

APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
HAOLIYUAN (SHENZHEN) ELECTRONIC CO., LTD

150M Mini Wireless USB Adapter
Model No.: WU110K

FCC ID: 2AAD8-WU110K

Prepared for : HAOLIYUAN (SHENZHEN) ELECTRONIC CO., LTD
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Report Number : ATE20141831
Date of Test : Sep 24-Oct 09,2014
Date of Report : Oct 09,2014

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Test Report Certification

Applicant : HAOLIYUAN (SHENZHEN) ELECTRONIC CO., LTD
 Manufacturer : HAOLIYUAN (SHENZHEN) ELECTRONIC CO., LTD
 EUT Description : 150M Mini Wireless USB Adapter
 (A) MODEL NO.: WU110K
 (B) SERIAL NO.: N/A
 (C) POWER SUPPLY: DC 5V (Power by USB)

Measurement Procedure Used:


FCC Rules and Regulations Part 15 Subpart C Section 15.247
ANSI C63.4: 2009


The EUT was tested according to DTS test procedure of Jun 05, 2014 KDB558074 D01 DTS Meas Guidance v03r02 for compliance to FCC 47CFR 15.247 requirements

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test : Sep 24-Oct 09,2014
 Date of Report : Oct 09,2014

Prepared by : 
 (Engineer)

Approved & Authorized Signer : 
 (Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

| | | |
|-------------------------|---|---|
| EUT | : | 150M Mini Wireless USB Adapter |
| Model Number | : | WU110K |
| Frequency Range | : | 802.11b/g/n (20MHz): 2412-2462MHz 11 Channels 802.11n (40MHz): 2422-2452MHz 7 Channels |
| Modulation | : | CCK,OFDM |
| Antenna Gain | : | 0.5dBi |
| Power Supply | : | DC 5V (USB Port) |
| Applicant | : | HAOLIYUAN (SHENZHEN) ELECTRONIC CO., LTD |
| Address | : | 3/F, Building A1, Junfeng Industrial Park, Yonghe Road, Fuyong, Bao'an District, Shenzhen, Guangdong,China |
| Manufacturer | : | HAOLIYUAN (SHENZHEN) ELECTRONIC CO., LTD |
| Address | : | 3/F, Building A1, Junfeng Industrial Park, Yonghe Road, Fuyong, Bao'an District, Shenzhen, Guangdong,China |
| Date of sample received | : | Sep 24,2014 |
| Date of Test | : | Sep 24-Oct 09,2014 |

1.2. Carrier Frequency of Channels

802.11b, 802.11g, 802.11n (20MHz)

| Channel | Frequency(MHz) | Channel | Frequency(MHz) |
|---------|----------------|---------|----------------|
| 01 | 2412 | 07 | 2442 |
| 02 | 2417 | 08 | 2447 |
| 03 | 2422 | 09 | 2452 |
| 04 | 2427 | 10 | 2457 |
| 05 | 2432 | 11 | 2462 |
| 06 | 2437 | --- | --- |

802.11n (40MHz)

| Channel | Frequency(MHz) | Channel | Frequency(MHz) |
|---------|----------------|---------|----------------|
| --- | --- | 07 | 2442 |
| --- | --- | 08 | 2447 |
| 03 | 2422 | 09 | 2452 |
| 04 | 2427 | --- | --- |
| 05 | 2432 | --- | --- |
| 06 | 2437 | --- | --- |

1.3. Special Accessory and Auxiliary Equipment

n.a.

1.4. Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen

Listed by FCC
The Registration Number is 752051

Listed by Industry Canada
The Registration Number is 5077A-2

Accredited by China National Accreditation Committee
for Laboratories
The Certificate Registration Number is L3193

Name of Firm : ACCURATE TECHNOLOGY CO. LTD

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

1.5.Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty
(9kHz-30MHz) = 3.08dB, k=2

Radiated emission expanded uncertainty
(30MHz-1000MHz) = 4.42dB, k=2

Radiated emission expanded uncertainty
(Above 1GHz) = 4.06dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

| Kind of equipment | Manufacturer | Type | S/N | Calibrated dates | Calibrated until |
|--------------------|---------------------------|---|------------|------------------|------------------|
| EMI Test Receiver | Rohde&Schwarz | ESCS30 | 100307 | Jan. 11, 2014 | Jan. 10, 2015 |
| EMI Test Receiver | Rohde&Schwarz | ESPI3 | 101526/003 | Jan. 11, 2014 | Jan. 10, 2015 |
| Spectrum Analyzer | Agilent | E7405A | MY45115511 | Jan. 11, 2014 | Jan. 10, 2015 |
| Pre-Amplifier | Rohde&Schwarz | CBLU118354 0-01 | 3791 | Jan. 11, 2014 | Jan. 10, 2015 |
| Loop Antenna | Schwarzbeck | FMZB1516 | 1516131 | Jan. 15, 2014 | Jan. 14, 2015 |
| Bilog Antenna | Schwarzbeck | VULB9163 | 9163-323 | Jan. 15, 2014 | Jan. 14, 2015 |
| Horn Antenna | Schwarzbeck | BBHA9120D | 9120D-655 | Jan. 15, 2014 | Jan. 14, 2015 |
| Horn Antenna | Schwarzbeck | BBHA9120D | 9120D-1067 | Jan. 15, 2014 | Jan. 14, 2015 |
| LISN | Rohde&Schwarz | ESH3-Z5 | 100305 | Jan. 11, 2014 | Jan. 10, 2015 |
| LISN | Schwarzbeck | NSLK8126 | 8126431 | Jan. 11, 2014 | Jan. 10, 2015 |
| Highpass Filter | Wainwright Instruments | WHKX3.6/18 G-10SS | N/A | Jan. 11, 2014 | Jan. 10, 2015 |
| Band Reject Filter | Wainwright Instruments | WRCG2400/2 485-2375/2510 -60/11SS | N/A | Jan. 11, 2014 | Jan. 10, 2015 |

3. OPERATION OF EUT DURING TESTING

3.1. Operating Mode

The mode is used: **1.802.11b Transmitting mode**

Low Channel: 2412MHz

Middle Channel: 2437MHz

High Channel: 2462MHz

2.802.11g Transmitting mode

Low Channel: 2412MHz

Middle Channel: 2437MHz

High Channel: 2462MHz

3.802.11n (20MHz) Transmitting mode

Low Channel: 2412MHz

Middle Channel: 2437MHz

High Channel: 2462MHz

4.802.11n (40MHz) Transmitting mode

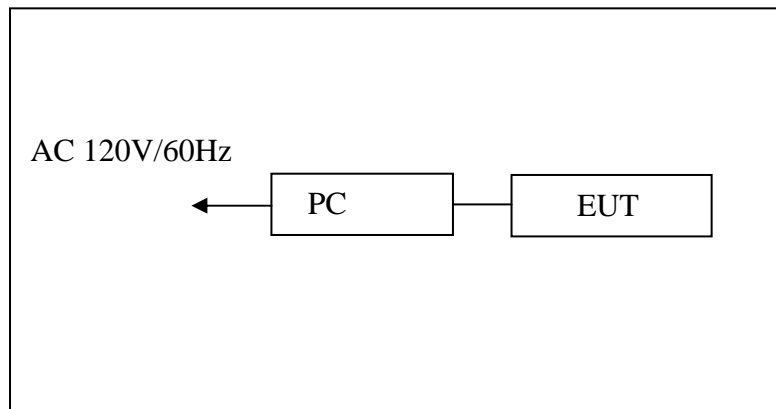
Low Channel: 2422MHz

Middle Channel: 2437MHz

High Channel: 2452MHz

5. Charging

3.2. Configuration and peripherals

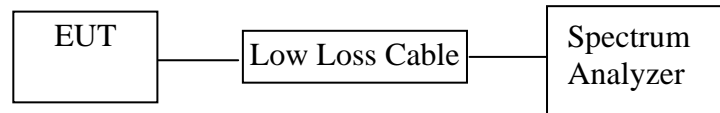


4. TEST PROCEDURES AND RESULTS

| FCC Rules | Description of Test | Result |
|-------------------------------------|---------------------------------------|---------------|
| Section 15.247(a)(2) | 6dB Bandwidth Test | Compliant |
| Section 15.247(e) | Power Spectral Density Test | Compliant |
| Section 15.247(b)(3) | Maximum Peak Output Power Test | Compliant |
| Section 15.247(d) | Band Edge Compliance Test | Compliant |
| Section 15.247(d) Section 15.209 | Radiated Spurious Emission Test | Compliant |
| Section 15.247(d) | Conducted Spurious Emission Test | Compliant |
| Section 15.207 | AC Power Line Conducted Emission Test | Compliant |
| Section 15.203 | Antenna Requirement | Compliant |

5. 6DB&20DB BANDWIDTH MEASUREMENT

5.1. Block Diagram of Test Setup



5.2. The Requirement For Section 15.247(a)(2)

Section 15.247(a)(2): Systems using digital modulation techniques may operate in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

5.3. EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.4. Operating Condition of EUT

5.4.1. Setup the EUT and simulator as shown as Section 5.1.

5.4.2. Turn on the power of all equipment.

5.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

5.5. Test Procedure

6dB bandwidth

1. Set resolution bandwidth (RBW) = 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

20dB bandwidth

1. Set resolution bandwidth (RBW) = 1%-5% OBW.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.

3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Once the reference level is established, the equipment is conditioned with typical modulating signals to produce the worst-case (i.e., the widest) bandwidth. Unless otherwise specified for an unlicensed wireless device, measure the bandwidth at the - 20 dB levels with respect to the reference level

5.6. Test Result

| The test was performed with 802.11b | | | | |
|-------------------------------------|-----------------|---------------------|----------------------|-------------|
| Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | 20dB Bandwidth (MHz) | Limit (MHz) |
| Low | 2412 | 10.16 | 17.308 | > 0.5MHz |
| Middle | 2437 | 10.20 | 17.250 | > 0.5MHz |
| High | 2462 | 10.16 | 17.308 | > 0.5MHz |

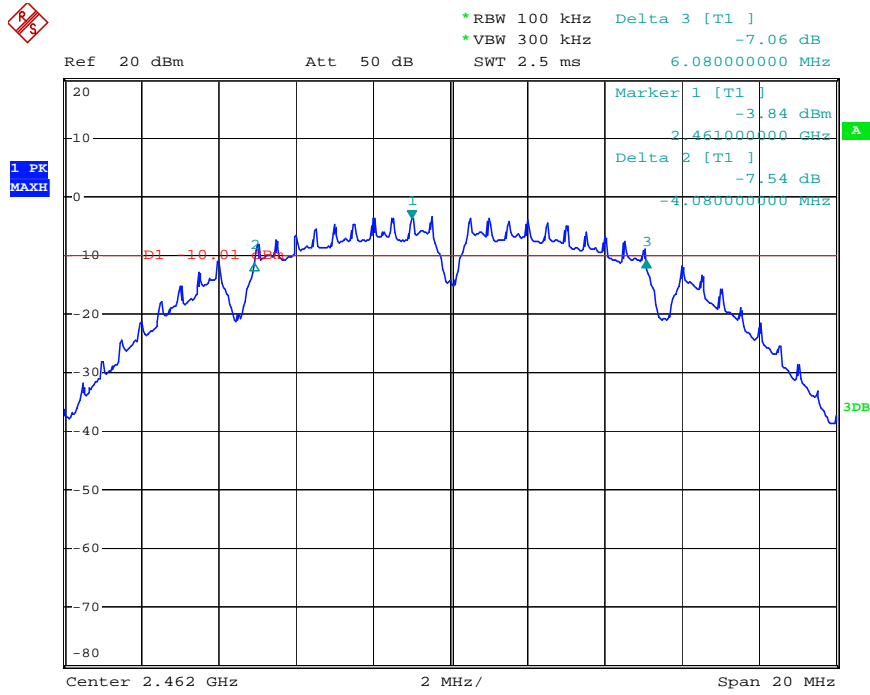
| The test was performed with 802.11g | | | | |
|-------------------------------------|-----------------|---------------------|----------------------|-------------|
| Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | 20dB Bandwidth (MHz) | Limit (MHz) |
| Low | 2412 | 16.60 | 18.813 | > 0.5MHz |
| Middle | 2437 | 16.64 | 18.698 | > 0.5MHz |
| High | 2462 | 16.60 | 18.582 | > 0.5MHz |

| The test was performed with 802.11n (Bandwidth: 20 MHz) | | | | |
|---|-----------------|---------------------|----------------------|-------------|
| Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | 20dB Bandwidth (MHz) | Limit (MHz) |
| Low | 2412 | 17.72 | 20.904 | > 0.5MHz |
| Middle | 2437 | 17.76 | 20.774 | > 0.5MHz |
| High | 2462 | 17.68 | 19.863 | > 0.5MHz |

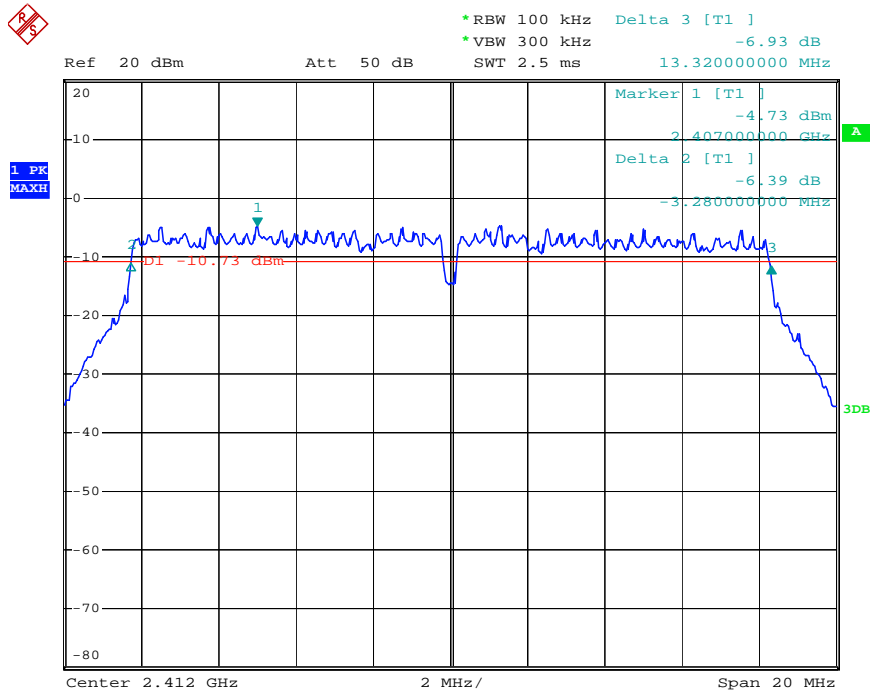
| The test was performed with 802.11n (Bandwidth: 40 MHz) | | | | |
|---|-----------------|---------------------|----------------------|-------------|
| Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | 20dB Bandwidth (MHz) | Limit (MHz) |
| Low | 2422 | 36.40 | 40.96 | > 0.5MHz |
| Middle | 2437 | 36.56 | 40.96 | > 0.5MHz |
| High | 2452 | 36.48 | 40.96 | > 0.5MHz |

The spectrum analyzer plots are attached as below.

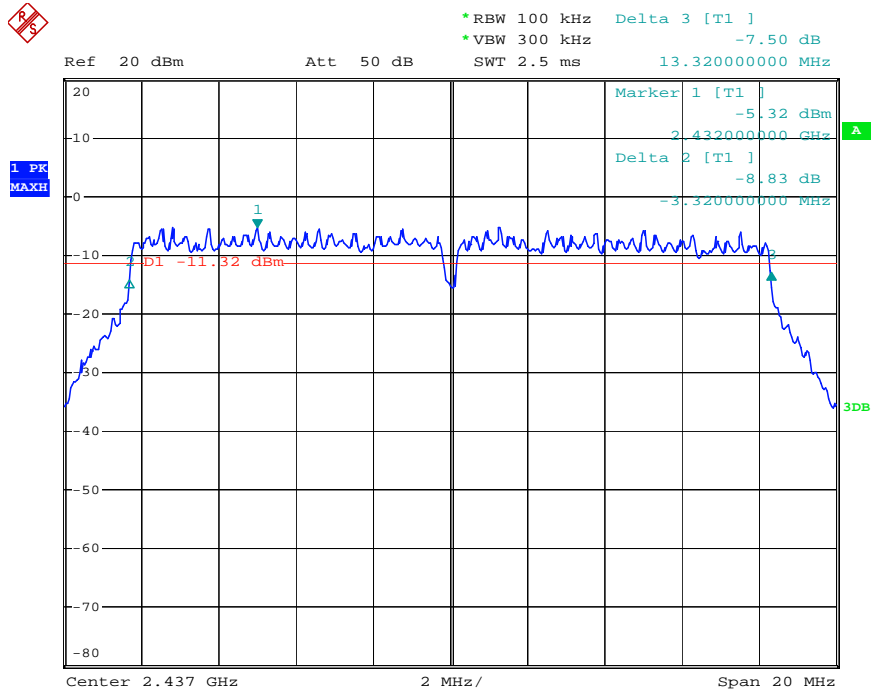
802.11b Channel High 2462MHz



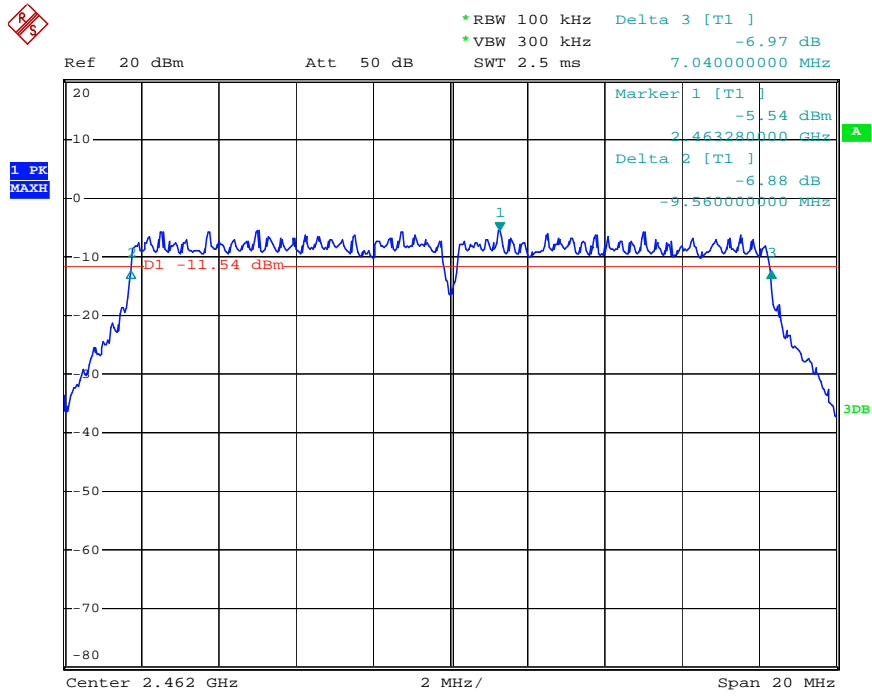
802.11g Channel Low 2412MHz



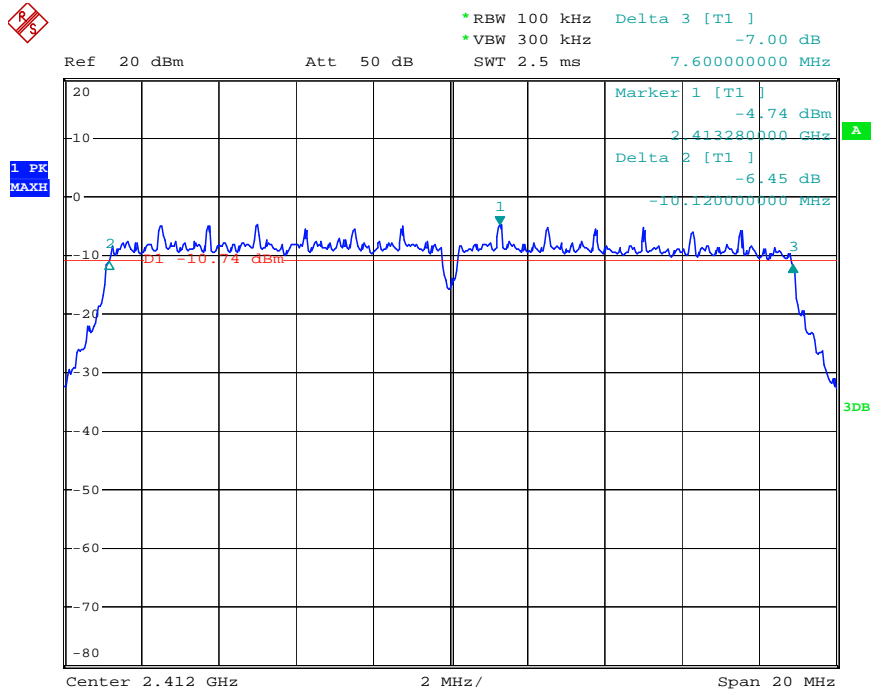
802.11g Channel Middle 2437MHz



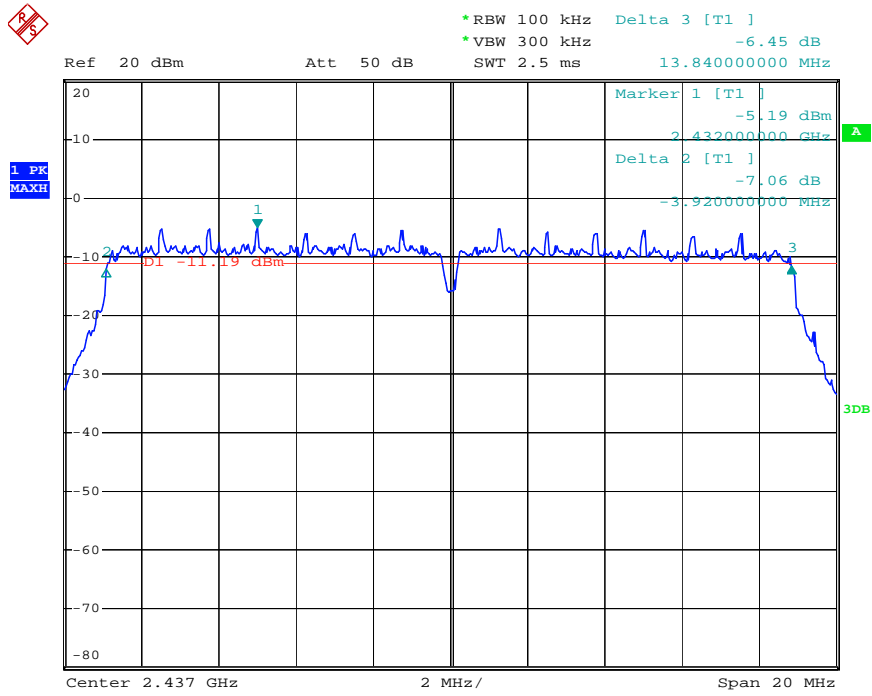
802.11g Channel High 2462MHz



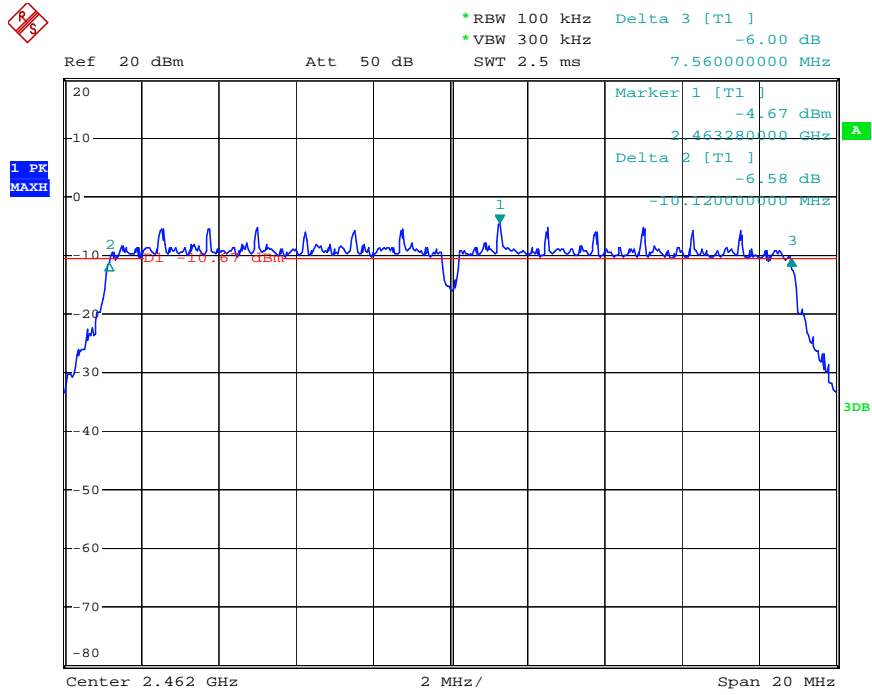
802.11n Channel Low 2412MHz (20MHz)



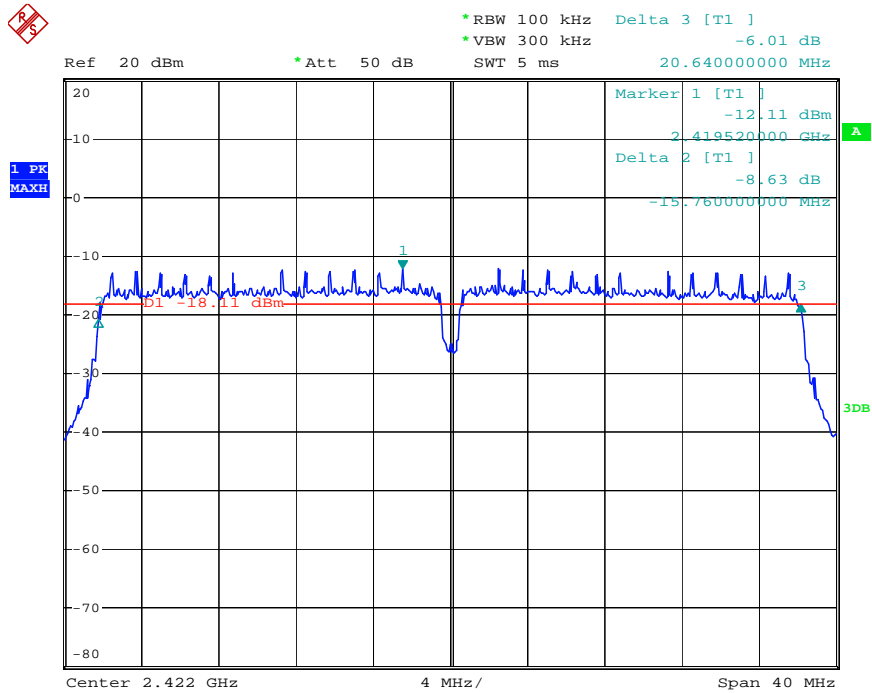
802.11n Channel Middle 2437MHz(20MHz)



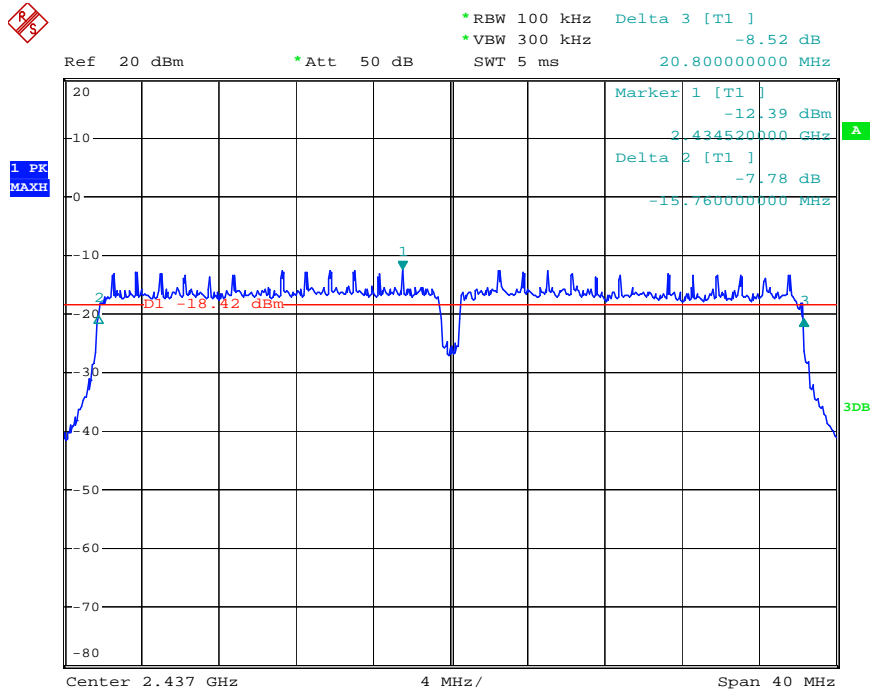
802.11n Channel High 2462MHz(20MHz)



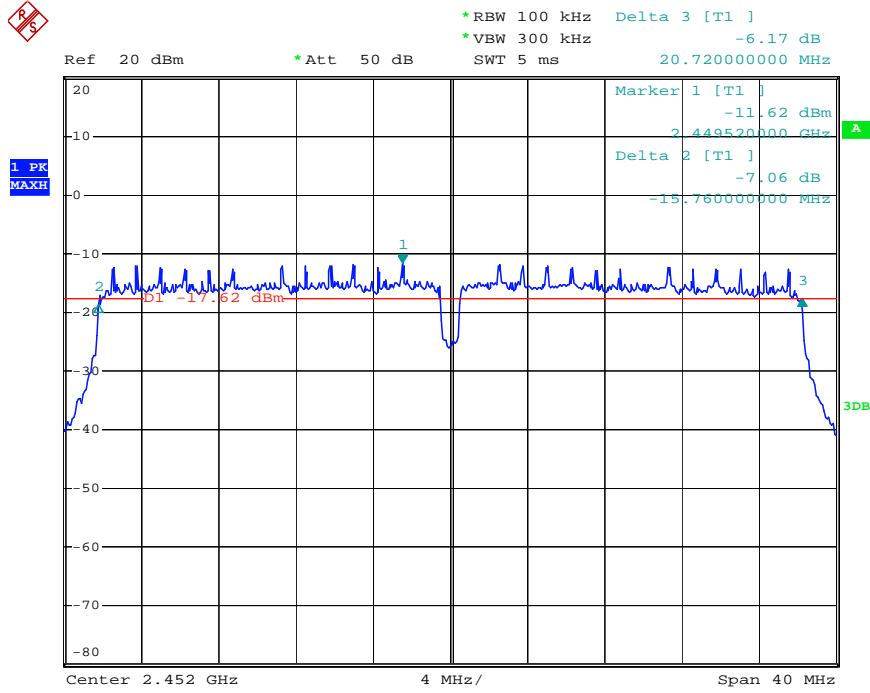
802.11n Channel Low 2422MHz (40MHz)



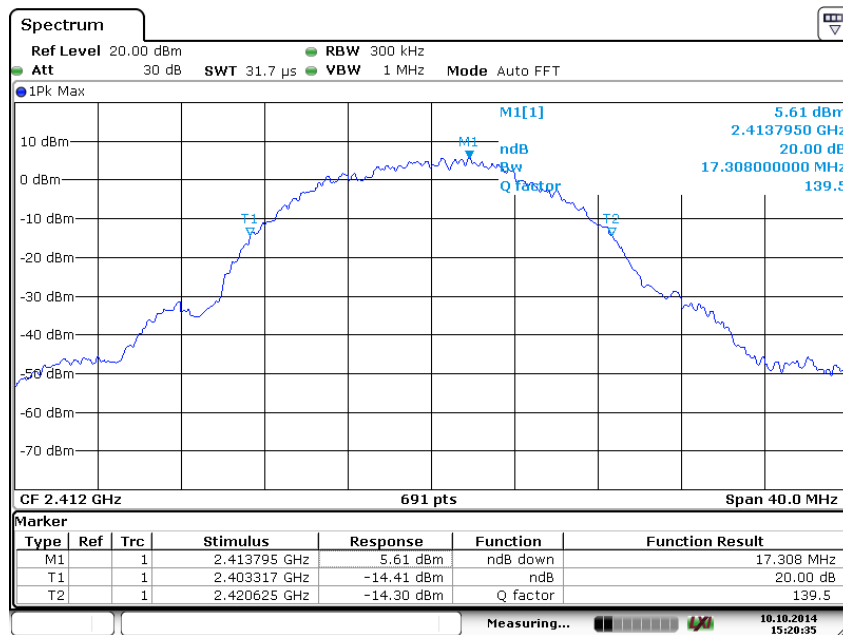
802.11n Channel Middle 2437MHz(40MHz)



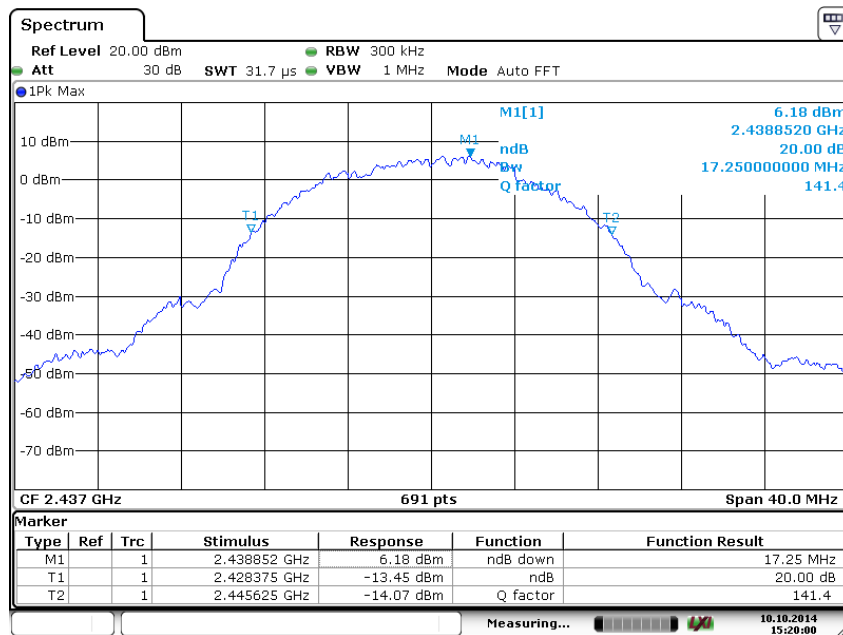
802.11n Channel High 2452MHz(40MHz)



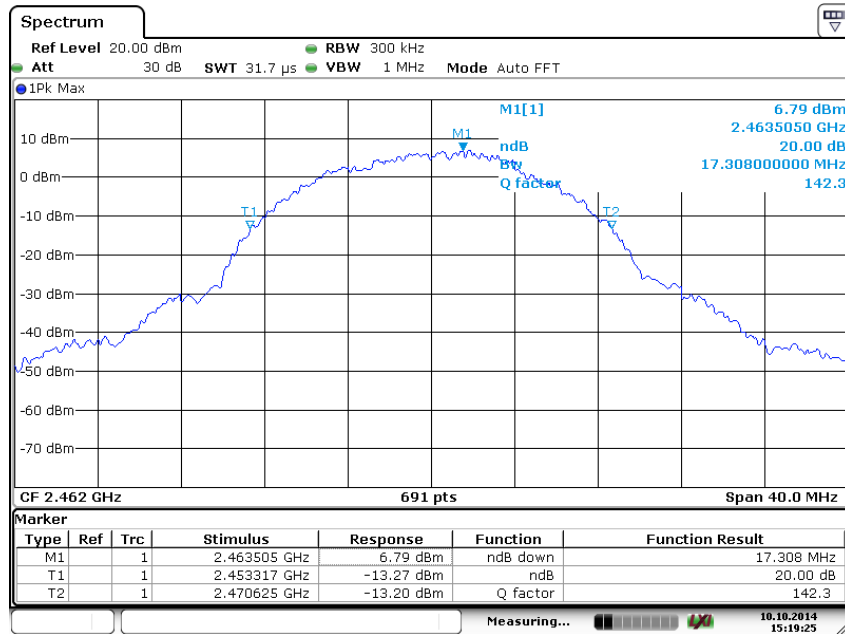
20dB Bandwidth 802.11b Channel Low 2412MHz



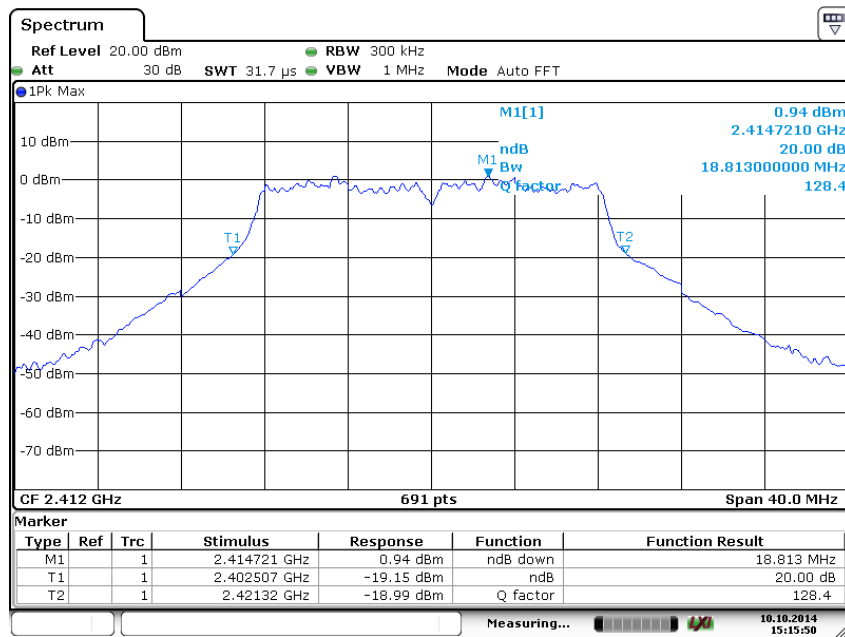
802.11b Channel Middle 2437MHz



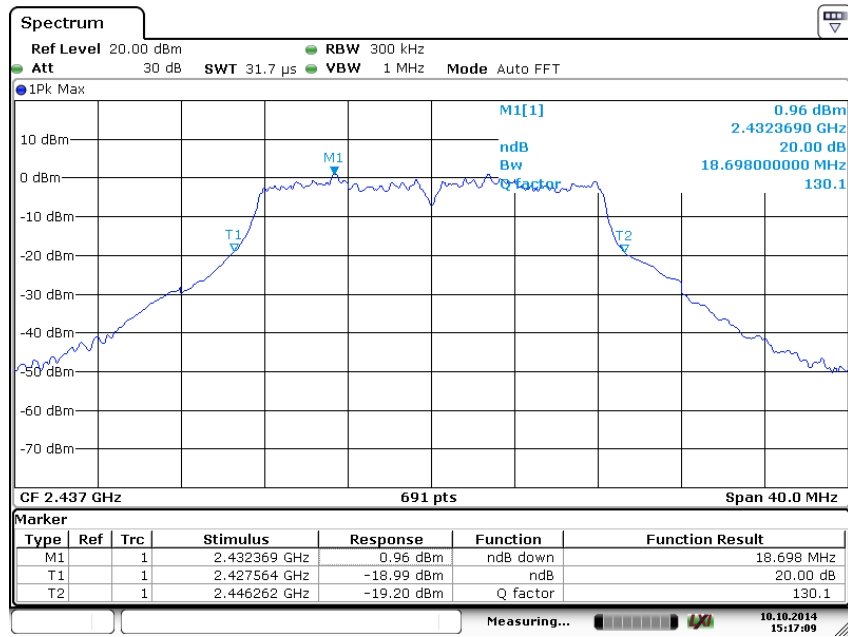
802.11b Channel High 2462MHz



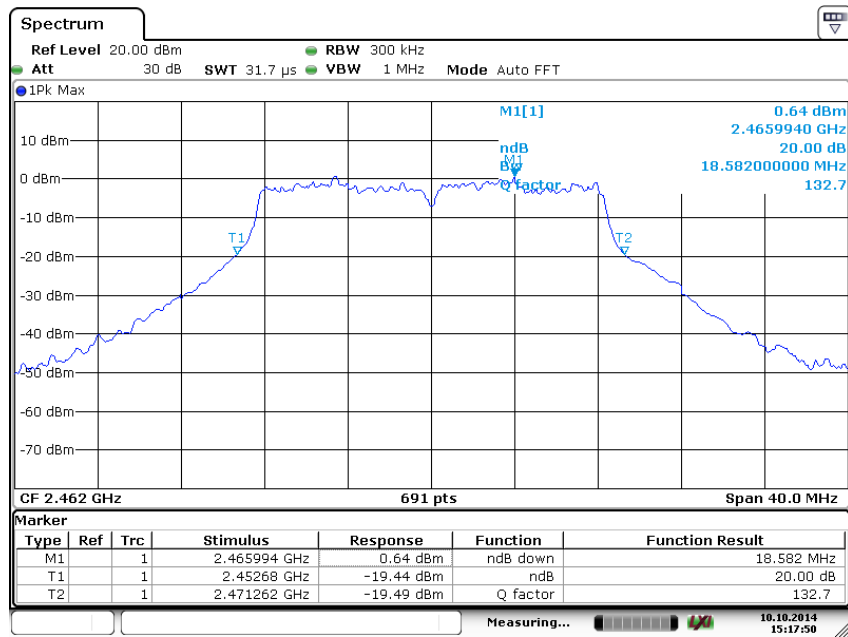
802.11g Channel Low 2412MHz



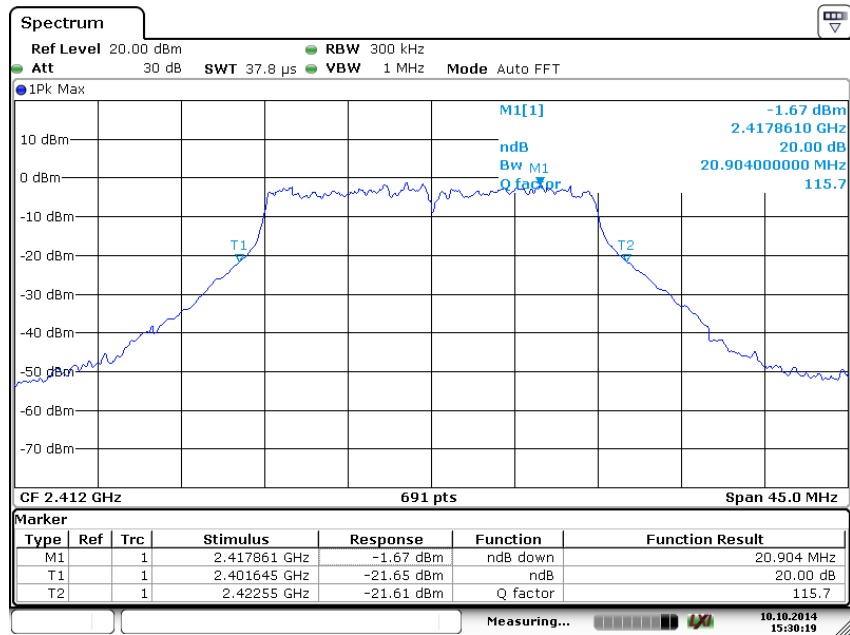
802.11g Channel Middle 2437MHz



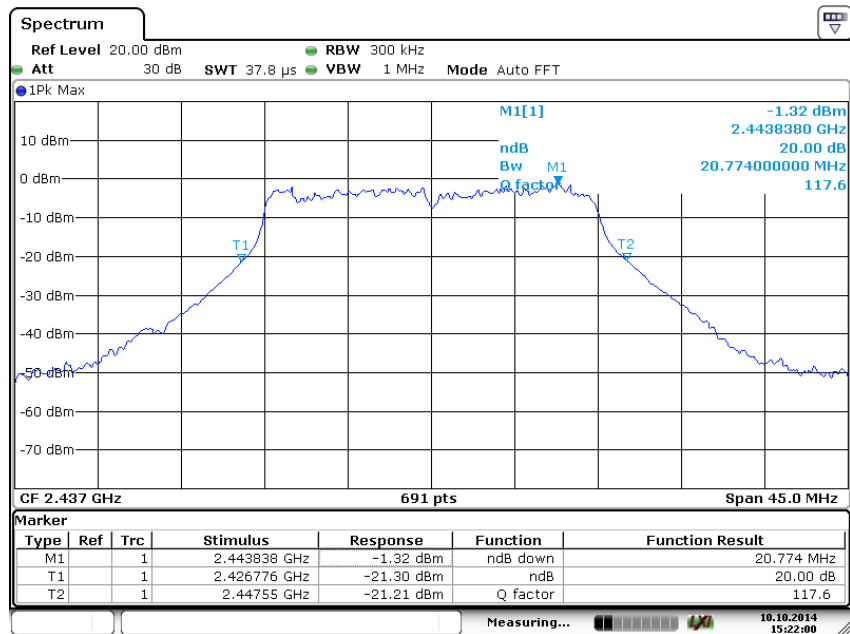
802.11g Channel High 2462MHz



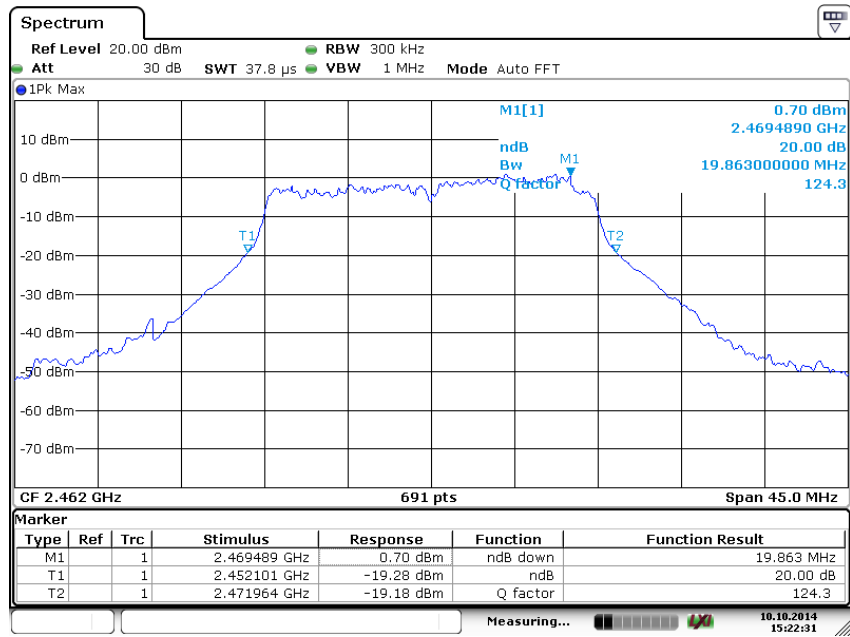
802.11n Channel Low 2412MHz (20MHz)



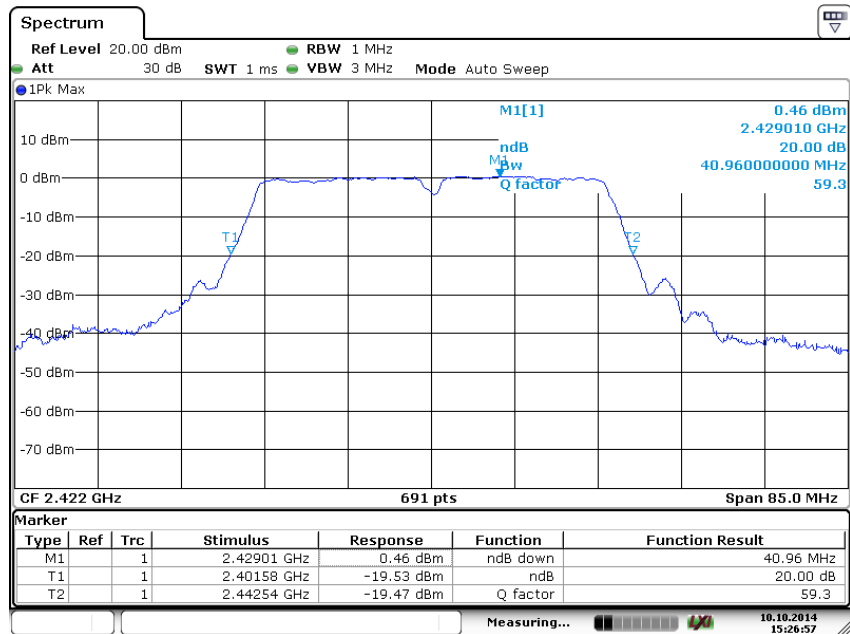
802.11n Channel Middle 2437MHz(20MHz)



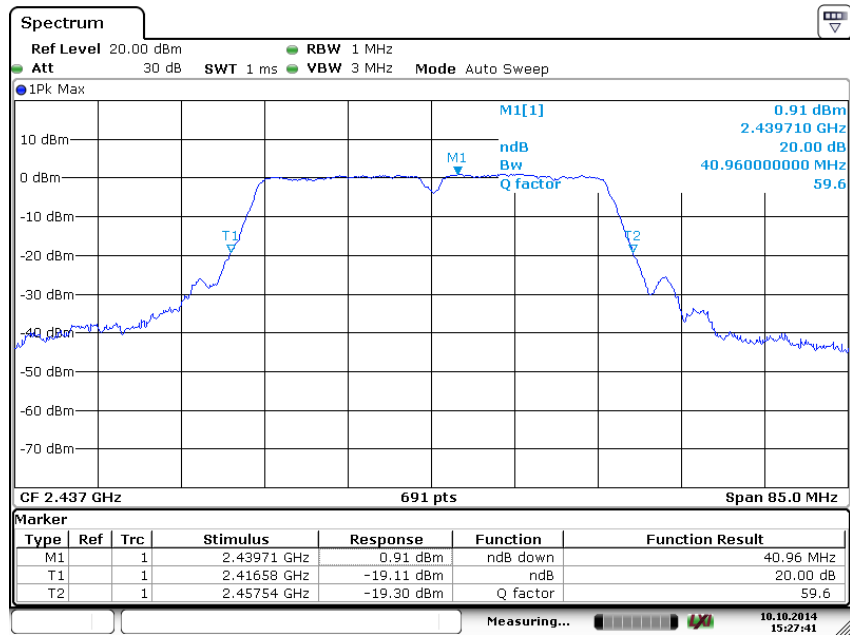
802.11n Channel High 2462MHz(20MHz)



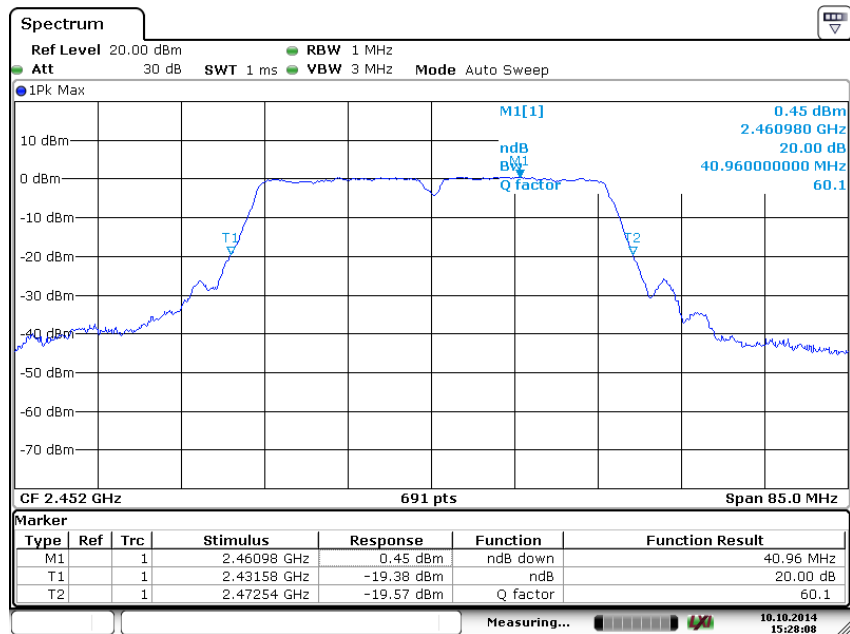
802.11n Channel Low 2422MHz (40MHz)



802.11n Channel Middle 2437MHz(40MHz)

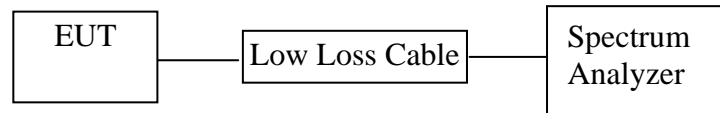


802.11n Channel High 2452MHz(40MHz)



6. MAXIMUM OUTPUT POWER

6.1. Block Diagram of Test Setup



6.2. The Requirement For Section 15.247(b)(3)

Section 15.247(b)(3): For systems using digital modulation in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands: 1 Watt.

6.3. EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.4. Operating Condition of EUT

6.4.1. Setup the EUT and simulator as shown as Section 6.1.

6.4.2. Turn on the power of all equipment.

6.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

6.5. Test Procedure

6.5.1. The EUT was tested according to DTS test procedure of Jun 05, 2014 KDB558074 D01 DTS Meas Guidance v03r02 for compliance to FCC 47CFR 15.247 requirements.

6.5.2. The transmitter output was connected to the spectrum analyzer through a low loss cable.

6.5.3. Set RBW of spectrum analyzer to 1-5% of the OBW, not to exceed 1 MHz and $VBW \geq 3 \times RBW$.

6.5.4. Measurement the maximum Average output power.

6.6. Test Result

| The test was performed with 802.11b | | | | |
|-------------------------------------|-----------------|---------------------------|--------------------------|----------------|
| Channel | Frequency (MHz) | Average Output Power(dBm) | Average Output Power(mW) | Limits dBm / W |
| Low | 2412 | 9.58 | 9.08 | 30 dBm / 1 W |
| Middle | 2437 | 9.67 | 9.27 | 30 dBm / 1 W |
| High | 2462 | 9.26 | 8.43 | 30 dBm / 1 W |

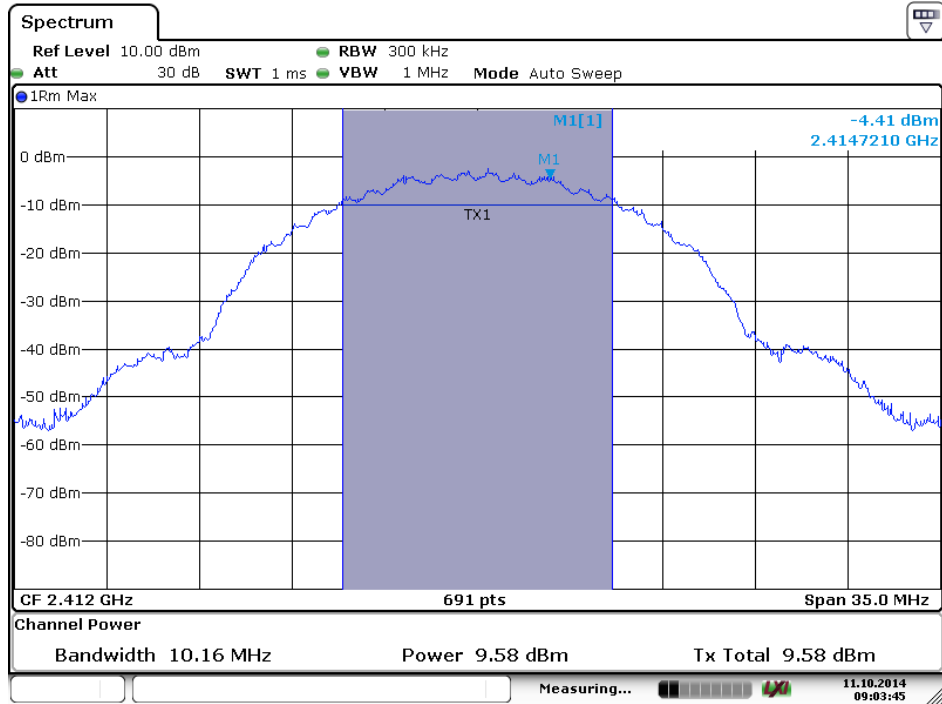
| The test was performed with 802.11g | | | | |
|-------------------------------------|-----------------|---------------------------|--------------------------|----------------|
| Channel | Frequency (MHz) | Average Output Power(dBm) | Average Output Power(mW) | Limits dBm / W |
| Low | 2412 | 8.37 | 6.87 | 30 dBm / 1 W |
| Middle | 2437 | 8.87 | 7.71 | 30 dBm / 1 W |
| High | 2462 | 8.38 | 6.89 | 30 dBm / 1 W |

| The test was performed with 802.11n (20MHz) | | | | |
|---|-----------------|---------------------------|--------------------------|----------------|
| Channel | Frequency (MHz) | Average Output Power(dBm) | Average Output Power(mW) | Limits dBm / W |
| Low | 2412 | 6.39 | 4.36 | 30 dBm / 1 W |
| Middle | 2437 | 6.55 | 4.52 | 30 dBm / 1 W |
| High | 2462 | 6.35 | 4.32 | 30 dBm / 1 W |

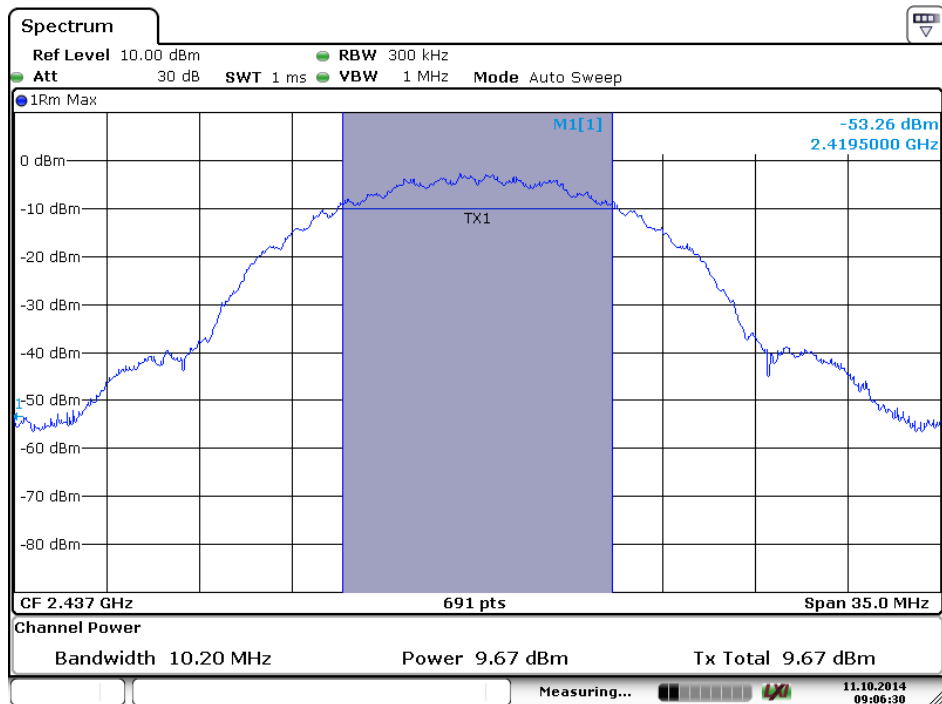
| The test was performed with 802.11n (40MHz) | | | | |
|---|-----------------|---------------------------|--------------------------|----------------|
| Channel | Frequency (MHz) | Average Output Power(dBm) | Average Output Power(mW) | Limits dBm / W |
| Low | 2422 | 5.07 | 3.21 | 30 dBm / 1 W |
| Middle | 2437 | 5.11 | 3.24 | 30 dBm / 1 W |
| High | 2452 | 5.15 | 3.27 | 30 dBm / 1 W |

The spectrum analyzer plots are attached as below.

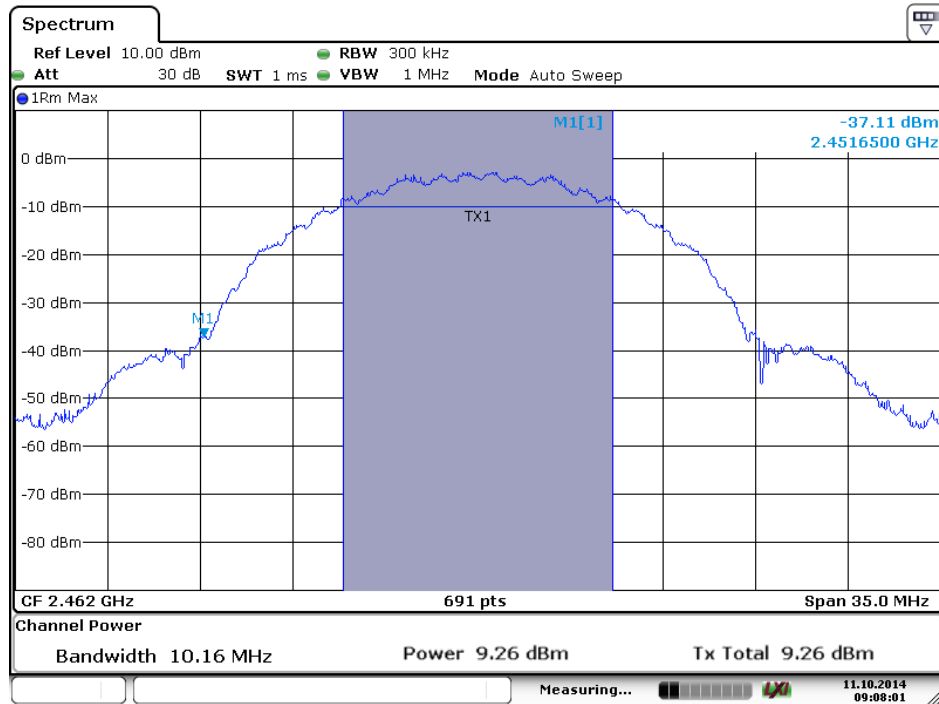
802.11b Channel Low 2412MHz



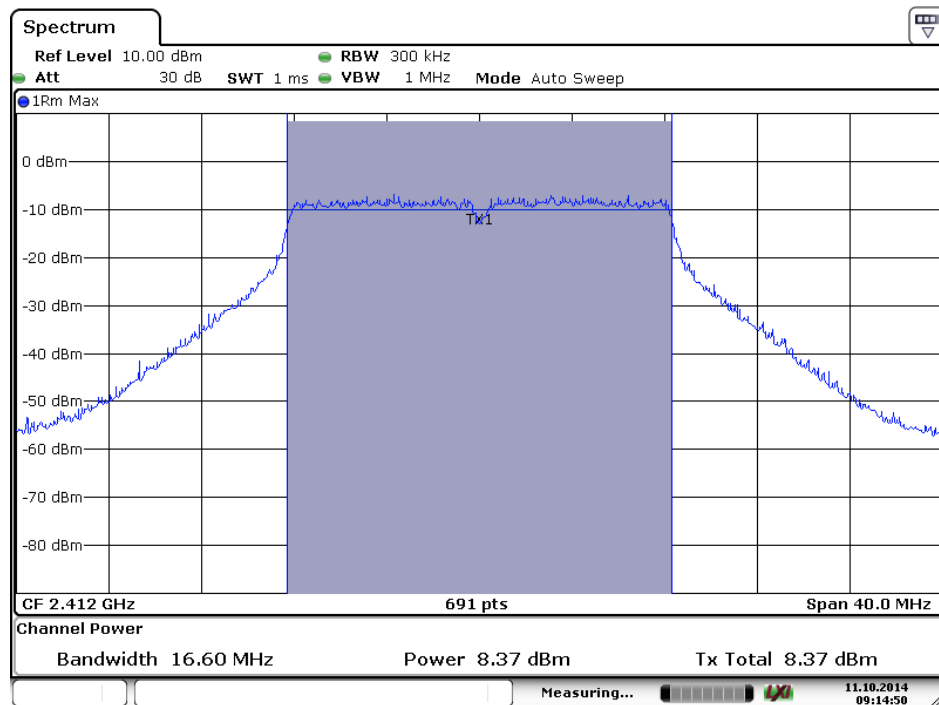
802.11b Channel Middle 2437MHz



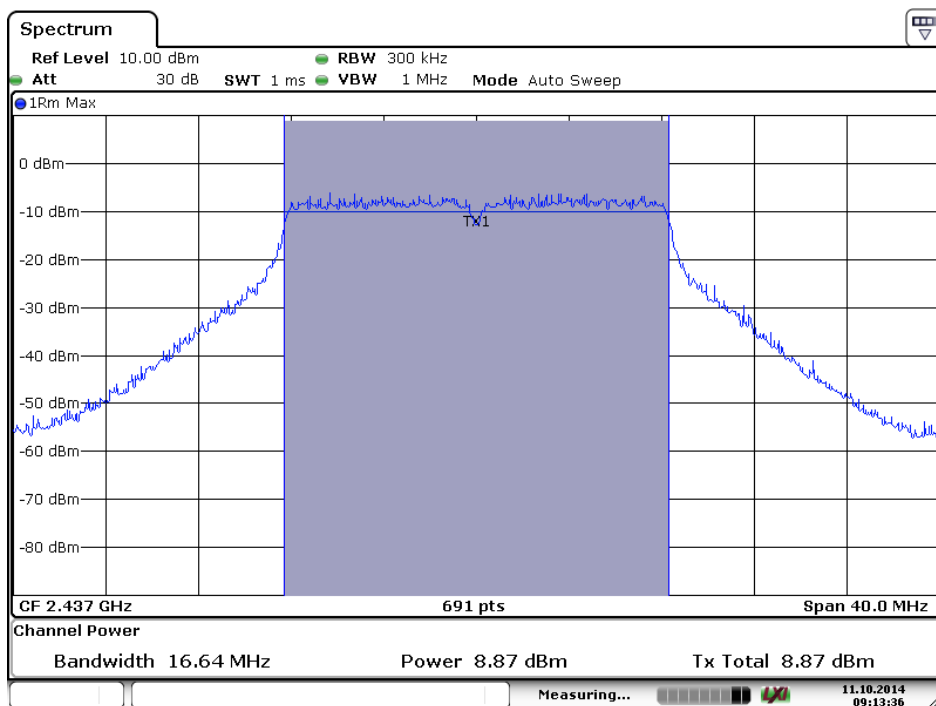
802.11b Channel High 2462MHz



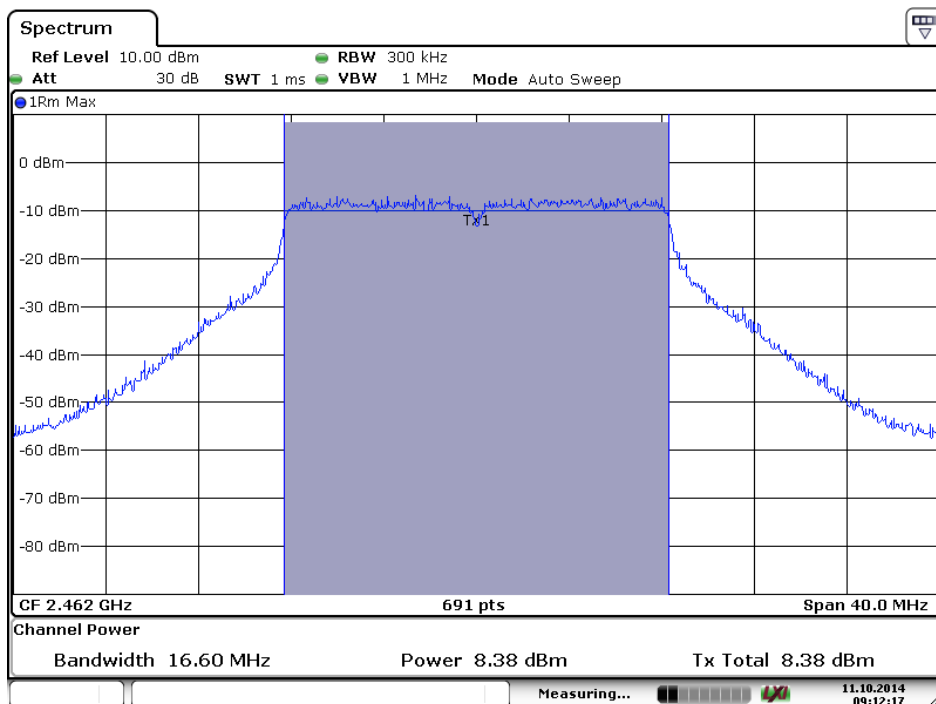
802.11g Channel Low 2412MHz



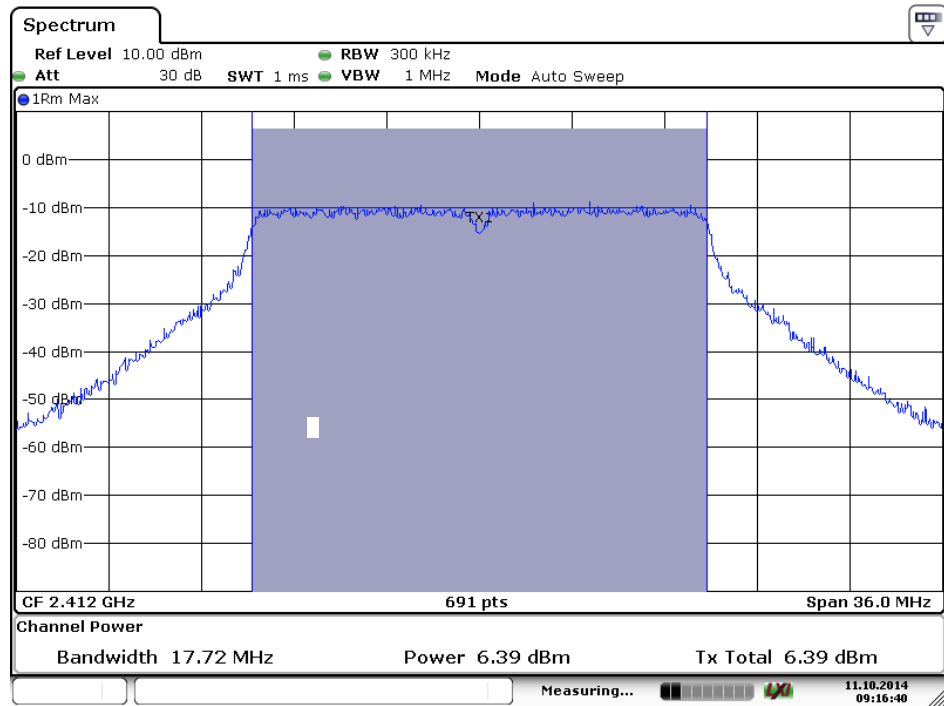
802.11g Channel Middle 2437MHz



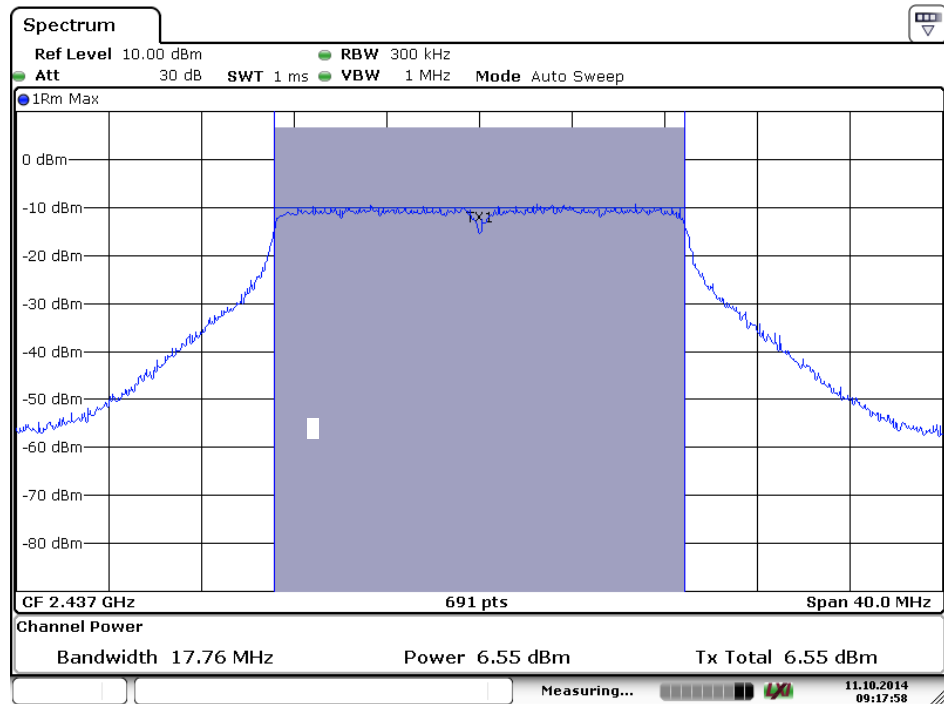
802.11g Channel High 2462MHz



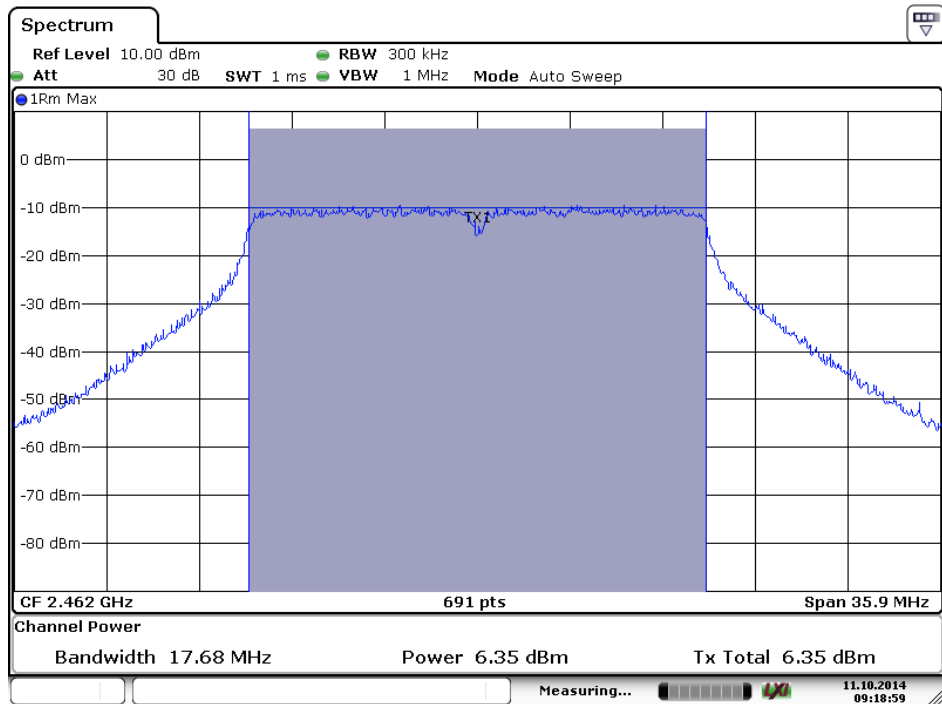
802.11n Channel Low 2412MHz (20MHz)



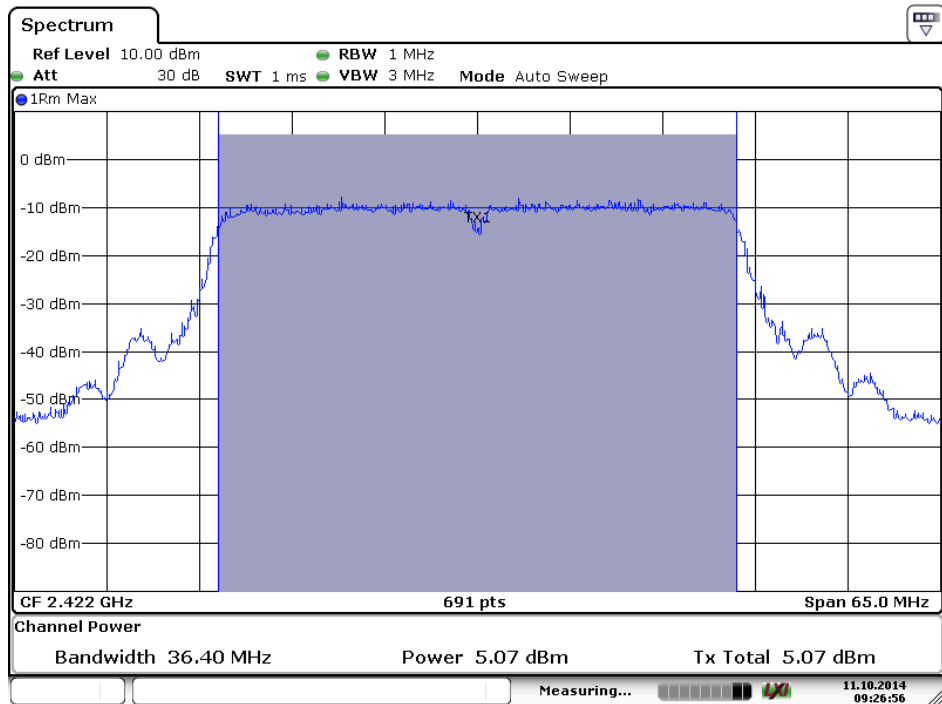
802.11n Channel Middle 2437MHz (20MHz)



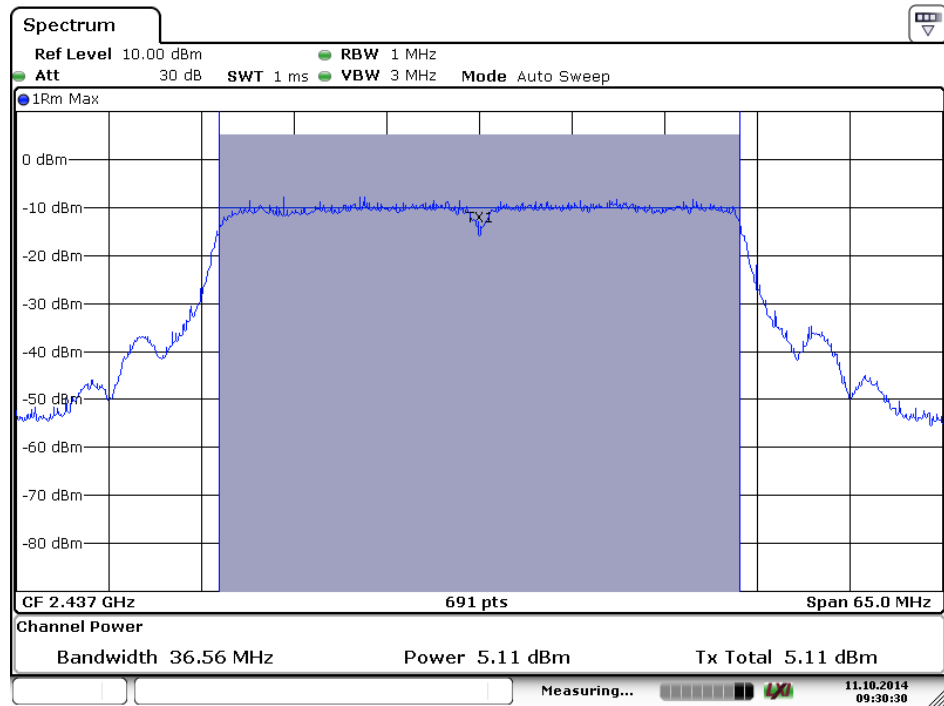
802.11n Channel High 2462MHz (20MHz)



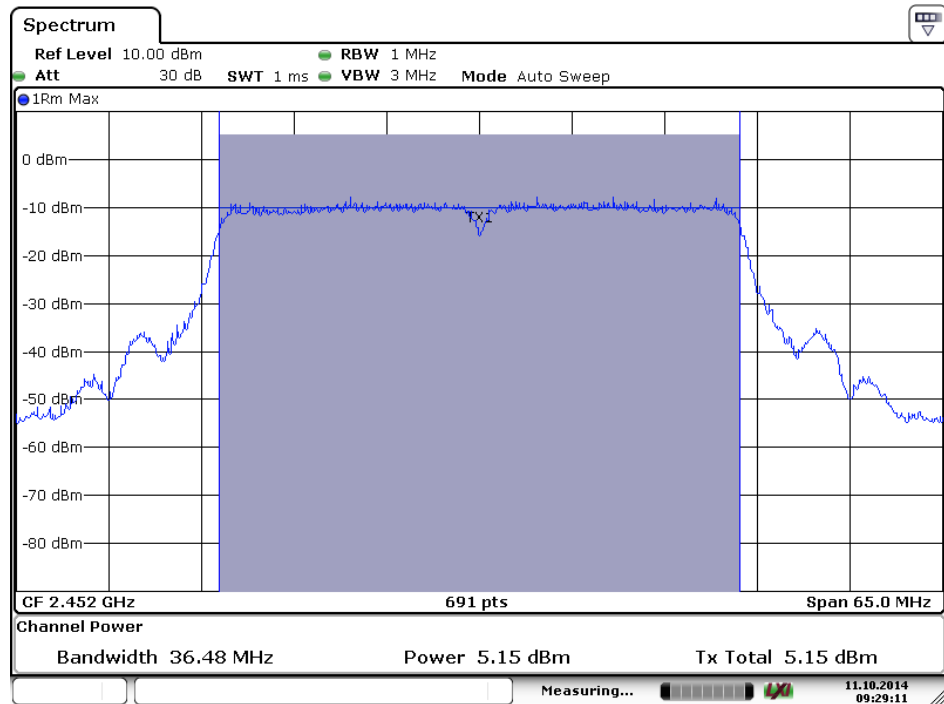
802.11n Channel Low 2422MHz (40MHz)



802.11n Channel Middle 2437MHz (40MHz)

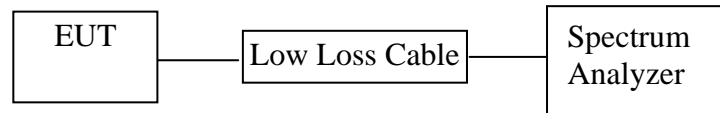


802.11n Channel High 2452MHz (40MHz)



7. POWER SPECTRAL DENSITY MEASUREMENT

7.1. Block Diagram of Test Setup



7.2. The Requirement For Section 15.247(e)

Section 15.247(e): For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

7.3. EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

7.4. Operating Condition of EUT

7.4.1. Setup the EUT and simulator as shown as Section 7.1.

7.4.2. Turn on the power of all equipment.

7.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

7.5. Test Procedure

7.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

7.5.2. Measurement Procedure PKPSD:

This procedure must be used if maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit, and is optional if the maximum (average) conducted output power was used to demonstrate compliance.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.

4. Set the VBW $\geq 3 \times$ RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

7.5.3.Measurement the maximum power spectral density.

7.6.Test Result

| The test was performed with 802.11b | | | |
|-------------------------------------|-----------------|------------------------------|--------------|
| Channel | Frequency (MHz) | Power Spectral Density (dBm) | Limits (dBm) |
| Low | 2412 | -18.77 | 8 dBm |
| Middle | 2437 | -19.25 | 8 dBm |
| High | 2462 | -18.04 | 8 dBm |

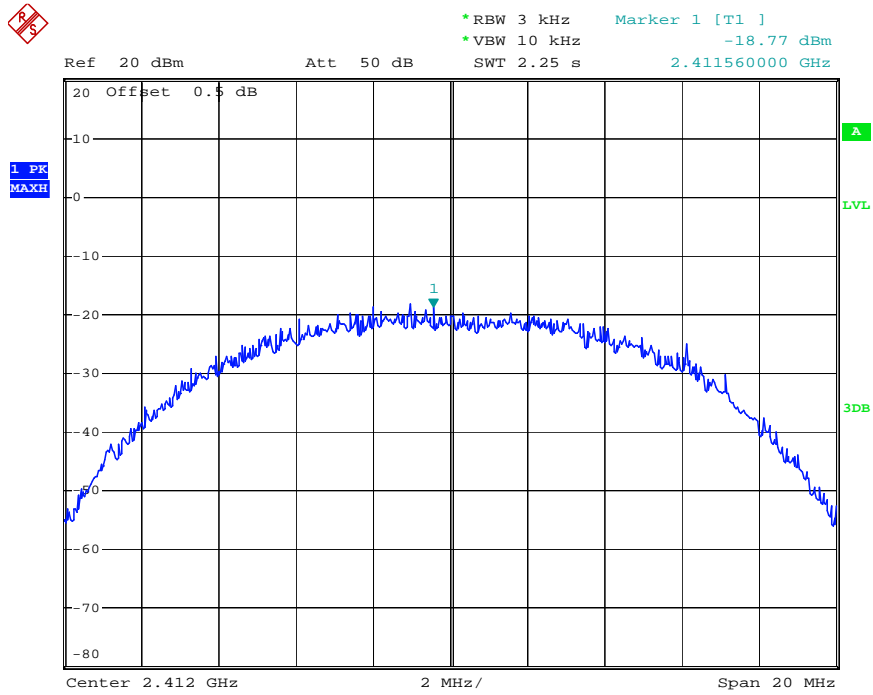
| The test was performed with 802.11g | | | |
|-------------------------------------|-----------------|------------------------------|--------------|
| Channel | Frequency (MHz) | Power Spectral Density (dBm) | Limits (dBm) |
| Low | 2412 | -26.29 | 8 dBm |
| Middle | 2437 | -24.60 | 8 dBm |
| High | 2462 | -25.98 | 8 dBm |

| The test was performed with 802.11n (20MHz) | | | |
|---|-----------------|------------------------------|--------------|
| Channel | Frequency (MHz) | Power Spectral Density (dBm) | Limits (dBm) |
| Low | 2412 | -24.90 | 8 dBm |
| Middle | 2437 | -24.33 | 8 dBm |
| High | 2462 | -25.90 | 8 dBm |

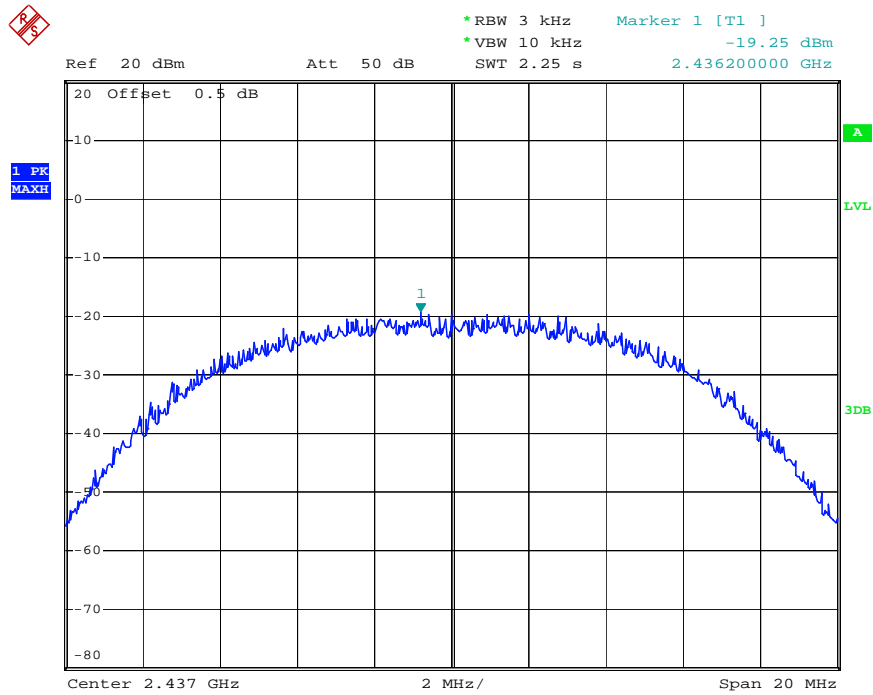
| The test was performed with 802.11n (40MHz) | | | |
|---|-----------------|------------------------------|--------------|
| Channel | Frequency (MHz) | Power Spectral Density (dBm) | Limits (dBm) |
| Low | 2422 | -31.31 | 8 dBm |
| Middle | 2437 | -33.02 | 8 dBm |
| High | 2452 | -31.22 | 8 dBm |

The spectrum analyzer plots are attached as below.

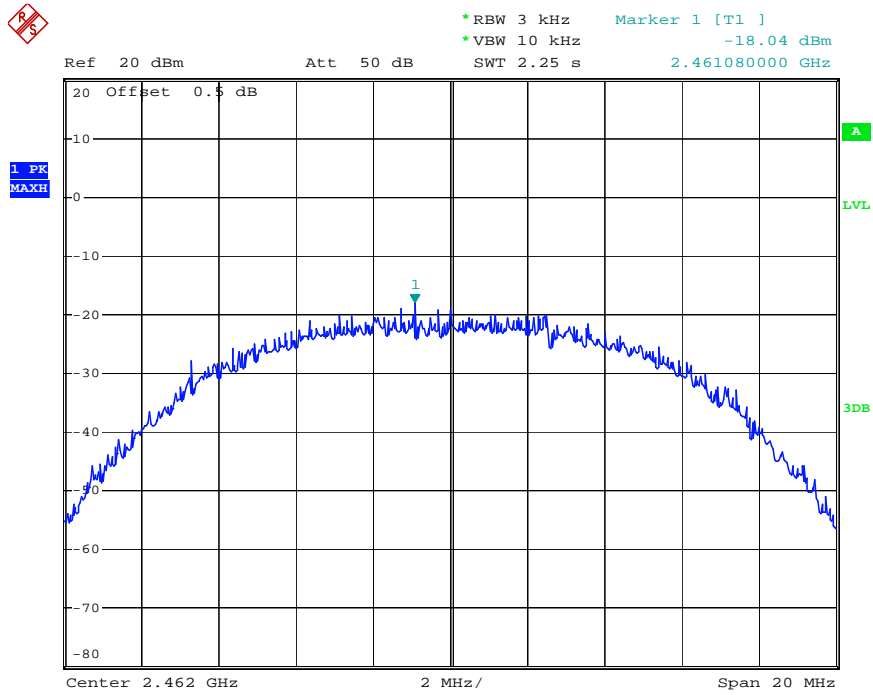
802.11b Channel Low 2412MHz



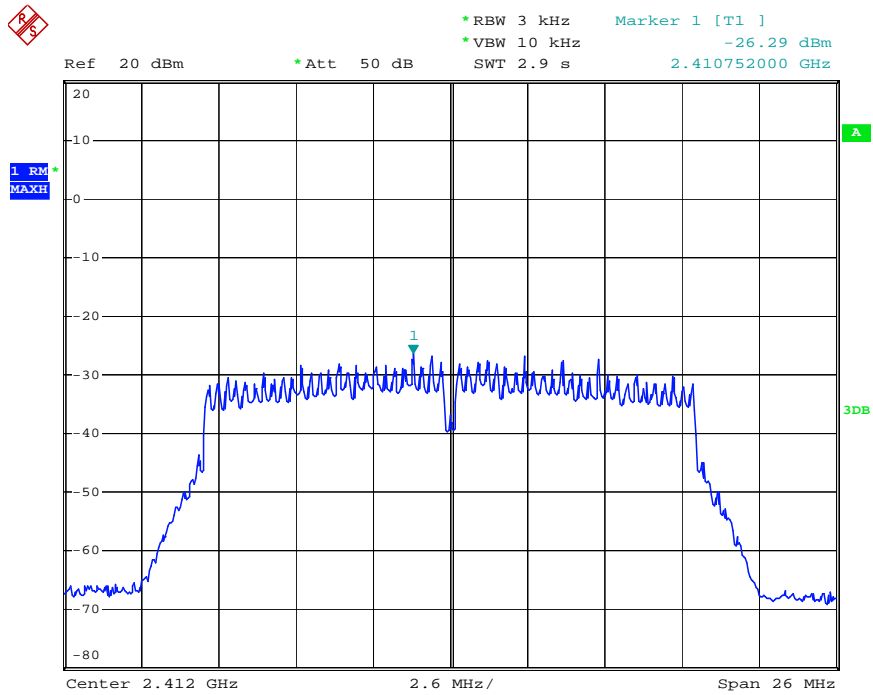
802.11b Channel Middle 2437MHz



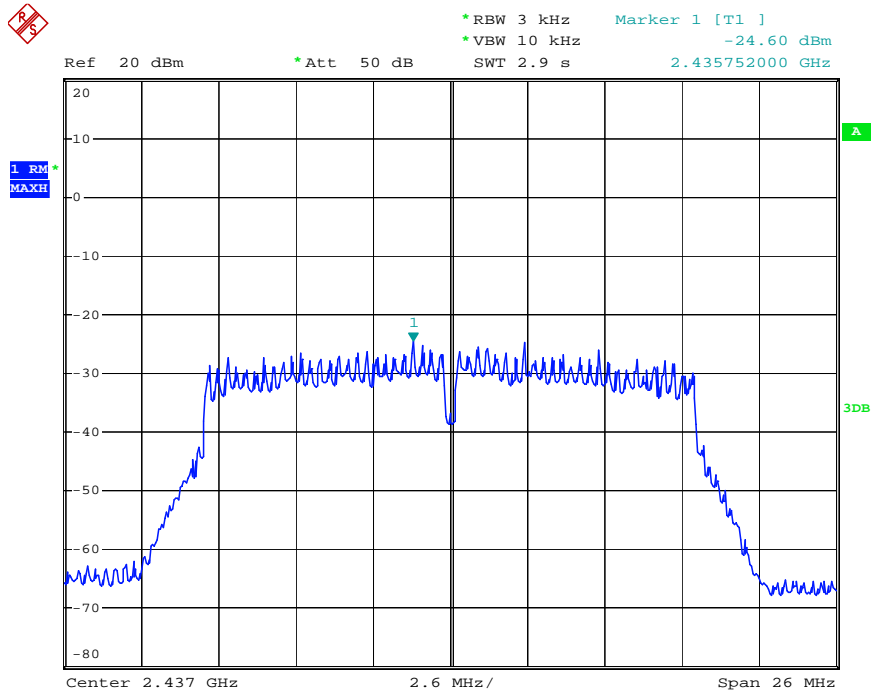
802.11b Channel High 2462MHz



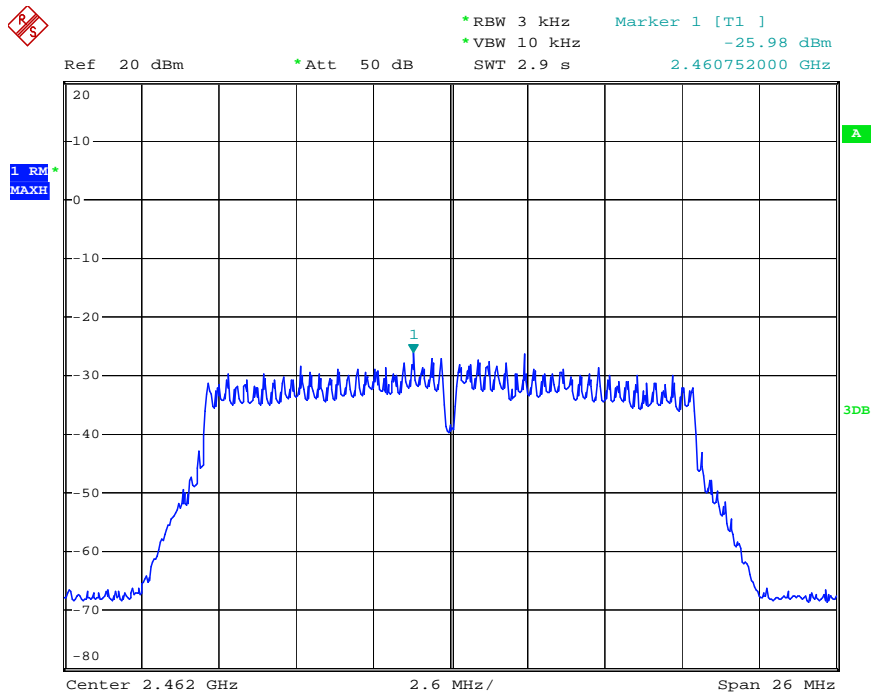
802.11g Channel Low 2412MHz



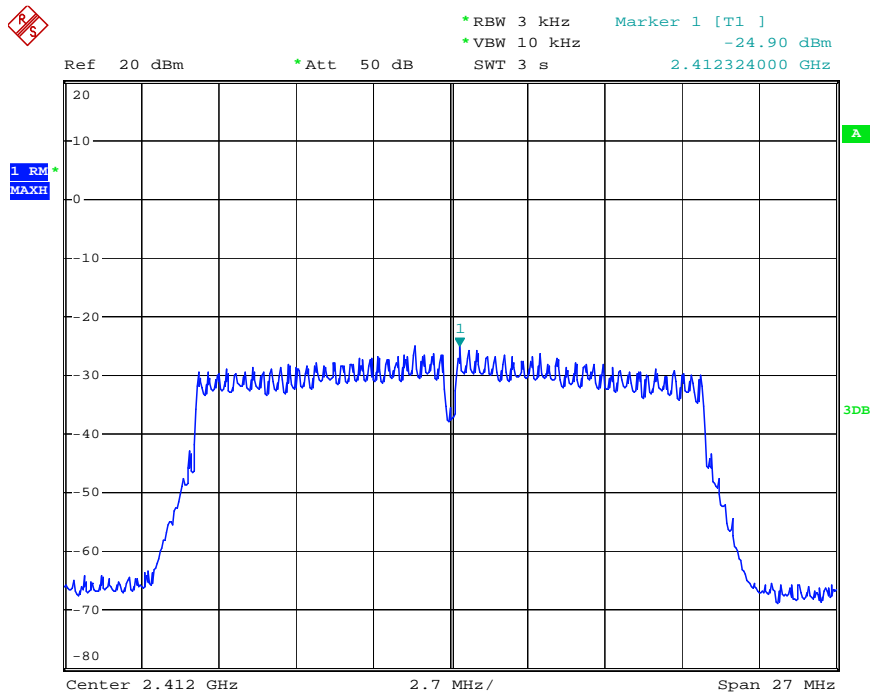
802.11g Channel Middle 2437MHz



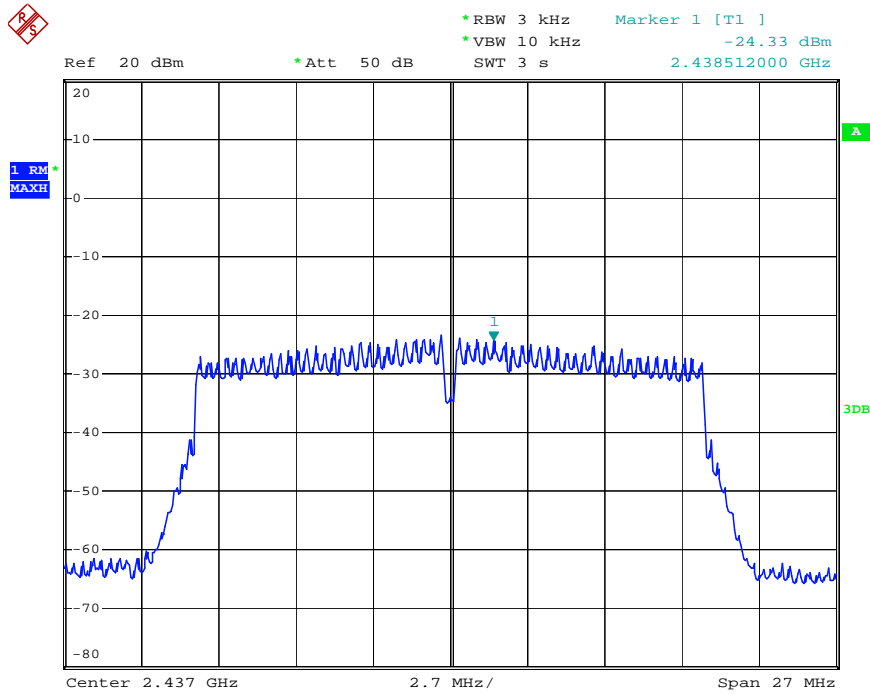
802.11g Channel High 2462MHz



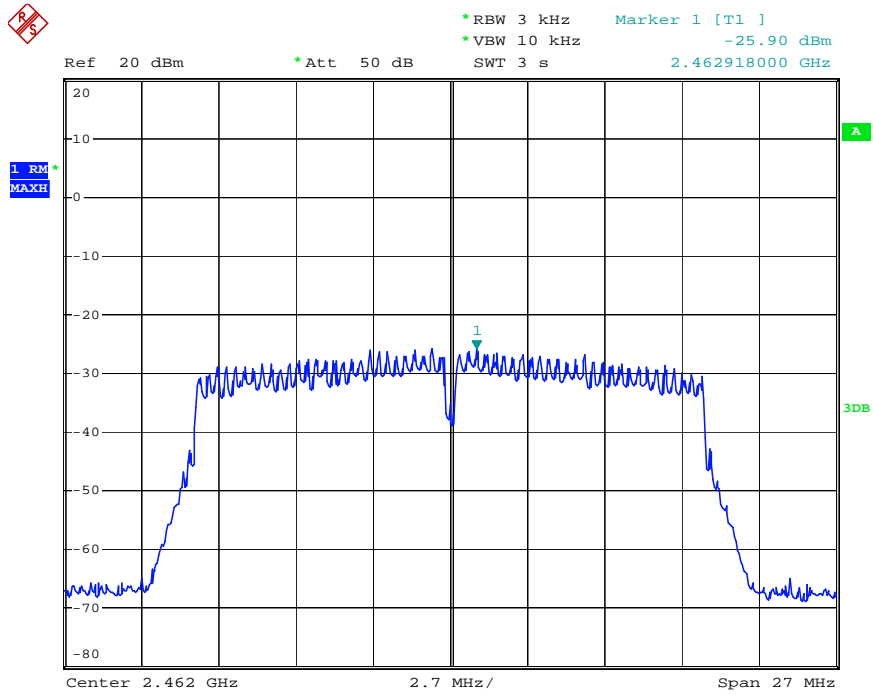
802.11n Channel Low 2412MHz (20MHz)



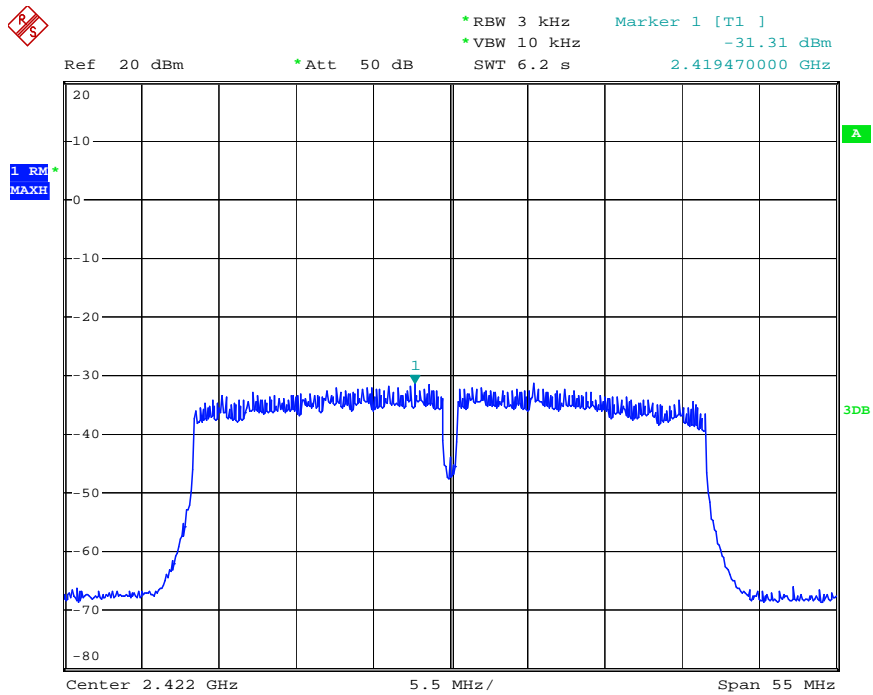
802.11n Channel Middle 2437MHz (20MHz)



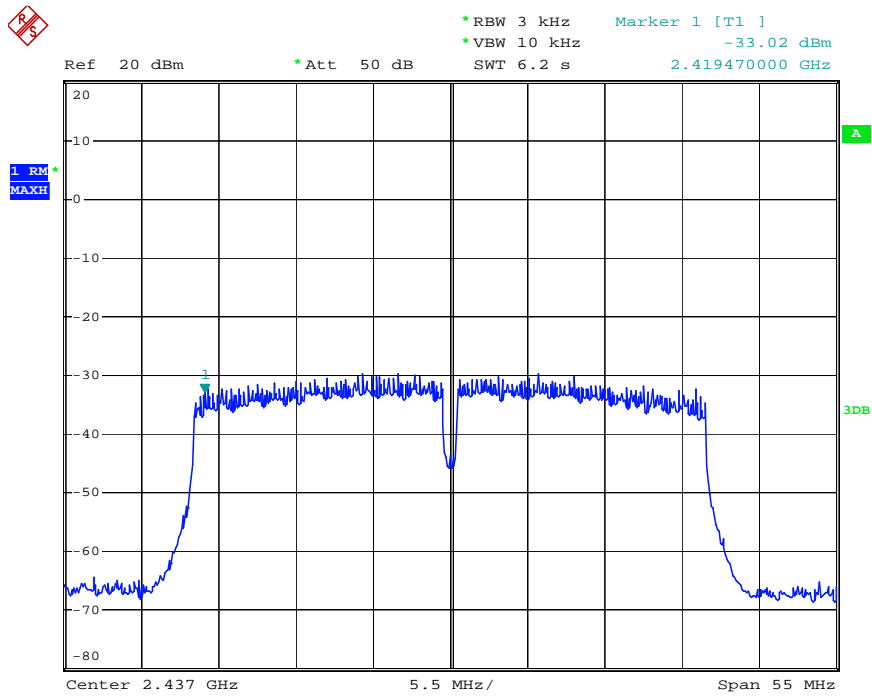
802.11n Channel High 2462MHz(20MHz)



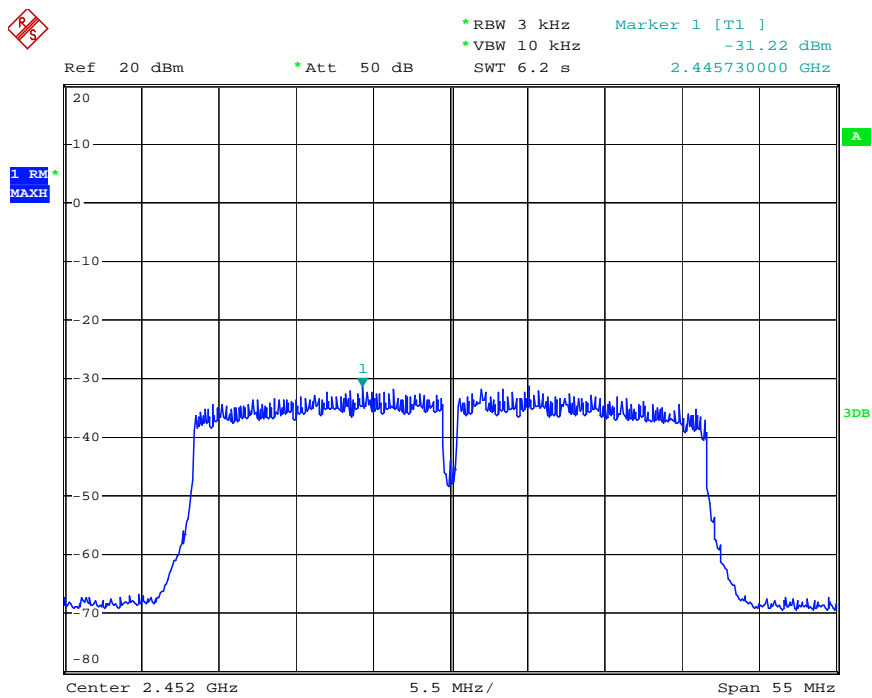
802.11n Channel Low 2422MHz (40MHz)



802.11n Channel Middle 2437MHz(40MHz)

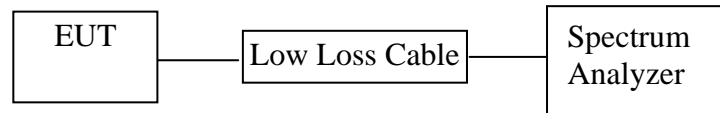


802.11n Channel High 2452MHz(40MHz)



8. BAND EDGE COMPLIANCE TEST

8.1. Block Diagram of Test Setup



8.2. The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

8.3. EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

8.4. Operating Condition of EUT

8.4.1. Setup the EUT and simulator as shown as Section 8.1.

8.4.2. Turn on the power of all equipment.

8.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz MHz. We select 2412MHz, 2462MHz and 2422MHz, 2452MHz TX frequency to transmit.

8.5. Test Procedure

Conducted Band Edge:

8.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.

8.5.2. Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz.

Radiate Band Edge:

8.5.3. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.

8.5.4. The turntable was rotated for 360 degrees to determine the position of maximum emission level.

8.5.5. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

8.5.6. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

Set RBW (1 MHz), VBW (3MHz) for Peak detector measurement, RBW (1 MHz), VBW (10Hz) for AV measurement.

8.5.7. The band edges was measured and recorded.

8.6. Test Result

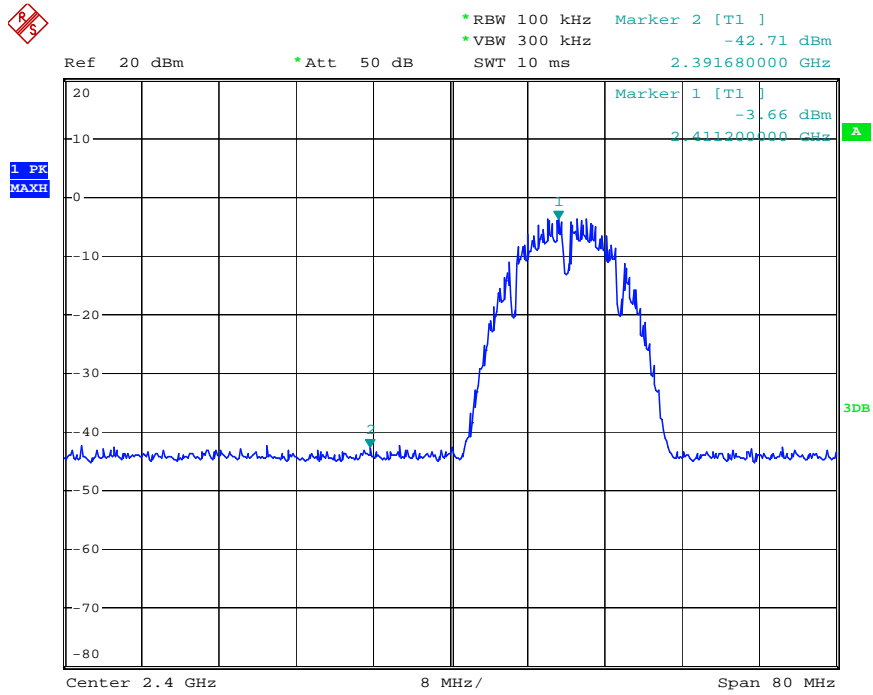
| The test was performed with 802.11b | | |
|-------------------------------------|---------------------------|--------------------------|
| Frequency (MHz) | Result of Band Edge (dBc) | Limit of Band Edge (dBc) |
| 2412 | 39.05 | > 20dBc |
| 2462 | 38.49 | > 20dBc |

| The test was performed with 802.11g | | |
|-------------------------------------|---------------------------|--------------------------|
| Frequency (MHz) | Result of Band Edge (dBc) | Limit of Band Edge (dBc) |
| 2412 | 36.34 | > 20dBc |
| 2462 | 38.26 | > 20dBc |

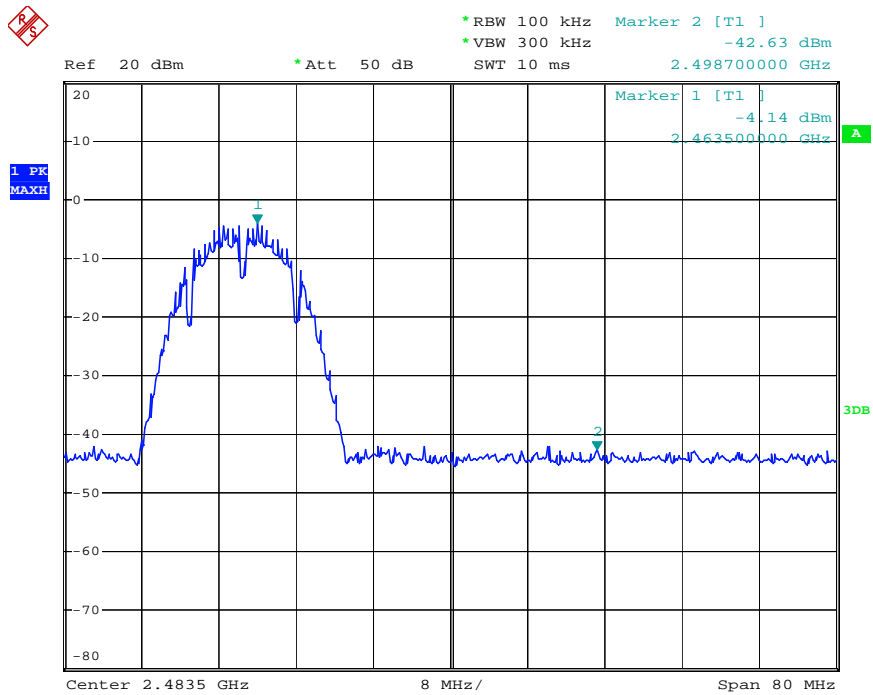
| The test was performed with 802.11n (20MHz) | | |
|---|---------------------------|--------------------------|
| Frequency (MHz) | Result of Band Edge (dBc) | Limit of Band Edge (dBc) |
| 2412 | 34.73 | > 20dBc |
| 2462 | 36.92 | > 20dBc |

| The test was performed with 802.11n (40MHz) | | |
|---|---------------------------|--------------------------|
| Frequency (MHz) | Result of Band Edge (dBc) | Limit of Band Edge (dBc) |
| 2422 | 32.75 | > 20dBc |
| 2452 | 34.60 | > 20dBc |

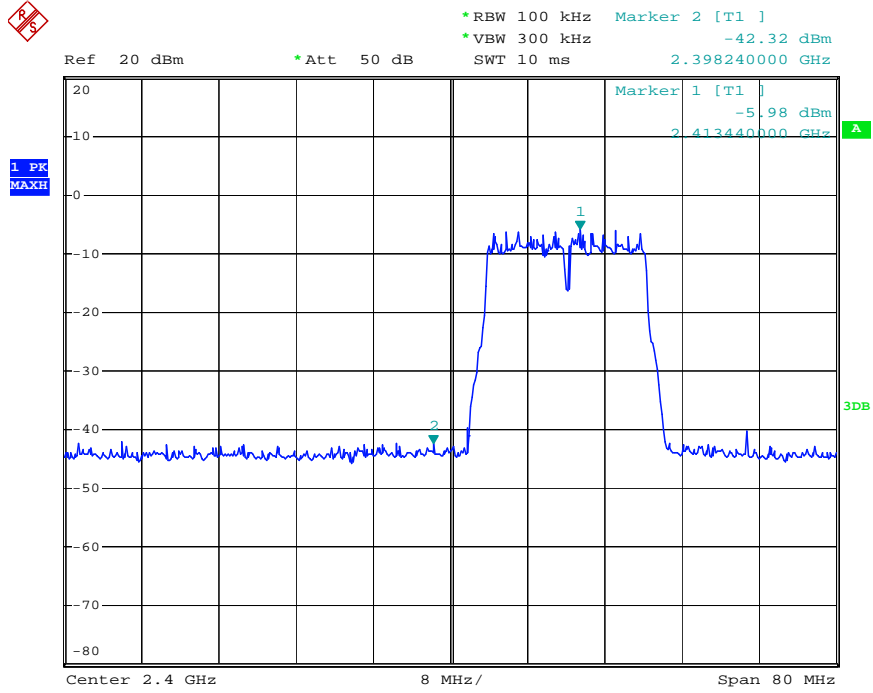
802.11b Channel Low 2412MHz



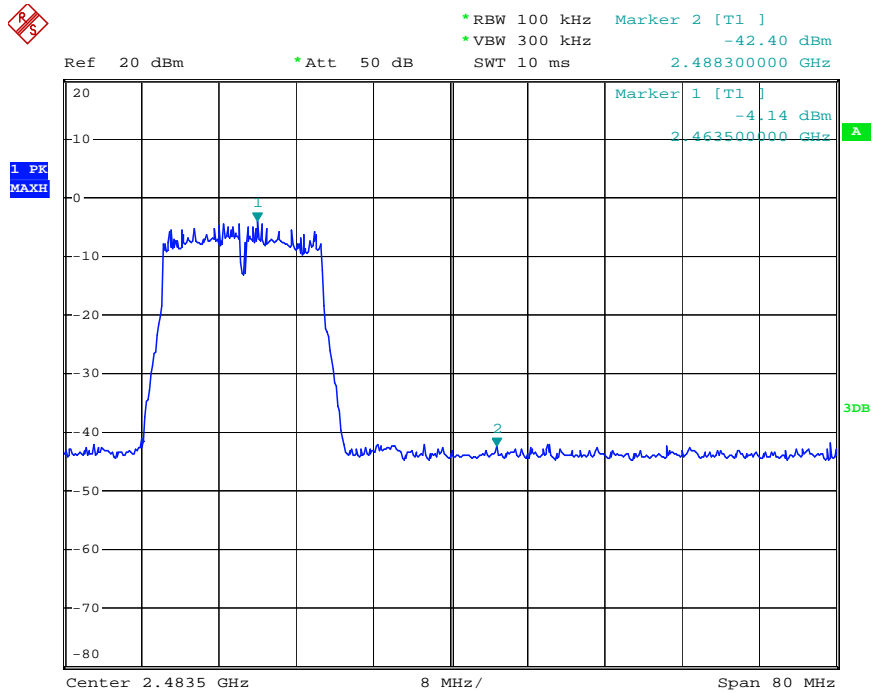
802.11b Channel High 2462MHz



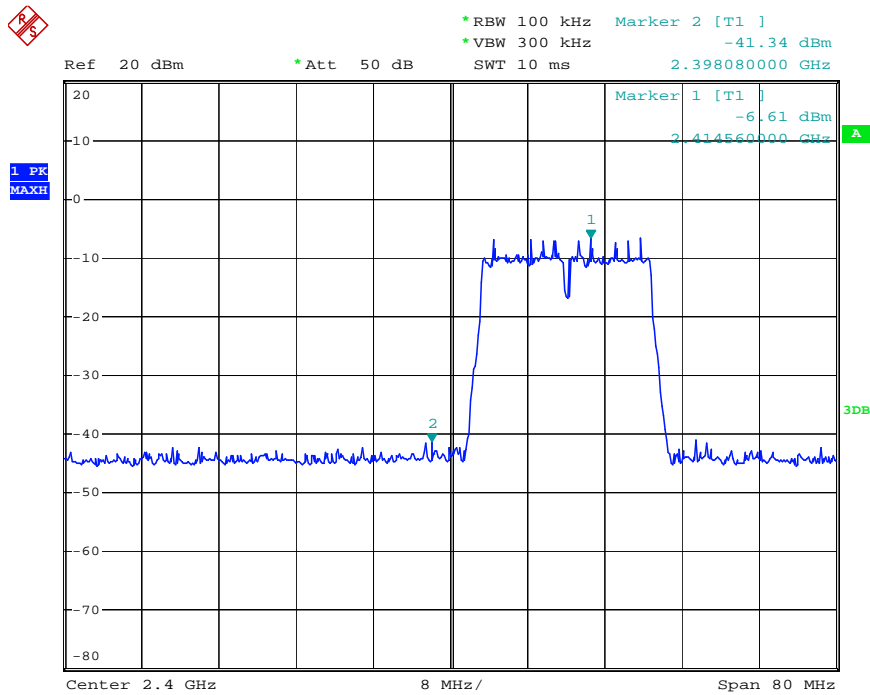
802.11g Channel Low 2412MHz



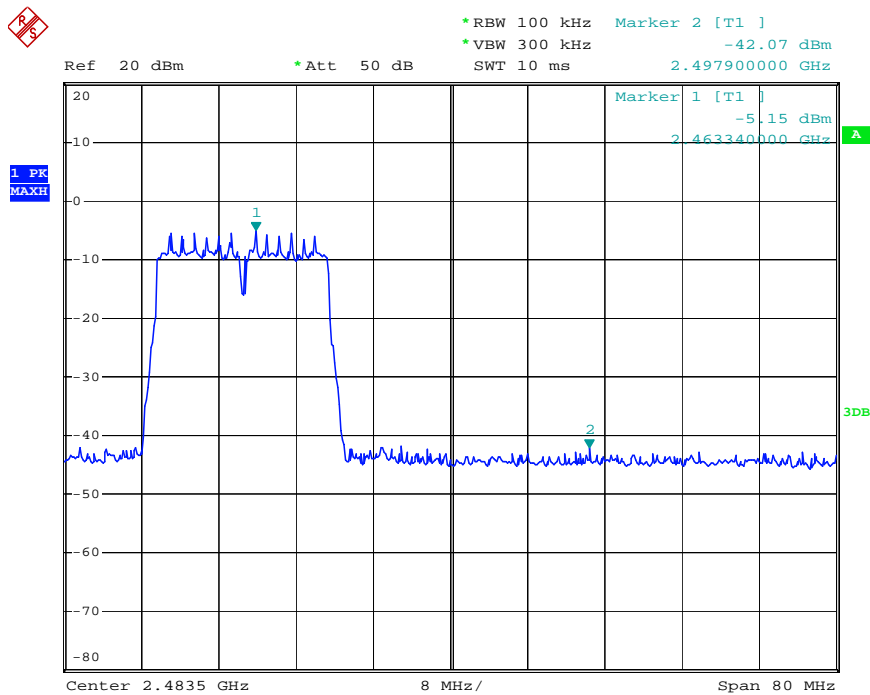
802.11g Channel High 2462MHz



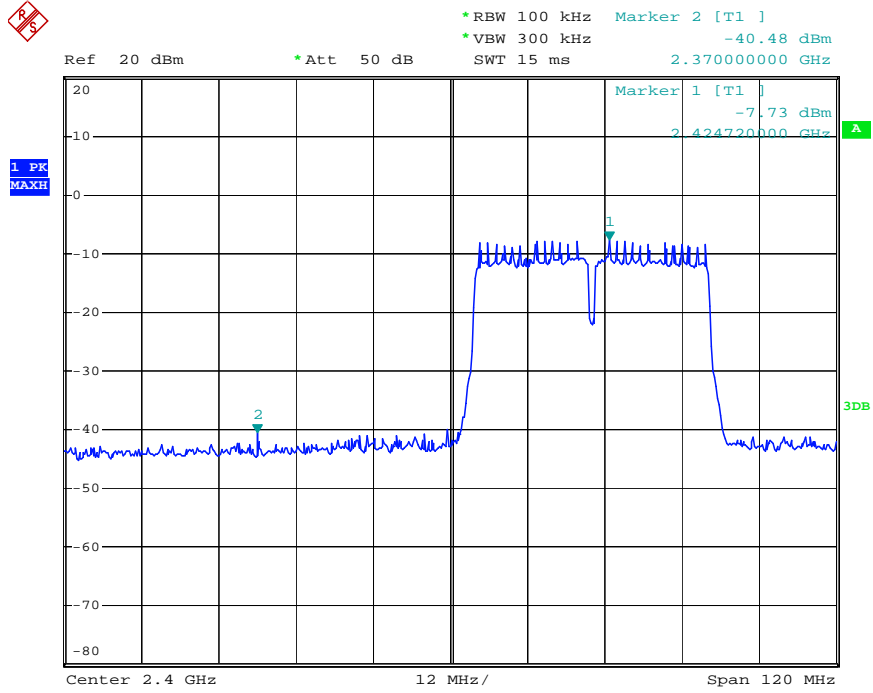
802.11n Channel Low 2412MHz (20MHz)



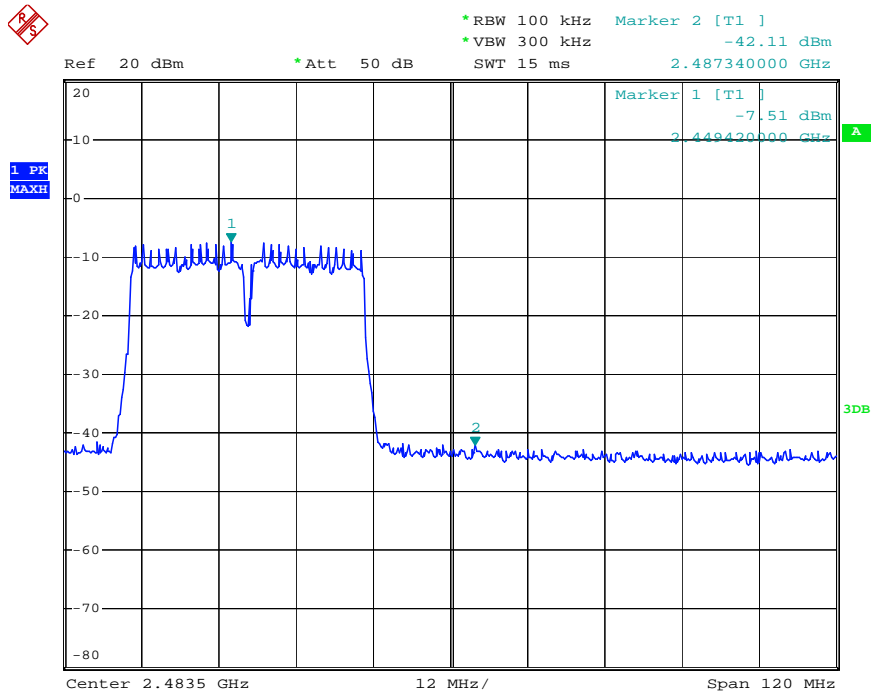
802.11n Channel High 2462MHz (20MHz)



802.11n Channel Low 2422MHz (40MHz)



802.11n Channel High 2452MHz (40MHz)



Radiated Band Edge Result

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

3. Display the measurement of peak values.



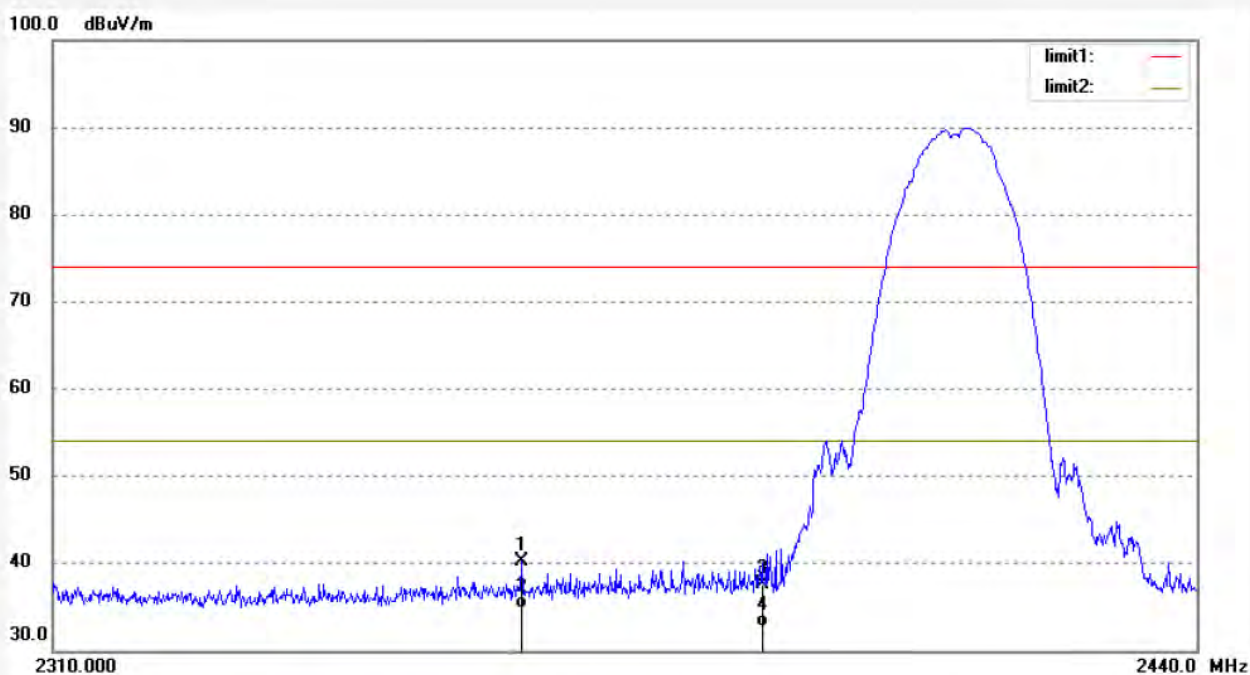
ACCURATE TECHNOLOGY CO., LTD.

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

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|-------------------------------------|--------------------------|
| Job No.: ricky #2609 | Polarization: Horizontal |
| Standard: FCC PK | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 16/33/06 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: |
| Mode: TX 2412MHz(802.11b) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2362.520 | 48.08 | -7.76 | 40.32 | 74.00 | -33.68 | peak | | | |
| 2 | 2362.520 | 42.52 | -7.76 | 34.76 | 54.00 | -19.24 | AVG | | | |
| 3 | 2390.000 | 45.25 | -7.57 | 37.68 | 74.00 | -36.32 | peak | | | |
| 4 | 2390.000 | 40.21 | -7.57 | 32.64 | 54.00 | -21.36 | AVG | | | |



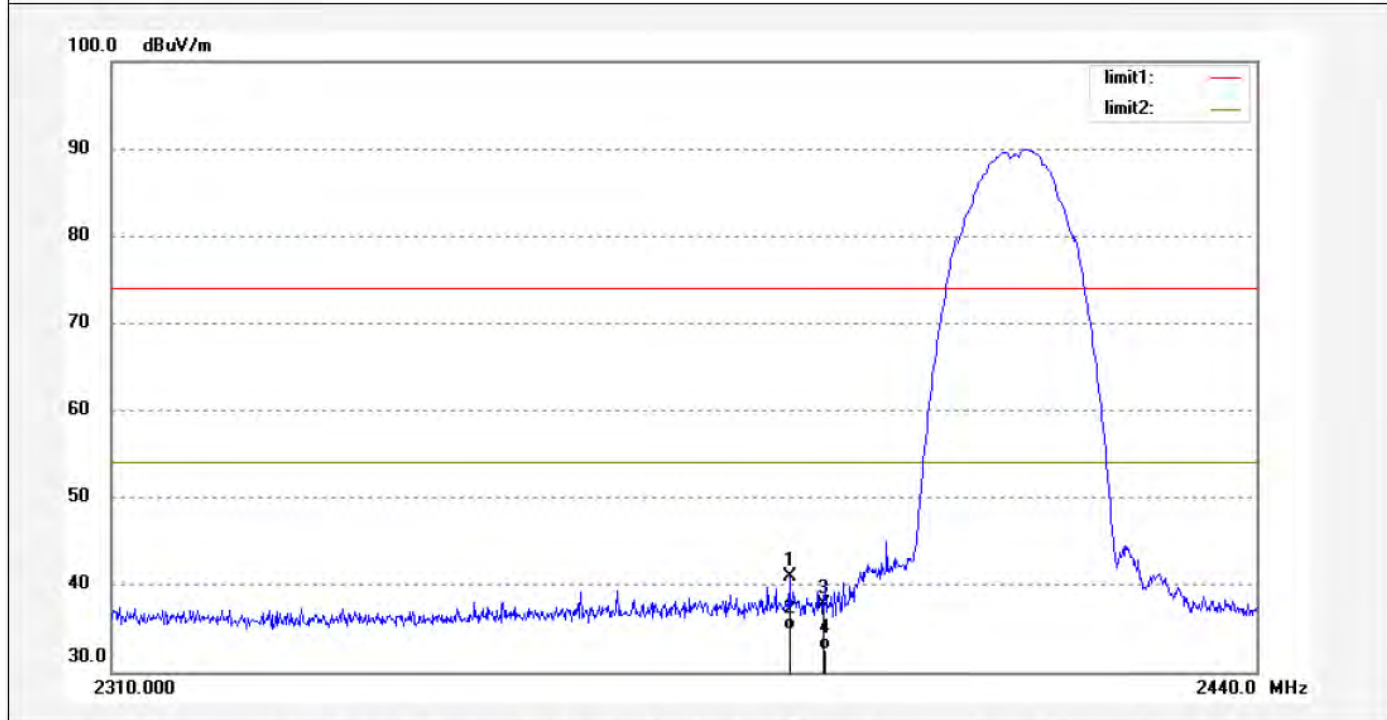
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| | |
|-------------------------------------|------------------------|
| Job No.: ricky #2610 | Polarization: Vertical |
| Standard: FCC PK | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 16/37/01 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: |
| Mode: TX 2412MHz(802.11b) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2386.180 | 48.47 | -7.61 | 40.86 | 74.00 | -33.14 | peak | | | |
| 2 | 2386.180 | 42.49 | -7.61 | 34.88 | 54.00 | -19.12 | AVG | | | |
| 3 | 2390.000 | 45.41 | -7.57 | 37.84 | 74.00 | -36.16 | peak | | | |
| 4 | 2390.000 | 40.11 | -7.57 | 32.54 | 54.00 | -21.46 | AVG | | | |



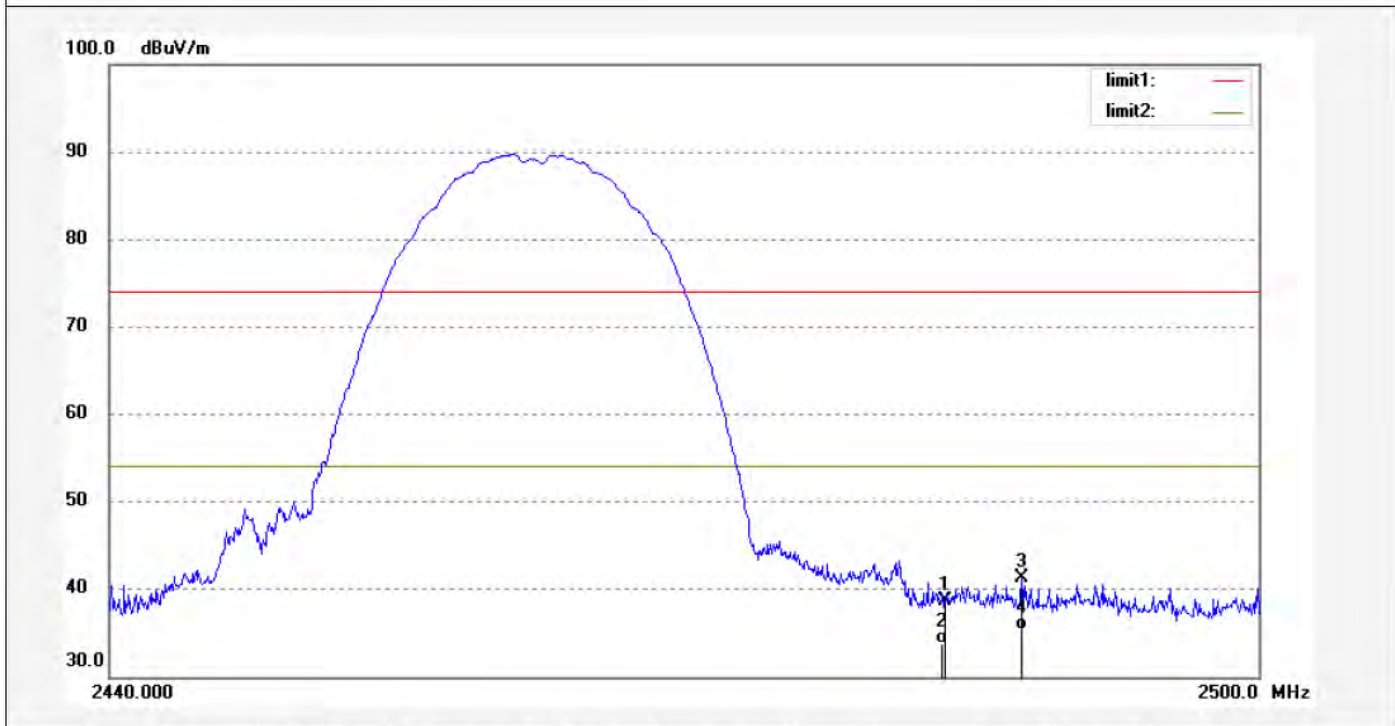
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Site: 1# Chamber
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| | |
|-------------------------------------|------------------------|
| Job No.: ricky #2611 | Polarization: Vertical |
| Standard: FCC PK | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 16/41/59 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: |
| Mode: TX 2462MHz(802.11b) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2483.500 | 46.03 | -7.38 | 38.65 | 74.00 | -35.35 | peak | | | |
| 2 | 2483.500 | 41.22 | -7.38 | 33.84 | 54.00 | -20.16 | AVG | | | |
| 3 | 2487.580 | 48.70 | -7.38 | 41.32 | 74.00 | -32.68 | peak | | | |
| 4 | 2487.580 | 42.67 | -7.38 | 35.29 | 54.00 | -18.71 | AVG | | | |



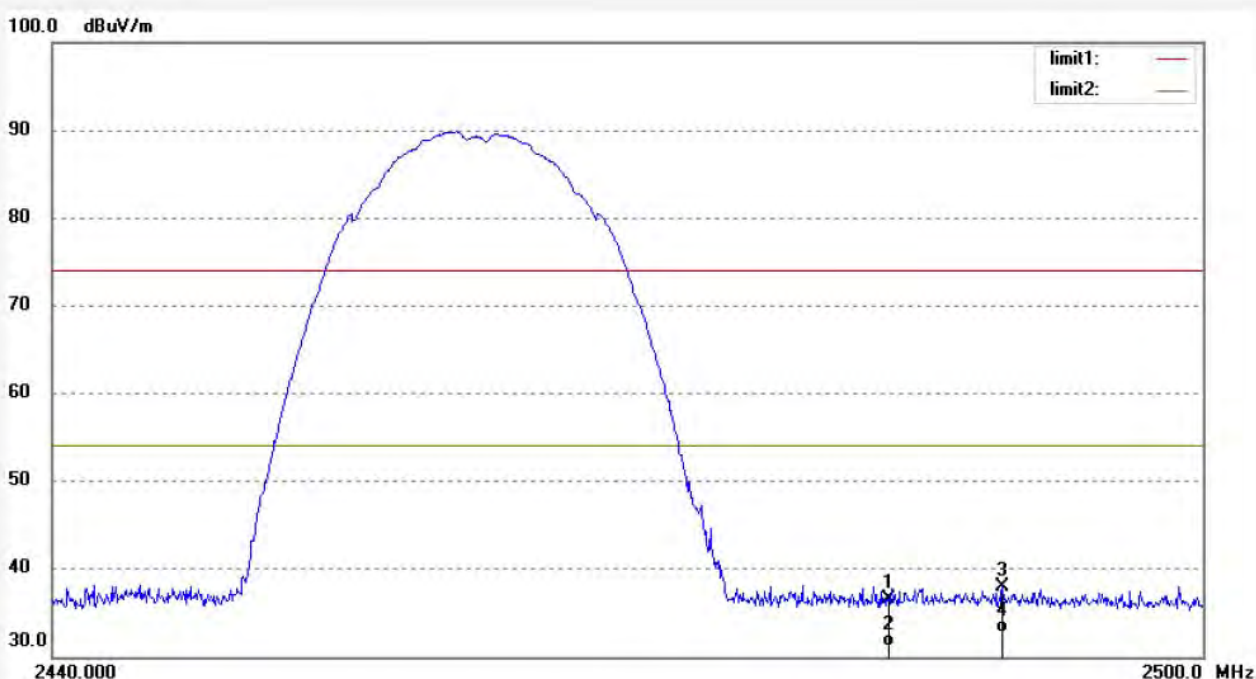
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Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|-------------------------------------|--------------------------|
| Job No.: ricky #2612 | Polarization: Horizontal |
| Standard: FCC PK | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 16/46/35 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: |
| Mode: TX 2462MHz(802.11b) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2483.500 | 43.90 | -7.38 | 36.52 | 74.00 | -37.48 | peak | | | |
| 2 | 2483.500 | 38.55 | -7.38 | 31.17 | 54.00 | -22.83 | AVG | | | |
| 3 | 2489.500 | 45.30 | -7.39 | 37.91 | 74.00 | -36.09 | peak | | | |
| 4 | 2489.500 | 40.13 | -7.39 | 32.74 | 54.00 | -21.26 | AVG | | | |



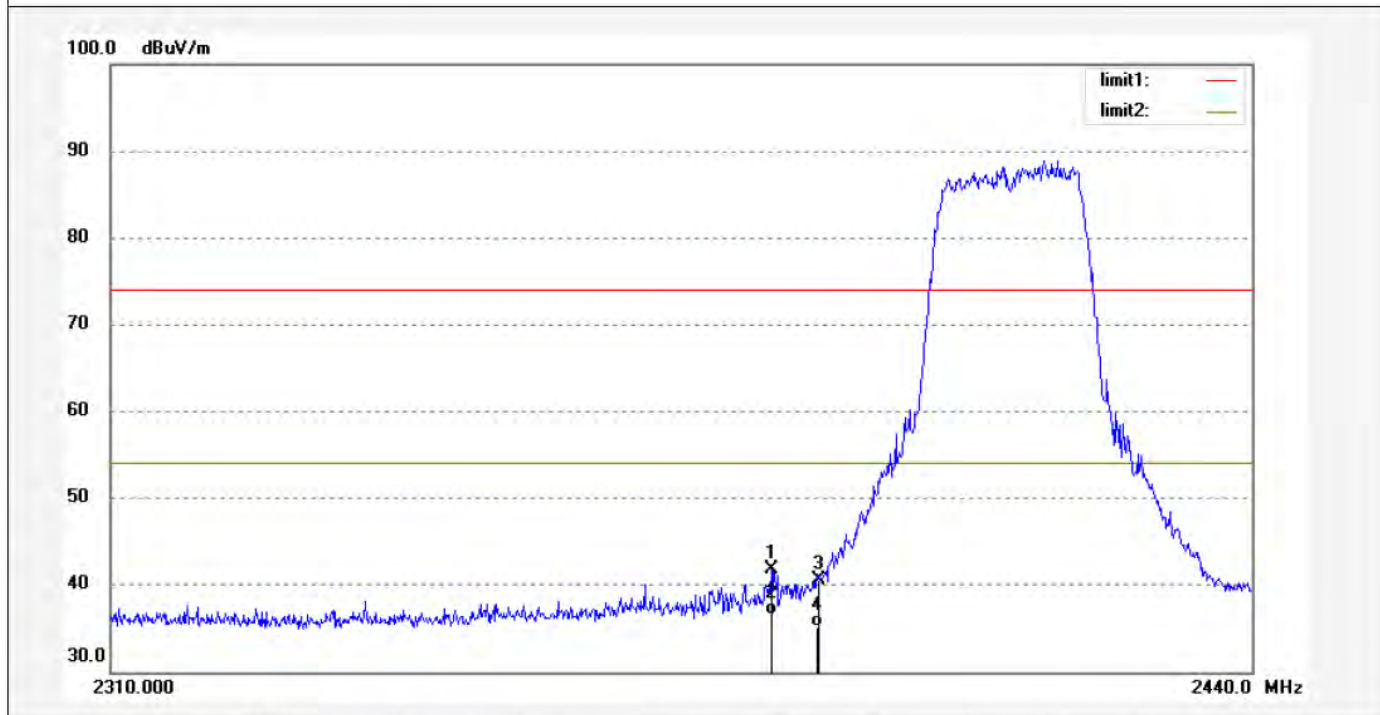
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Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|-------------------------------------|------------------------|
| Job No.: ricky #2615 | Polarization: Vertical |
| Standard: FCC PK | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 16/58/20 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: |
| Mode: TX 2412MHz(802.11g) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2384.490 | 49.35 | -7.61 | 41.74 | 74.00 | -32.26 | peak | | | |
| 2 | 2384.490 | 44.22 | -7.61 | 36.61 | 54.00 | -17.39 | AVG | | | |
| 3 | 2390.000 | 48.17 | -7.57 | 40.60 | 74.00 | -33.40 | peak | | | |
| 4 | 2390.000 | 42.78 | -7.57 | 35.21 | 54.00 | -18.79 | AVG | | | |



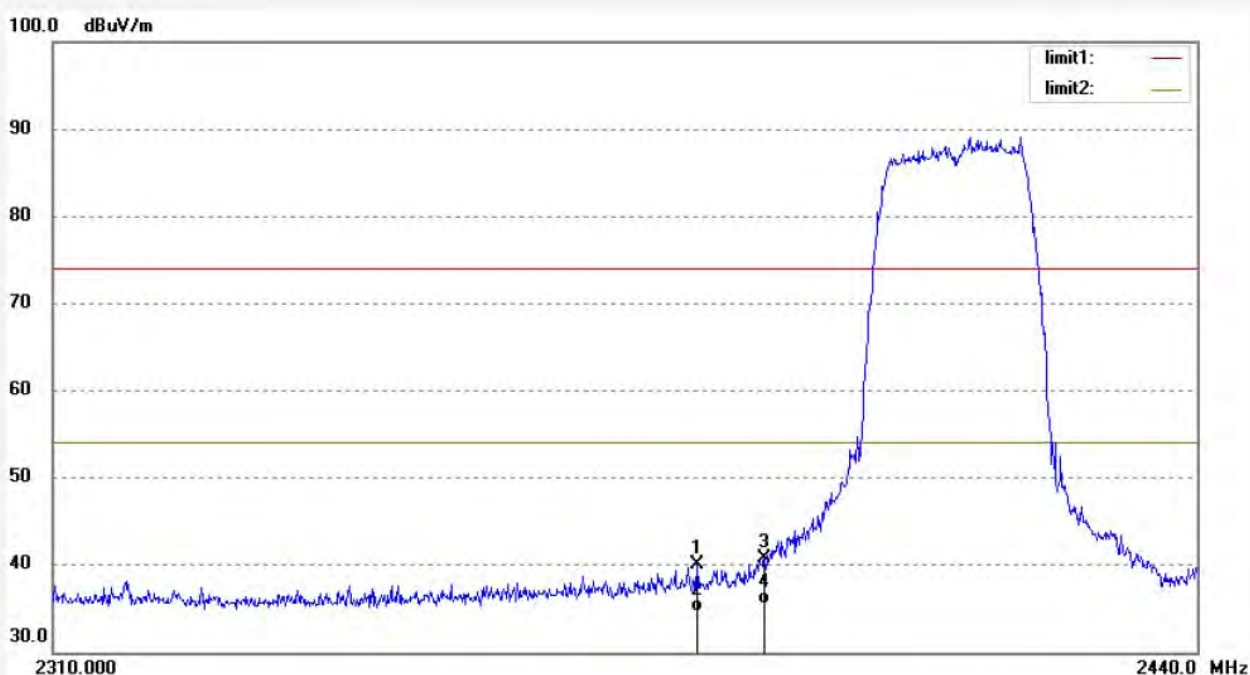
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|-------------------------------------|--------------------------|
| Job No.: ricky #2616 | Polarization: Horizontal |
| Standard: FCC PK | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 17/01/02 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: |
| Mode: TX 2412MHz(802.11g) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2382.410 | 47.78 | -7.63 | 40.15 | 74.00 | -33.85 | peak | | | |
| 2 | 2382.410 | 42.33 | -7.63 | 34.70 | 54.00 | -19.30 | AVG | | | |
| 3 | 2390.000 | 48.25 | -7.57 | 40.68 | 74.00 | -33.32 | peak | | | |
| 4 | 2390.000 | 43.10 | -7.57 | 35.53 | 54.00 | -18.47 | AVG | | | |


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Job No.: ricky #2614

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: 150M Mini Wireless USB Adapter

Mode: TX 2462MHz(802.11g)

Model: WU110K

Manufacturer: HAOLIYUAN

Polarization: Vertical

Power Source: DC 5V

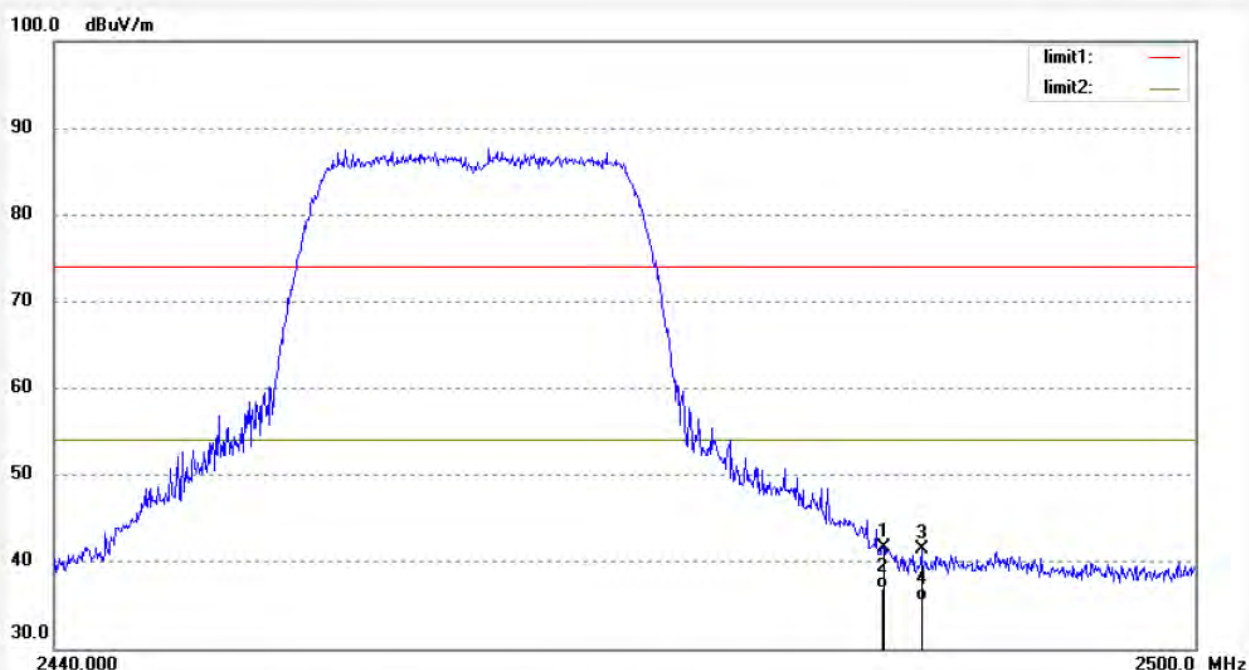
Date: 2014/09/21

Time: 16/54/42

Engineer Signature:

Distance: 3m

Note: Report No:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2483.500 | 49.05 | -7.38 | 41.67 | 74.00 | -32.33 | peak | | | |
| 2 | 2483.500 | 44.27 | -7.38 | 36.89 | 54.00 | -17.11 | AVG | | | |
| 3 | 2485.480 | 48.83 | -7.39 | 41.44 | 74.00 | -32.56 | peak | | | |
| 4 | 2485.480 | 42.92 | -7.39 | 35.53 | 54.00 | -18.47 | AVG | | | |



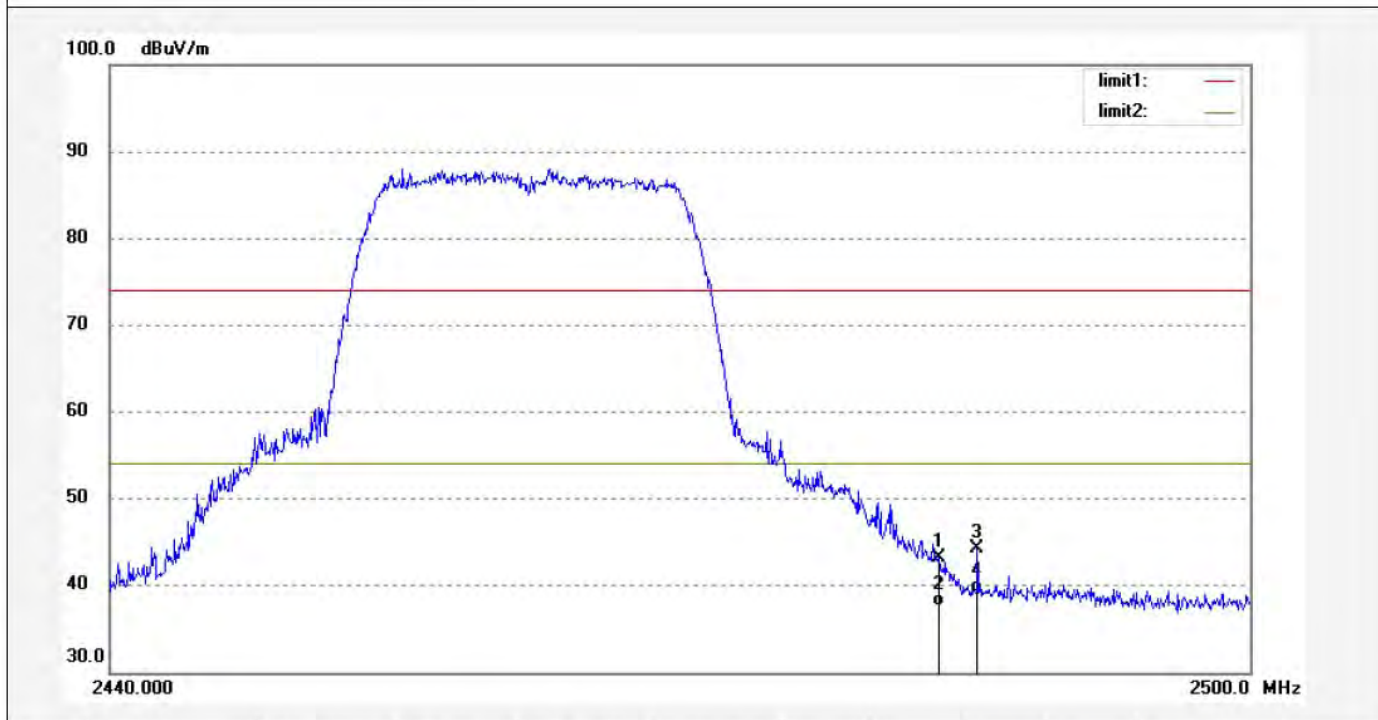
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| | |
|-------------------------------------|--------------------------|
| Job No.: ricky #2613 | Polarization: Horizontal |
| Standard: FCC PK | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 16/51/48 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: |
| Mode: TX 2462MHz(802.11g) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2483.500 | 50.66 | -7.38 | 43.28 | 74.00 | -30.72 | peak | | | |
| 2 | 2483.500 | 44.98 | -7.38 | 37.60 | 54.00 | -16.40 | AVG | | | |
| 3 | 2485.540 | 51.58 | -7.39 | 44.19 | 74.00 | -29.81 | peak | | | |
| 4 | 2485.540 | 46.59 | -7.39 | 39.20 | 54.00 | -14.80 | AVG | | | |



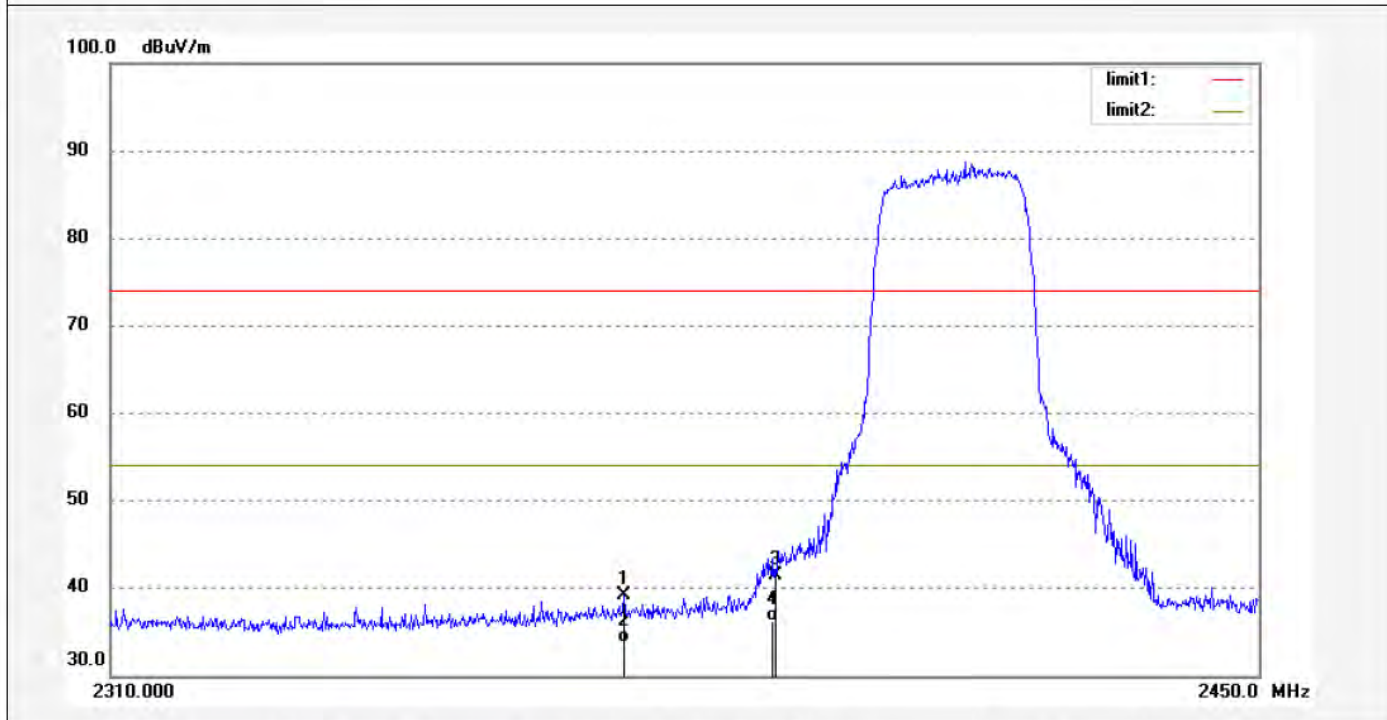
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Site: 1# Chamber
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| | |
|-------------------------------------|--------------------------|
| Job No.: ricky #2617 | Polarization: Horizontal |
| Standard: FCC PK | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 17/06/58 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: |
| Mode: TX 2412MHz(802.11n20) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2371.600 | 46.81 | -7.69 | 39.12 | 74.00 | -34.88 | peak | | | |
| 2 | 2371.600 | 41.38 | -7.69 | 33.69 | 54.00 | -20.31 | AVG | | | |
| 3 | 2390.000 | 49.07 | -7.57 | 41.50 | 74.00 | -32.50 | peak | | | |
| 4 | 2390.000 | 43.81 | -7.57 | 36.24 | 54.00 | -17.76 | AVG | | | |



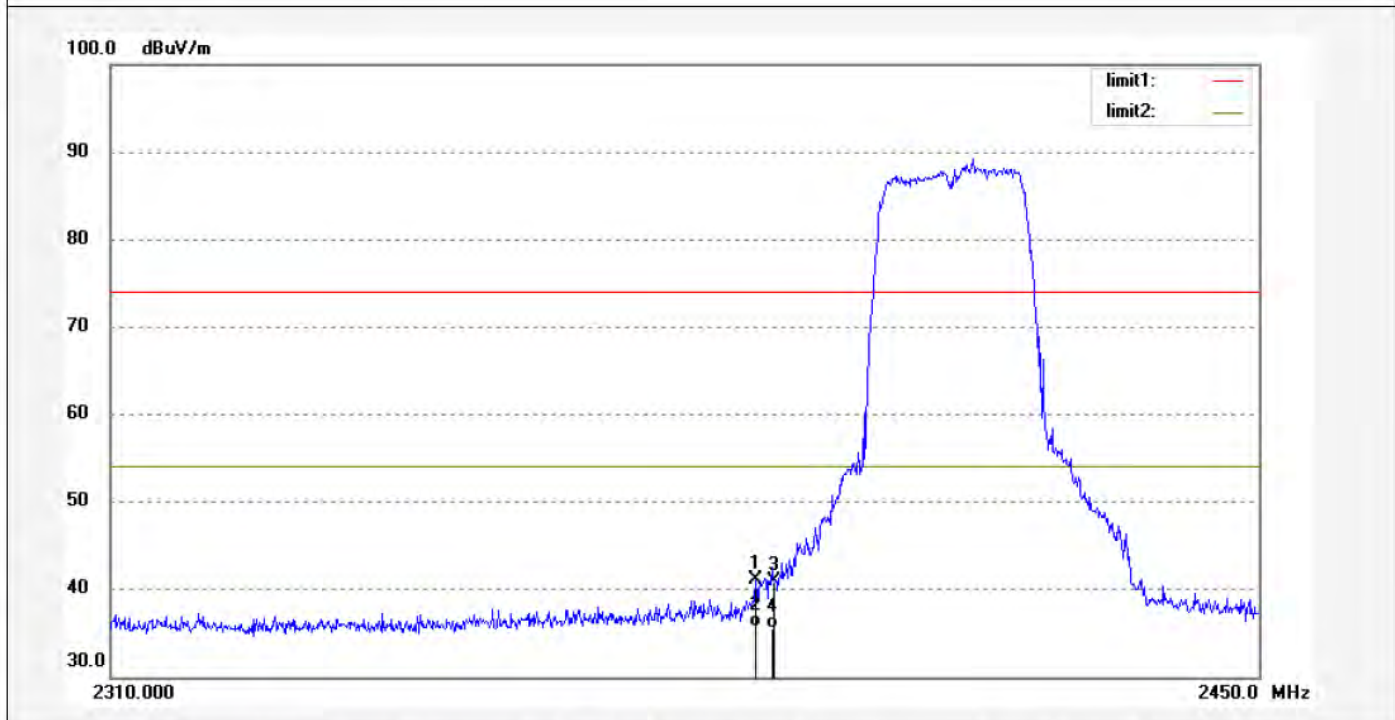
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| | |
|-------------------------------------|------------------------|
| Job No.: ricky #2618 | Polarization: Vertical |
| Standard: FCC PK | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 17/10/20 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: |
| Mode: TX 2412MHz(802.11n20) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2387.700 | 48.68 | -7.58 | 41.10 | 74.00 | -32.90 | peak | | | |
| 2 | 2387.700 | 43.19 | -7.58 | 35.61 | 54.00 | -18.39 | AVG | | | |
| 3 | 2390.000 | 48.43 | -7.57 | 40.86 | 74.00 | -33.14 | peak | | | |
| 4 | 2390.000 | 43.09 | -7.57 | 35.52 | 54.00 | -18.48 | AVG | | | |



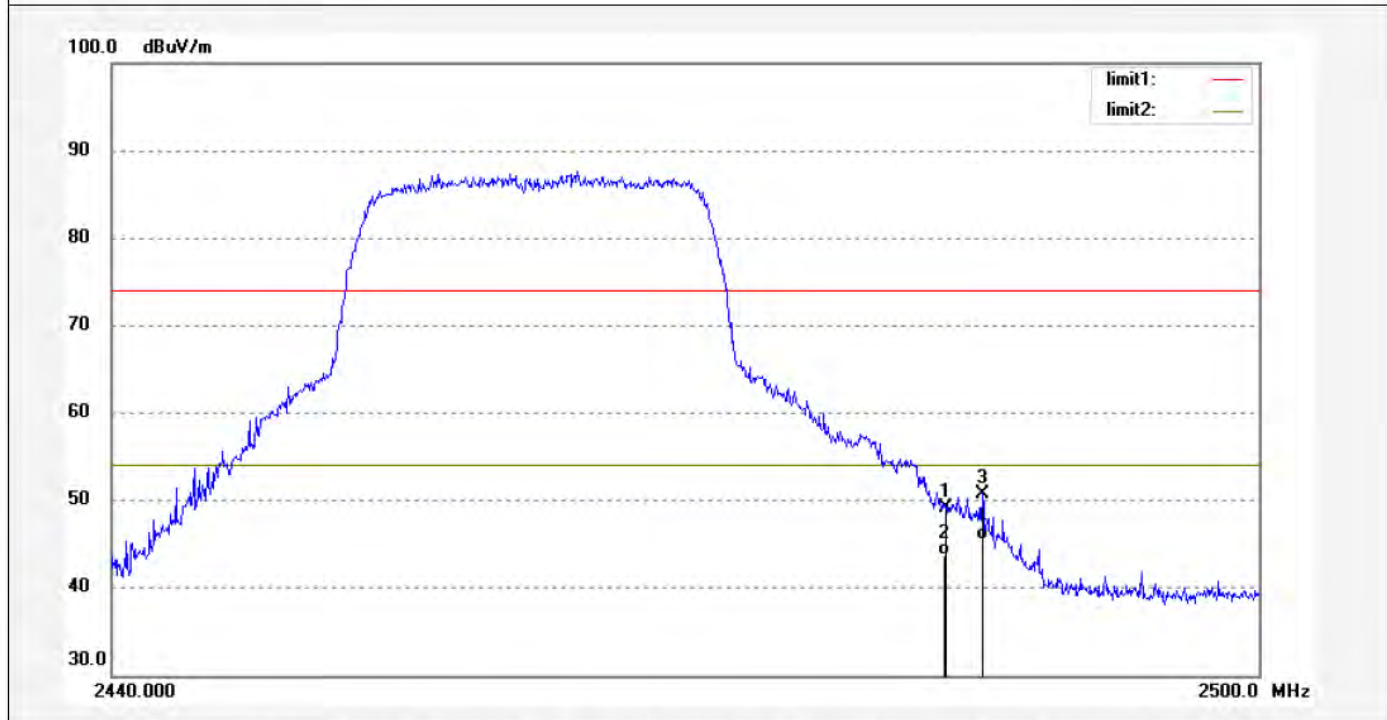
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| | |
|-------------------------------------|------------------------|
| Job No.: ricky #2619 | Polarization: Vertical |
| Standard: FCC PK | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 17/14/27 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: |
| Mode: TX 2462MHz(802.11n20) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2483.500 | 56.58 | -7.38 | 49.20 | 74.00 | -24.80 | peak | | | |
| 2 | 2483.500 | 51.14 | -7.38 | 43.76 | 54.00 | -10.24 | AVG | | | |
| 3 | 2485.420 | 58.16 | -7.39 | 50.77 | 74.00 | -23.23 | peak | | | |
| 4 | 2485.420 | 52.95 | -7.39 | 45.56 | 54.00 | -8.44 | AVG | | | |



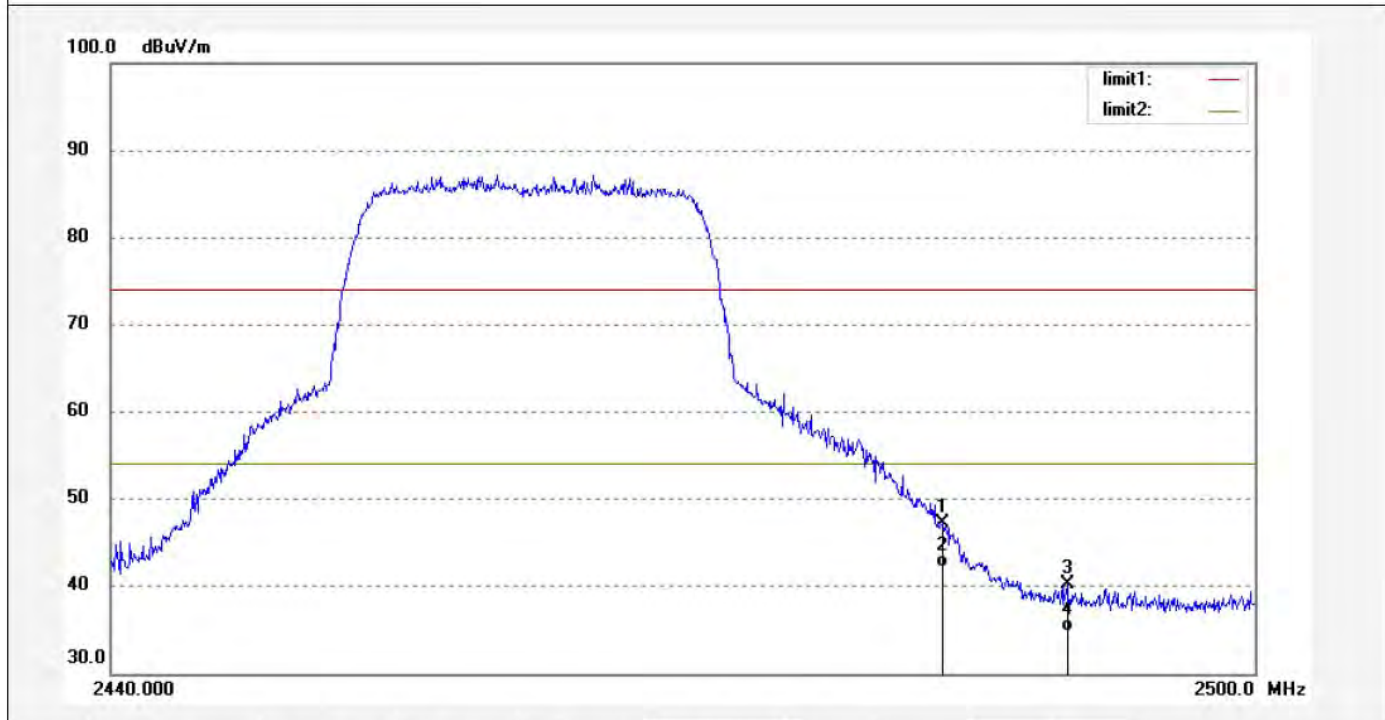
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| | |
|-------------------------------------|--------------------------|
| Job No.: ricky #2620 | Polarization: Horizontal |
| Standard: FCC PK | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 17/16/48 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: |
| Mode: TX 2462MHz(802.11n20) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2483.500 | 54.64 | -7.38 | 47.26 | 74.00 | -26.74 | peak | | | |
| 2 | 2483.500 | 49.61 | -7.38 | 42.23 | 54.00 | -11.77 | AVG | | | |
| 3 | 2490.100 | 47.69 | -7.39 | 40.30 | 74.00 | -33.70 | peak | | | |
| 4 | 2490.100 | 42.13 | -7.39 | 34.74 | 54.00 | -19.26 | AVG | | | |



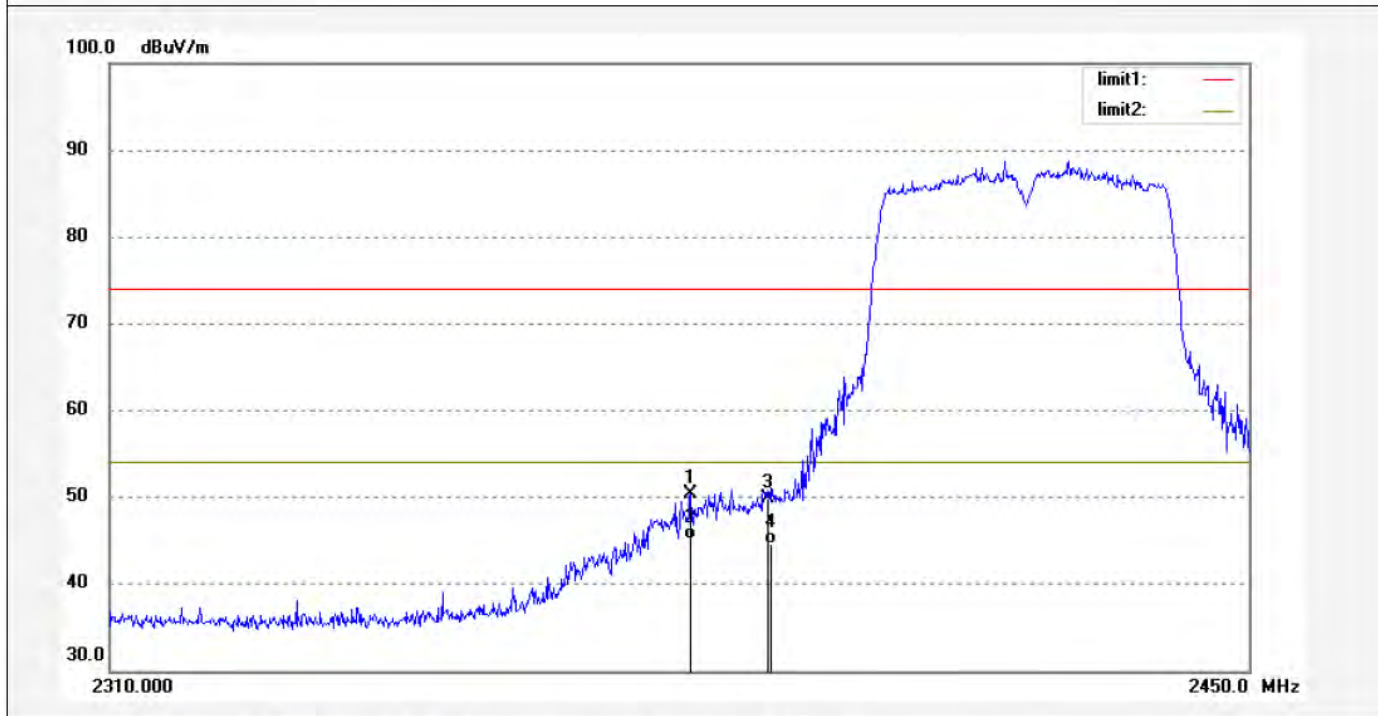
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| | |
|-------------------------------------|------------------------|
| Job No.: ricky #2624 | Polarization: Vertical |
| Standard: FCC PK | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 17/29/36 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: |
| Mode: TX 2422MHz(802.11n40) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2380.420 | 58.00 | -7.64 | 50.36 | 74.00 | -23.64 | peak | | | |
| 2 | 2380.420 | 52.81 | -7.64 | 45.17 | 54.00 | -8.83 | AVG | | | |
| 3 | 2390.000 | 57.35 | -7.57 | 49.78 | 74.00 | -24.22 | peak | | | |
| 4 | 2390.000 | 52.10 | -7.57 | 44.53 | 54.00 | -9.47 | AVG | | | |



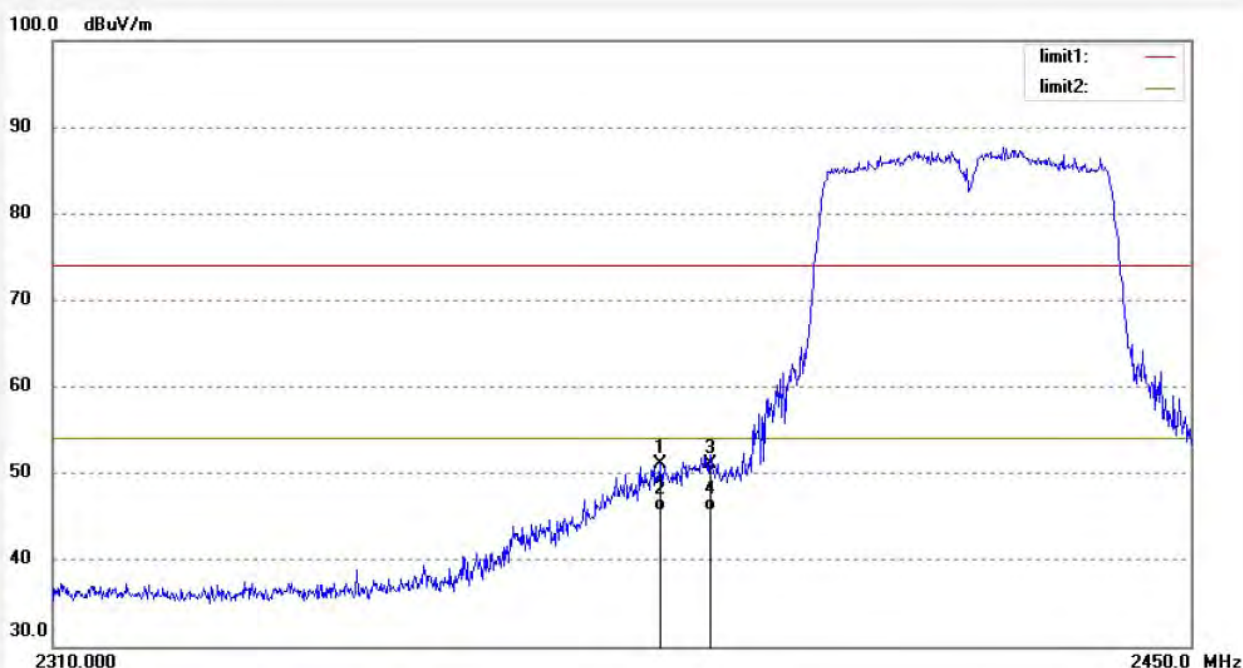
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| | |
|-------------------------------------|--------------------------|
| Job No.: ricky #2623 | Polarization: Horizontal |
| Standard: FCC PK | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 17/27/50 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: |
| Mode: TX 2422MHz(802.11n40) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2383.780 | 58.70 | -7.61 | 51.09 | 74.00 | -22.91 | peak | | | |
| 2 | 2383.780 | 53.21 | -7.61 | 45.60 | 54.00 | -8.40 | AVG | | | |
| 3 | 2390.000 | 58.72 | -7.57 | 51.15 | 74.00 | -22.85 | peak | | | |
| 4 | 2390.000 | 53.29 | -7.57 | 45.72 | 54.00 | -8.28 | AVG | | | |



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| | |
|-------------------------------------|------------------------|
| Job No.: ricky #2622 | Polarization: Vertical |
| Standard: FCC PK | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 17/24/21 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: |
| Mode: TX 2452MHz(802.11n40) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2483.500 | 51.46 | -7.38 | 44.08 | 74.00 | -29.92 | peak | | | |
| 2 | 2483.500 | 45.37 | -7.38 | 37.99 | 54.00 | -16.01 | AVG | | | |
| 3 | 2491.180 | 52.34 | -7.38 | 44.96 | 74.00 | -29.04 | peak | | | |
| 4 | 2491.180 | 46.32 | -7.38 | 38.94 | 54.00 | -15.06 | AVG | | | |



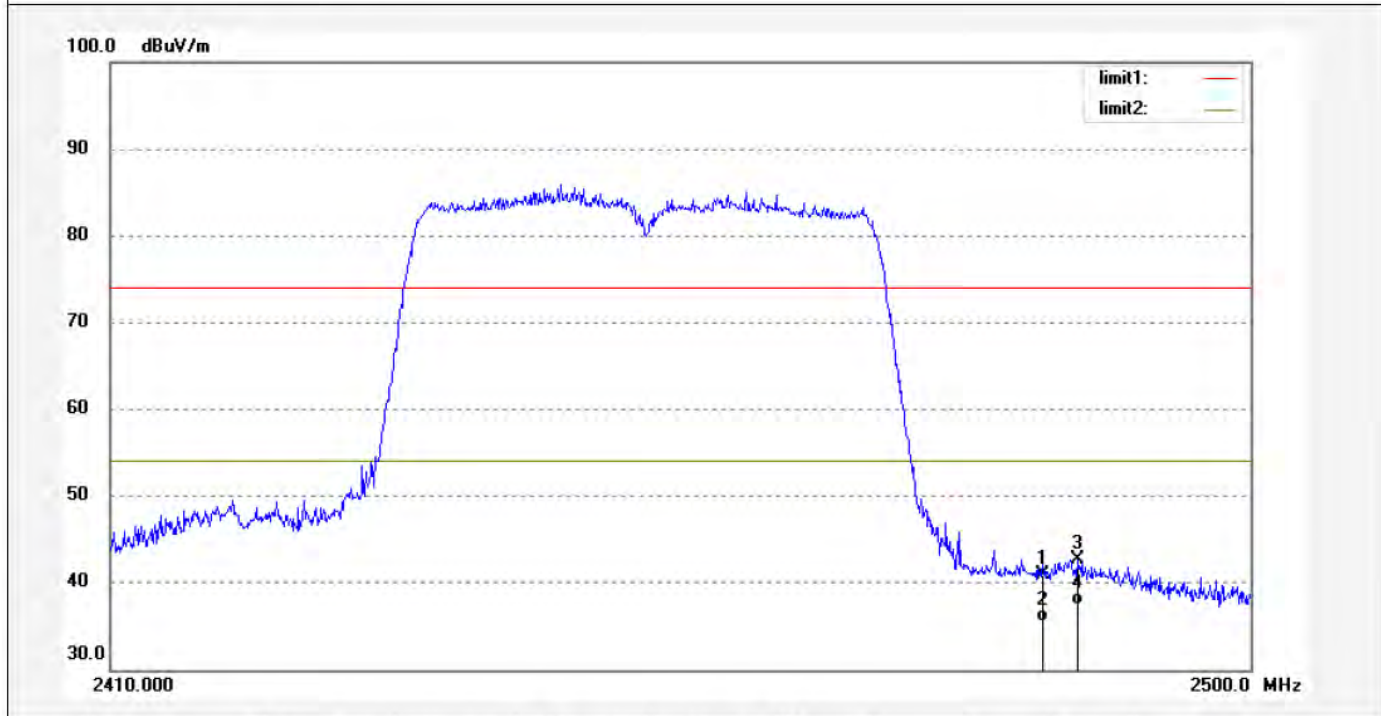
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| | |
|-------------------------------------|--------------------------|
| Job No.: ricky #2621 | Polarization: Horizontal |
| Standard: FCC PK | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 17/21/58 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: |
| Mode: TX 2452MHz(802.11n40) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831

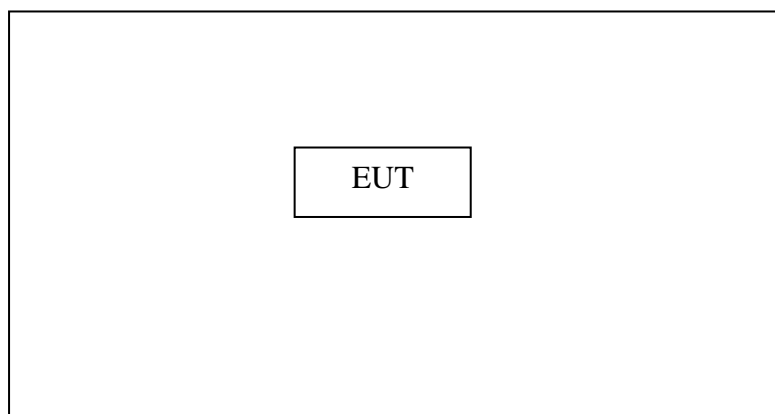


| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2483.500 | 48.33 | -7.38 | 40.95 | 74.00 | -33.05 | peak | | | |
| 2 | 2483.500 | 42.97 | -7.38 | 35.59 | 54.00 | -18.41 | AVG | | | |
| 3 | 2486.140 | 50.11 | -7.39 | 42.72 | 74.00 | -31.28 | peak | | | |
| 4 | 2486.140 | 44.87 | -7.39 | 37.48 | 54.00 | -16.52 | AVG | | | |

9. RADIATED SPURIOUS EMISSION TEST

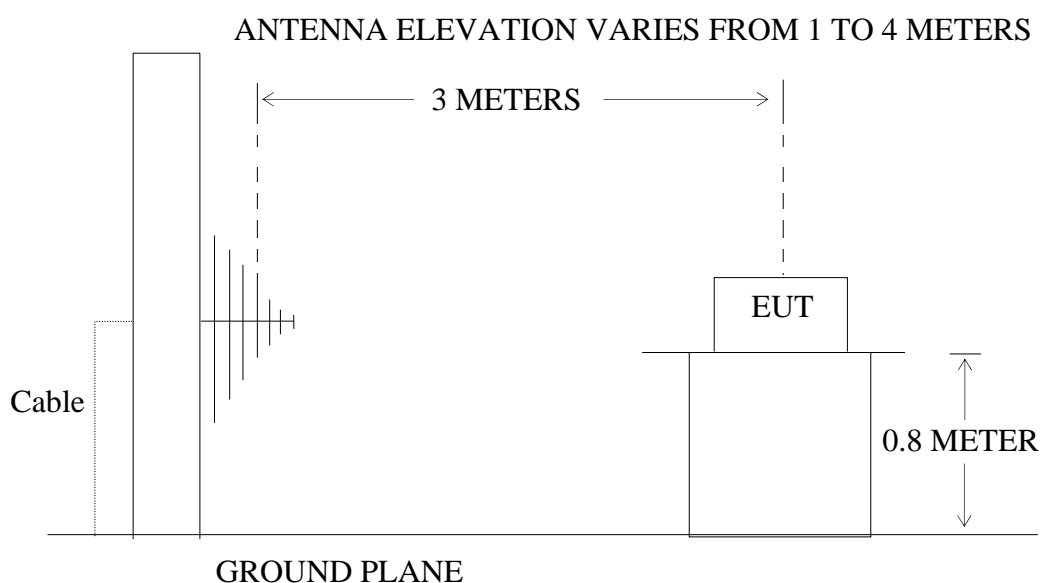
9.1. Block Diagram of Test Setup

9.1.1. Block diagram of connection between the EUT and peripherals



Setup: Transmitting mode

9.1.2. Semi-Anechoic Chamber Test Setup Diagram



9.2. The Limit For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the

transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

9.3.Restricted bands of operation

9.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|--------------------------|---------------------|---------------|------------------|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| ¹ 0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | (²) |
| 13.36-13.41 | | | |

¹Until February 1, 1999, this restricted band shall be 0.490-0.510

²Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

9.4.Configuration of EUT on Measurement

The equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

9.5.Operating Condition of EUT

9.5.1. Setup the EUT and simulator as shown as Section 9.1.

9.5.2. Turn on the power of all equipment.

9.5.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

9.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2009 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The worst-case data rate for this channel to be 1Mbps for 802.11b mode and 6Mbps for 802.11g mode and 150Mbps for 802.11n mode, based on previous with 802.11 WLAN product design architectures.

The final measurement in band 9-90 kHz, 110-490 kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

When average radiated emissions measurements are specified there is also a limit on the peak emissions level which is 20 dB above the applicable maximum permitted average emission limit

RBW (120 kHz), VBW (300 kHz) for QP detector below 1GHz
 RBW (1 MHz), VBW (3MHz) for Peak measurement above 1GHz
 RBW (1 MHz), VBW (10Hz) for AV measurement above 1GHz

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

9.7. The Field Strength of Radiation Emission Measurement Results

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. The average measurement was not performed when peak measured data under the limit of average detection.

3. The fundamental radiated emissions were reduced by Band Reject Filter in the attached plots.

4. The EUT is tested radiation emission at each test mode(802.11 b/g/n) in three axes. The worst emissions are reported in all test mode and channels.

5. The 18-25GHz emissions are not reported, because the levels are too low against the limit.

Below 1G



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

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky #2585

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: 150M Mini Wireless USB Adapter

Mode: TX 2412MHz(802.11b)

Model: WU110K

Manufacturer: HAOLIYUAN

Polarization: Vertical

Power Source: DC 5V

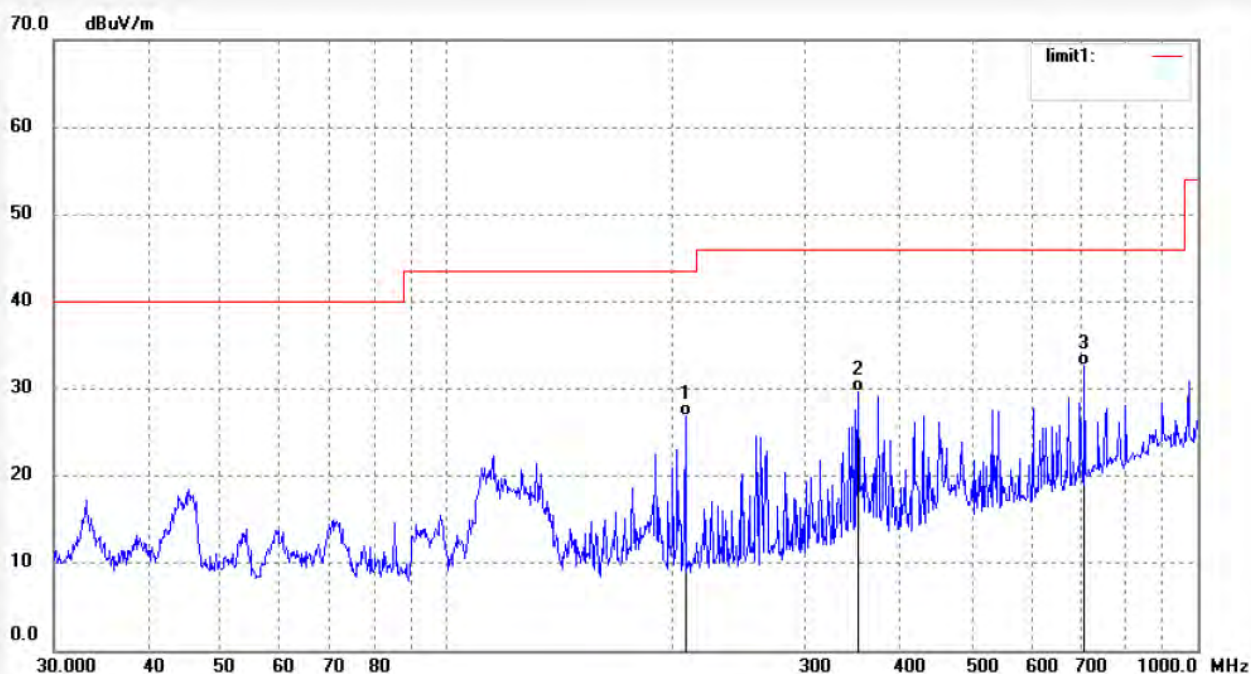
Date: 2014/09/21

Time: 15:13:06

Engineer Signature:

Distance: 3m

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 207.8501 | 46.96 | -20.03 | 26.93 | 43.50 | -16.57 | QP | | | |
| 2 | 352.9433 | 45.86 | -16.14 | 29.72 | 46.00 | -16.28 | QP | | | |
| 3 | 706.6999 | 42.24 | -9.65 | 32.59 | 46.00 | -13.41 | QP | | | |



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Site: 1# Chamber
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Fax:+86-0755-26503396

Job No.: ricky #2586

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: 150M Mini Wireless USB Adapter

Mode: TX 2412MHz(802.11b)

Model: WU110K

Manufacturer: HAOLIYUAN

Polarization: Horizontal

Power Source: DC 5V

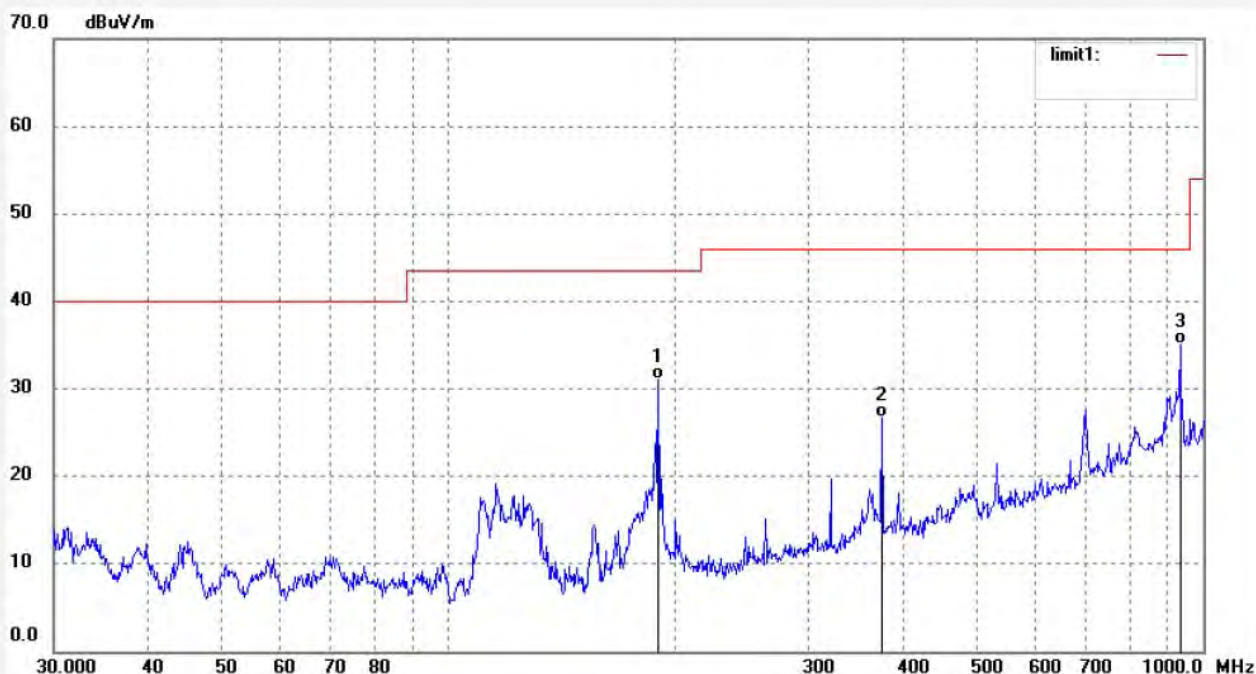
Date: 2014/09/21

Time: 15:14:15

Engineer Signature:

Distance: 3m

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 189.7385 | 52.09 | -20.99 | 31.10 | 43.50 | -12.40 | QP | | | |
| 2 | 375.9385 | 42.49 | -15.81 | 26.68 | 46.00 | -19.32 | QP | | | |
| 3 | 932.2715 | 40.72 | -5.63 | 35.09 | 46.00 | -10.91 | QP | | | |

Above 1G



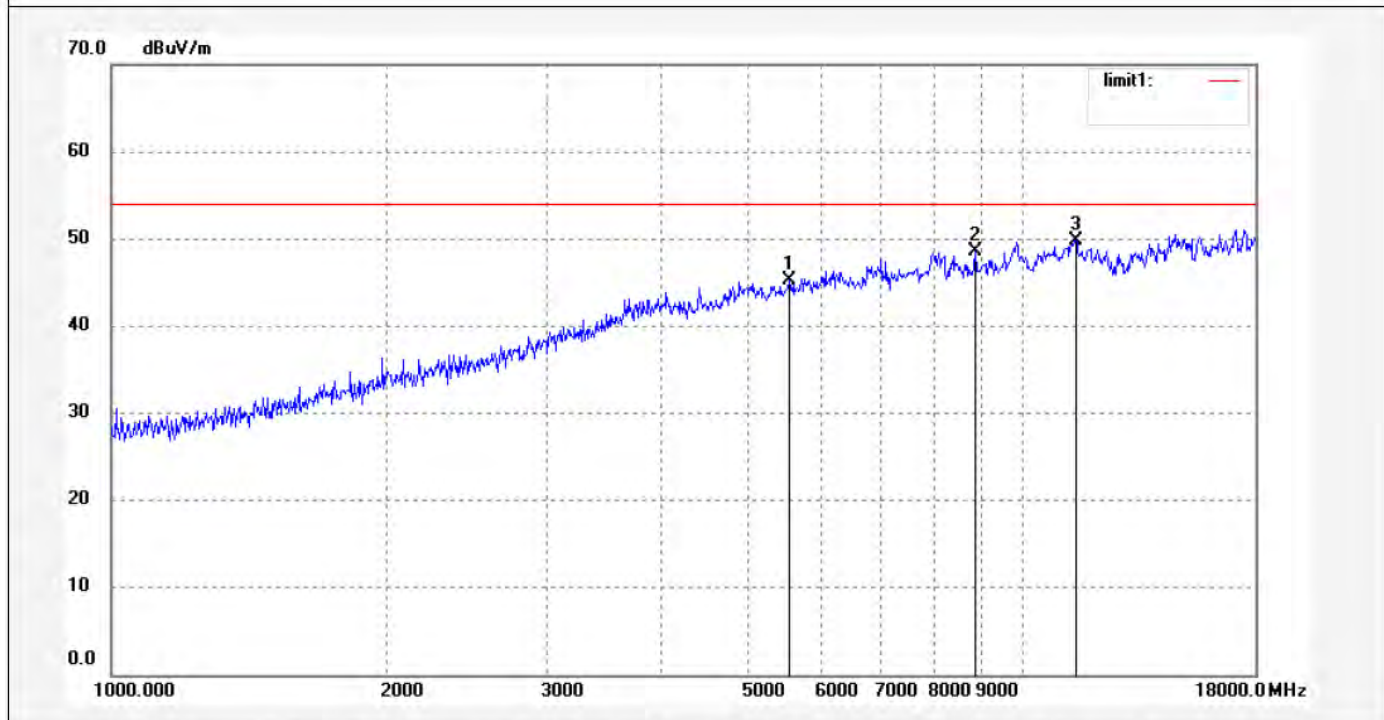
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Site: 1# Chamber
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2648 | Polarization: Horizontal |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 19/01/30 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2412MHz(802.11b) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 5551.069 | 42.96 | 2.30 | 45.26 | 54.00 | -8.74 | peak | | | |
| 2 | 8866.061 | 39.76 | 8.79 | 48.55 | 54.00 | -5.45 | peak | | | |
| 3 | 11433.909 | 37.96 | 11.79 | 49.75 | 54.00 | -4.25 | peak | | | |



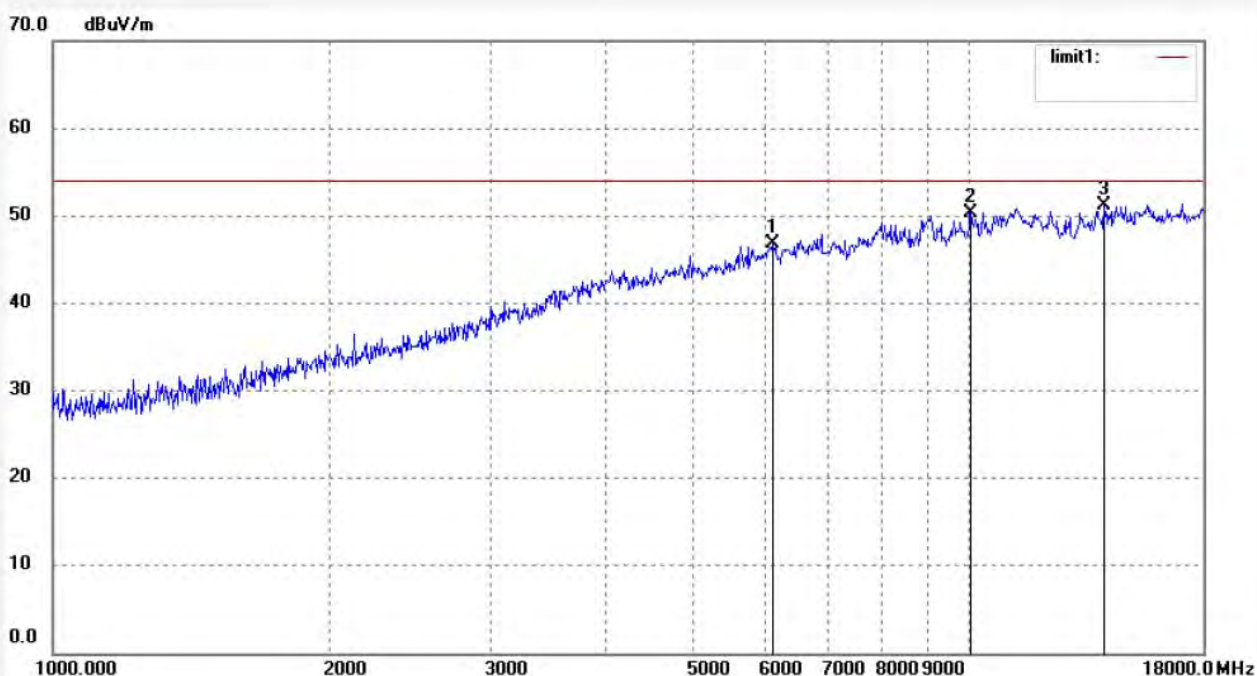
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2647 | Polarization: Vertical |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/59/32 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2412MHz(802.11b) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 6106.616 | 43.26 | 3.54 | 46.80 | 54.00 | -7.20 | peak | | | |
| 2 | 10039.393 | 39.38 | 10.96 | 50.34 | 54.00 | -3.66 | peak | | | |
| 3 | 14038.447 | 3.04 | 48.10 | 51.14 | 54.00 | -2.86 | peak | | | |



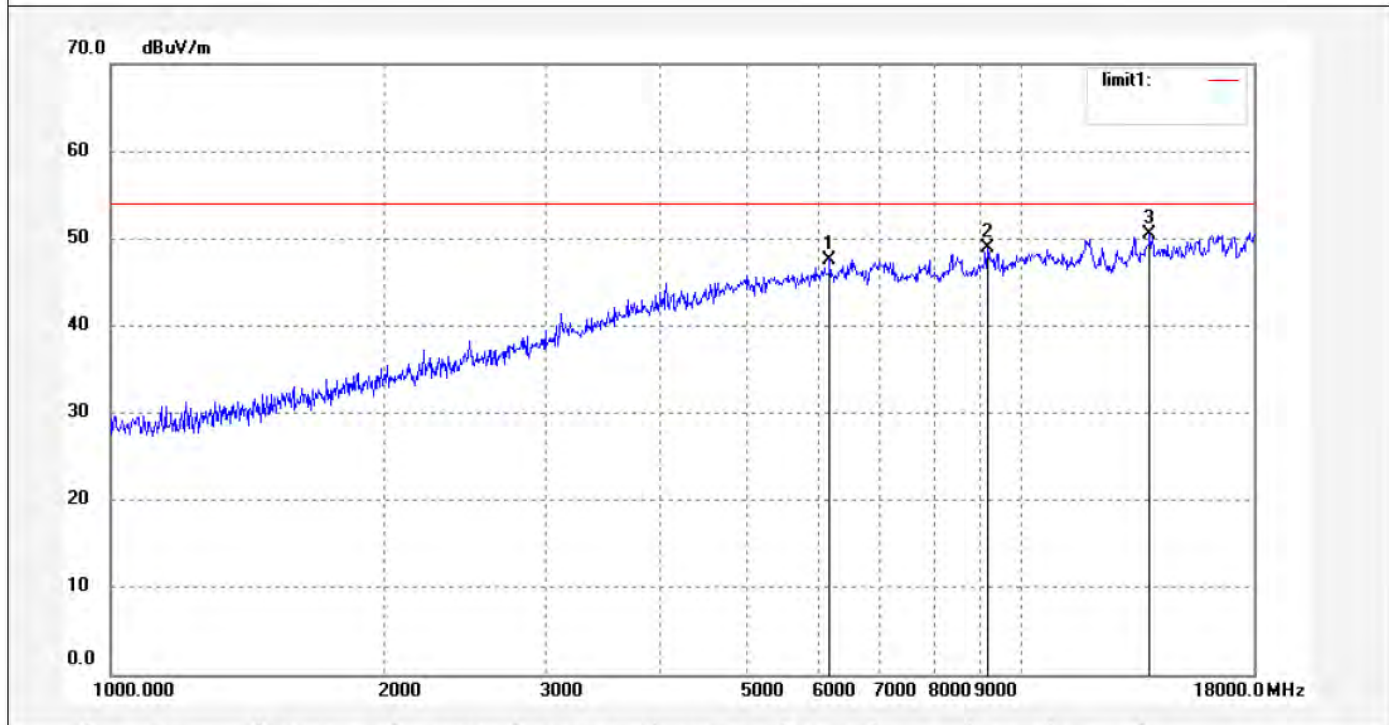
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2646 | Polarization: Vertical |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/58/19 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2437MHz(802.11b) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 6159.797 | 44.04 | 3.56 | 47.60 | 54.00 | -6.40 | peak | | | |
| 2 | 9178.971 | 39.70 | 9.20 | 48.90 | 54.00 | -5.10 | peak | | | |
| 3 | 13837.024 | 2.87 | 47.59 | 50.46 | 54.00 | -3.54 | peak | | | |


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Job No.: ricky #2645

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: 150M Mini Wireless USB Adapter

Mode: TX 2437MHz(802.11b)

Model: WU110K

Manufacturer: HAOLIYUAN

Polarization: Horizontal

Power Source: DC 5V

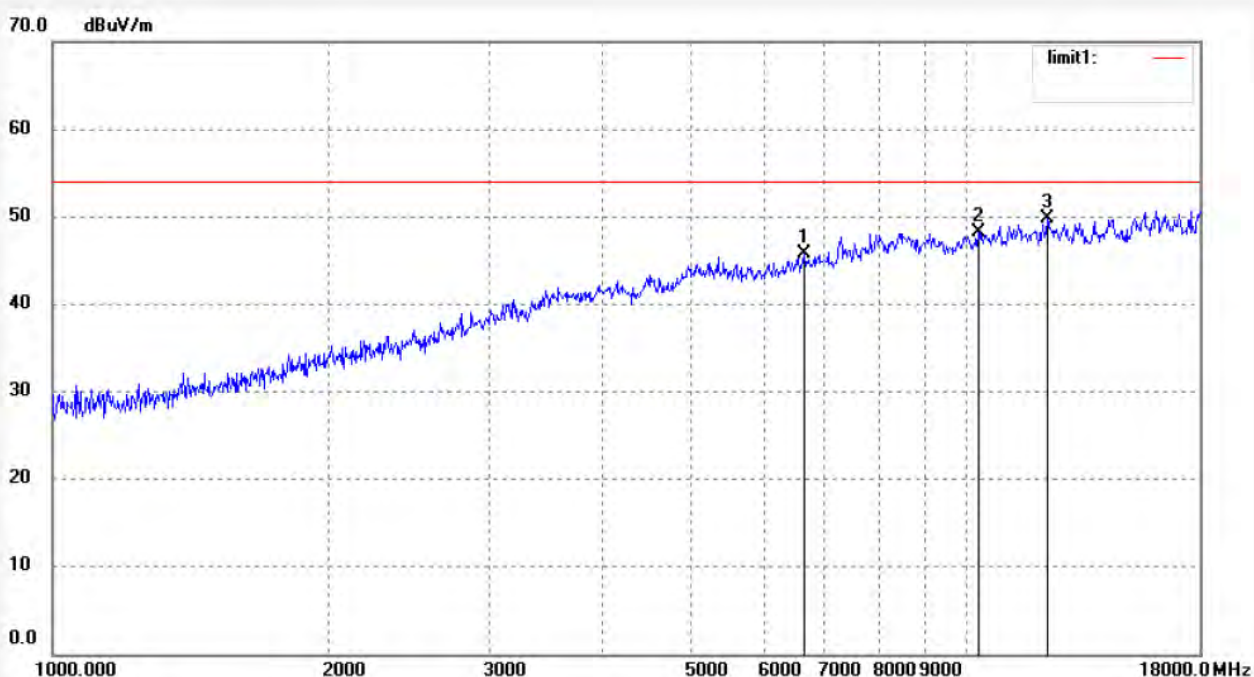
Date: 2014/09/21

Time: 18/57/11

Engineer Signature: Ricky

Distance: 3m

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 6640.541 | 41.22 | 4.60 | 45.82 | 54.00 | -8.18 | peak | | | |
| 2 | 10303.978 | 37.93 | 10.27 | 48.20 | 54.00 | -5.80 | peak | | | |
| 3 | 12255.224 | 4.66 | 45.06 | 49.72 | 54.00 | -4.28 | peak | | | |



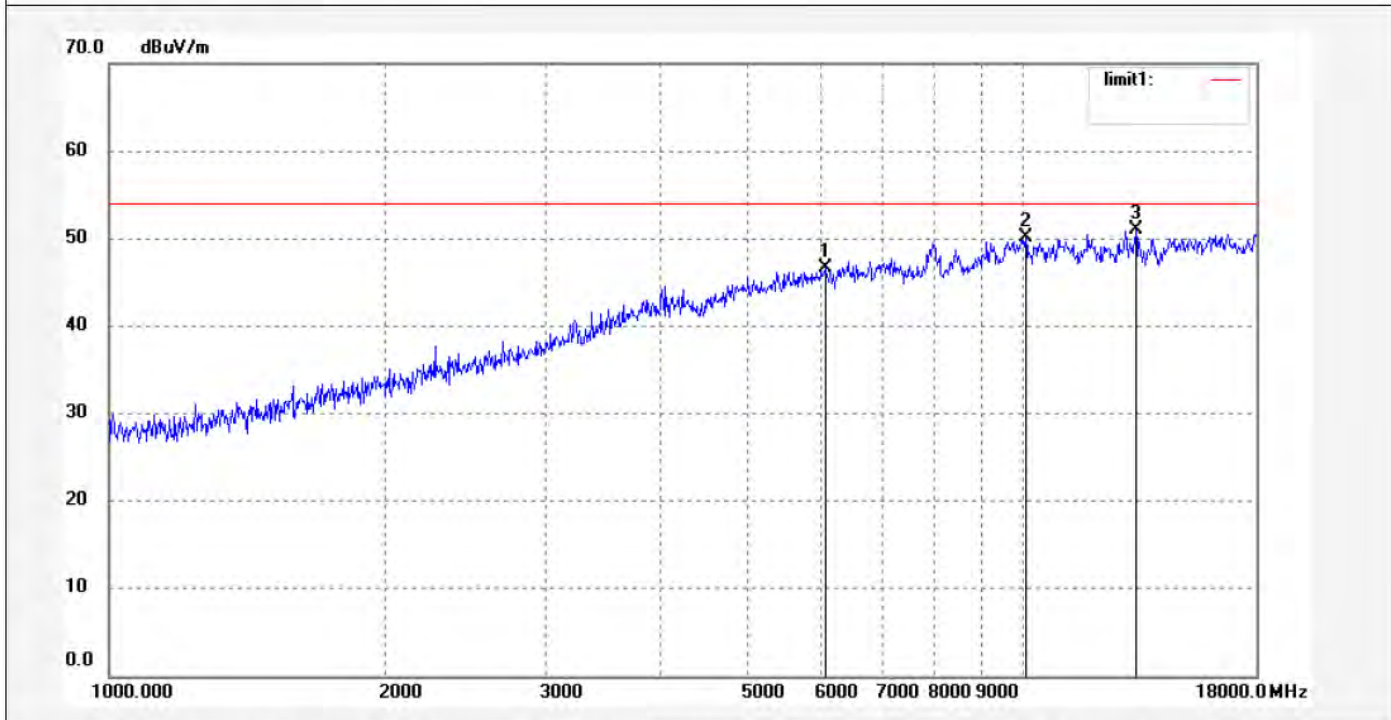
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2644 | Polarization: Horizontal |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/56/38 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2462MHz(802.11b) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 6071.417 | 43.09 | 3.53 | 46.62 | 54.00 | -7.38 | peak | | | |
| 2 | 10068.453 | 39.26 | 10.85 | 50.11 | 54.00 | -3.89 | peak | | | |
| 3 | 13288.284 | 4.34 | 46.64 | 50.98 | 54.00 | -3.02 | peak | | | |



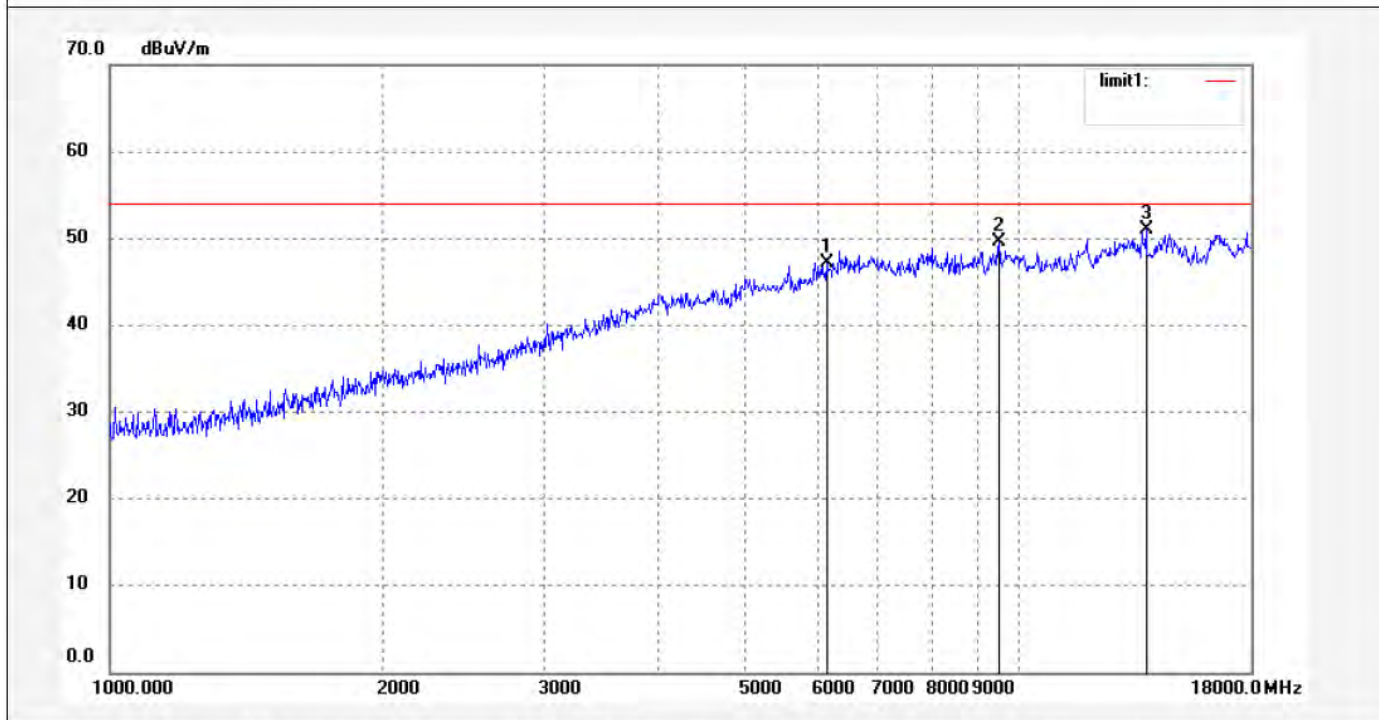
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2643 | Polarization: Vertical |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/54/33 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2462MHz(802.11b) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 6142.019 | 43.60 | 3.56 | 47.16 | 54.00 | -6.84 | peak | | | |
| 2 | 9502.925 | 38.94 | 10.60 | 49.54 | 54.00 | -4.46 | peak | | | |
| 3 | 13797.088 | 3.41 | 47.52 | 50.93 | 54.00 | -3.07 | peak | | | |



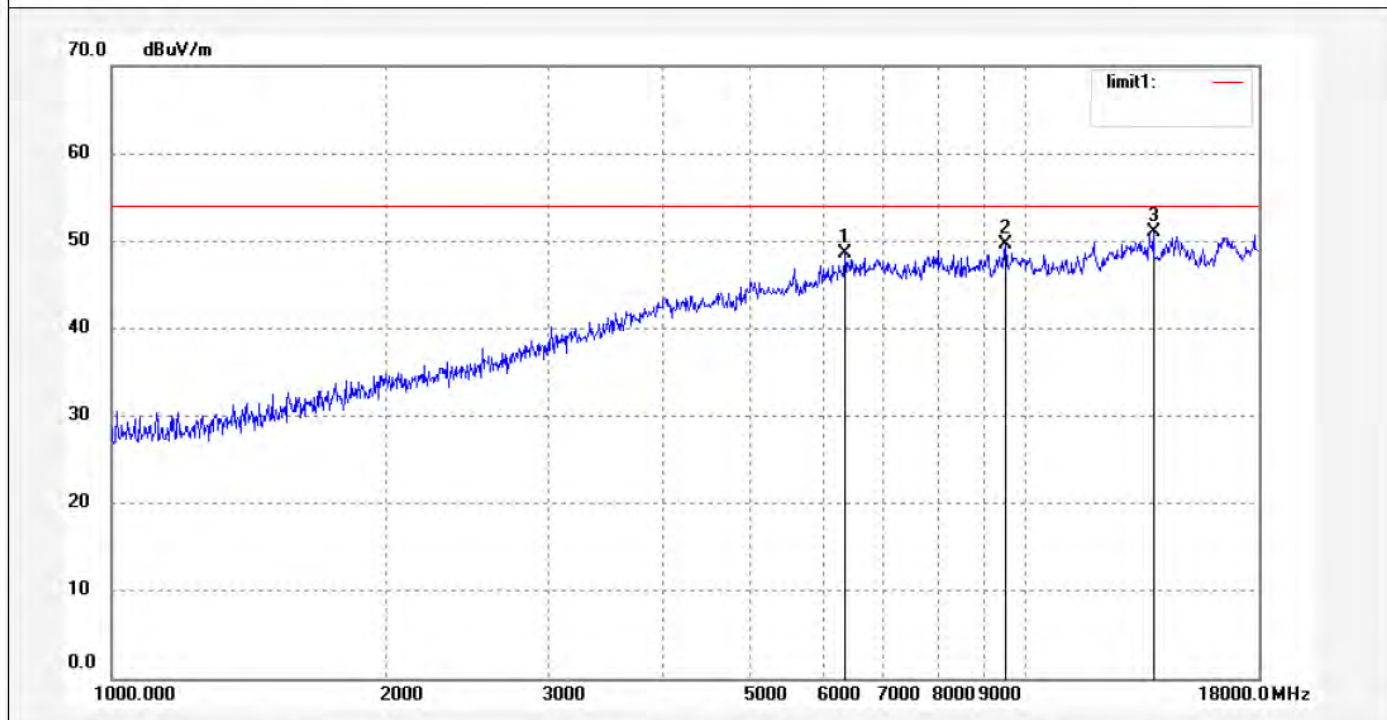
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Site: 1# Chamber
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2637 | Polarization: Vertical |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/48/41 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2412MHz(802.11g) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 6340.436 | 44.36 | 4.20 | 48.56 | 54.00 | -5.44 | peak | | | |
| 2 | 9502.925 | 38.94 | 10.60 | 49.54 | 54.00 | -4.46 | peak | | | |
| 3 | 13797.088 | 3.41 | 47.52 | 50.93 | 54.00 | -3.07 | peak | | | |


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Site: 1# Chamber

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Job No.: ricky #2638

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: 150M Mini Wireless USB Adapter

Mode: TX 2412MHz(802.11g)

Model: WU110K

Manufacturer: HAOLIYUAN

Polarization: Horizontal

Power Source: DC 5V

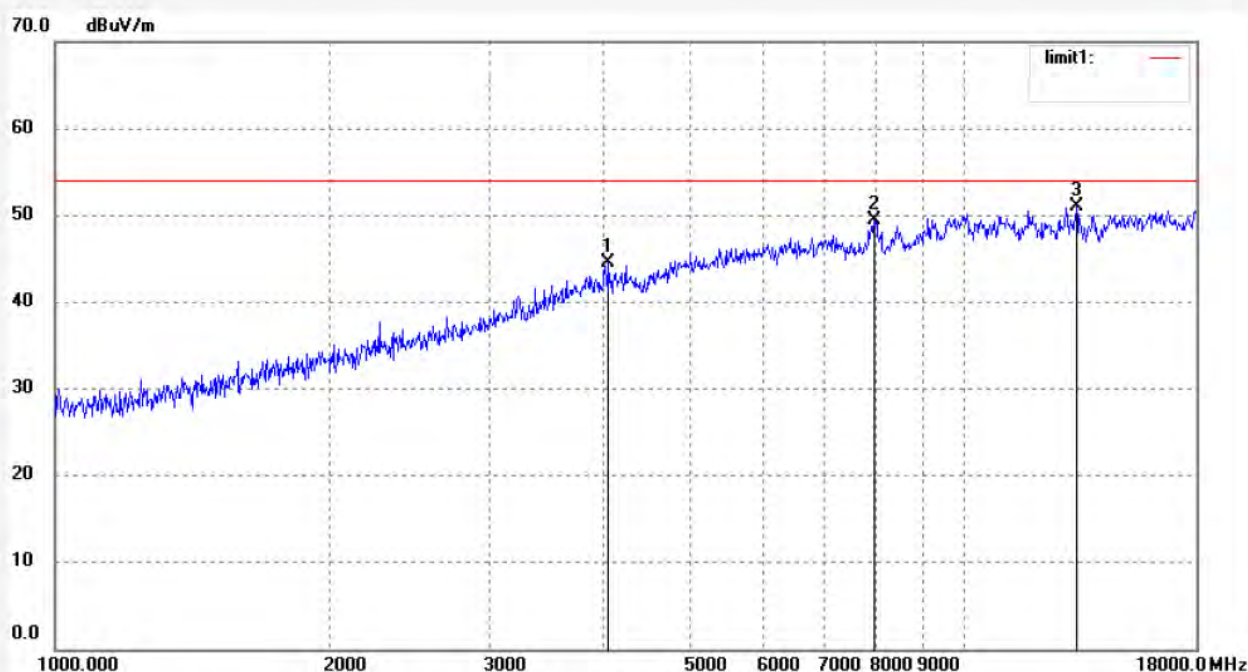
Date: 2014/09/21

Time: 18/49/28

Engineer Signature: Ricky

Distance: 3m

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 4062.629 | 45.63 | -1.17 | 44.46 | 54.00 | -9.54 | peak | | | |
| 2 | 7966.832 | 41.47 | 8.03 | 49.50 | 54.00 | -4.50 | peak | | | |
| 3 | 13288.284 | 4.34 | 46.64 | 50.98 | 54.00 | -3.02 | peak | | | |



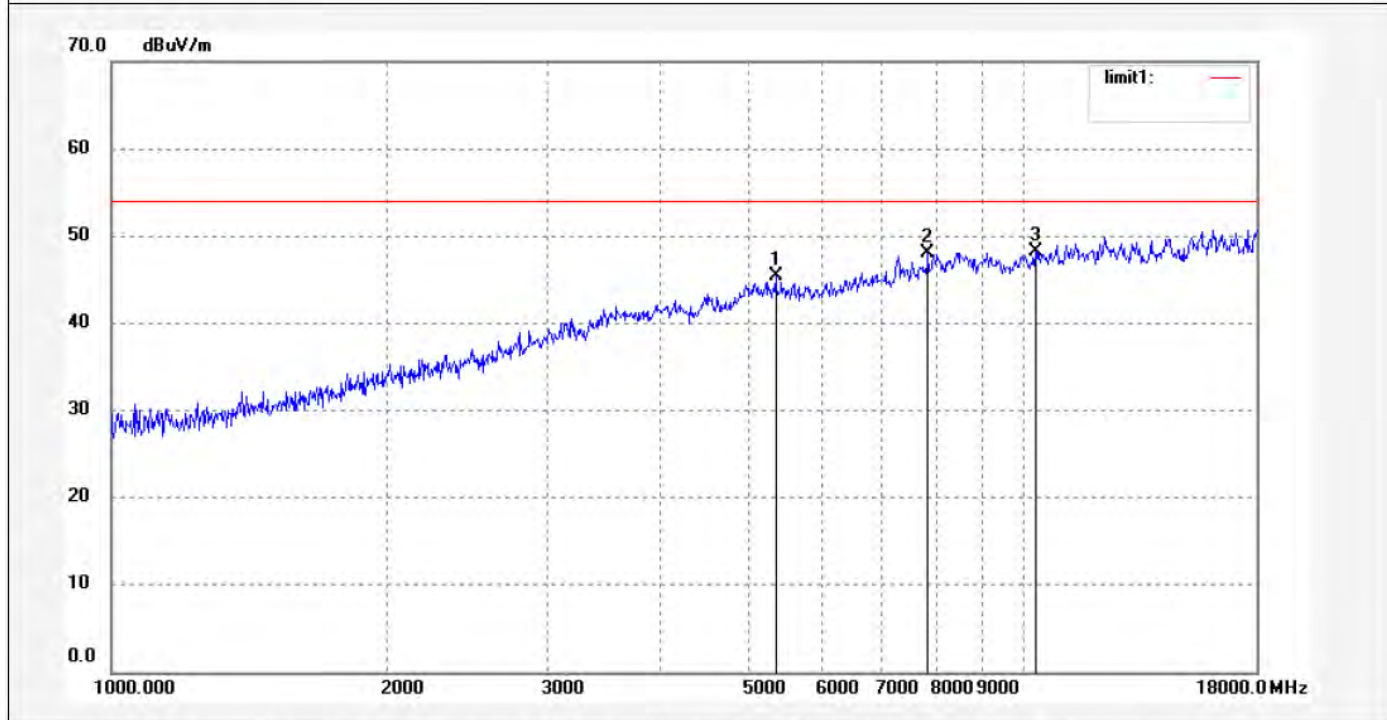
ACCURATE TECHNOLOGY CO., LTD.

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Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2639 | Polarization: Horizontal |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/50/33 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2437MHz(802.11g) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 5346.358 | 43.72 | 1.74 | 45.46 | 54.00 | -8.54 | peak | | | |
| 2 | 7852.524 | 40.91 | 7.06 | 47.97 | 54.00 | -6.03 | peak | | | |
| 3 | 10303.978 | 37.93 | 10.27 | 48.20 | 54.00 | -5.80 | peak | | | |



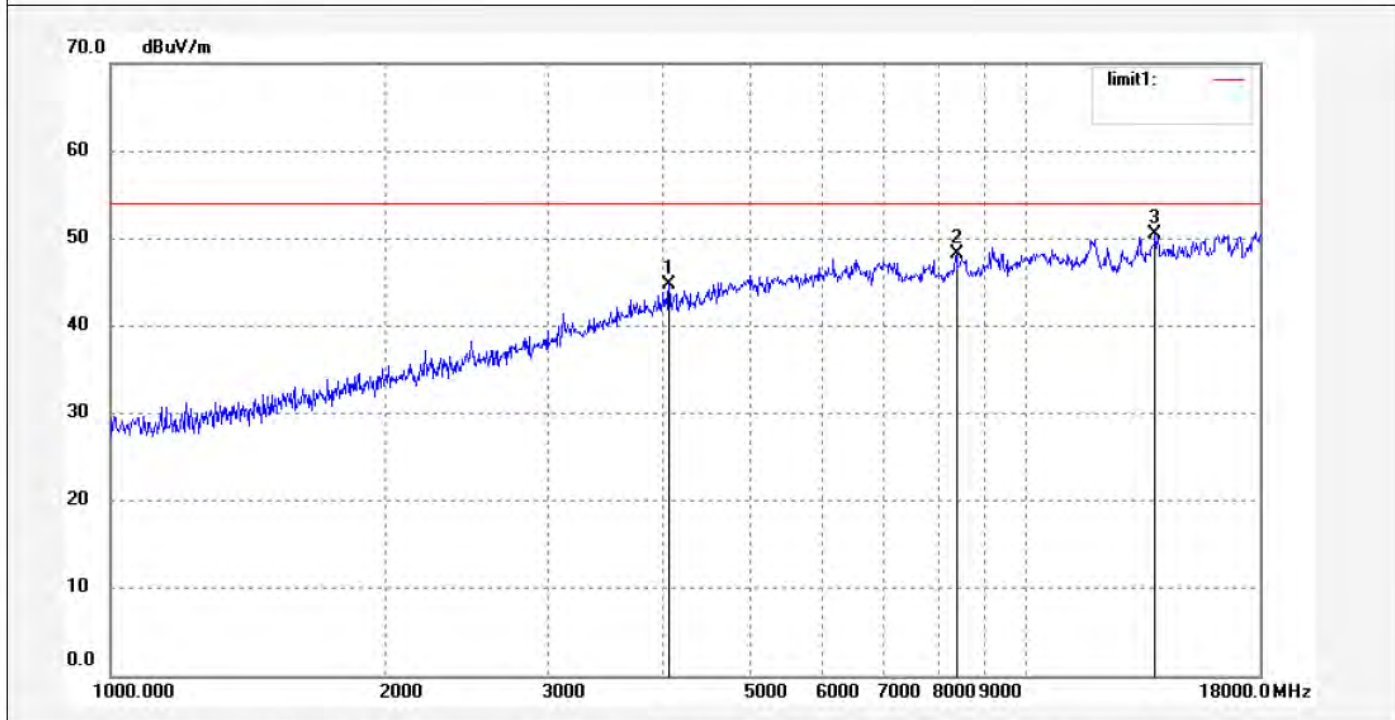
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Site: 1# Chamber
Tel:+86-0755-26503290
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2640 | Polarization: Vertical |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/51/37 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2437MHz(802.11g) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 4074.389 | 45.95 | -1.15 | 44.80 | 54.00 | -9.20 | peak | | | |
| 2 | 8392.292 | 39.19 | 9.03 | 48.22 | 54.00 | -5.78 | peak | | | |
| 3 | 13837.024 | 2.87 | 47.59 | 50.46 | 54.00 | -3.54 | peak | | | |



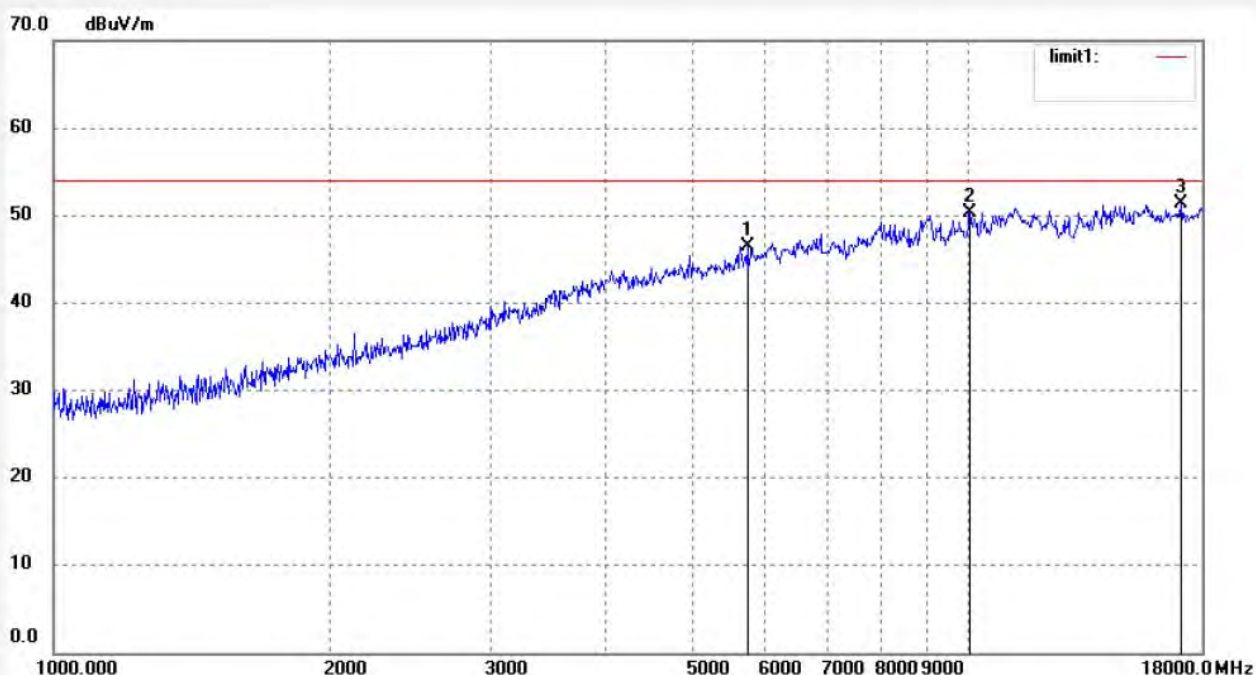
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Site: 1# Chamber
Tel:+86-0755-26503290
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2641 | Polarization: Vertical |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/52/65 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2462MHz(802.11g) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 5730.395 | 44.00 | 2.41 | 46.41 | 54.00 | -7.59 | peak | | | |
| 2 | 10039.393 | 39.38 | 10.96 | 50.34 | 54.00 | -3.66 | peak | | | |
| 3 | 17087.464 | 0.04 | 51.28 | 51.32 | 54.00 | -2.68 | peak | | | |



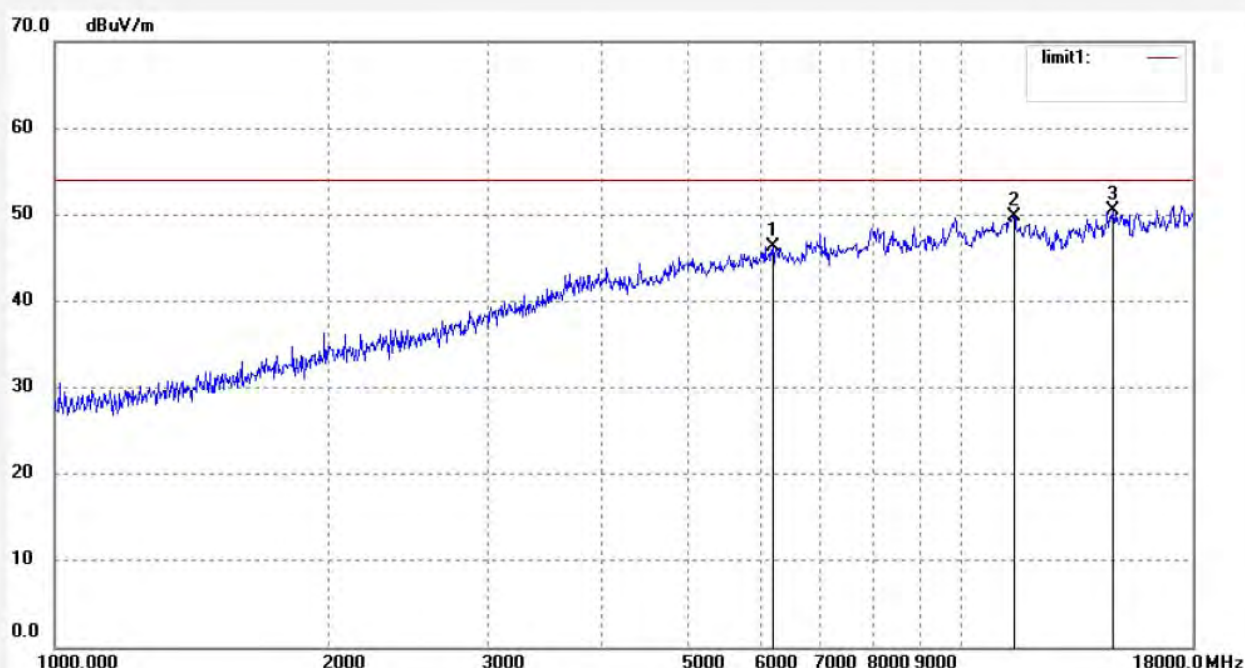
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Site: 1# Chamber
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2642 | Polarization: Horizontal |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/53/28 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2462MHz(802.11g) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 6195.508 | 42.67 | 3.57 | 46.24 | 54.00 | -7.76 | peak | | | |
| 2 | 11433.909 | 37.96 | 11.79 | 49.75 | 54.00 | -4.25 | peak | | | |
| 3 | 14702.914 | 0.49 | 49.98 | 50.47 | 54.00 | -3.53 | peak | | | |



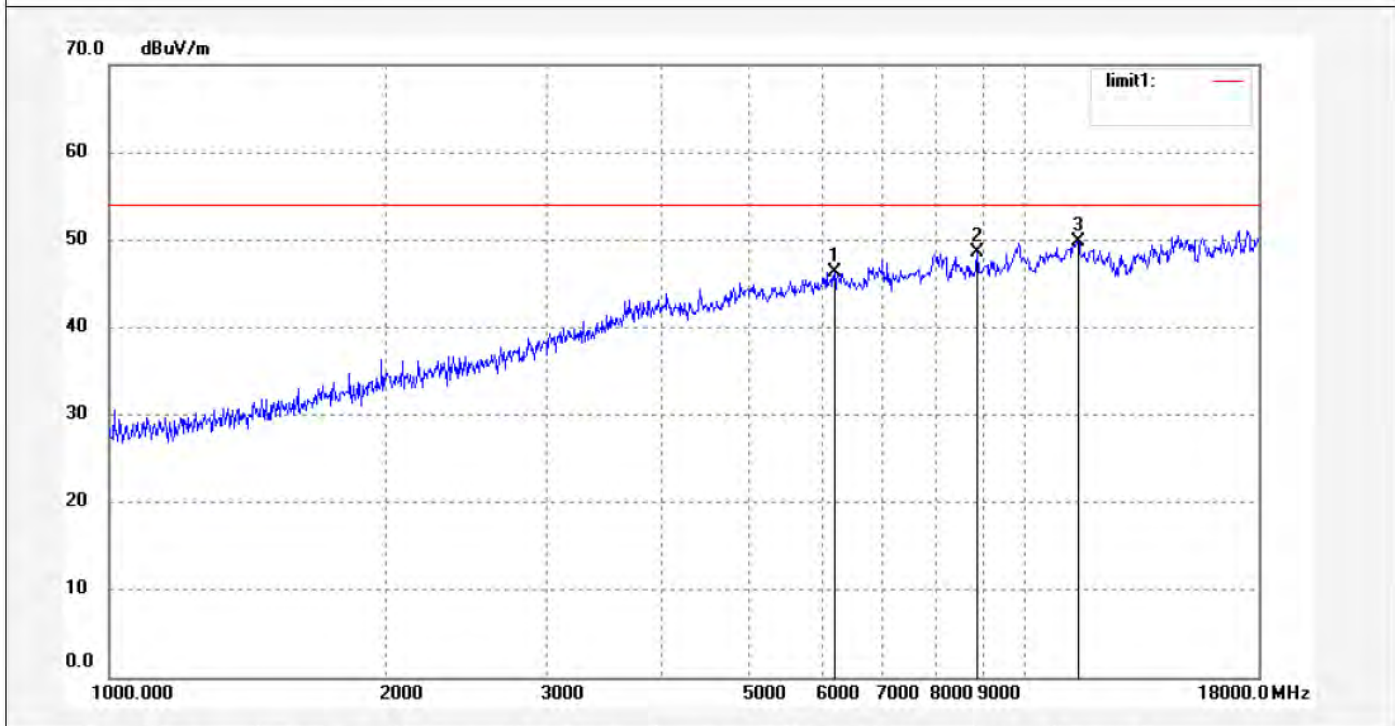
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Site: 1# Chamber
Tel:+86-0755-26503290
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2636 | Polarization: Horizontal |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/47/37 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2412MHz(802.11n20) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 6195.508 | 42.67 | 3.57 | 46.24 | 54.00 | -7.76 | peak | | | |
| 2 | 8866.061 | 39.76 | 8.79 | 48.55 | 54.00 | -5.45 | peak | | | |
| 3 | 11433.909 | 37.96 | 11.79 | 49.75 | 54.00 | -4.25 | peak | | | |


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Job No.: ricky #2635

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: 150M Mini Wireless USB Adapter

Mode: TX 2412MHz(802.11n20)

Model: WU110K

Manufacturer: HAOLIYUAN

Polarization: Vertical

Power Source: DC 5V

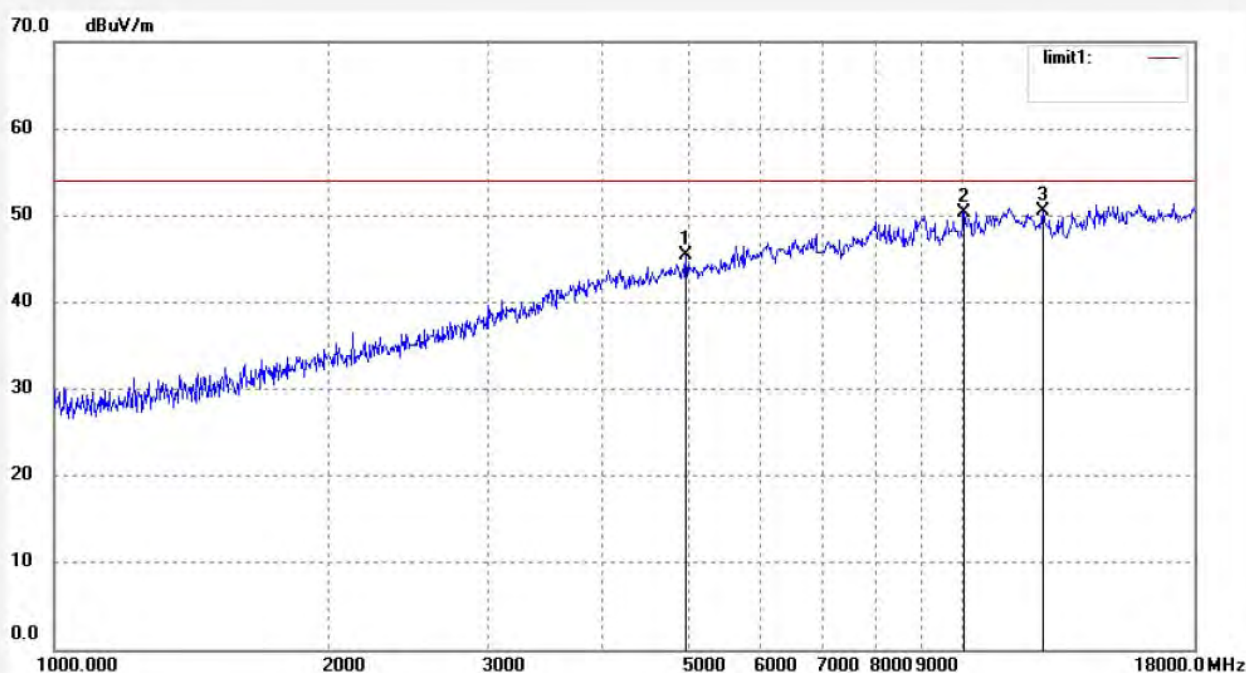
Date: 2014/09/21

Time: 18/46/55

Engineer Signature: Ricky

Distance: 3m

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 4959.307 | 44.04 | 1.32 | 45.36 | 54.00 | -8.64 | peak | | | |
| 2 | 10039.393 | 39.38 | 10.96 | 50.34 | 54.00 | -3.66 | peak | | | |
| 3 | 12255.224 | 5.39 | 45.06 | 50.45 | 54.00 | -3.55 | peak | | | |



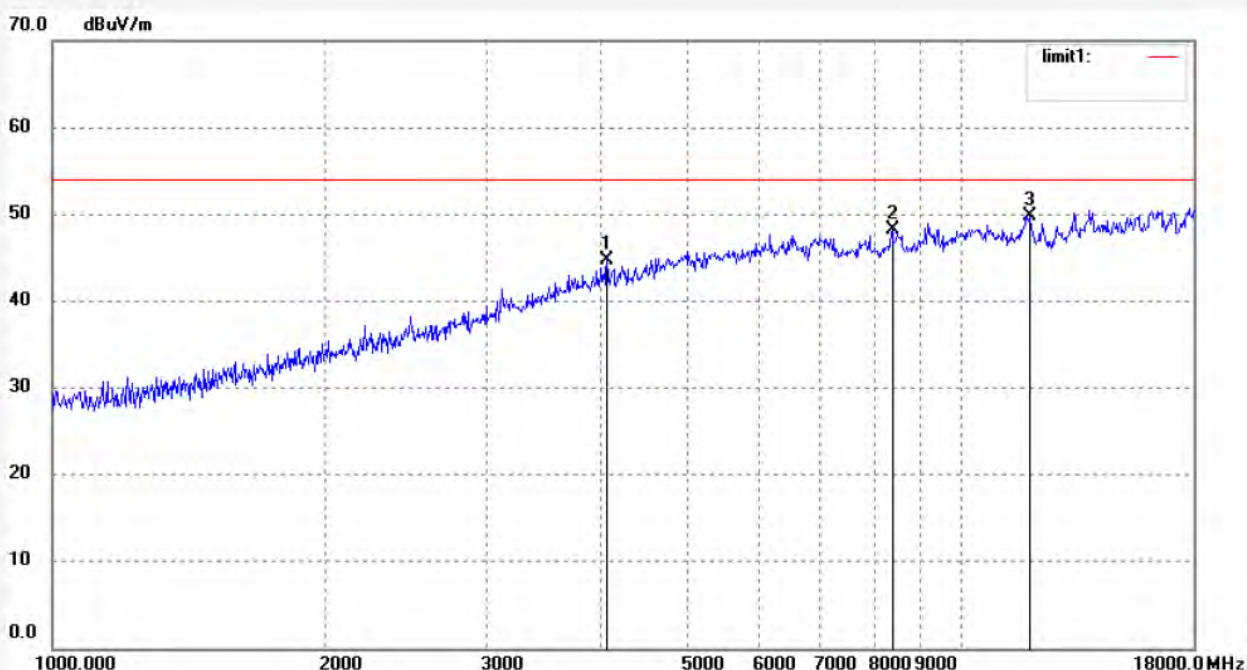
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2634 | Polarization: Vertical |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/44/26 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2437MHz(802.11n20) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 4074.389 | 45.95 | -1.15 | 44.80 | 54.00 | -9.20 | peak | | | |
| 2 | 8392.292 | 39.19 | 9.03 | 48.22 | 54.00 | -5.78 | peak | | | |
| 3 | 11871.710 | 36.92 | 12.84 | 49.76 | 54.00 | -4.24 | peak | | | |


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Job No.: ricky #2633

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: 150M Mini Wireless USB Adapter

Mode: TX 2437MHz(802.11n20)

Model: WU110K

Manufacturer: HAOLIYUAN

Polarization: Horizontal

Power Source: DC 5V

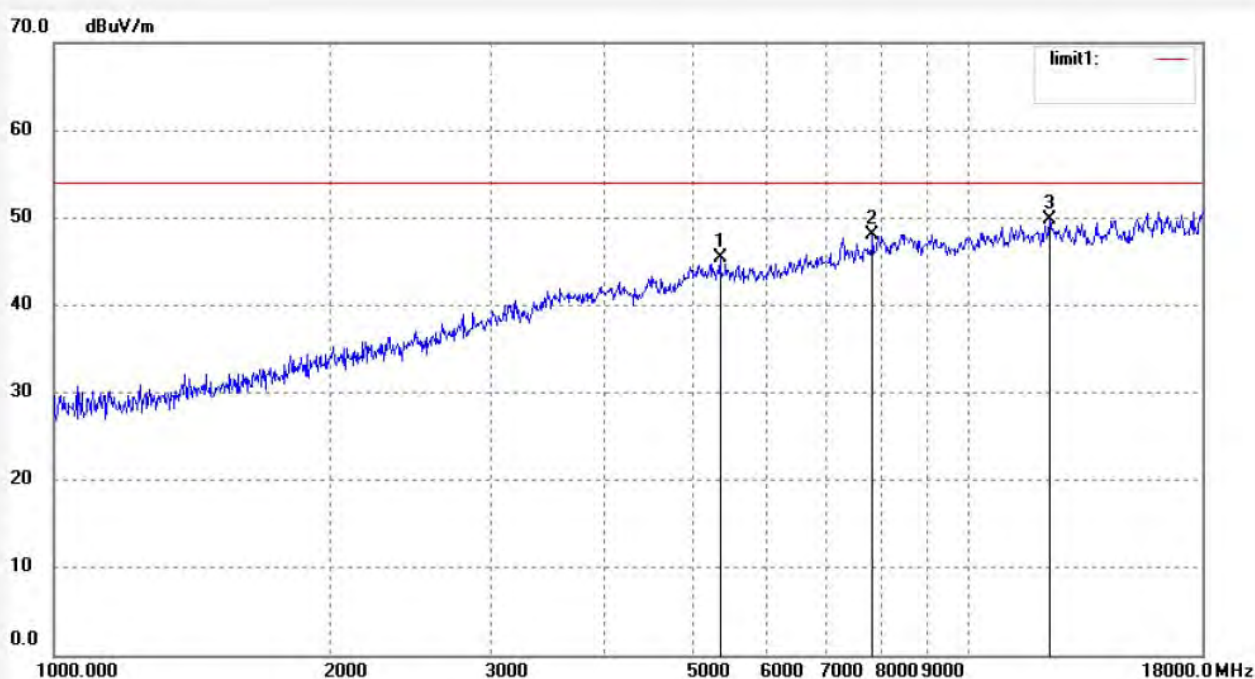
Date: 2014/09/21

Time: 18/43/25

Engineer Signature: Ricky

Distance: 3m

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 5346.358 | 43.72 | 1.74 | 45.46 | 54.00 | -8.54 | peak | | | |
| 2 | 7852.524 | 40.91 | 7.06 | 47.97 | 54.00 | -6.03 | peak | | | |
| 3 | 12255.224 | 4.66 | 45.06 | 49.72 | 54.00 | -4.28 | peak | | | |



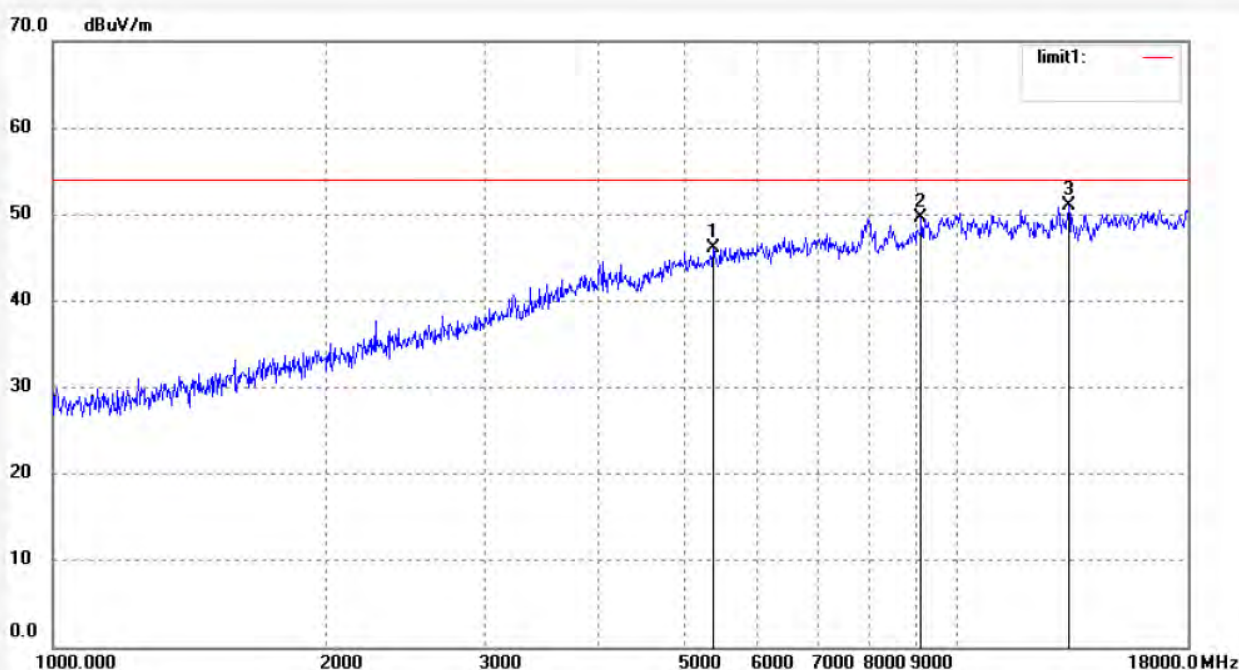
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2632 | Polarization: Horizontal |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/42/33 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2462MHz(802.11n20) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 5377.354 | 44.49 | 1.71 | 46.20 | 54.00 | -7.80 | peak | | | |
| 2 | 9126.063 | 40.57 | 9.11 | 49.68 | 54.00 | -4.32 | peak | | | |
| 3 | 13288.284 | 4.34 | 46.64 | 50.98 | 54.00 | -3.02 | peak | | | |



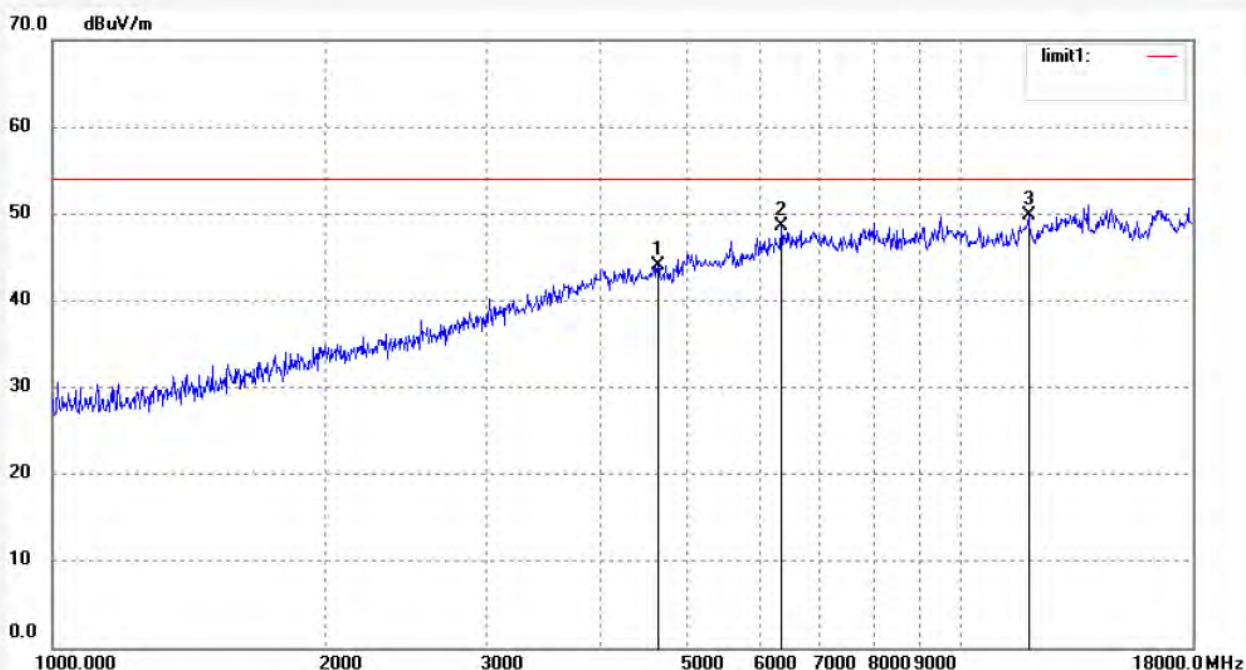
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2631 | Polarization: Vertical |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/41/32 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2462MHz(802.11n20) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 4640.339 | 44.39 | -0.37 | 44.02 | 54.00 | -9.98 | peak | | | |
| 2 | 6340.436 | 44.36 | 4.20 | 48.56 | 54.00 | -5.44 | peak | | | |
| 3 | 11871.710 | 36.97 | 12.84 | 49.81 | 54.00 | -4.19 | peak | | | |



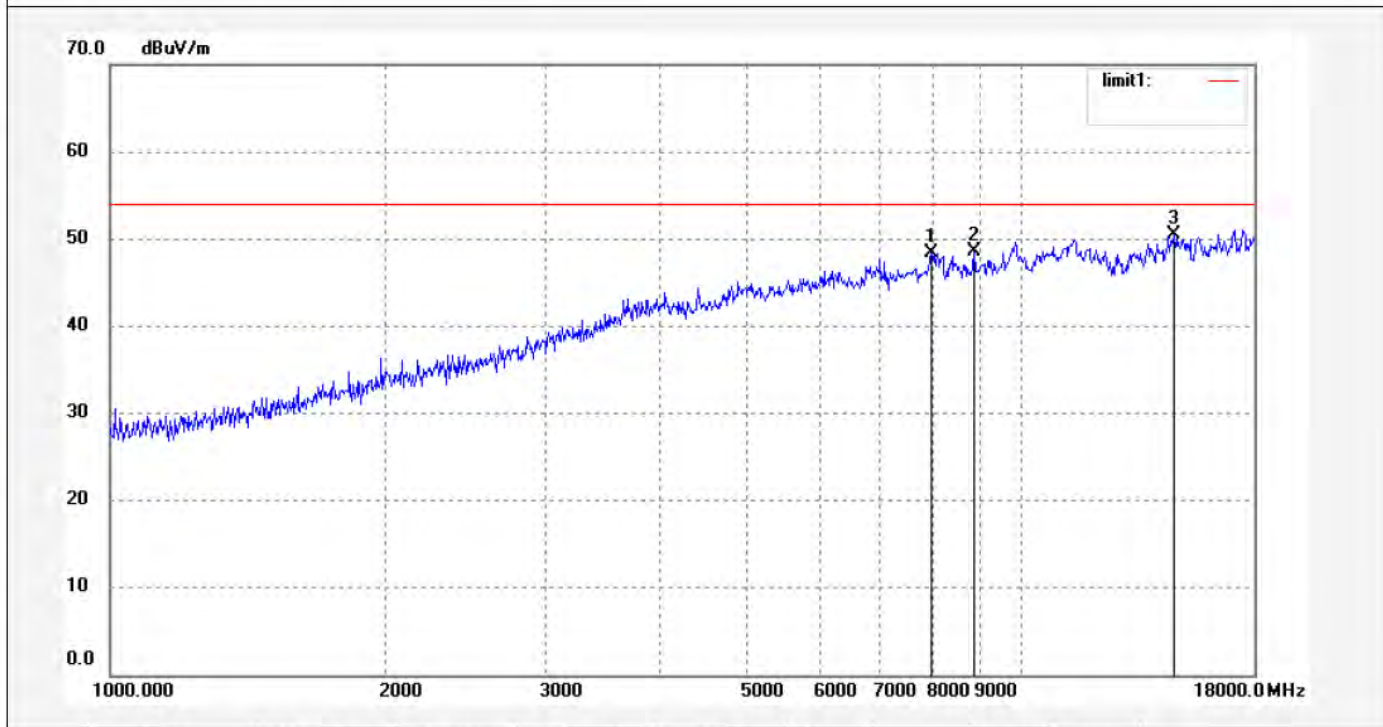
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2630 | Polarization: Horizontal |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/40/54 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2422MHz(802.11n40) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 7966.832 | 40.30 | 8.03 | 48.33 | 54.00 | -5.67 | peak | | | |
| 2 | 8866.061 | 39.76 | 8.79 | 48.55 | 54.00 | -5.45 | peak | | | |
| 3 | 14702.914 | 0.49 | 49.98 | 50.47 | 54.00 | -3.53 | peak | | | |



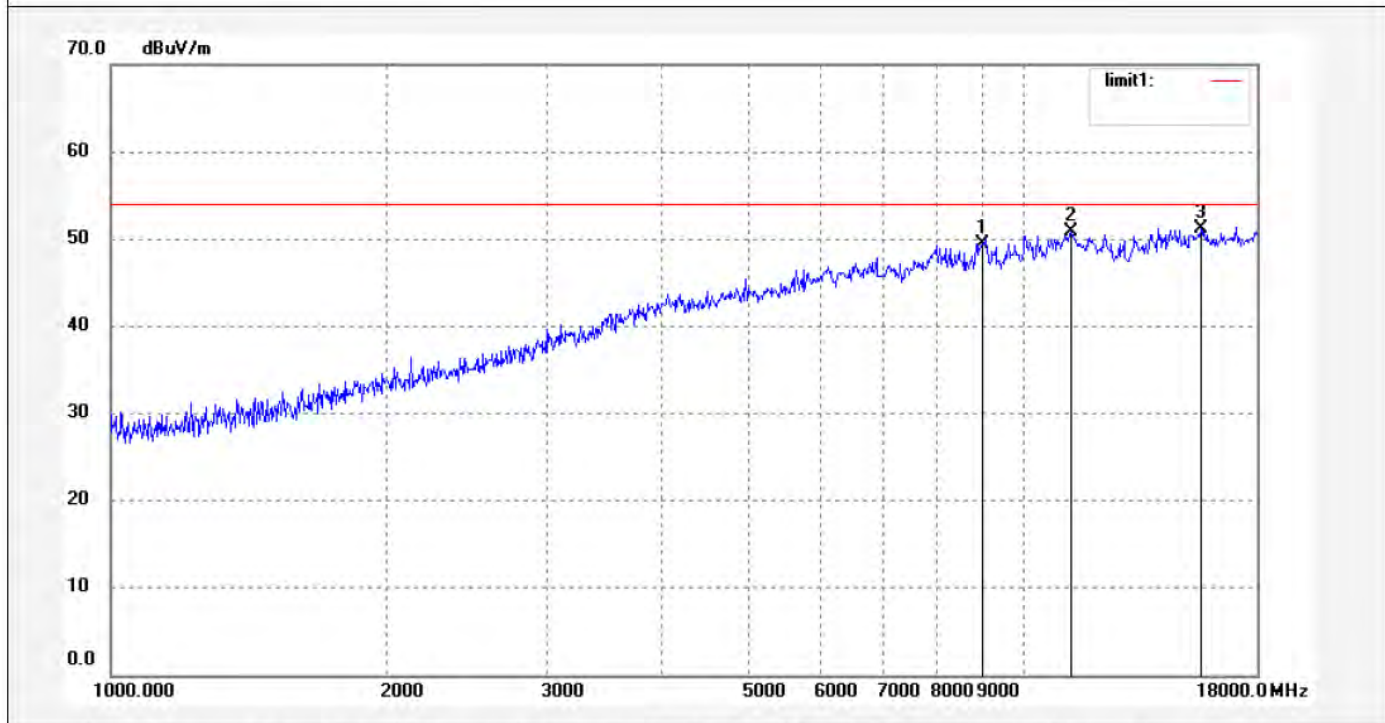
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2629 | Polarization: Vertical |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/39/46 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2422MHz(802.11n40) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 9021.160 | 40.48 | 8.94 | 49.42 | 54.00 | -4.58 | peak | | | |
| 2 | 11269.856 | 39.61 | 11.26 | 50.87 | 54.00 | -3.13 | peak | | | |
| 3 | 15622.990 | 2.69 | 48.53 | 51.22 | 54.00 | -2.78 | peak | | | |



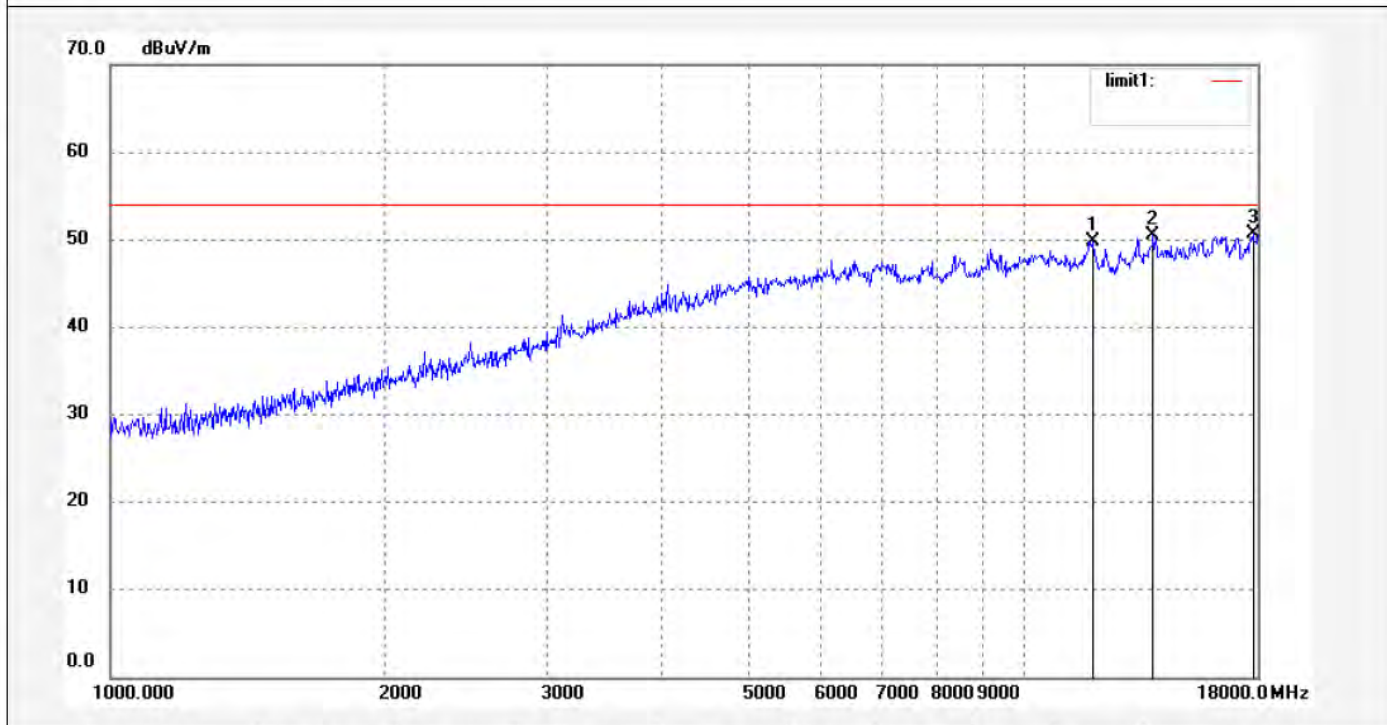
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2628 | Polarization: Vertical |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/37/23 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2437MHz(802.11n40) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 11871.710 | 36.92 | 12.84 | 49.76 | 54.00 | -4.24 | peak | | | |
| 2 | 13837.024 | 2.87 | 47.59 | 50.46 | 54.00 | -3.54 | peak | | | |
| 3 | 17793.091 | -4.01 | 54.63 | 50.62 | 54.00 | -3.38 | peak | | | |



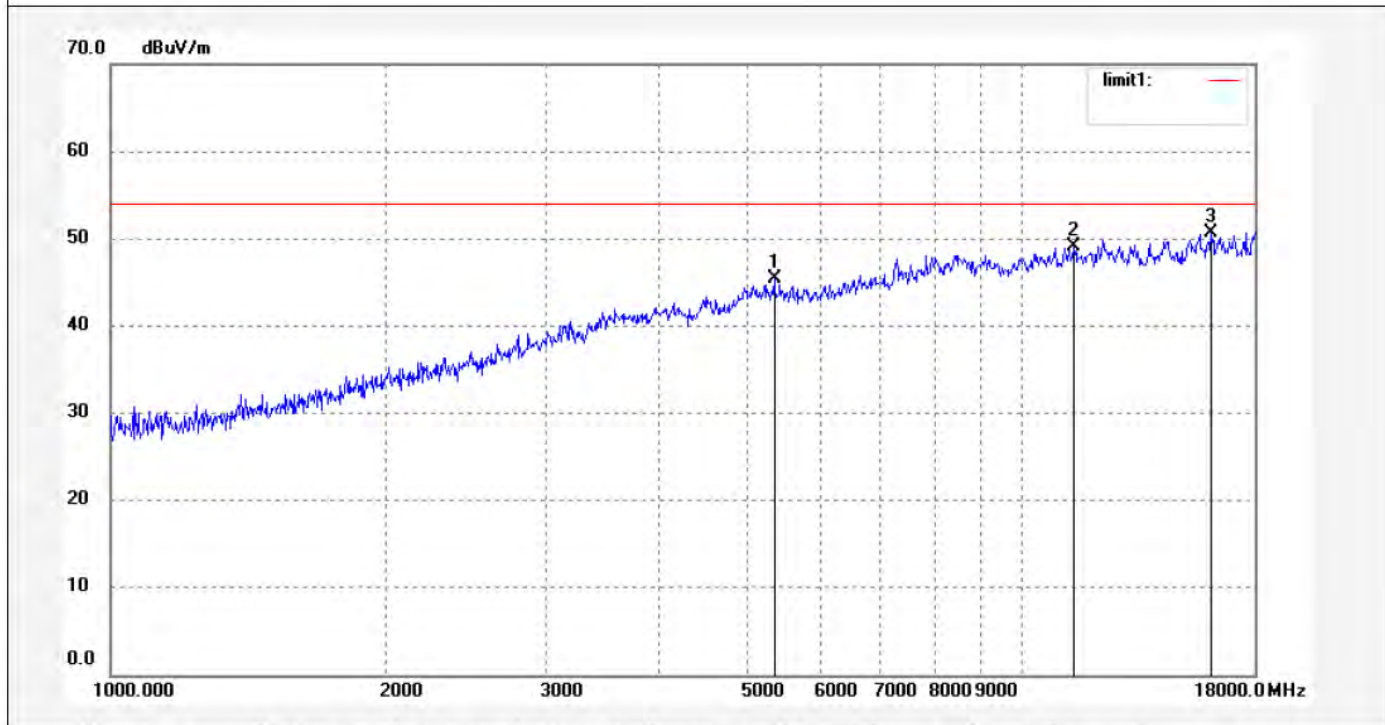
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2627 | Polarization: Horizontal |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/35/46 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2437MHz(802.11n40) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 5346.358 | 43.72 | 1.74 | 45.46 | 54.00 | -8.54 | peak | | | |
| 2 | 11400.908 | 37.25 | 11.76 | 49.01 | 54.00 | -4.99 | peak | | | |
| 3 | 16127.689 | 1.95 | 48.76 | 50.71 | 54.00 | -3.29 | peak | | | |



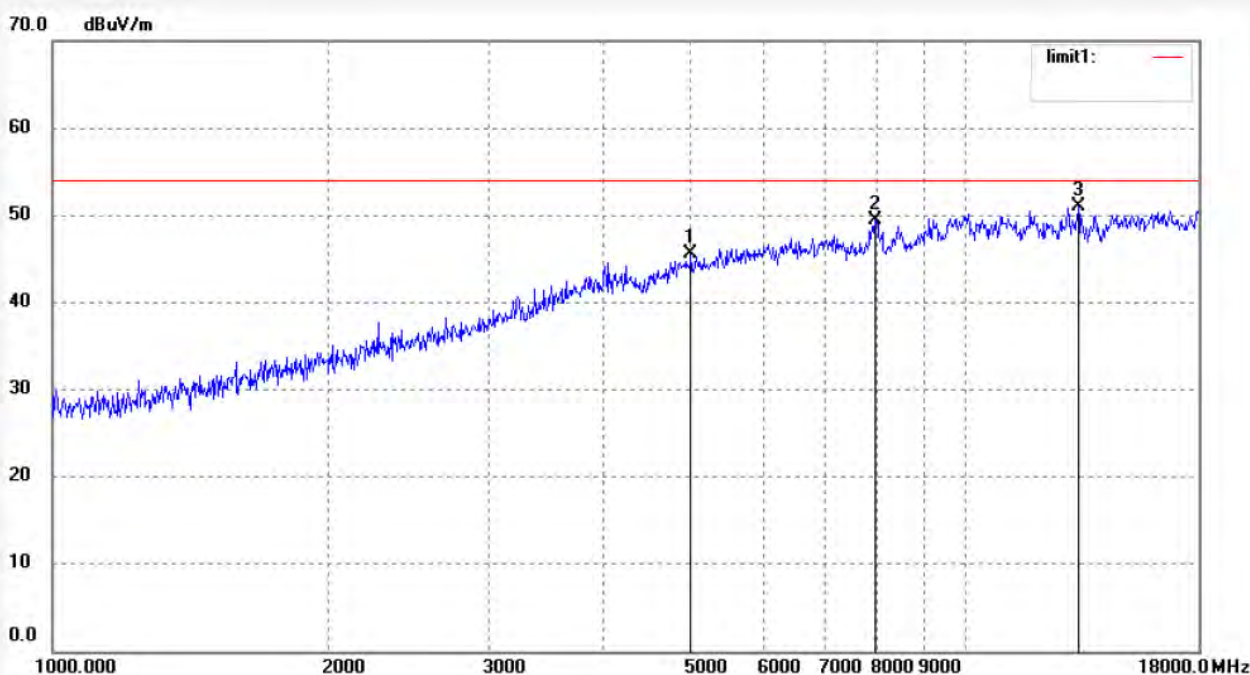
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| | |
|-------------------------------------|---------------------------|
| Job No.: ricky #2626 | Polarization: Horizontal |
| Standard: FCC Class B 3M Radiated | Power Source: DC 5V |
| Test item: Radiation Test | Date: 2014/09/21 |
| Temp.(C)/Hum.(%) 25 C / 55 % | Time: 18/34/06 |
| EUT: 150M Mini Wireless USB Adapter | Engineer Signature: Ricky |
| Mode: TX 2452MHz(802.11n40) | Distance: 3m |
| Model: WU110K | |
| Manufacturer: HAOLIYUAN | |

Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 5002.496 | 44.03 | 1.49 | 45.52 | 54.00 | -8.48 | peak | | | |
| 2 | 7966.832 | 41.47 | 8.03 | 49.50 | 54.00 | -4.50 | peak | | | |
| 3 | 13288.284 | 4.34 | 46.64 | 50.98 | 54.00 | -3.02 | peak | | | |


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Job No.: ricky #2625

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: 150M Mini Wireless USB Adapter

Mode: TX 2452MHz(802.11n40)

Model: WU110K

Manufacturer: HAOLIYUAN

Polarization: Vertical

Power Source: DC 5V

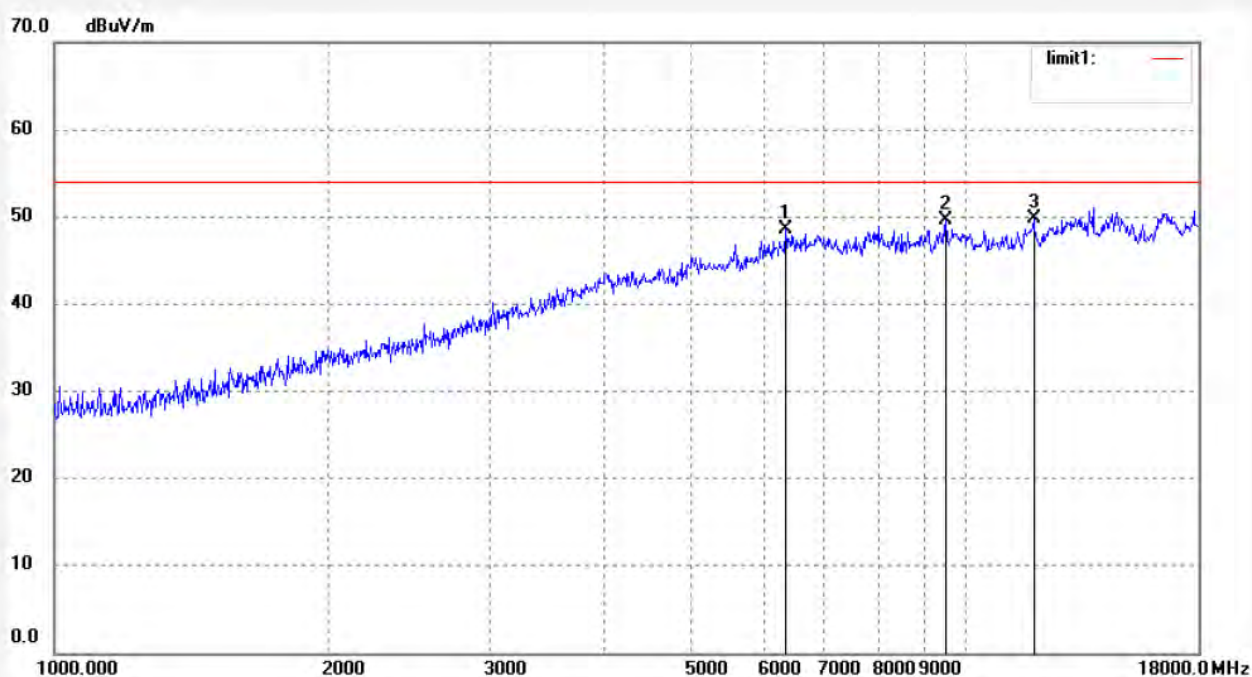
Date: 2014/09/21

Time: 18/32/56

Engineer Signature: Ricky

Distance: 3m

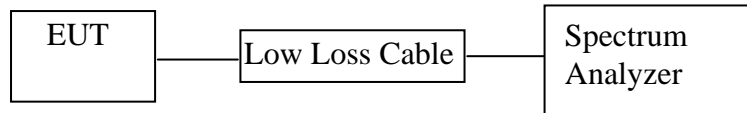
Note: Report No.:ATE20141831



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 6340.436 | 44.36 | 4.20 | 48.56 | 54.00 | -5.44 | peak | | | |
| 2 | 9502.925 | 38.94 | 10.60 | 49.54 | 54.00 | -4.46 | peak | | | |
| 3 | 11871.710 | 36.97 | 12.84 | 49.81 | 54.00 | -4.19 | peak | | | |

10. CONDUCTED SPURIOUS EMISSION COMPLIANCE TEST

10.1. Block Diagram of Test Setup



10.2. The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

10.3. EUT Configuration on Measurement

The equipment is installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

10.4. Operating Condition of EUT

10.4.1. Setup the EUT and simulator as shown as Section 10.1.

10.4.2. Turn on the power of all equipment.

10.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

10.5. Test Procedure

10.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.

10.5.2. Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz (below 1GHz).

10.5.3. Set RBW of spectrum analyzer to 1MHz and VBW to 3MHz (above 1GHz).

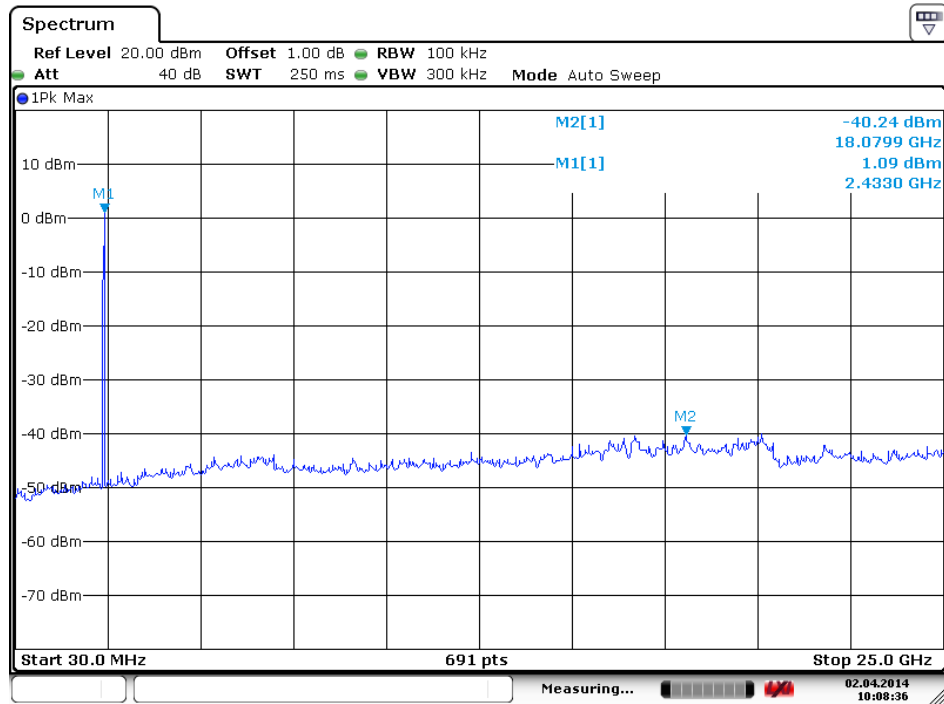
10.5.4. The Conducted Spurious Emission was measured and recorded.

10.6. Test Result

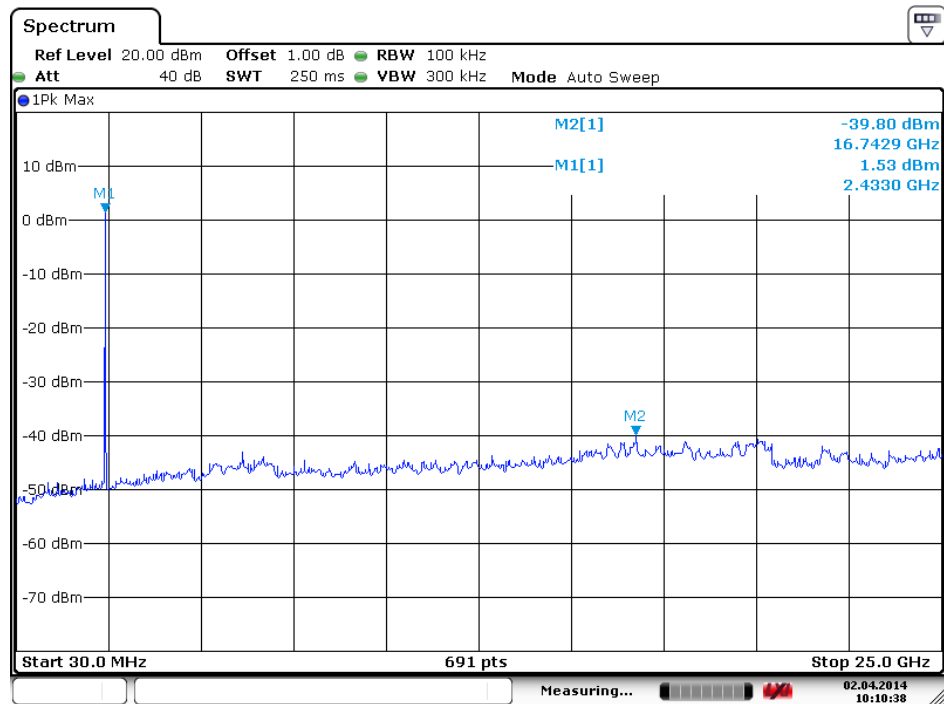
Pass.

The spectrum analyzer plots are attached as below.

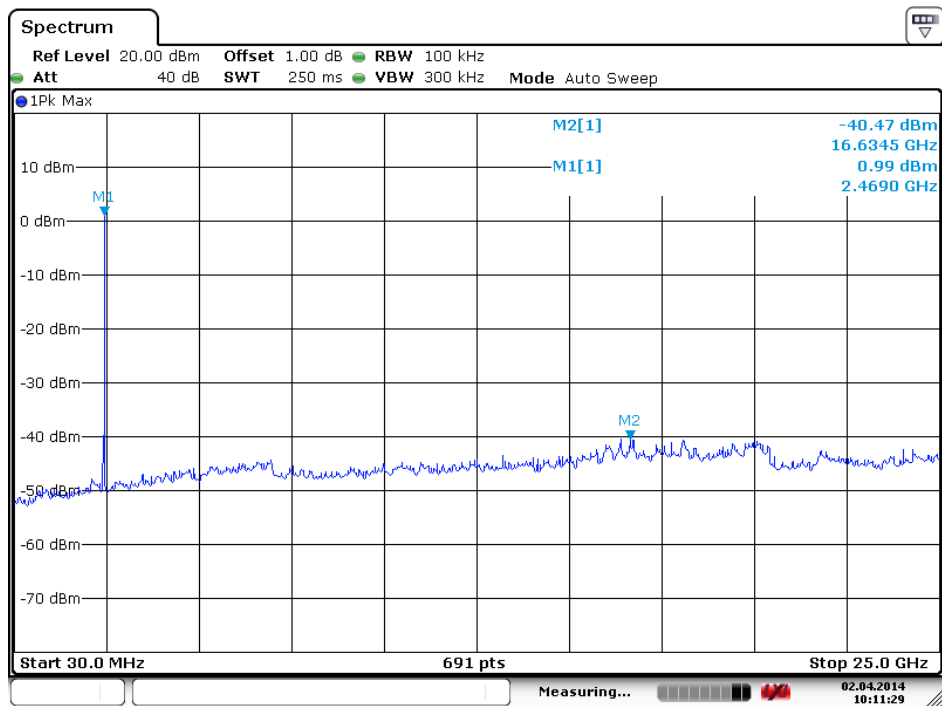
TX 802.11b Channel Low 2412MHz



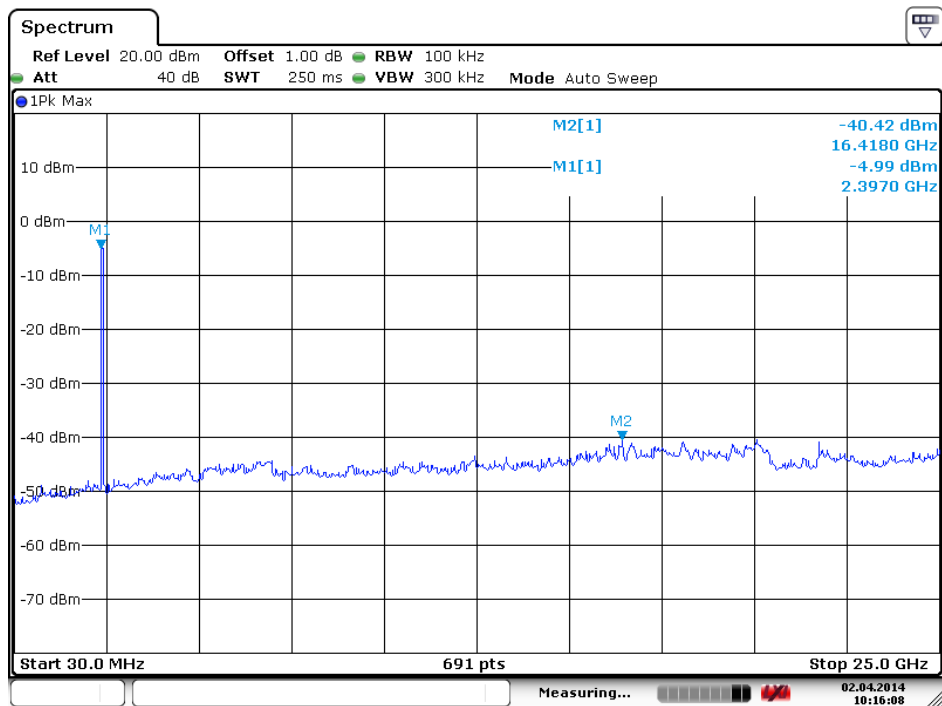
TX 802.11b Channel Middle 2437MHz



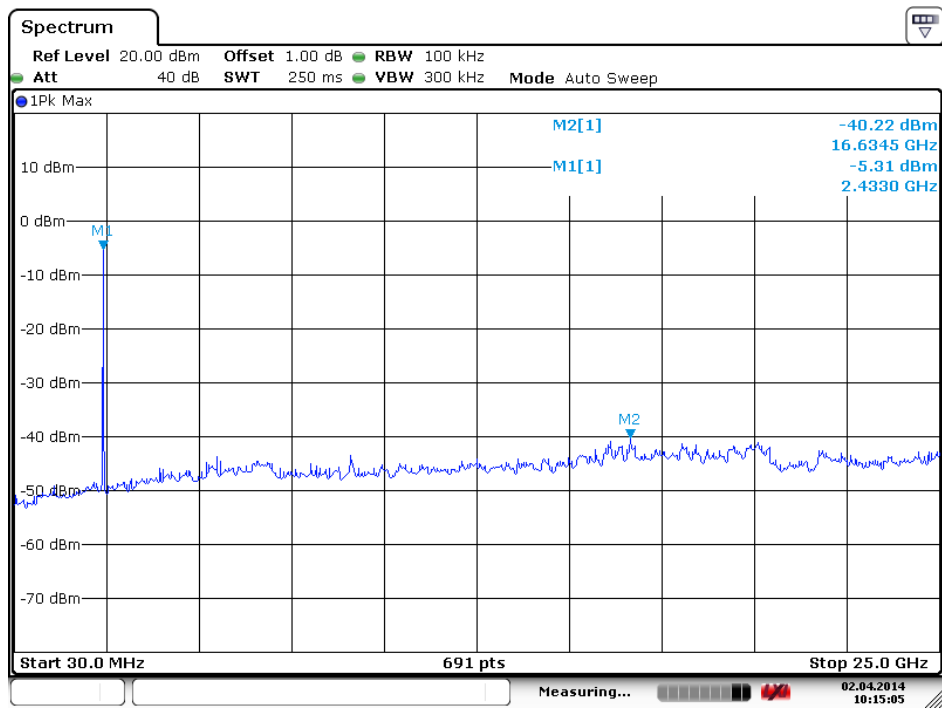
TX 802.11b Channel High 2462MHz



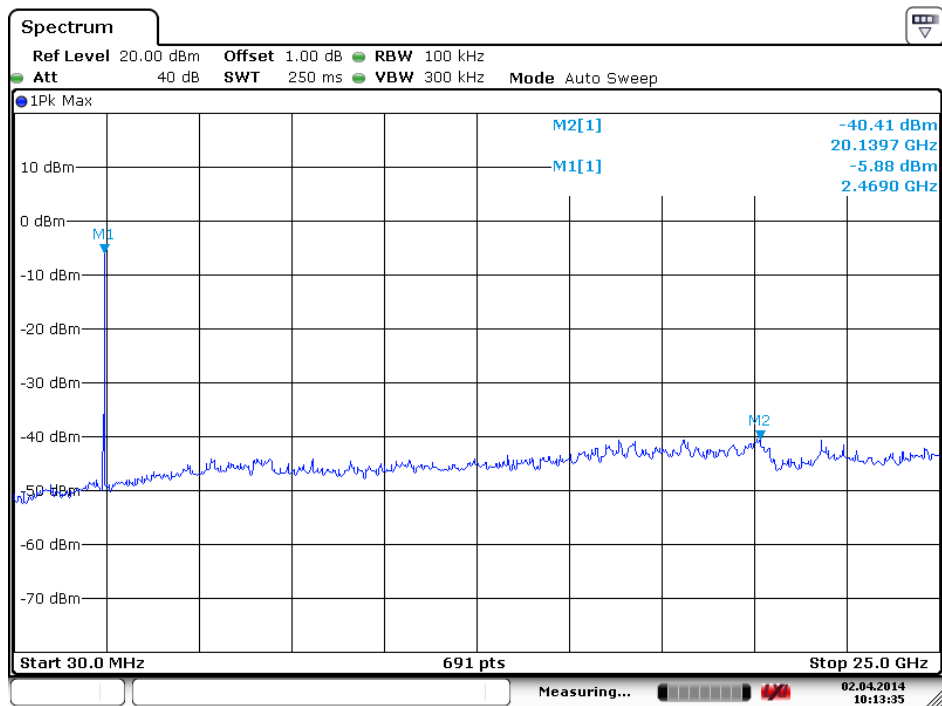
TX 802.11g Channel Low 2412MHz



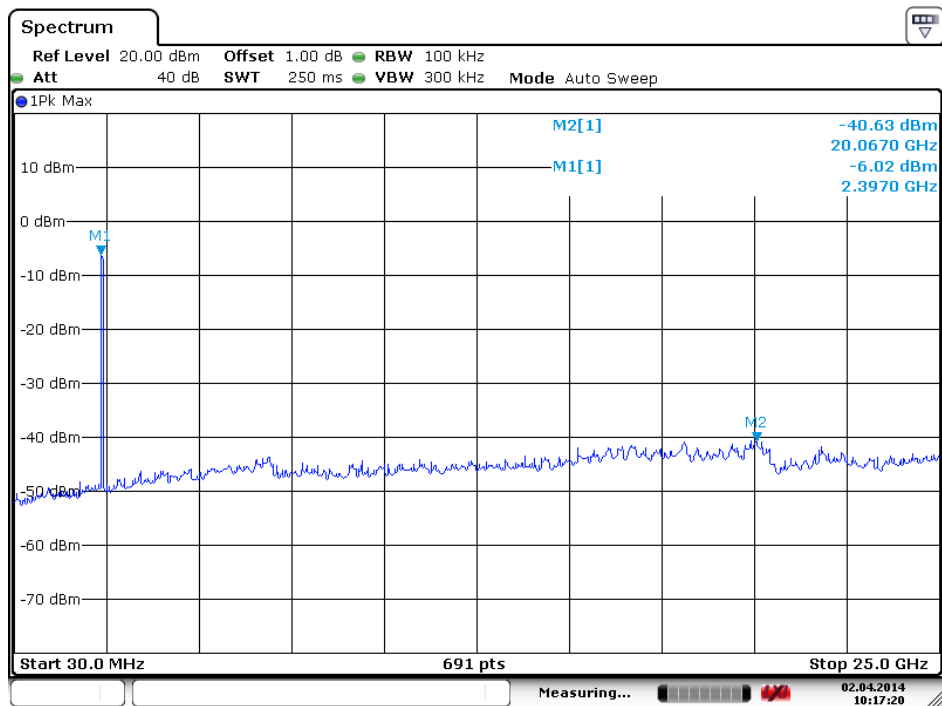
TX 802.11g Channel Middle 2437MHz



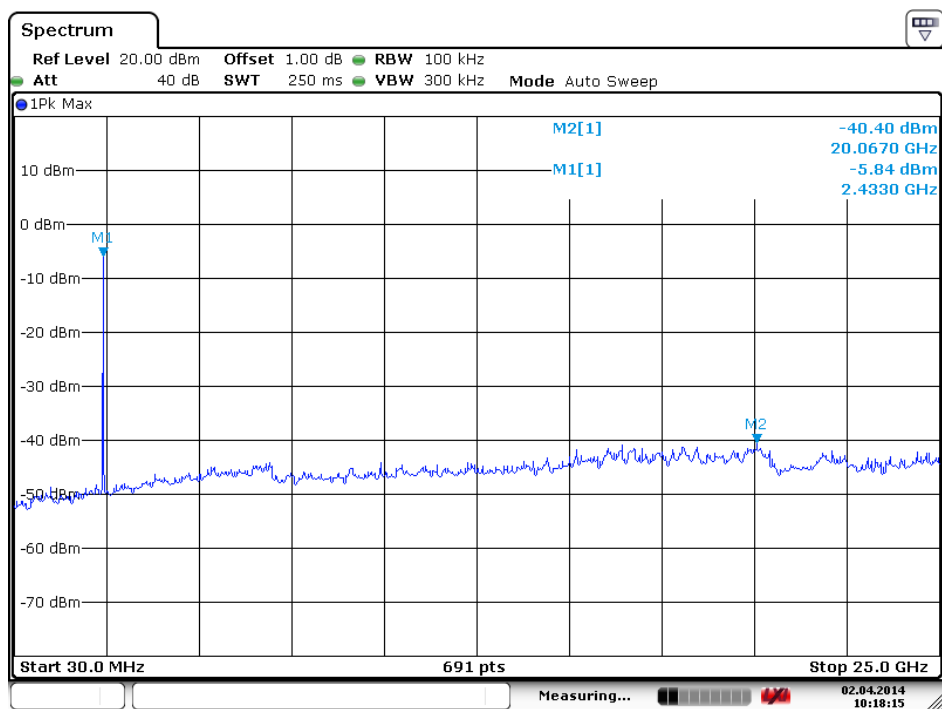
TX 802.11g Channel High 2462MHz



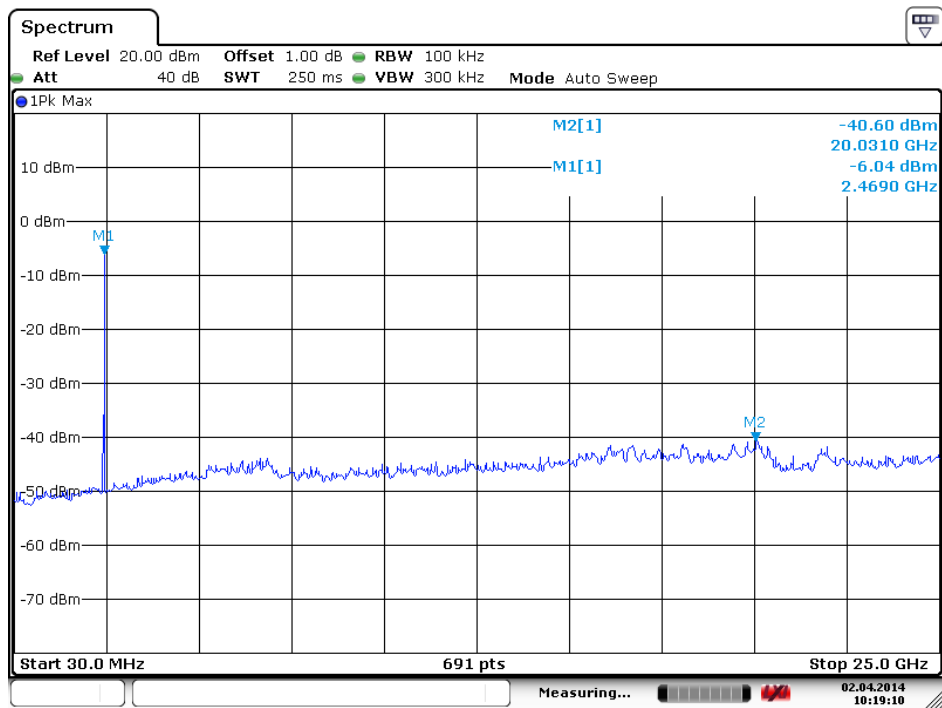
TX 802.11n Channel Low 2412MHz (20MHz)



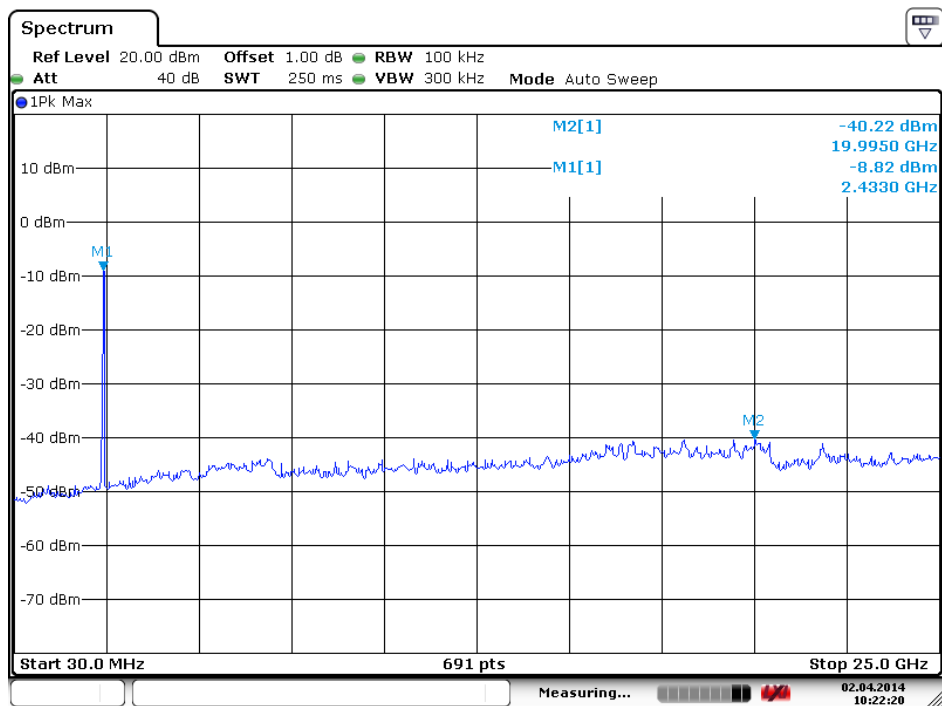
TX 802.11n Channel Middle 2437MHz (20MHz)



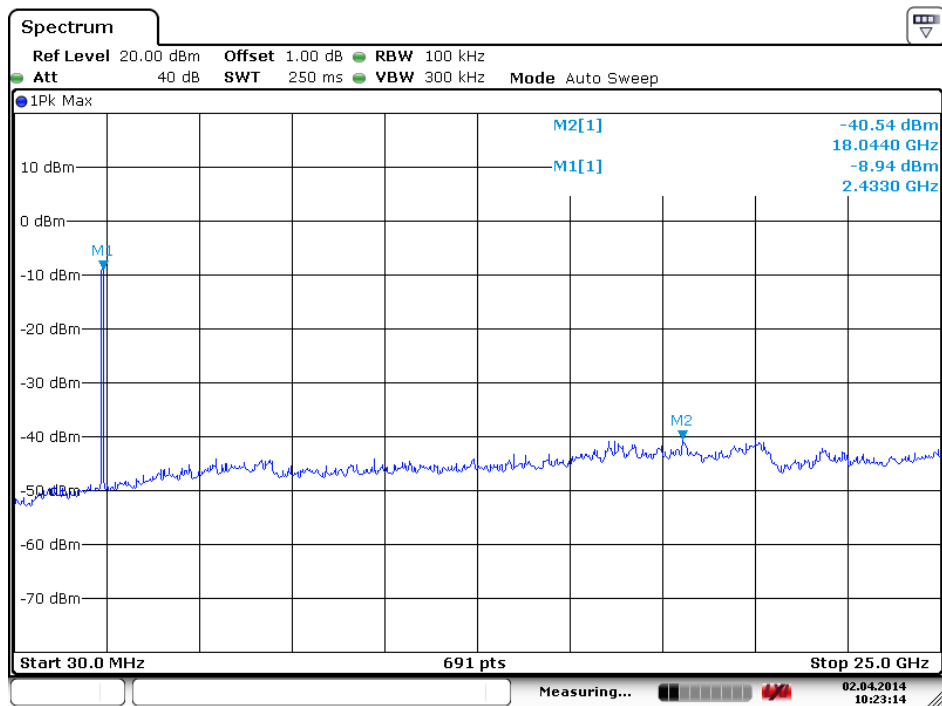
TX 802.11n Channel High 2462MHz (20MHz)



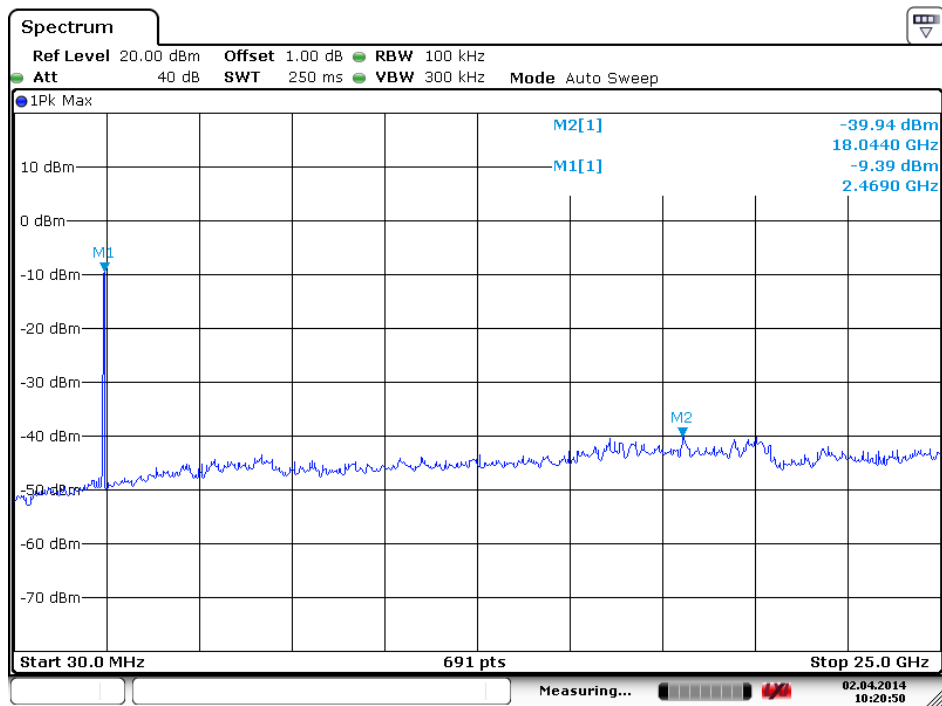
TX 802.11n Channel Low 2422MHz (40MHz)



TX 802.11n Channel Middle 2437MHz (40MHz)



TX 802.11n Channel High 2452MHz (40MHz)

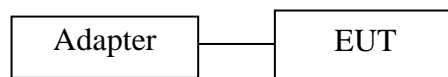


11.AC POWER LINE CONDUCTED EMISSION FOR FCC PART

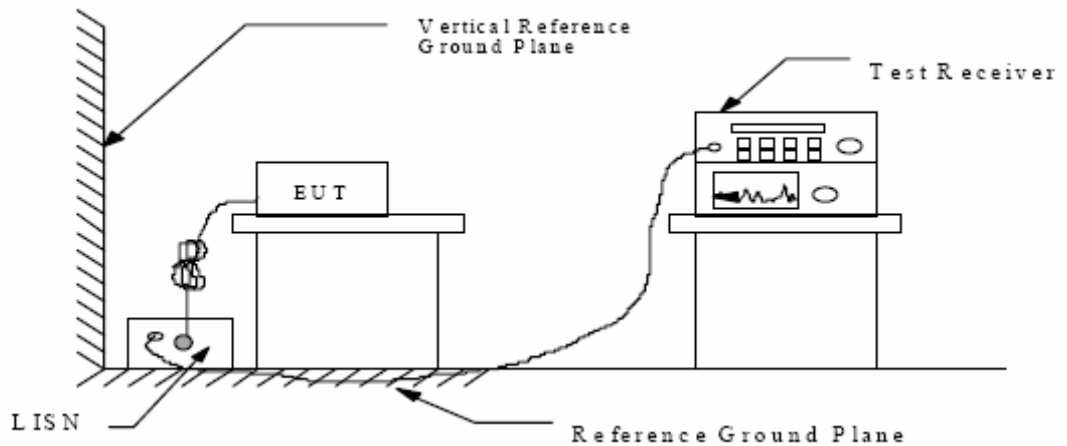
15 SECTION 15.207(A)

11.1.Block Diagram of Test Setup

11.1.1.Block diagram of connection between the EUT and simulators



11.1.2.Shielding Room Test Setup Diagram



11.2.The Emission Limit

11.2.1.Conducted Emission Measurement Limits According to Section 15.207(a)

| Frequency (MHz) | Limit dB(μV) | |
|-----------------|------------------|---------------|
| | Quasi-peak Level | Average Level |
| 0.15 - 0.50 | 66.0 - 56.0 * | 56.0 - 46.0 * |
| 0.50 - 5.00 | 56.0 | 46.0 |
| 5.00 - 30.00 | 60.0 | 50.0 |

* Decreases with the logarithm of the frequency.

11.3.Configuration of EUT on Measurement

The equipment are installed on the Conducted Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

11.4.Operating Condition of EUT

11.4.1.Setup the EUT and simulator as shown as Section 11.1.

11.4.2.Turn on the power of all equipment.

11.4.3.Let the EUT work in (Charging) mode measure it.

11.5.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2009 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

11.6.Power Line Conducted Emission Measurement Results

ACCURATE TECHNOLOGY CO., LTD

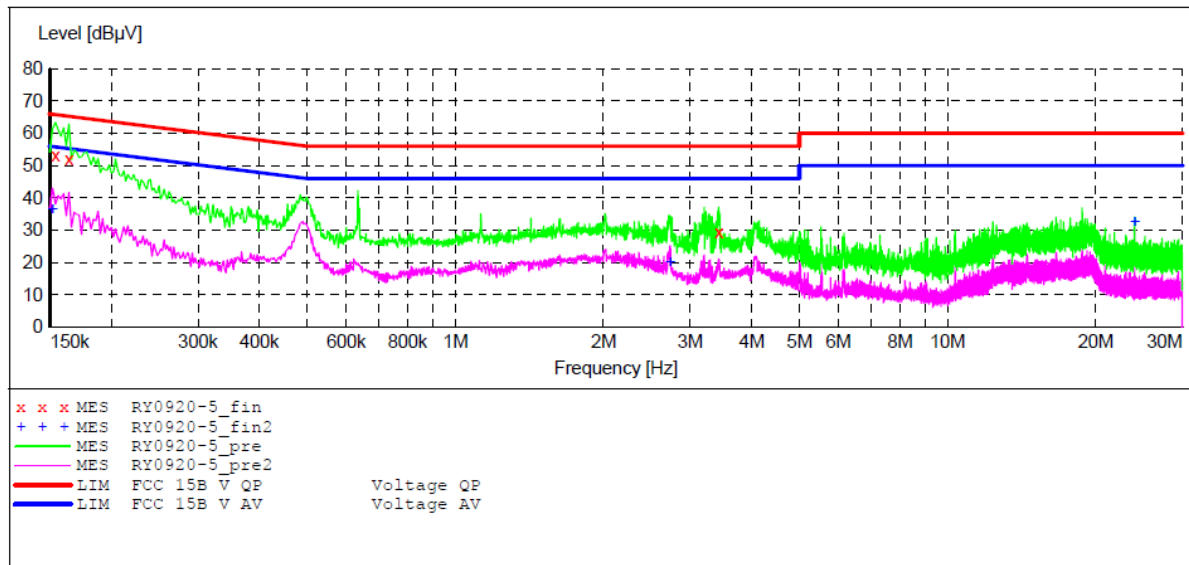
CONDUCTED EMISSION STANDARD EN 55015

EUT: 150M Mini Wireless USB Adapter M/N:WU110K
 Manufacturer: HAOLIYUAN
 Operating Condition: Operation
 Test Site: 1#Shielding Room
 Operator: Ricky
 Test Specification: L 120V/60Hz
 Comment:

Report No.:ATE20141831

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz LISN (ESH3-Z5)
 Average



MEASUREMENT RESULT: "RY0920-5_fin"

2014-9-20 13:33

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.154000 | 55.30 | 10.4 | 66 | 10.5 | QP | L1 | GND |
| 0.164000 | 52.00 | 10.4 | 65 | 13.3 | QP | L1 | GND |
| 3.426500 | 29.20 | 11.7 | 56 | 26.8 | QP | L1 | GND |

MEASUREMENT RESULT: "RY0920-5_fin2"

2014-9-20 13:33

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.152000 | 36.20 | 10.4 | 56 | 19.7 | AV | L1 | GND |
| 2.733500 | 19.90 | 11.7 | 46 | 26.1 | AV | L1 | GND |
| 24.000500 | 32.40 | 12.0 | 50 | 17.6 | AV | L1 | GND |

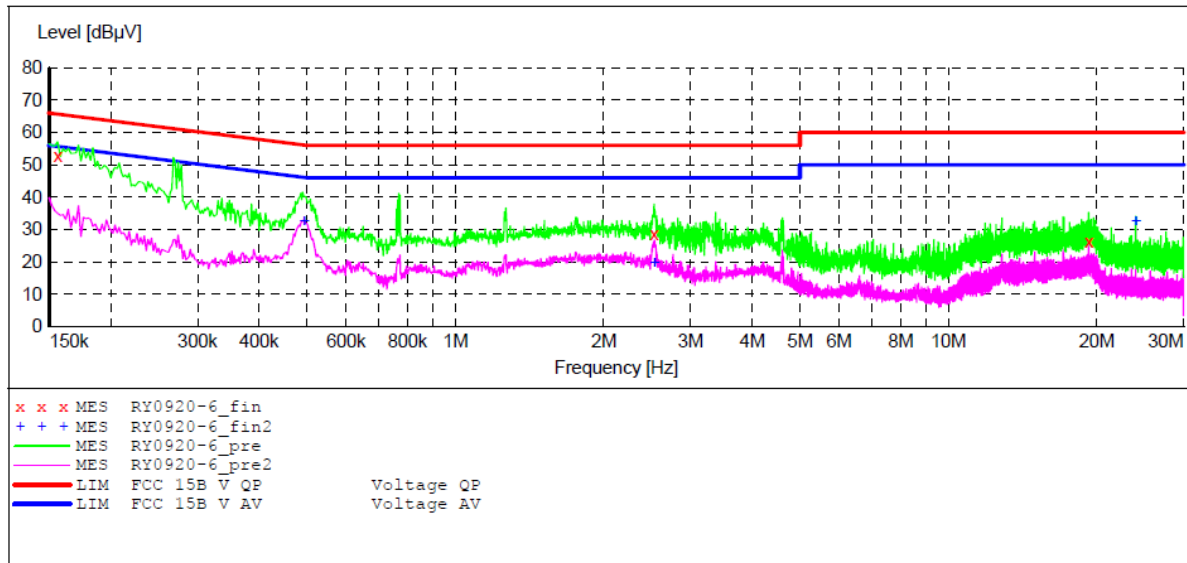
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD EN 55015

EUT: 150M Mini Wireless USB Adapter M/N:WU110K
 Manufacturer: HAOLIYUAN
 Operating Condition: Operation
 Test Site: 1#Shielding Room
 Operator: Ricky
 Test Specification: N 120V/60Hz
 Comment: Report No.:ATE20141831

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz LISN(ESH3-25)
 Average



MEASUREMENT RESULT: "RY0920-6_fin"

2014-9-20 13:37

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.156000 | 52.90 | 10.4 | 66 | 12.8 | QP | N | GND |
| 2.531000 | 28.60 | 11.7 | 56 | 27.4 | QP | N | GND |
| 19.257500 | 26.30 | 11.9 | 60 | 33.7 | QP | N | GND |

MEASUREMENT RESULT: "RY0920-6_fin2"

2014-9-20 13:37

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.494000 | 32.60 | 11.5 | 46 | 13.5 | AV | N | GND |
| 2.535500 | 19.60 | 11.7 | 46 | 26.4 | AV | N | GND |
| 24.000500 | 32.40 | 12.0 | 50 | 17.6 | AV | N | GND |

12. ANTENNA REQUIREMENT

12.1. The Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

12.2. Antenna Construction

Device is equipped with unique antenna, which isn't displaced by other antenna. Therefore, the equipment complies with the antenna requirement of Section 15.203.

