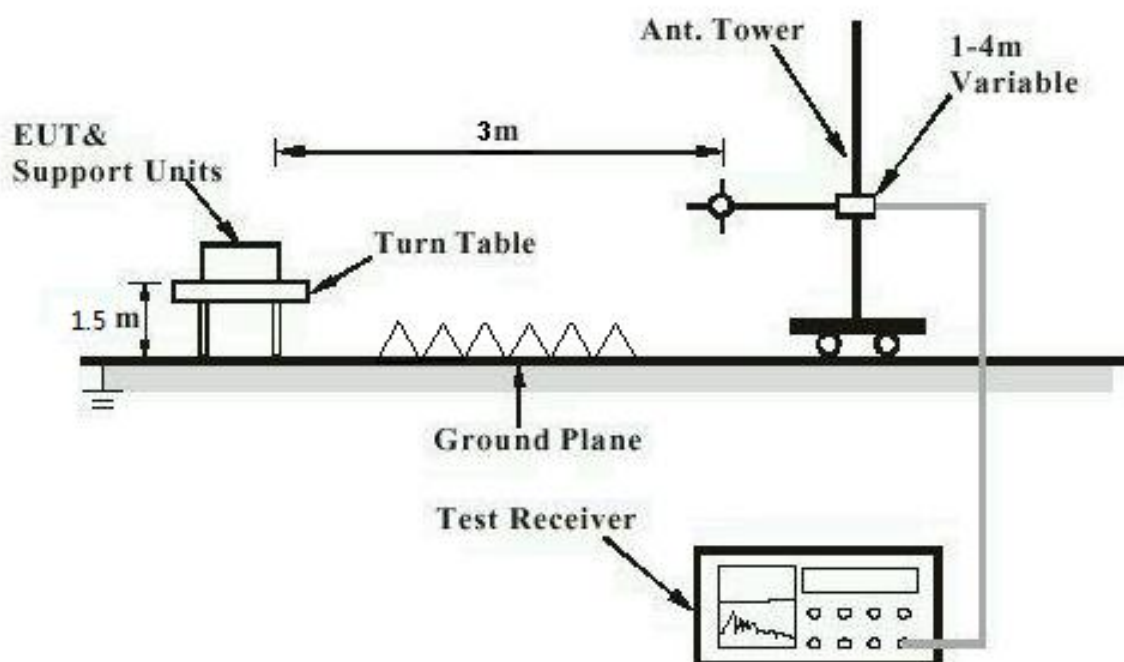


Diagram of Measurement Equipment Configuration for Conduction Measurement

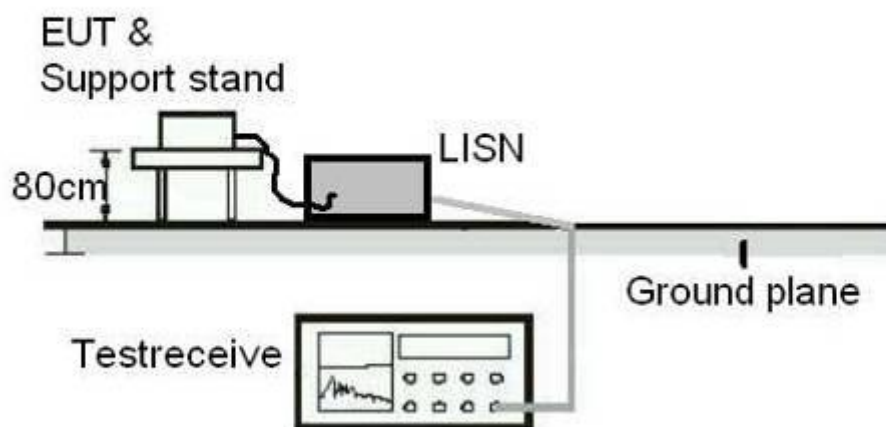
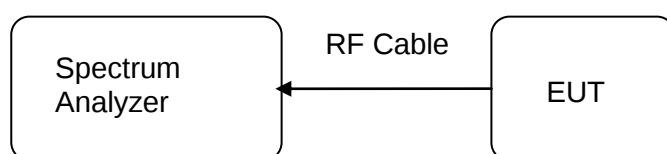


Diagram of Measurement Equipment Configuration for Transmitter Measurement



5. Test Results

5.1 Transmitter Requirement & Test Suites - Part 15 Subpart C DTS equipment

5.1.1 Antenna Requirement

RESULT:**Pass**

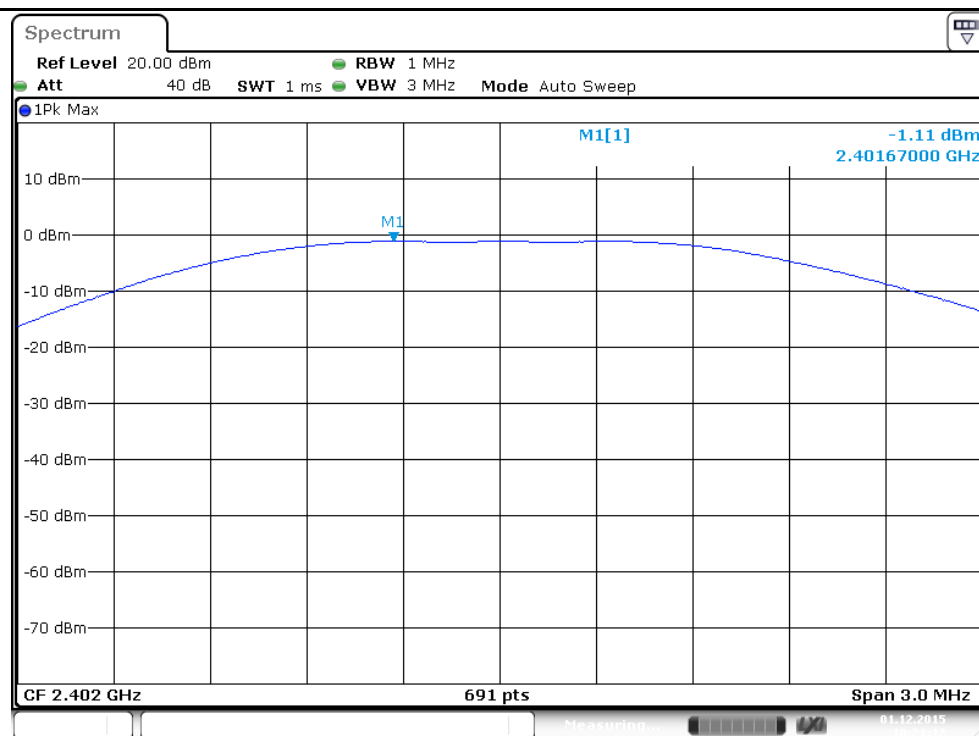
Test standard	:	FCC Part 15.247(b)(4) and Part 15.203
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is 0.5 dBi for Bluetooth, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to compliance the provision.

Refer to EUT photo for details.

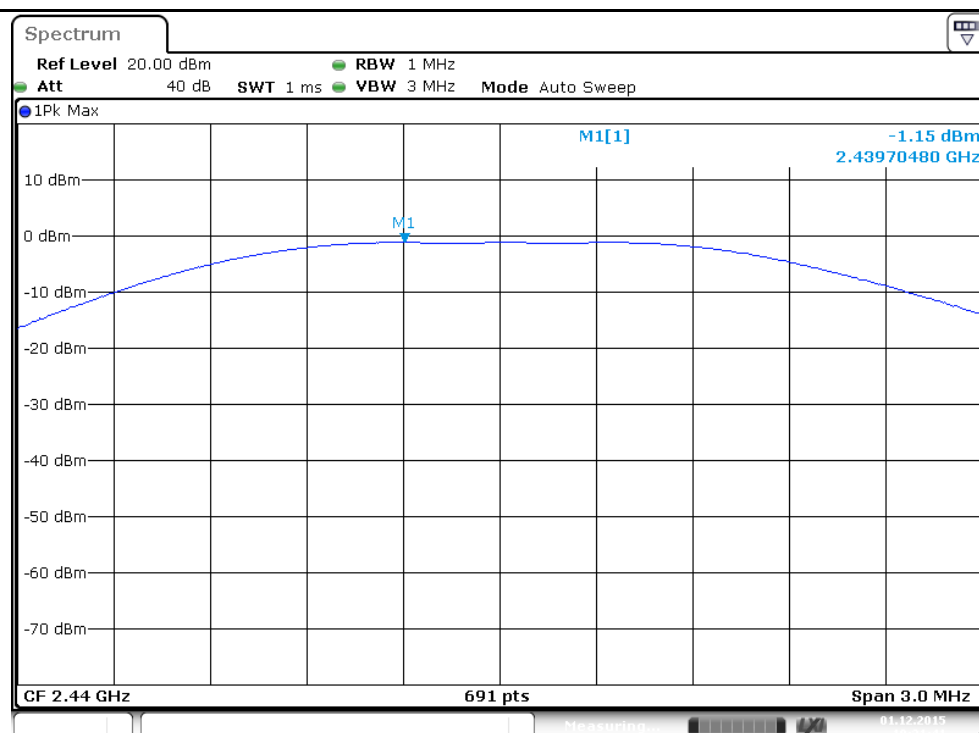
Channel	Channel Frequency (MHz)	Bluetooth 4.0 Low Energy					
		Measured Result (dBm)	Cable Loss (dB)	Peak Output Power		Limit (W)	Verdict
				dBm	W		
Low Channel	2402	-1.11	0.3	-0.81	0.00083	1	Pass
Middle Channel	2440	-1.15	0.3	-0.85	0.00082	1	Pass
High Channel	2480	-1.89	0.3	-1.59	0.00069	1	Pass
Note: Peak Output Power (dBm) = Measured Result + Cable Loss							

Test Graph of Peak Output Power, Bluetooth 4.0 Low Energy mode Low Channel

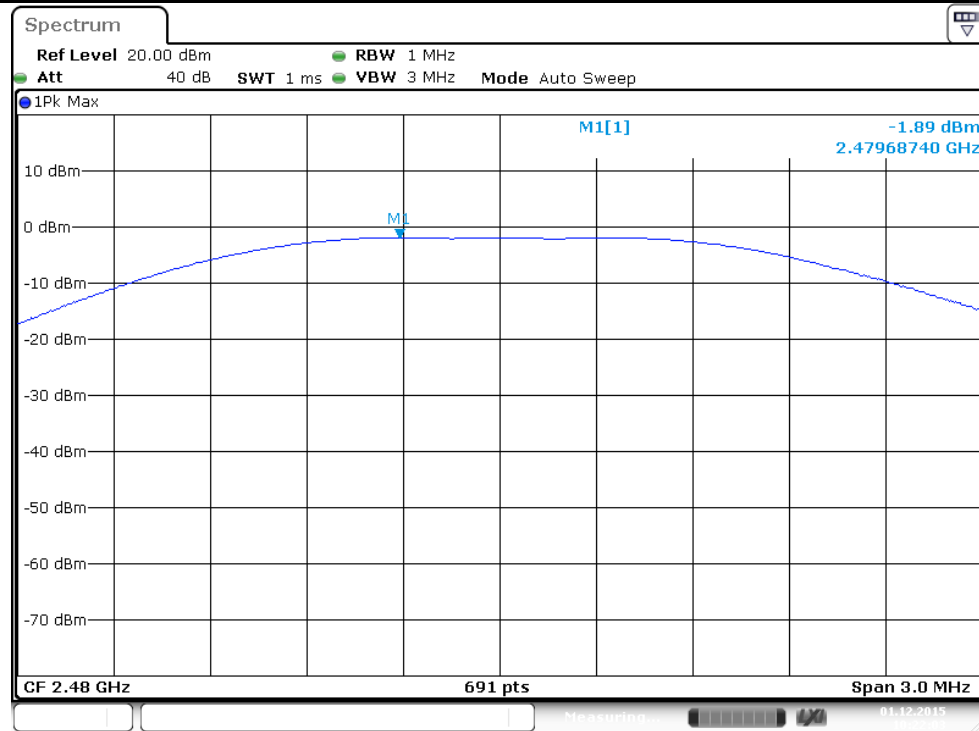


Date: 1.DEC.2015 10:21:12

Middle Channel



Date: 1.DEC.2015 10:21:41

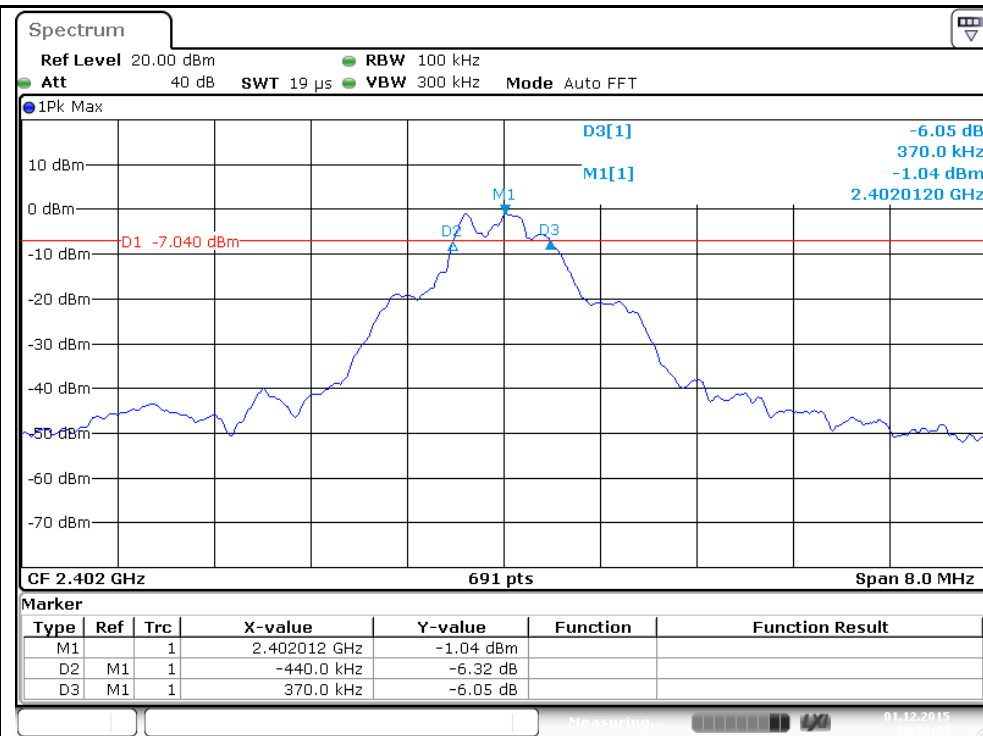
High Channel


Date: 1.DEC.2015 10:22:03

Channel	Channel Frequency (MHz)	6dB Bandwidth (kHz)	99% Bandwidth (kHz)	Limit (kHz)	Verdict
Low Channel	2402	810	1748.191	at least 500	Pass
Mid Channel	2440	882	1759.768	at least 500	Pass
High Channel	2480	810	1771.346	at least 500	Pass

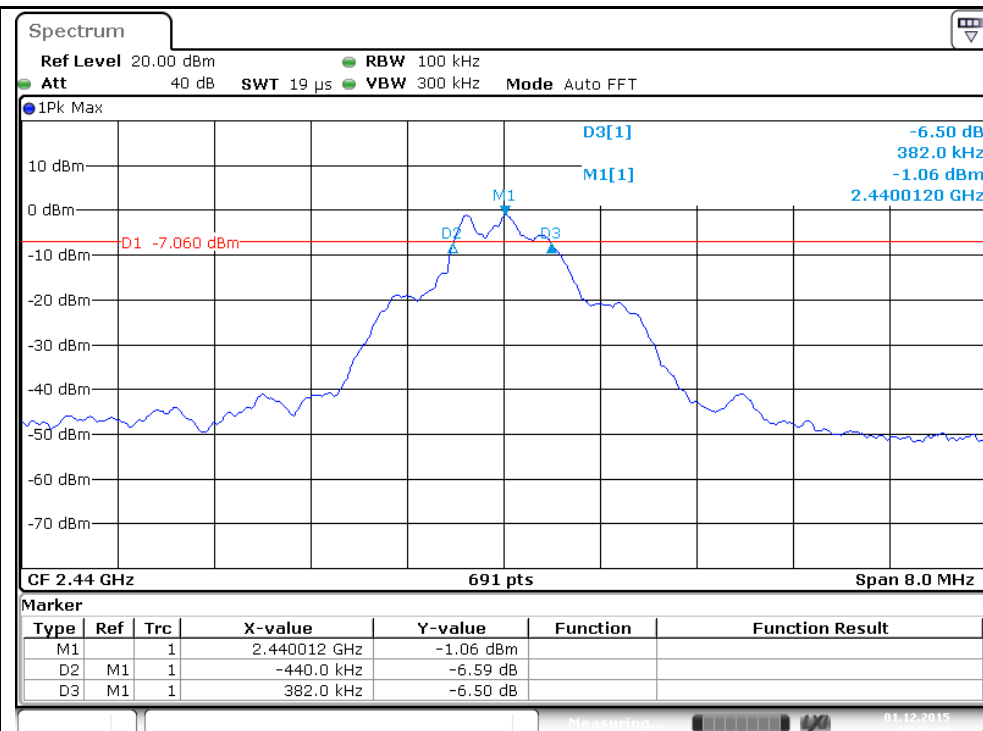
Test Graph of 6dB Bandwidth, Bluetooth 4.0 Low Energy mode

Low Channel



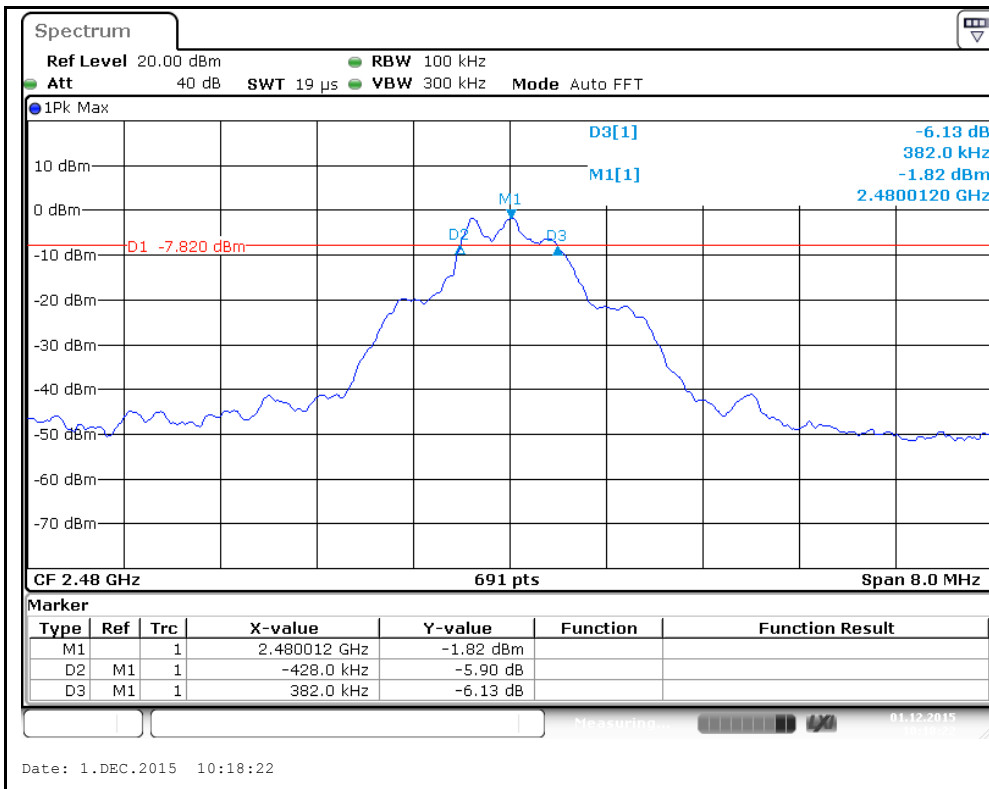
Date: 1.DEC.2015 10:19:44

Middle Channel



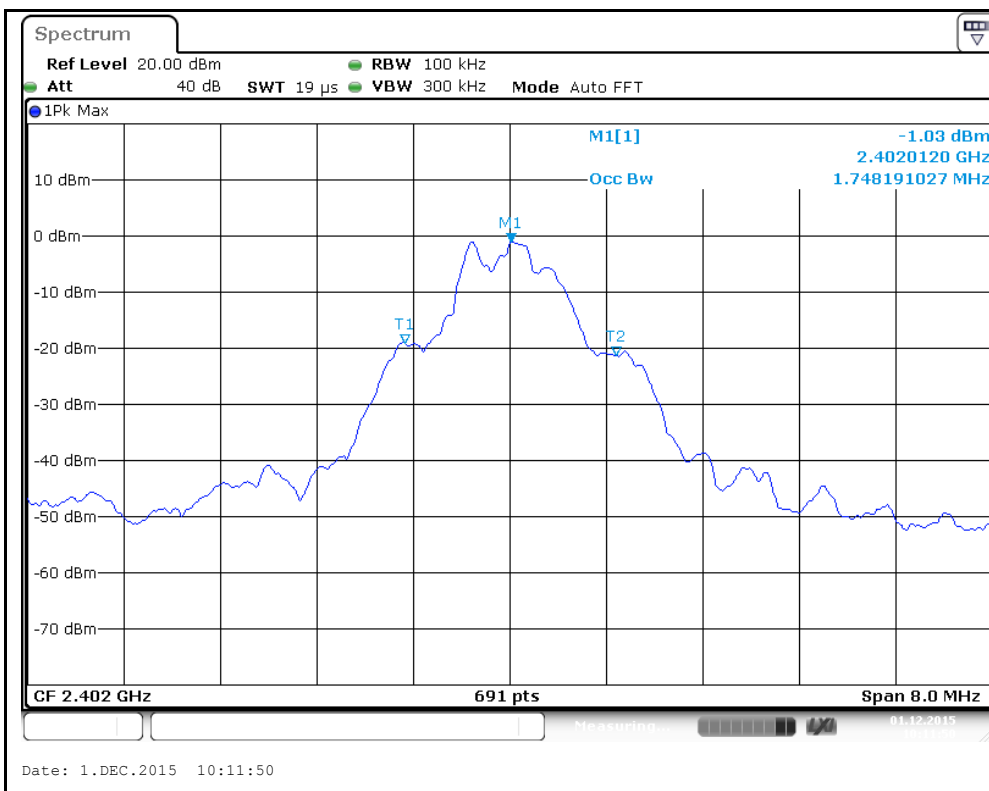
Date: 1.DEC.2015 10:16:39

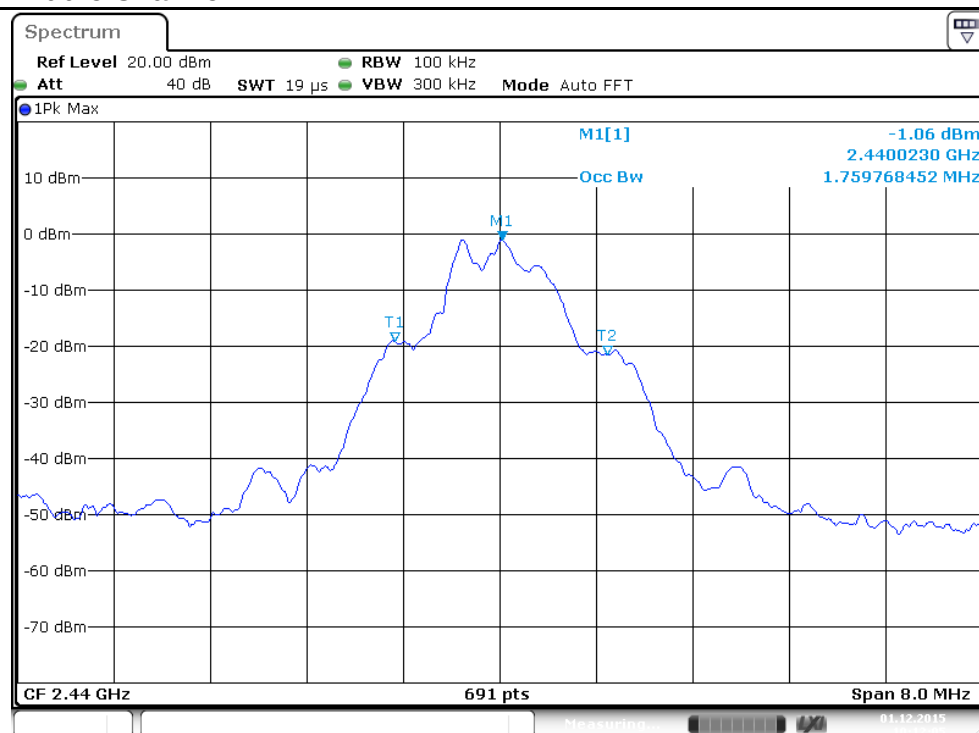
High Channel



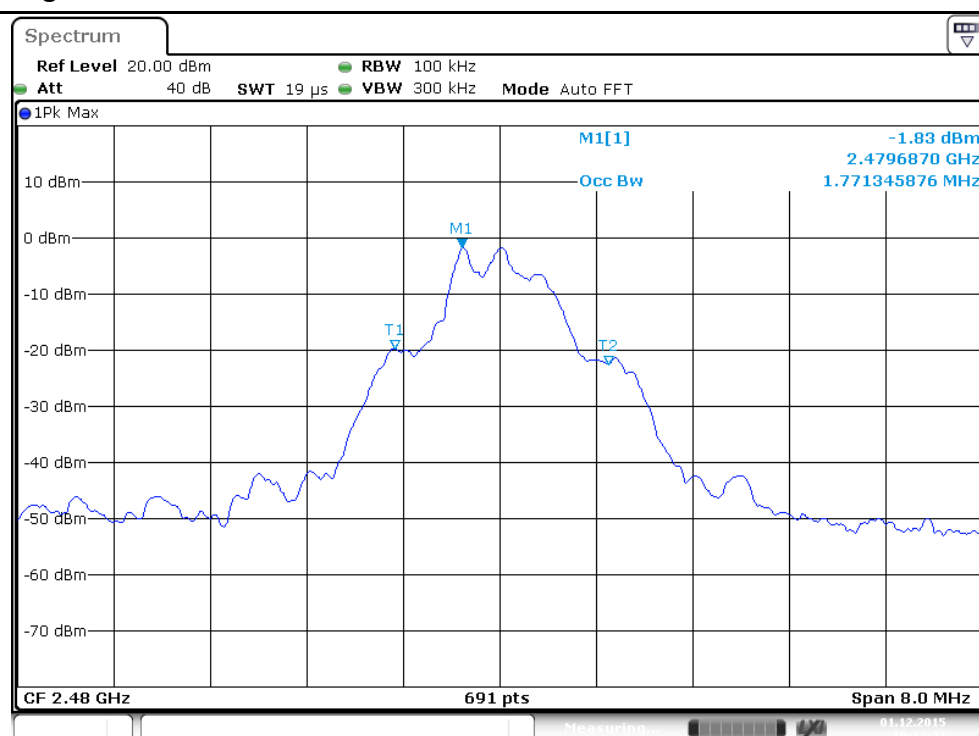
Test Graph of 99% Bandwidth, Bluetooth 4.0 Low Energy mode

Low Channel



Middle Channel


Date: 1.DEC.2015 10:12:05

High Channel


Date: 1.DEC.2015 10:12:22

5.1.4 Conducted Spurious Emissions measured in 100 kHz Bandwidth

RESULT:**Pass**

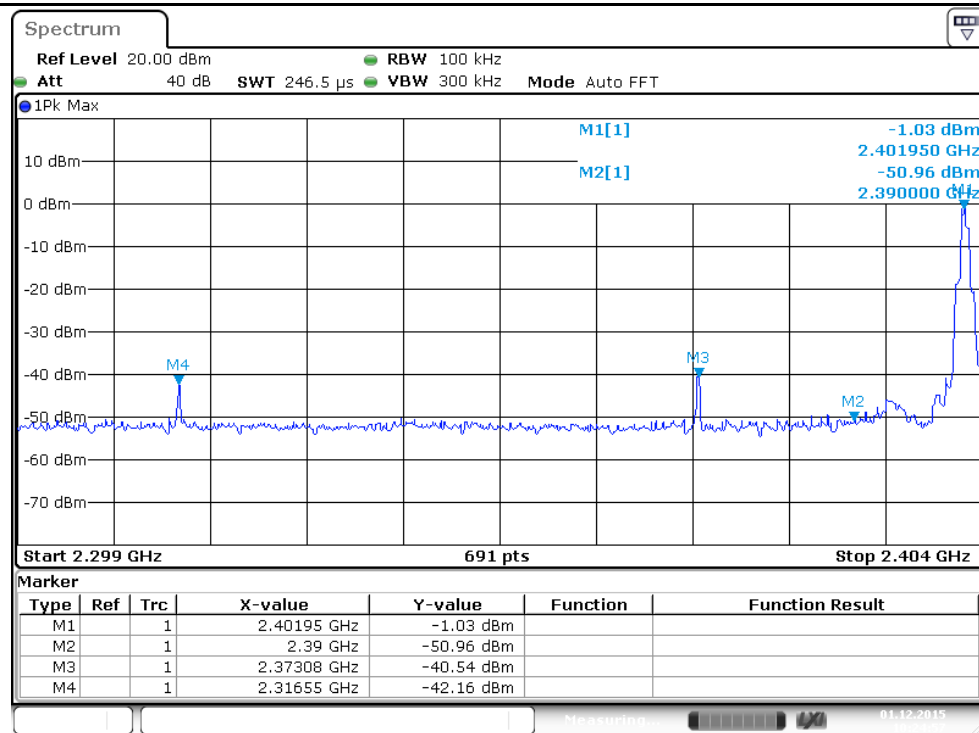
Date of testing	:	2015-12-01
Test standard	:	FCC part 15.247(d) RSS-247 Section 5.5 RSS-Gen Issue 4 Clause 6.13
Basic standard	:	ANSI C63.10:2013 FCC KDB 558074 v03r02
Limit	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	:	Shield room

Test setup

Test Channel	:	Low/ Middle/ High
Operation mode	:	B.1
Ambient temperature	:	23°C
Relative humidity	:	51%
Atmospheric pressure	:	101.0 kPa

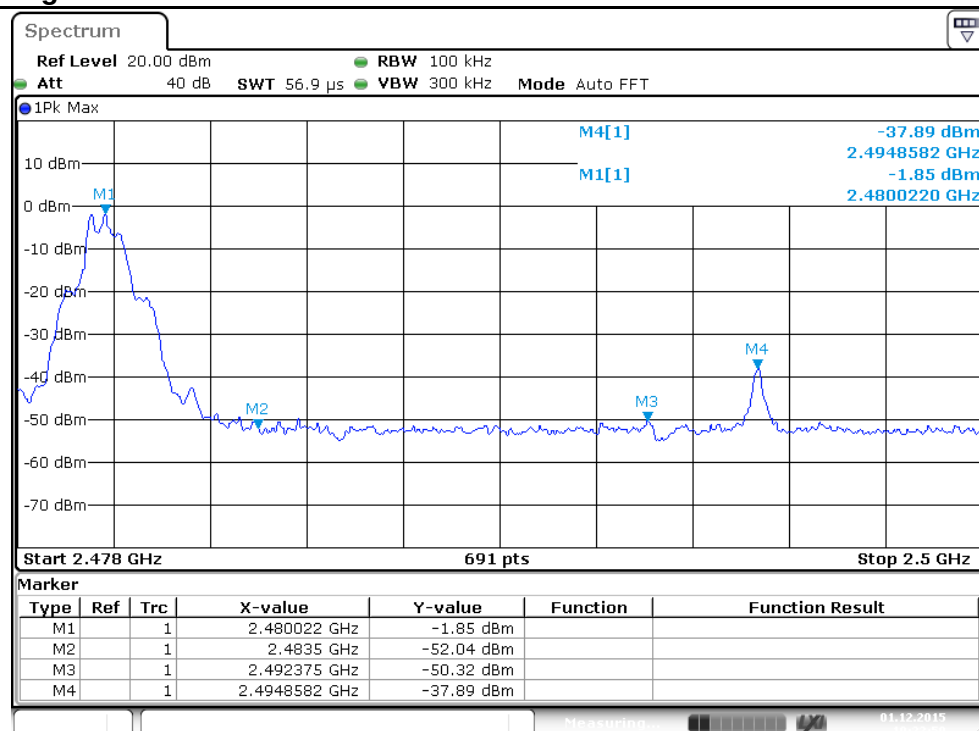
Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to following test graph, and compliance is achieved as well.

Test Graph of 100 kHz Bandwidth of Frequency Band Edge, Bluetooth 4.0 Low Energy mode Low Channel



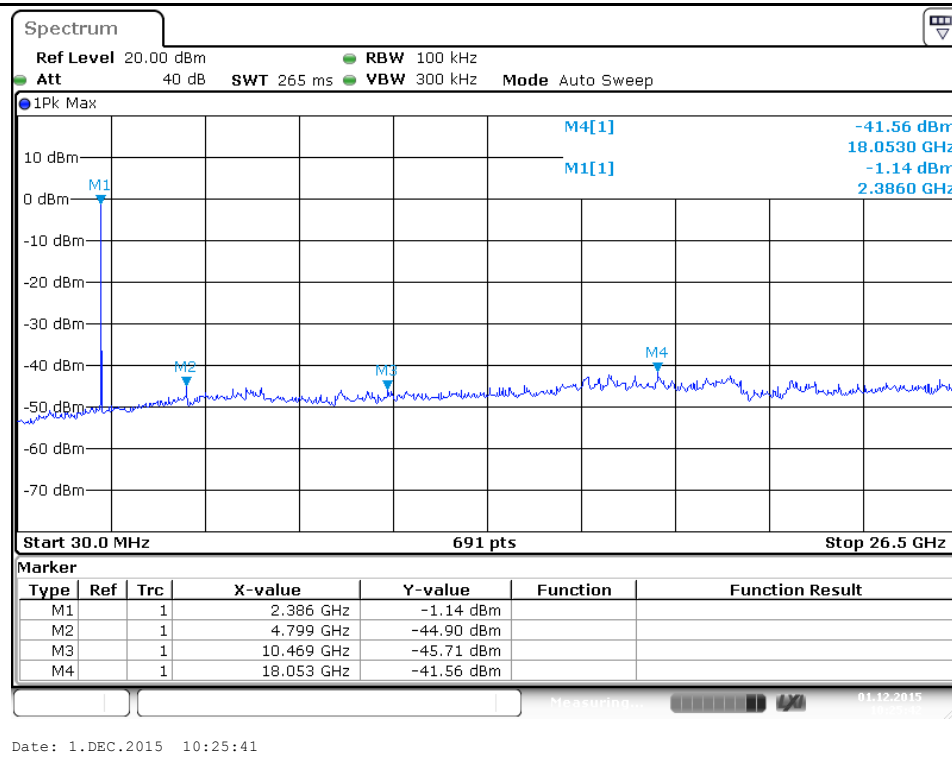
Date: 1.DEC.2015 10:24:57

High Channel

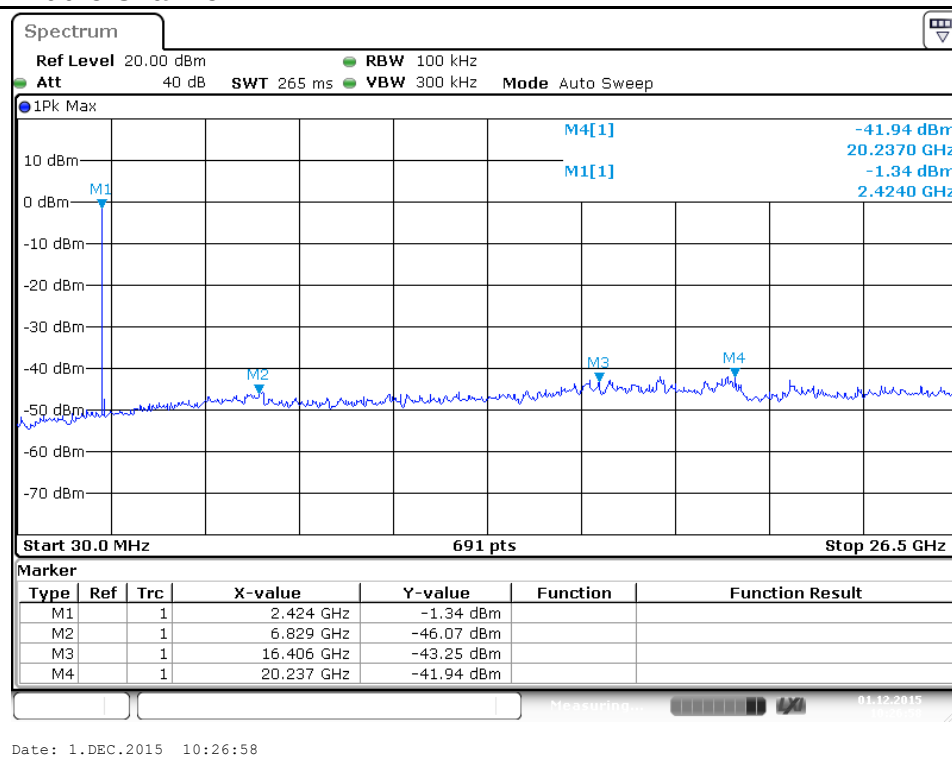


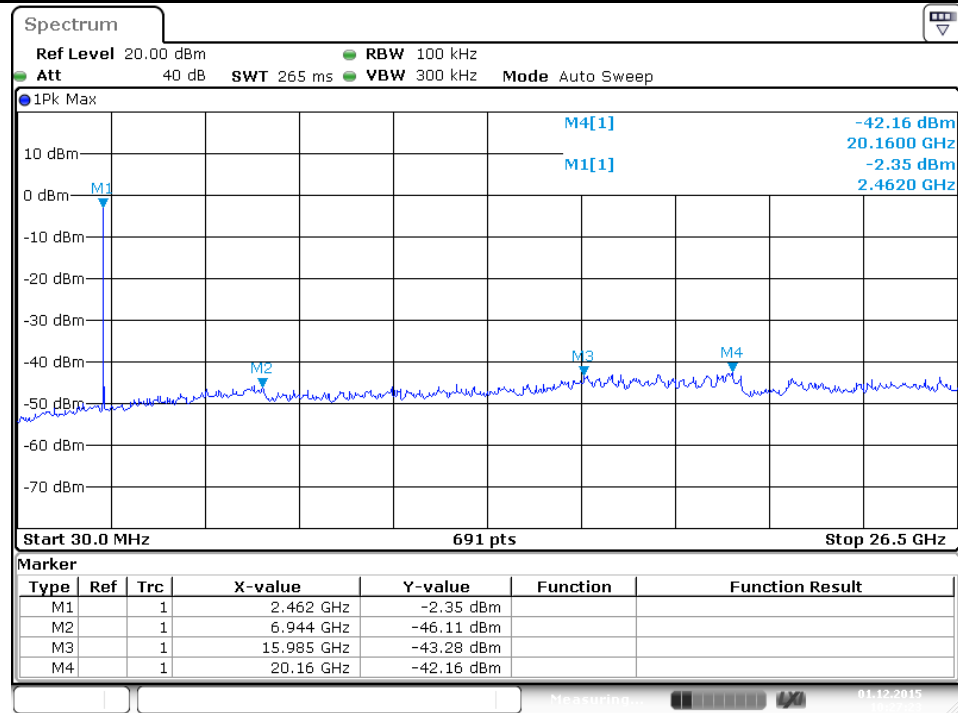
Date: 1.DEC.2015 10:22:58

Test Graph of Conducted spurious emissions measured in 100 kHz Bandwidth, Bluetooth 4.0 Low Energy mode Low Channel



Middle Channel



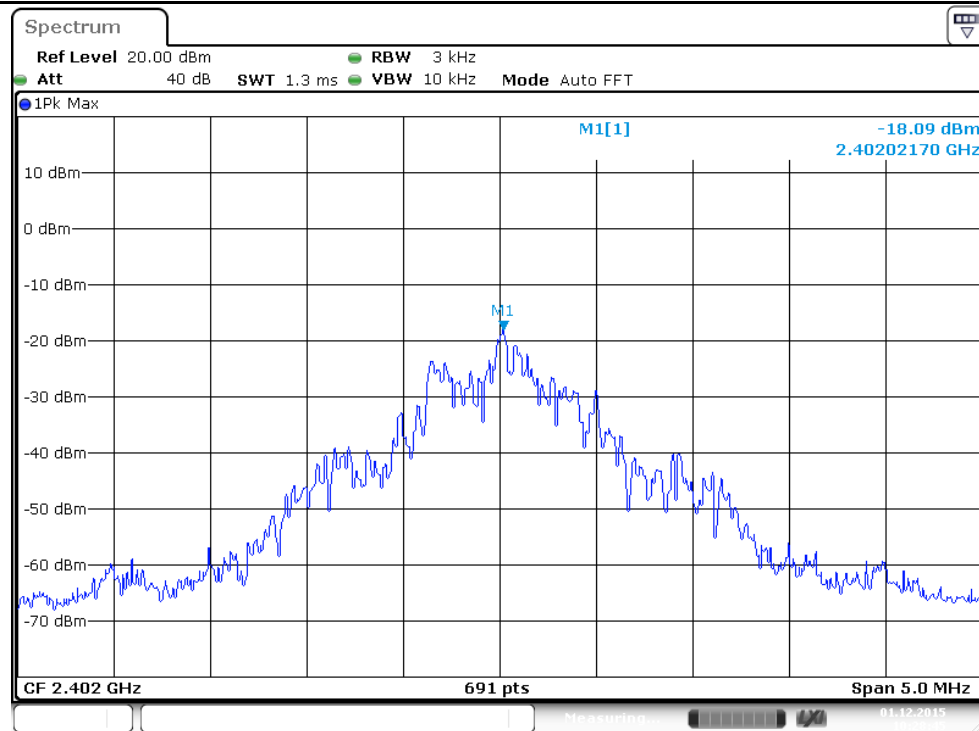
High Channel


Date: 1.DEC.2015 10:27:23

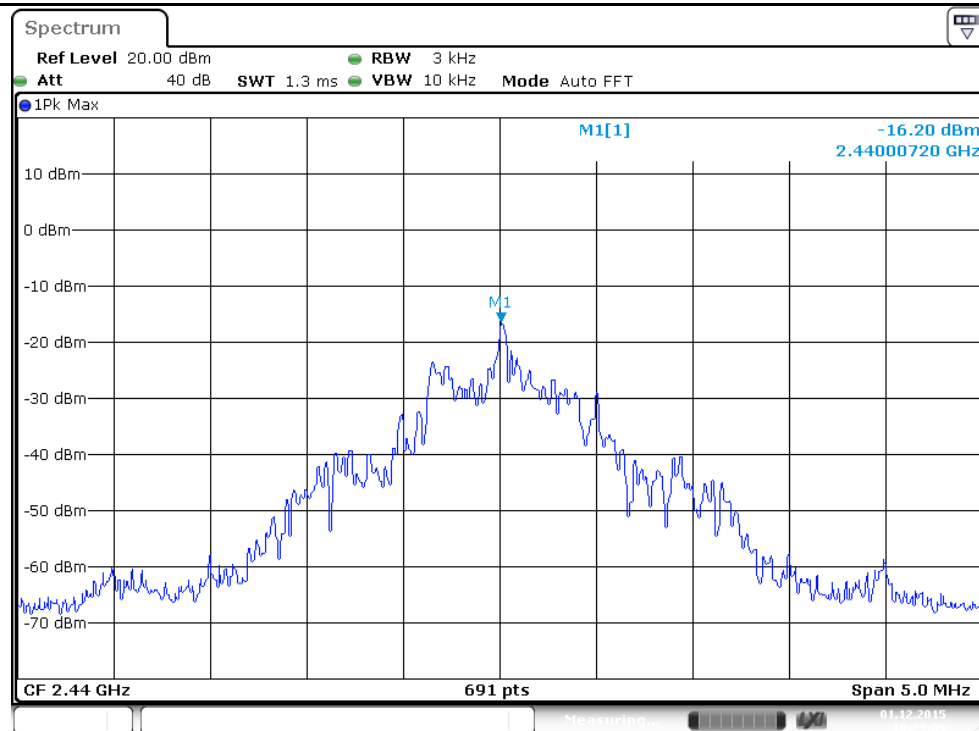
Note:
PSD = Measured Result + Cable Loss

Test Graph of Power Spectral Density, Bluetooth 4.0 Low Energy mode

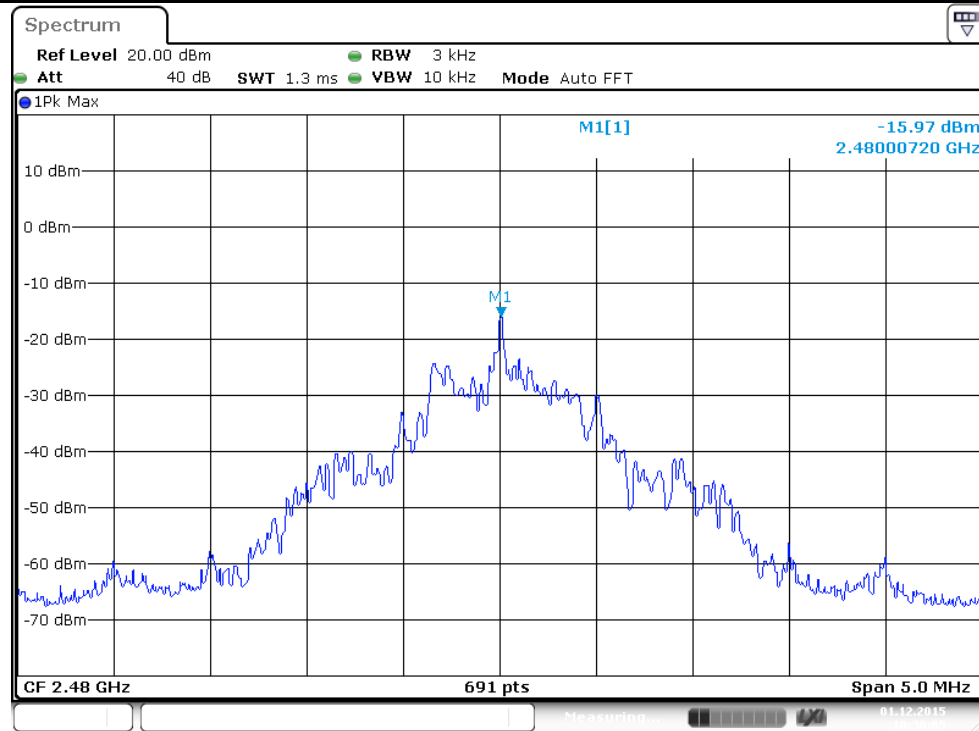
Low Channel



Middle Channel



High Channel



Date: 1.DEC.2015 10:30:04

5.1.6 Spurious Emissions

RESULT:**Pass**

Date of testing	:	2015-12-03 to 2015-12-07
Test standard	:	FCC part 15.247(d) RSS-247 Section 5.5 and Section 3.3 RSS-Gen Issue 4 Clause 6.13
Basic standard	:	ANSI C63.10:2013
Limits	:	Refer to 15.209(a) RSS-Gen Issue 4 Clause 8.9 and 8.10
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Test Channel	:	Low/ Middle/ High
Operation mode	:	B.1
Ambient temperature	:	23°C
Relative humidity	:	48%
Atmospheric pressure	:	101.0 kPa

Refer to attached Appendix A for details.

5.2 Transmitter Requirement & Test Suites - Part 15 Subpart C DXX equipment

5.2.1 Antenna Requirement

RESULT:**Pass**

Test standard : Part 15.203

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is 0.5 dBi for 2.4 GHz, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to compliance the provision.

Refer to EUT photo for details.

5.2.2 Field strength of fundamental and harmonics

RESULT:
Pass

Date of testing : 2015-12-03
 Test standard : FCC part 15.249(a)
 Clause A2.9(a) of RSS-210
 Basic standard : ANSI C63.10:2013
 Limits : Refer to 15.249(a)
 Clause A2.9(a) of RSS-210
 Kind of test site : 3m Semi-Anechoic Chamber

Test setup

Test Channel : Low/ Middle/ High
 Operation mode : A.1
 Ambient temperature : 23°C
 Relative humidity : 48%
 Atmospheric pressure : 101.0 kPa

Table 12: Test result of Field strength of fundamental and harmonics, 2.4 GHz Wireless operation

2.4 GHz Wireless						
Test Channel	Channel Frequency (MHz)	Measured Result (dBuV/m)	Limit (dBuV/m)	Detector	Polarity	Verdict
Low	2402	76.05	114	Peak	Horizontal	Pass
		69.67	94	Average		
		72.56	114	Peak	Vertical	Pass
		66.18	94	Average		
Middle	2441	76.69	114	Peak	Horizontal	Pass
		70.31	94	Average		
		69.84	114	Peak	Vertical	Pass
		63.46	94	Average		
High	2479	76.55	114	Peak	Horizontal	Pass
		70.17	94	Average		
		68.42	114	Peak	Vertical	Pass
		62.04	94	Average		

Note:

1. No harmonics were found.
2. The average value of fundamental = Peak value + 20*log(Duty cycle).
3. Duty cycle = $TX_{on}/TX_{on+off} = 0.48$, hence 20*log(Duty cycle) = -6.38 dB.

5.2.3 20dB Bandwidth and 99% Bandwidth

RESULT:
Pass

Date of testing : 2015-12-04 to 2015-12-12
 Test standard : FCC Part 15.215
 Clause 6.6 of RSS-Gen
 Basic standard : ANSI C63.10:2013
 Kind of test site : Shielded room

Test setup

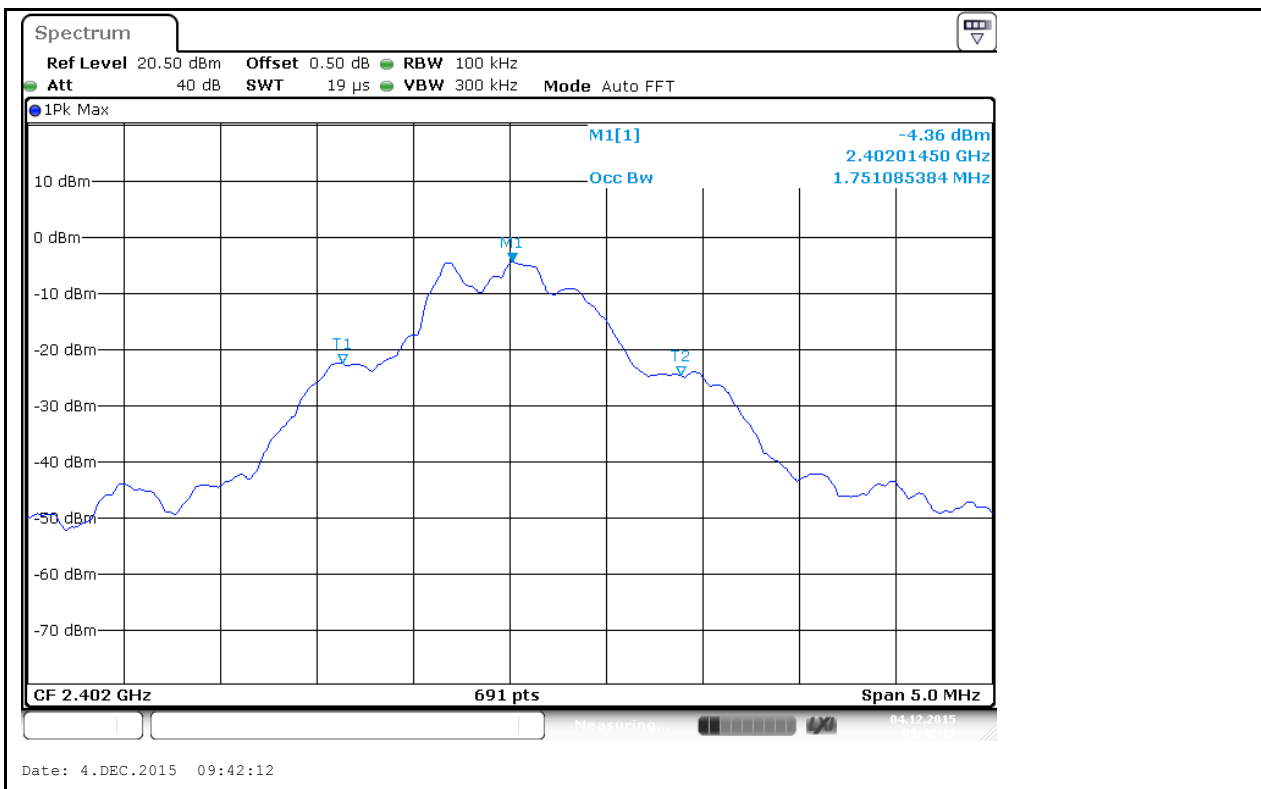
Test Channel : Low/ Middle/ High
 Operation mode : A.1
 Ambient temperature : 23°C
 Relative humidity : 48%
 Atmospheric pressure : 101.0 kPa

Table 13: Test result of 20dB Bandwidth and 99% Bandwidth, 2.4 GHz Wireless operation

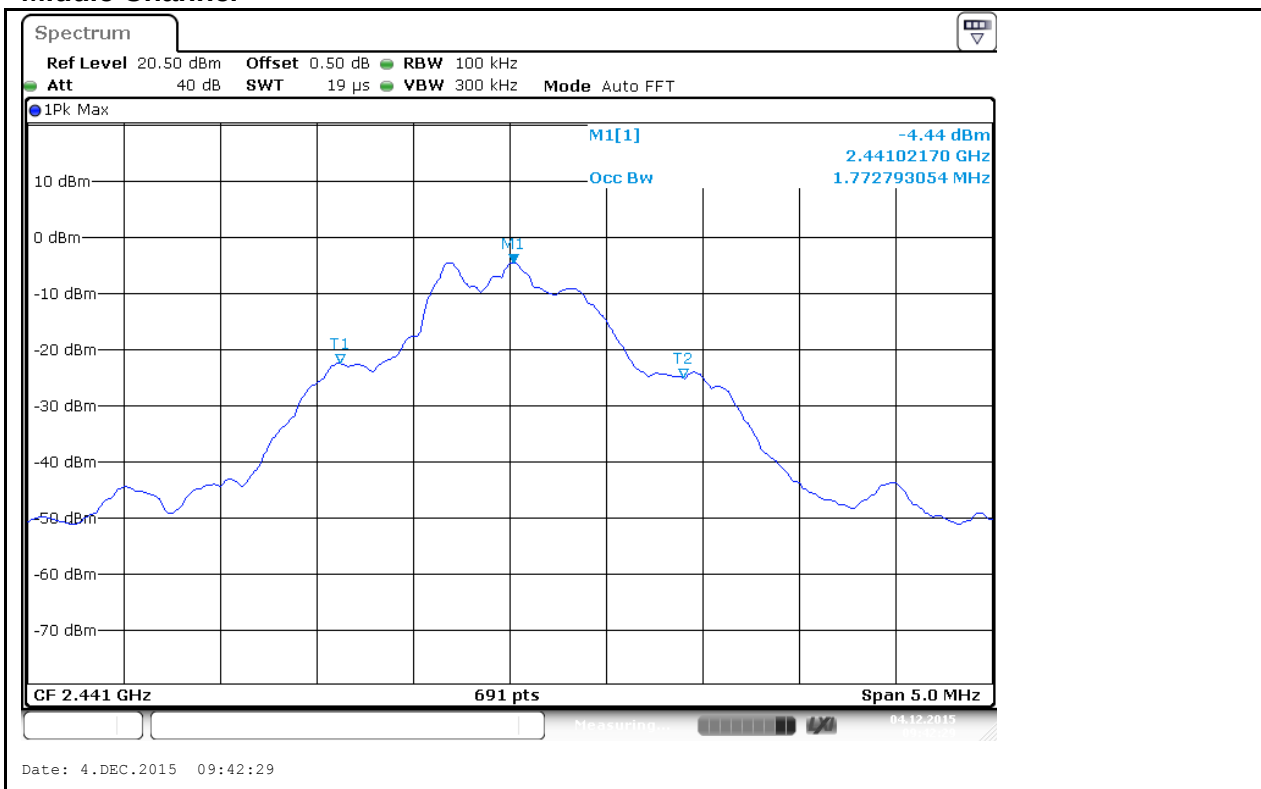
2.4 GHz Wireless				
Channel	Channel Frequency (MHz)	20dB Bandwidth (kHz)	99% Bandwidth (kHz)	Verdict
Low Channel	2402	1946.4	1751.085	Pass
Mid Channel	2441	1939.2	1772.793	Pass
High Channel	2479	1953.7	1787.265	Pass

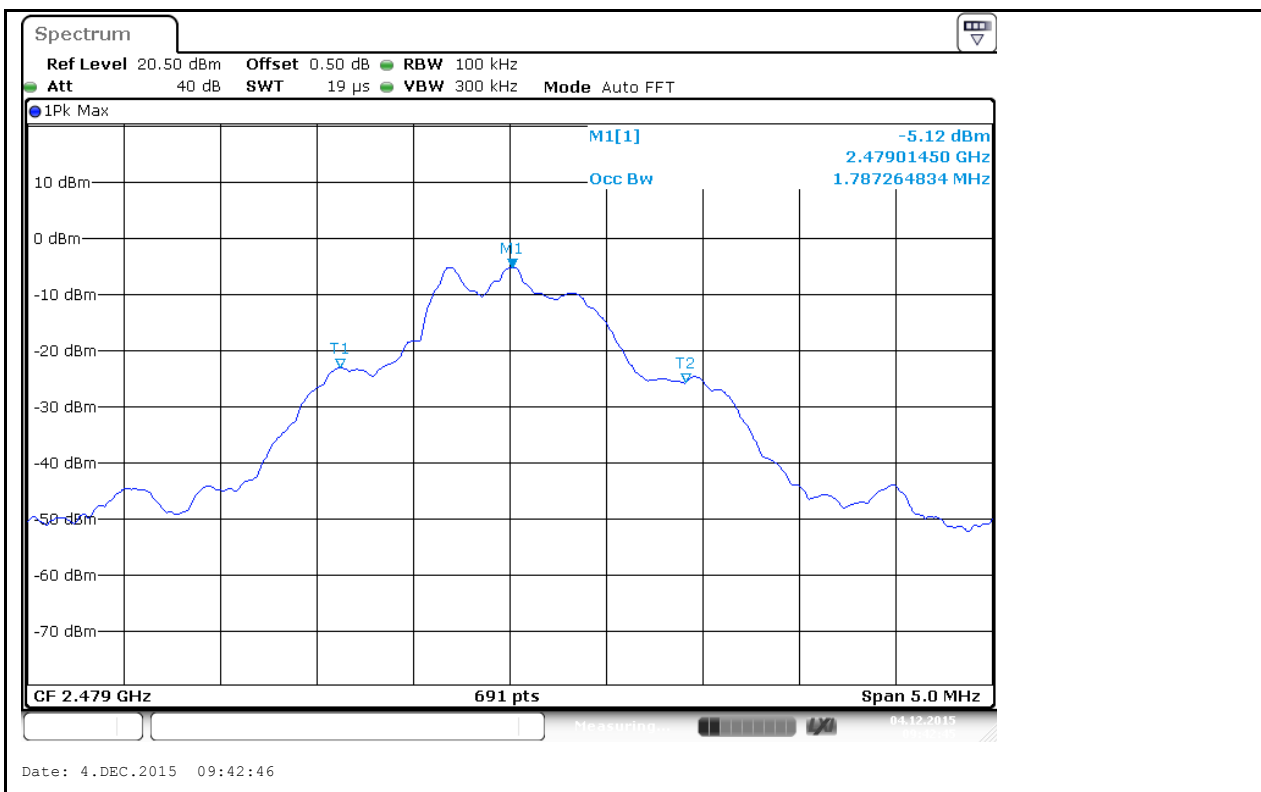
Test Graph of 99% Bandwidth, 2.4 GHz Wireless mode

Low Channel



Middle Channel



High Channel


5.2.4 Out-of-band emissions

RESULT:**Pass**

Date of testing	:	2015-12-03 to 2015-12-07
Test standard	:	FCC part 15.249(d) Clause A2.9(b) of RSS-210
Basic standard	:	ANSI C63.10:2013
Limits	:	Refer to 15.249(d) Clause A2.9(b) of RSS-210
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Test Channel	:	Low/ Middle/ High
Operation mode	:	A.1
Ambient temperature	:	23°C
Relative humidity	:	48%
Atmospheric pressure	:	101.0 kPa

Refer to attached Appendix C for details.

5.3 Transmitter Requirement & Test Suites - Part 15 Subpart B

5.3.1 Radiated emissions

RESULT:**Pass**

Date of testing	:	2015-12-03
Test standard	:	FCC Part 15.109 ICES-003 Issue 5
Basic standard	:	ANSI C63.4: 2014
Frequency range	:	30 – 1000MHz, 1GHz – 6GHz
Limits	:	FCC Part 15.109(a) Table 5 of ICES-003
Kind of test site	:	3m Semi-Anechoic Chamber

Test Setup

Input Voltage	:	DC 5V via USB port
Operation Mode	:	C
Ambient temperature	:	23°C
Relative humidity	:	48%
Atmospheric pressure	:	101.0 kPa

Refer to attached Appendix E for details.

5.3.2 Conducted emissions

RESULT:**Pass**

Date of testing	:	2015-12-05
Test standard	:	FCC Part 15.107 RSS-Gen Clause 8.8 ICES-003 Issue 5
Basic standard	:	ANSI C63.4: 2014
Frequency range	:	0.15MHz – 30MHz
Limits	:	FCC Part 15.107(a) Table 3 of RSS-Gen Table 2 of ICES-003
Kind of test site	:	Shield Room

Test Setup

Input Voltage	:	DC 5V via USB port
Operation Mode	:	C
Ambient temperature	:	23°C
Relative humidity	:	48%
Atmospheric pressure	:	101.0 kPa

Refer to attached Appendix E for details.

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Appendix A

Test Results of Bluetooth 4.0 Low Energy Mode

APPENDIX A.1: SPURIOUS EMISSIONS OF BLUETOOTH 4.0 LOW ENERGY OPERATION 2

Low Channel..... 2

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Low Channel..... 29

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Appendix A.1: Spurious Emissions of Bluetooth 4.0 Low Energy operation Low Channel

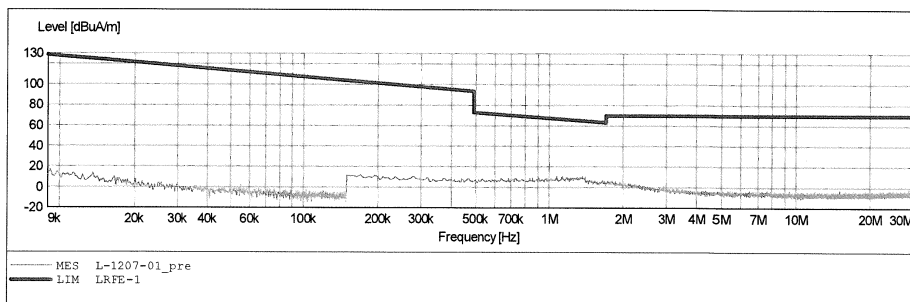
ACCURATE TECHNOLOGY CO.,LTD

FCC Class B 3M Radiated

EUT: ThinkPad X1 Mouse M/N:MOBTJNL
Manufacturer: Lenovo
Operating Condition: TX 2402MHz
Test Site: 2# Chamber
Operator: LAN
Test Specification: DC 3.7V
Comment: X
Start of Test: 2015-12-7 /

SCAN TABLE: "LFE Fin"

Short Description:			SUB_STD_VTERM2 1.70			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M



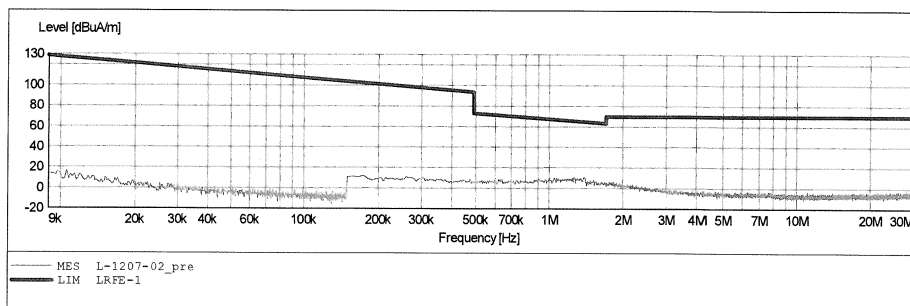
ACCURATE TECHNOLOGY CO.,LTD

FCC Class B 3M Radiated

EUT: ThinkPad X1 Mouse M/N:MOBTJNL
 Manufacturer: Lenovo
 Operating Condition: TX 2402MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 3.7V
 Comment: Y
 Start of Test: 2015-12-7 /

SCAN TABLE: "LFRE Fin"

Short Description:		_SUB_STD_VTERM2 1.70				
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M



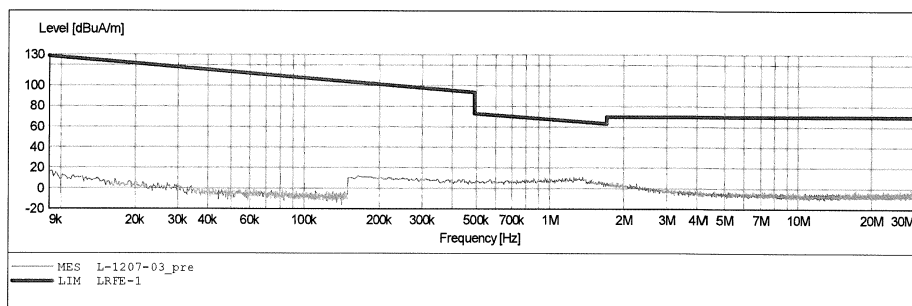
ACCURATE TECHNOLOGY CO., LTD

FCC Class B 3M Radiated

EUT: ThinkPad X1 Mouse M/N:MOBTJNL
 Manufacturer: Lenovo
 Operating Condition: TX 2402MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 3.7V
 Comment: Z
 Start of Test: 2015-12-7 /

SCAN TABLE: "LFRE Fin"

Short Description:			_SUB_STD_VTERM2 1.70			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M





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Job No.: LAN2015 #3763

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2402MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3.7V

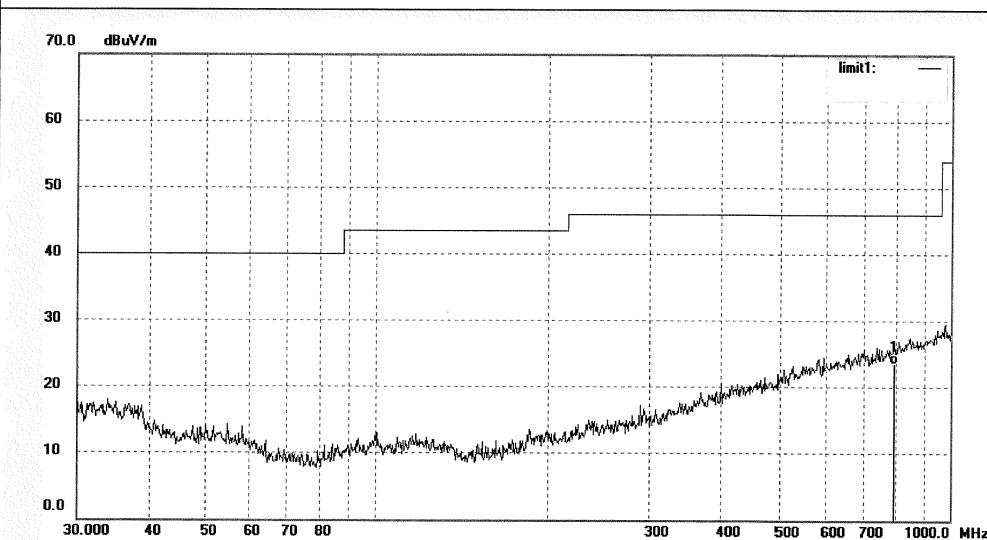
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	793.3958	23.72	-0.12	23.60	46.00	-22.40	QP			



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Job No.: LAN2015 #3764

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2402MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3.7V

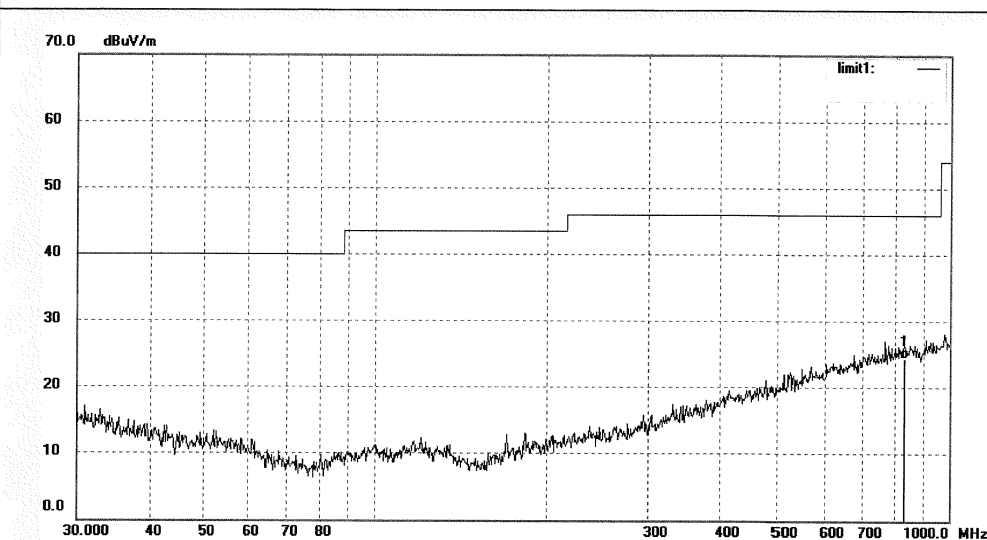
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	830.4002	23.90	0.54	24.44	46.00	-21.56	QP			

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Job No.: LAN2015 #3699

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2402MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3.7V

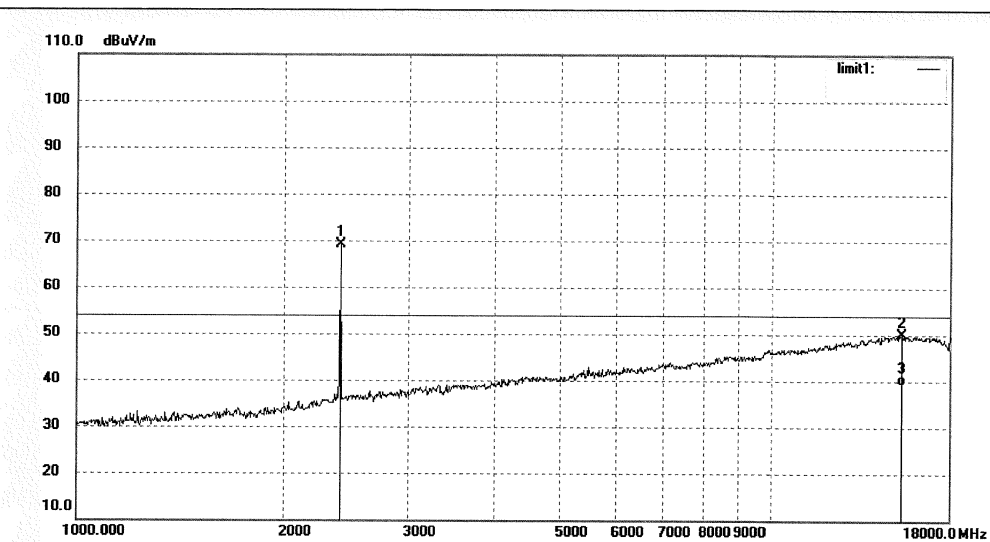
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.000	76.48	-7.45	69.03	/	/	peak			
2	15354.388	9.37	40.39	49.76	74.00	-24.24	peak			
3	15354.388	-1.34	40.39	39.05	54.00	-14.95	AVG			



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Fax:+86-0755-26503396

Job No.: LAN2015 #3700

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2402MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3.7V

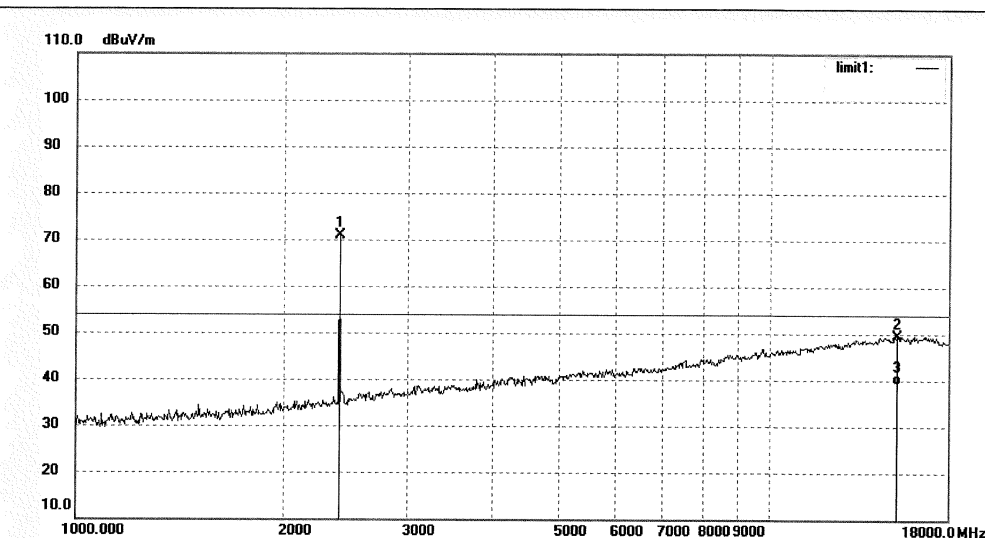
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.000	78.32	-7.45	70.87	/	/	peak			
2	15177.891	8.72	40.74	49.46	74.00	-24.54	peak			
3	15177.891	-1.52	40.74	39.22	54.00	-14.78	AVG			



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Fax:+86-0755-26503396

Job No.: LAN2015 #3715

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2402MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3.7V

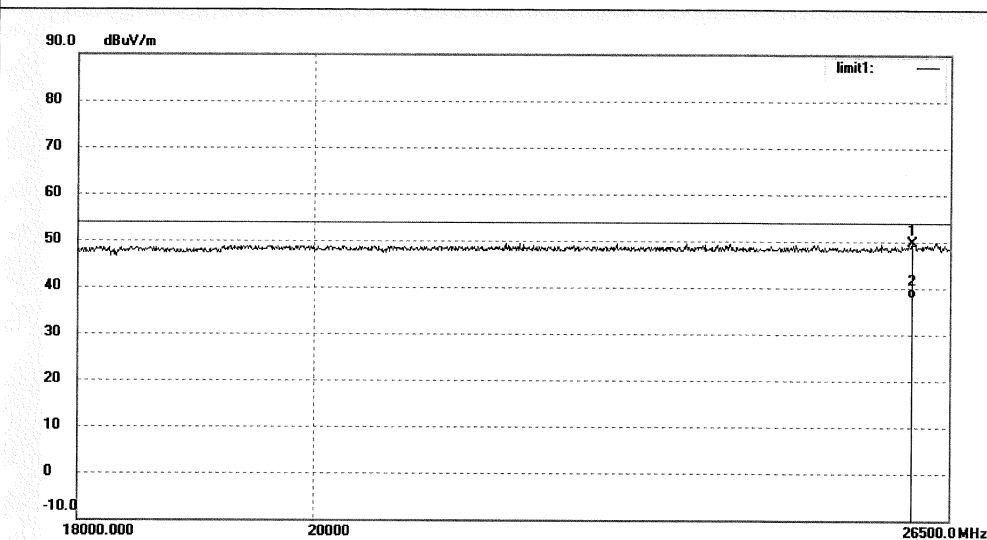
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	26052.838	32.45	17.20	49.65	74.00	-24.35	peak			
2	26052.838	20.79	17.20	37.99	54.00	-16.01	AVG			

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Job No.: LAN2015 #3716

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2402MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3.7V

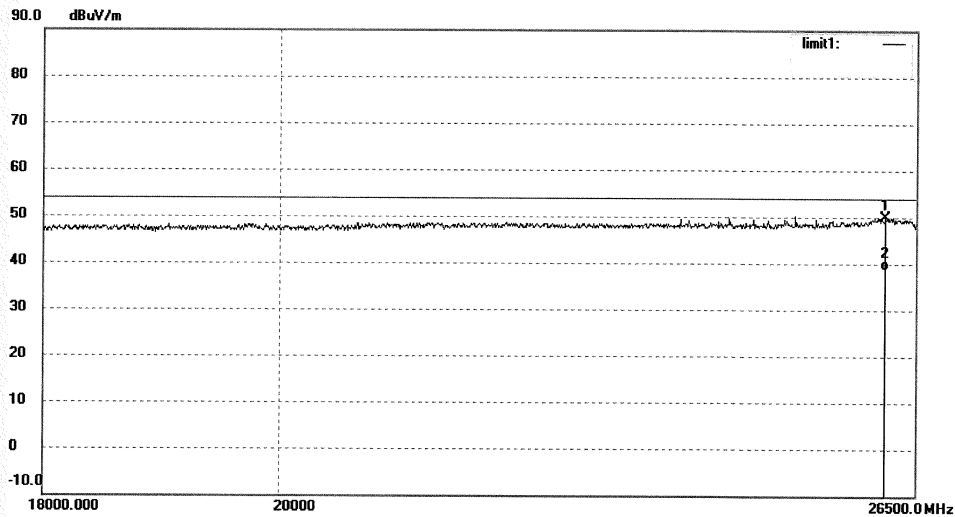
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	26143.685	32.84	17.14	49.98	74.00	-24.02	peak			
2	26143.685	21.53	17.14	38.67	54.00	-15.33	AVG			

Middle Channel

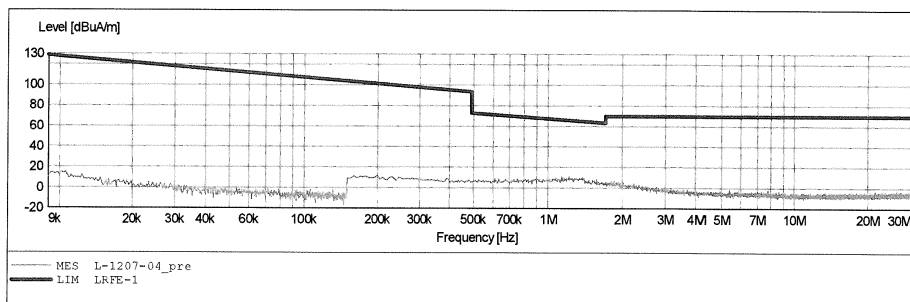
ACCURATE TECHNOLOGY CO.,LTD

FCC Class B 3M Radiated

EUT: ThinkPad X1 Mouse M/N:MOBTJNL
 Manufacturer: Lenovo
 Operating Condition: TX 2440MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 3.7V
 Comment: X
 Start of Test: 2015-12-7 /

SCAN TABLE: "LFRE Fin"

Short Description:			_SUB_STD_VTERM2 1.70			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M



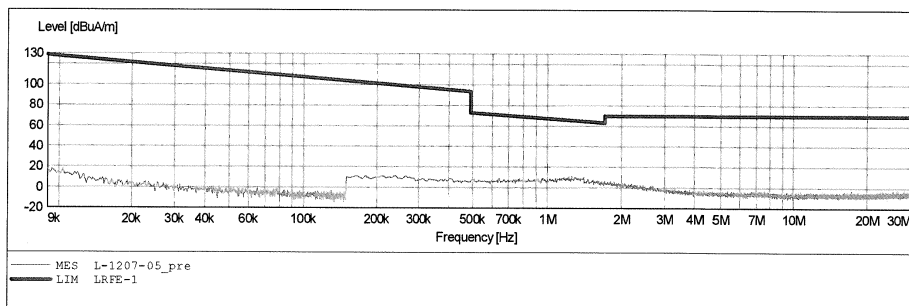
ACCURATE TECHNOLOGY CO., LTD

FCC Class B 3M Radiated

EUT: ThinkPad X1 Mouse M/N:MOBTJNL
 Manufacturer: Lenovo
 Operating Condition: TX 2440MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 3.7V
 Comment: Y
 Start of Test: 2015-12-7 /

SCAN TABLE: "LFRE Fin"

Short Description:			SUB STD VTERM2 1.70			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M



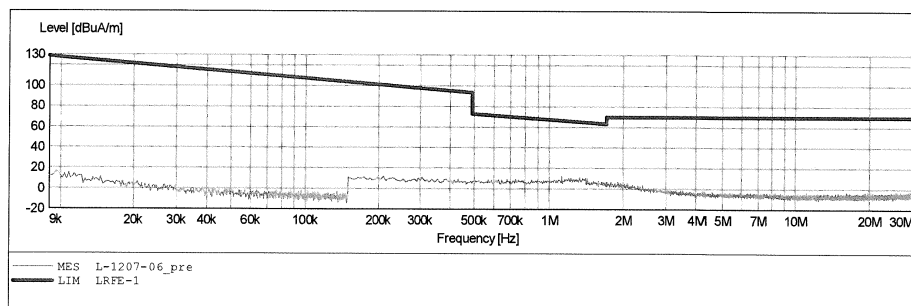
ACCURATE TECHNOLOGY CO.,LTD

FCC Class B 3M Radiated

EUT: ThinkPad X1 Mouse M/N:MOBTJNL
 Manufacturer: Lenovo
 Operating Condition: TX 2440MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 3.7V
 Comment: Z
 Start of Test: 2015-12-7 /

SCAN TABLE: "LFRE Fin"

Short Description:		_SUB_STD_VTERM2 1.70				
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M





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Site: 2# Chamber

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Fax:+86-0755-26503396

Job No.: LAN2015 #3766

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2440MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3.7V

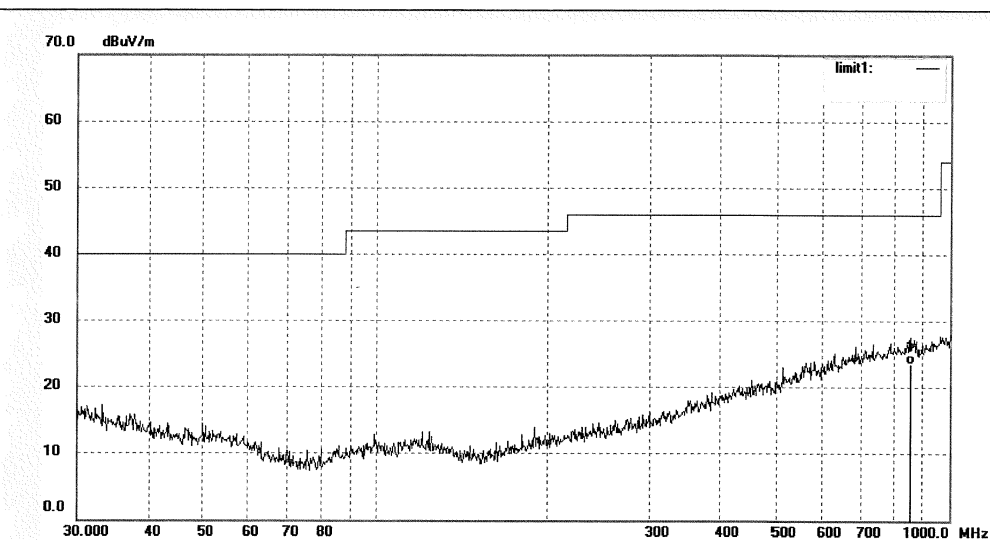
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	854.0247	22.84	0.75	23.59	46.00	-22.41	QP			



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Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: LAN2015 #3765

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2440MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3.7V

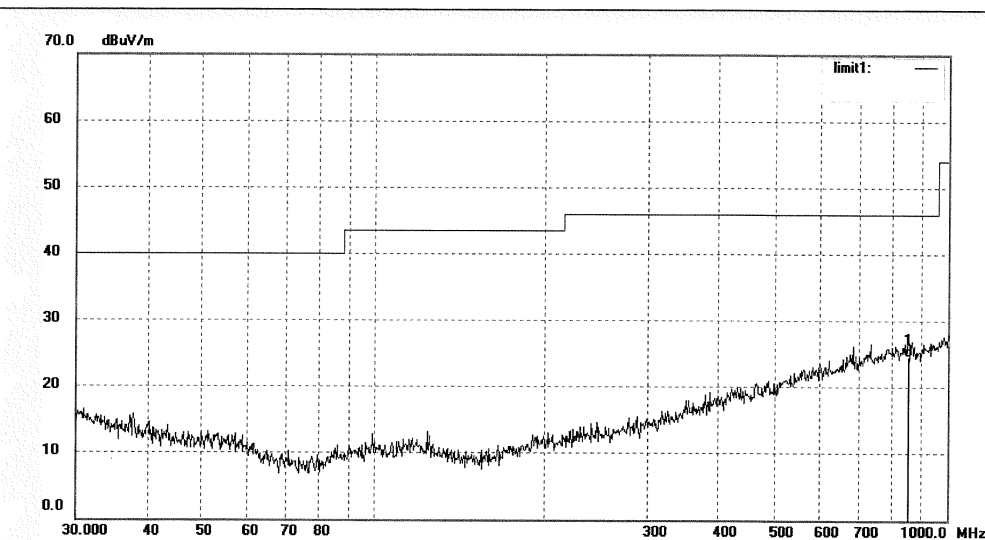
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	854.0247	23.84	0.75	24.59	46.00	-21.41	QP			

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Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: LAN2015 #3703

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2440MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3.7V

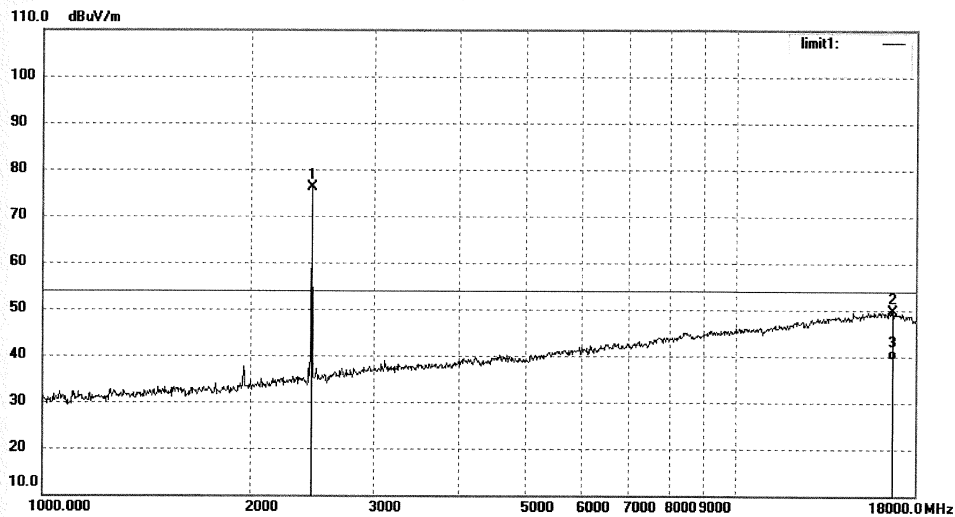
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2440.000	83.46	-7.36	76.10	/	/	peak			
2	16696.884	8.82	40.85	49.67	74.00	-24.33	peak			
3	16696.884	-1.42	40.85	39.43	54.00	-14.57	AVG			

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Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: LAN2015 #3704

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2440MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3.7V

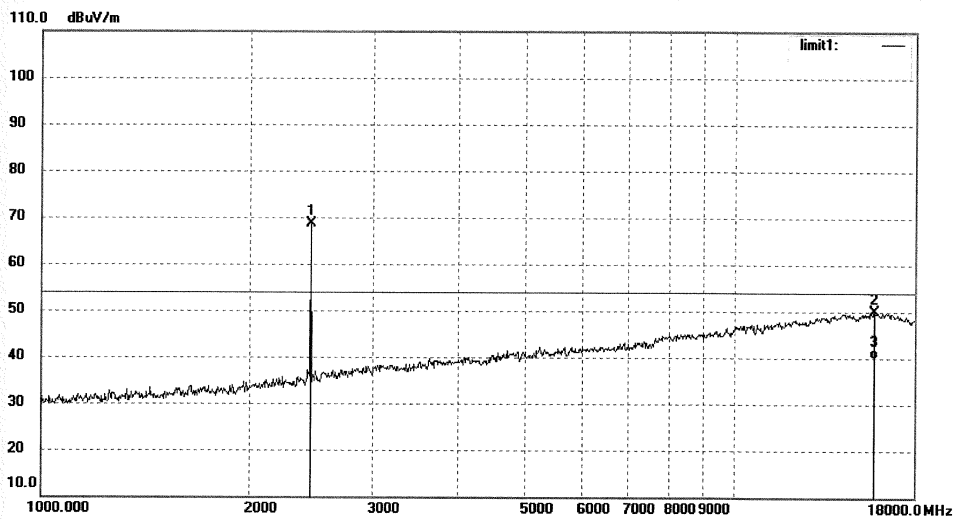
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2440.000	75.88	-7.36	68.52	/	/	peak			
2	15759.048	9.86	40.05	49.91	74.00	-24.09	peak			
3	15759.048	-0.05	40.05	40.00	54.00	-14.00	AVG			

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Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: LAN2015 #3718

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: DC 3.7V

Test item: Radiation Test

Date: 15/12/03/

Temp.(C)/Hum.(%) 23 C / 48 %

Time:

EUT: ThinkPad X1 Mouse

Engineer Signature: PEI

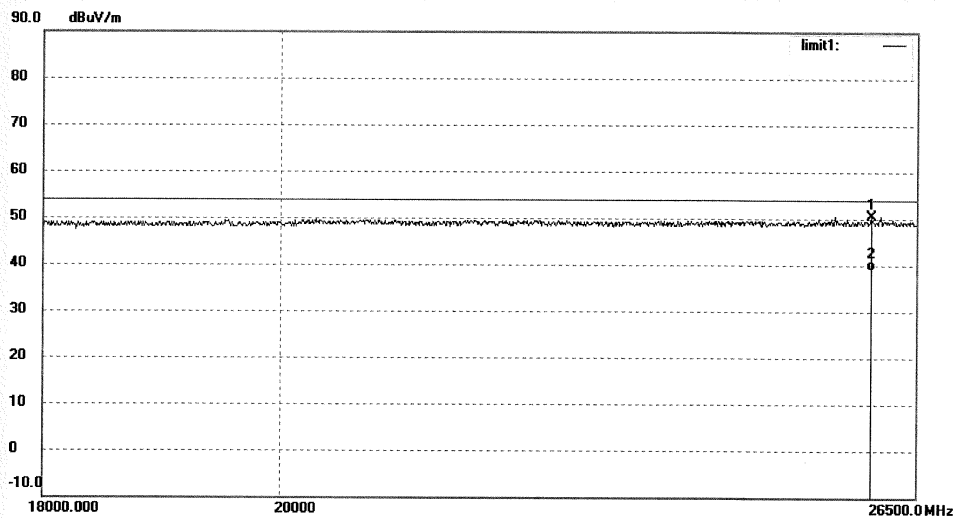
Mode: TX 2440MHz

Distance: 3m

Model: MOBTJNL

Manufacturer: Lenovo

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	25972.351	33.14	17.25	50.39	74.00	-23.61	peak			
2	25972.351	21.66	17.25	38.91	54.00	-15.09	AVG			

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Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: LAN2015 #3717

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2440MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3.7V

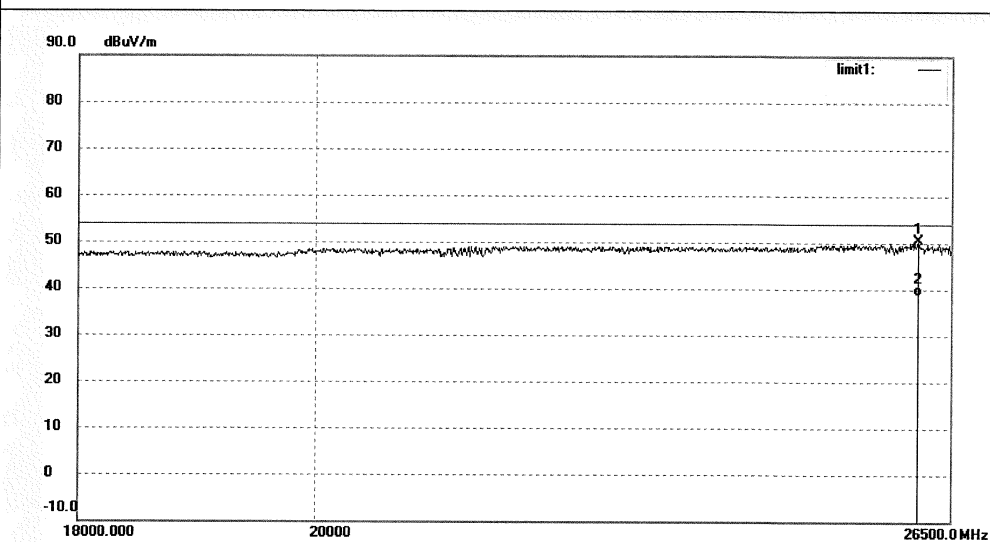
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	26113.368	33.11	17.16	50.27	74.00	-23.73	peak			
2	26113.368	21.58	17.16	38.74	54.00	-15.26	AVG			

High Channel

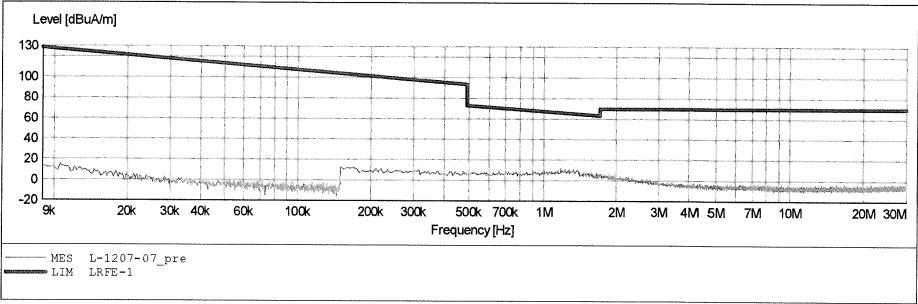
ACCURATE TECHNOLOGY CO.,LTD

FCC Class B 3M Radiated

EUT: ThinkPad X1 Mouse M/N:MOBTJNL
Manufacturer: Lenovo
Operating Condition: TX 2480MHz
Test Site: 2# Chamber
Operator: LAN
Test Specification: DC 3.7V
Comment: X
Start of Test: 2015-12-7 /

SCAN TABLE: "LFRE Fin"

Short Description:		_SUB_STD_VTERM2 1.70					
Start	Stop	Step	Detector	Meas.	IF	Transducer	
Frequency	Frequency	Width		Time	Bandw.		
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M	
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M	



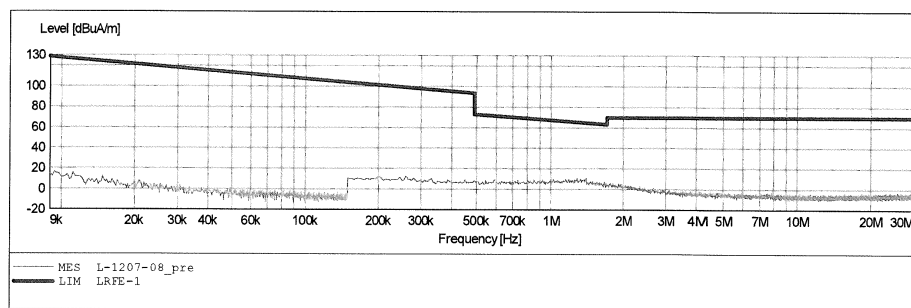
ACCURATE TECHNOLOGY CO.,LTD

FCC Class B 3M Radiated

EUT: ThinkPad X1 Mouse M/N:MOBTJNL
 Manufacturer: Lenovo
 Operating Condition: TX 2480MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 3.7V
 Comment: Y
 Start of Test: 2015-12-7 /

SCAN TABLE: "LFRE Fin"

Short Description:			_SUB STD VTERM2 1.70			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M



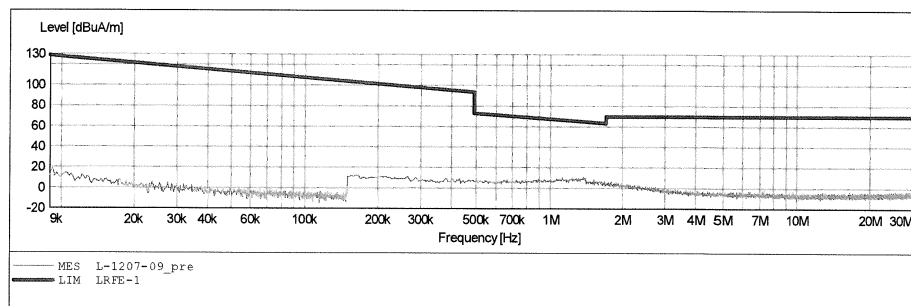
ACCURATE TECHNOLOGY CO., LTD

FCC Class B 3M Radiated

EUT: ThinkPad X1 Mouse M/N:MOBTJNL
 Manufacturer: Lenovo
 Operating Condition: TX 2480MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 3.7V
 Comment: Z
 Start of Test: 2015-12-7 /

SCAN TABLE: "LFRE Fin"

Short Description:			_SUB_STD_VTERM2 1.70			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M





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Site: 2# Chamber

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Job No.: LAN2015 #3767

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2480MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3.7V

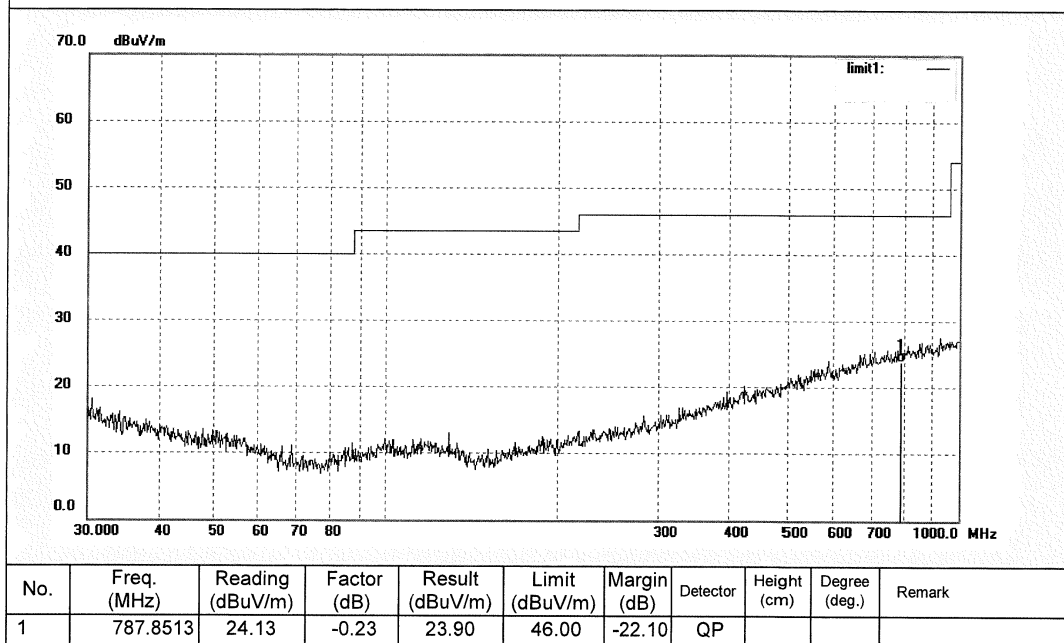
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0





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Site: 2# Chamber

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Fax:+86-0755-26503396

Job No.: LAN2015 #3768

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2480MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3.7V

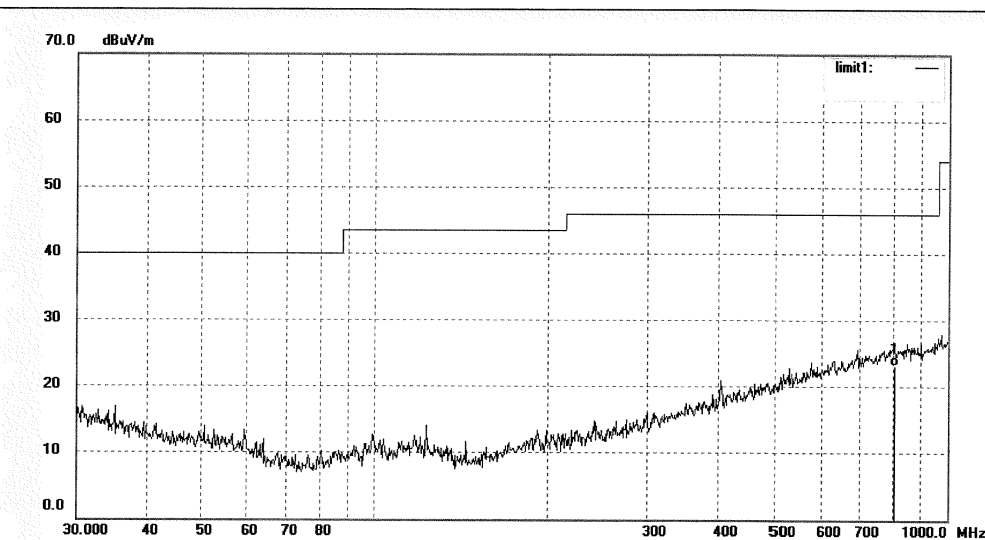
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	804.6028	23.12	0.11	23.23	46.00	-22.77	QP			



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Job No.: LAN2015 #3706

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2480MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3.7V

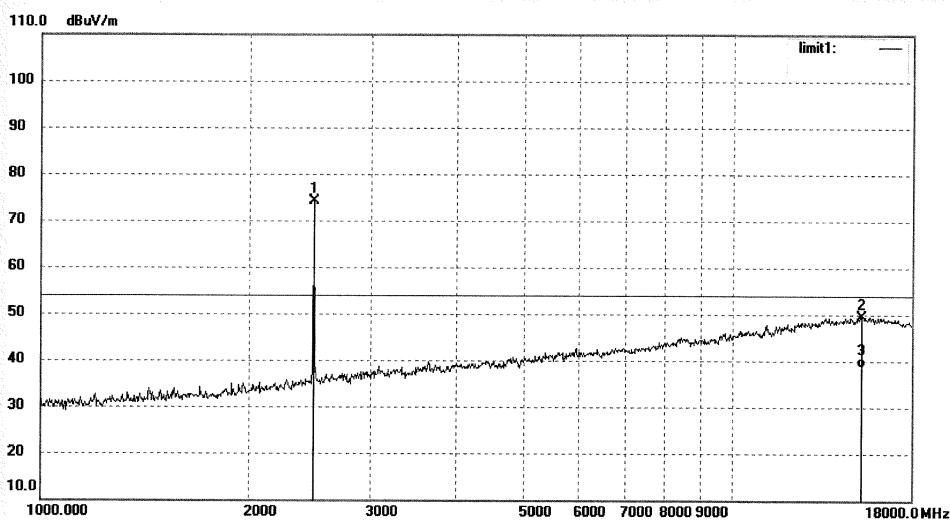
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.000	81.62	-7.37	74.25	/	/	peak			
2	15221.824	8.75	40.66	49.41	74.00	-24.59	peak			
3	15221.824	-1.97	40.66	38.69	54.00	-15.31	AVG			



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Job No.: LAN2015 #3705

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2480MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3.7V

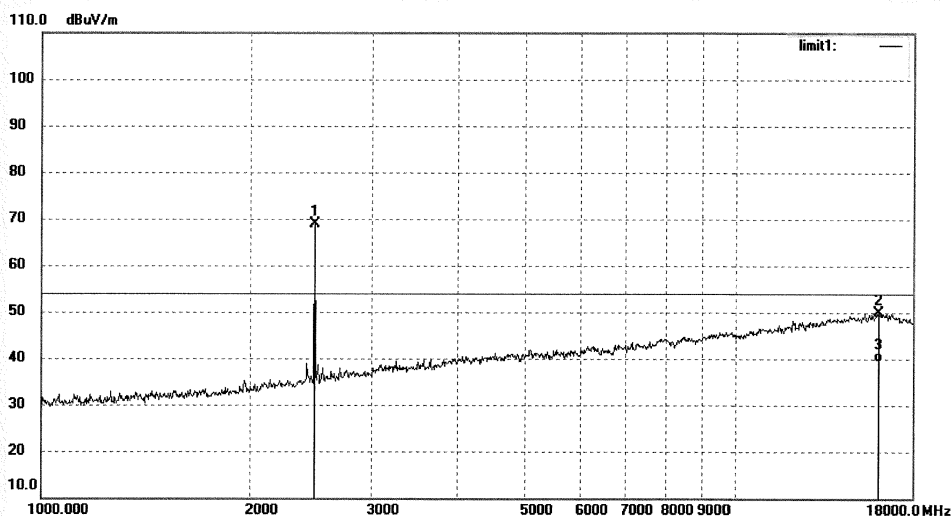
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.000	76.30	-7.37	68.93	/	/	peak			
2	16081.142	9.71	40.05	49.76	74.00	-24.24	peak			
3	16081.142	-0.79	40.05	39.26	54.00	-14.74	AVG			

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Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: LAN2015 #3719

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2480MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3.7V

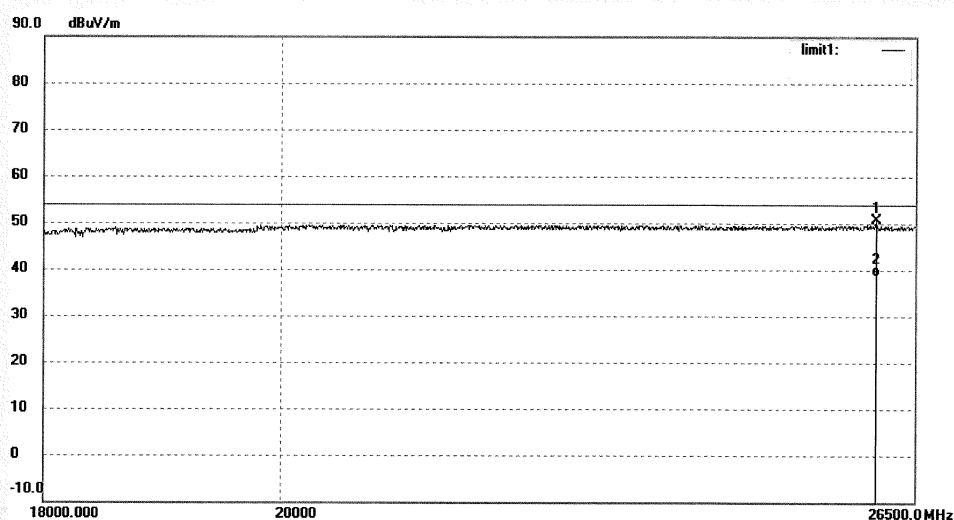
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	26042.764	33.35	17.20	50.55	74.00	-23.45	peak			
2	26042.764	21.50	17.20	38.70	54.00	-15.30	AVG			

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Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: LAN2015 #3720

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2480MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3.7V

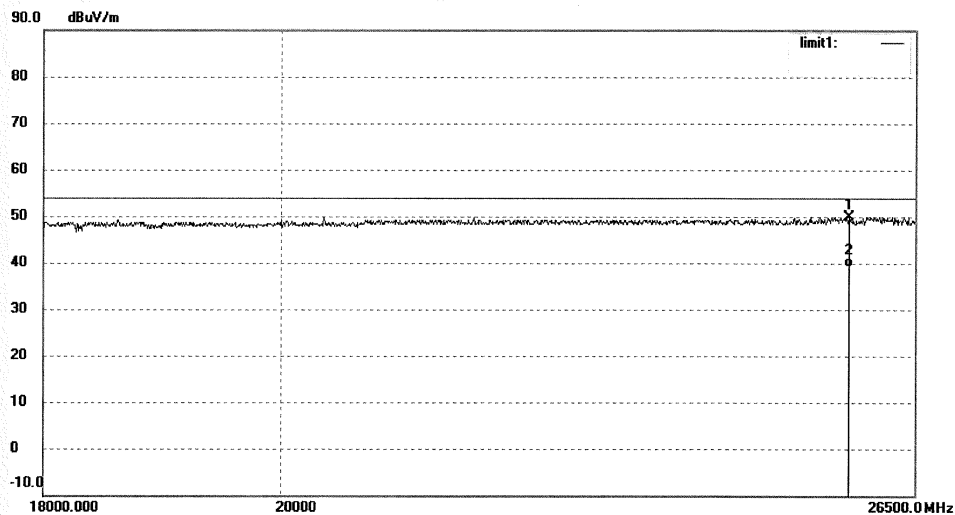
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	25742.331	32.58	17.40	49.98	74.00	-24.02	peak			
2	25742.331	21.79	17.40	39.19	54.00	-14.81	AVG			

Appendix A.2: Radiated Emissions in Restricted Bands
 Low Channel
**ACCURATE TECHNOLOGY CO., LTD.**
 F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
 Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: LAN2015 #3702

Standard: FCC (Band Edge)

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2402MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3.7V

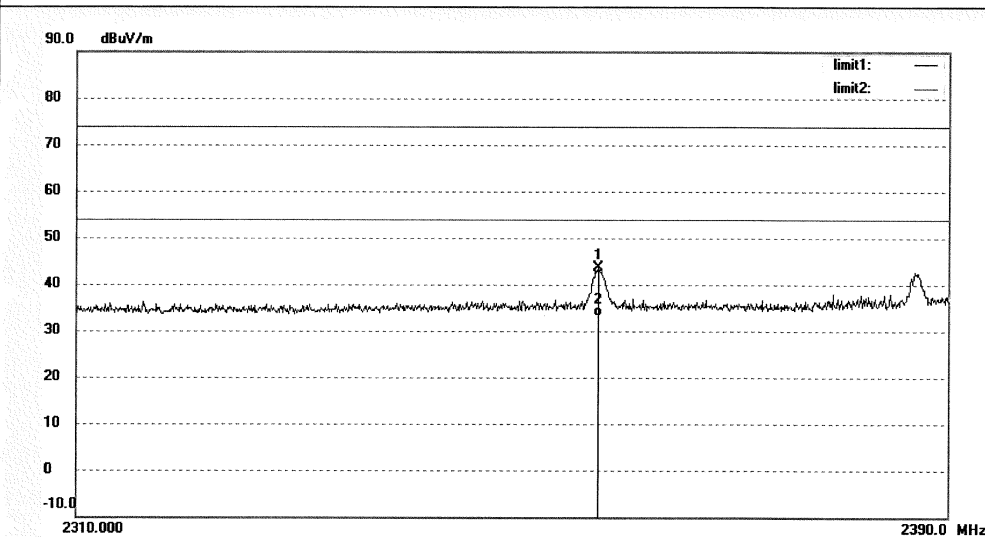
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2357.680	51.25	-7.74	43.51	74.00	-30.49	peak			
2	2357.680	40.87	-7.74	33.13	54.00	-20.87	AVG			



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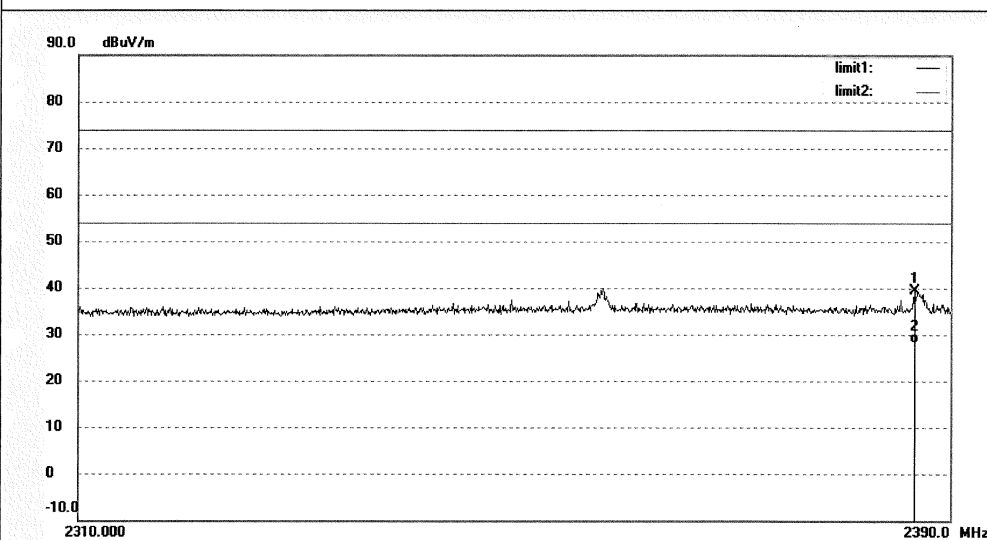
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: LAN2015 #3701
Standard: FCC (Band Edge)
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: ThinkPad X1 Mouse
Mode: TX 2402MHz
Model: MOBTJNL
Manufacturer: Lenovo

Polarization: Vertical
Power Source: DC 3.7V
Date: 15/12/03/
Time:
Engineer Signature: PEI
Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2386.720	46.87	-7.54	39.33	74.00	-34.67	peak			
2	2386.720	35.75	-7.54	28.21	54.00	-25.79	AVG			

High Channel

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 Science & Industry Park,Nanshan Shenzhen,P.R.China

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Job No.: LAN2015 #3707

Standard: FCC (Band Edge)

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: ThinkPad X1 Mouse

Mode: TX 2480MHz

Model: MOBTJNL

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3.7V

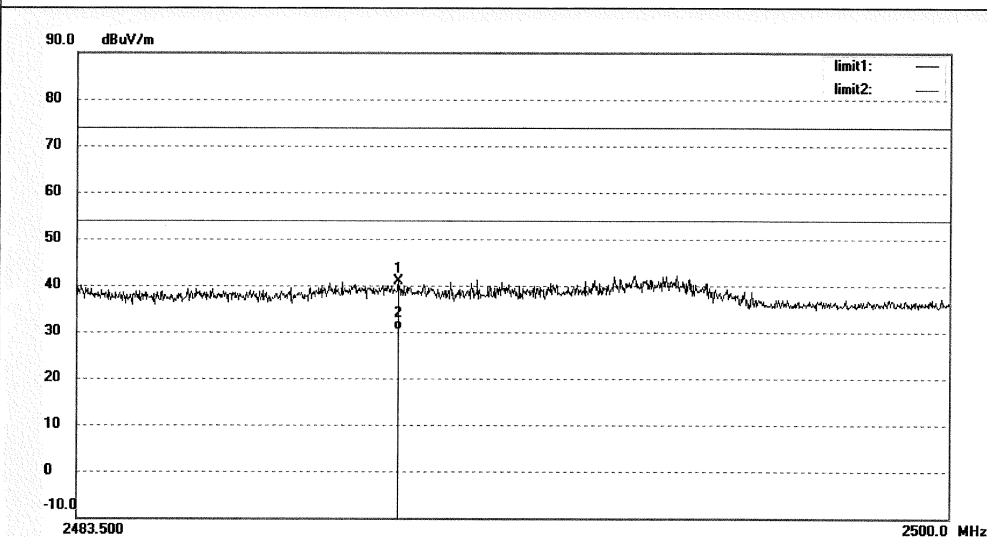
Date: 15/12/03/

Time:

Engineer Signature: PEI

Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2489.605	48.27	-7.39	40.88	74.00	-33.12	peak			
2	2489.605	37.78	-7.39	30.39	54.00	-23.61	AVG			