

Prüfbericht-Nr.: <i>Test report No.:</i>	50083424 001	Auftrags-Nr.: <i>Order No.:</i>	164091064	Seite 1 von 21 <i>Page 1 of 21</i>
Kunden-Referenz-Nr.: <i>Client reference No.:</i>	N/A	Auftragsdatum: <i>Order date.:</i>	02.05.2017	
Auftraggeber: <i>Client:</i>	Lenovo (Beijing) Limited No.6 Chuang Ye Road, Shangdi Information Industry Base, Haidian District, Beijing, China			
Prüfgegenstand: <i>Test item:</i>	Lenovo 500 Wireless Keyboard			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	L500-K (Lenovo)			
Auftrags-Inhalt: <i>Order content:</i>	FCC approval			
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15.249 CFR47 FCC Part 15.207 CFR47 FCC Part 15.209 CFR47 FCC Part 15.203 CFR47 FCC Part 2.1093			
Wareneingangsdatum: <i>Date of receipt:</i>	02.05.2017	Please refer to photo documents		
Prüfmuster-Nr.: <i>Test sample No.:</i>	A000531117-007 A000531117-008			
Prüfzeitraum: <i>Testing period:</i>	03.05.2017 - 16.05.2017			
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: 		
18.05.2017	Hardy Suo / Assistant Project Manager	18.05.2017	Owen Tian / 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: FCC ID: A5ML500-K				
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 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specifications(s) F(ail) = failed a.m. test specifications(s) N/A = not applicable 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 FUNDAMENTAL & HARMONICS RADIATED EMISSION

RESULT: Pass

5.1.3 20dB BANDWIDTH

RESULT: Pass

5.1.4 99% BANDWIDTH

RESULT: Pass

5.1.5 RADIATED SPURIOUS EMISSION & BAND EDGE

RESULT: Pass

6.1.1 ELECTROMAGNETIC FIELDS

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

2 Test Sites

2.1 Test Facilities

Accurate Technology Co., Ltd.

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

FCC Registration No.: 752051

IC Assigned Code: 5077A

The tests at the test sites 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

Radio Spectrum Test (Accurate Technology Co., Ltd.)				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Spectrum Analyzer	R&S	ESPI3	100396/003	06.01.2018
Radiated Emission & Spurious Emission (Accurate Technology Co., Ltd.)				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Spectrum Analyzer	R&S	FSV40	101495	06.01.2018
Test Receiver	R&S	ESCS30	100307	06.01.2018
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	09.01.2018
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	09.01.2018
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	09.01.2018
RF Switching Unit+PreAMP	Compliance Direction	RSU-M2	38322	09.01.2018
Pre-Amplifier	R&S	CBLU11835 40-01	3791	06.01.2018
50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	06.01.2018
RF Coaxial Cable	SUHNER	N-3m	No.8	06.01.2018
RF Coaxial Cable	RESENBERGER	N-3.5m	No.9	06.01.2018
RF Coaxial Cable	SUHNER	N-6m	No.10	06.01.2018
RF Coaxial Cable	RESENBERGER	N-12m	No.11	06.01.2018
50_ Coaxial Switch	Anritsu Corp	MP59B	6200283933	06.01.2018

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, 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

Item		Extended Uncertainty
Radiated Emission (9kHz-30MHz)	Field strength (dBμV/m)	U=3.08dB, k=2, σ=95%
Radiated Emission (30-1000MHz)	Field strength (dBμV/m)	U=4.42dB, k=2, σ=95%
Radiated Emission (above 1000MHz)	Field strength (dBμV/m)	U=4.06dB, k=2, σ=95%
Conducted Emission (0.15 - 30MHz)	Disturbance Voltage (dBuV)	U=±2.90dB, k=2, σ=95%
Radio Spectrum		± 0.60 dB
Ambient Temperature		25 °C
Relative Humidity		56 %
Atmospheric Pressure		101 kPa

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. Test facility located at F1, Bldg. A, Changyuan New Material Port Keyuan Rd., Science & Industry Park, Nanshan Shenzhen, 518057, P.R. China is listed on the US Federal Communications Commission and Innovation, Science and Economic Development Canada list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is Lenovo 500 Wireless Keyboard operating in 2403-2479MHz with 16 channels. The EUT is powered by DC 3.0V ("AAA" battery x 2).

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

3.2 Ratings and System Details

Table 2: Technical Specification of Transmitter

Technical Specification	Value
Kind of Equipment	Lenovo 500 Wireless Keyboard
Type Designation	L500-K
Trade mark	Lenovo
FCC ID	A5ML500-K
Operating Frequency	2403 ~ 2479MHz
Operating Temperature Range	0 °C ~ +40 °C
Operating Voltage	DC 3.0V ("AAA" battery x 2)
Testing Voltage	DC 3.0V ("AAA" battery x 2)
Type of Modulation	GFSK
Channel Number	16 channels
Channel Separation	Various
Antenna Type	Integral Antenna (PCB Antenna)
Antenna number	1
Antenna Gain	2.15 dBi Max

Table 3: RF Channel and Frequency

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
01	2403.00	05	2407.00	09	2414.00	13	2419.00
02	2426.00	06	2422.00	10	2436.00	14	2439.00
03	2441.00	07	2445.00	11	2459.00	15	2453.00
04	2463.00	08	2466.00	12	2473.00	16	2479.00

Remark: The RF channel and Frequency are declared by the manufacturer.

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, transmitting mode
 - 1. Low channel
 - 2. Middle channel
 - 3. High channel
- B. On, normal transmitting mode
- C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- | | |
|---------------------------|-------------------------|
| - Application Form | |
| - Block Diagram | - Circuit Diagram |
| - FCC Label and Location | - Operation Description |
| - Model Difference Letter | - User Manual |

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. All testing were performed according to the procedures in ANSI C63.10: 2013.

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 Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

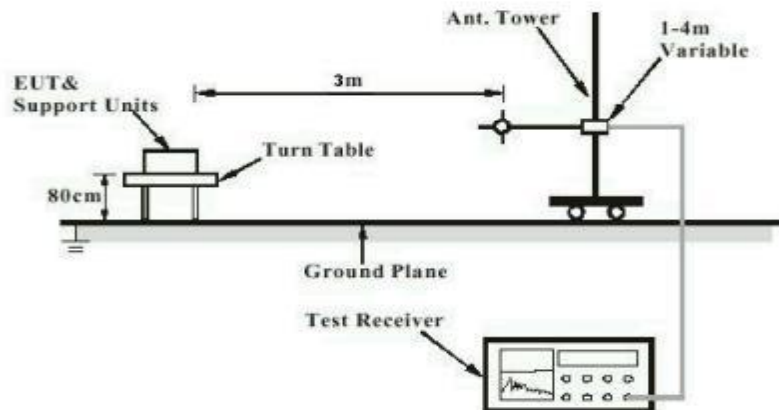


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

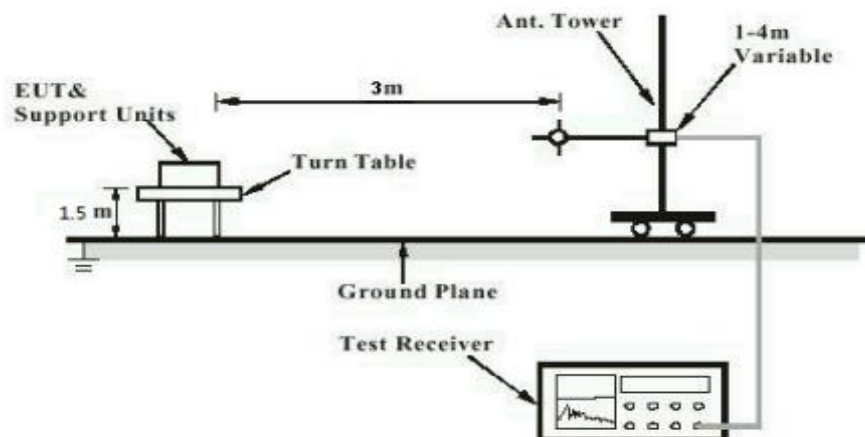
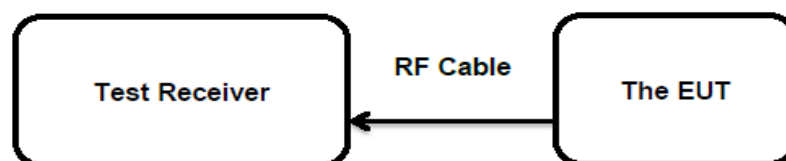


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:

Pass

Test Specification

Test standard

FCC Part 15.203

RSS-Gen Clause 8.3

According to the manufacturer declared, the EUT has an integral antenna, the directional gain of antenna is 2.15dBi max, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Fundamental & Harmonics Radiated Emission

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.249(a) RSS-210 Clause B.10(a)
Basic standard	: ANSI C63.10: 2013
Limits	: Refer to FCC Part 15.209(a) Refer to RSS-210 Clause B.10(a)
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: 12.05.2017
Input voltage	: DC 3.0V ("AAA" battery x 2)
Operation mode	: A
Ambient temperature	: 23°C
Relative humidity	: 48 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

5.1.3 20dB Bandwidth

RESULT:**Pass****Test Specification**

Test standard : FCC Part 15.215
Basic standard : ANSI C63.10: 2013
Kind of test site : Shielded Room

Test Setup

Date of testing : 09.05.2017
Input voltage : DC 3.0V ("AAA" battery x 2)
Operation mode : A
Ambient temperature : 23 °C
Relative humidity : 48 %
Atmospheric pressure : 101 kPa

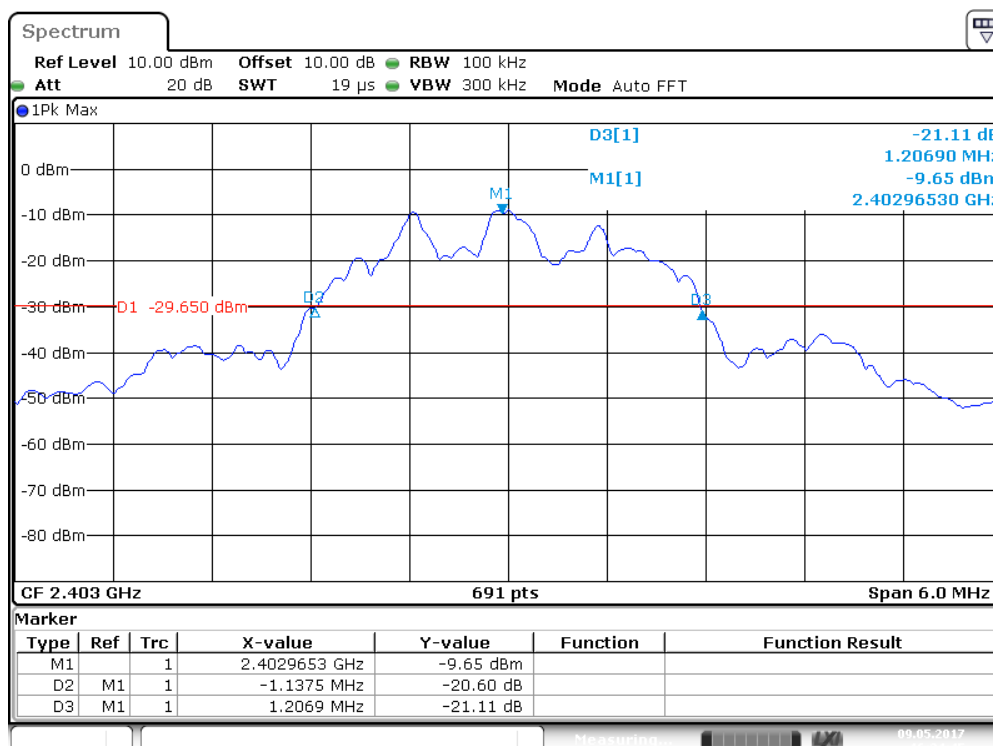
Table 4: Test Result of 20dB Bandwidth

Channel	Channel Frequency (MHz)	20dB Bandwidth (MHz)	Limit (MHz)
Low Channel	2403	2.344	Within the assigned frequency band 2400~2483.5MHz
High Channel	2479	2.327	
Maximum Measured Value		2.344	

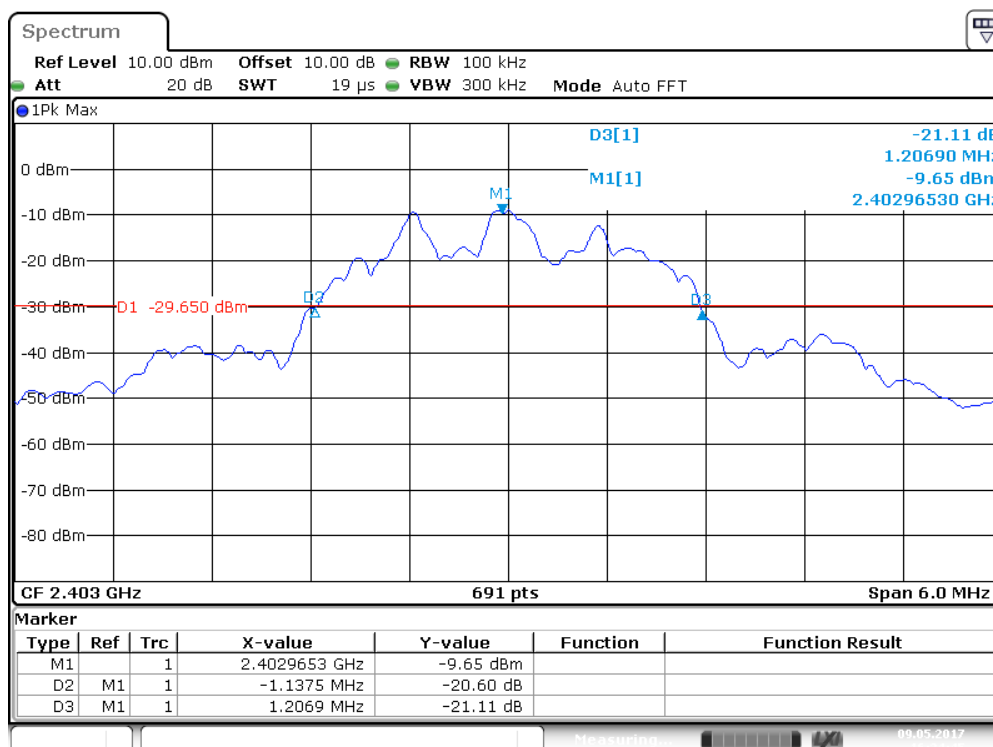
For the measurement records, refer to following test plot:

Test Plot of 20dB Bandwidth

Low CH



High CH



5.1.4 99% Bandwidth

RESULT:**Pass****Test Specification**

Test standard : RSS-Gen Clause 6.6
Basic standard : ANSI C63.10: 2013
Kind of test site : Shielded Room

Test Setup

Date of testing : 09.05.2017
Input voltage : DC 3.0V ("AAA" battery x 2)
Operation mode : A
Ambient temperature : 23 °C
Relative humidity : 48 %
Atmospheric pressure : 101 kPa

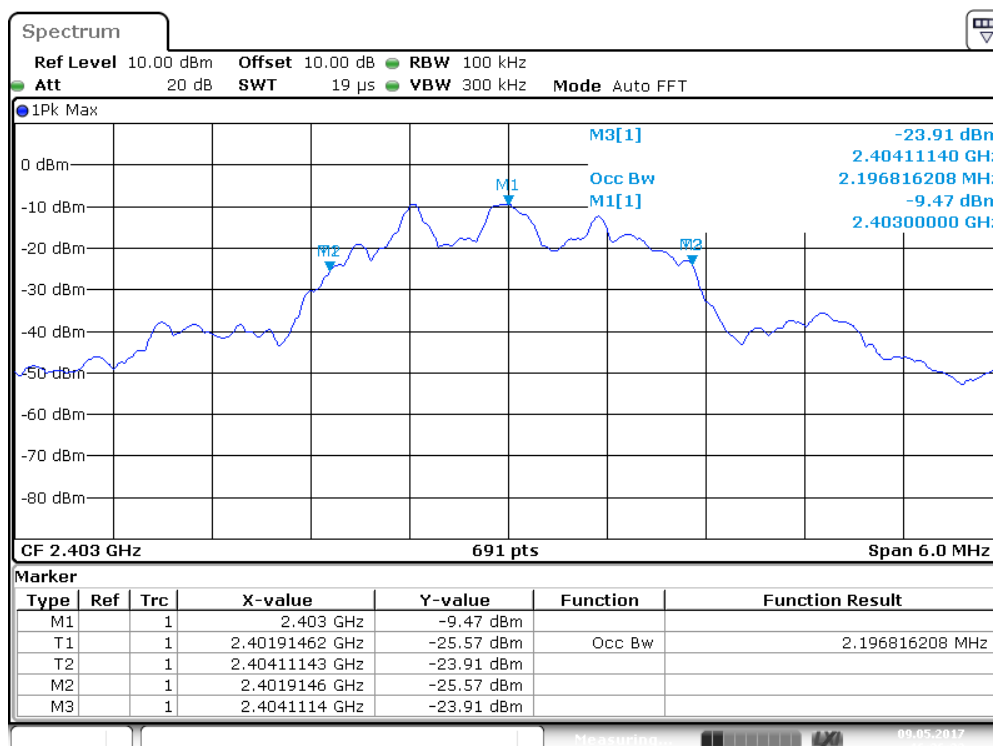
Table 5: Test Result of 99% Bandwidth

Channel	Channel Frequency (MHz)	99% Bandwidth (MHz)
Low Channel	2403	2.197
Mid Channel	2439	2.197
High Channel	2479	2.205
Maximum Measured Value		2.205

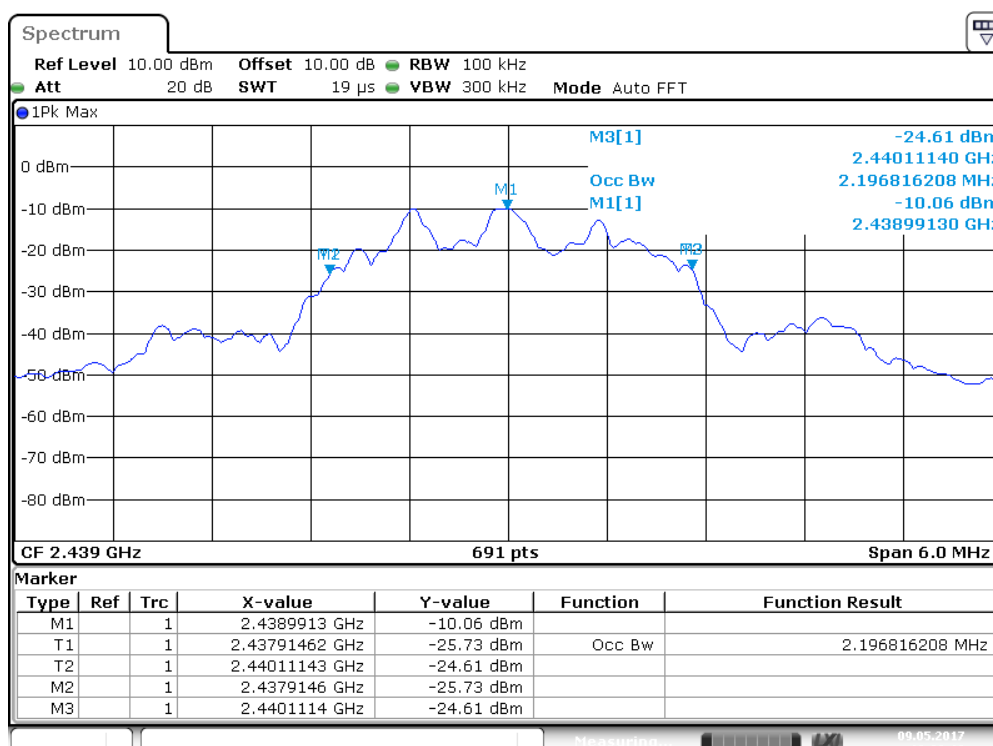
For the measurement records, refer to following test plot:

Test Plot of 99% Bandwidth

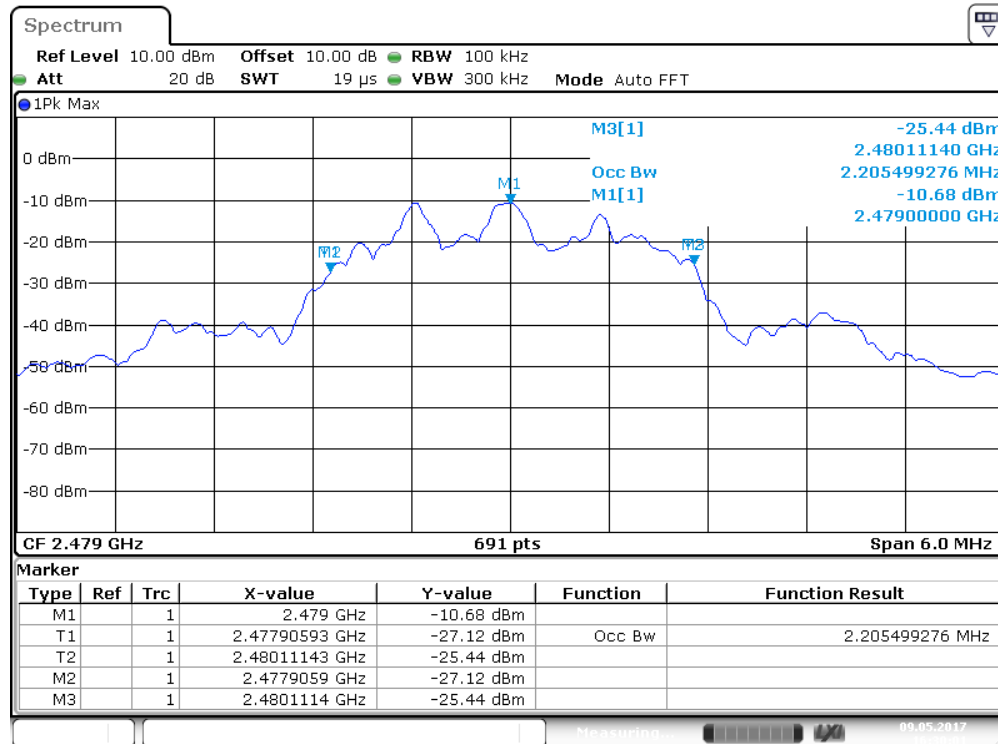
Low CH



Mid CH



High CH



5.1.5 Radiated Spurious Emission & Band Edge

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.249 (d) & FCC Part 15.205 RSS-Gen Clause 8.8 & 8.9
Basic standard	: ANSI C63.10: 2013
Limits	: Refer to FCC Part 15.209 (a) and 15.249 (d) RSS-Gen Clause 8.8 & 8.9
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: 12.05.2017
Input voltage	: DC 3.0V ("AAA" battery x 2)
Operation mode	: A
Ambient temperature	: 23°C
Relative humidity	: 48 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

6 Safety Human Exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

RESULT:**Pass****Test Specification**

Test standard : CFR47 FCC Part 2.1093
RSS-102

Limit : FCC KDB Publication 447498 v06
RSS-102 Clause 2.5.1

Measurement Record for CFR47 FCC Part 2.1093

The minimum distance for the EUT is less than 5mm.

The maximum specified e.i.r.p.: 88.58dBuV/m @3m = -6.7dBm=0.2mW

Antenna Gain: 2.15dBi max

According to KDB 447498 D01 v06 4.3.1 a)

Exempted Power for this Bluetooth device: 9.5mW, hence the EUT is compliance with the RF exposure.

Measurement Record for RSS-102

The minimum distance for the EUT is less than 5mm.

The maximum specified e.i.r.p.: 88.58dBuV/m @3m = -6.7dBm=0.2mW

Antenna Gain: 2.15dBi max

According to RSS-102 Clause 2.5.1

Exempted Power for this device: 4mW, hence the EUT is compliance with the RF exposure.

7 Photographs of the Test Set-Up

Photograph 1: Set-up for Radiated Spurious Emission up to 1GHz

Pls. refer to the attached setup photos.

Photograph 2: Set-up for Radiated Spurious Emission above 1GHz

Pls. refer to the attached setup photos.

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Appendix A

Test Results

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APPENDIX A.1: TEST RESULTS OF RADIATED SPURIOUS EMISSIONS	2
APPENDIX A.2: TEST RESULTS OF RADIATED EMISSIONS IN RESTRICTED BANDS	15

Note: The radiated spurious emission were measured from 9KHz to 26.5GHz, the measurements from 9KHz-30MHz and 18-26.5GHz were greater than 20dB below the limit, so the radiated Spurious Emissions (9kHz – 30MHz and 18-26.5GHz) tests were recorded but not showed in the appendix A.

Appendix A.1: Test Results of Radiated Spurious Emissions

30MHz-1GHz



ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: lenovo #1904

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2403MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3V

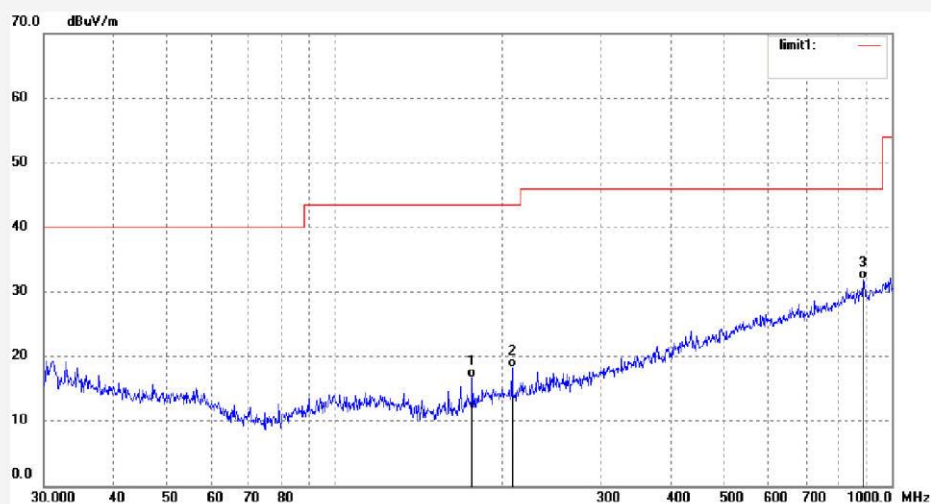
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	176.2684	30.08	-13.44	16.64	43.50	-26.86	QP			
2	207.8499	30.36	-12.05	18.31	43.50	-25.19	QP			
3	887.6099	29.74	2.12	31.86	46.00	-14.14	QP			



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Job No.: lenovo #1905

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2403MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3V

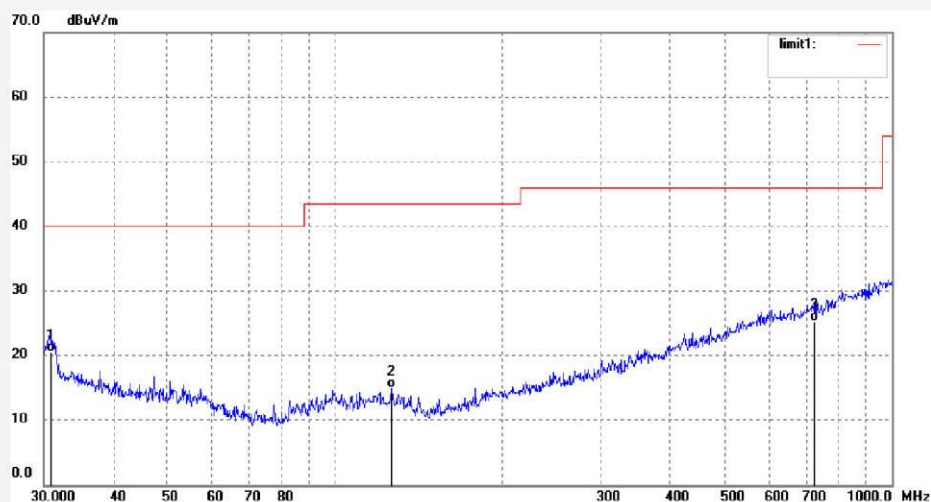
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	30.8535	29.72	-9.18	20.54	40.00	-19.46	QP			
2	126.3285	28.70	-13.67	15.03	43.50	-28.47	QP			
3	726.8052	25.97	-0.67	25.30	46.00	-20.70	QP			



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Site: 2# Chamber

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Fax:+86-0755-26503396

Job No.: lenovo #1907

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2439MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3V

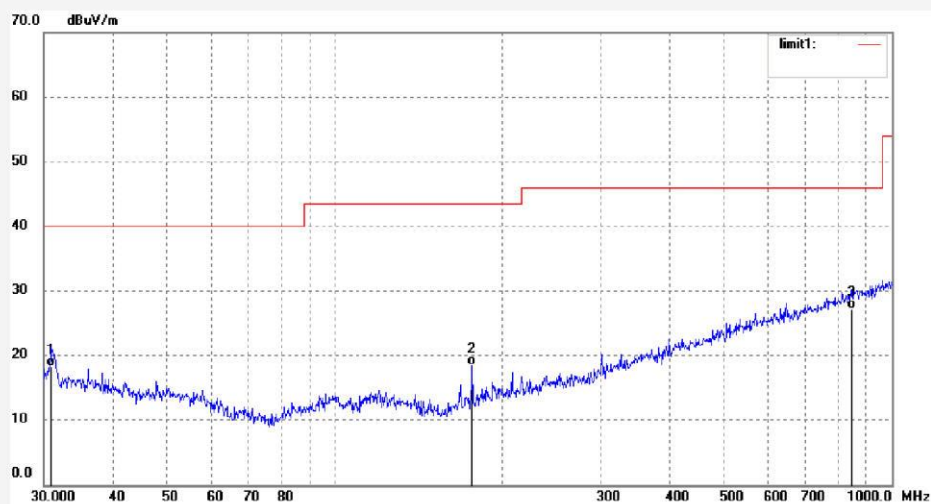
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	30.9618	28.39	-10.02	18.37	40.00	-21.63	QP			
2	176.2685	31.85	-13.44	18.41	43.50	-25.09	QP			
3	848.0562	25.63	1.54	27.17	46.00	-18.83	QP			



ACCURATE TECHNOLOGY CO., LTD.

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Site: 2# Chamber

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Fax:+86-0755-26503396

Job No.: lenovo #1906

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2439MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3V

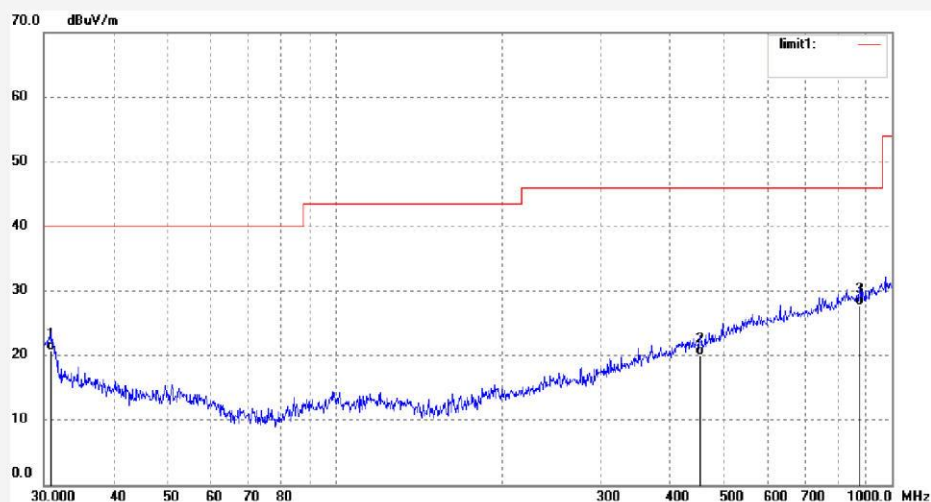
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	30.9618	29.98	-9.21	20.77	40.00	-19.23	QP			
2	452.7196	25.29	-5.31	19.98	46.00	-26.02	QP			
3	875.2469	25.68	1.98	27.66	46.00	-18.34	QP			



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F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
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Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: lenovo #1908

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2479MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3V

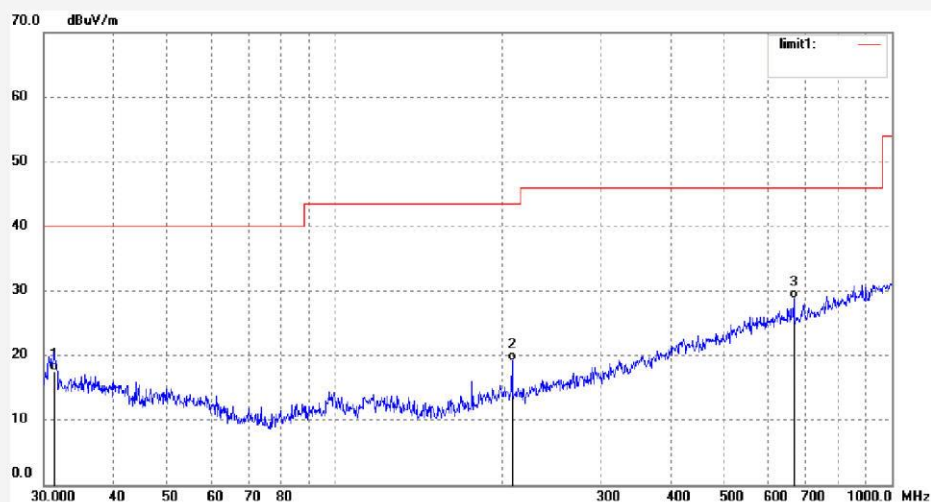
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	31.2893	27.56	-10.05	17.51	40.00	-22.49	QP			
2	207.8500	31.27	-12.05	19.22	43.50	-24.28	QP			
3	665.8034	30.25	-1.53	28.72	46.00	-17.28	QP			



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Job No.: lenovo #1909

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2479MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3V

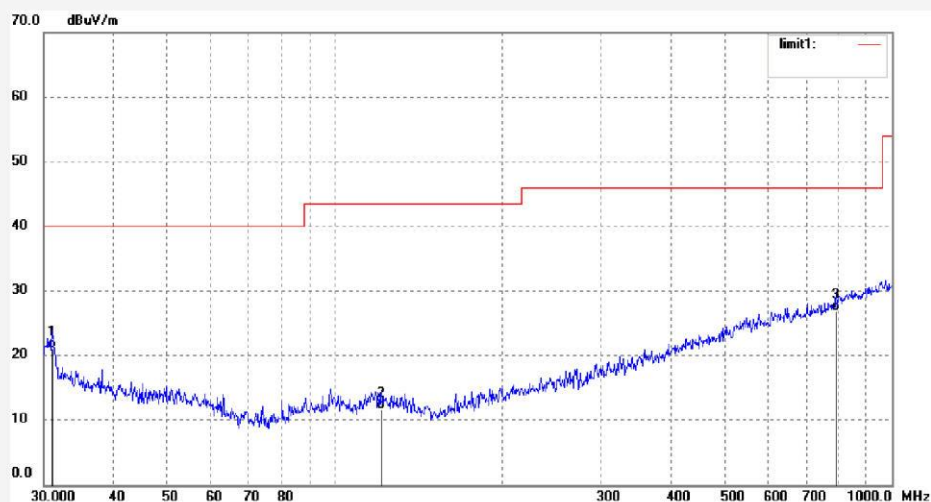
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	31.0705	30.31	-9.25	21.06	40.00	-18.94	QP			
2	121.1230	24.85	-13.19	11.66	43.50	-31.84	QP			
3	793.3958	26.19	0.67	26.86	46.00	-19.14	QP			

1GHz - 18GHz



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Job No.: lenovo #1852

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2403MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3V

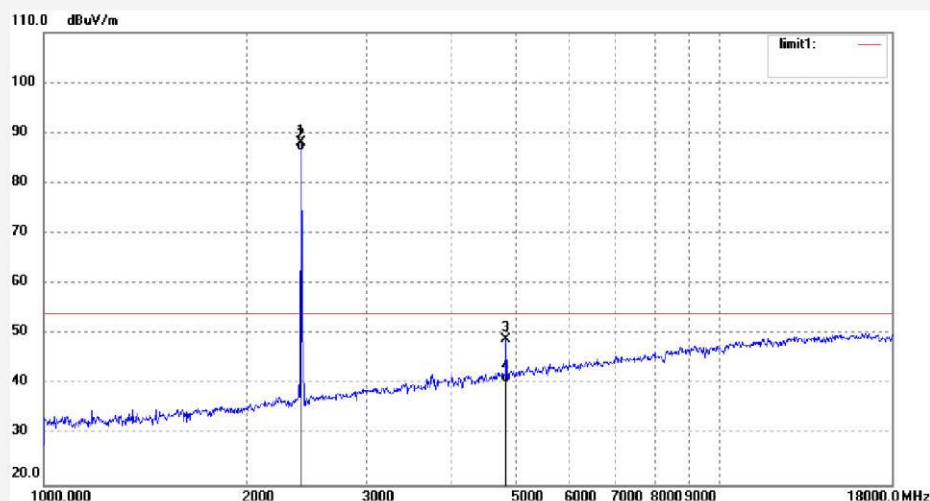
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2403.000	89.63	-1.61	88.02	114.00	-25.98	peak			
2	2403.000	88.13	-1.61	86.52	94.00	-7.48	AVG			
3	4806.000	44.06	4.92	48.98	74.00	-25.02	peak			
4	4806.000	35.39	4.92	40.31	54.00	-13.69	AVG			



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Job No.: lenovo #1853

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2403MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3V

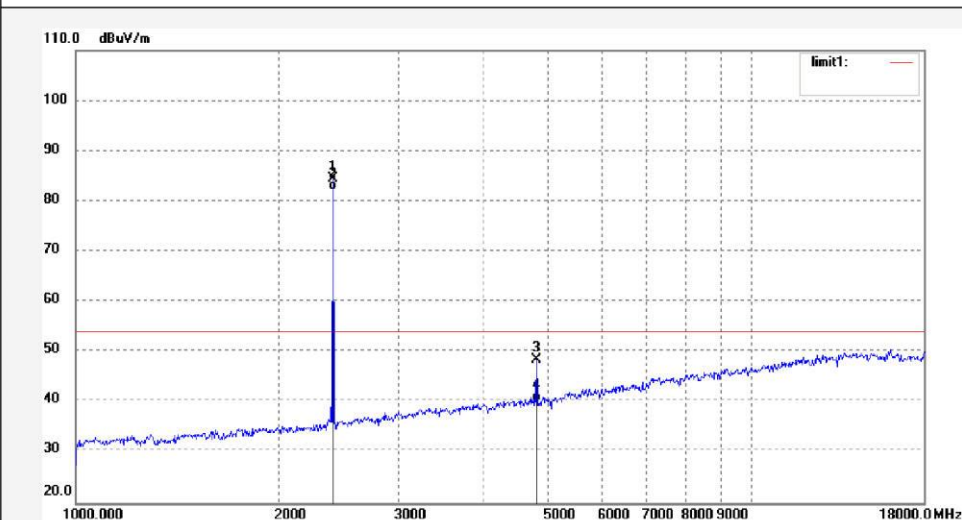
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2403.000	86.03	-1.61	84.42	114.00	-29.58	peak			
2	2403.000	83.90	-1.61	82.29	94.00	-11.71	AVG			
3	4806.000	43.65	4.92	48.57	74.00	-25.43	peak			
4	4806.000	35.29	4.92	40.21	54.00	-13.79	AVG			



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Job No.: lenovo #1856

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2439MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3V

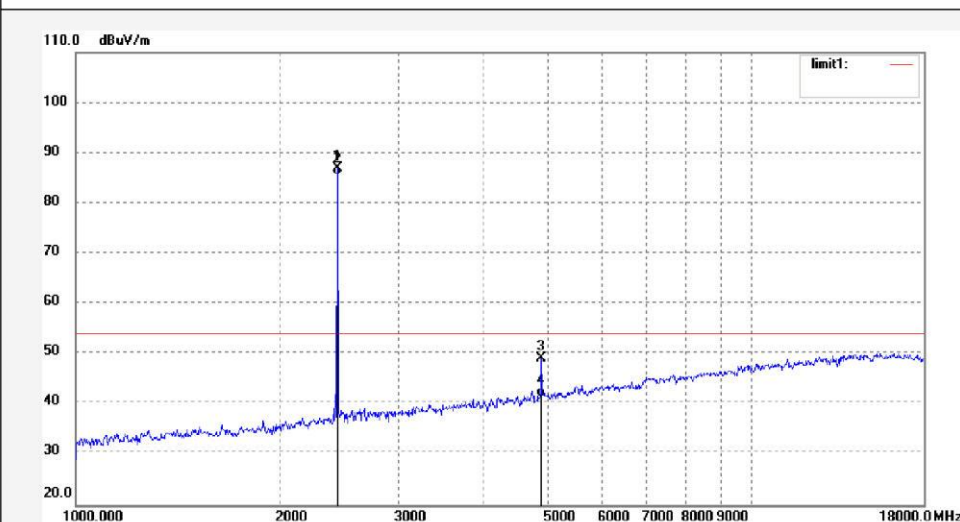
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2439.000	88.40	-1.46	86.94	114.00	-27.06	peak			
2	2439.000	87.10	-1.46	85.64	94.00	-8.36	AVG			
3	4878.000	43.67	5.57	49.24	74.00	-24.76	peak			
4	4878.000	35.90	5.57	41.47	54.00	-12.53	AVG			



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Job No.: lenovo #1857

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2439MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3V

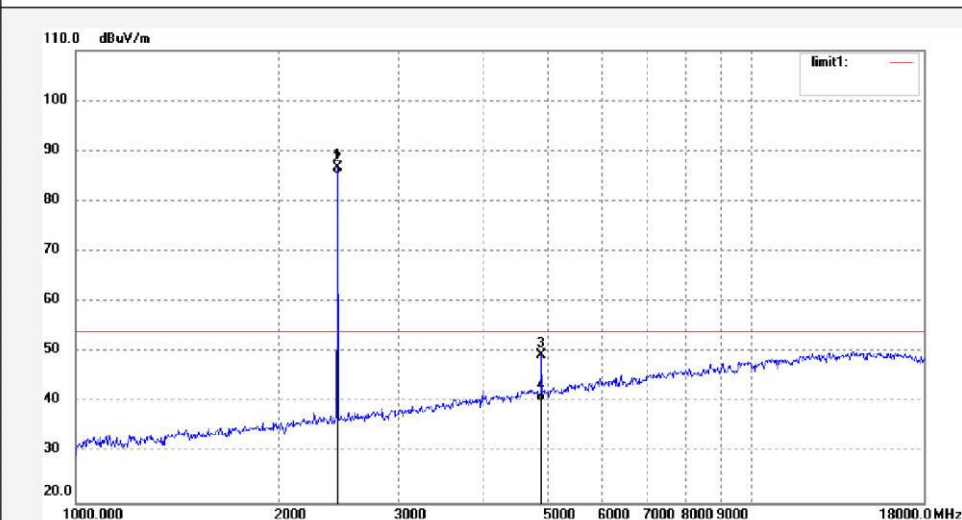
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2439.000	88.22	-1.46	86.76	114.00	-27.24	peak			
2	2439.000	86.92	-1.46	85.46	94.00	-8.54	AVG			
3	4878.000	43.73	5.57	49.30	74.00	-24.70	peak			
4	4878.000	34.57	5.57	40.14	54.00	-13.86	AVG			



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Job No.: lenovo #1858

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2479MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3V

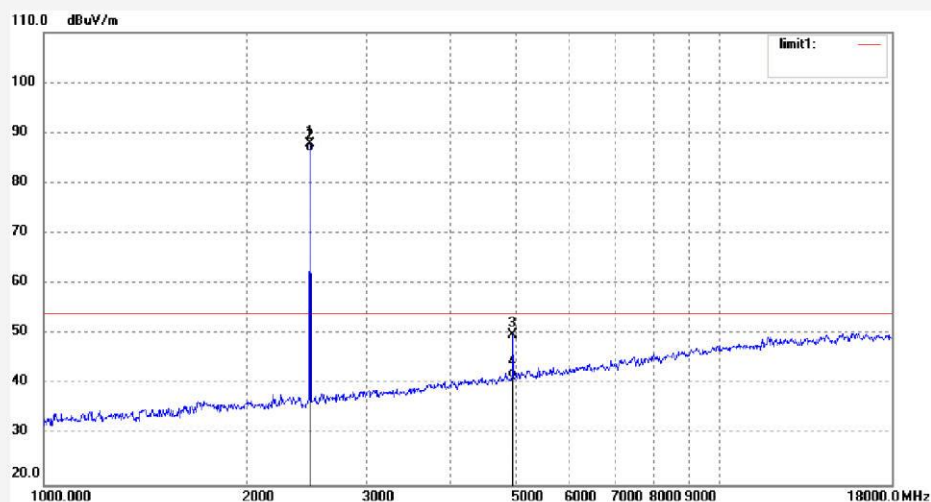
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2479.000	89.16	-1.40	87.76	114.00	-26.24	peak			
2	2479.000	87.66	-1.40	86.26	94.00	-7.74	AVG			
3	4958.000	43.77	6.08	49.85	74.00	-24.15	peak			
4	4958.000	35.27	6.08	41.35	54.00	-12.65	AVG			



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Job No.: lenovo #1859

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2479MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3V

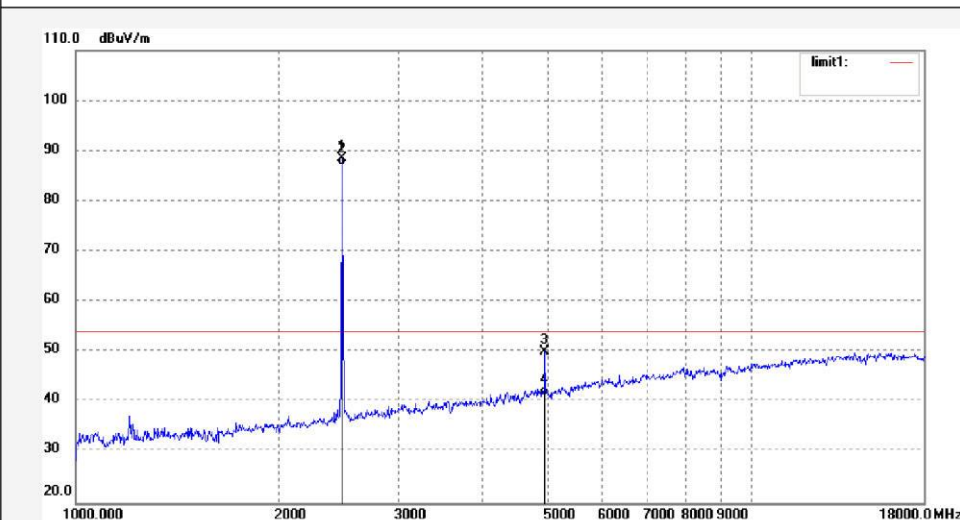
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2479.000	89.98	-1.40	88.58	114.00	-25.42	peak			
2	2479.000	88.48	-1.40	87.08	94.00	-6.92	AVG			
3	4958.000	44.05	6.08	50.13	74.00	-23.87	peak			
4	4958.000	35.26	6.08	41.34	54.00	-12.66	AVG			

Appendix A.2: Test Results of Radiated Emissions in Restricted Bands

Low channel



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Job No.: lenovo #1855

Standard: FCC (Band Edge)

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2403MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3V

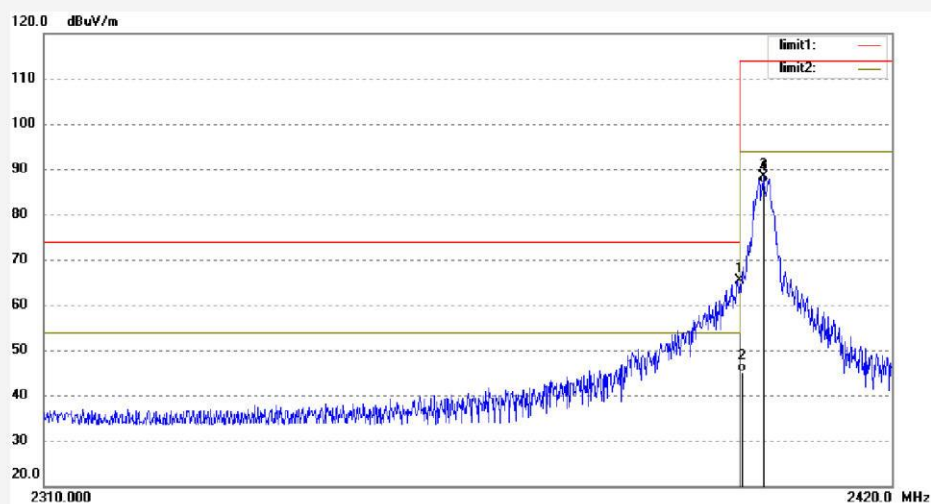
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2400.000	66.92	-1.62	65.30	74.00	-8.70	peak			
2	2400.000	46.72	-1.62	45.10	54.00	-8.90	AVG			
3	2403.000	89.92	-1.61	88.31	114.00	-25.69	peak			
4	2403.000	88.42	-1.61	86.81	94.00	-7.19	AVG			



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Job No.: lenovo #1854

Standard: FCC (Band Edge)

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2403MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3V

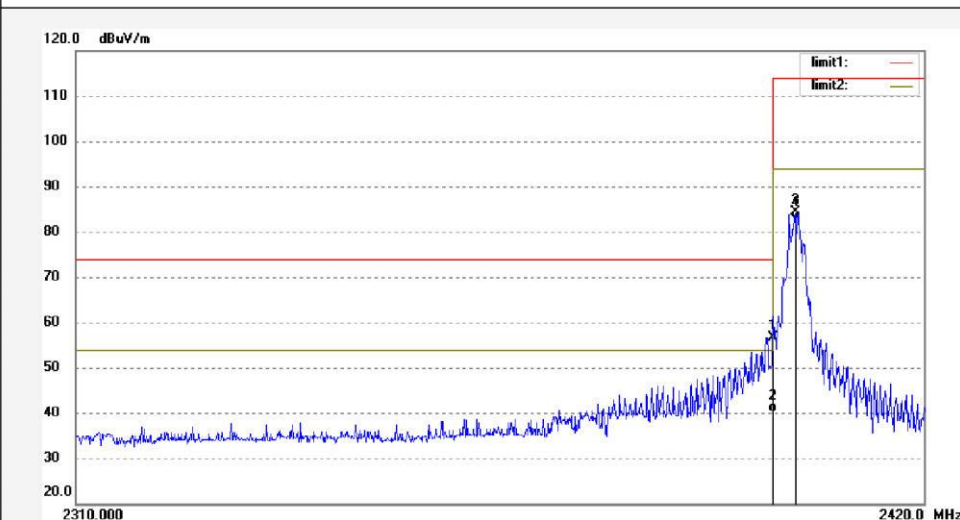
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2400.000	58.21	-1.62	56.59	74.00	-17.41	peak			
2	2400.000	41.76	-1.62	40.14	54.00	-13.86	AVG			
3	2403.000	85.90	-1.61	84.29	114.00	-29.71	peak			
4	2403.000	84.40	-1.61	82.79	94.00	-11.21	AVG			

High channel



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Job No.: lenovo #1860

Standard: FCC (Band Edge)

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2479MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Horizontal

Power Source: DC 3V

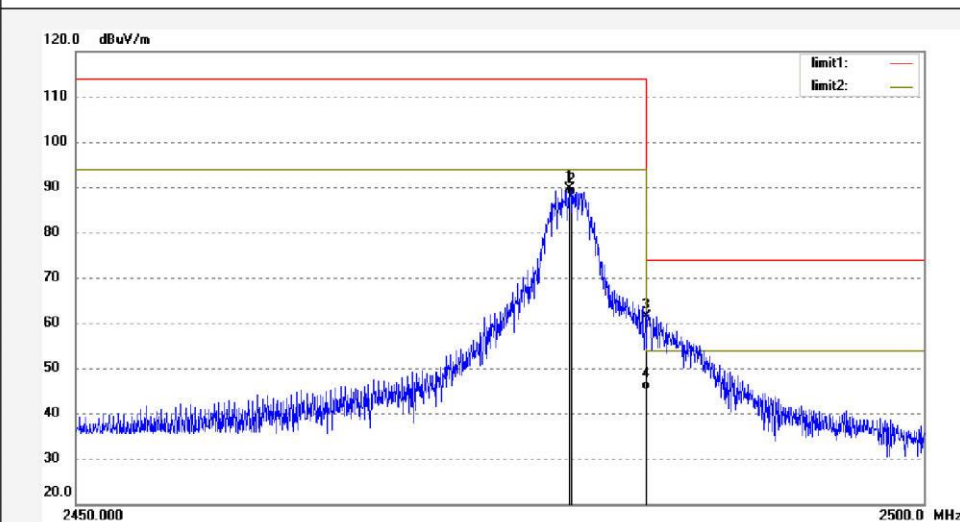
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2479.000	90.94	-1.40	89.54	114.00	-24.46	peak			
2	2479.000	89.44	-1.40	88.04	94.00	-5.96	AVG			
3	2483.500	62.67	-1.40	61.27	74.00	-12.73	peak			
4	2483.500	46.57	-1.40	45.17	54.00	-8.83	AVG			



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Job No.: lenovo #1861

Standard: FCC (Band Edge)

Test item: Radiation Test

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

EUT: Lenovo 500 Wireless Keyboard

Mode: TX 2479MHz

Model: L500-K

Manufacturer: Lenovo

Polarization: Vertical

Power Source: DC 3V

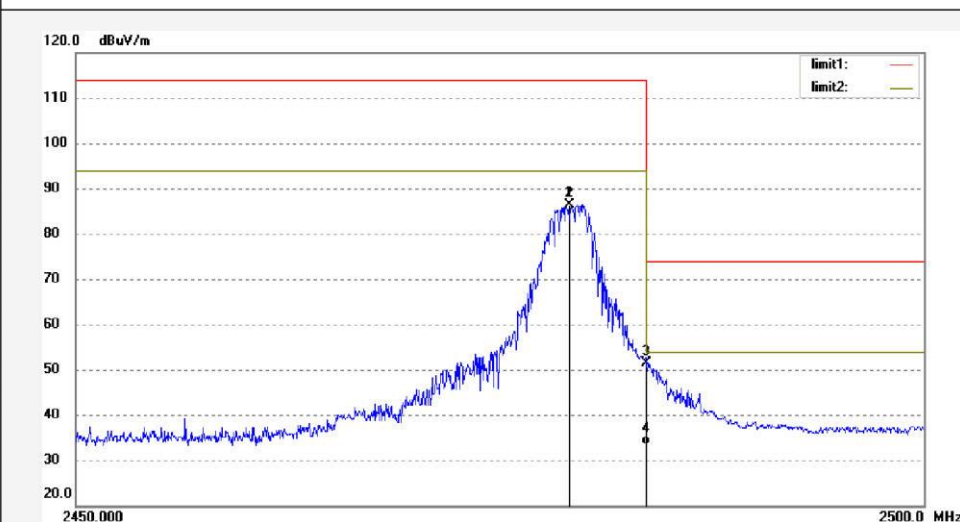
Date: 2017/05/10

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2479.000	87.86	-1.40	86.46	114.00	-27.54	peak			
2	2479.000	87.86	-1.40	86.46	114.00	-27.54	peak			
3	2483.500	52.89	-1.40	51.49	74.00	-22.51	peak			
4	2483.500	34.81	-1.40	33.41	54.00	-20.59	AVG			