

# ***FCC Report***

***WIFI***

**Product Description: MID**

**Trade Mark: QUO**

**Model No.: QD3Gm-710-SL, QD3Gm-710-GD**

**FCC ID: 2ACDE-QD3GM-710-SL**

**Applicant: Cubix Latin America, LLC**

**Address: 2841 NW 107th Ave, Doral, FL 33172**

**Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247:2013**

**Test Date: 28 ~ 30 July, 2014**

**Issued Date: 31 July, 2014**

**Test Result: Complied**



**James Wu**  
**Laboratory Manager**

The test result in this test report relate only to the tested samples in this report .

This report shall not be reproduced except in full without the written approval of TMC Rheinland Testing Services Corp Limited

## 2 Version

| <i>Version No.</i> | <i>Date</i>   | <i>Description</i> |
|--------------------|---------------|--------------------|
| 00                 | 31 July, 2014 | Original           |
|                    |               |                    |
|                    |               |                    |
|                    |               |                    |
|                    |               |                    |

**Prepared By:**

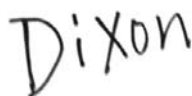


**Date:**

31 July, 2014

**Young Li**  
**Project Engineer**

**Check By:**



**Date:**

31 July, 2014

**Dixon Hao**  
**Reviewer**

### 3 Contents

|                                           | Page |
|-------------------------------------------|------|
| 1 COVER PAGE .....                        | 1    |
| 2 VERSION .....                           | 2    |
| 3 CONTENTS .....                          | 3    |
| 4 TEST SUMMARY .....                      | 4    |
| 5 GENERAL INFORMATION .....               | 5    |
| 5.1 CLIENT INFORMATION .....              | 5    |
| 5.2 GENERAL DESCRIPTION OF EUT .....      | 5    |
| 5.3 TEST MODE .....                       | 6    |
| 5.4 TEST FACILITY .....                   | 6    |
| 5.5 TEST LOCATION .....                   | 6    |
| 6 TEST INSTRUMENTS LIST .....             | 7    |
| 7 MEASUREMENT DATA AND TEST RESULTS ..... | 8    |
| 7.1 ANTENNA REQUIREMENT .....             | 8    |
| 7.2 CONDUCTED EMISSIONS .....             | 9    |
| 7.3 CONDUCTED PEAK OUTPUT POWER .....     | 12   |
| 7.4 CHANNEL BANDWIDTH .....               | 17   |
| 7.5 POWER SPECTRAL DENSITY .....          | 22   |
| 7.6 BAND EDGE .....                       | 27   |
| 7.6.1 Conducted Emission Method .....     | 27   |
| 7.6.2 Radiated Emission Method .....      | 30   |
| 7.7 SPURIOUS EMISSION .....               | 35   |
| 7.7.1 Conducted Emission Method .....     | 35   |
| 7.7.2 Radiated Emission Method .....      | 40   |
| 8 TEST SETUP PHOTO .....                  | 54   |
| 9 EUT CONSTRUCTIONAL DETAILS .....        | 55   |

## 4 Test Summary

| Test Item                        | Test Method       | Result   |
|----------------------------------|-------------------|----------|
| Antenna requirement              | 15.203/15.247 (c) | Complied |
| AC Power Line Conducted Emission | 15.207            | Complied |
| Conducted Peak Output Power      | 15.247 (b)(3)     | Complied |
| 6dB Occupied Bandwidth           | 15.247 (a)(2)     | Complied |
| Power Spectral Density           | 15.247 (e)        | Complied |
| Band Edge                        | 15.247(d)         | Complied |
| Spurious Emission                | 15.205/15.209     | Complied |

*Complied: The EUT has complied with the essential requirements in the standard.*

## 5 General Information

### 5.1 Client Information

|               |                                    |
|---------------|------------------------------------|
| Applicant:    | Cubix Latin America, LLC           |
| Address:      | 2841 NW 107th Ave, Doral, FL 33172 |
| Manufacturer: | Cubix Latin America, LLC           |
| Address:      | 2841 NW 107th Ave, Doral, FL 33172 |

### 5.2 General Description of EUT

|                        |                                                                                                                               |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Product Name:          | MID                                                                                                                           |
| Brand Mark:            | QUO                                                                                                                           |
| Model No.:             | QD3Gm-710-SL, QD3Gm-710-GD                                                                                                    |
| Test model No.:        | QD3Gm-710-SL                                                                                                                  |
| Software Version:      | MG723D(B1-2)                                                                                                                  |
| Hardware Version:      | V1.0                                                                                                                          |
| <b>WIFI</b>            |                                                                                                                               |
| Support Protocol:      | 802.11b/g/n(H20)/n(H40)                                                                                                       |
| Operation Frequency:   | 802.11b/g/n(H20): 2412MHz~2462MHz<br>802.11n(H40): 2422MHz~2452MHz                                                            |
| Channel numbers:       | 802.11b/g/n(H20): 11<br>802.11n(H40): 7                                                                                       |
| Channel separation:    | 5MHz                                                                                                                          |
| Modulation technology: | 802.11b: Direct Sequence Spread Spectrum (DSSS)<br>802.11g/n(H20)/n(H40):<br>Orthogonal Frequency Division Multiplexing(OFDM) |
| Antenna Type:          | Integral Antenna                                                                                                              |
| Antenna Gain:          | 1dBi                                                                                                                          |
| AC Adapter:            | Model: JHD-AP012U-050200AB<br>Input: AC 100~240V 50/60Hz 0.35A<br>Output: DC 5.0V 2.0A                                        |
| Power supply:          | lithium-ion charge battery 3.7V                                                                                               |

| Operation Frequency each of channel |           |         |           |         |           |         |           |
|-------------------------------------|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel                             | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 1                                   | 2412MHz   | 4       | 2427MHz   | 7       | 2442MHz   | 10      | 2457MHz   |
| 2                                   | 2417MHz   | 5       | 2432MHz   | 8       | 2447MHz   | 11      | 2462MHz   |
| 3                                   | 2422MHz   | 6       | 2437MHz   | 9       | 2452MHz   |         |           |
|                                     |           |         |           |         |           |         |           |

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

| Test channel    | Frequency (MHz)               |               |
|-----------------|-------------------------------|---------------|
|                 | 802.11b/802.11g/802.11n(HT20) | 802.11n(HT40) |
| Lowest channel  | 2412MHz                       | 2422MHz       |
| Middle channel  | 2437MHz                       | 2437MHz       |
| Highest channel | 2462MHz                       | 2452MHz       |

### 5.3 Test Mode

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Transmitting mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Keep the EUT in continuously transmitting mode |
| Remark:<br>1. During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.<br>2. We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:<br>802.11b: 1Mbps; 802.11g: 6Mbps; 802.11n(H20): 6.5Mbps; 802.11n(H40): 13Mbps |                                                |

### 5.4 Test Facility

|                                                                                           |                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The test facility is recognized, certified, or accredited by the following organizations: |                                                                                                                                                                                                                                                                                                            |
| ■ <b>CNAS —Registration No.: CNAS L5775</b>                                               | CNAS has accredited Global United Technology Services Co., Ltd. to ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. |
| ■ <b>FCC —Registration No.: 600491</b>                                                    | Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, July 20, 2010.                            |
| ■ <b>Industry Canada (IC) —Registration No.: 9079A-2</b>                                  | The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2.                                                                                     |

### 5.5 Test Location

|                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All tests were performed at:<br>Global United Technology Services Co., Ltd.<br>Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 6 Test Instruments list

| Instrument                              | Manufacturer                   | Model No.                   | Inventory No. | Next Cal. Date |
|-----------------------------------------|--------------------------------|-----------------------------|---------------|----------------|
| 3m Semi- Anechoic Chamber               | ZhongYu Electron               | 9.2(L)*6.2(W)* 6.4(H)       | GTS250        | Mar. 27 2015   |
| Control Room                            | ZhongYu Electron               | 6.2(L)*2.5(W)* 2.4(H)       | GTS251        | N/A            |
| EMI Test Receiver                       | Rohde & Schwarz                | ESU26                       | GTS203        | Jun. 30 2015   |
| BiConiLog Antenna                       | SCHWARZBECK<br>MESS-ELEKTRONIK | VULB9163                    | GTS214        | Feb. 22 2015   |
| Double -ridged waveguide<br>horn        | SCHWARZBECK<br>MESS-ELEKTRONIK | 9120D-829                   | GTS208        | June 26 2015   |
| Horn Antenna                            | ETS-LINDGREN                   | 3160                        | GTS217        | Mar. 27 2015   |
| EMI Test Software                       | AUDIX                          | E3                          | N/A           | N/A            |
| Coaxial Cable                           | GTS                            | N/A                         | GTS213        | Mar. 28 2015   |
| Coaxial Cable                           | GTS                            | N/A                         | GTS211        | Mar. 28 2015   |
| Coaxial cable                           | GTS                            | N/A                         | GTS210        | Mar. 28 2015   |
| Coaxial Cable                           | GTS                            | N/A                         | GTS212        | Mar. 28 2015   |
| Amplifier(100kHz-3GHz)                  | HP                             | 8347A                       | GTS204        | Jun. 30 2015   |
| Amplifier(2GHz-20GHz)                   | HP                             | 8349B                       | GTS206        | Jun. 30 2015   |
| Pre-amplifier<br>(18-26GHz)             | Rohde & Schwarz                | AFS33-18002<br>650-30-8P-44 | GTS218        | June 26 2015   |
| Band filter                             | Amindeon                       | 82346                       | GTS219        | Mar. 28 2015   |
| Universal radio<br>communication tester | Rohde & Schwarz                | CMU200                      | GTS235        | May 09 2015    |
| Signal Generator                        | Rohde & Schwarz                | SML03                       | GTS236        | May 09 2015    |
| Temp. Humidity/ Barometer               | Oregon Scientific              | BA-888                      | GTS248        | May 09 2015    |
| D.C. Power Supply                       | Instek                         | PS-3030                     | GTS232        | NA             |
| Splitter                                | Agilent                        | 11636B                      | GTS237        | May 09 2015    |

### Conducted Emission

| Instrument        | Manufacturer                   | Model No.            | Inventory No. | Next Cal. Date |
|-------------------|--------------------------------|----------------------|---------------|----------------|
| Shielding Room    | ZhongYu Electron               | 7.0(L)x3.0(W)x3.0(H) | GTS264        | Sep. 06 2015   |
| EMI Test Receiver | Rohde & Schwarz                | ESCS30               | GTS223        | Jun. 30 2015   |
| 10dB Pulse Limita | Rohde & Schwarz                | N/A                  | GTS224        | Jun. 30 2015   |
| Coaxial Switch    | ANRITSU CORP                   | MP59B                | GTS225        | Jun. 30 2015   |
| LISN              | SCHWARZBECK<br>MESS-ELEKTRONIK | NSLK 8127            | GTS226        | Jun. 30 2015   |
| Coaxial Cable     | GTS                            | N/A                  | GTS227        | Jun. 30 2015   |
| EMI Test Software | AUDIX                          | E3                   | N/A           | N/A            |

## 7 Measurement Data and Test Results

### 7.1 Antenna requirement

#### Standard requirement

According to Standard: FCC Part15 C Section 15.203 /247(c)

15.203 requirement:

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

#### EUT Antenna:

The antenna is unique integral antenna, the typical gain of the antenna is 1 dBi.



Bluetooth / WIFI Antenna

## 7.2 Conducted Emissions

### ☞ Standard requirement

FCC Part15 C Section 15.207

### ☞ Test method

ANSI C63.4:2003

### ☞ Receiver set

RBW=9KHz, VBW=30KHz, Sweep time=auto

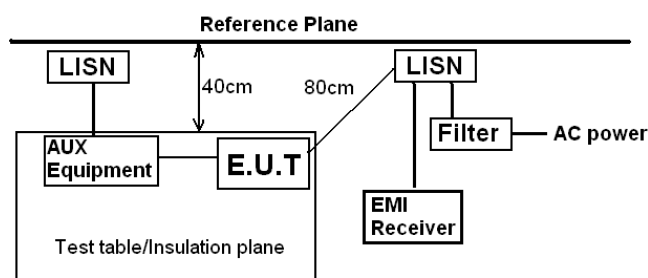
### ☞ Limit

| Frequency range (MHz) | Limit (dBuV) |           |
|-----------------------|--------------|-----------|
|                       | Quasi-peak   | Average   |
| 0.15-0.5              | 66 to 56*    | 56 to 46* |
| 0.5-5                 | 56           | 46        |
| 5-30                  | 60           | 50        |

### ☞ Test mode

Refer to section 5.3 for details

### ☞ Test setup



Remark:  
 E.U.T: Equipment Under Test  
 LISN: Line Impedance Stabilization Network  
 Test table height=0.8m

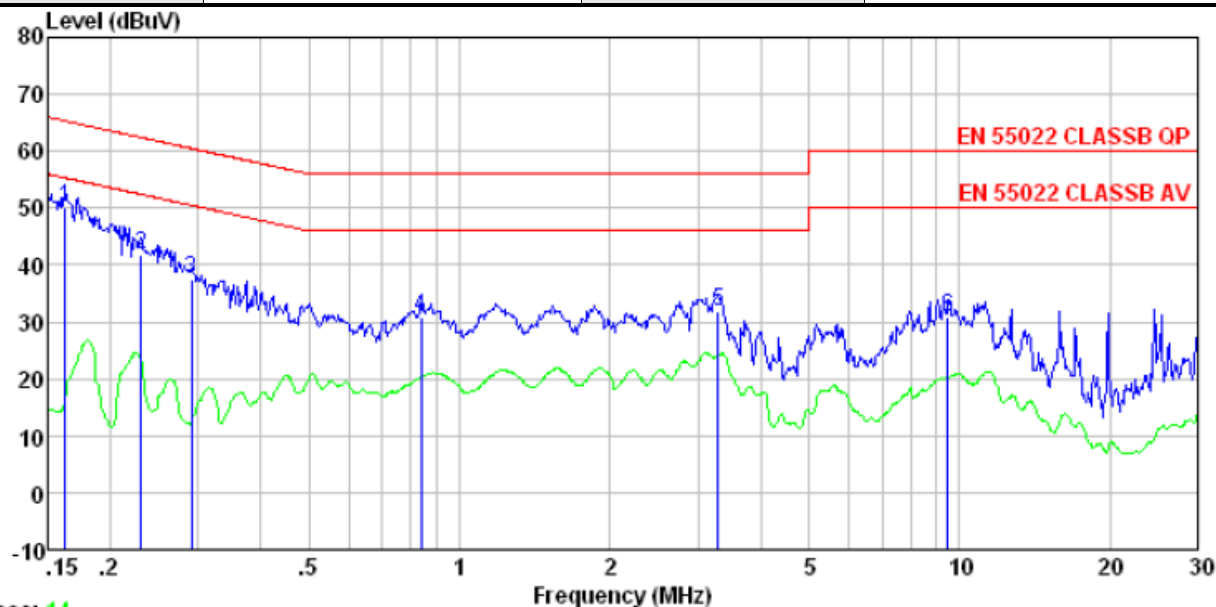
### ☞ Test mode

1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.

### ☞ Test Result

**Complied**

|                 |           |                    |         |
|-----------------|-----------|--------------------|---------|
| Test mode:      | WIFI mode | Temperature:       | 24~26°C |
| Phase Polarity: | Line      | Relative Humidity: | 50~53%  |



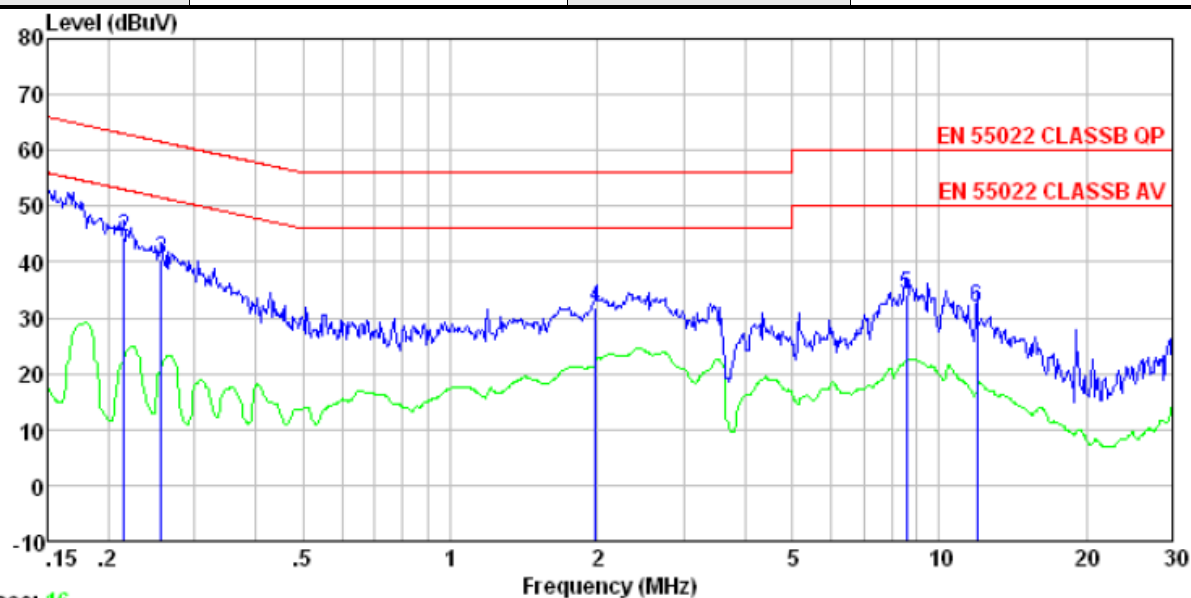
Trace: 14

Condition: EN 55022 CLASSB QP LISN-2013 LINE

Test mode: WiFi mode

|   | Freq  | Read Level | LISN Factor | Cable Loss | Level | Limit Line | Over Limit | Remark |
|---|-------|------------|-------------|------------|-------|------------|------------|--------|
|   | MHz   | dBuV       | dB          | dB         | dBuV  | dBuV       | dB         |        |
| 1 | 0.162 | 49.85      | 0.15        | 0.12       | 50.12 | 65.34      | -15.22     | QP     |
| 2 | 0.230 | 41.64      | 0.12        | 0.12       | 41.88 | 62.44      | -20.56     | QP     |
| 3 | 0.291 | 37.14      | 0.11        | 0.10       | 37.35 | 60.50      | -23.15     | QP     |
| 4 | 0.839 | 30.68      | 0.14        | 0.13       | 30.95 | 56.00      | -25.05     | QP     |
| 5 | 3.293 | 31.59      | 0.18        | 0.15       | 31.92 | 56.00      | -24.08     | QP     |
| 6 | 9.502 | 30.42      | 0.29        | 0.19       | 30.90 | 60.00      | -29.10     | QP     |

|                 |           |                    |         |
|-----------------|-----------|--------------------|---------|
| Test mode:      | WIFI mode | Temperature:       | 24~26°C |
| Phase Polarity: | Nertral   | Relative Humidity: | 50~53%  |



Trace: 16

Condition: EN 55022 CLASSB QP LISN-2013 NEUTRAL

Test mode: WiFi mode

|   | Freq   | Read Level | LISN Factor | Cable Loss | Level | Limit Line | Over Limit | Remark |
|---|--------|------------|-------------|------------|-------|------------|------------|--------|
|   | MHz    | dBuV       | dB          | dB         | dBuV  | dBuV       | dB         |        |
| 1 | 0.150  | 49.79      | 0.07        | 0.12       | 49.98 | 66.00      | -16.02     | QP     |
| 2 | 0.215  | 44.18      | 0.06        | 0.13       | 44.37 | 63.01      | -18.64     | QP     |
| 3 | 0.256  | 40.25      | 0.06        | 0.11       | 40.42 | 61.56      | -21.14     | QP     |
| 4 | 1.980  | 31.57      | 0.09        | 0.14       | 31.80 | 56.00      | -24.20     | QP     |
| 5 | 8.592  | 33.72      | 0.20        | 0.18       | 34.10 | 60.00      | -25.90     | QP     |
| 6 | 11.933 | 31.34      | 0.32        | 0.20       | 31.86 | 60.00      | -28.14     | QP     |

## Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss

### 7.3 Conducted Peak Output Power

**Standard requirement**

FCC Part15 C Section 15.247 (b)(3)

**Test method**

ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V03

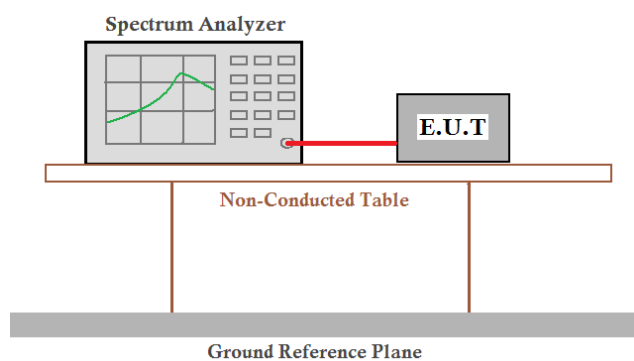
**Limit**

30dBm

**Test mode**

Refer to section 5.3 for details

**Test setup**



**Test Result**

**Complied**

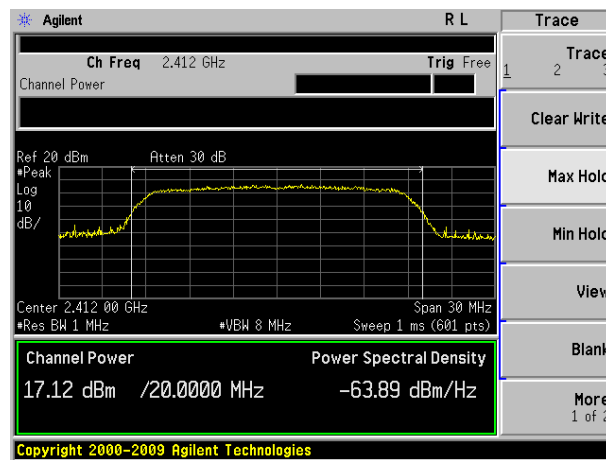
Measurement Data

| Test CH | Peak Output Power (dBm) |         |               |               | Limit(dBm) | Result |
|---------|-------------------------|---------|---------------|---------------|------------|--------|
|         | 802.11b                 | 802.11g | 802.11n(HT20) | 802.11n(HT40) |            |        |
| Lowest  | 17.12                   | 14.88   | 13.90         | 13.68         | 30.00      | Pass   |
| Middle  | 17.35                   | 14.03   | 13.82         | 13.67         |            |        |
| Highest | 17.83                   | 14.32   | 13.94         | 13.75         |            |        |

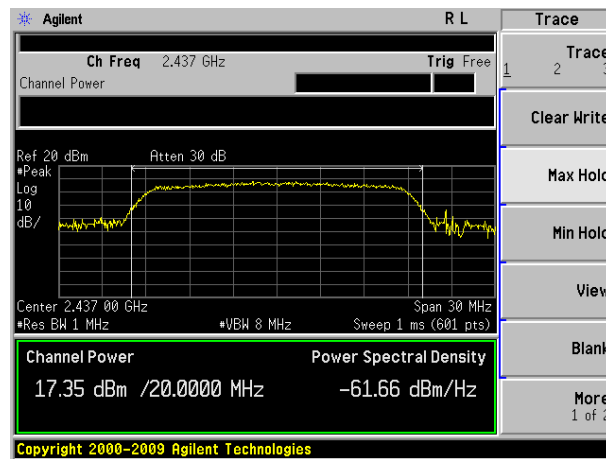
Mode

802.11b

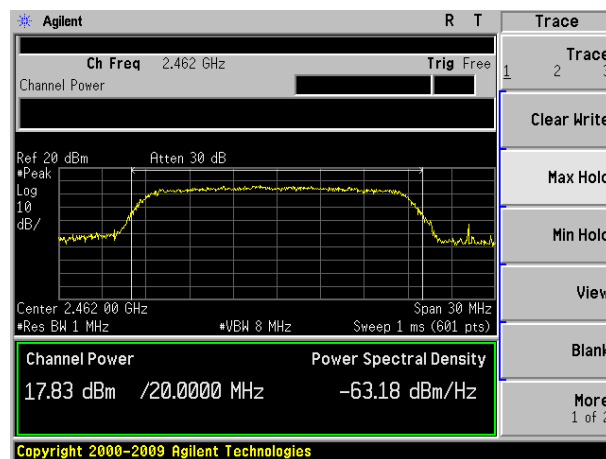
Lowest channel:



Middle channel:



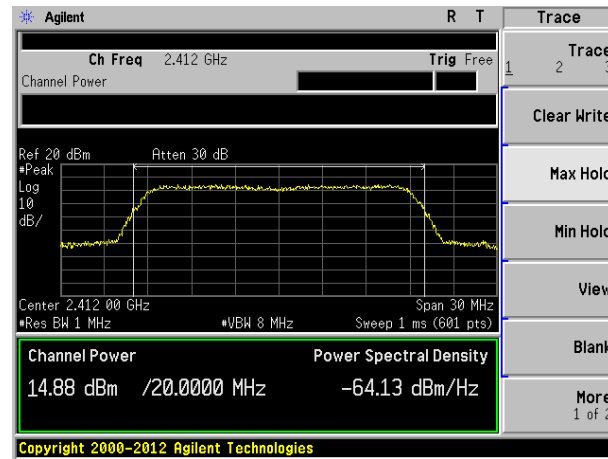
Highest channel:



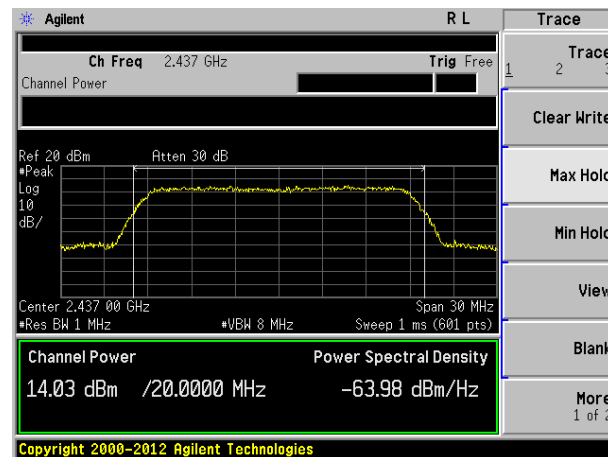
Mode

802.11g

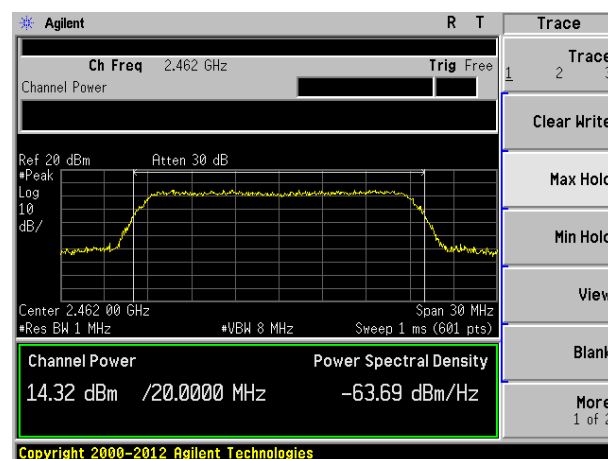
Lowest channel:



Middle channel:



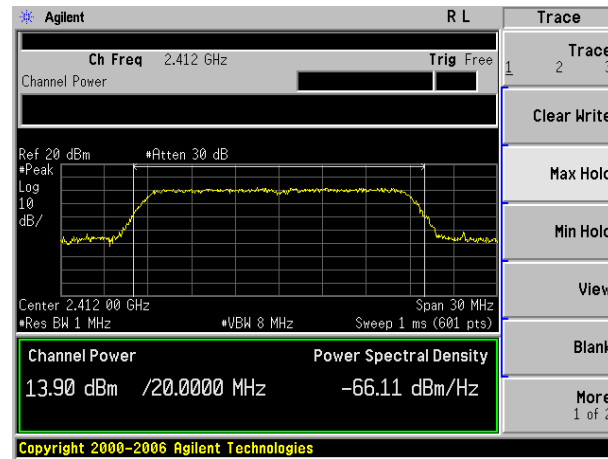
Highest channel:



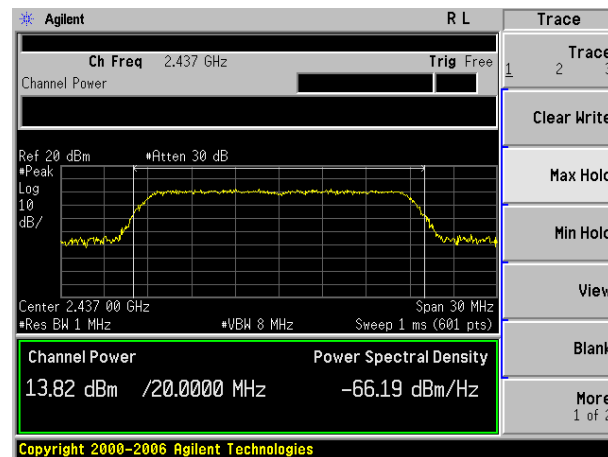
Mode

802.11n(H20)

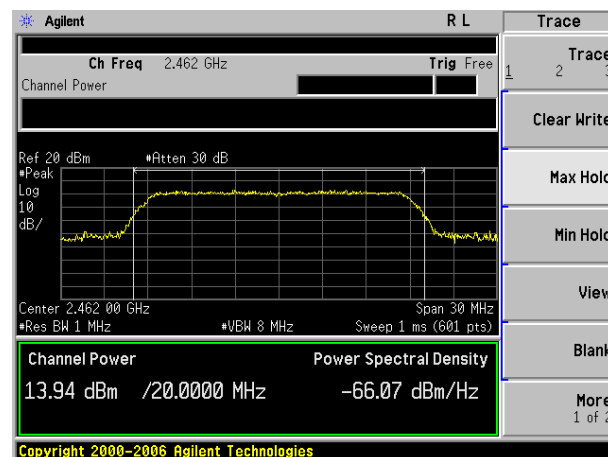
Lowest channel:



Middle channel:



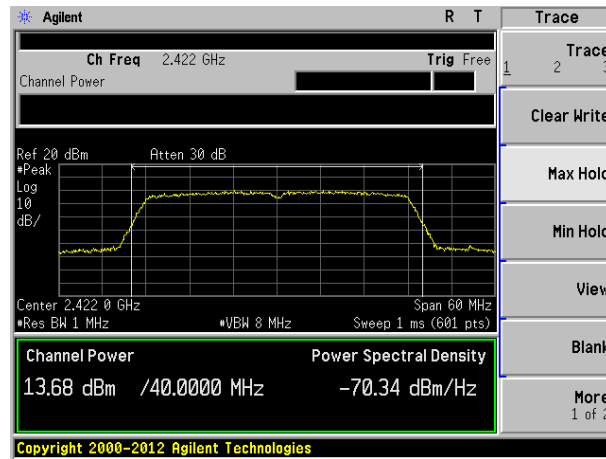
Highest channel:



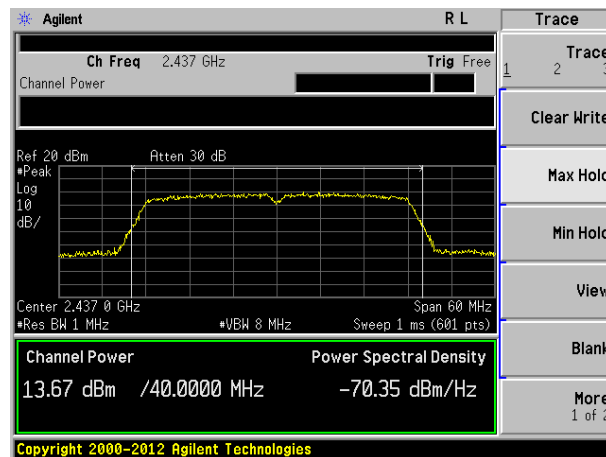
Mode

802.11n(H40)

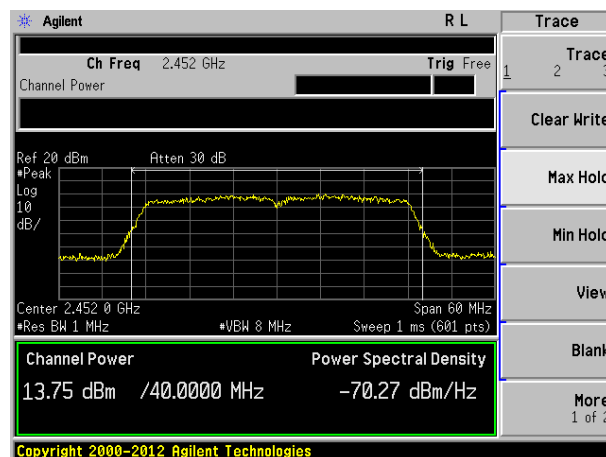
Lowest channel:



Middle channel:



Highest channel:



## 7.4 Channel Bandwidth

### ☞ Standard requirement

FCC Part15 C Section 15.247 (a)(2)

### ☞ Test method

ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V03

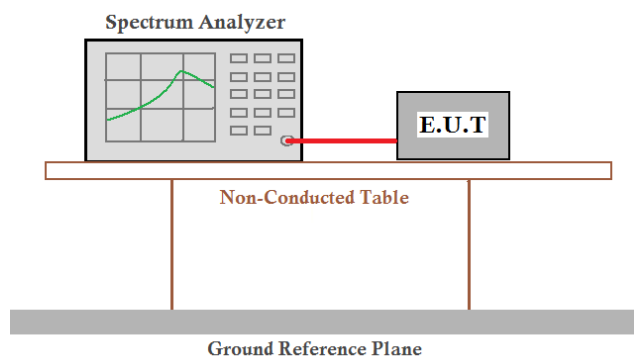
### ☞ Limit

>500KHz

### ☞ Test mode

Refer to section 5.3 for details

### ☞ Test setup



### ☞ Test Result

**Complied**

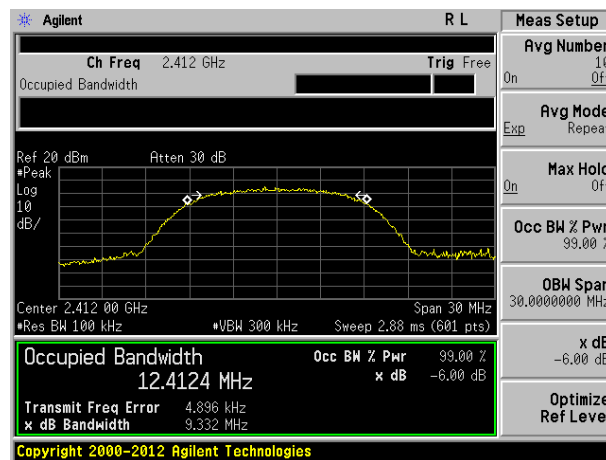
#### Measurement Data

| Test CH | Channel Bandwidth (MHz) |         |               |               | Limit(KHz) | Result |
|---------|-------------------------|---------|---------------|---------------|------------|--------|
|         | 802.11b                 | 802.11g | 802.11n(HT20) | 802.11n(HT40) |            |        |
| Lowest  | 9.332                   | 16.563  | 17.772        | 35.575        | >500       | Pass   |
| Middle  | 9.161                   | 16.548  | 17.780        | 35.351        |            |        |
| Highest | 9.544                   | 16.572  | 17.776        | 35.348        |            |        |

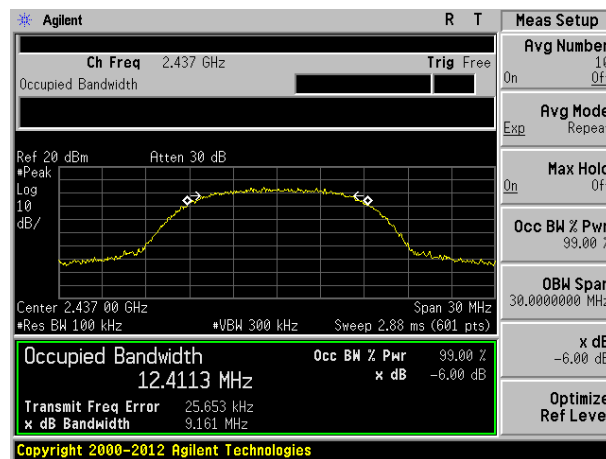
Mode

802.11b

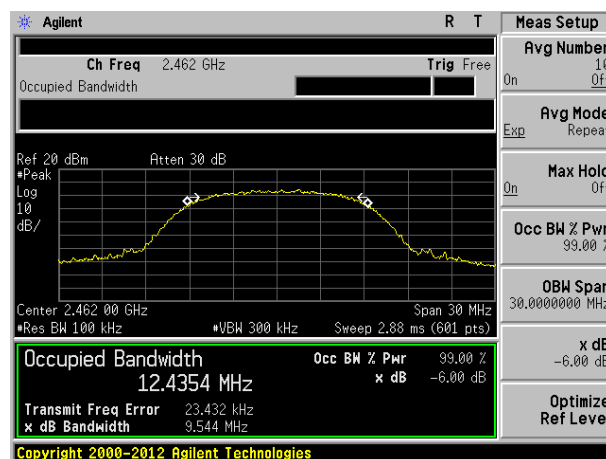
Lowest channel:



Middle channel:



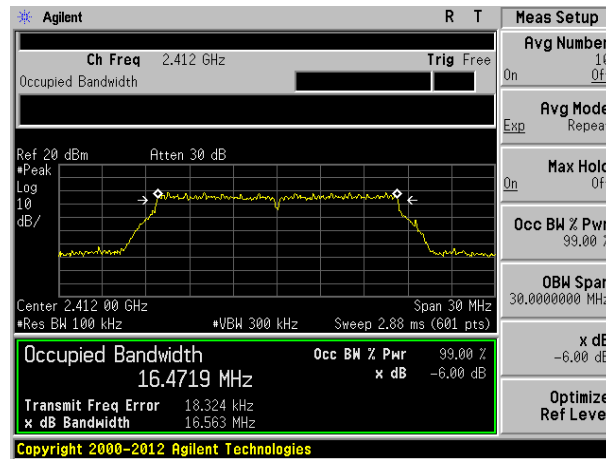
Highest channel:



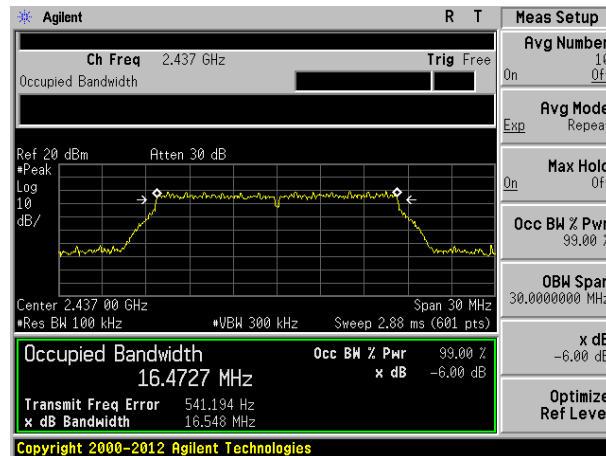
Mode

802.11g

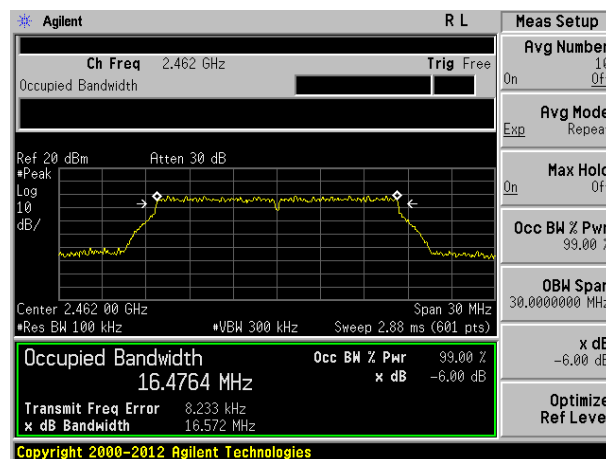
Lowest channel:



Middle channel:



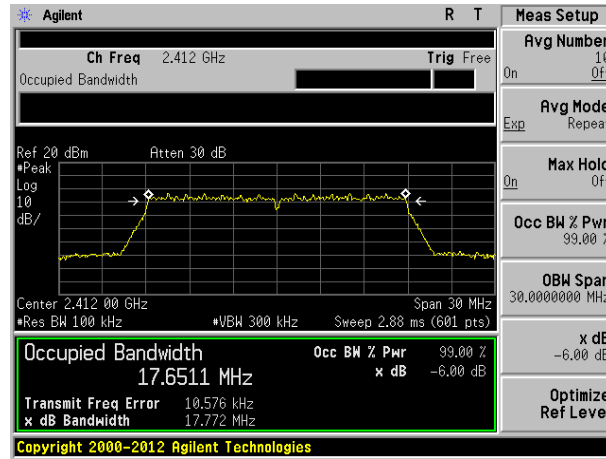
Highest channel:



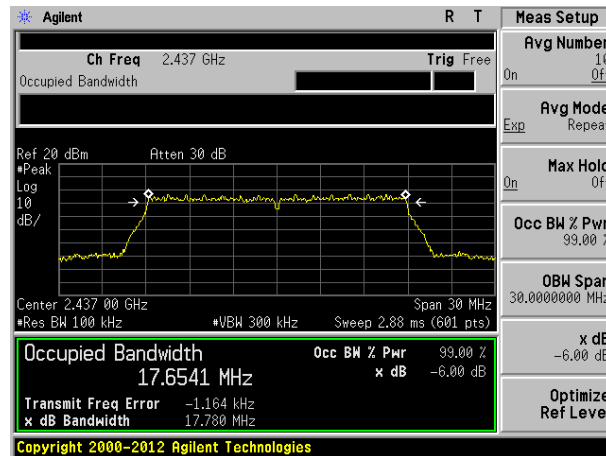
Mode

802.11n(H20)

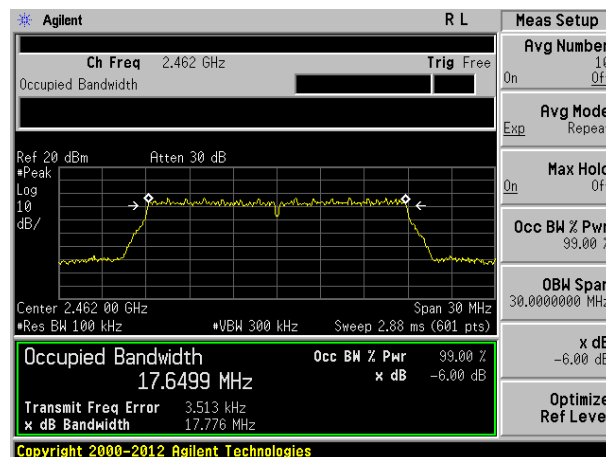
Lowest channel:



Middle channel:



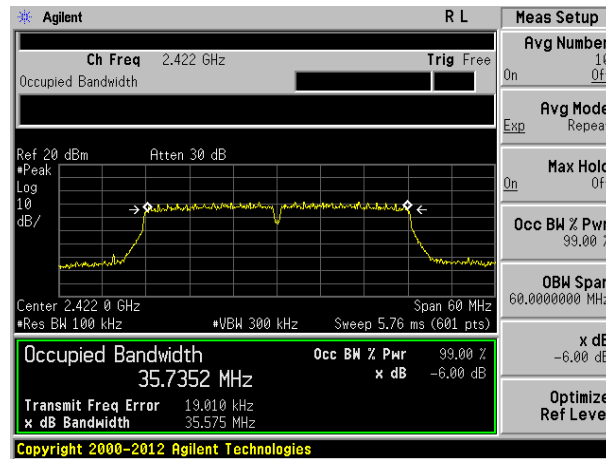
Highest channel:



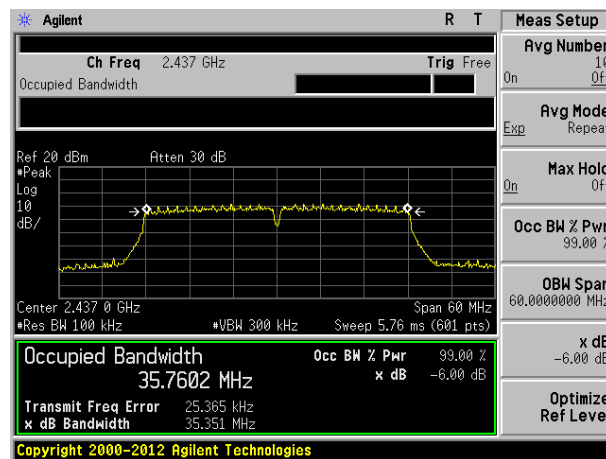
Mode

802.11n(H40)

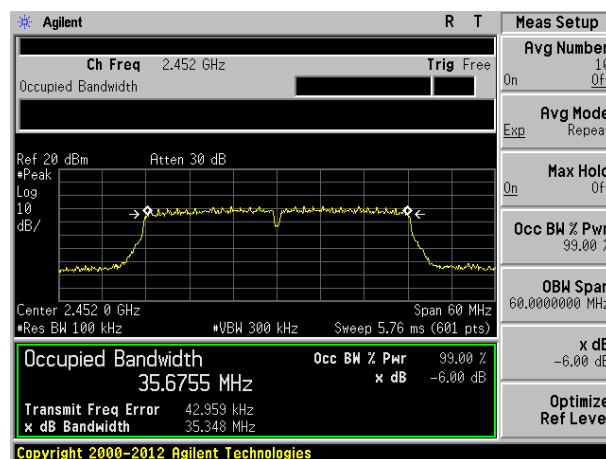
Lowest channel:



Middle channel:



Highest channel:



## 7.5 Power Spectral Density

### ☞ Standard requirement

FCC Part15 C Section 15.247 (e)

### ☞ Test method

ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V03

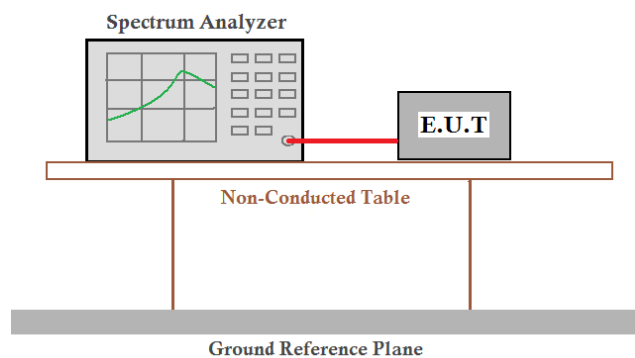
### ☞ Limit

8dBm

### ☞ Test mode

Refer to section 5.3 for details

### ☞ Test setup



### ☞ Test Result

**Complied**

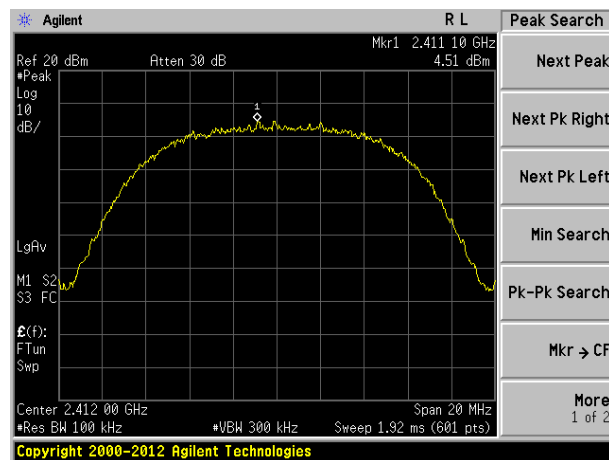
#### Measurement Data

| Test CH | Power Spectral Density (dBm) |         |               |               | Limit(dBm/3kHz) | Result |
|---------|------------------------------|---------|---------------|---------------|-----------------|--------|
|         | 802.11b                      | 802.11g | 802.11n(HT20) | 802.11n(HT40) |                 |        |
| Lowest  | 4.51                         | -1.41   | -3.61         | -8.53         | 8.00            | Pass   |
| Middle  | 4.01                         | -0.93   | -3.21         | -8.38         |                 |        |
| Highest | 4.70                         | -1.25   | -3.44         | -8.40         |                 |        |

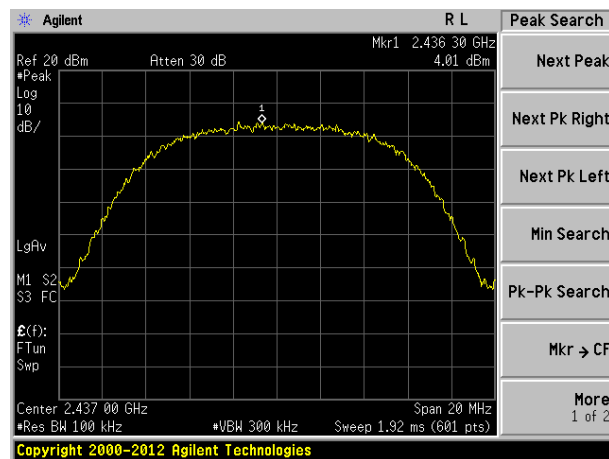
Mode

802.11b

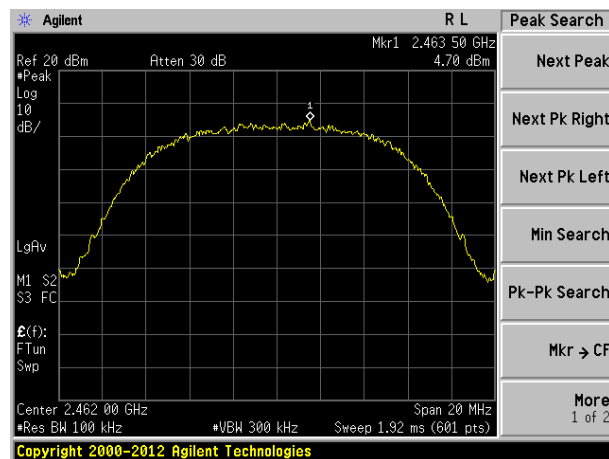
Lowest channel:



Middle channel:



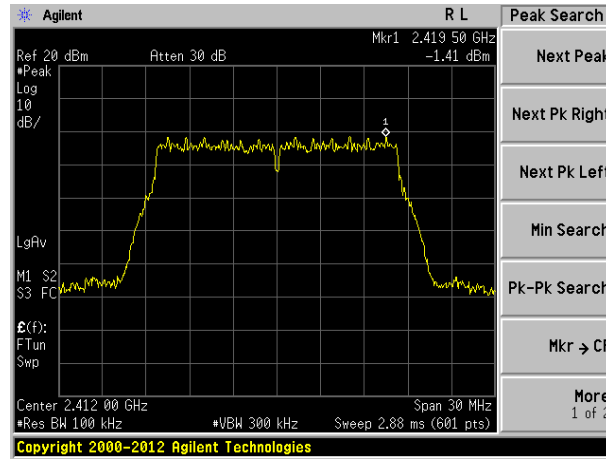
Highest channel:



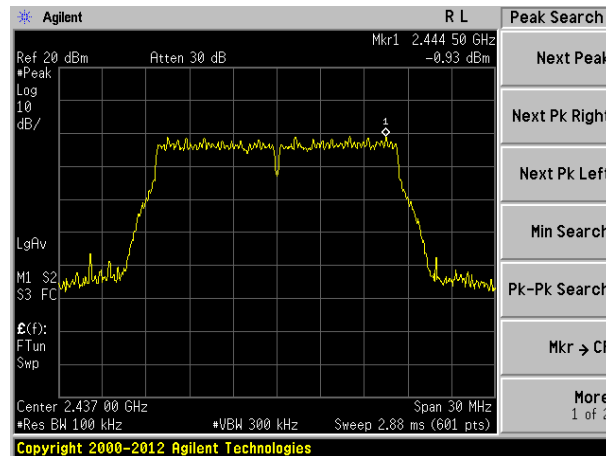
Mode

802.11g

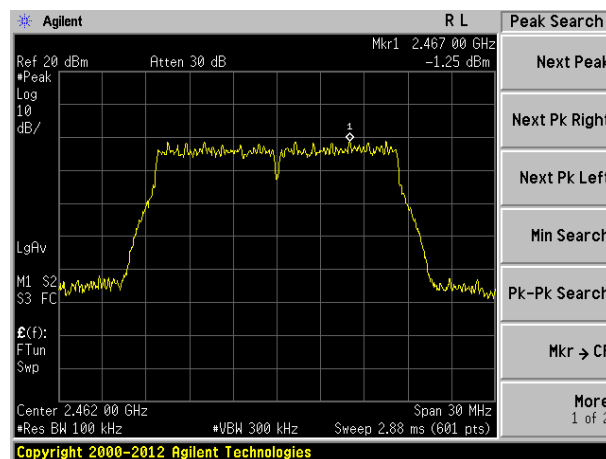
Lowest channel:



Middle channel:



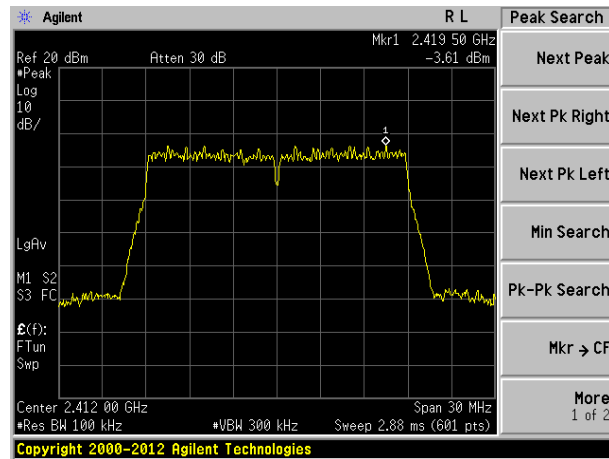
Highest channel:



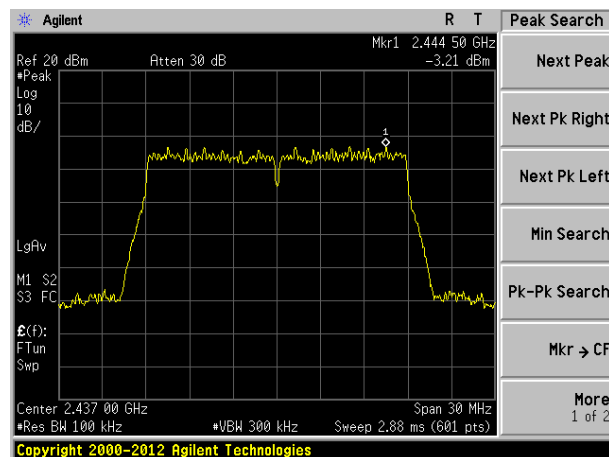
Mode

802.11n(H20)

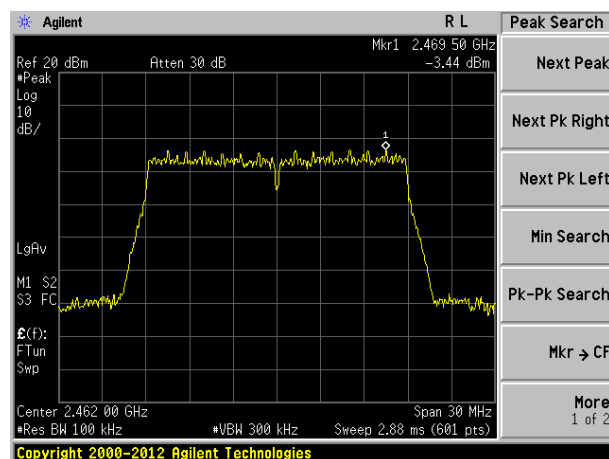
Lowest channel:



Middle channel:



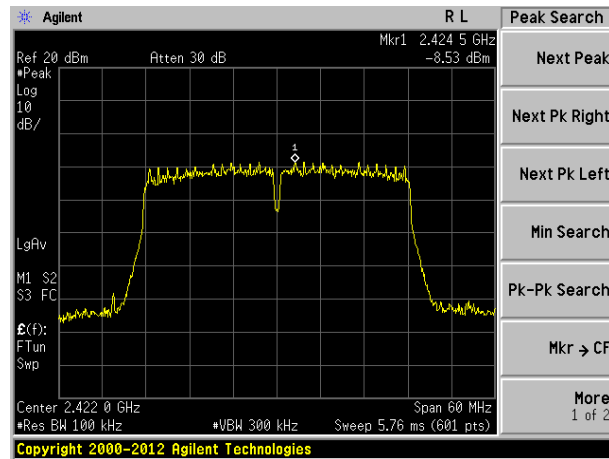
Highest channel:



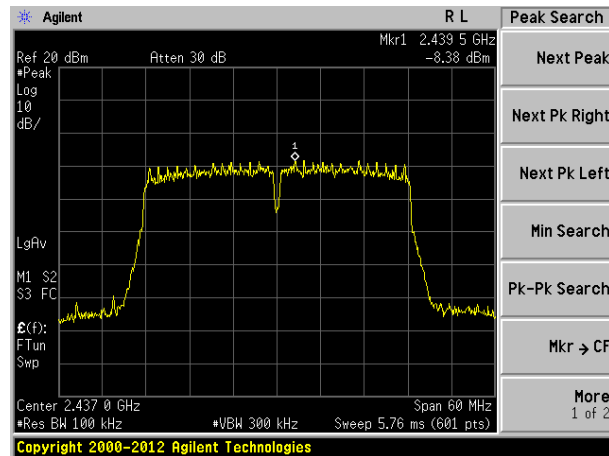
Mode

802.11n(H40)

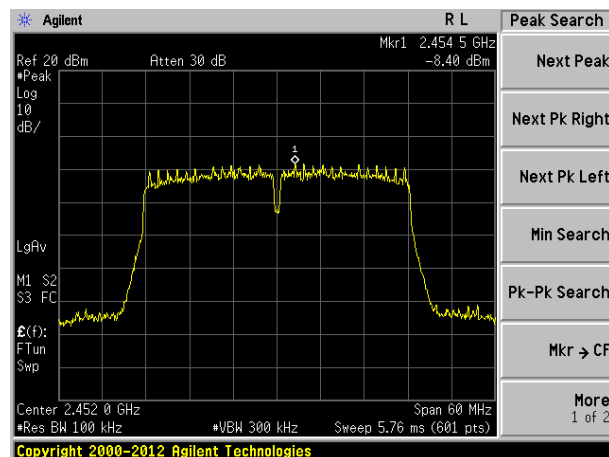
Lowest channel:



Middle channel:



Highest channel:



## 7.6 Band Edge

### 7.6.1 Conducted Emission Method

#### ☞ Test method

FCC Part15 C Section 15.247 (d)

#### ☞ Test method

ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V03

#### ☞ Receiver set

RBW=100kHz, VBW=300kHz, Detector=Peak

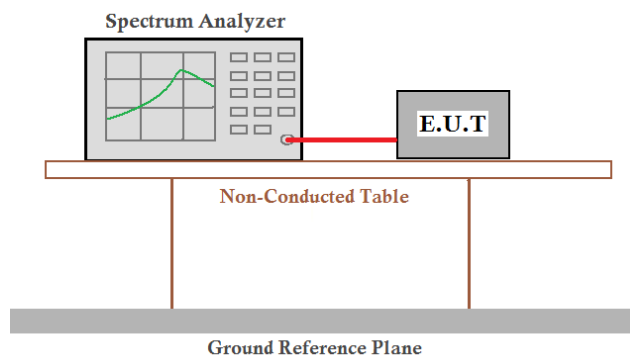
#### ☞ Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.

#### ☞ Test mode

Refer to section 5.3 for details

#### ☞ Test setup

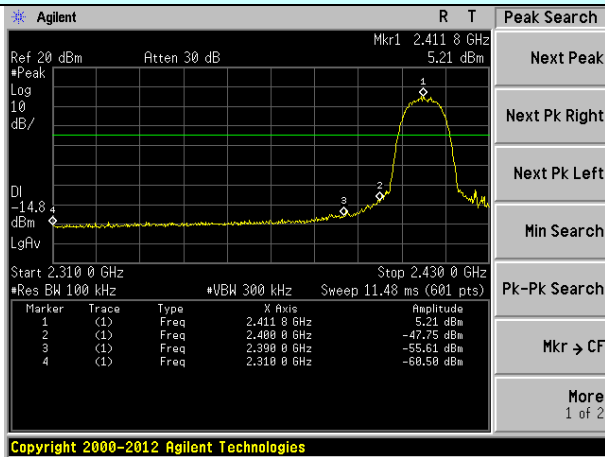


#### ☞ Test Result

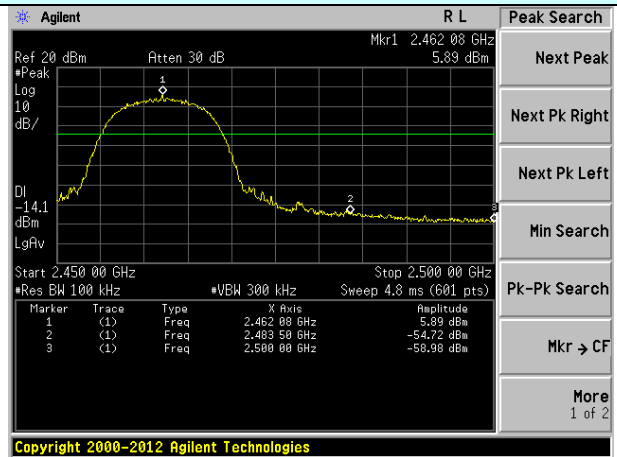
**Complied**

Mode

802.11b



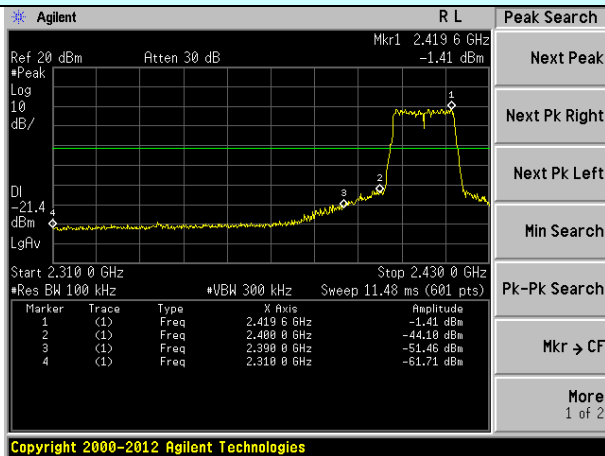
Lowest channel



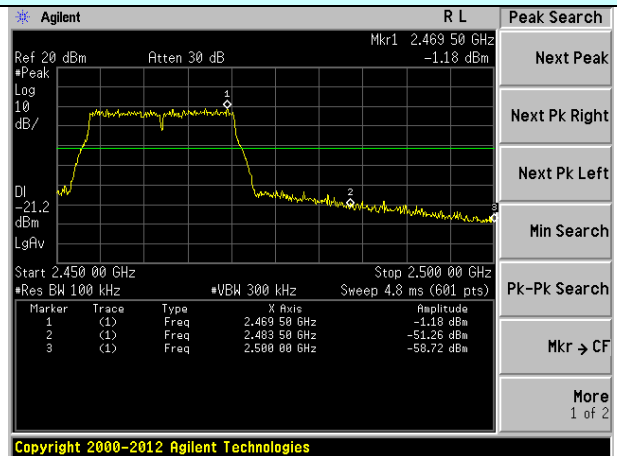
Highest channel

Mode

802.11g



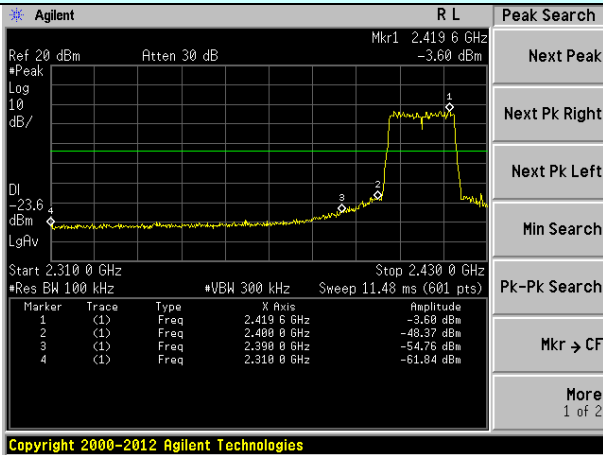
Lowest channel



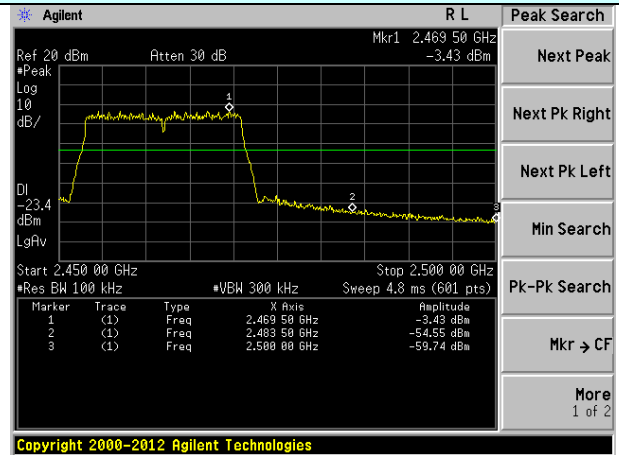
Highest channel

Mode

802.11n(H20)



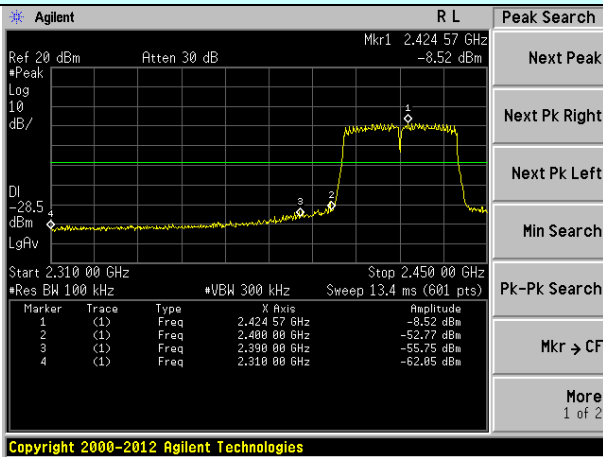
Lowest channel



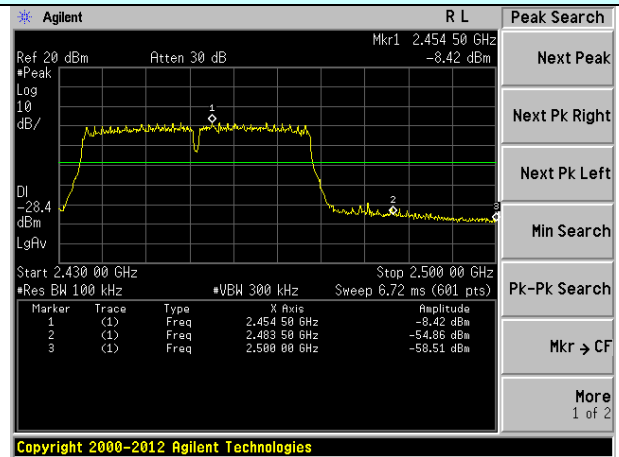
Highest channel

Mode

802.11n(H40)



Lowest channel



Highest channel

## 7.6.2 Radiated Emission Method

### ☞ Test method

FCC Part15 C Section 15.209 and 15.205

### ☞ Test method

ANSI C63.4:2003

### ☞ Receiver set

| Frequency  | Detector | RBW  | VBW  | Remark        |
|------------|----------|------|------|---------------|
| Above 1GHz | Peak     | 1MHz | 3MHz | Peak Value    |
|            | Peak     | 1MHz | 10Hz | Average Value |

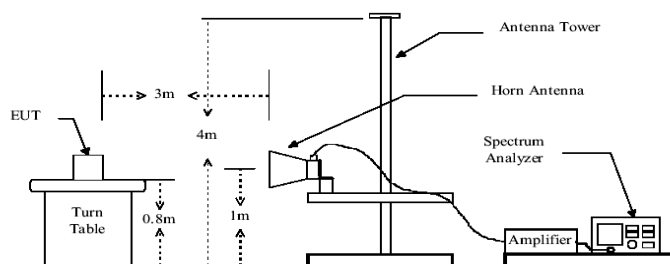
### ☞ Limit

| Frequency  | Limit (dBuV/m @3m) | Remark        |
|------------|--------------------|---------------|
| Above 1GHz | 54.00              | Average Value |
|            | 74.00              | Peak Value    |

### ☞ Test mode

Refer to section 5.3 for details

### ☞ Test setup



### ☞ Test Procedure

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

### ☞ Test Result

**Complied**

Remark:

During the test, pre-scan the GFSK, Pi/4QPSK, 8DPSK modulation, and found the GFSK modulation which it is worse case, so only show the test data of worse case modulation on the test report.

|            |         |               |        |
|------------|---------|---------------|--------|
| Test mode: | 802.11b | Test channel: | Lowest |
|------------|---------|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2310.00         | 50.79             | 27.03                 | 5.30            | 38.91              | 44.21          | 74.00               | -29.79          | Vertical     |
| 2390.00         | 57.57             | 27.29                 | 5.38            | 38.99              | 51.25          | 74.00               | -22.75          | Vertical     |
| 2310.00         | 48.29             | 27.03                 | 5.30            | 38.91              | 41.71          | 74.00               | -32.29          | Horizontal   |
| 2390.00         | 55.68             | 27.29                 | 5.38            | 38.99              | 49.36          | 74.00               | -24.64          | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2310.00         | 34.65             | 27.03                 | 5.30            | 38.91              | 28.07          | 54.00               | -25.93          | Vertical     |
| 2390.00         | 40.30             | 27.29                 | 5.38            | 38.99              | 33.98          | 54.00               | -20.02          | Vertical     |
| 2310.00         | 31.48             | 27.03                 | 5.30            | 38.91              | 24.90          | 54.00               | -29.10          | Horizontal   |
| 2390.00         | 38.47             | 27.29                 | 5.38            | 38.99              | 32.15          | 54.00               | -21.85          | Horizontal   |

|            |         |               |         |
|------------|---------|---------------|---------|
| Test mode: | 802.11b | Test channel: | Highest |
|------------|---------|---------------|---------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2483.50         | 56.35             | 27.55                 | 5.47            | 39.07              | 50.30          | 74.00               | -23.70          | Vertical     |
| 2500.00         | 51.64             | 27.60                 | 5.49            | 39.09              | 45.64          | 74.00               | -28.36          | Vertical     |
| 2483.50         | 53.70             | 27.55                 | 5.47            | 39.07              | 47.65          | 74.00               | -26.35          | Horizontal   |
| 2500.00         | 48.86             | 27.60                 | 5.49            | 39.09              | 42.86          | 74.00               | -31.14          | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2483.50         | 43.86             | 27.55                 | 5.47            | 39.07              | 37.81          | 54.00               | -16.19          | Vertical     |
| 2500.00         | 39.19             | 27.60                 | 5.49            | 39.09              | 33.19          | 54.00               | -20.81          | Vertical     |
| 2483.50         | 41.24             | 27.55                 | 5.47            | 39.07              | 35.19          | 54.00               | -18.81          | Horizontal   |
| 2500.00         | 36.44             | 27.60                 | 5.49            | 39.09              | 30.44          | 54.00               | -23.56          | Horizontal   |

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

|            |         |               |        |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Lowest |
|------------|---------|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2310.00         | 49.77             | 27.03                 | 5.30            | 38.91              | 43.19          | 74.00               | -30.81          | Vertical     |
| 2390.00         | 56.42             | 27.29                 | 5.38            | 38.99              | 50.10          | 74.00               | -23.90          | Vertical     |
| 2310.00         | 47.33             | 27.03                 | 5.30            | 38.91              | 40.75          | 74.00               | -33.25          | Horizontal   |
| 2390.00         | 54.57             | 27.29                 | 5.38            | 38.99              | 48.25          | 74.00               | -25.75          | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2310.00         | 33.96             | 27.03                 | 5.30            | 38.91              | 27.38          | 54.00               | -26.62          | Vertical     |
| 2390.00         | 39.49             | 27.29                 | 5.38            | 38.99              | 33.17          | 54.00               | -20.83          | Vertical     |
| 2310.00         | 30.85             | 27.03                 | 5.30            | 38.91              | 24.27          | 54.00               | -29.73          | Horizontal   |
| 2390.00         | 37.70             | 27.29                 | 5.38            | 38.99              | 31.38          | 54.00               | -22.62          | Horizontal   |

|            |         |               |         |
|------------|---------|---------------|---------|
| Test mode: | 802.11g | Test channel: | Highest |
|------------|---------|---------------|---------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2483.50         | 55.22             | 27.55                 | 5.47            | 39.07              | 49.17          | 74.00               | -24.83          | Vertical     |
| 2500.00         | 50.60             | 27.60                 | 5.49            | 39.09              | 44.60          | 74.00               | -29.40          | Vertical     |
| 2483.50         | 52.63             | 27.55                 | 5.47            | 39.07              | 46.58          | 74.00               | -27.42          | Horizontal   |
| 2500.00         | 47.88             | 27.60                 | 5.49            | 39.09              | 41.88          | 74.00               | -32.12          | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2483.50         | 42.98             | 27.55                 | 5.47            | 39.07              | 36.93          | 54.00               | -17.07          | Vertical     |
| 2500.00         | 37.97             | 27.60                 | 5.49            | 39.09              | 31.97          | 54.00               | -22.03          | Vertical     |
| 2483.50         | 40.17             | 27.55                 | 5.47            | 39.07              | 34.12          | 54.00               | -19.88          | Horizontal   |
| 2500.00         | 35.02             | 27.60                 | 5.49            | 39.09              | 29.02          | 54.00               | -24.98          | Horizontal   |

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

|            |               |               |        |
|------------|---------------|---------------|--------|
| Test mode: | 802.11n (H20) | Test channel: | Lowest |
|------------|---------------|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2310.00         | 52.21             | 27.03                 | 5.30            | 38.91              | 45.63          | 74.00               | -28.37          | Vertical     |
| 2390.00         | 59.06             | 27.29                 | 5.38            | 38.99              | 52.74          | 74.00               | -21.26          | Vertical     |
| 2310.00         | 49.69             | 27.03                 | 5.30            | 38.91              | 43.11          | 74.00               | -30.89          | Horizontal   |
| 2390.00         | 57.15             | 27.29                 | 5.38            | 38.99              | 50.83          | 74.00               | -23.17          | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2310.00         | 35.34             | 27.03                 | 5.30            | 38.91              | 28.76          | 54.00               | -25.24          | Vertical     |
| 2390.00         | 41.04             | 27.29                 | 5.38            | 38.99              | 34.72          | 54.00               | -19.28          | Vertical     |
| 2310.00         | 32.14             | 27.03                 | 5.30            | 38.91              | 25.56          | 54.00               | -28.44          | Horizontal   |
| 2390.00         | 39.19             | 27.29                 | 5.38            | 38.99              | 32.87          | 54.00               | -21.13          | Horizontal   |

|            |              |               |        |
|------------|--------------|---------------|--------|
| Test mode: | 802.11n(H20) | Test channel: | Lowest |
|------------|--------------|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2483.50         | 58.04             | 27.55                 | 5.47            | 39.07              | 51.99          | 74.00               | -22.01          | Vertical     |
| 2500.00         | 53.28             | 27.60                 | 5.49            | 39.09              | 47.28          | 74.00               | -26.72          | Vertical     |
| 2483.50         | 55.37             | 27.55                 | 5.47            | 39.07              | 49.32          | 74.00               | -24.68          | Horizontal   |
| 2500.00         | 50.48             | 27.60                 | 5.49            | 39.09              | 44.48          | 74.00               | -29.52          | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2483.50         | 45.18             | 27.55                 | 5.47            | 39.07              | 39.13          | 54.00               | -14.87          | Vertical     |
| 2500.00         | 40.02             | 27.60                 | 5.49            | 39.09              | 34.02          | 54.00               | -19.98          | Vertical     |
| 2483.50         | 42.28             | 27.55                 | 5.47            | 39.07              | 36.23          | 54.00               | -17.77          | Horizontal   |
| 2500.00         | 36.98             | 27.60                 | 5.49            | 39.09              | 30.98          | 54.00               | -23.02          | Horizontal   |

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

|            |               |               |        |
|------------|---------------|---------------|--------|
| Test mode: | 802.11n (H40) | Test channel: | Lowest |
|------------|---------------|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2310.00         | 47.74             | 27.03                 | 5.30            | 38.91              | 41.16          | 74.00               | -32.84          | Vertical     |
| 2390.00         | 56.02             | 27.29                 | 5.38            | 38.99              | 49.70          | 74.00               | -24.30          | Vertical     |
| 2310.00         | 44.69             | 27.03                 | 5.30            | 38.91              | 38.11          | 74.00               | -35.89          | Horizontal   |
| 2390.00         | 53.72             | 27.29                 | 5.38            | 38.99              | 47.40          | 74.00               | -26.60          | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2310.00         | 32.57             | 27.03                 | 5.30            | 38.91              | 25.99          | 54.00               | -28.01          | Vertical     |
| 2390.00         | 39.47             | 27.29                 | 5.38            | 38.99              | 33.15          | 54.00               | -20.85          | Vertical     |
| 2310.00         | 28.70             | 27.03                 | 5.30            | 38.91              | 22.12          | 54.00               | -31.88          | Horizontal   |
| 2390.00         | 37.23             | 27.29                 | 5.38            | 38.99              | 30.91          | 54.00               | -23.09          | Horizontal   |

|            |              |               |        |
|------------|--------------|---------------|--------|
| Test mode: | 802.11n(H40) | Test channel: | Lowest |
|------------|--------------|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2483.50         | 52.97             | 27.55                 | 5.47            | 39.07              | 46.92          | 74.00               | -27.08          | Vertical     |
| 2500.00         | 47.21             | 27.60                 | 5.49            | 39.09              | 41.21          | 74.00               | -32.79          | Vertical     |
| 2483.50         | 49.74             | 27.55                 | 5.47            | 39.07              | 43.69          | 74.00               | -30.31          | Horizontal   |
| 2500.00         | 43.82             | 27.60                 | 5.49            | 39.09              | 37.82          | 74.00               | -36.18          | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2483.50         | 41.23             | 27.55                 | 5.47            | 39.07              | 35.18          | 54.00               | -18.82          | Vertical     |
| 2500.00         | 34.98             | 27.60                 | 5.49            | 39.09              | 28.98          | 54.00               | -25.02          | Vertical     |
| 2483.50         | 37.72             | 27.55                 | 5.47            | 39.07              | 31.67          | 54.00               | -22.33          | Horizontal   |
| 2500.00         | 31.31             | 27.60                 | 5.49            | 39.09              | 25.31          | 54.00               | -28.69          | Horizontal   |

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

## 7.7 Spurious Emission

### 7.7.1 Conducted Emission Method

#### ☞ Test method

FCC Part15 C Section 15.247 (d)

#### ☞ Test method

ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V03

#### ☞ Receiver set

RBW=100kHz, VBW=300kHz, Detector=Peak

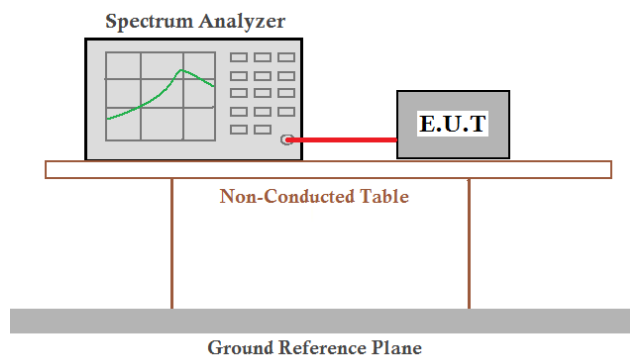
#### ☞ Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.

#### ☞ Test mode

Refer to section 5.3 for details

#### ☞ Test setup



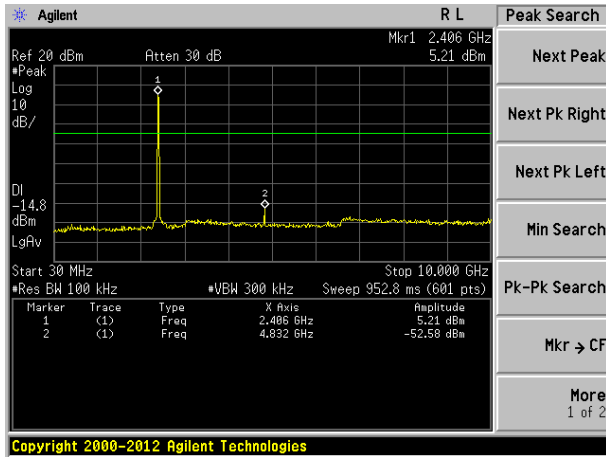
#### ☞ Test Result

**Complied**

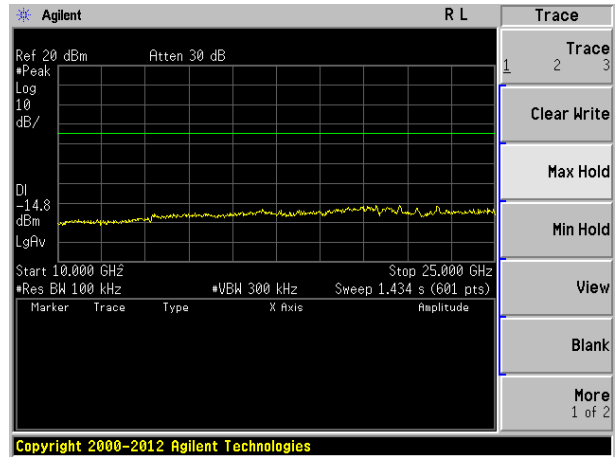
Test mode:

802.11b

Lowest channel

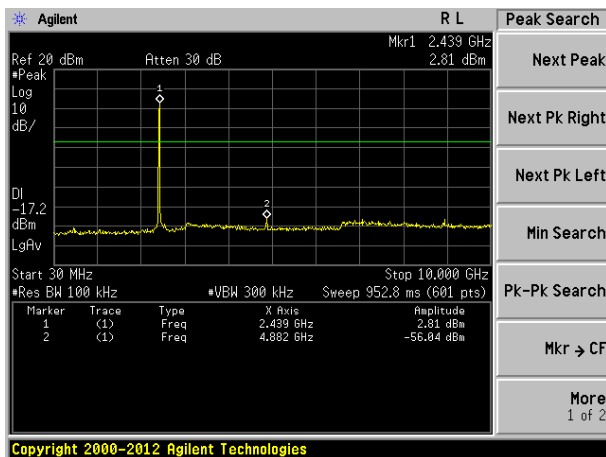


30MHz~10GHz

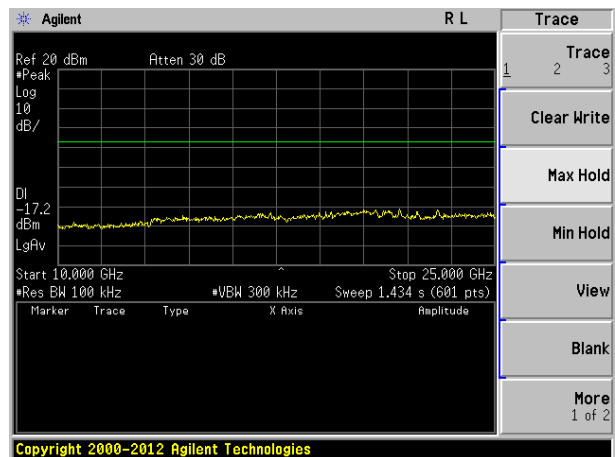


10GHz~25GHz

Middle channel

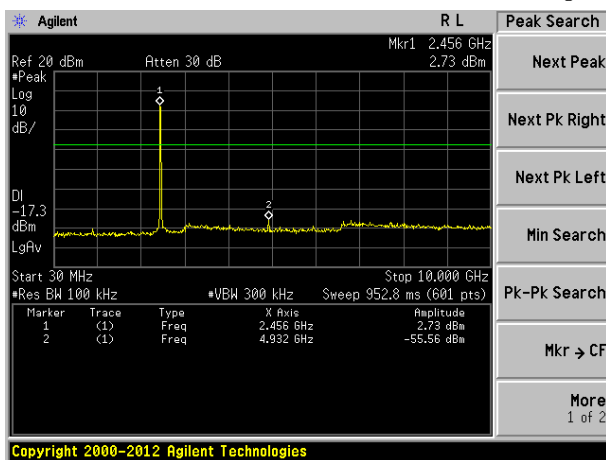


30MHz~10GHz

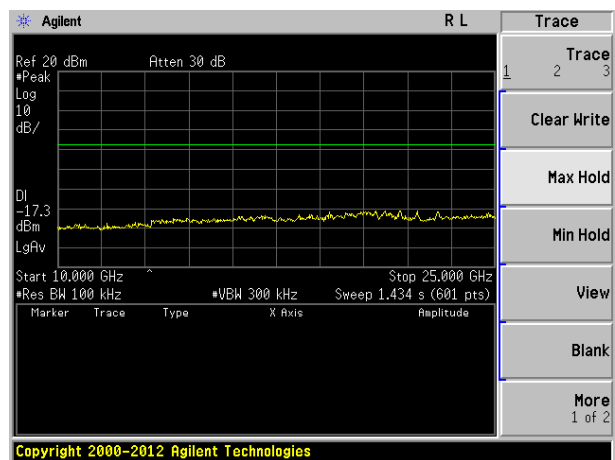


10GHz~25GHz

Highest channel



30MHz~10GHz

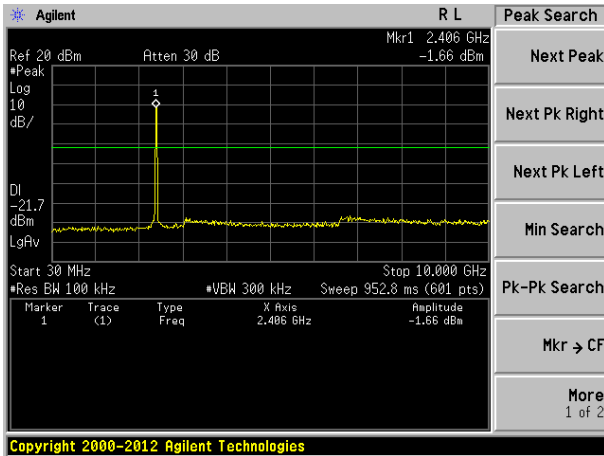


10GHz~25GHz

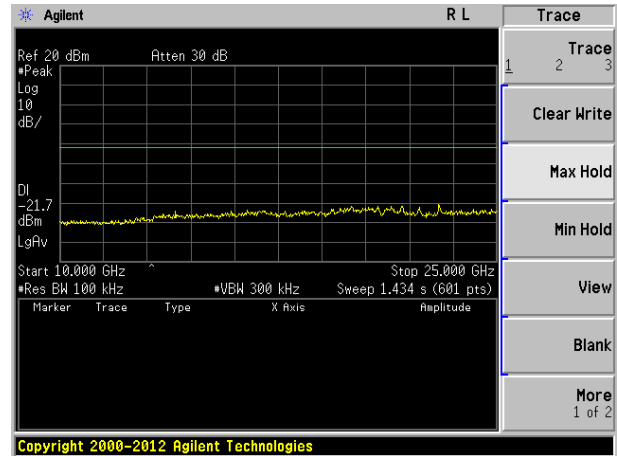
Test mode:

802.11g

Lowest channel

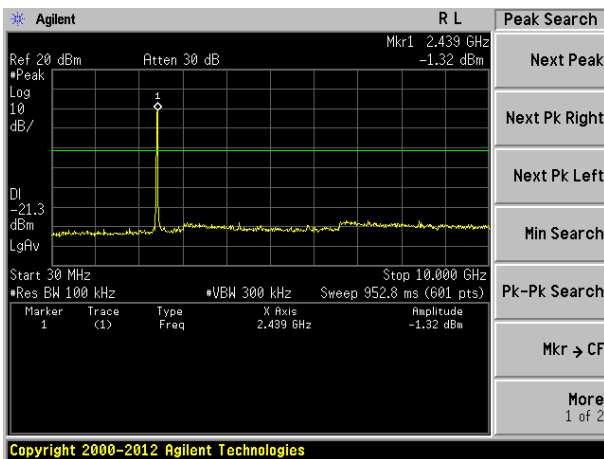


30MHz~10GHz

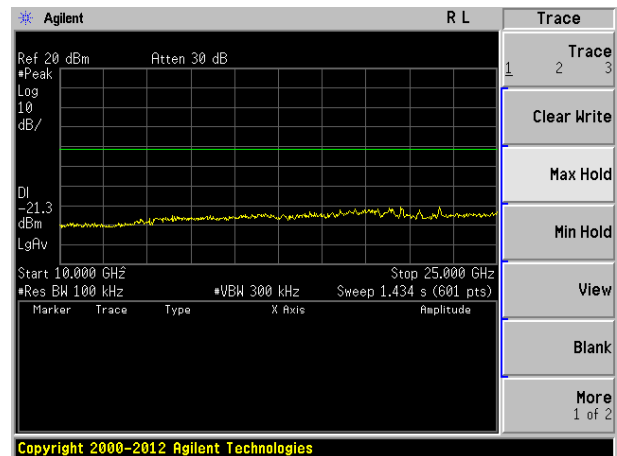


10GHz~25GHz

Middle channel

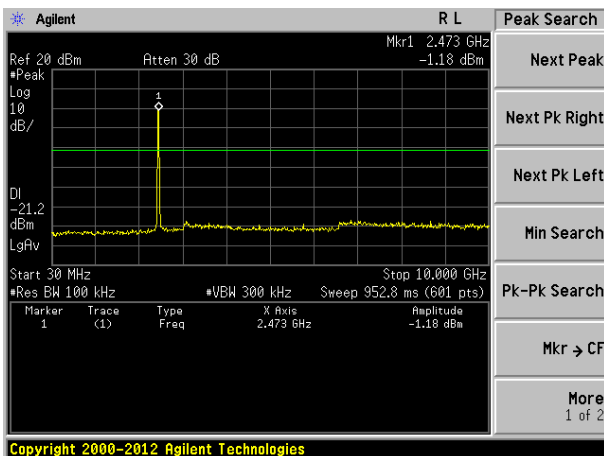


30MHz~10GHz

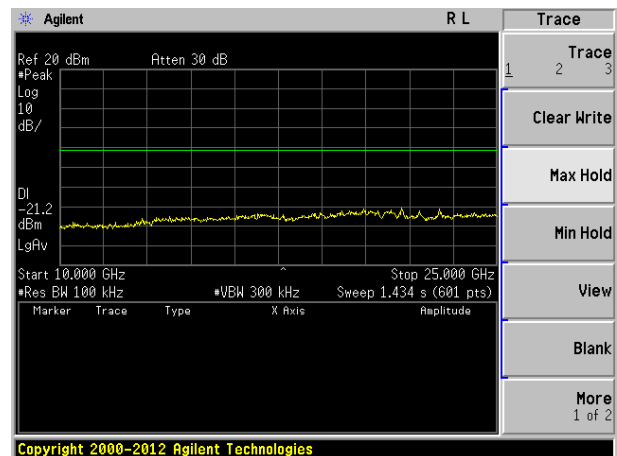


10GHz~25GHz

Highest channel



30MHz~10GHz

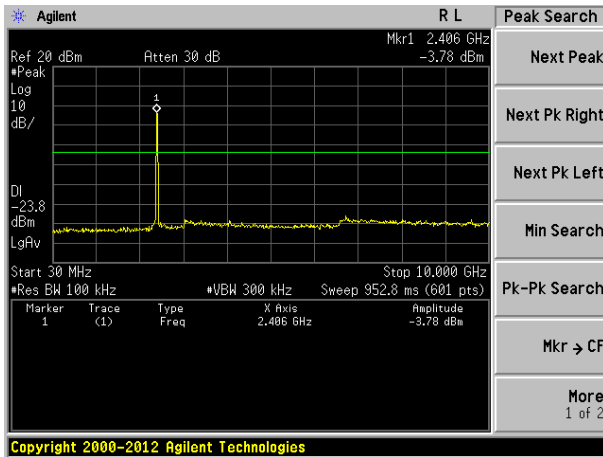


10GHz~25GHz

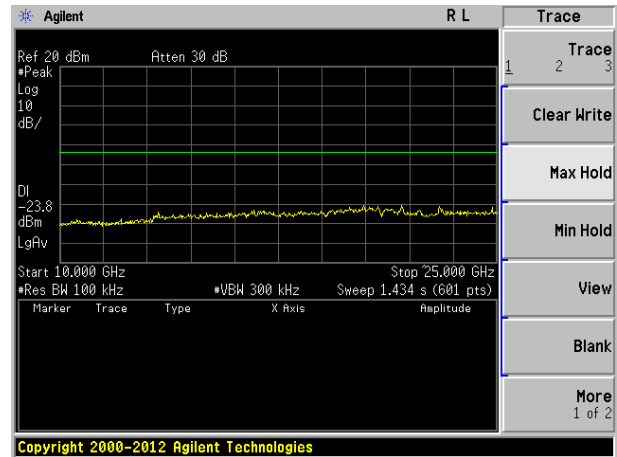
Test mode:

802.11n (H20)

Lowest channel

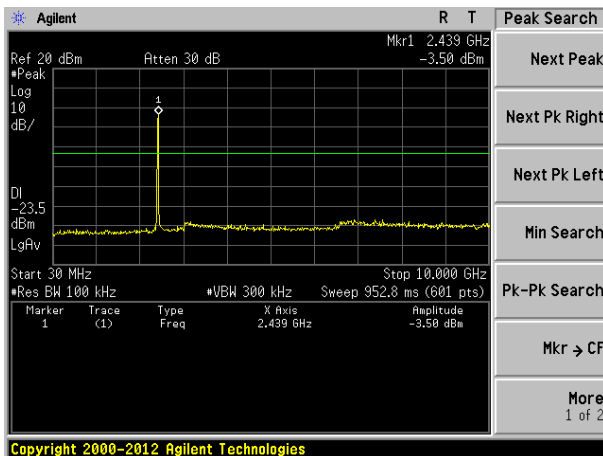


30MHz~10GHz

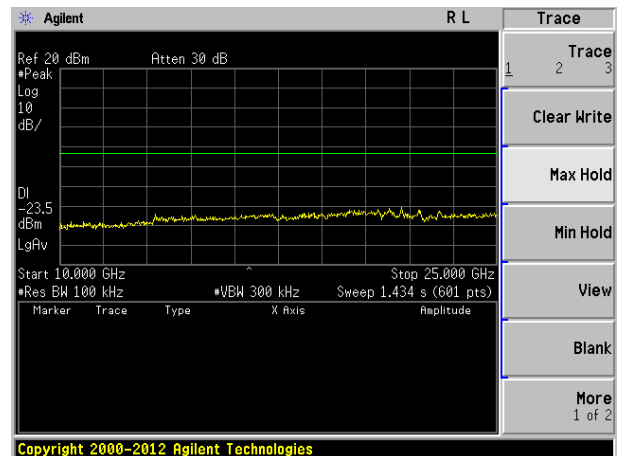


10GHz~25GHz

Middle channel

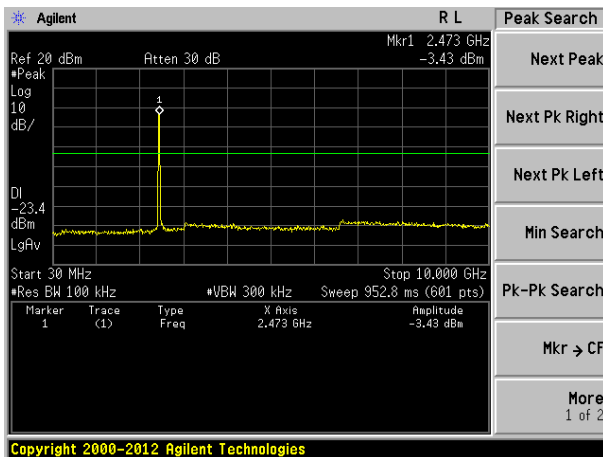


30MHz~10GHz

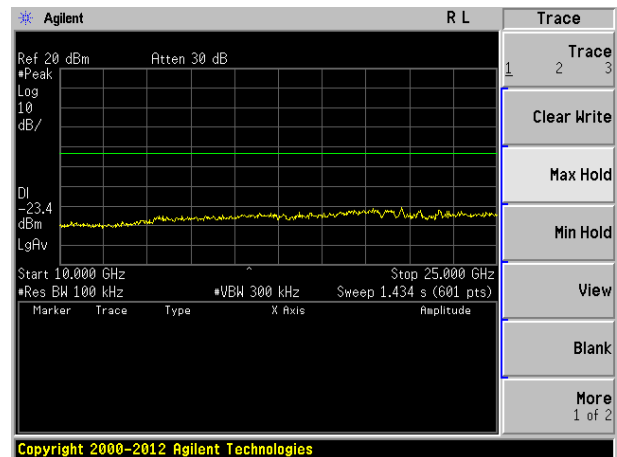


10GHz~25GHz

Highest channel



30MHz~10GHz

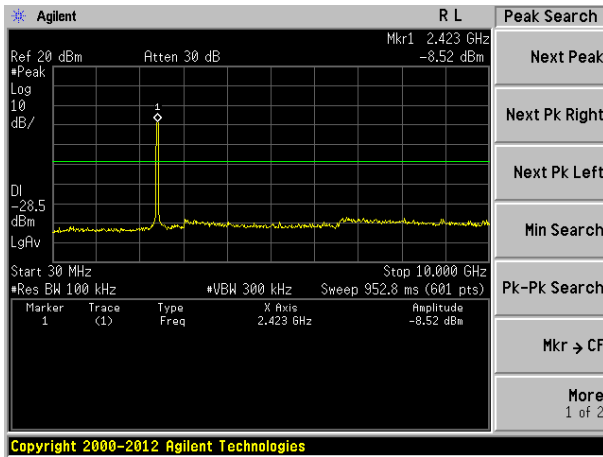


10GHz~25GHz

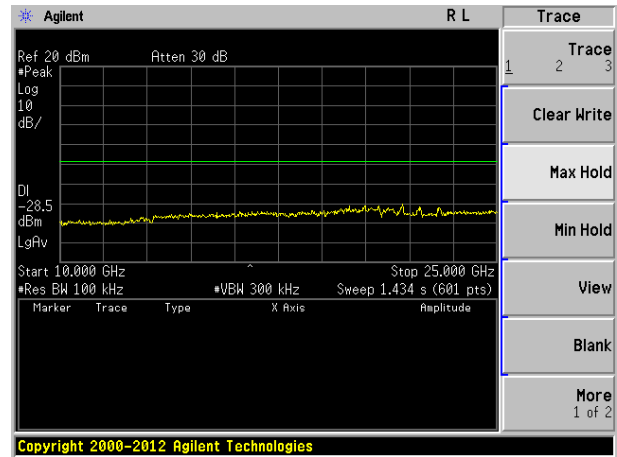
Test mode:

802.11n (H40)

Lowest channel

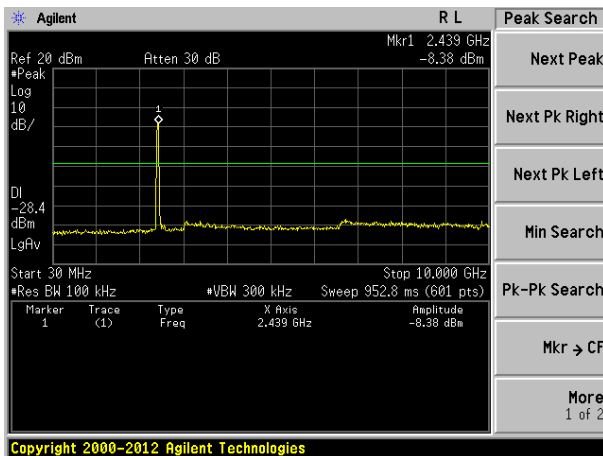


30MHz~10GHz

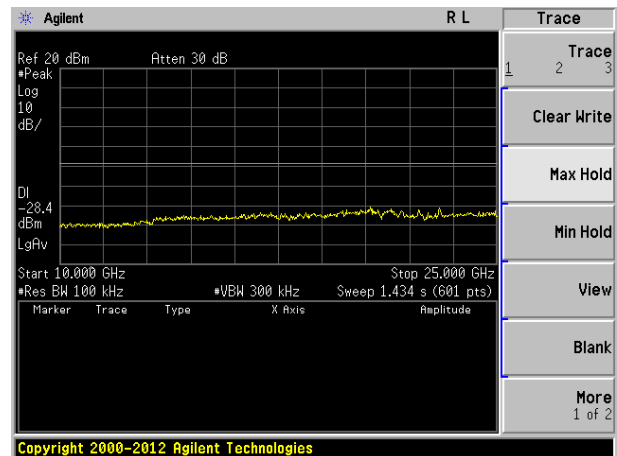


10GHz~25GHz

Middle channel

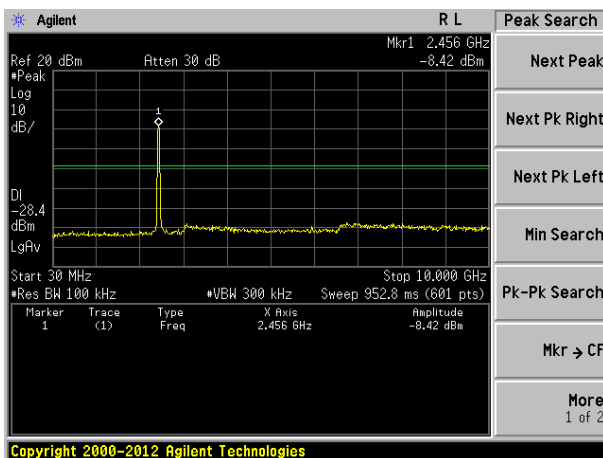


30MHz~10GHz

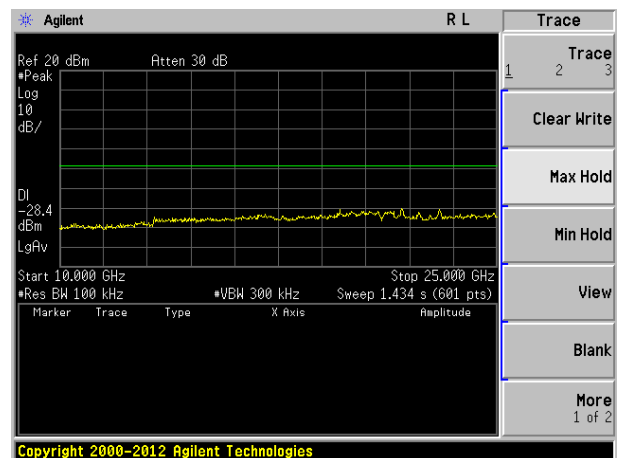


10GHz~25GHz

Highest channel



30MHz~10GHz



10GHz~25GHz

## 7.7.2 Radiated Emission Method

### ☞ Test method

FCC Part15 C Section 15.209 and 15.205

### ☞ Test method

ANSI C63.4:2003

### ☞ Receiver set

| Frequency  | Detector   | RBW    | VBW    | Remark           |
|------------|------------|--------|--------|------------------|
| 30MHz-1GHz | Quasi-peak | 100KHz | 300KHz | Quasi-peak Value |
| Above 1GHz | Peak       | 1MHz   | 3MHz   | Peak Value       |
|            | Peak       | 1MHz   | 10Hz   | Average Value    |

### ☞ Limit

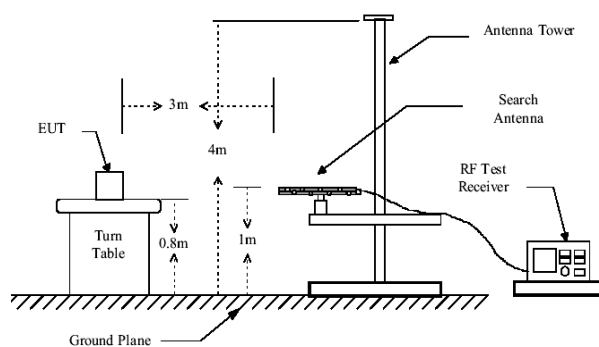
| Frequency     | Limit (dBuV/m @3m) | Remark           |
|---------------|--------------------|------------------|
| 30MHz-88MHz   | 40.00              | Quasi-peak Value |
| 88MHz-216MHz  | 43.50              | Quasi-peak Value |
| 216MHz-960MHz | 46.00              | Quasi-peak Value |
| 960MHz-1GHz   | 54.00              | Quasi-peak Value |
| Above 1GHz    | 54.00              | Average Value    |
|               | 74.00              | Peak Value       |

### ☞ Test mode

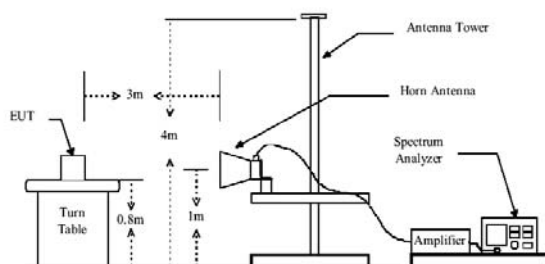
Refer to section 5.3 for details

### ☞ Test setup

Below 1GHz



Above 1GHz



### Test Procedure

6. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
7. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
8. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
9. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
10. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
11. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

### Test Result

**Complied**

Remark:

During the test, pre-scan the GFSK, Pi/4QPSK, 8DPSK modulation, and found the GFSK modulation which it is worse case, so only show the test data of worse case modulation on the test report.

#### Measurement data:

##### ■ Below 1GHz

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 30.32           | 45.43             | 14.33                 | 0.55            | 32.06                    | 28.25          | 40.00               | -11.75          | Vertical     |
| 39.99           | 42.90             | 15.58                 | 0.66            | 32.06                    | 27.08          | 40.00               | -12.92          | Vertical     |
| 59.44           | 42.40             | 14.73                 | 0.86            | 31.94                    | 26.05          | 40.00               | -13.95          | Vertical     |
| 68.63           | 47.00             | 11.20                 | 0.93            | 31.89                    | 27.24          | 40.00               | -12.76          | Vertical     |
| 104.54          | 36.80             | 14.73                 | 1.23            | 31.78                    | 20.98          | 43.50               | -22.52          | Vertical     |
| 240.83          | 37.46             | 14.09                 | 2.08            | 32.16                    | 21.47          | 46.00               | -24.53          | Vertical     |
| 41.71           | 36.56             | 15.57                 | 0.68            | 32.04                    | 20.77          | 40.00               | -19.23          | Horizontal   |
| 58.41           | 36.95             | 14.80                 | 0.85            | 31.94                    | 20.66          | 40.00               | -19.34          | Horizontal   |
| 90.22           | 37.18             | 13.99                 | 1.11            | 31.72                    | 20.56          | 43.50               | -22.94          | Horizontal   |
| 234.99          | 38.03             | 13.83                 | 2.05            | 32.16                    | 21.75          | 46.00               | -24.25          | Horizontal   |
| 407.52          | 36.67             | 17.22                 | 2.89            | 31.86                    | 24.92          | 46.00               | -21.08          | Horizontal   |
| 574.63          | 35.82             | 20.03                 | 3.63            | 31.17                    | 28.31          | 46.00               | -17.69          | Horizontal   |

**■ Above 1GHz**

|       |         |               |        |
|-------|---------|---------------|--------|
| Mode: | 802.11b | Test channel: | Lowest |
|-------|---------|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4824.00         | 42.56             | 31.77                 | 8.61            | 39.55                    | 43.39          | 74.00               | -30.61          | Vertical     |
| 7236.00         | 35.85             | 38.09                 | 11.68           | 36.29                    | 49.33          | 74.00               | -24.67          | Vertical     |
| 9648.00         | 38.16             | 37.44                 | 14.16           | 37.28                    | 52.48          | 74.00               | -21.52          | Vertical     |
| 12060.00        | *                 |                       |                 |                          |                | 74.00               |                 | Vertical     |
| 14472.00        | *                 |                       |                 |                          |                | 74.00               |                 | Vertical     |
| 4824.00         | 40.09             | 31.77                 | 8.61            | 39.55                    | 40.92          | 74.00               | -33.08          | Horizontal   |
| 7236.00         | 34.56             | 38.09                 | 11.68           | 36.29                    | 48.04          | 74.00               | -25.96          | Horizontal   |
| 9648.00         | 35.38             | 37.44                 | 14.16           | 37.28                    | 49.70          | 74.00               | -24.30          | Horizontal   |
| 12060.00        | *                 |                       |                 |                          |                | 74.00               |                 | Horizontal   |
| 14472.00        | *                 |                       |                 |                          |                | 74.00               |                 | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4824.00         | 31.71             | 31.77                 | 8.61            | 39.55                    | 32.54          | 54.00               | -21.46          | Vertical     |
| 7236.00         | 24.86             | 38.09                 | 11.68           | 36.29                    | 38.34          | 54.00               | -15.66          | Vertical     |
| 9648.00         | 27.22             | 37.44                 | 14.16           | 37.28                    | 41.54          | 54.00               | -12.46          | Vertical     |
| 12060.00        | *                 |                       |                 |                          |                | 54.00               |                 | Vertical     |
| 14472.00        | *                 |                       |                 |                          |                | 54.00               |                 | Vertical     |
| 4824.00         | 29.19             | 31.77                 | 8.61            | 39.55                    | 30.02          | 54.00               | -23.98          | Horizontal   |
| 7236.00         | 23.55             | 38.09                 | 11.68           | 36.29                    | 37.03          | 54.00               | -16.97          | Horizontal   |
| 9648.00         | 24.39             | 37.44                 | 14.16           | 37.28                    | 38.71          | 54.00               | -15.29          | Horizontal   |
| 12060.00        | *                 |                       |                 |                          |                | 54.00               |                 | Horizontal   |
| 14472.00        | *                 |                       |                 |                          |                | 54.00               |                 | Horizontal   |

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “\*”, means this data is too weak; instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not shown in test report.

|       |         |               |        |
|-------|---------|---------------|--------|
| Mode: | 802.11b | Test channel: | Middle |
|-------|---------|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4874.00         | 43.84             | 31.75                 | 8.66            | 39.54                    | 44.71          | 74.00               | -29.29          | Vertical     |
| 7311.00         | 36.79             | 38.15                 | 11.71           | 36.23                    | 50.42          | 74.00               | -23.58          | Vertical     |
| 9748.00         | 39.21             | 37.34                 | 14.25           | 37.44                    | 53.36          | 74.00               | -20.64          | Vertical     |
| 12185.00        | *                 |                       |                 |                          |                | 74.00               |                 | Vertical     |
| 14622.00        | *                 |                       |                 |                          |                | 74.00               |                 | Vertical     |
| 4874.00         | 41.24             | 31.75                 | 8.66            | 39.54                    | 42.11          | 74.00               | -31.89          | Horizontal   |
| 7311.00         | 35.44             | 38.15                 | 11.71           | 36.23                    | 49.07          | 74.00               | -24.93          | Horizontal   |
| 9748.00         | 36.30             | 37.34                 | 14.25           | 37.44                    | 50.45          | 74.00               | -23.55          | Horizontal   |
| 12185.00        | *                 |                       |                 |                          |                | 74.00               |                 | Horizontal   |
| 14622.00        | *                 |                       |                 |                          |                | 74.00               |                 | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4874.00         | 32.98             | 31.75                 | 8.66            | 39.54                    | 33.85          | 54.00               | -20.15          | Vertical     |
| 7311.00         | 25.72             | 38.15                 | 11.71           | 36.23                    | 39.35          | 54.00               | -14.65          | Vertical     |
| 9748.00         | 28.22             | 37.34                 | 14.25           | 37.44                    | 42.37          | 54.00               | -11.63          | Vertical     |
| 12185.00        | *                 |                       |                 |                          |                | 54.00               |                 | Vertical     |
| 14622.00        | *                 |                       |                 |                          |                | 54.00               |                 | Vertical     |
| 4874.00         | 30.31             | 31.75                 | 8.66            | 39.54                    | 31.18          | 54.00               | -22.82          | Horizontal   |
| 7311.00         | 24.33             | 38.15                 | 11.71           | 36.23                    | 37.96          | 54.00               | -16.04          | Horizontal   |
| 9748.00         | 25.22             | 37.34                 | 14.25           | 37.44                    | 39.37          | 54.00               | -14.63          | Horizontal   |
| 12185.00        | *                 |                       |                 |                          |                | 54.00               |                 | Horizontal   |
| 14622.00        | *                 |                       |                 |                          |                | 54.00               |                 | Horizontal   |

**Remark:**

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *“\*” means this data is too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

|       |         |               |         |
|-------|---------|---------------|---------|
| Mode: | 802.11b | Test channel: | Highest |
|-------|---------|---------------|---------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4924.00         | 41.71             | 31.73                 | 8.70            | 39.52                    | 42.62          | 74.00               | -31.38          | Vertical     |
| 7386.00         | 34.53             | 38.22                 | 11.76           | 36.15                    | 48.36          | 74.00               | -25.64          | Vertical     |
| 9848.00         | 37.00             | 37.26                 | 14.31           | 37.57                    | 51.00          | 74.00               | -23.00          | Vertical     |
| 12310.00        | *                 |                       |                 |                          |                | 74.00               |                 | Vertical     |
| 14772.00        | *                 |                       |                 |                          |                | 74.00               |                 | Vertical     |
| 4924.00         | 39.06             | 31.73                 | 8.70            | 39.52                    | 39.97          | 74.00               | -34.03          | Horizontal   |
| 7386.00         | 33.15             | 38.22                 | 11.76           | 36.15                    | 46.98          | 74.00               | -27.02          | Horizontal   |
| 9848.00         | 34.03             | 37.26                 | 14.31           | 37.57                    | 48.03          | 74.00               | -25.97          | Horizontal   |
| 12310.00        | *                 |                       |                 |                          |                | 74.00               |                 | Horizontal   |
| 14772.00        | *                 |                       |                 |                          |                | 74.00               |                 | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4924.00         | 30.44             | 31.73                 | 8.70            | 39.52                    | 31.35          | 54.00               | -22.65          | Vertical     |
| 7386.00         | 23.05             | 38.22                 | 11.76           | 36.15                    | 36.88          | 54.00               | -17.12          | Vertical     |
| 9848.00         | 25.59             | 37.26                 | 14.31           | 37.57                    | 39.59          | 54.00               | -14.41          | Vertical     |
| 12310.00        | *                 |                       |                 |                          |                | 54.00               |                 | Vertical     |
| 14772.00        | *                 |                       |                 |                          |                | 54.00               |                 | Vertical     |
| 4924.00         | 27.72             | 31.73                 | 8.70            | 39.52                    | 28.63          | 54.00               | -25.37          | Horizontal   |
| 7386.00         | 21.63             | 38.22                 | 11.76           | 36.15                    | 35.46          | 54.00               | -18.54          | Horizontal   |
| 9848.00         | 22.54             | 37.26                 | 14.31           | 37.57                    | 36.54          | 54.00               | -17.46          | Horizontal   |
| 12310.00        | *                 |                       |                 |                          |                | 54.00               |                 | Horizontal   |
| 14772.00        | *                 |                       |                 |                          |                | 54.00               |                 | Horizontal   |

**Remark:**

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *“\*” means this data is too weak; instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not shown in test report.*

|       |         |               |        |
|-------|---------|---------------|--------|
| Mode: | 802.11g | Test channel: | Lowest |
|-------|---------|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 4824.00         | 40.86             | 31.77                 | 8.61            | 39.55              | 41.69          | 74.00               | -32.31          | Vertical     |
| 7236.00         | 34.28             | 38.09                 | 11.68           | 36.29              | 47.76          | 74.00               | -26.24          | Vertical     |
| 9648.00         | 36.54             | 37.44                 | 14.16           | 37.28              | 50.86          | 74.00               | -23.14          | Vertical     |
| 12060.00        | *                 |                       |                 |                    |                | 74.00               |                 | Vertical     |
| 14472.00        | *                 |                       |                 |                    |                | 74.00               |                 | Vertical     |
| 4824.00         | 38.43             | 31.77                 | 8.61            | 39.55              | 39.26          | 74.00               | -34.74          | Horizontal   |
| 7236.00         | 33.02             | 38.09                 | 11.68           | 36.29              | 46.50          | 74.00               | -27.50          | Horizontal   |
| 9648.00         | 33.83             | 37.44                 | 14.16           | 37.28              | 48.15          | 74.00               | -25.85          | Horizontal   |
| 12060.00        | *                 |                       |                 |                    |                | 74.00               |                 | Horizontal   |
| 14472.00        | *                 |                       |                 |                    |                | 74.00               |                 | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 4824.00         | 32.34             | 31.77                 | 8.61            | 39.55              | 33.17          | 54.00               | -20.83          | Vertical     |
| 7236.00         | 25.63             | 38.09                 | 11.68           | 36.29              | 39.11          | 54.00               | -14.89          | Vertical     |
| 9648.00         | 27.94             | 37.44                 | 14.16           | 37.28              | 42.26          | 54.00               | -11.74          | Vertical     |
| 12060.00        | *                 |                       |                 |                    |                | 54.00               |                 | Vertical     |
| 14472.00        | *                 |                       |                 |                    |                | 54.00               |                 | Vertical     |
| 4824.00         | 29.87             | 31.77                 | 8.61            | 39.55              | 30.70          | 54.00               | -23.30          | Horizontal   |
| 7236.00         | 24.35             | 38.09                 | 11.68           | 36.29              | 37.83          | 54.00               | -16.17          | Horizontal   |
| 9648.00         | 25.17             | 37.44                 | 14.16           | 37.28              | 39.49          | 54.00               | -14.51          | Horizontal   |
| 12060.00        | *                 |                       |                 |                    |                | 54.00               |                 | Horizontal   |
| 14472.00        | *                 |                       |                 |                    |                | 54.00               |                 | Horizontal   |

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “\*”, means this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

|       |         |               |        |
|-------|---------|---------------|--------|
| Mode: | 802.11g | Test channel: | Middle |
|-------|---------|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4874.00         | 42.08             | 31.75                 | 8.66            | 39.54                    | 42.95          | 74.00               | -31.05          | Vertical     |
| 7311.00         | 35.18             | 38.15                 | 11.71           | 36.23                    | 48.81          | 74.00               | -25.19          | Vertical     |
| 9748.00         | 37.55             | 37.34                 | 14.25           | 37.44                    | 51.70          | 74.00               | -22.30          | Vertical     |
| 12185.00        | *                 |                       |                 |                          |                | 74.00               |                 | Vertical     |
| 14622.00        | *                 |                       |                 |                          |                | 74.00               |                 | Vertical     |
| 4874.00         | 39.54             | 31.75                 | 8.66            | 39.54                    | 40.41          | 74.00               | -33.59          | Horizontal   |
| 7311.00         | 33.85             | 38.15                 | 11.71           | 36.23                    | 47.48          | 74.00               | -26.52          | Horizontal   |
| 9748.00         | 34.70             | 37.34                 | 14.25           | 37.44                    | 48.85          | 74.00               | -25.15          | Horizontal   |
| 12185.00        | *                 |                       |                 |                          |                | 74.00               |                 | Horizontal   |
| 14622.00        | *                 |                       |                 |                          |                | 74.00               |                 | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4874.00         | 33.64             | 31.75                 | 8.66            | 39.54                    | 34.51          | 54.00               | -19.49          | Vertical     |
| 7311.00         | 26.52             | 38.15                 | 11.71           | 36.23                    | 40.15          | 54.00               | -13.85          | Vertical     |
| 9748.00         | 28.97             | 37.34                 | 14.25           | 37.44                    | 43.12          | 54.00               | -10.88          | Vertical     |
| 12185.00        | *                 |                       |                 |                          |                | 54.00               |                 | Vertical     |
| 14622.00        | *                 |                       |                 |                          |                | 54.00               |                 | Vertical     |
| 4874.00         | 31.02             | 31.75                 | 8.66            | 39.54                    | 31.89          | 54.00               | -22.11          | Horizontal   |
| 7311.00         | 25.16             | 38.15                 | 11.71           | 36.23                    | 38.79          | 54.00               | -15.21          | Horizontal   |
| 9748.00         | 26.03             | 37.34                 | 14.25           | 37.44                    | 40.18          | 54.00               | -13.82          | Horizontal   |
| 12185.00        | *                 |                       |                 |                          |                | 54.00               |                 | Horizontal   |
| 14622.00        | *                 |                       |                 |                          |                | 54.00               |                 | Horizontal   |

**Remark:**

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"\*" means this data is too weak; instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not shown in test report.*

|       |         |               |         |
|-------|---------|---------------|---------|
| Mode: | 802.11g | Test channel: | Highest |
|-------|---------|---------------|---------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4924.00         | 40.04             | 31.73                 | 8.70            | 39.52                    | 40.95          | 74.00               | -33.05          | Vertical     |
| 7386.00         | 33.00             | 38.22                 | 11.76           | 36.15                    | 46.83          | 74.00               | -27.17          | Vertical     |
| 9848.00         | 35.42             | 37.26                 | 14.31           | 37.57                    | 49.42          | 74.00               | -24.58          | Vertical     |
| 12310.00        | *                 |                       |                 |                          |                | 74.00               |                 | Vertical     |
| 14772.00        | *                 |                       |                 |                          |                | 74.00               |                 | Vertical     |
| 4924.00         | 37.45             | 31.73                 | 8.70            | 39.52                    | 38.36          | 74.00               | -35.64          | Horizontal   |
| 7386.00         | 31.65             | 38.22                 | 11.76           | 36.15                    | 45.48          | 74.00               | -28.52          | Horizontal   |
| 9848.00         | 32.52             | 37.26                 | 14.31           | 37.57                    | 46.52          | 74.00               | -27.48          | Horizontal   |
| 12310.00        | *                 |                       |                 |                          |                | 74.00               |                 | Horizontal   |
| 14772.00        | *                 |                       |                 |                          |                | 74.00               |                 | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4924.00         | 31.05             | 31.73                 | 8.70            | 39.52                    | 31.96          | 54.00               | -22.04          | Vertical     |
| 7386.00         | 23.80             | 38.22                 | 11.76           | 36.15                    | 37.63          | 54.00               | -16.37          | Vertical     |
| 9848.00         | 26.30             | 37.26                 | 14.31           | 37.57                    | 40.30          | 54.00               | -13.70          | Vertical     |
| 12310.00        | *                 |                       |                 |                          |                | 54.00               |                 | Vertical     |
| 14772.00        | *                 |                       |                 |                          |                | 54.00               |                 | Vertical     |
| 4924.00         | 28.38             | 31.73                 | 8.70            | 39.52                    | 29.29          | 54.00               | -24.71          | Horizontal   |
| 7386.00         | 22.41             | 38.22                 | 11.76           | 36.15                    | 36.24          | 54.00               | -17.76          | Horizontal   |
| 9848.00         | 23.30             | 37.26                 | 14.31           | 37.57                    | 37.30          | 54.00               | -16.70          | Horizontal   |
| 12310.00        | *                 |                       |                 |                          |                | 54.00               |                 | Horizontal   |
| 14772.00        | *                 |                       |                 |                          |                | 54.00               |                 | Horizontal   |

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “\*”, means this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

|       |              |               |        |
|-------|--------------|---------------|--------|
| Mode: | 802.11n(H20) | Test channel: | Lowest |
|-------|--------------|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 4824.00         | 39.58             | 31.77                 | 8.61            | 39.55              | 40.41          | 74.00               | -33.59          | Vertical     |
| 7236.00         | 32.73             | 38.09                 | 11.68           | 36.29              | 46.21          | 74.00               | -27.79          | Vertical     |
| 9648.00         | 35.09             | 37.44                 | 14.16           | 37.28              | 49.41          | 74.00               | -24.59          | Vertical     |
| 12060.00        | *                 |                       |                 |                    |                | 74.00               |                 | Vertical     |
| 14472.00        | *                 |                       |                 |                    |                | 74.00               |                 | Vertical     |
| 4824.00         | 37.06             | 31.77                 | 8.61            | 39.55              | 37.89          | 74.00               | -36.11          | Horizontal   |
| 7236.00         | 31.42             | 38.09                 | 11.68           | 36.29              | 44.90          | 74.00               | -29.10          | Horizontal   |
| 9648.00         | 32.26             | 37.44                 | 14.16           | 37.28              | 46.58          | 74.00               | -27.42          | Horizontal   |
| 12060.00        | *                 |                       |                 |                    |                | 74.00               |                 | Horizontal   |
| 14472.00        | *                 |                       |                 |                    |                | 74.00               |                 | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 4824.00         | 32.34             | 31.77                 | 8.61            | 39.55              | 33.17          | 54.00               | -20.83          | Vertical     |
| 7236.00         | 25.36             | 38.09                 | 11.68           | 36.29              | 38.84          | 54.00               | -15.16          | Vertical     |
| 9648.00         | 27.76             | 37.44                 | 14.16           | 37.28              | 42.08          | 54.00               | -11.92          | Vertical     |
| 12060.00        | *                 |                       |                 |                    |                | 54.00               |                 | Vertical     |
| 14472.00        | *                 |                       |                 |                    |                | 54.00               |                 | Vertical     |
| 4824.00         | 29.77             | 31.77                 | 8.61            | 39.55              | 30.60          | 54.00               | -23.40          | Horizontal   |
| 7236.00         | 24.02             | 38.09                 | 11.68           | 36.29              | 37.50          | 54.00               | -16.50          | Horizontal   |
| 9648.00         | 24.88             | 37.44                 | 14.16           | 37.28              | 39.20          | 54.00               | -14.80          | Horizontal   |
| 12060.00        | *                 |                       |                 |                    |                | 54.00               |                 | Horizontal   |
| 14472.00        | *                 |                       |                 |                    |                | 54.00               |                 | Horizontal   |

**Remark:**

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *“\*” means this data is too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

|       |              |               |        |
|-------|--------------|---------------|--------|
| Mode: | 802.11n(H20) | Test channel: | Middle |
|-------|--------------|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4874.00         | 40.77             | 31.75                 | 8.66            | 39.54                    | 41.64          | 74.00               | -32.36          | Vertical     |
| 7311.00         | 33.58             | 38.15                 | 11.71           | 36.23                    | 47.21          | 74.00               | -26.79          | Vertical     |
| 9748.00         | 36.05             | 37.34                 | 14.25           | 37.44                    | 50.20          | 74.00               | -23.80          | Vertical     |
| 12185.00        | *                 |                       |                 |                          |                | 74.00               |                 | Vertical     |
| 14622.00        | *                 |                       |                 |                          |                | 74.00               |                 | Vertical     |
| 4874.00         | 38.12             | 31.75                 | 8.66            | 39.54                    | 38.99          | 74.00               | -35.01          | Horizontal   |
| 7311.00         | 32.20             | 38.15                 | 11.71           | 36.23                    | 45.83          | 74.00               | -28.17          | Horizontal   |
| 9748.00         | 33.08             | 37.34                 | 14.25           | 37.44                    | 47.23          | 74.00               | -26.77          | Horizontal   |
| 12185.00        | *                 |                       |                 |                          |                | 74.00               |                 | Horizontal   |
| 14622.00        | *                 |                       |                 |                          |                | 74.00               |                 | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4874.00         | 33.64             | 31.75                 | 8.66            | 39.54                    | 34.51          | 54.00               | -19.49          | Vertical     |
| 7311.00         | 26.23             | 38.15                 | 11.71           | 36.23                    | 39.86          | 54.00               | -14.14          | Vertical     |
| 9748.00         | 28.78             | 37.34                 | 14.25           | 37.44                    | 42.93          | 54.00               | -11.07          | Vertical     |
| 12185.00        | *                 |                       |                 |                          |                | 54.00               |                 | Vertical     |
| 14622.00        | *                 |                       |                 |                          |                | 54.00               |                 | Vertical     |
| 4874.00         | 30.91             | 31.75                 | 8.66            | 39.54                    | 31.78          | 54.00               | -22.22          | Horizontal   |
| 7311.00         | 24.82             | 38.15                 | 11.71           | 36.23                    | 38.45          | 54.00               | -15.55          | Horizontal   |
| 9748.00         | 25.72             | 37.34                 | 14.25           | 37.44                    | 39.87          | 54.00               | -14.13          | Horizontal   |
| 12185.00        | *                 |                       |                 |                          |                | 54.00               |                 | Horizontal   |
| 14622.00        | *                 |                       |                 |                          |                | 54.00               |                 | Horizontal   |

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “\*”, means this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

|       |              |               |         |
|-------|--------------|---------------|---------|
| Mode: | 802.11n(H20) | Test channel: | Highest |
|-------|--------------|---------------|---------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 4924.00         | 38.79             | 31.73                 | 8.70            | 39.52              | 39.70          | 74.00               | -34.30          | Vertical     |
| 7386.00         | 31.46             | 38.22                 | 11.76           | 36.15              | 45.29          | 74.00               | -28.71          | Vertical     |
| 9848.00         | 33.98             | 37.26                 | 14.31           | 37.57              | 47.98          | 74.00               | -26.02          | Vertical     |
| 12310.00        | *                 |                       |                 |                    |                | 74.00               |                 | Vertical     |
| 14772.00        | *                 |                       |                 |                    |                | 74.00               |                 | Vertical     |
| 4924.00         | 36.09             | 31.73                 | 8.70            | 39.52              | 37.00          | 74.00               | -37.00          | Horizontal   |
| 7386.00         | 30.06             | 38.22                 | 11.76           | 36.15              | 43.89          | 74.00               | -30.11          | Horizontal   |
| 9848.00         | 30.96             | 37.26                 | 14.31           | 37.57              | 44.96          | 74.00               | -29.04          | Horizontal   |
| 12310.00        | *                 |                       |                 |                    |                | 74.00               |                 | Horizontal   |
| 14772.00        | *                 |                       |                 |                    |                | 74.00               |                 | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 4924.00         | 31.05             | 31.73                 | 8.70            | 39.52              | 31.96          | 54.00               | -22.04          | Vertical     |
| 7386.00         | 23.51             | 38.22                 | 11.76           | 36.15              | 37.34          | 54.00               | -16.66          | Vertical     |
| 9848.00         | 26.10             | 37.26                 | 14.31           | 37.57              | 40.10          | 54.00               | -13.90          | Vertical     |
| 12310.00        | *                 |                       |                 |                    |                | 54.00               |                 | Vertical     |
| 14772.00        | *                 |                       |                 |                    |                | 54.00               |                 | Vertical     |
| 4924.00         | 28.27             | 31.73                 | 8.70            | 39.52              | 29.18          | 54.00               | -24.82          | Horizontal   |
| 7386.00         | 22.06             | 38.22                 | 11.76           | 36.15              | 35.89          | 54.00               | -18.11          | Horizontal   |
| 9848.00         | 22.99             | 37.26                 | 14.31           | 37.57              | 36.99          | 54.00               | -17.01          | Horizontal   |
| 12310.00        | *                 |                       |                 |                    |                | 54.00               |                 | Horizontal   |
| 14772.00        | *                 |                       |                 |                    |                | 54.00               |                 | Horizontal   |

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. “\*”, means this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

|       |              |               |        |
|-------|--------------|---------------|--------|
| Mode: | 802.11n(H40) | Test channel: | Lowest |
|-------|--------------|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 4844.00         | 40.43             | 31.76                 | 8.63            | 39.55              | 41.27          | 74.00               | -32.73          | Vertical     |
| 7266.00         | 33.65             | 38.12                 | 11.69           | 36.26              | 47.20          | 74.00               | -26.80          | Vertical     |
| 9688.00         | 35.99             | 37.41                 | 14.21           | 37.33              | 50.28          | 74.00               | -23.72          | Vertical     |
| 12060.00        | *                 |                       |                 |                    |                | 74.00               |                 | Vertical     |
| 14472.00        | *                 |                       |                 |                    |                | 74.00               |                 | Vertical     |
| 4844.00         | 37.93             | 31.76                 | 8.63            | 39.55              | 38.77          | 74.00               | -35.23          | Horizontal   |
| 7266.00         | 32.35             | 38.12                 | 11.69           | 36.26              | 45.90          | 74.00               | -28.10          | Horizontal   |
| 9688.00         | 33.18             | 37.41                 | 14.21           | 37.33              | 47.47          | 74.00               | -26.53          | Horizontal   |
| 12060.00        | *                 |                       |                 |                    |                | 74.00               |                 | Horizontal   |
| 14472.00        | *                 |                       |                 |                    |                | 74.00               |                 | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 4844.00         | 30.12             | 31.76                 | 8.63            | 39.55              | 30.96          | 54.00               | -23.04          | Vertical     |
| 7266.00         | 23.21             | 38.12                 | 11.69           | 36.26              | 36.76          | 54.00               | -17.24          | Vertical     |
| 9688.00         | 25.59             | 37.41                 | 14.21           | 37.33              | 39.88          | 54.00               | -14.12          | Vertical     |
| 12060.00        | *                 |                       |                 |                    |                | 54.00               |                 | Vertical     |
| 14472.00        | *                 |                       |                 |                    |                | 54.00               |                 | Vertical     |
| 4844.00         | 27.58             | 31.76                 | 8.63            | 39.55              | 28.42          | 54.00               | -25.58          | Horizontal   |
| 7266.00         | 21.88             | 38.12                 | 11.69           | 36.26              | 35.43          | 54.00               | -18.57          | Horizontal   |
| 9688.00         | 22.73             | 37.41                 | 14.21           | 37.33              | 37.02          | 54.00               | -16.98          | Horizontal   |
| 12060.00        | *                 |                       |                 |                    |                | 54.00               |                 | Horizontal   |
| 14472.00        | *                 |                       |                 |                    |                | 54.00               |                 | Horizontal   |

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “\*”, means this data is too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

|       |              |               |        |
|-------|--------------|---------------|--------|
| Mode: | 802.11n(H40) | Test channel: | Middle |
|-------|--------------|---------------|--------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4874.00         | 43.26             | 31.75                 | 8.66            | 39.54                    | 44.13          | 74.00               | -29.87          | Vertical     |
| 7311.00         | 36.14             | 38.15                 | 11.71           | 36.23                    | 49.77          | 74.00               | -24.23          | Vertical     |
| 9748.00         | 38.59             | 37.34                 | 14.25           | 37.44                    | 52.74          | 74.00               | -21.26          | Vertical     |
| 12185.00        | *                 |                       |                 |                          |                | 74.00               |                 | Vertical     |
| 14622.00        | *                 |                       |                 |                          |                | 74.00               |                 | Vertical     |
| 4874.00         | 40.64             | 31.75                 | 8.66            | 39.54                    | 41.51          | 74.00               | -32.49          | Horizontal   |
| 7311.00         | 34.78             | 38.15                 | 11.71           | 36.23                    | 48.41          | 74.00               | -25.59          | Horizontal   |
| 9748.00         | 35.65             | 37.34                 | 14.25           | 37.44                    | 49.80          | 74.00               | -24.20          | Horizontal   |
| 12185.00        | *                 |                       |                 |                          |                | 74.00               |                 | Horizontal   |
| 14622.00        | *                 |                       |                 |                          |                | 74.00               |                 | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 4874.00         | 31.93             | 31.75                 | 8.66            | 39.54                    | 32.80          | 54.00               | -21.20          | Vertical     |
| 7311.00         | 24.60             | 38.15                 | 11.71           | 36.23                    | 38.23          | 54.00               | -15.77          | Vertical     |
| 9748.00         | 27.13             | 37.34                 | 14.25           | 37.44                    | 41.28          | 54.00               | -12.72          | Vertical     |
| 12185.00        | *                 |                       |                 |                          |                | 54.00               |                 | Vertical     |
| 14622.00        | *                 |                       |                 |                          |                | 54.00               |                 | Vertical     |
| 4874.00         | 29.23             | 31.75                 | 8.66            | 39.54                    | 30.10          | 54.00               | -23.90          | Horizontal   |
| 7311.00         | 23.20             | 38.15                 | 11.71           | 36.23                    | 36.83          | 54.00               | -17.17          | Horizontal   |
| 9748.00         | 24.10             | 37.34                 | 14.25           | 37.44                    | 38.25          | 54.00               | -15.75          | Horizontal   |
| 12185.00        | *                 |                       |                 |                          |                | 54.00               |                 | Horizontal   |
| 14622.00        | *                 |                       |                 |                          |                | 54.00               |                 | Horizontal   |

**Remark:**

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"\*" means this data is too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

|       |              |               |         |
|-------|--------------|---------------|---------|
| Mode: | 802.11n(H40) | Test channel: | Highest |
|-------|--------------|---------------|---------|

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 4904.00         | 41.24             | 31.73                 | 8.68            | 39.53              | 42.12          | 74.00               | -31.88          | Vertical     |
| 7356.00         | 33.99             | 38.19                 | 11.74           | 36.18              | 47.74          | 74.00               | -26.26          | Vertical     |
| 9808.00         | 36.48             | 37.29                 | 14.29           | 37.52              | 50.54          | 74.00               | -23.46          | Vertical     |
| 12310.00        | *                 |                       |                 |                    |                | 74.00               |                 | Vertical     |
| 14772.00        | *                 |                       |                 |                    |                | 74.00               |                 | Vertical     |
| 4904.00         | 38.57             | 31.73                 | 8.68            | 39.53              | 39.45          | 74.00               | -34.55          | Horizontal   |
| 7356.00         | 32.60             | 38.19                 | 11.74           | 36.18              | 46.35          | 74.00               | -27.65          | Horizontal   |
| 9808.00         | 33.49             | 37.29                 | 14.29           | 37.52              | 47.55          | 74.00               | -26.45          | Horizontal   |
| 12310.00        | *                 |                       |                 |                    |                | 74.00               |                 | Horizontal   |
| 14772.00        | *                 |                       |                 |                    |                | 74.00               |                 | Horizontal   |

**Average value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 4904.00         | 31.03             | 31.73                 | 8.68            | 39.53              | 31.91          | 54.00               | -22.09          | Vertical     |
| 7356.00         | 23.56             | 38.19                 | 11.74           | 36.18              | 37.31          | 54.00               | -16.69          | Vertical     |
| 9808.00         | 26.13             | 37.29                 | 14.29           | 37.52              | 40.19          | 54.00               | -13.81          | Vertical     |
| 12310.00        | *                 |                       |                 |                    |                | 54.00               |                 | Vertical     |
| 14772.00        | *                 |                       |                 |                    |                | 54.00               |                 | Vertical     |
| 4904.00         | 28.28             | 31.73                 | 8.68            | 39.53              | 29.16          | 54.00               | -24.84          | Horizontal   |
| 7356.00         | 22.13             | 38.19                 | 11.74           | 36.18              | 35.88          | 54.00               | -18.12          | Horizontal   |
| 9808.00         | 23.04             | 37.29                 | 14.29           | 37.52              | 37.10          | 54.00               | -16.90          | Horizontal   |
| 12310.00        | *                 |                       |                 |                    |                | 54.00               |                 | Horizontal   |
| 14772.00        | *                 |                       |                 |                    |                | 54.00               |                 | Horizontal   |

**Remark:**

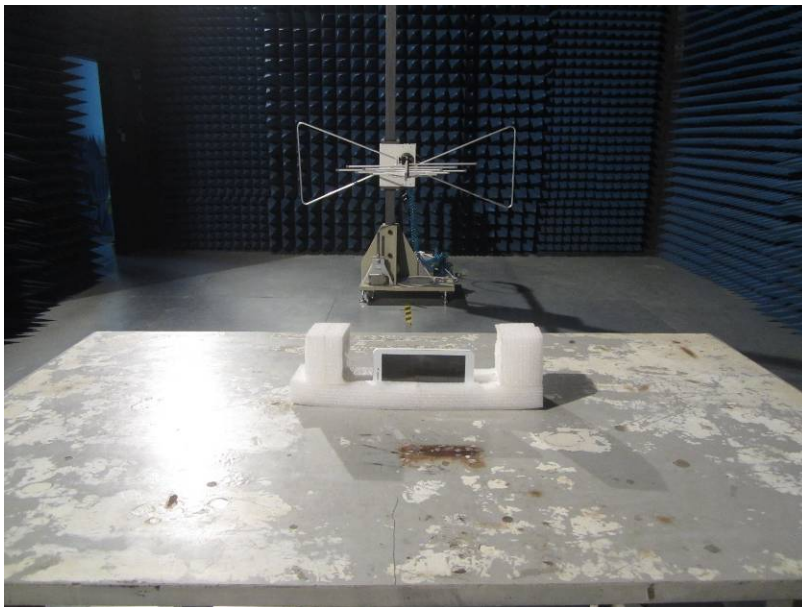
1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. “\*”, means this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

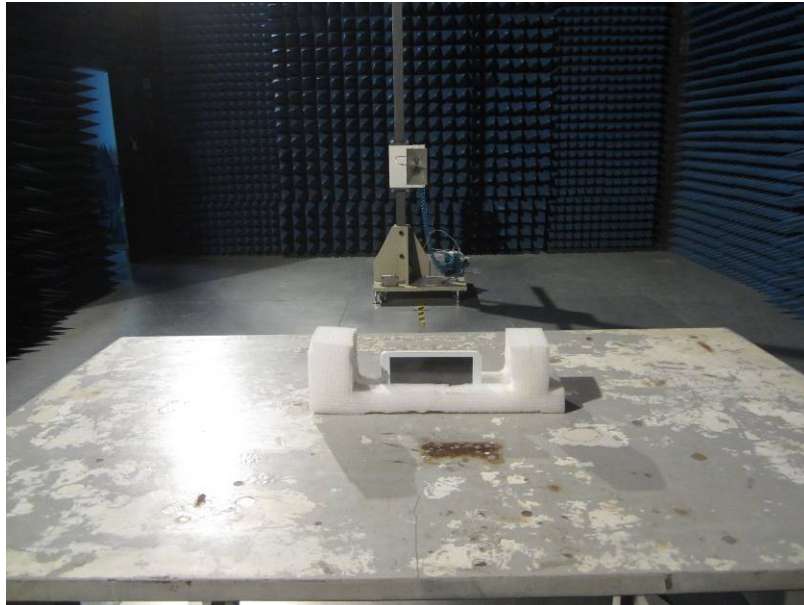
## 8 Test Setup Photo

Conducted emissions:



Radiated emissions:





## 9 EUT Constructional Details

Reference to the test report No.: TMC1407018801

-----End-----