



# FCC RADIO TEST REPORT

FCC ID : NM82Q6U100  
Equipment : Smart Hub  
Model Name : 2Q6U100  
Applicant : HTC Corporation  
No.88, Sec. 3, Zhongxing Rd., Xindian  
Dist., New Taipei City 231, Taiwan (R.O.C.)  
Manufacturer : HTC Corporation  
No.88, Sec. 3, Zhongxing Rd., Xindian  
Dist., New Taipei City 231, Taiwan (R.O.C.)  
Standard : FCC Part 15 Subpart C §15.247

The product was received on Dec. 20, 2018 and testing was started from Dec. 27, 2018 and completed on Mar. 08, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Jones Tsai

**SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory**

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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## History of this test report

| Report No. | Version | Description             | Issued Date   |
|------------|---------|-------------------------|---------------|
| FR8D2018C  | 01      | Initial issue of report | Mar. 13, 2019 |
|            |         |                         |               |
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|            |         |                         |               |

## Summary of Test Result

| Report Clause | Ref Std. Clause       | Test Items                                         | Result (PASS/FAIL) | Remark                                    |
|---------------|-----------------------|----------------------------------------------------|--------------------|-------------------------------------------|
| 3.1           | 15.247(a)(2)          | 6dB Bandwidth                                      | Pass               | -                                         |
| 3.1           | 2.1049                | 99% Occupied Bandwidth                             | Reporting only     | -                                         |
| 3.2           | 15.247(b)             | Power Output Measurement                           | Pass               | -                                         |
| 3.3           | 15.247(e)             | Power Spectral Density                             | Pass               | -                                         |
| 3.4           | 15.247(d)             | Conducted Band Edges                               | Pass               | -                                         |
|               |                       | Conducted Spurious Emission                        | Pass               | -                                         |
| 3.5           | 15.247(d)             | Radiated Band Edges and Radiated Spurious Emission | Pass               | Under limit<br>0.14 dB at<br>2483.500 MHz |
| 3.6           | 15.207                | AC Conducted Emission                              | Pass               | Under limit<br>12.14 dB at<br>0.409 MHz   |
| 3.7           | 15.203 &<br>15.247(b) | Antenna Requirement                                | Pass               | -                                         |

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

**Reviewed by: Wii Chang**

**Report Producer: Natasha Hsieh**

# 1 General Description

## 1.1 Product Feature of Equipment Under Test

LTE, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n/ac, Wi-Fi 5GHz 802.11a/n/ac, WiGig, and 5G NR.

| Product Specification subjective to this standard |                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Antenna Type                                      | WWAN:<br><Ant. 1>: Fixed Internal PIFA Antenna<br><Ant. 2>: Fixed Internal Dipole Antenna<br><Ant. 3>: Fixed Internal PCB Antenna<br>WLAN:<br><Ant. 1>: Fixed Internal PCB Antenna<br><Ant. 2>: Fixed Internal PIFA Antenna<br>Bluetooth: Fixed Internal PCB Antenna<br>WiGig: Fixed Internal Array Antenna<br>5G NR: Fixed Internal PCB Antenna |

## 1.2 Modification of EUT

No modifications are made to the EUT during all test items.

## 1.3 Testing Location

|                    |                                                                                                                       |         |
|--------------------|-----------------------------------------------------------------------------------------------------------------------|---------|
| Test Site          | SPORTON INTERNATIONAL INC.                                                                                            |         |
| Test Site Location | No.52, Huaya 1st Rd., Guishan Dist.,<br>Taoyuan City, Taiwan (R.O.C.)<br>TEL: +886-3-327-3456<br>FAX: +886-3-328-4978 |         |
| Test Site No.      | Sporton Site No.                                                                                                      |         |
|                    | TH05-HY                                                                                                               | CO05-HY |

**Note:** The test site complies with ANSI C63.4 2014 requirement.

|                    |                                                                                                                                           |  |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--|
| Test Site          | SPORTON INTERNATIONAL INC.                                                                                                                |  |
| Test Site Location | No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist.,<br>Taoyuan City, Taiwan (R.O.C.)<br>TEL: +886-3-327-0868<br>FAX: +886-3-327-0855 |  |
| Test Site No.      | Sporton Site No.                                                                                                                          |  |
|                    | 03CH15-HY                                                                                                                                 |  |

**Note:** The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No. TW1190 and TW0007



## **1.4 Applicable Standards**

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05r01
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

## 2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

### 2.1 Carrier Frequency and Channel

| Frequency Band  | Channel | Freq.<br>(MHz) | Channel | Freq.<br>(MHz) |
|-----------------|---------|----------------|---------|----------------|
| 2400-2483.5 MHz | 1       | 2412           | 7       | 2442           |
|                 | 2       | 2417           | 8       | 2447           |
|                 | 3       | 2422           | 9       | 2452           |
|                 | 4       | 2427           | 10      | 2457           |
|                 | 5       | 2432           | 11      | 2462           |
|                 | 6       | 2437           |         |                |

## 2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

### Single Antenna

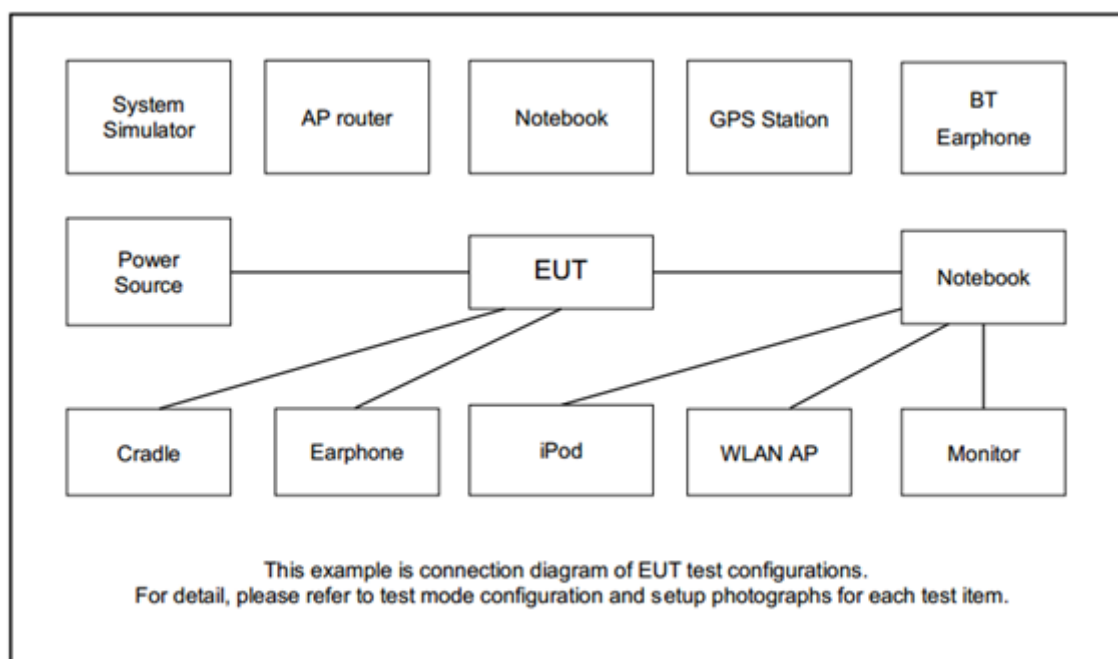
| Modulation | Data Rate |
|------------|-----------|
| 802.11b    | 1 Mbps    |
| 802.11g    | 6 Mbps    |

### MIMO Antenna

| Modulation                       | Data Rate |
|----------------------------------|-----------|
| 802.11n HT20                     | MCS0      |
| 802.11n HT40                     | MCS0      |
| 802.11ac VHT20 (Covered by HT20) | MCS0      |
| 802.11ac VHT40 (Covered by HT40) | MCS0      |

| Test Cases                                                                                               |                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AC Conducted Emission</b>                                                                             | Mode 1 : LTE Band 5 Idle + Bluetooth Link + WLAN (2.4 GHz) Link + H-Pattern + Adapter + WiGig On + LAN Link + USB Data Link with Notebook |
| <b>Remark:</b> Data Link with Notebook means data application transferred mode between EUT and Notebook. |                                                                                                                                           |

## 2.3 Connection Diagram of Test System



## 2.4 Support Unit used in test configuration and system

| Item | Equipment              | Trade Name    | Model Name        | FCC ID                                       | Data Cable      | Power Cord                                                 |
|------|------------------------|---------------|-------------------|----------------------------------------------|-----------------|------------------------------------------------------------|
| 1.   | Bluetooth Base Station | R&S           | CBT32             | N/A                                          | N/A             | Unshielded, 1.8 m                                          |
| 2.   | System Simulator       | Anritsu       | MT8820C           | N/A                                          | N/A             | Unshielded, 1.8 m                                          |
| 3.   | Bluetooth Earphone     | Sony Ericsson | MW600             | PY7DDA-2029                                  | N/A             | N/A                                                        |
| 4.   | WLAN AP                | ASUS          | RT-AC66U          | MSQ-RTAC66U                                  | N/A             | Unshielded, 1.8 m                                          |
| 5.   | iPod                   | Apple         | A1285             | FCC DoC                                      | Shielded, 1.0 m | N/A                                                        |
| 6.   | Notebook               | DELL          | P20G              | FCC DoC/<br>Contains FCC ID:<br>QDS-BRCM1051 | N/A             | AC I/P:<br>Unshielded, 1.2 m<br>DC O/P:<br>Shielded, 1.8 m |
| 7.   | Notebook               | DELL          | Latitude<br>E6320 | FCC DoC/<br>Contains FCC ID:<br>QDS-BRCM1054 | N/A             | AC I/P:<br>Unshielded, 1.2 m<br>DC O/P:<br>Shielded, 1.8 m |
| 8.   | Notebook               | Lenovo        | L570              | N/A                                          | N/A             | AC I/P:<br>Unshielded, 1.2 m<br>DC O/P:<br>Shielded, 1.8 m |
| 9.   | SD Card                | SanDisk       | MicroSD HC        | FCC DoC                                      | N/A             | N/A                                                        |

## 2.5 EUT Operation Test Setup

The RF test items, utility "QRCT" was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.



## 2.6 Measurement Results Explanation Example

**For all conducted test items:**

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

*Offset = RF cable loss + attenuator factor.*

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 4.2 + 10 = 14.2 \text{ (dB)}\end{aligned}$$

### 3 Test Result

#### 3.1 6dB and 99% Bandwidth Measurement

##### 3.1.1 Limit of 6dB and 99% Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

##### 3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

##### 3.1.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 6.9.3 (OBW) and 11.8.1 (6dB BW).
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the emission bandwidth and set the Video bandwidth (VBW)  $\geq 3 * RBW$ .
6. Measure and record the results in the test report.

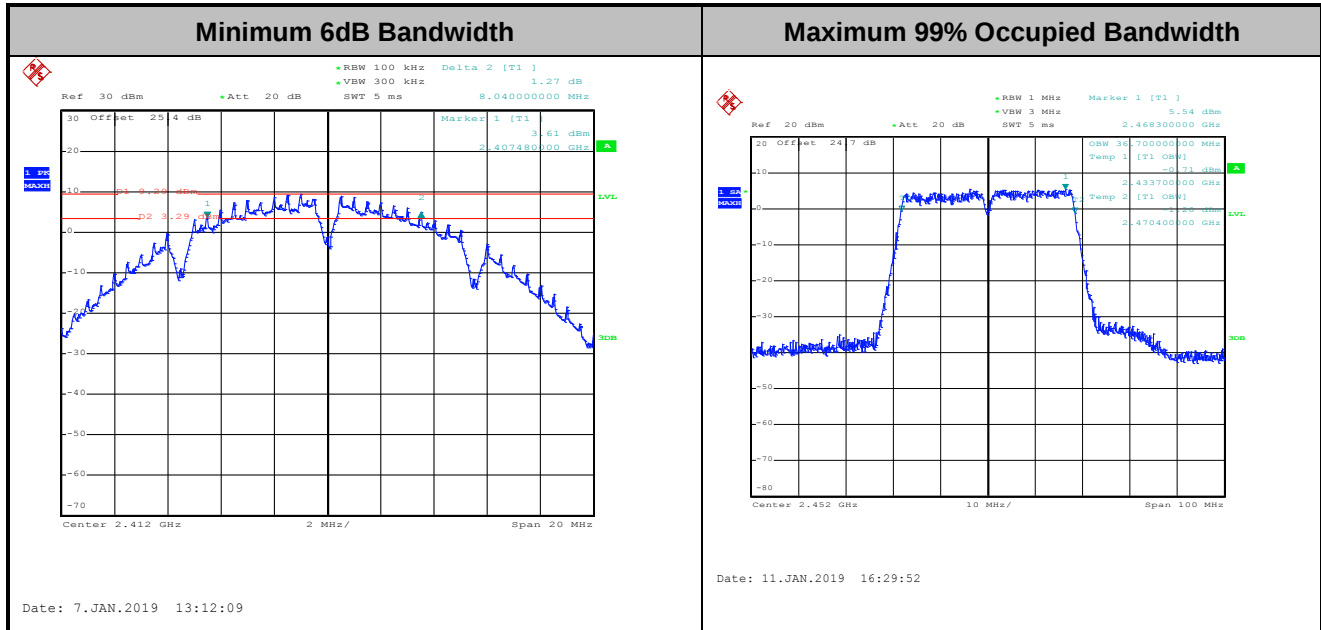
##### 3.1.4 Test Setup





### 3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.



Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

## 3.2 Output Power Measurement

### 3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna with directional gain greater than 6dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

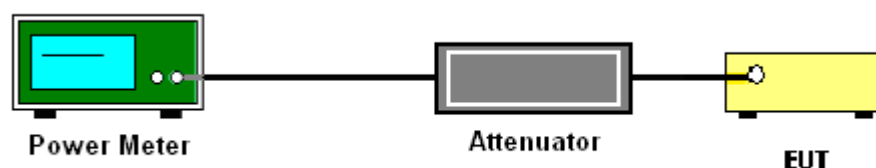
### 3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

### 3.2.3 Test Procedures

1. For Peak Power, the testing follows ANSI C63.10 Section 11.9.1.3 PKPM1
2. For Average Power, the testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v05r01 section 9.2.3.1 Method AVGPM.
3. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. Set to the maximum power setting and enable the EUT transmit continuously.
5. Measure the conducted output power and record the results in the test report.
6. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

### 3.2.4 Test Setup



### 3.2.5 Test Result of Peak Output Power

Please refer to Appendix A.

### 3.2.6 Test Result of Average output Power (Reporting Only)

Please refer to Appendix A.

### 3.3 Power Spectral Density Measurement

#### 3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

#### 3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.3.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.10.2 Method PKPSD.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.
7. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

If measurements performed using method (2) plus  $10 \log(N)$  exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

Method (1): Measure and sum the spectra across the outputs.

The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

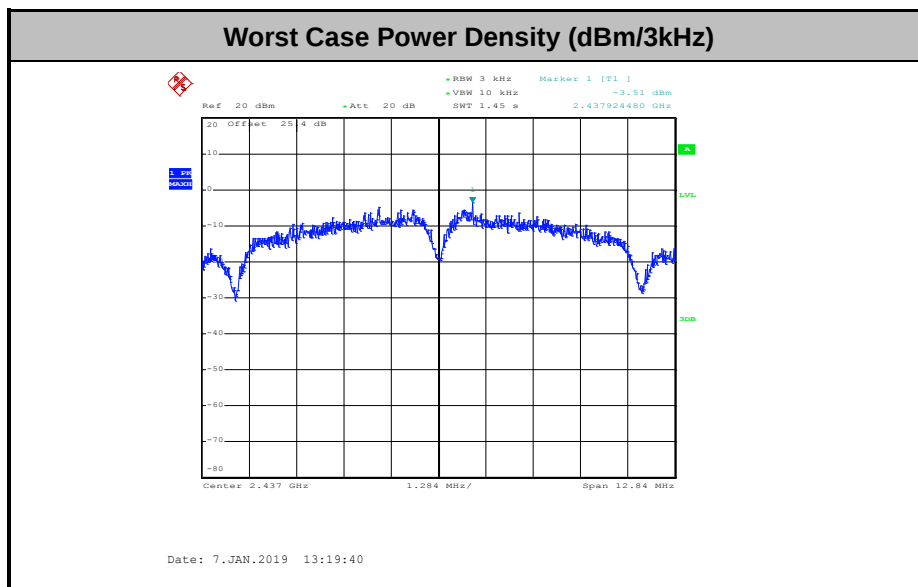
Method (2): Measure and add  $10 \log(N)$  dB, where N is the number of outputs. (N=2)

### 3.3.4 Test Setup



### 3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



### 3.4 Conducted Band Edges and Spurious Emission Measurement

#### 3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement.

#### 3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.4.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.11.3 Emission level measurement.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

#### 3.4.4 Test Setup



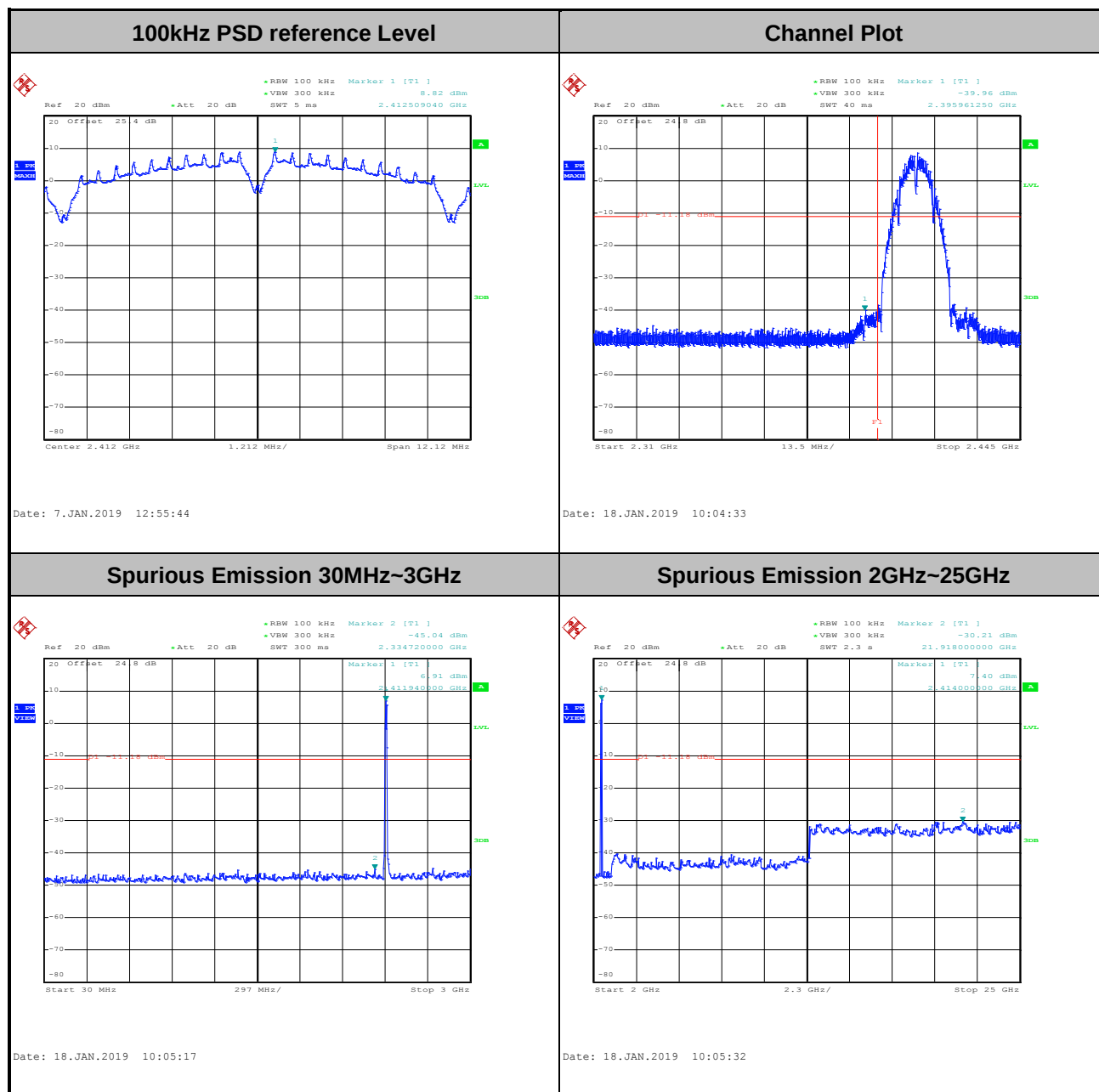


## 3.4.5 Test Result of Conducted Band Edges and Spurious Emission

|                 |                      |                     |         |
|-----------------|----------------------|---------------------|---------|
| Test Engineer : | AnAn Wu and Kai Liao | Temperature :       | 21~25°C |
|                 |                      | Relative Humidity : | 51~54%  |

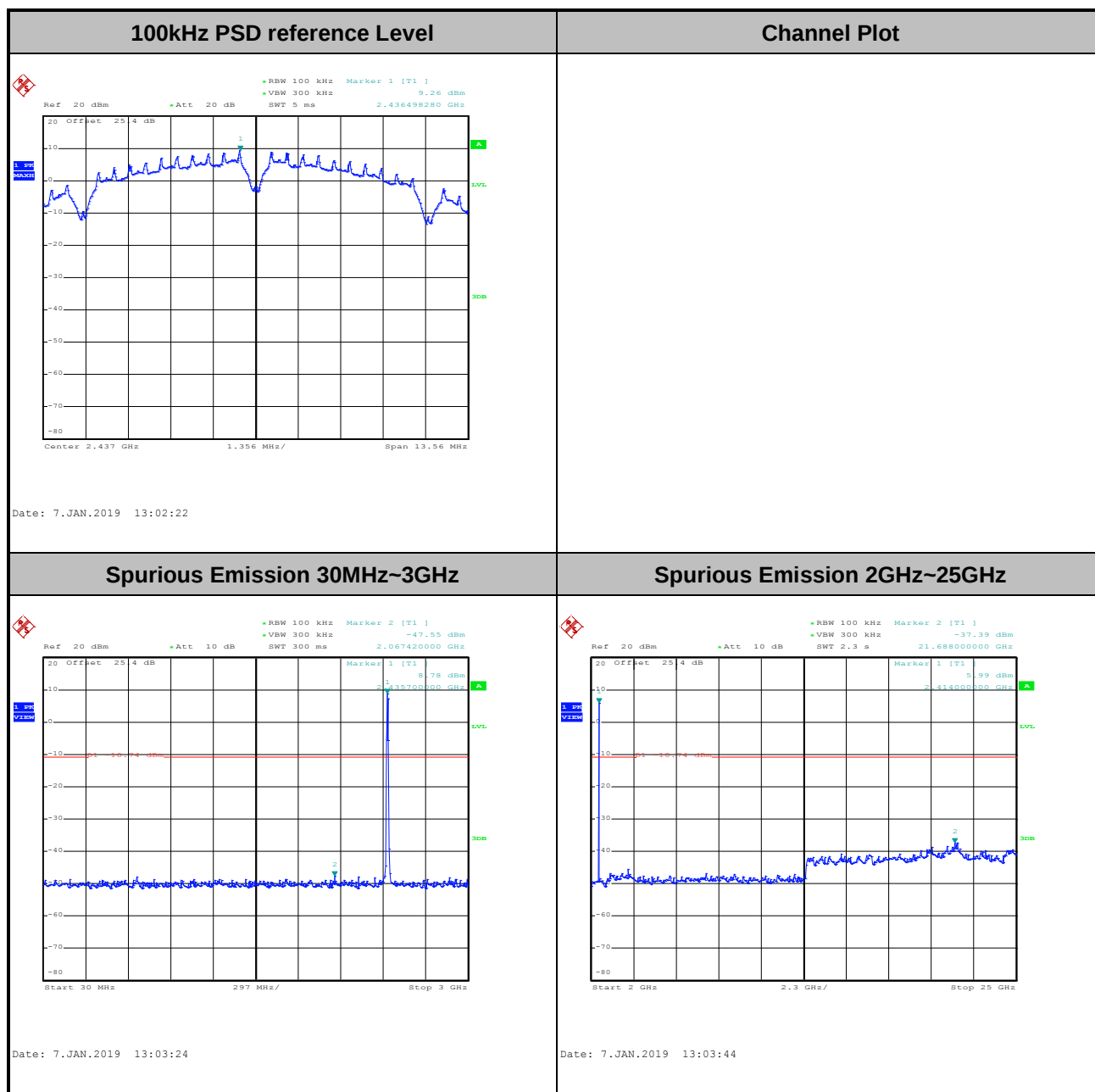
Number of TX = 1, Ant. 1 (Measured)

|             |         |                |    |
|-------------|---------|----------------|----|
| Test Mode : | 802.11b | Test Channel : | 01 |
|-------------|---------|----------------|----|



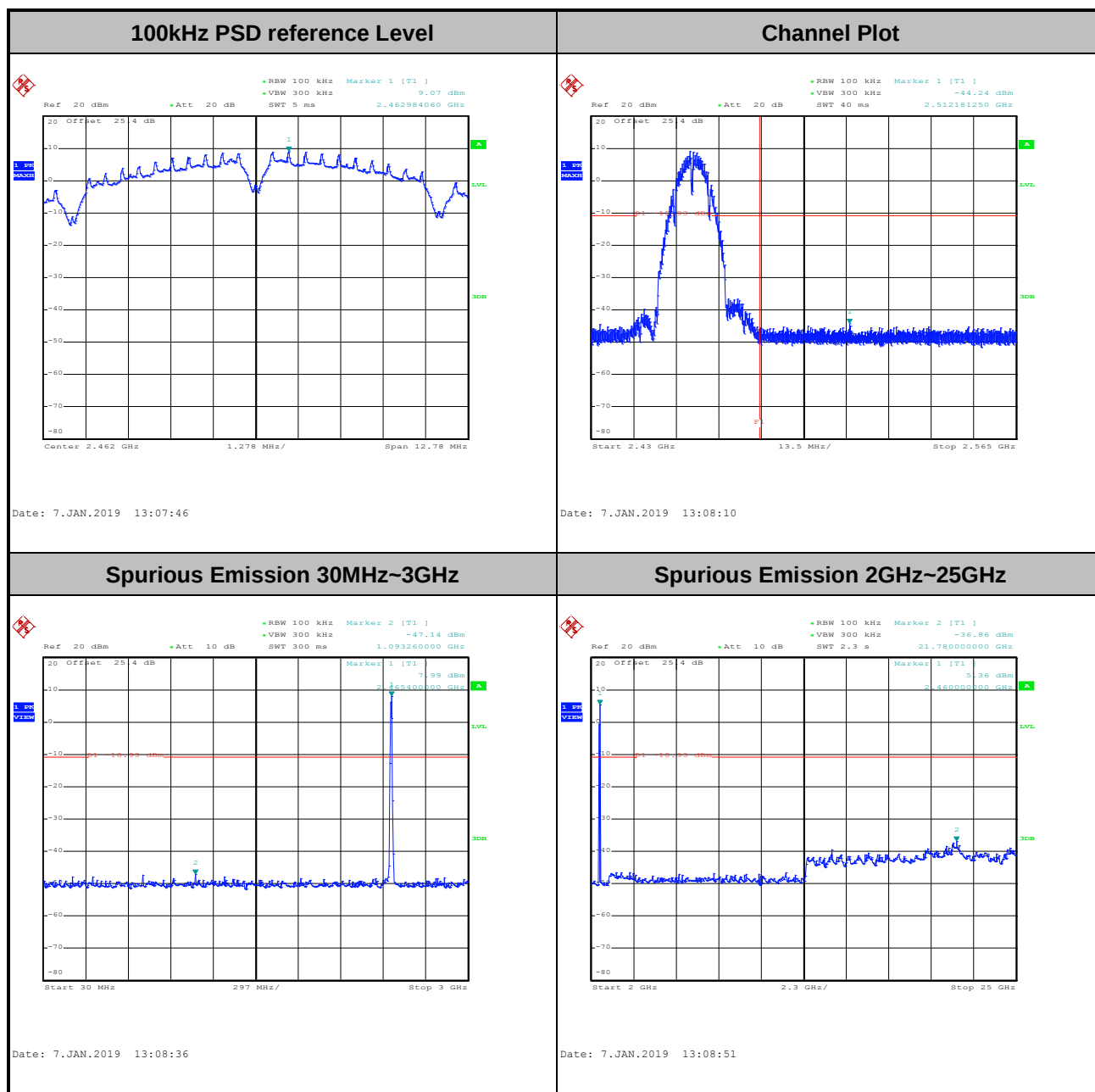


|             |         |                |    |
|-------------|---------|----------------|----|
| Test Mode : | 802.11b | Test Channel : | 06 |
|-------------|---------|----------------|----|





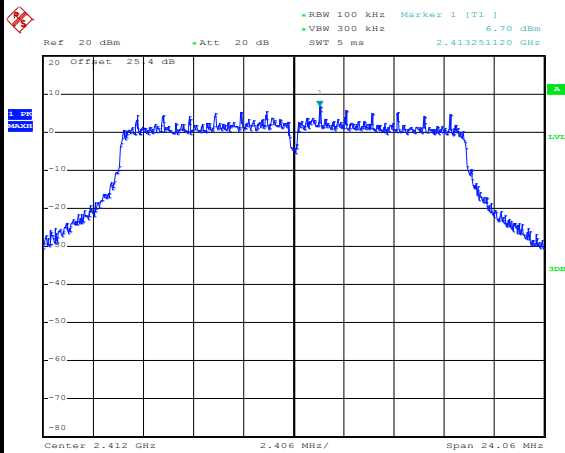
|             |         |                |    |
|-------------|---------|----------------|----|
| Test Mode : | 802.11b | Test Channel : | 11 |
|-------------|---------|----------------|----|





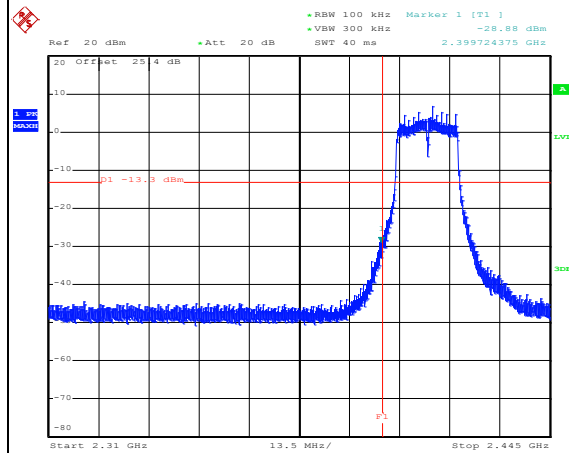
|             |         |                |    |
|-------------|---------|----------------|----|
| Test Mode : | 802.11g | Test Channel : | 01 |
|-------------|---------|----------------|----|

100kHz PSD reference Level



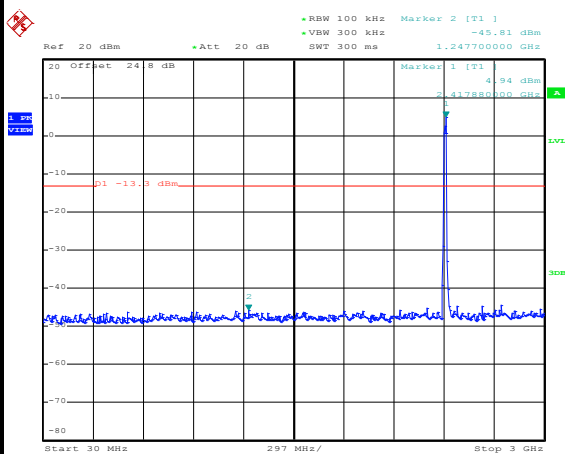
Date: 7.JAN.2019 13:30:07

Channel Plot



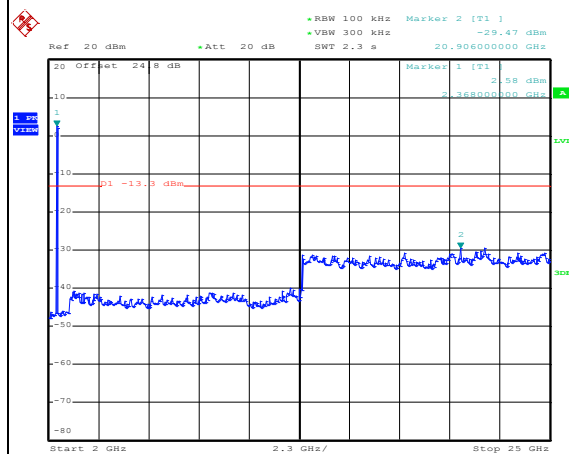
Date: 7.JAN.2019 13:30:37

Spurious Emission 30MHz~3GHz



Date: 18.JAN.2019 10:32:09

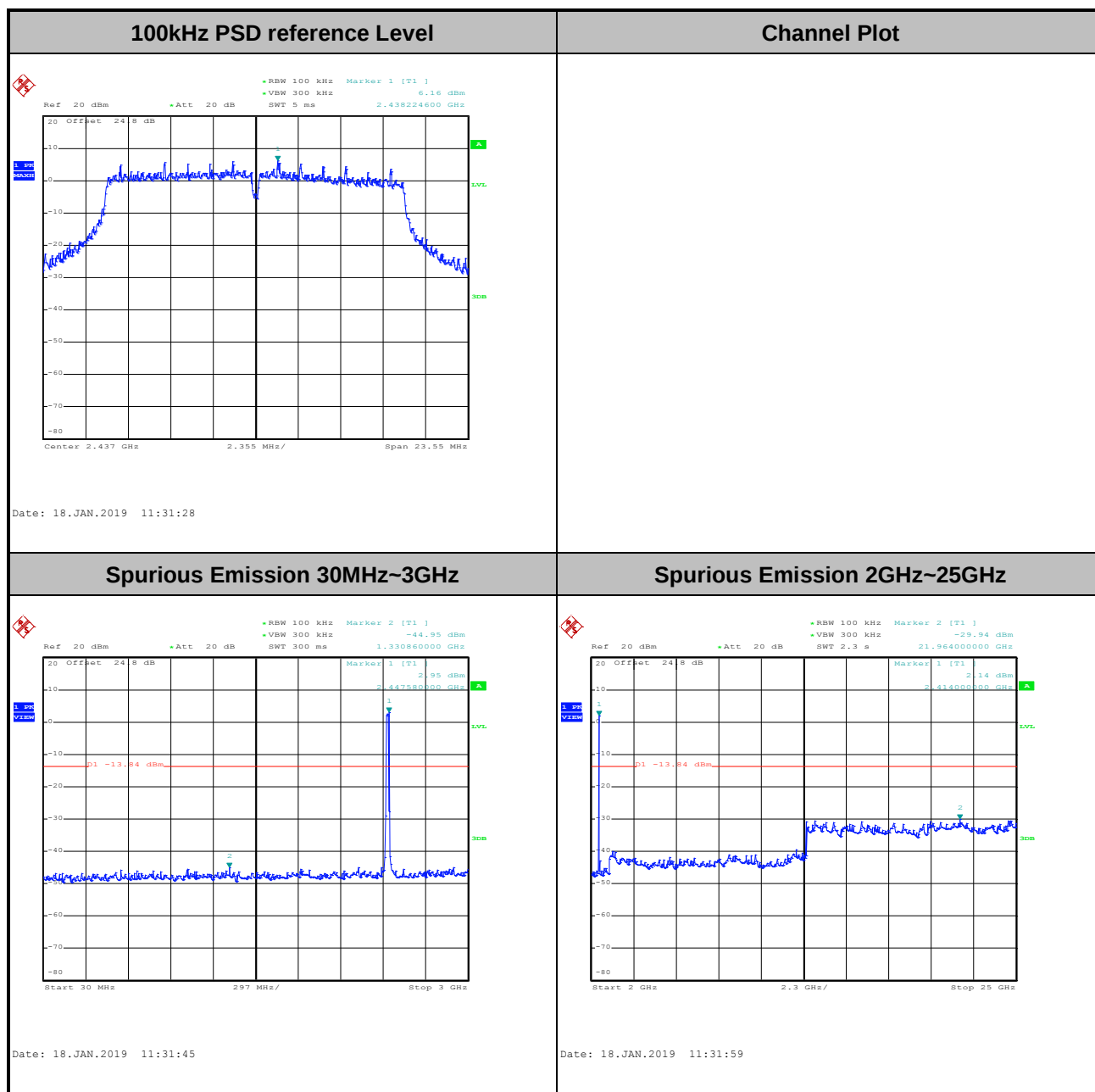
Spurious Emission 2GHz~25GHz



Date: 18.JAN.2019 10:32:24



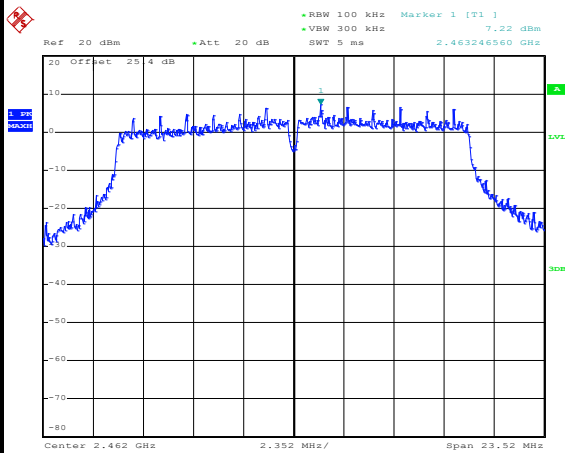
|             |         |                |    |
|-------------|---------|----------------|----|
| Test Mode : | 802.11g | Test Channel : | 06 |
|-------------|---------|----------------|----|





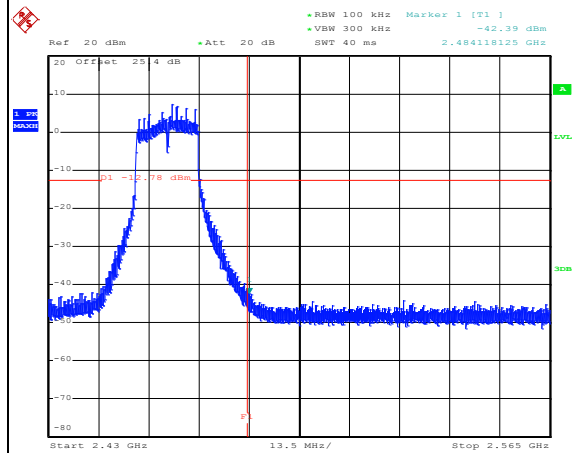
|             |         |                |    |
|-------------|---------|----------------|----|
| Test Mode : | 802.11g | Test Channel : | 11 |
|-------------|---------|----------------|----|

100kHz PSD reference Level



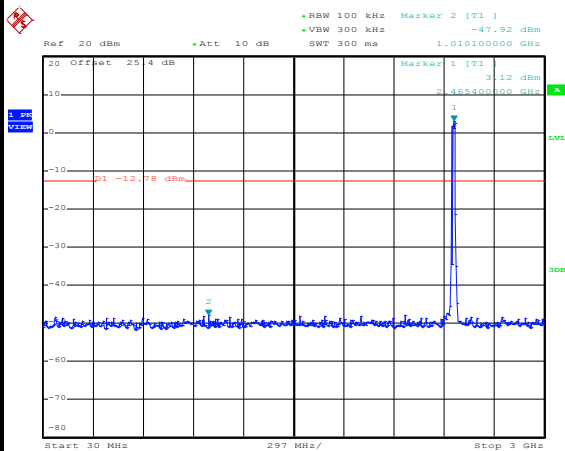
Date: 7.JAN.2019 13:39:31

Channel Plot



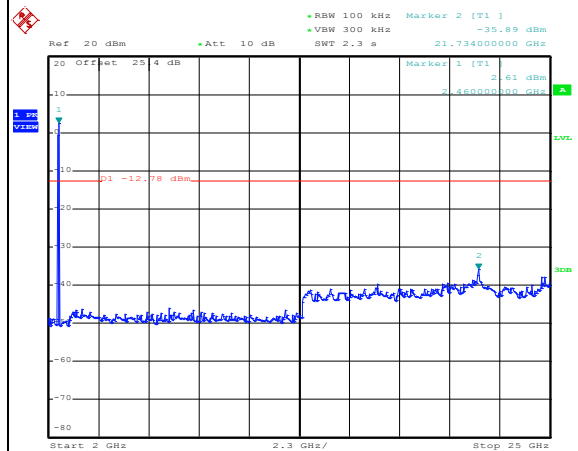
Date: 7.JAN.2019 13:39:57

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2019 13:40:17

Spurious Emission 2GHz~25GHz



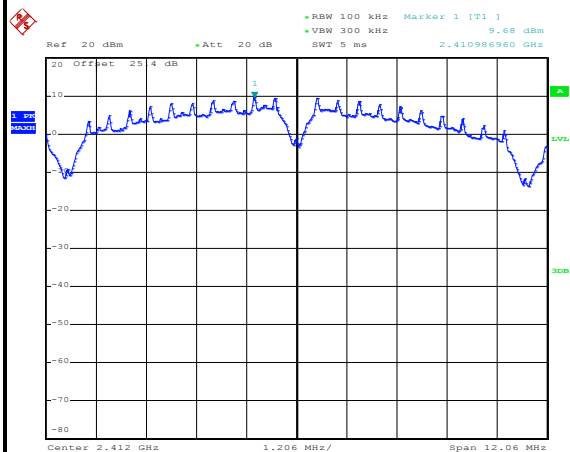
Date: 7.JAN.2019 13:40:32



Number of TX = 1, Ant. 2 (Measured)

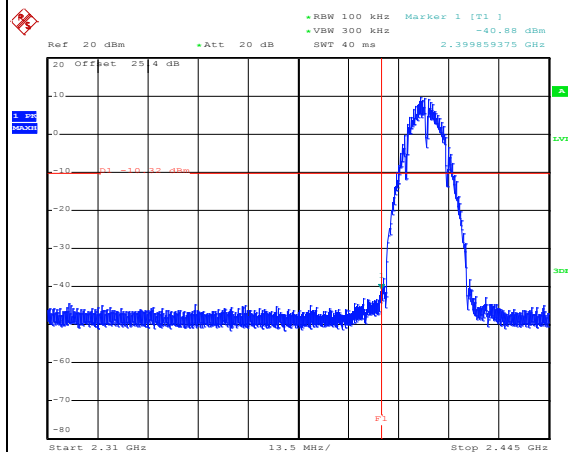
|             |         |                |    |
|-------------|---------|----------------|----|
| Test Mode : | 802.11b | Test Channel : | 01 |
|-------------|---------|----------------|----|

100kHz PSD reference Level



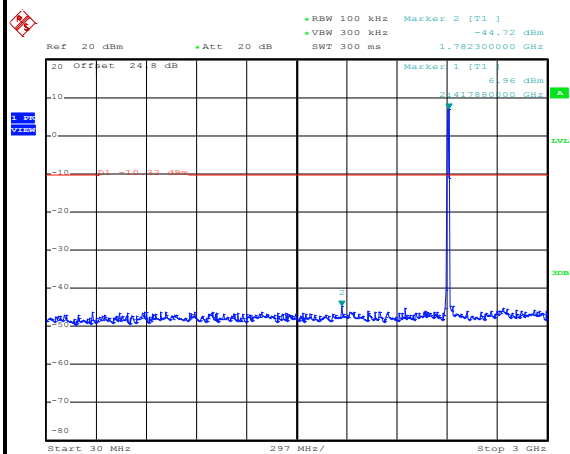
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Channel Plot



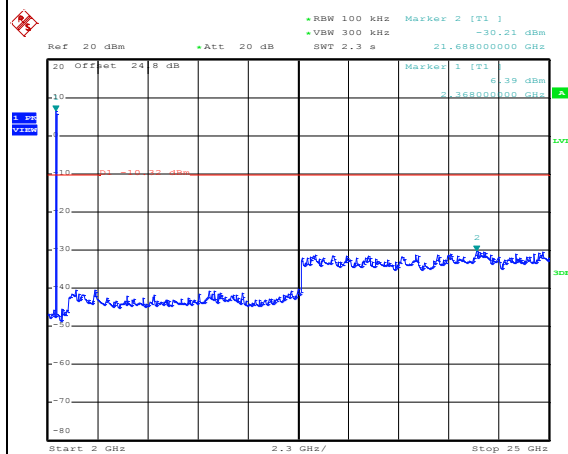
Date: 7.JAN.2019 13:13:22

Spurious Emission 30MHz~3GHz



Date: 18.JAN.2019 10:07:36

Spurious Emission 2GHz~25GHz

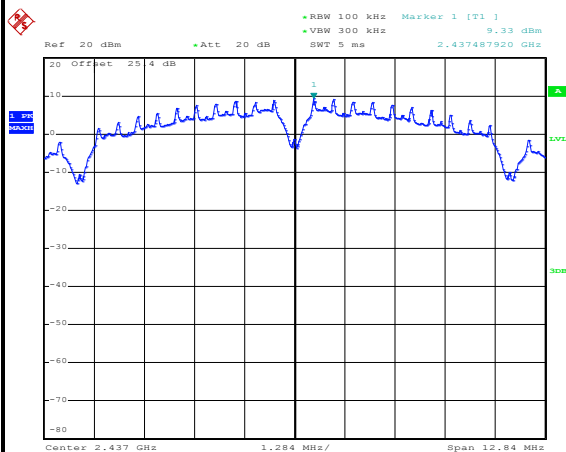


Date: 18.JAN.2019 10:07:51



|             |         |                |    |
|-------------|---------|----------------|----|
| Test Mode : | 802.11b | Test Channel : | 06 |
|-------------|---------|----------------|----|

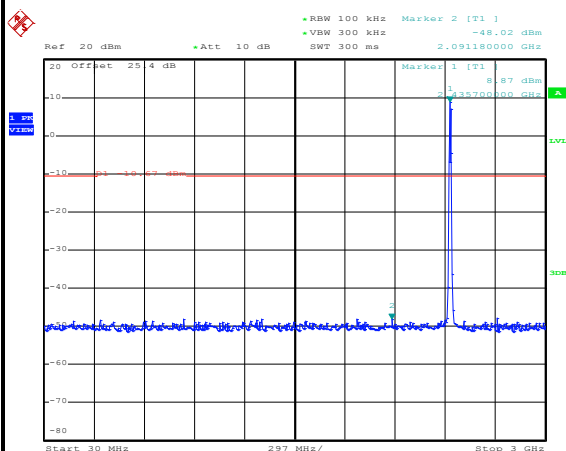
100kHz PSD reference Level



Date: 7.JAN.2019 13:20:02

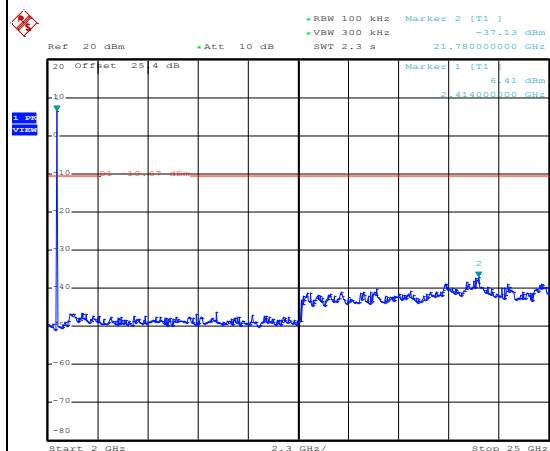
Channel Plot

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2019 13:20:23

Spurious Emission 2GHz~25GHz

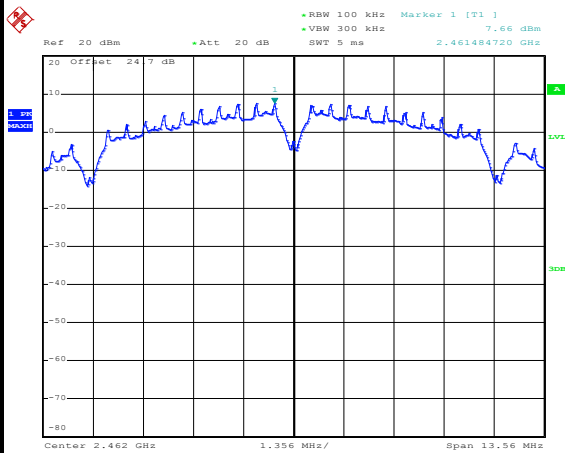


Date: 7.JAN.2019 13:20:38



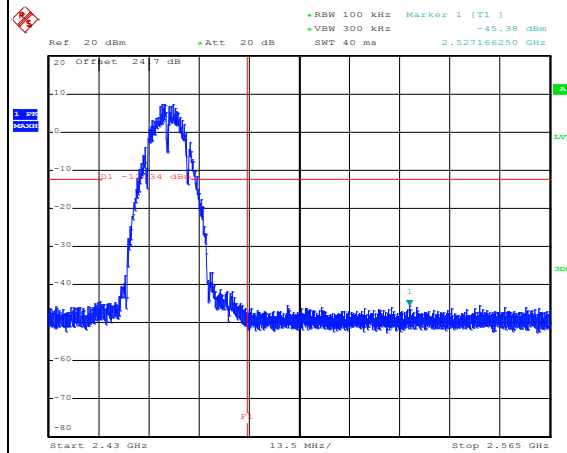
|             |         |                |    |
|-------------|---------|----------------|----|
| Test Mode : | 802.11b | Test Channel : | 11 |
|-------------|---------|----------------|----|

100kHz PSD reference Level



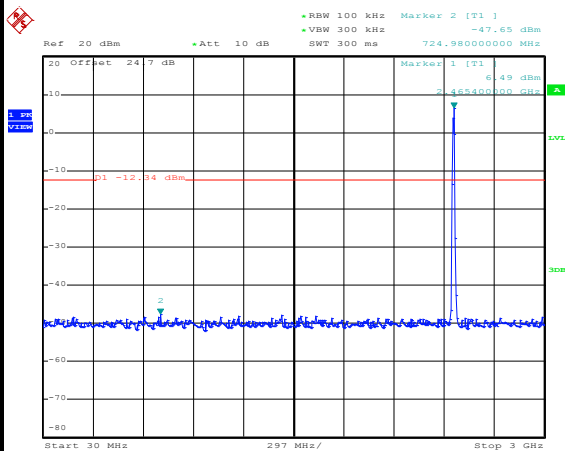
Date: 8.JAN.2019 10:19:16

Channel Plot



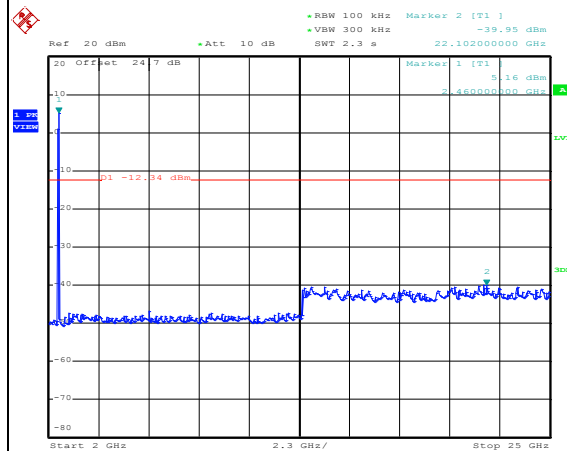
Date: 8.JAN.2019 10:19:33

Spurious Emission 30MHz~3GHz

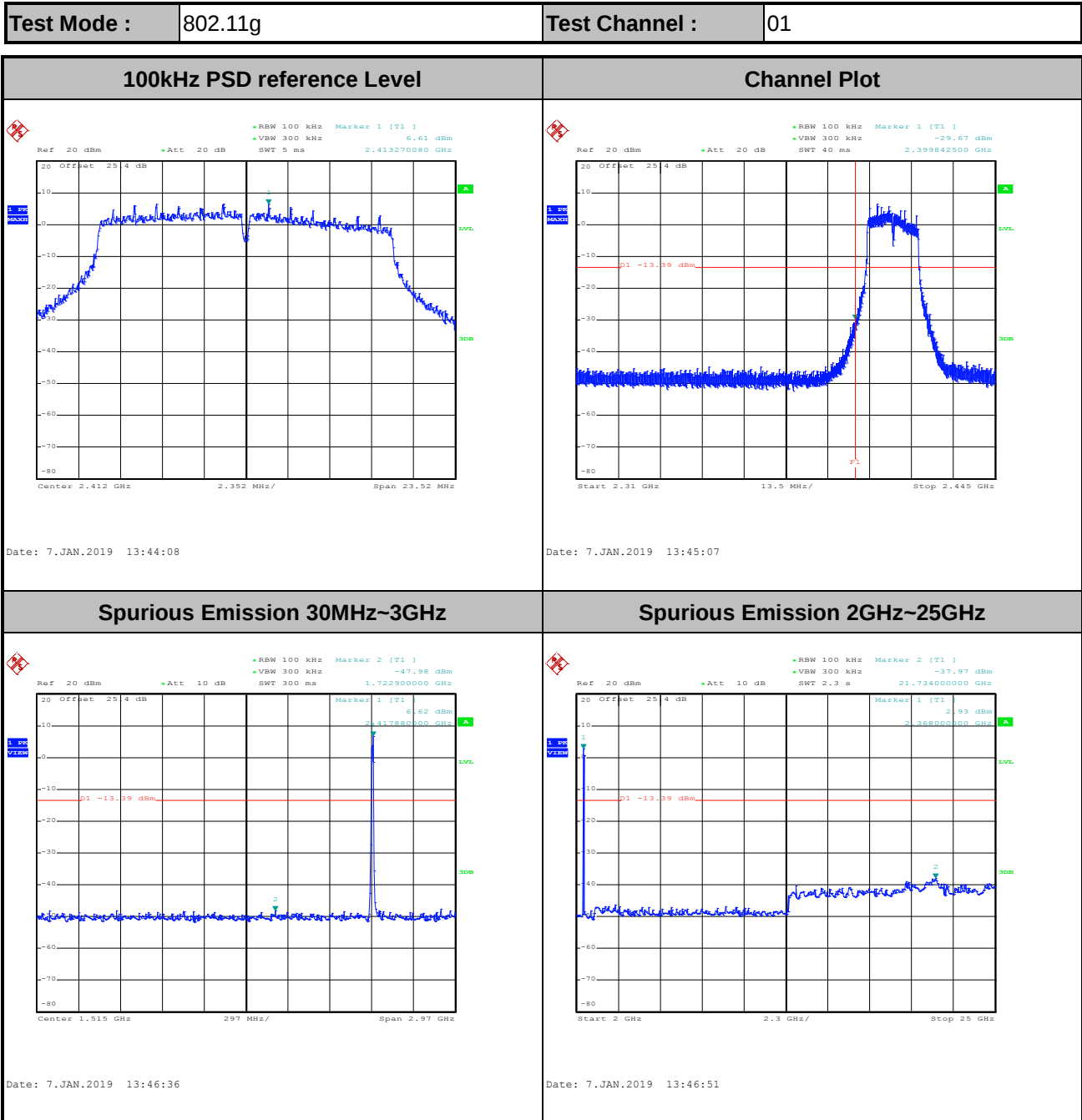


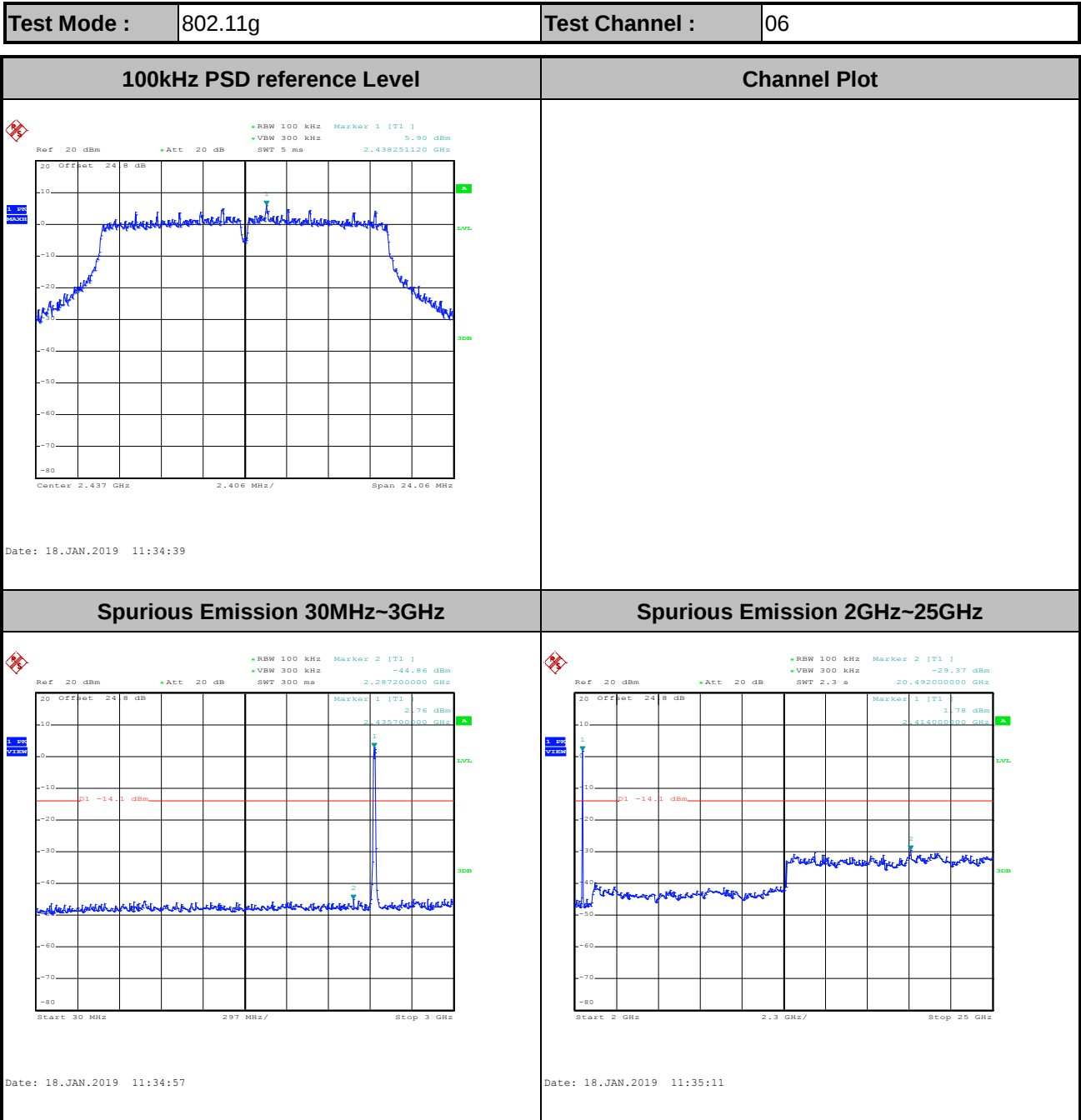
Date: 8.JAN.2019 10:19:53

Spurious Emission 2GHz~25GHz



Date: 8.JAN.2019 10:20:07

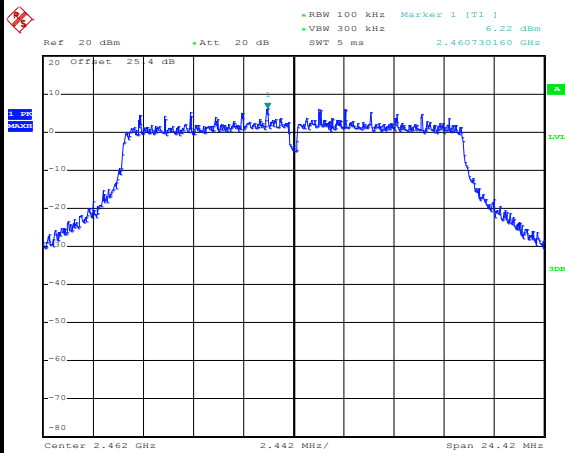






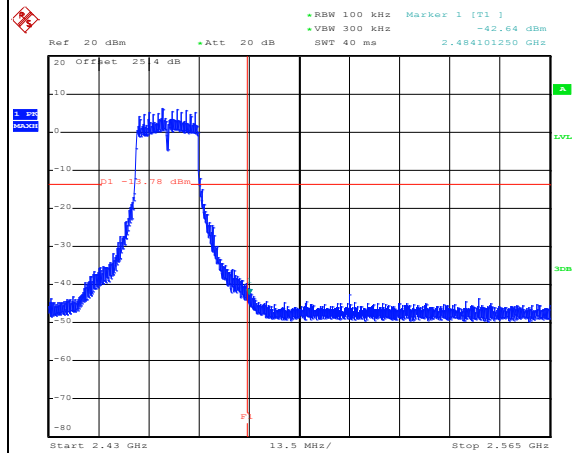
|             |         |                |    |
|-------------|---------|----------------|----|
| Test Mode : | 802.11g | Test Channel : | 11 |
|-------------|---------|----------------|----|

## 100kHz PSD reference Level



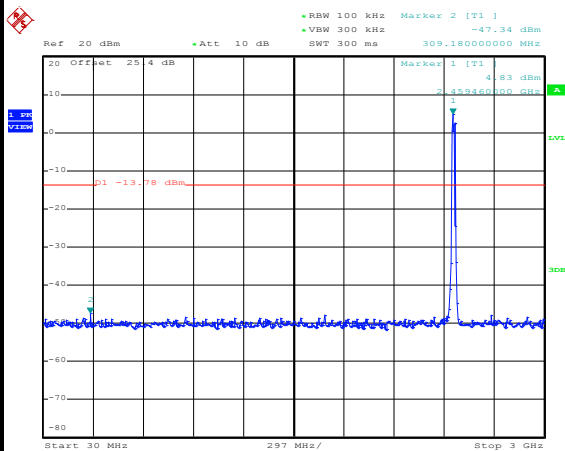
Date: 7.JAN.2019 13:53:54

## Channel Plot



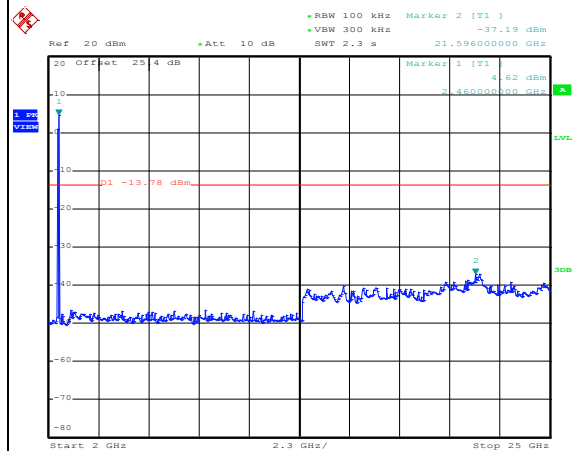
Date: 7.JAN.2019 13:54:52

## Spurious Emission 30MHz~3GHz



Date: 7.JAN.2019 13:55:13

## Spurious Emission 2GHz~25GHz

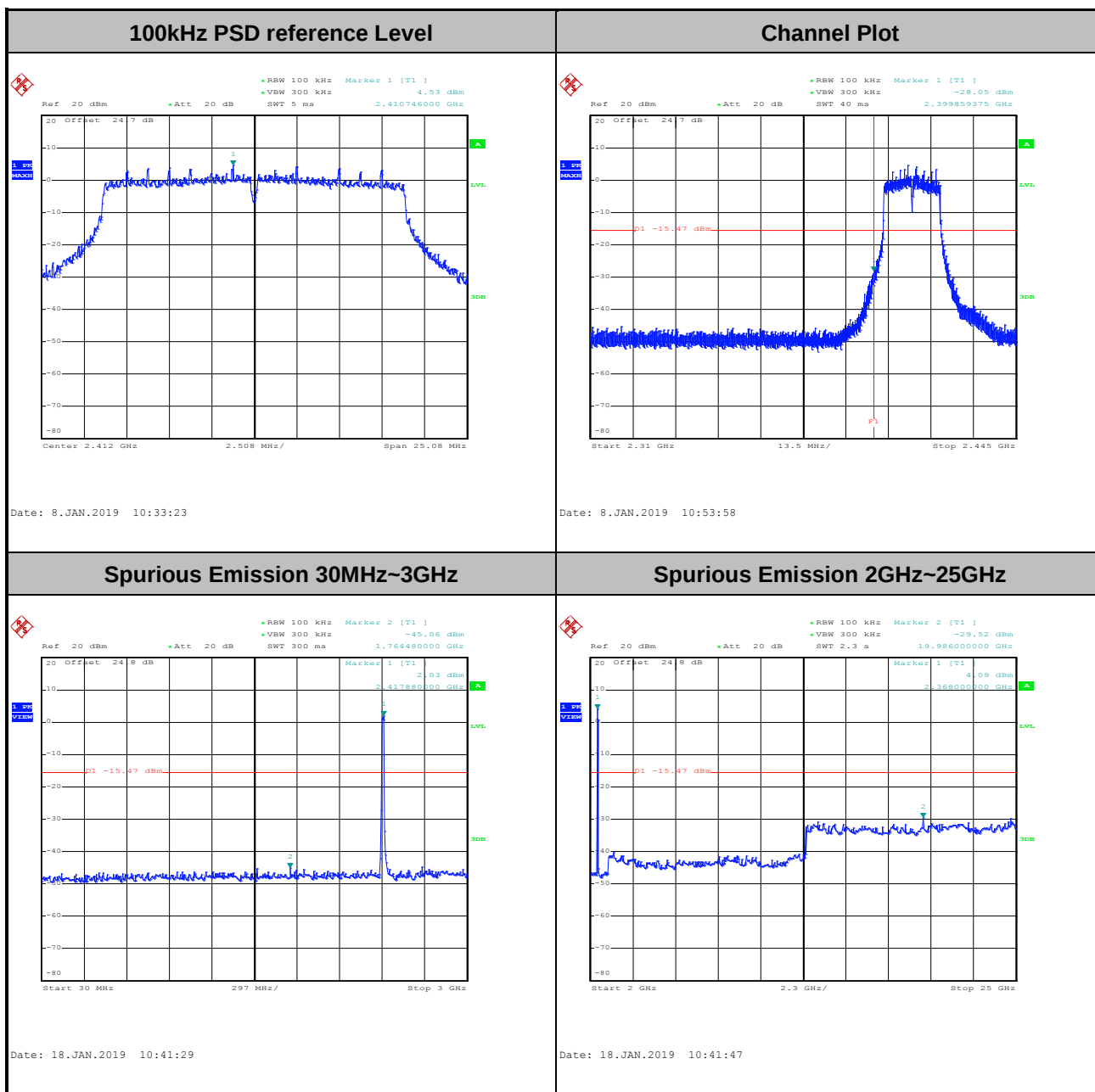


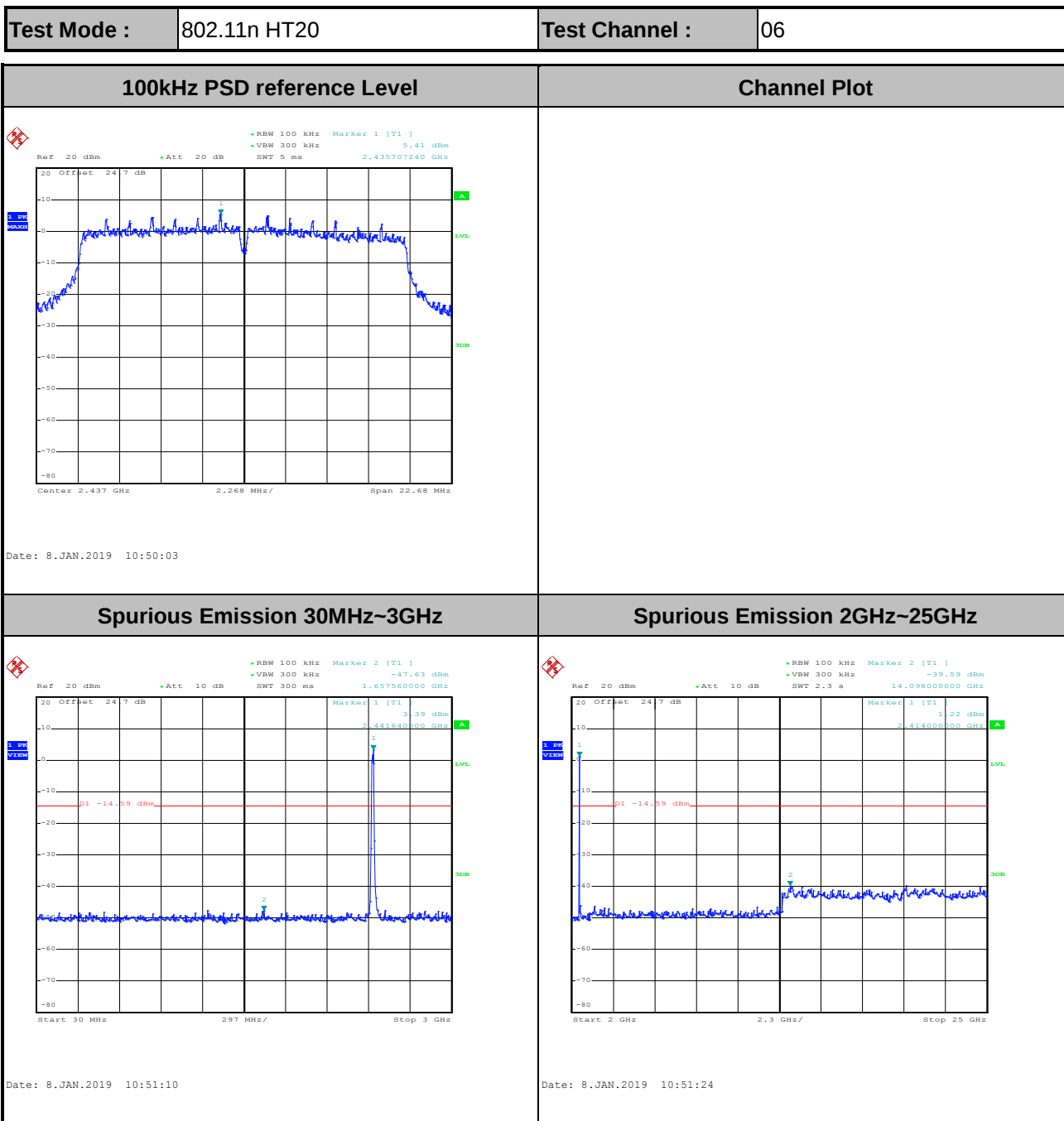
Date: 7.JAN.2019 13:55:30

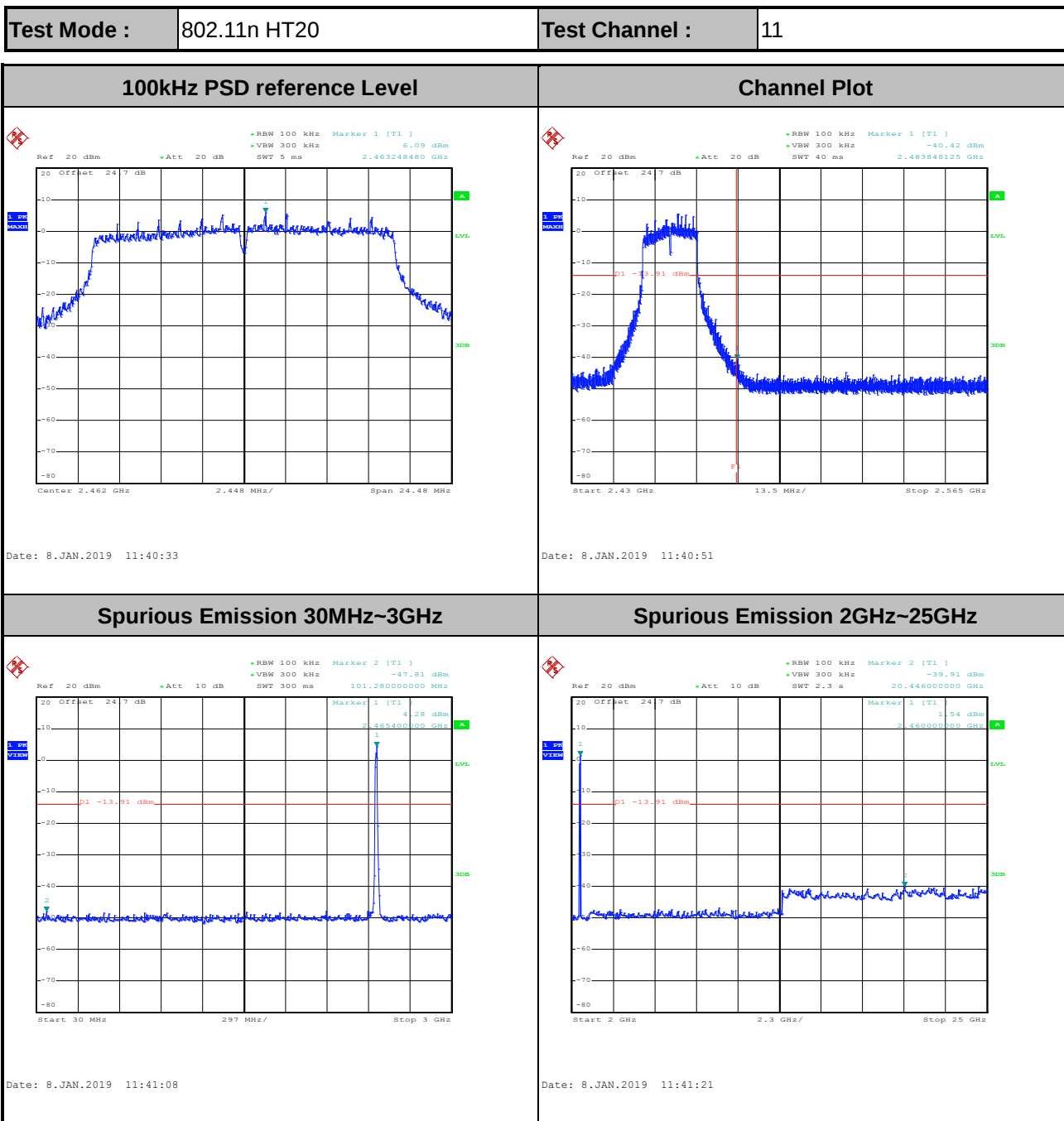


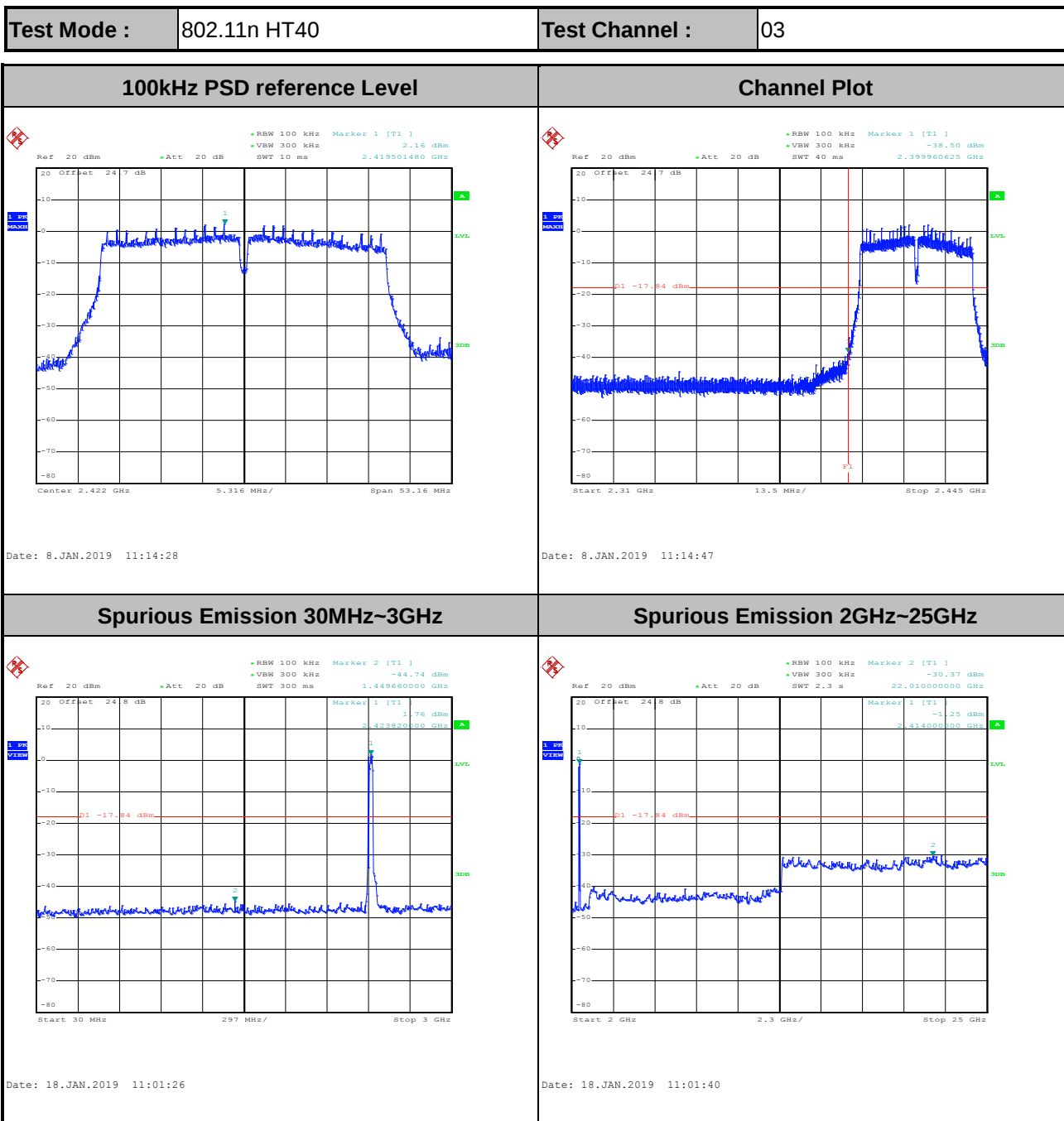
Number of TX = 2, Ant. 1 (Measured)

|             |              |                |    |
|-------------|--------------|----------------|----|
| Test Mode : | 802.11n HT20 | Test Channel : | 01 |
|-------------|--------------|----------------|----|





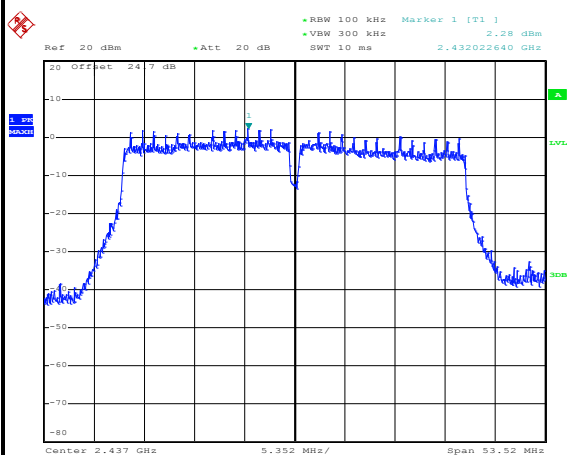






|             |              |                |    |
|-------------|--------------|----------------|----|
| Test Mode : | 802.11n HT40 | Test Channel : | 06 |
|-------------|--------------|----------------|----|

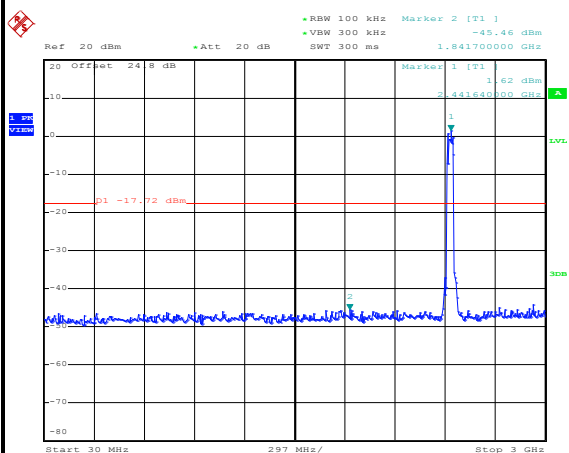
## 100kHz PSD reference Level



Date: 8.JAN.2019 11:21:26

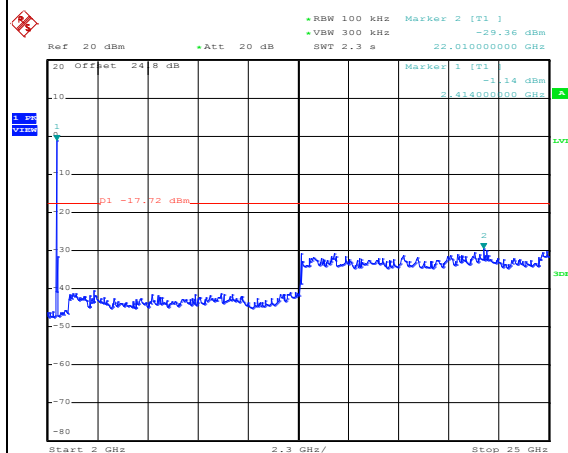
## Channel Plot

## Spurious Emission 30MHz~3GHz

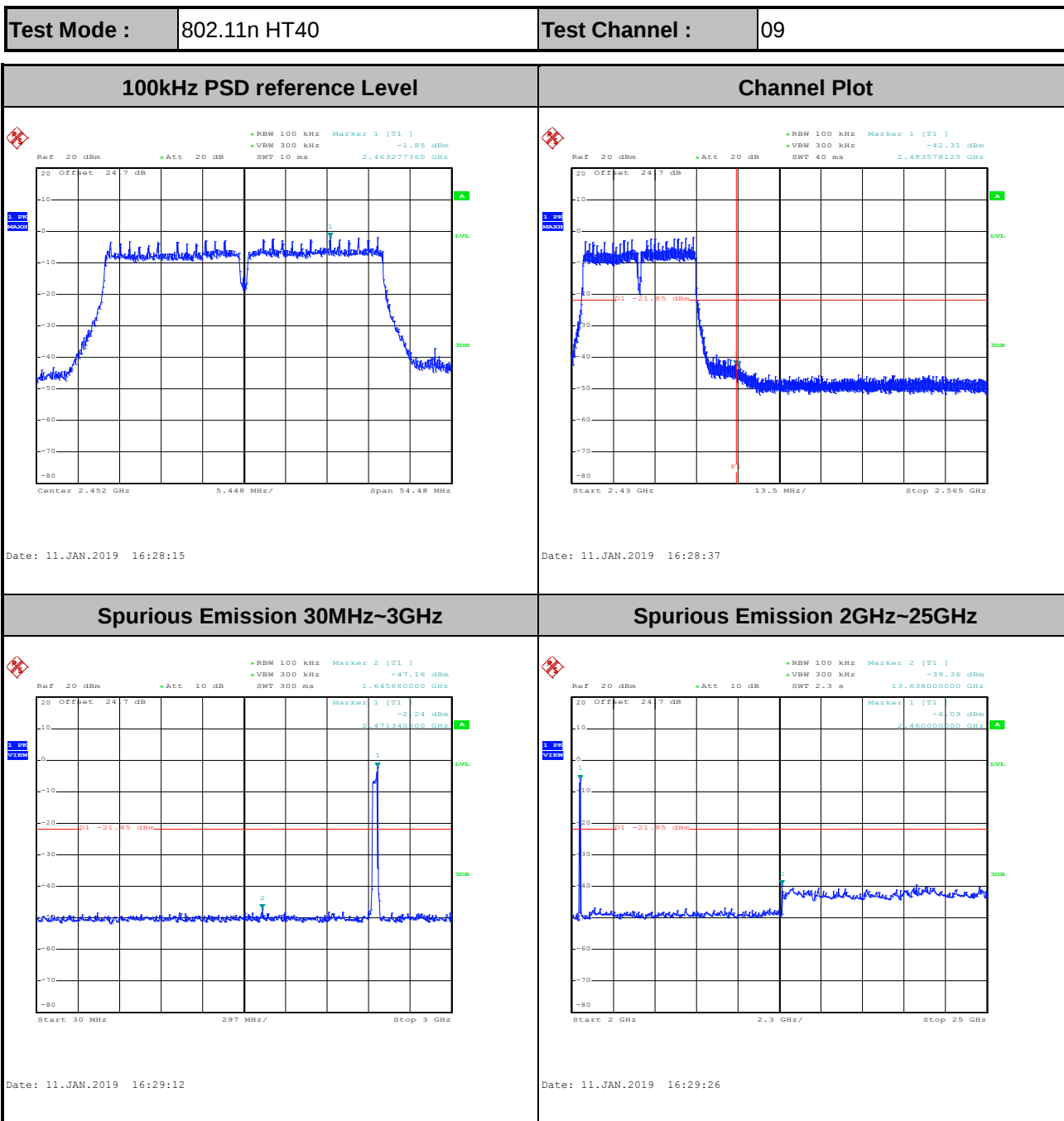


Date: 18.JAN.2019 11:03:39

## Spurious Emission 2GHz~25GHz



Date: 18.JAN.2019 11:03:54

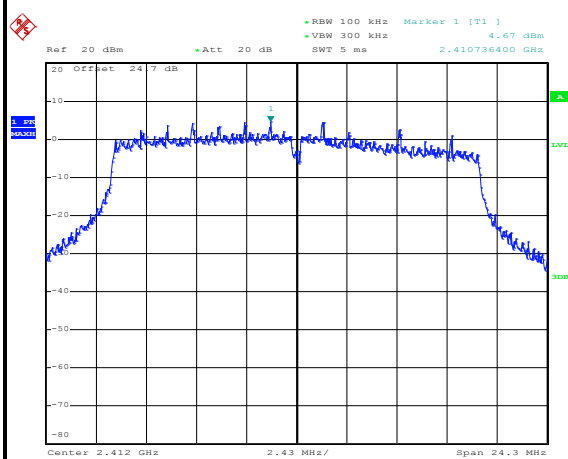




Number of TX = 2, Ant. 2 (Measured)

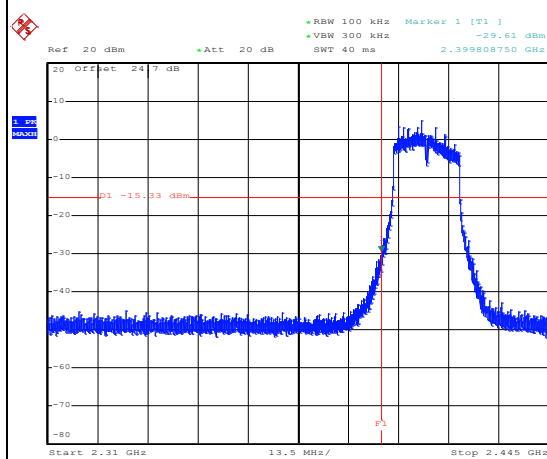
|             |              |                |    |
|-------------|--------------|----------------|----|
| Test Mode : | 802.11n HT20 | Test Channel : | 01 |
|-------------|--------------|----------------|----|

100kHz PSD reference Level



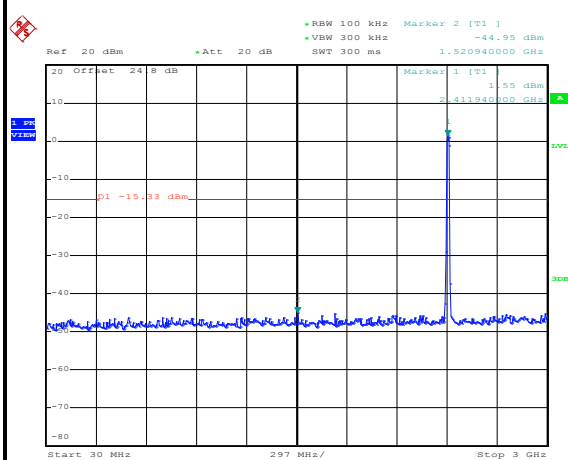
Date: 8.JAN.2019 10:37:24

Channel Plot



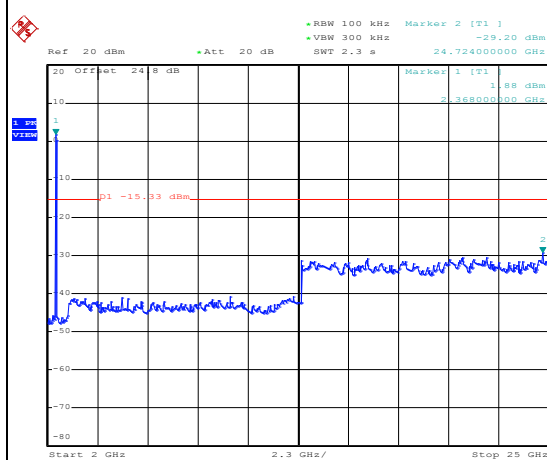
Date: 8.JAN.2019 10:37:45

Spurious Emission 30MHz~3GHz

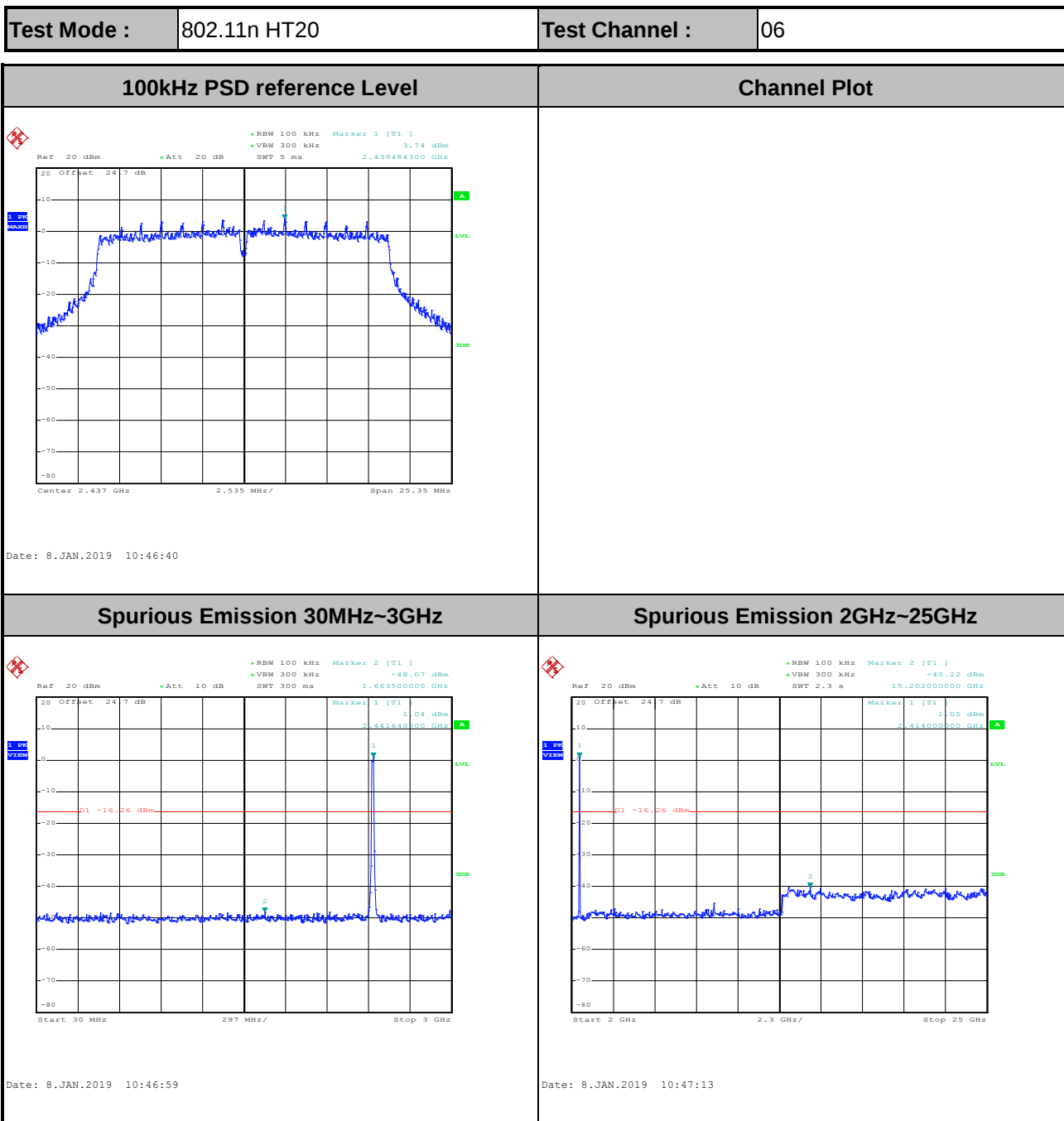


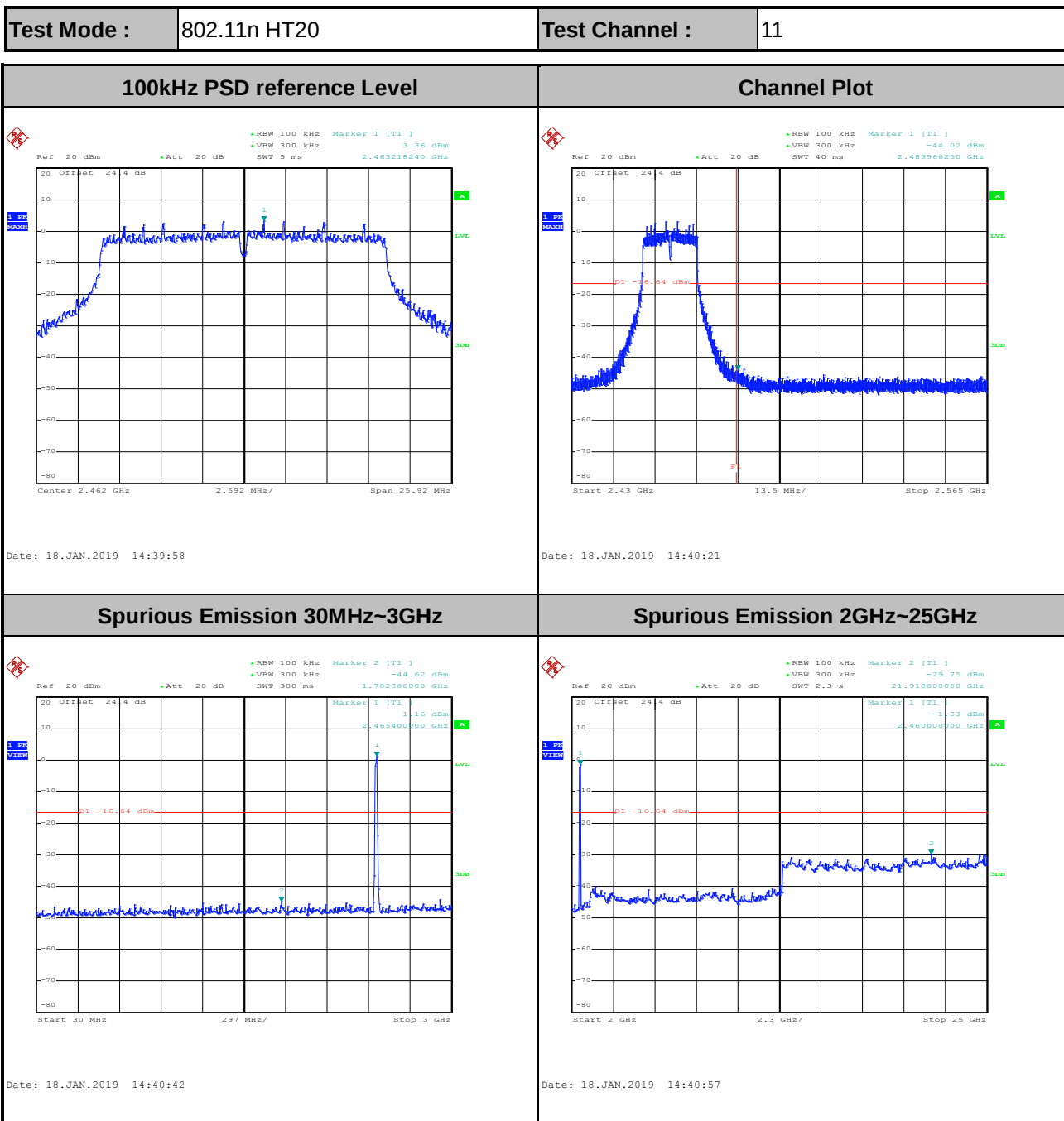
Date: 18.JAN.2019 10:57:50

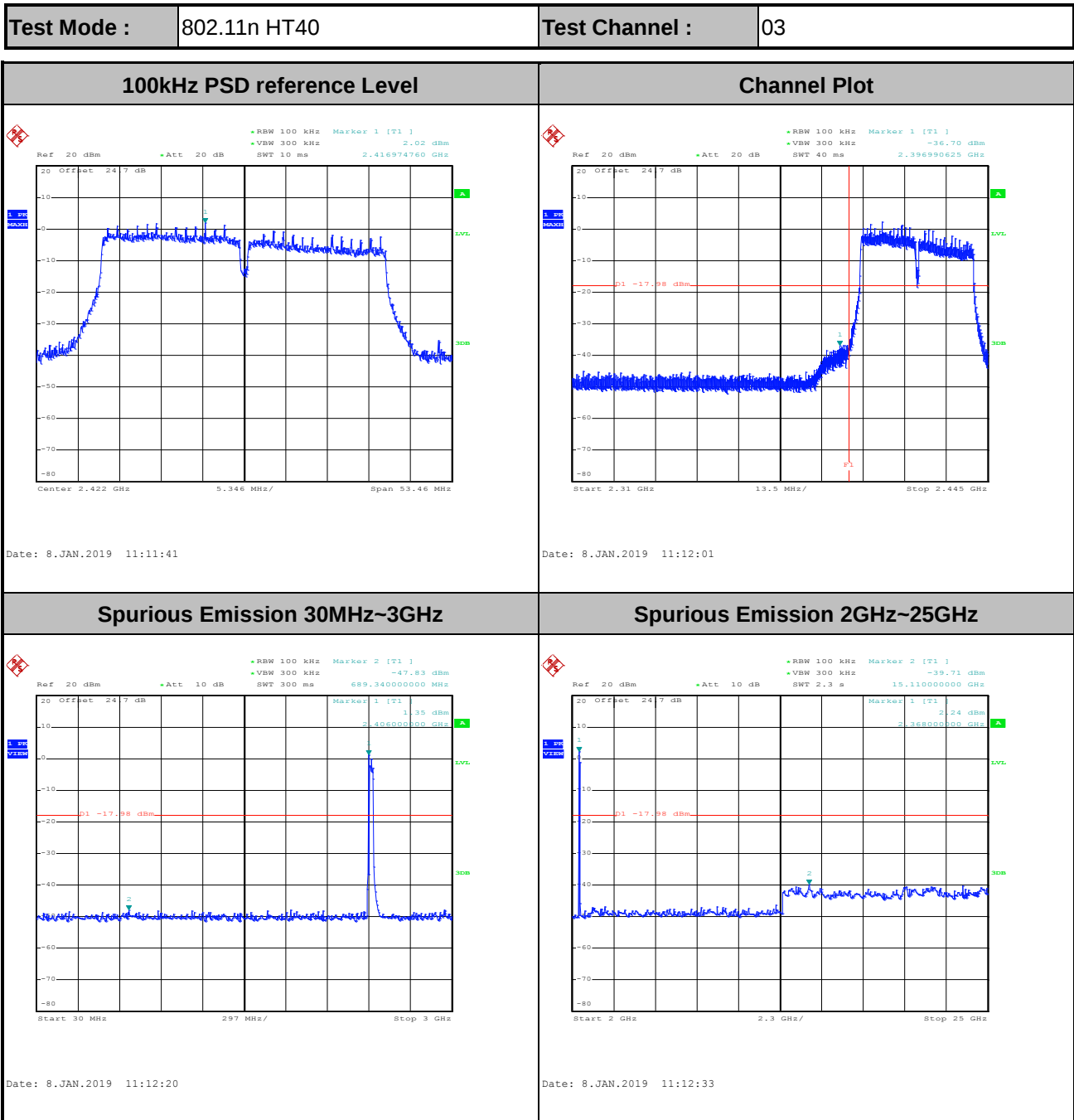
Spurious Emission 2GHz~25GHz



Date: 18.JAN.2019 10:58:10

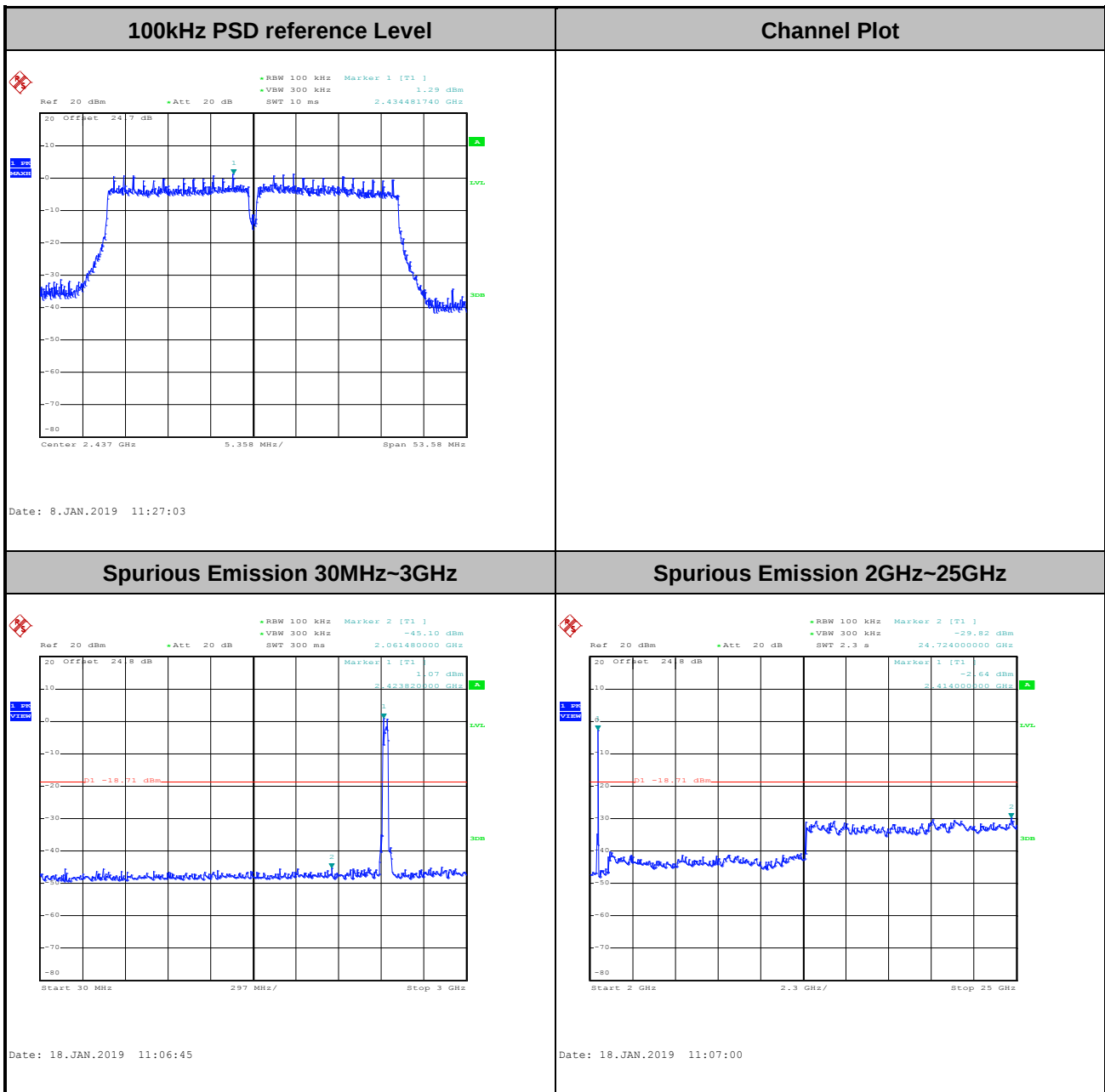


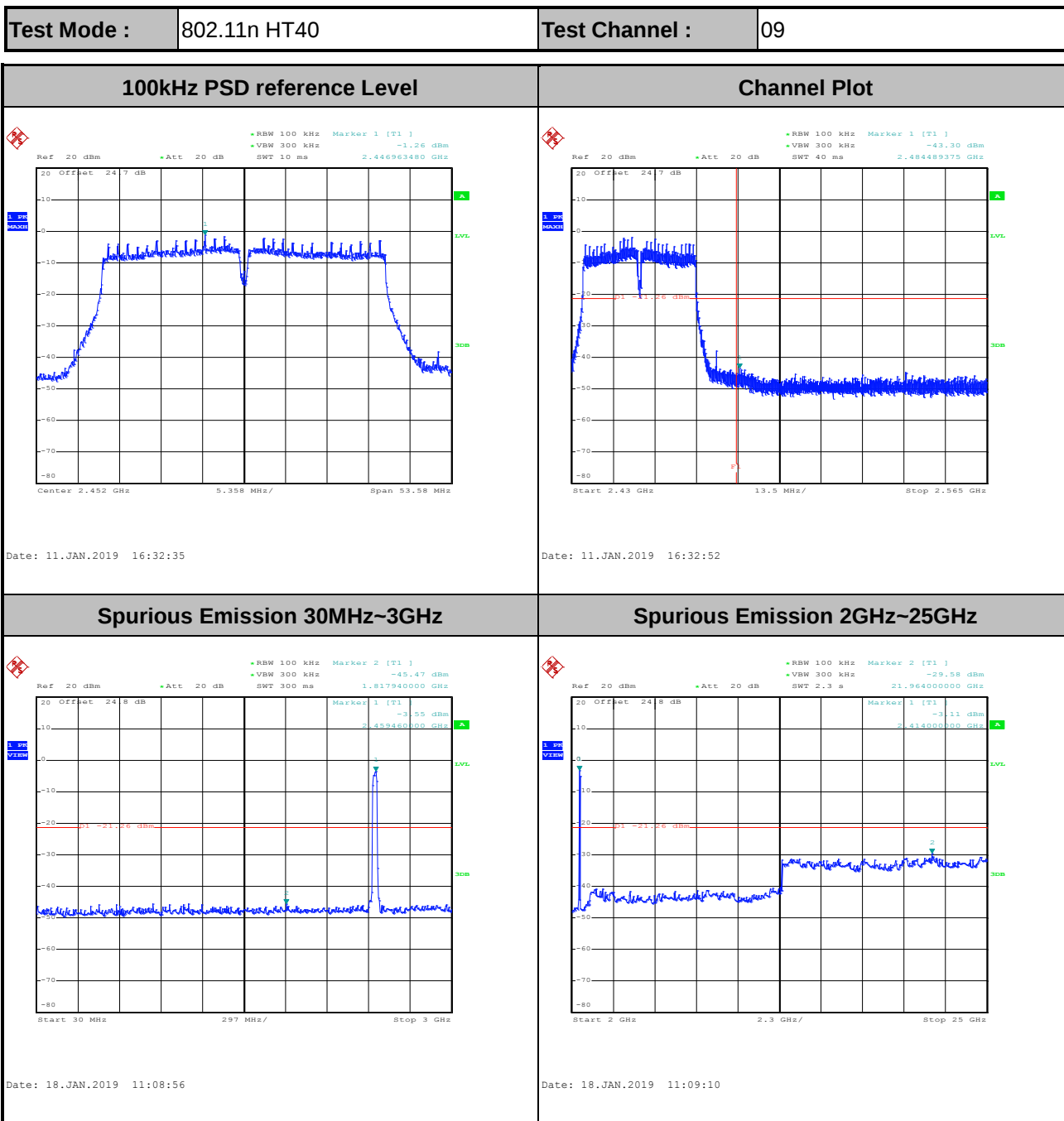






|             |              |                |    |
|-------------|--------------|----------------|----|
| Test Mode : | 802.11n HT40 | Test Channel : | 06 |
|-------------|--------------|----------------|----|





### 3.5 Radiated Band Edges and Spurious Emission Measurement

#### 3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

| Frequency<br>(MHz) | Field Strength<br>(microvolts/meter) | Measurement Distance<br>(meters) |
|--------------------|--------------------------------------|----------------------------------|
| 0.009 – 0.490      | 2400/F(kHz)                          | 300                              |
| 0.490 – 1.705      | 24000/F(kHz)                         | 30                               |
| 1.705 – 30.0       | 30                                   | 30                               |
| 30 – 88            | 100                                  | 3                                |
| 88 – 216           | 150                                  | 3                                |
| 216 - 960          | 200                                  | 3                                |
| Above 960          | 500                                  | 3                                |

#### 3.5.2 Measuring Instruments

See list of measuring equipment of this test report.

### 3.5.3 Test Procedures

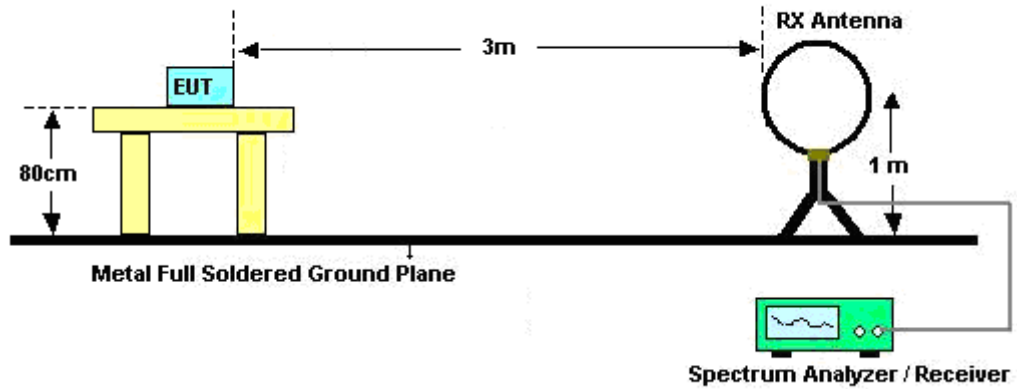
1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. Use the following spectrum analyzer settings:
  - (1) Span shall wide enough to fully capture the emission being measured;
  - (2) Set RBW=100 kHz for  $f < 1$  GHz; VBW  $\geq$  RBW; Sweep = auto; Detector function = peak; Trace = max hold;
  - (3) Set RBW = 1 MHz, VBW= 3MHz for  $f \geq 1$  GHz for peak measurement.

For average measurement:

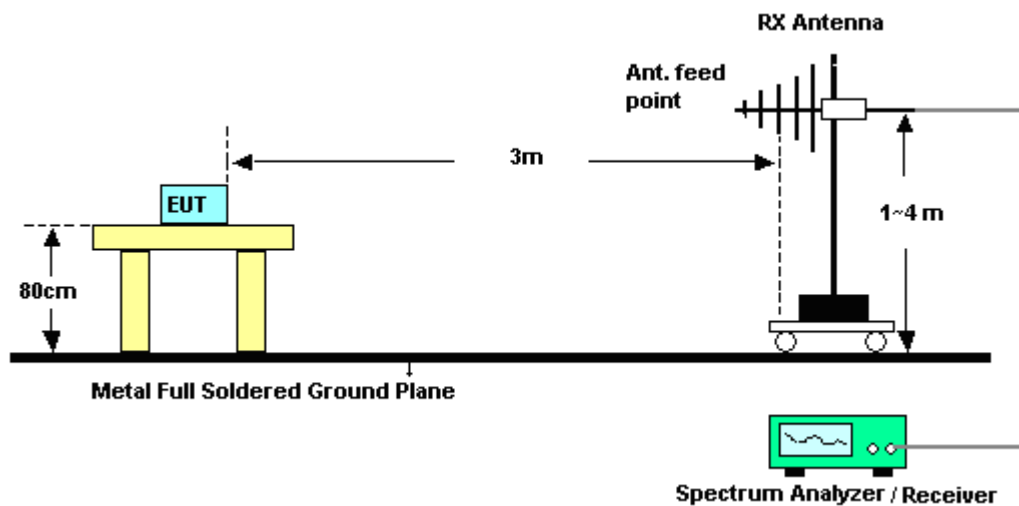
    - VBW = 10 Hz, when duty cycle is no less than 98 percent.
    - VBW  $\geq 1/T$ , when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

### 3.5.4 Test Setup

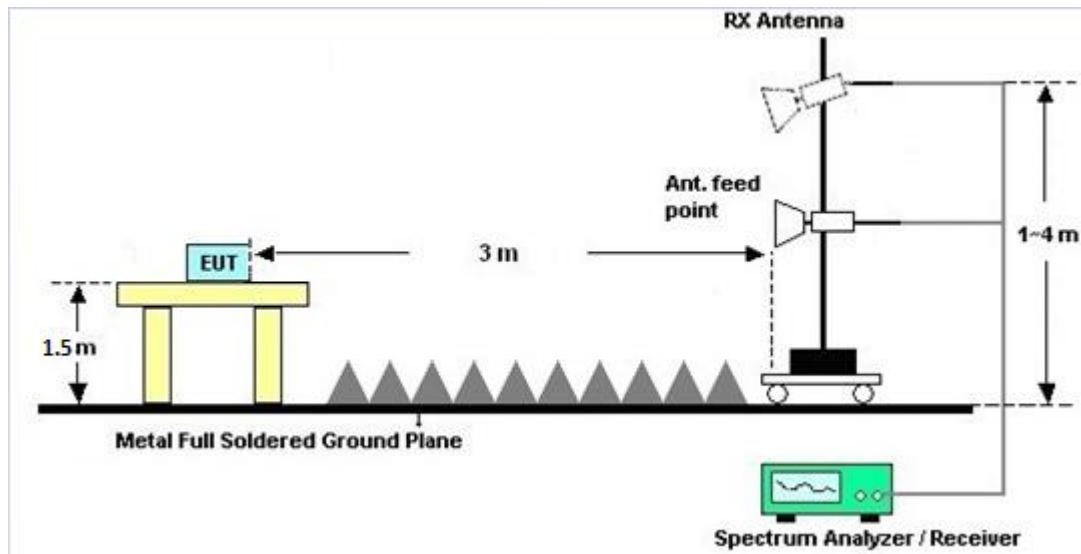
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



### 3.5.5 Test Results of Radiated Spurious Emissions (9kHz ~ 30MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

### 3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

### 3.5.7 Duty Cycle

Please refer to Appendix E.

### 3.5.8 Test Result of Radiated Spurious Emission (30MHz ~ 10<sup>th</sup> Harmonic)

Please refer to Appendix C and D.

## 3.6 AC Conducted Emission Measurement

### 3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

| Frequency of Emission<br>(MHz) | Conducted Limit (dB $\mu$ V) |           |
|--------------------------------|------------------------------|-----------|
|                                | Quasi-Peak                   | Average   |
| 0.15-0.5                       | 66 to 56*                    | 56 to 46* |
| 0.5-5                          | 56                           | 46        |
| 5-30                           | 60                           | 50        |

\*Decreases with the logarithm of the frequency.

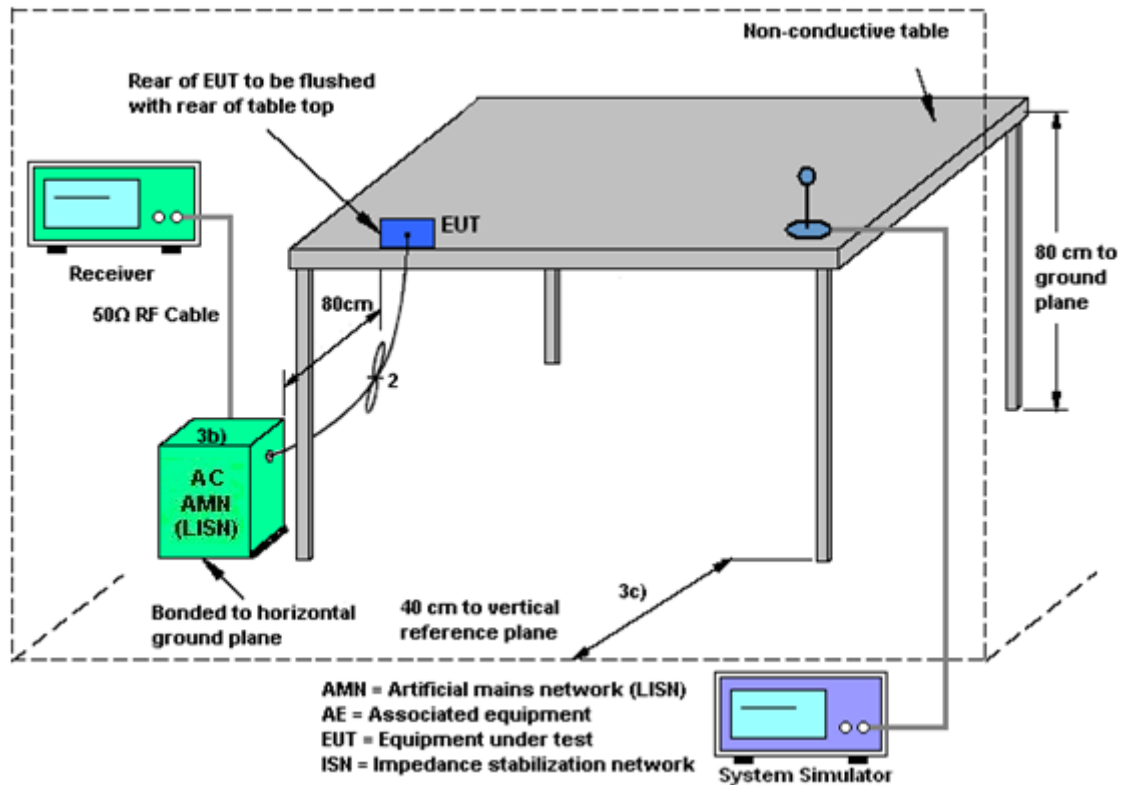
### 3.6.2 Measuring Instruments

See list of measuring equipment of this test report.

### 3.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.

### 3.6.4 Test Setup



### 3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

### 3.7 Antenna Requirements

#### 3.7.1 Standard Applicable

If directional gain of transmitting Antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached Antenna or of an Antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

#### 3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

#### 3.7.3 Antenna Gain

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain =  $G_{ANT}$  + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain =  $10 \log(N_{ANT}/N_{SS}=1)$  dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for  $N_{ANT} \leq 4$ .

Directional gain may be calculated by using the formulas applicable to equal gain antennas with  $G_{ANT}$  set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain  $G_{ANT}$  is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

| <CDD Modes> |        |        |       |       |           |           |
|-------------|--------|--------|-------|-------|-----------|-----------|
|             |        |        | DG    | DG    | Power     | PSD       |
|             |        |        | for   | for   | Limit     | Limit     |
|             | Ant. 1 | Ant. 2 | Power | PSD   | Reduction | Reduction |
|             | (dBi)  | (dBi)  | (dBi) | (dBi) | (dB)      | (dB)      |
| 2.4 GHz     | 1.00   | -0.58  | 1.00  | 3.26  | 0.00      | 0.00      |

*Power Limit Reduction =  $DG(\text{Power}) - 6\text{dBi}$ , ( min = 0 )*

*PSD Limit Reduction =  $DG(\text{PSD}) - 6\text{dBi}$ , ( min = 0 )*



## 4 List of Measuring Equipment

| Instrument           | Manufacturer      | Model No.                       | Serial No.                | Characteristics | Calibration Date | Test Date                        | Due Date      | Remark                   |
|----------------------|-------------------|---------------------------------|---------------------------|-----------------|------------------|----------------------------------|---------------|--------------------------|
| Power Meter          | Anritsu           | ML2495A                         | 1036004                   | N/A             | Jul. 25, 2018    | Dec. 27, 2018~<br>Jan. 18, 2019  | Jul. 24, 2019 | Conducted<br>(TH05-HY)   |
| Power Sensor         | Anritsu           | MA2411B                         | 1207253                   | 300MHz~40GHz    | Jul. 25, 2018    | Dec. 27, 2018~<br>Jan. 18, 2019  | Jul. 24, 2019 | Conducted<br>(TH05-HY)   |
| Signal Analyzer      | Rohde & Schwarz   | FSP40                           | 100055                    | 9kHz~40GHz      | Jun. 14, 2018    | Dec. 27, 2018~<br>Jan. 18, 2019  | Jun. 13, 2019 | Conducted<br>(TH05-HY)   |
| Temperature Chamber  | ESPEC             | SH-641                          | 92013720                  | -40°C ~90°C     | Aug. 29, 2018    | Dec. 27, 2018~<br>Jan. 18, 2019  | Aug. 28, 2019 | Conducted<br>(TH05-HY)   |
| AC Power Source      | ChainTek          | APC-1000<br>W                   | N/A                       | N/A             | N/A              | Jan. 16, 2019                    | N/A           | Conduction<br>(CO05-HY)  |
| EMI Test Receiver    | Rohde & Schwarz   | ESR3                            | 102388                    | 9KHz~3.6GHz     | Nov. 12, 2018    | Jan. 16, 2019                    | Nov. 11, 2019 | Conduction<br>(CO05-HY)  |
| LISN                 | Rohde & Schwarz   | ENV216                          | 100080                    | 9kHz~30MHz      | Nov. 14, 2018    | Jan. 16, 2019                    | Nov. 13, 2019 | Conduction<br>(CO05-HY)  |
| LISN                 | Rohde & Schwarz   | ENV216                          | 100081                    | 9kHz~30MHz      | Nov. 09, 2018    | Jan. 16, 2019                    | Nov. 08, 2019 | Conduction<br>(CO05-HY)  |
| Software             | Rohde & Schwarz   | EMC32<br>V10.30                 | N/A                       | N/A             | N/A              | Jan. 16, 2019                    | N/A           | Conduction<br>(CO05-HY)  |
| LF Cable             | HUBER +<br>SUHNER | RG-214/U                        | LF01                      | N/A             | Dec. 31, 2018    | Jan. 16, 2019                    | Dec. 30, 2019 | Conduction<br>(CO05-HY)  |
| Pulse Limiter        | Rohde & Schwarz   | ESH3-Z2                         | 100851                    | N/A             | Dec. 31, 2018    | Jan. 16, 2019                    | Dec. 30, 2019 | Conduction<br>(CO05-HY)  |
| Loop Antenna         | TESEQ             | HLA 6120                        | 31244                     | 9 kHz~30 MHz    | Mar. 29, 2018    | Jan. 06, 2019 ~<br>Mar. 08, 2019 | Mar. 28, 2019 | Radiation<br>(03CH15-HY) |
| Preamplifier         | EMEC              | EM18G40G                        | 060715                    | 18GHz ~ 40GHz   | Dec. 06, 2018    | Jan. 06, 2019 ~<br>Mar. 08, 2019 | Dec. 05, 2019 | Radiation<br>(03CH15-HY) |
| Bilog Antenna        | TESEQ             | CBL6111D<br>&00802N1<br>D01N-06 | 47020&06                  | 30MHz to 1GHz   | Oct. 13, 2018    | Jan. 06, 2019 ~<br>Mar. 08, 2019 | Oct. 12, 2019 | Radiation<br>(03CH15-HY) |
| Horn Antenna         | SCHWARZBE<br>CK   | BBHA<br>9120D                   | 9120D-162<br>0            | 1G~18GHz        | Oct. 17, 2018    | Jan. 06, 2019 ~<br>Mar. 08, 2019 | Oct. 16, 2019 | Radiation<br>(03CH15-HY) |
| SHF-EHF Horn Antenna | SCHWARZBE<br>CK   | BBHA 9170                       | BBHA9170<br>576           | 18GHz ~ 40GHz   | May 08, 2018     | Jan. 06, 2019 ~<br>Mar. 08, 2019 | May 07, 2019  | Radiation<br>(03CH15-HY) |
| Amplifier            | SONOMA            | 310N                            | 363440                    | 9kHz~1GHz       | Dec. 28, 2018    | Jan. 06, 2019 ~<br>Mar. 08, 2019 | Dec. 27, 2019 | Radiation<br>(03CH15-HY) |
| Preamplifier         | Jet-Power         | JPA0118-5<br>5-303              | 17100018<br>00055000<br>6 | 1GHz~18GHz      | Jul. 10, 2018    | Jan. 06, 2019 ~<br>Mar. 08, 2019 | Jul. 09, 2019 | Radiation<br>(03CH15-HY) |
| Preamplifier         | Jet-Power         | JAP001018<br>00-30-10P          | 160118550<br>004          | 1GHz~18GHz      | Apr. 17, 2018    | Jan. 06, 2019 ~<br>Mar. 08, 2019 | Apr. 16, 2019 | Radiation<br>(03CH15-HY) |
| Preamplifier         | Keysight          | 83017A                          | MY532701<br>95            | 1GHz~26.5GHz    | Aug. 23, 2018    | Jan. 06, 2019 ~<br>Mar. 08, 2019 | Aug. 22, 2019 | Radiation<br>(03CH15-HY) |



| Instrument        | Manufacturer   | Model No.                    | Serial No.            | Characteristics | Calibration Date | Test Date                     | Due Date      | Remark                |
|-------------------|----------------|------------------------------|-----------------------|-----------------|------------------|-------------------------------|---------------|-----------------------|
| EMI Test Receiver | Keysight       | N9038A (MXE)                 | MY54130085            | 20Hz ~ 8.4GHz   | Nov. 01, 2018    | Jan. 06, 2019 ~ Mar. 08, 2019 | Oct. 31, 2019 | Radiation (03CH15-HY) |
| Spectrum Analyzer | Agilent        | E4446A                       | MY50180136            | 3Hz~44GHz       | Apr. 25, 2018    | Jan. 06, 2019 ~ Mar. 08, 2019 | Apr. 24, 2019 | Radiation (03CH15-HY) |
| Antenna Mast      | ChainTek       | MBS-520-1                    | N/A                   | 1m~4m           | N/A              | Jan. 06, 2019 ~ Mar. 08, 2019 | N/A           | Radiation (03CH15-HY) |
| Turn Table        | ChainTek       | T-200-S-1                    | N/A                   | 0~360 Degree    | N/A              | Jan. 06, 2019 ~ Mar. 08, 2019 | N/A           | Radiation (03CH15-HY) |
| Software          | Audix          | E3 6.2009-8-24               | RK-000451             | N/A             | N/A              | Jan. 06, 2019 ~ Mar. 08, 2019 | N/A           | Radiation (03CH15-HY) |
| RF Cable          | HUBER + SUHNER | SUCOFLE X 104                | MY36980/4             | 30M-18G         | Apr. 16, 2018    | Jan. 06, 2019 ~ Mar. 08, 2019 | Apr. 15, 2019 | Radiation (03CH15-HY) |
| RF Cable          | HUBER + SUHNER | SUCOFLE X 104                | MY9838/4              | 30M-18G         | Apr. 16, 2018    | Jan. 06, 2019 ~ Mar. 08, 2019 | Apr. 15, 2019 | Radiation (03CH15-HY) |
| RF Cable          | HUBER + SUHNER | MTJ                          | 000000-MT18A-100D3210 | 30M-18G         | Apr. 16, 2018    | Jan. 06, 2019 ~ Mar. 08, 2019 | Apr. 15, 2019 | Radiation (03CH15-HY) |
| RF Cable          | HUBER + SUHNER | SUCOFLE X 102                | MY2859/2              | 30MHz-40GHz     | Mar. 14, 2018    | Jan. 06, 2019 ~ Mar. 08, 2019 | Mar. 13, 2019 | Radiation (03CH15-HY) |
| RF Cable          | HUBER + SUHNER | SUCOFLE X 102                | MY4274/2              | 30MHz-40GHz     | Mar. 14, 2018    | Jan. 06, 2019 ~ Mar. 08, 2019 | Mar. 13, 2019 | Radiation (03CH15-HY) |
| Filter            | Wainwright     | WHKX12-2 700-3000-18000-60ST | SN1                   | 3 GHz Highpass  | Sep. 16, 2018    | Jan. 06, 2019 ~ Mar. 08, 2019 | Sep. 15, 2019 | Radiation (03CH15-HY) |
| Filter            | Wainwright     | WLK4-1000 -1530-8000 -40SS   | SN11                  | 1G Low Pass     | Sep. 16, 2018    | Jan. 06, 2019 ~ Mar. 08, 2019 | Sep. 15, 2019 | Radiation (03CH15-HY) |



## 5 Uncertainty of Evaluation

### Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

|                                                                         |      |
|-------------------------------------------------------------------------|------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 2.20 |
|-------------------------------------------------------------------------|------|

### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

|                                                                         |      |
|-------------------------------------------------------------------------|------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 5.20 |
|-------------------------------------------------------------------------|------|

### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

|                                                                         |      |
|-------------------------------------------------------------------------|------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 5.50 |
|-------------------------------------------------------------------------|------|

### Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

|                                                                         |      |
|-------------------------------------------------------------------------|------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 5.20 |
|-------------------------------------------------------------------------|------|

## Appendix A. Test Result of Conducted Test Items

|                |                      |                    |       |    |
|----------------|----------------------|--------------------|-------|----|
| Test Engineer: | AnAn Wu / Kai Liao   | Temperature:       | 21~25 | °C |
| Test Date:     | 2018/12/27~2019/1/18 | Relative Humidity: | 51~54 | %  |

**TEST RESULTS DATA**  
**6dB and 99% Occupied Bandwidth**

| 2.4GHz Band |           |                 |     |             |                       |       |              |       |                    |           |
|-------------|-----------|-----------------|-----|-------------|-----------------------|-------|--------------|-------|--------------------|-----------|
| Mod.        | Data Rate | N <sub>TX</sub> | CH. | Freq. (MHz) | 99% Occupied BW (MHz) |       | 6dB BW (MHz) |       | 6dB BW Limit (MHz) | Pass/Fail |
|             |           |                 |     |             | Ant 1                 | Ant 2 | Ant 1        | Ant 2 |                    |           |
| 11b         | 1Mbps     | 1               | 1   | 2412        | 13.75                 | 13.45 | 8.08         | 8.04  | 0.50               | Pass      |
| 11b         | 1Mbps     | 1               | 6   | 2437        | 13.75                 | 13.80 | 9.04         | 8.56  | 0.50               | Pass      |
| 11b         | 1Mbps     | 1               | 11  | 2462        | 13.75                 | 13.90 | 8.52         | 9.04  | 0.50               | Pass      |
| 11g         | 6Mbps     | 1               | 1   | 2412        | 16.60                 | 16.50 | 16.04        | 15.68 | 0.50               | Pass      |
| 11g         | 6Mbps     | 1               | 6   | 2437        | 16.70                 | 16.75 | 15.70        | 16.04 | 0.50               | Pass      |
| 11g         | 6Mbps     | 1               | 11  | 2462        | 16.70                 | 16.75 | 15.68        | 16.28 | 0.50               | Pass      |
| HT20        | MCS0      | 2               | 1   | 2412        | 17.85                 | 17.70 | 16.72        | 16.20 | 0.50               | Pass      |
| HT20        | MCS0      | 2               | 6   | 2437        | 17.80                 | 17.85 | 15.12        | 16.90 | 0.50               | Pass      |
| HT20        | MCS0      | 2               | 11  | 2462        | 17.85                 | 17.85 | 16.32        | 17.28 | 0.50               | Pass      |
| HT40        | MCS0      | 2               | 3   | 2422        | 36.40                 | 36.50 | 35.44        | 35.64 | 0.50               | Pass      |
| HT40        | MCS0      | 2               | 6   | 2437        | 36.60                 | 36.70 | 35.68        | 35.72 | 0.50               | Pass      |
| HT40        | MCS0      | 2               | 9   | 2452        | 36.70                 | 36.50 | 36.32        | 35.72 | 0.50               | Pass      |

**TEST RESULTS DATA**  
**Peak Output Power**

| 2.4GHz Band |           |                 |     |             |                            |       |       |                             |       |          |       |                  |       |                        |       |            |
|-------------|-----------|-----------------|-----|-------------|----------------------------|-------|-------|-----------------------------|-------|----------|-------|------------------|-------|------------------------|-------|------------|
| Mod.        | Data Rate | N <sub>Tx</sub> | CH. | Freq. (MHz) | Peak Conducted Power (dBm) |       |       | Conducted Power Limit (dBm) |       | DG (dBi) |       | EIRP Power (dBm) |       | EIRP Power Limit (dBm) |       | Pass /Fail |
|             |           |                 |     |             | Ant 1                      | Ant 2 | SUM   | Ant 1                       | Ant 2 | Ant 1    | Ant 2 | Ant 1            | Ant 2 | Ant 1                  | Ant 2 |            |
| 11b         | 1Mbps     | 1               | 1   | 2412        | 20.18                      | 20.44 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 21.18            | 19.86 | 36.00                  | 36.00 | Pass       |
| 11b         | 1Mbps     | 1               | 6   | 2437        | 20.26                      | 20.52 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 21.26            | 19.94 | 36.00                  | 36.00 | Pass       |
| 11b         | 1Mbps     | 1               | 11  | 2462        | 20.38                      | 20.14 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 21.38            | 19.56 | 36.00                  | 36.00 | Pass       |
| 11g         | 6Mbps     | 1               | 1   | 2412        | 24.02                      | 24.65 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 25.02            | 24.07 | 36.00                  | 36.00 | Pass       |
| 11g         | 6Mbps     | 1               | 6   | 2437        | 23.97                      | 24.06 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 24.97            | 23.48 | 36.00                  | 36.00 | Pass       |
| 11g         | 6Mbps     | 1               | 11  | 2462        | 23.91                      | 24.04 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 24.91            | 23.46 | 36.00                  | 36.00 | Pass       |
| HT20        | MCS0      | 1               | 1   | 2412        | 23.33                      | 23.86 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 24.33            | 23.28 | 36.00                  | 36.00 | Pass       |
| HT20        | MCS0      | 1               | 6   | 2437        | 23.35                      | 23.58 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 24.35            | 23.00 | 36.00                  | 36.00 | Pass       |
| HT20        | MCS0      | 1               | 11  | 2462        | 23.34                      | 23.18 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 24.34            | 22.60 | 36.00                  | 36.00 | Pass       |
| HT40        | MCS0      | 1               | 3   | 2422        | 23.62                      | 23.74 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 24.62            | 23.16 | 36.00                  | 36.00 | Pass       |
| HT40        | MCS0      | 1               | 6   | 2437        | 23.72                      | 23.67 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 24.72            | 23.09 | 36.00                  | 36.00 | Pass       |
| HT40        | MCS0      | 1               | 9   | 2452        | 23.37                      | 23.34 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 24.37            | 22.76 | 36.00                  | 36.00 | Pass       |
| VHT20       | MCS0      | 1               | 1   | 2412        | 23.31                      | 23.47 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 24.31            | 22.89 | 36.00                  | 36.00 | Pass       |
| VHT20       | MCS0      | 1               | 6   | 2437        | 23.15                      | 23.08 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 24.15            | 22.50 | 36.00                  | 36.00 | Pass       |
| VHT20       | MCS0      | 1               | 11  | 2462        | 23.32                      | 23.02 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 24.32            | 22.44 | 36.00                  | 36.00 | Pass       |
| VHT40       | MCS0      | 1               | 3   | 2422        | 23.60                      | 23.72 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 24.60            | 23.14 | 36.00                  | 36.00 | Pass       |
| VHT40       | MCS0      | 1               | 6   | 2437        | 23.70                      | 23.65 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 24.70            | 23.07 | 36.00                  | 36.00 | Pass       |
| VHT40       | MCS0      | 1               | 9   | 2452        | 23.34                      | 23.32 | -     | 30.00                       | 30.00 | 1.00     | -0.58 | 24.34            | 22.74 | 36.00                  | 36.00 | Pass       |
| HT20        | MCS0      | 2               | 1   | 2412        | 23.51                      | 23.61 | 26.57 | 30.00                       |       | 1.00     |       | 27.57            |       | 36.00                  |       | Pass       |
| HT20        | MCS0      | 2               | 6   | 2437        | 23.35                      | 22.97 | 26.17 | 30.00                       |       | 1.00     |       | 27.17            |       | 36.00                  |       | Pass       |
| HT20        | MCS0      | 2               | 11  | 2462        | 22.73                      | 22.09 | 25.43 | 30.00                       |       | 1.00     |       | 26.43            |       | 36.00                  |       | Pass       |
| HT40        | MCS0      | 2               | 3   | 2422        | 23.98                      | 23.82 | 26.91 | 30.00                       |       | 1.00     |       | 27.91            |       | 36.00                  |       | Pass       |
| HT40        | MCS0      | 2               | 6   | 2437        | 24.00                      | 23.78 | 26.90 | 30.00                       |       | 1.00     |       | 27.90            |       | 36.00                  |       | Pass       |
| HT40        | MCS0      | 2               | 9   | 2452        | 20.46                      | 20.11 | 23.30 | 30.00                       |       | 1.00     |       | 24.30            |       | 36.00                  |       | Pass       |
| VHT20       | MCS0      | 2               | 1   | 2412        | 23.38                      | 23.50 | 26.45 | 30.00                       |       | 1.00     |       | 27.45            |       | 36.00                  |       | Pass       |
| VHT20       | MCS0      | 2               | 6   | 2437        | 23.16                      | 22.85 | 26.02 | 30.00                       |       | 1.00     |       | 27.02            |       | 36.00                  |       | Pass       |
| VHT20       | MCS0      | 2               | 11  | 2462        | 23.32                      | 22.37 | 25.88 | 30.00                       |       | 1.00     |       | 26.88            |       | 36.00                  |       | Pass       |
| VHT40       | MCS0      | 2               | 3   | 2422        | 23.96                      | 23.80 | 26.89 | 30.00                       |       | 1.00     |       | 27.89            |       | 36.00                  |       | Pass       |
| VHT40       | MCS0      | 2               | 6   | 2437        | 23.98                      | 23.72 | 26.86 | 30.00                       |       | 1.00     |       | 27.86            |       | 36.00                  |       | Pass       |
| VHT40       | MCS0      | 2               | 9   | 2452        | 23.63                      | 23.60 | 26.63 | 30.00                       |       | 1.00     |       | 27.63            |       | 36.00                  |       | Pass       |

Note: Measured power (dBm) has offset with cable loss.

**TEST RESULTS DATA**  
**Average Output Power**

| 2.4GHz Band |           |     |     |             |                  |       |                               |       |       |
|-------------|-----------|-----|-----|-------------|------------------|-------|-------------------------------|-------|-------|
| Mod.        | Data Rate | NTX | CH. | Freq. (MHz) | Duty Factor (dB) |       | Average Conducted Power (dBm) |       |       |
|             |           |     |     |             | Ant 1            | Ant 2 | Ant 1                         | Ant 2 | SUM   |
| 11b         | 1Mbps     | 1   | 1   | 2412        | 0.06             | 0.06  | 17.68                         | 17.98 | -     |
| 11b         | 1Mbps     | 1   | 6   | 2437        | 0.06             | 0.06  | 17.92                         | 17.99 |       |
| 11b         | 1Mbps     | 1   | 11  | 2462        | 0.06             | 0.06  | 17.98                         | 17.72 |       |
| 11g         | 6Mbps     | 1   | 1   | 2412        | 0.07             | 0.06  | 17.61                         | 17.87 |       |
| 11g         | 6Mbps     | 1   | 6   | 2437        | 0.07             | 0.06  | 17.81                         | 17.62 |       |
| 11g         | 6Mbps     | 1   | 11  | 2462        | 0.07             | 0.06  | 17.90                         | 17.57 |       |
| HT20        | MCS0      | 1   | 1   | 2412        | 0.09             | 0.07  | 16.93                         | 16.92 |       |
| HT20        | MCS0      | 1   | 6   | 2437        | 0.09             | 0.07  | 16.99                         | 16.87 |       |
| HT20        | MCS0      | 1   | 11  | 2462        | 0.09             | 0.07  | 16.98                         | 16.70 |       |
| HT40        | MCS0      | 1   | 3   | 2422        | 0.22             | 0.25  | 16.36                         | 16.10 |       |
| HT40        | MCS0      | 1   | 6   | 2437        | 0.22             | 0.25  | 16.49                         | 16.09 |       |
| HT40        | MCS0      | 1   | 9   | 2452        | 0.22             | 0.25  | 16.11                         | 16.05 |       |
| VHT20       | MCS0      | 1   | 1   | 2412        | 0.07             | 0.10  | 16.82                         | 16.43 |       |
| VHT20       | MCS0      | 1   | 6   | 2437        | 0.07             | 0.10  | 16.96                         | 16.23 |       |
| VHT20       | MCS0      | 1   | 11  | 2462        | 0.07             | 0.10  | 16.95                         | 16.20 |       |
| VHT40       | MCS0      | 1   | 3   | 2422        | 0.24             | 0.24  | 16.35                         | 16.08 |       |
| VHT40       | MCS0      | 1   | 6   | 2437        | 0.24             | 0.24  | 16.48                         | 16.06 |       |
| VHT40       | MCS0      | 1   | 9   | 2452        | 0.24             | 0.24  | 16.09                         | 16.01 |       |
| HT20        | MCS0      | 2   | 1   | 2412        | 0.07             | 0.08  | 17.04                         | 16.56 | 19.82 |
| HT20        | MCS0      | 2   | 6   | 2437        | 0.07             | 0.08  | 17.20                         | 16.43 | 19.84 |
| HT20        | MCS0      | 2   | 11  | 2462        | 0.07             | 0.08  | 16.41                         | 15.60 | 19.03 |
| HT40        | MCS0      | 2   | 3   | 2422        | 0.22             | 0.25  | 16.80                         | 16.11 | 19.48 |
| HT40        | MCS0      | 2   | 6   | 2437        | 0.22             | 0.25  | 16.84                         | 16.10 | 19.50 |
| HT40        | MCS0      | 2   | 9   | 2452        | 0.22             | 0.25  | 13.10                         | 12.80 | 15.96 |
| VHT20       | MCS0      | 2   | 1   | 2412        | 0.11             | 0.08  | 16.89                         | 16.43 | 19.68 |
| VHT20       | MCS0      | 2   | 6   | 2437        | 0.11             | 0.08  | 17.03                         | 16.23 | 19.66 |
| VHT20       | MCS0      | 2   | 11  | 2462        | 0.11             | 0.08  | 17.03                         | 15.89 | 19.51 |
| VHT40       | MCS0      | 2   | 3   | 2422        | 0.24             | 0.24  | 16.80                         | 16.04 | 19.45 |
| VHT40       | MCS0      | 2   | 6   | 2437        | 0.24             | 0.24  | 16.84                         | 16.06 | 19.48 |
| VHT40       | MCS0      | 2   | 9   | 2452        | 0.24             | 0.24  | 16.52                         | 16.02 | 19.29 |

Note: Measured power (dBm) has offset with cable loss.

**TEST RESULTS DATA**  
**Peak Power Spectral Density**

| 2.4GHz Band |           |     |     |             |                     |        |              |          |       |                           |       |           |
|-------------|-----------|-----|-----|-------------|---------------------|--------|--------------|----------|-------|---------------------------|-------|-----------|
| Mod.        | Data Rate | Ntx | CH. | Freq. (MHz) | Peak PSD (dBm/3kHz) |        |              | DG (dBi) |       | Peak PSD Limit (dBm/3kHz) |       | Pass/Fail |
|             |           |     |     |             | Ant 1               | Ant 2  | Worse + 3.01 | Ant 1    | Ant 2 | Ant 1                     | Ant 2 |           |
| 11b         | 1Mbps     | 1   | 1   | 2412        | -5.65               | -4.47  | -            | 1.00     | -0.58 | 8.00                      | 8.00  | Pass      |
| 11b         | 1Mbps     | 1   | 6   | 2437        | -4.94               | -3.51  | -            | 1.00     | -0.58 | 8.00                      | 8.00  | Pass      |
| 11b         | 1Mbps     | 1   | 11  | 2462        | -4.47               | -6.80  | -            | 1.00     | -0.58 | 8.00                      | 8.00  | Pass      |
| 11g         | 6Mbps     | 1   | 1   | 2412        | -8.62               | -7.31  | -            | 1.00     | -0.58 | 8.00                      | 8.00  | Pass      |
| 11g         | 6Mbps     | 1   | 6   | 2437        | -6.58               | -9.20  | -            | 1.00     | -0.58 | 8.00                      | 8.00  | Pass      |
| 11g         | 6Mbps     | 1   | 11  | 2462        | -6.87               | -6.63  | -            | 1.00     | -0.58 | 8.00                      | 8.00  | Pass      |
| HT20        | MCS0      | 2   | 1   | 2412        | -10.02              | -9.38  | -6.37        | 3.26     |       | 8.00                      |       | Pass      |
| HT20        | MCS0      | 2   | 6   | 2437        | -10.61              | -9.85  | -6.84        | 3.26     |       | 8.00                      |       | Pass      |
| HT20        | MCS0      | 2   | 11  | 2462        | -8.71               | -12.03 | -5.70        | 3.26     |       | 8.00                      |       | Pass      |
| HT40        | MCS0      | 2   | 3   | 2422        | -12.62              | -13.25 | -9.61        | 3.26     |       | 8.00                      |       | Pass      |
| HT40        | MCS0      | 2   | 6   | 2437        | -12.71              | -13.10 | -9.70        | 3.26     |       | 8.00                      |       | Pass      |
| HT40        | MCS0      | 2   | 9   | 2452        | -17.27              | -16.08 | -13.07       | 3.26     |       | 8.00                      |       | Pass      |

Measured power density (dBm) has offset with cable loss.



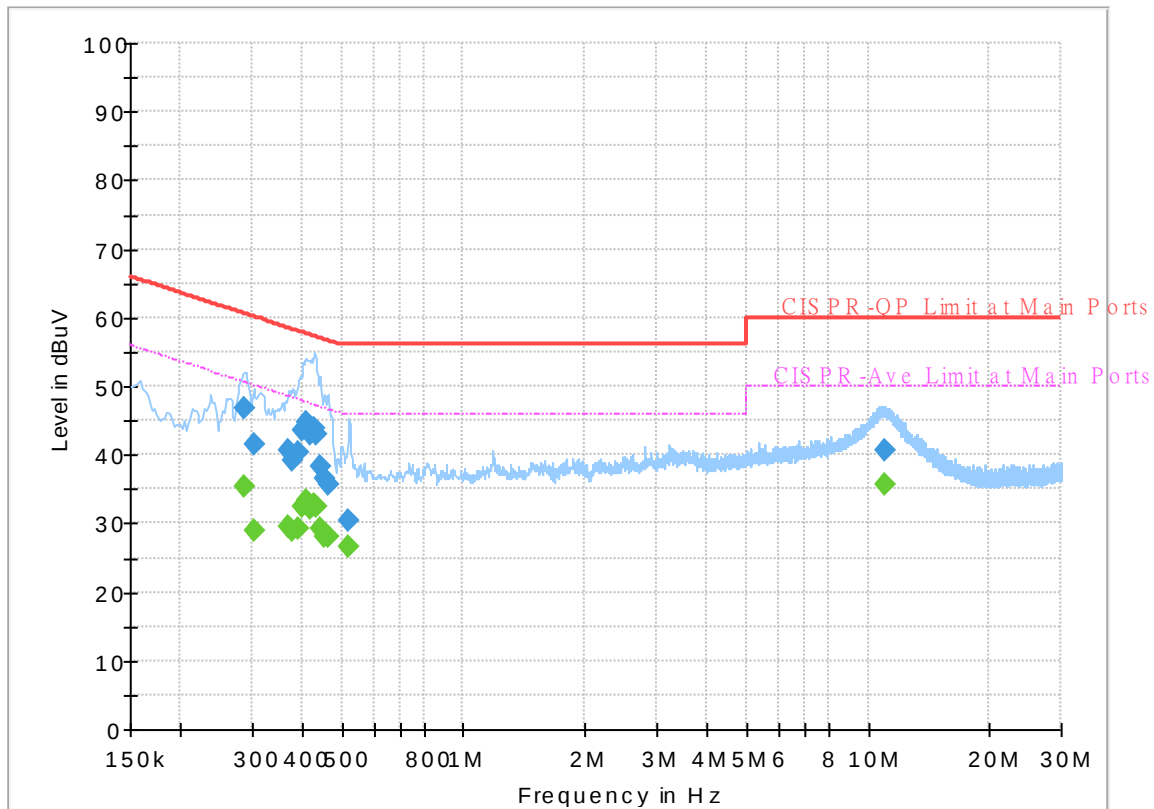
## **Appendix B. AC Conducted Emission Test Results**

|                        |          |                            |        |
|------------------------|----------|----------------------------|--------|
| <b>Test Engineer :</b> | Rick Lin | <b>Temperature :</b>       | 22~23℃ |
|                        |          | <b>Relative Humidity :</b> | 60~62% |

## EUT Information

Report NO : 8D2018  
 Test Mode : Mode 1  
 Test Voltage : 120Vac/60Hz  
 Phase : Line

Full Spectrum



## Final\_Result

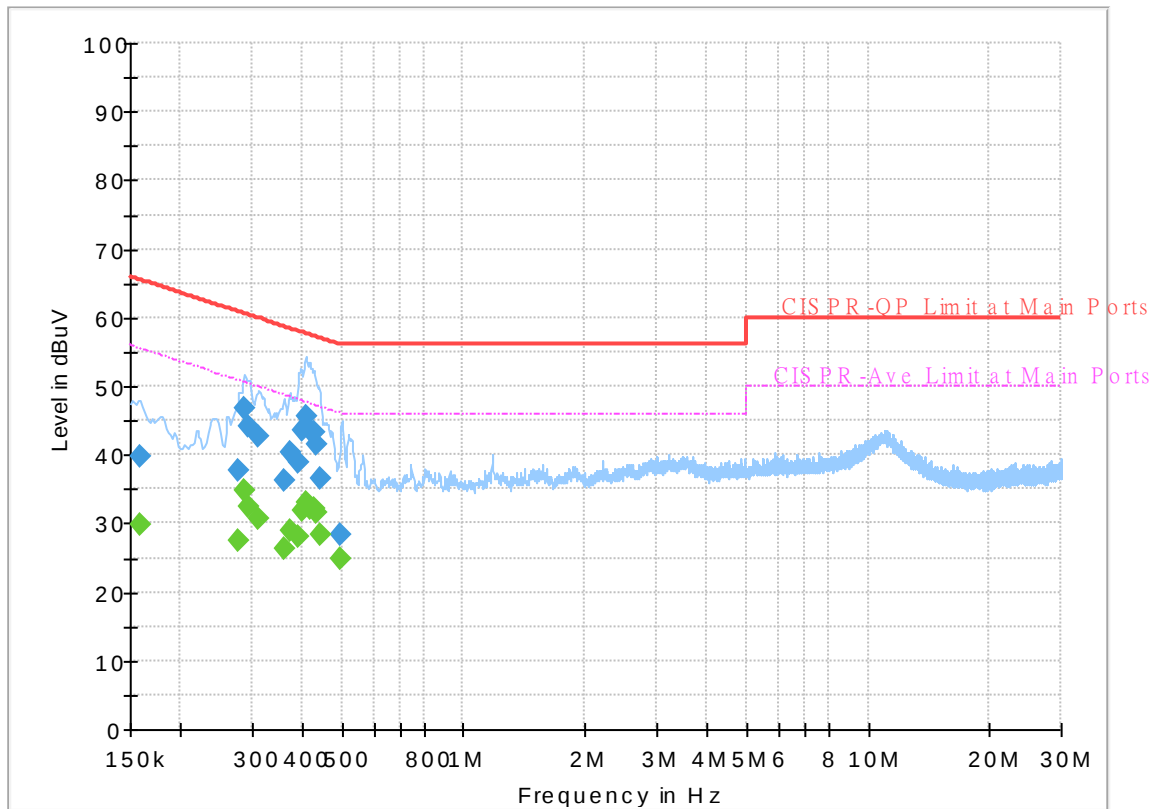
| Frequency (MHz) | QuasiPeak (dBuV) | CAverage (dBuV) | Limit (dBuV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|------|--------|------------|
| 0.287250        | ---              | 35.38           | 50.60        | 15.22       | L1   | OFF    | 19.5       |
| 0.287250        | 46.81            | ---             | 60.60        | 13.79       | L1   | OFF    | 19.5       |
| 0.303000        | ---              | 28.81           | 50.16        | 21.35       | L1   | OFF    | 19.5       |
| 0.303000        | 41.60            | ---             | 60.16        | 18.56       | L1   | OFF    | 19.5       |
| 0.368250        | ---              | 29.55           | 48.54        | 18.99       | L1   | OFF    | 19.5       |
| 0.368250        | 40.60            | ---             | 58.54        | 17.94       | L1   | OFF    | 19.5       |
| 0.379500        | ---              | 28.91           | 48.29        | 19.38       | L1   | OFF    | 19.5       |
| 0.379500        | 39.19            | ---             | 58.29        | 19.10       | L1   | OFF    | 19.5       |
| 0.390750        | ---              | 29.14           | 48.05        | 18.91       | L1   | OFF    | 19.5       |
| 0.390750        | 40.49            | ---             | 58.05        | 17.56       | L1   | OFF    | 19.5       |
| 0.399750        | ---              | 32.39           | 47.86        | 15.47       | L1   | OFF    | 19.5       |
| 0.399750        | 43.68            | ---             | 57.86        | 14.18       | L1   | OFF    | 19.5       |
| 0.408750        | ---              | 33.20           | 47.67        | 14.47       | L1   | OFF    | 19.5       |
| 0.408750        | 44.72            | ---             | 57.67        | 12.95       | L1   | OFF    | 19.5       |
| 0.417750        | ---              | 32.07           | 47.49        | 15.42       | L1   | OFF    | 19.5       |
| 0.417750        | 43.08            | ---             | 57.49        | 14.41       | L1   | OFF    | 19.5       |
| 0.429000        | ---              | 32.88           | 47.27        | 14.39       | L1   | OFF    | 19.5       |
| 0.429000        | 44.00            | ---             | 57.27        | 13.27       | L1   | OFF    | 19.5       |
| 0.433500        | ---              | 32.31           | 47.19        | 14.88       | L1   | OFF    | 19.5       |
| 0.433500        | 42.88            | ---             | 57.19        | 14.31       | L1   | OFF    | 19.5       |
| 0.442500        | ---              | 29.30           | 47.02        | 17.72       | L1   | OFF    | 19.5       |

|           |       |       |       |       |    |     |      |
|-----------|-------|-------|-------|-------|----|-----|------|
| 0.442500  | 38.38 | ---   | 57.02 | 18.64 | L1 | OFF | 19.5 |
| 0.451500  | ---   | 27.98 | 46.85 | 18.87 | L1 | OFF | 19.5 |
| 0.451500  | 36.51 | ---   | 56.85 | 20.34 | L1 | OFF | 19.5 |
| 0.462750  | ---   | 27.94 | 46.64 | 18.70 | L1 | OFF | 19.5 |
| 0.462750  | 35.73 | ---   | 56.64 | 20.91 | L1 | OFF | 19.5 |
| 0.521250  | ---   | 26.69 | 46.00 | 19.31 | L1 | OFF | 19.5 |
| 0.521250  | 30.30 | ---   | 56.00 | 25.70 | L1 | OFF | 19.5 |
| 10.970250 | ---   | 35.61 | 50.00 | 14.39 | L1 | OFF | 19.9 |
| 10.970250 | 40.71 | ---   | 60.00 | 19.29 | L1 | OFF | 19.9 |

## EUT Information

Report NO : 8D2018  
 Test Mode : Mode 1  
 Test Voltage : 120Vac/60Hz  
 Phase : Neutral

Full Spectrum



## Final\_Result

| Frequency (MHz) | QuasiPeak (dBuV) | CAverage (dBuV) | Limit (dBuV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|------|--------|------------|
| 0.159000        | ---              | 29.71           | 55.52        | 25.81       | N    | OFF    | 19.5       |
| 0.159000        | 39.69            | ---             | 65.52        | 25.83       | N    | OFF    | 19.5       |
| 0.278250        | ---              | 27.54           | 50.87        | 23.33       | N    | OFF    | 19.5       |
| 0.278250        | 37.80            | ---             | 60.87        | 23.07       | N    | OFF    | 19.5       |
| 0.287250        | ---              | 34.68           | 50.60        | 15.92       | N    | OFF    | 19.5       |
| 0.287250        | 46.74            | ---             | 60.60        | 13.86       | N    | OFF    | 19.5       |
| 0.294000        | ---              | 32.50           | 50.41        | 17.91       | N    | OFF    | 19.5       |
| 0.294000        | 44.04            | ---             | 60.41        | 16.37       | N    | OFF    | 19.5       |
| 0.312000        | ---              | 30.66           | 49.92        | 19.26       | N    | OFF    | 19.5       |
| 0.312000        | 42.75            | ---             | 59.92        | 17.17       | N    | OFF    | 19.5       |
| 0.359250        | ---              | 26.22           | 48.75        | 22.53       | N    | OFF    | 19.5       |
| 0.359250        | 36.35            | ---             | 58.75        | 22.40       | N    | OFF    | 19.5       |
| 0.372750        | ---              | 28.93           | 48.44        | 19.51       | N    | OFF    | 19.5       |
| 0.372750        | 40.44            | ---             | 58.44        | 18.00       | N    | OFF    | 19.5       |
| 0.390750        | ---              | 28.08           | 48.05        | 19.97       | N    | OFF    | 19.5       |
| 0.390750        | 38.84            | ---             | 58.05        | 19.21       | N    | OFF    | 19.5       |
| 0.399750        | ---              | 31.88           | 47.86        | 15.98       | N    | OFF    | 19.5       |
| 0.399750        | 43.68            | ---             | 57.86        | 14.18       | N    | OFF    | 19.5       |
| 0.408750        | ---              | 33.06           | 47.67        | 14.61       | N    | OFF    | 19.5       |
| 0.408750        | 45.53            | ---             | 57.67        | 12.14       | N    | OFF    | 19.5       |
| 0.417750        | ---              | 32.06           | 47.49        | 15.43       | N    | OFF    | 19.5       |

|          |       |       |       |       |   |     |      |
|----------|-------|-------|-------|-------|---|-----|------|
| 0.417750 | 43.47 | ---   | 57.49 | 14.02 | N | OFF | 19.5 |
| 0.426750 | ---   | 32.04 | 47.32 | 15.28 | N | OFF | 19.5 |
| 0.426750 | 43.42 | ---   | 57.32 | 13.90 | N | OFF | 19.5 |
| 0.433500 | ---   | 31.63 | 47.19 | 15.56 | N | OFF | 19.5 |
| 0.433500 | 41.44 | ---   | 57.19 | 15.75 | N | OFF | 19.5 |
| 0.442500 | ---   | 28.23 | 47.02 | 18.79 | N | OFF | 19.5 |
| 0.442500 | 36.41 | ---   | 57.02 | 20.61 | N | OFF | 19.5 |
| 0.498750 | ---   | 25.00 | 46.02 | 21.02 | N | OFF | 19.5 |
| 0.498750 | 28.40 | ---   | 56.02 | 27.62 | N | OFF | 19.5 |



## **Appendix C. Radiated Spurious Emission**

|                        |                                        |                            |         |
|------------------------|----------------------------------------|----------------------------|---------|
| <b>Test Engineer :</b> | Watt Tseng, Karl Hou, and BigShow Wang | <b>Temperature :</b>       | 24~26°C |
|                        |                                        | <b>Relative Humidity :</b> | 47~58%  |



## 2.4GHz 2400~2483.5MHz

## WIFI 802.11b (Band Edge @ 3m)

| WIFI                        | Note | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Path   | Preamp | Ant    | Table   | Peak  | Pol.  |
|-----------------------------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                        |      |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 1                           |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 802.11b<br>CH 01<br>2412MHz |      | 2351.16   | 53.59      | -20.41 | 74         | 41.05    | 27.7     | 15.72  | 30.88  | 330    | 128     | P     | H     |
|                             |      | 2390      | 42.92      | -11.08 | 54         | 30.39    | 27.6     | 15.78  | 30.85  | 330    | 128     | A     | H     |
|                             | *    | 2412      | 108.49     | -      | -          | 95.93    | 27.6     | 15.81  | 30.85  | 330    | 128     | P     | H     |
|                             | *    | 2412      | 105.24     | -      | -          | 92.68    | 27.6     | 15.81  | 30.85  | 330    | 128     | A     | H     |
|                             |      |           |            |        |            |          |          |        |        |        |         |       | H     |
|                             |      |           |            |        |            |          |          |        |        |        |         |       | H     |
|                             |      | 2377.2    | 54.13      | -19.87 | 74         | 41.6     | 27.63    | 15.76  | 30.86  | 362    | 145     | P     | V     |
|                             |      | 2310.21   | 42.83      | -11.17 | 54         | 30.24    | 27.83    | 15.66  | 30.9   | 362    | 145     | A     | V     |
|                             | *    | 2412      | 103.97     | -      | -          | 91.41    | 27.6     | 15.81  | 30.85  | 362    | 145     | P     | V     |
|                             | *    | 2412      | 100.75     | -      | -          | 88.19    | 27.6     | 15.81  | 30.85  | 362    | 145     | A     | V     |
|                             |      |           |            |        |            |          |          |        |        |        |         |       | V     |
|                             |      |           |            |        |            |          |          |        |        |        |         |       | V     |
| 802.11b<br>CH 06<br>2437MHz |      | 2314.9    | 53.87      | -20.13 | 74         | 41.27    | 27.83    | 15.66  | 30.89  | 366    | 125     | P     | H     |
|                             |      | 2310      | 42.83      | -11.17 | 54         | 30.24    | 27.83    | 15.66  | 30.9   | 366    | 125     | A     | H     |
|                             | *    | 2437      | 109.74     | -      | -          | 97.14    | 27.6     | 15.84  | 30.84  | 366    | 125     | P     | H     |
|                             | *    | 2437      | 106.61     | -      | -          | 94.01    | 27.6     | 15.84  | 30.84  | 366    | 125     | A     | H     |
|                             |      | 2487.12   | 53.55      | -20.45 | 74         | 40.99    | 27.47    | 15.91  | 30.82  | 366    | 125     | P     | H     |
|                             |      | 2483.5    | 43.18      | -10.82 | 54         | 30.62    | 27.47    | 15.91  | 30.82  | 366    | 125     | A     | H     |
|                             |      | 2388.82   | 53.49      | -20.51 | 74         | 40.98    | 27.6     | 15.77  | 30.86  | 400    | 144     | P     | V     |
|                             |      | 2322.04   | 42.8       | -11.2  | 54         | 30.25    | 27.77    | 15.67  | 30.89  | 400    | 144     | A     | V     |
|                             | *    | 2437      | 104.81     | -      | -          | 92.21    | 27.6     | 15.84  | 30.84  | 400    | 144     | P     | V     |
|                             | *    | 2437      | 101.54     | -      | -          | 88.94    | 27.6     | 15.84  | 30.84  | 400    | 144     | A     | V     |
|                             |      | 2491.74   | 52.99      | -21.01 | 74         | 40.49    | 27.4     | 15.92  | 30.82  | 400    | 144     | P     | V     |
|                             |      | 2483.83   | 42.85      | -11.15 | 54         | 30.29    | 27.47    | 15.91  | 30.82  | 400    | 144     | A     | V     |



|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   |   |
|--------------------------------------------------|---------------------------------------------------------------------------------------------|---------|--------|--------|----|-------|-------|-------|-------|-----|-----|---|---|
| <b>802.11b</b><br><b>CH 11</b><br><b>2462MHz</b> | *                                                                                           | 2462    | 110.45 | -      | -  | 97.87 | 27.53 | 15.88 | 30.83 | 357 | 117 | P | H |
|                                                  | *                                                                                           | 2462    | 107.47 | -      | -  | 94.89 | 27.53 | 15.88 | 30.83 | 357 | 117 | A | H |
|                                                  |                                                                                             | 2484.72 | 55.31  | -18.69 | 74 | 42.75 | 27.47 | 15.91 | 30.82 | 357 | 117 | P | H |
|                                                  |                                                                                             | 2483.52 | 44.87  | -9.13  | 54 | 32.31 | 27.47 | 15.91 | 30.82 | 357 | 117 | A | H |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | H |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | H |
|                                                  | *                                                                                           | 2462    | 107.03 | -      | -  | 94.45 | 27.53 | 15.88 | 30.83 | 395 | 146 | P | V |
|                                                  | *                                                                                           | 2462    | 104.06 | -      | -  | 91.48 | 27.53 | 15.88 | 30.83 | 395 | 146 | A | V |
|                                                  |                                                                                             | 2493.48 | 54.03  | -19.97 | 74 | 41.52 | 27.4  | 15.92 | 30.81 | 395 | 146 | P | V |
|                                                  |                                                                                             | 2483.52 | 43.54  | -10.46 | 54 | 30.98 | 27.47 | 15.91 | 30.82 | 395 | 146 | A | V |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | V |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | V |
| <b>Remark</b>                                    | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |         |        |        |    |       |       |       |       |     |     |   |   |



## 2.4GHz 2400~2483.5MHz

## WIFI 802.11b (Harmonic @ 3m)

| WIFI<br>Ant.<br>1           | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-----------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11b<br>CH 01<br>2412MHz |                                                                                             | 4824                 | 41.09               | -32.91                  | 74                          | 59.35                     | 31.3                          | 8.5                    | 58.06                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             | 4824                 | 39.42               | -34.58                  | 74                          | 57.68                     | 31.3                          | 8.5                    | 58.06                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11b<br>CH 06<br>2437MHz |                                                                                             | 4874                 | 38.02               | -35.98                  | 74                          | 56.17                     | 31.3                          | 8.65                   | 58.1                       | 100                  | 0                       | P                       | H               |
|                             |                                                                                             | 7311                 | 43.34               | -30.66                  | 74                          | 54.21                     | 36.2                          | 11.27                  | 58.34                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             | 4874                 | 38.14               | -35.86                  | 74                          | 56.29                     | 31.3                          | 8.65                   | 58.1                       | 100                  | 0                       | P                       | V               |
|                             |                                                                                             | 7311                 | 42.61               | -31.39                  | 74                          | 53.48                     | 36.2                          | 11.27                  | 58.34                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11b<br>CH 11<br>2462MHz |                                                                                             | 4924                 | 38.88               | -35.12                  | 74                          | 56.85                     | 31.37                         | 8.8                    | 58.14                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             | 7386                 | 43.95               | -30.05                  | 74                          | 54.49                     | 36.5                          | 11.28                  | 58.32                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             | 4924                 | 39.01               | -34.99                  | 74                          | 56.98                     | 31.37                         | 8.8                    | 58.14                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             | 7386                 | 43                  | -31                     | 74                          | 53.54                     | 36.5                          | 11.28                  | 58.32                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## 2.4GHz 2400~2483.5MHz

## WIFI 802.11g (Band Edge @ 3m)

| WIFI<br>Ant.<br>1           | Note | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-----------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11g<br>CH 01<br>2412MHz |      | 2390                 | 55.41               | -18.59                  | 74                          | 42.88                     | 27.6                          | 15.78                  | 30.85                      | 331                  | 128                     | P                       | H               |
|                             |      | 2390                 | 45.25               | -8.75                   | 54                          | 32.72                     | 27.6                          | 15.78                  | 30.85                      | 331                  | 128                     | A                       | H               |
|                             | *    | 2412                 | 110.3               | -                       | -                           | 97.74                     | 27.6                          | 15.81                  | 30.85                      | 331                  | 128                     | P                       | H               |
|                             | *    | 2412                 | 102.68              | -                       | -                           | 90.12                     | 27.6                          | 15.81                  | 30.85                      | 331                  | 128                     | A                       | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      | 2363.97              | 53.9                | -20.1                   | 74                          | 41.37                     | 27.67                         | 15.74                  | 30.88                      | 365                  | 223                     | P                       | V               |
|                             |      | 2390                 | 43.77               | -10.23                  | 54                          | 31.24                     | 27.6                          | 15.78                  | 30.85                      | 365                  | 223                     | A                       | V               |
|                             | *    | 2412                 | 105.68              | -                       | -                           | 93.12                     | 27.6                          | 15.81                  | 30.85                      | 365                  | 223                     | P                       | V               |
|                             | *    | 2412                 | 98.17               | -                       | -                           | 85.61                     | 27.6                          | 15.81                  | 30.85                      | 365                  | 223                     | A                       | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11g<br>CH 06<br>2437MHz |      | 2333.8               | 54.03               | -19.97                  | 74                          | 41.46                     | 27.77                         | 15.69                  | 30.89                      | 365                  | 125                     | P                       | H               |
|                             |      | 2389.94              | 42.96               | -11.04                  | 54                          | 30.44                     | 27.6                          | 15.77                  | 30.85                      | 365                  | 125                     | A                       | H               |
|                             | *    | 2437                 | 111.49              | -                       | -                           | 98.89                     | 27.6                          | 15.84                  | 30.84                      | 365                  | 125                     | P                       | H               |
|                             | *    | 2437                 | 103.98              | -                       | -                           | 91.38                     | 27.6                          | 15.84                  | 30.84                      | 365                  | 125                     | A                       | H               |
|                             |      | 2484.39              | 54.41               | -19.59                  | 74                          | 41.85                     | 27.47                         | 15.91                  | 30.82                      | 365                  | 125                     | P                       | H               |
|                             |      | 2483.5               | 44.58               | -9.42                   | 54                          | 32.02                     | 27.47                         | 15.91                  | 30.82                      | 365                  | 125                     | A                       | H               |
|                             |      | 2374.26              | 53.85               | -20.15                  | 74                          | 41.33                     | 27.63                         | 15.75                  | 30.86                      | 400                  | 145                     | P                       | V               |
|                             |      | 2311.12              | 42.79               | -11.21                  | 54                          | 30.2                      | 27.83                         | 15.66                  | 30.9                       | 400                  | 145                     | A                       | V               |
|                             | *    | 2437                 | 107.09              | -                       | -                           | 94.49                     | 27.6                          | 15.84                  | 30.84                      | 400                  | 145                     | P                       | V               |
|                             | *    | 2437                 | 99.44               | -                       | -                           | 86.84                     | 27.6                          | 15.84                  | 30.84                      | 400                  | 145                     | A                       | V               |
|                             |      | 2487.61              | 53.53               | -20.47                  | 74                          | 41.04                     | 27.4                          | 15.91                  | 30.82                      | 400                  | 145                     | P                       | V               |
|                             |      | 2483.55              | 43.49               | -10.51                  | 54                          | 30.93                     | 27.47                         | 15.91                  | 30.82                      | 400                  | 145                     | A                       | V               |



|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   |   |
|--------------------------------------------------|---------------------------------------------------------------------------------------------|---------|--------|--------|----|-------|-------|-------|-------|-----|-----|---|---|
| <b>802.11g</b><br><b>CH 11</b><br><b>2462MHz</b> | *                                                                                           | 2462    | 111.44 | -      | -  | 98.86 | 27.53 | 15.88 | 30.83 | 355 | 119 | P | H |
|                                                  | *                                                                                           | 2462    | 104.15 | -      | -  | 91.57 | 27.53 | 15.88 | 30.83 | 355 | 119 | A | H |
|                                                  |                                                                                             | 2483.56 | 62.86  | -11.14 | 74 | 50.3  | 27.47 | 15.91 | 30.82 | 355 | 119 | P | H |
|                                                  |                                                                                             | 2483.52 | 50.96  | -3.04  | 54 | 38.4  | 27.47 | 15.91 | 30.82 | 355 | 119 | A | H |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | H |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | H |
|                                                  | *                                                                                           | 2462    | 107.95 | -      | -  | 95.37 | 27.53 | 15.88 | 30.83 | 400 | 142 | P | V |
|                                                  | *                                                                                           | 2462    | 100.2  | -      | -  | 87.62 | 27.53 | 15.88 | 30.83 | 400 | 142 | A | V |
|                                                  |                                                                                             | 2483.88 | 58.6   | -15.4  | 74 | 46.04 | 27.47 | 15.91 | 30.82 | 400 | 142 | P | V |
|                                                  |                                                                                             | 2483.52 | 47.59  | -6.41  | 54 | 35.03 | 27.47 | 15.91 | 30.82 | 400 | 142 | A | V |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | V |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | V |
| <b>Remark</b>                                    | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |         |        |        |    |       |       |       |       |     |     |   |   |



## 2.4GHz 2400~2483.5MHz

## WIFI 802.11g (Harmonic @ 3m)

| WIFI<br>Ant.<br>1           | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-----------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11g<br>CH 01<br>2412MHz |                                                                                             | 4824                 | 38.01               | -35.99                  | 74                          | 56.27                     | 31.3                          | 8.5                    | 58.06                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             | 4824                 | 37.84               | -36.16                  | 74                          | 56.1                      | 31.3                          | 8.5                    | 58.06                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11g<br>CH 06<br>2437MHz |                                                                                             | 4874                 | 37.87               | -36.13                  | 74                          | 56.02                     | 31.3                          | 8.65                   | 58.1                       | 100                  | 0                       | P                       | H               |
|                             |                                                                                             | 7311                 | 42.9                | -31.1                   | 74                          | 53.77                     | 36.2                          | 11.27                  | 58.34                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             | 4874                 | 37.21               | -36.79                  | 74                          | 55.36                     | 31.3                          | 8.65                   | 58.1                       | 100                  | 0                       | P                       | V               |
|                             |                                                                                             | 7311                 | 43.33               | -30.67                  | 74                          | 54.2                      | 36.2                          | 11.27                  | 58.34                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11g<br>CH 11<br>2462MHz |                                                                                             | 4924                 | 38.06               | -35.94                  | 74                          | 56.03                     | 31.37                         | 8.8                    | 58.14                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             | 7386                 | 44.26               | -29.74                  | 74                          | 54.8                      | 36.5                          | 11.28                  | 58.32                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             | 4924                 | 37.51               | -36.49                  | 74                          | 55.48                     | 31.37                         | 8.8                    | 58.14                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             | 7386                 | 43.83               | -30.17                  | 74                          | 54.37                     | 36.5                          | 11.28                  | 58.32                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## 2.4GHz 2400~2483.5MHz

## Emission below 1GHz

## 2.4GHz WIFI 802.11g (LF)

| WIFI Ant.               | Note                                                                       | Frequency | Level      | Over Limit | Limit Line | Read Level | Antenna Factor | Path Loss | Preamp Factor | Ant Pos | Table Pos | Peak Avg. | Pol.  |
|-------------------------|----------------------------------------------------------------------------|-----------|------------|------------|------------|------------|----------------|-----------|---------------|---------|-----------|-----------|-------|
| 1                       |                                                                            | ( MHz )   | ( dBμV/m ) | ( dB )     | ( dBμV/m ) | (dBμV)     | ( dB/m )       | ( dB )    | ( dB )        | ( cm )  | ( deg )   | (P/A)     | (H/V) |
| 2.4GHz<br>802.11g<br>LF |                                                                            | 30.97     | 23.27      | -16.73     | 40         | 30.4       | 24.81          | 0.68      | 32.62         | -       | -         | P         | H     |
|                         |                                                                            | 85.29     | 21.4       | -18.6      | 40         | 38.57      | 14.13          | 1.23      | 32.53         | -       | -         | P         | H     |
|                         |                                                                            | 304.51    | 25.25      | -20.75     | 46         | 36.28      | 19.3           | 2.21      | 32.54         | -       | -         | P         | H     |
|                         |                                                                            | 399.57    | 26.21      | -19.79     | 46         | 34.38      | 21.88          | 2.5       | 32.55         | -       | -         | P         | H     |
|                         |                                                                            | 717.73    | 29.53      | -16.47     | 46         | 31.56      | 27.06          | 3.27      | 32.36         | -       | -         | P         | H     |
|                         |                                                                            | 889.42    | 32.15      | -13.85     | 46         | 31.24      | 28.9           | 3.72      | 31.71         | 100     | 0         | P         | H     |
|                         |                                                                            |           |            |            |            |            |                |           |               |         |           |           | H     |
|                         |                                                                            |           |            |            |            |            |                |           |               |         |           |           | H     |
|                         |                                                                            |           |            |            |            |            |                |           |               |         |           |           | H     |
|                         |                                                                            |           |            |            |            |            |                |           |               |         |           |           | H     |
|                         |                                                                            |           |            |            |            |            |                |           |               |         |           |           | H     |
|                         |                                                                            | 30        | 23.51      | -16.49     | 40         | 30.26      | 25.2           | 0.67      | 32.62         | -       | -         | P         | V     |
|                         |                                                                            | 209.45    | 18.97      | -24.53     | 43.5       | 34.38      | 15.2           | 1.88      | 32.49         | -       | -         | P         | V     |
|                         |                                                                            | 305.48    | 23.16      | -22.84     | 46         | 34.19      | 19.3           | 2.21      | 32.54         | -       | -         | P         | V     |
|                         |                                                                            | 568.35    | 27.61      | -18.39     | 46         | 30.88      | 26.33          | 2.99      | 32.59         | -       | -         | P         | V     |
|                         |                                                                            | 755.56    | 30.71      | -15.29     | 46         | 31.26      | 28.4           | 3.34      | 32.29         | -       | -         | P         | V     |
|                         |                                                                            | 851.59    | 31.66      | -14.34     | 46         | 30.74      | 29.2           | 3.63      | 31.91         | 100     | 0         | P         | V     |
|                         |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V     |
|                         |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V     |
|                         |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V     |
|                         |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V     |
|                         |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V     |
|                         |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V     |
| Remark                  | 1. No other spurious found.<br>2. All results are PASS against limit line. |           |            |            |            |            |                |           |               |         |           |           |       |



## 2.4GHz 2400~2483.5MHz

## WIFI 802.11b (Band Edge @ 3m)

| WIFI                        | Note | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Path   | Preamp | Ant    | Table   | Peak  | Pol.  |
|-----------------------------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                        |      |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 2                           |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 802.11b<br>CH 01<br>2412MHz |      | 2368.59   | 53.22      | -20.78 | 74         | 40.71    | 27.63    | 15.74  | 30.86  | 100    | 40      | P     | H     |
|                             |      | 2390      | 42.79      | -11.21 | 54         | 30.26    | 27.6     | 15.78  | 30.85  | 100    | 40      | A     | H     |
|                             | *    | 2412      | 109.2      | -      | -          | 96.64    | 27.6     | 15.81  | 30.85  | 100    | 40      | P     | H     |
|                             | *    | 2412      | 105.98     | -      | -          | 93.42    | 27.6     | 15.81  | 30.85  | 100    | 40      | A     | H     |
|                             |      |           |            |        |            |          |          |        |        |        |         |       | H     |
|                             |      |           |            |        |            |          |          |        |        |        |         |       | H     |
|                             |      | 2348.745  | 53.4       | -20.6  | 74         | 40.87    | 27.7     | 15.71  | 30.88  | 379    | 117     | P     | V     |
|                             |      | 2389.38   | 42.64      | -11.36 | 54         | 30.13    | 27.6     | 15.77  | 30.86  | 379    | 117     | A     | V     |
|                             | *    | 2412      | 106.73     | -      | -          | 94.17    | 27.6     | 15.81  | 30.85  | 379    | 117     | P     | V     |
|                             | *    | 2412      | 103.66     | -      | -          | 91.1     | 27.6     | 15.81  | 30.85  | 379    | 117     | A     | V     |
|                             |      |           |            |        |            |          |          |        |        |        |         |       | V     |
|                             |      |           |            |        |            |          |          |        |        |        |         |       | V     |
| 802.11b<br>CH 06<br>2437MHz |      | 2362.78   | 52.93      | -21.07 | 74         | 40.41    | 27.67    | 15.73  | 30.88  | 118    | 39      | P     | H     |
|                             |      | 2389.94   | 42.7       | -11.3  | 54         | 30.18    | 27.6     | 15.77  | 30.85  | 118    | 39      | A     | H     |
|                             | *    | 2437      | 107.61     | -      | -          | 95.01    | 27.6     | 15.84  | 30.84  | 118    | 39      | P     | H     |
|                             | *    | 2437      | 104.62     | -      | -          | 92.02    | 27.6     | 15.84  | 30.84  | 118    | 39      | A     | H     |
|                             |      | 2494.54   | 53.49      | -20.51 | 74         | 40.98    | 27.4     | 15.92  | 30.81  | 118    | 39      | P     | H     |
|                             |      | 2483.76   | 42.76      | -11.24 | 54         | 30.2     | 27.47    | 15.91  | 30.82  | 118    | 39      | A     | H     |
|                             |      | 2349.48   | 53.68      | -20.32 | 74         | 41.15    | 27.7     | 15.71  | 30.88  | 325    | 188     | P     | V     |
|                             |      | 2360.96   | 42.59      | -11.41 | 54         | 30.07    | 27.67    | 15.73  | 30.88  | 325    | 188     | A     | V     |
|                             | *    | 2437      | 105.76     | -      | -          | 93.16    | 27.6     | 15.84  | 30.84  | 325    | 188     | P     | V     |
|                             | *    | 2437      | 102.76     | -      | -          | 90.16    | 27.6     | 15.84  | 30.84  | 325    | 188     | A     | V     |
|                             |      | 2483.69   | 53.35      | -20.65 | 74         | 40.79    | 27.47    | 15.91  | 30.82  | 325    | 188     | P     | V     |
|                             |      | 2484.53   | 42.5       | -11.5  | 54         | 29.94    | 27.47    | 15.91  | 30.82  | 325    | 188     | A     | V     |



|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   |   |
|--------------------------------------------------|---------------------------------------------------------------------------------------------|---------|--------|--------|----|-------|-------|-------|-------|-----|-----|---|---|
| <b>802.11b</b><br><b>CH 11</b><br><b>2462MHz</b> | *                                                                                           | 2462    | 109.09 | -      | -  | 96.51 | 27.53 | 15.88 | 30.83 | 111 | 37  | P | H |
|                                                  | *                                                                                           | 2462    | 105.8  | -      | -  | 93.22 | 27.53 | 15.88 | 30.83 | 111 | 37  | A | H |
|                                                  |                                                                                             | 2483.92 | 57.76  | -16.24 | 74 | 45.2  | 27.47 | 15.91 | 30.82 | 111 | 37  | P | H |
|                                                  |                                                                                             | 2486.4  | 43.77  | -10.23 | 54 | 31.21 | 27.47 | 15.91 | 30.82 | 111 | 37  | A | H |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | H |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | H |
|                                                  | *                                                                                           | 2462    | 105.82 | -      | -  | 93.24 | 27.53 | 15.88 | 30.83 | 400 | 114 | P | V |
|                                                  | *                                                                                           | 2462    | 102.71 | -      | -  | 90.13 | 27.53 | 15.88 | 30.83 | 400 | 114 | A | V |
|                                                  |                                                                                             | 2499.32 | 53.12  | -20.88 | 74 | 40.6  | 27.4  | 15.93 | 30.81 | 400 | 114 | P | V |
|                                                  |                                                                                             | 2483.52 | 42.93  | -11.07 | 54 | 30.37 | 27.47 | 15.91 | 30.82 | 400 | 114 | A | V |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | V |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | V |
| <b>Remark</b>                                    | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |         |        |        |    |       |       |       |       |     |     |   |   |



## 2.4GHz 2400~2483.5MHz

## WIFI 802.11b (Harmonic @ 3m)

| WIFI<br>Ant.<br>2           | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-----------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11b<br>CH 01<br>2412MHz |                                                                                             | 4824                 | 38.34               | -35.66                  | 74                          | 56.6                      | 31.3                          | 8.5                    | 58.06                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             | 4824                 | 38.22               | -35.78                  | 74                          | 56.48                     | 31.3                          | 8.5                    | 58.06                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11b<br>CH 06<br>2437MHz |                                                                                             | 4874                 | 39.57               | -34.43                  | 74                          | 57.72                     | 31.3                          | 8.65                   | 58.1                       | 100                  | 0                       | P                       | H               |
|                             |                                                                                             | 7311                 | 43                  | -31                     | 74                          | 53.87                     | 36.2                          | 11.27                  | 58.34                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             | 4874                 | 38.38               | -35.62                  | 74                          | 56.53                     | 31.3                          | 8.65                   | 58.1                       | 100                  | 0                       | P                       | V               |
|                             |                                                                                             | 7311                 | 42.71               | -31.29                  | 74                          | 53.58                     | 36.2                          | 11.27                  | 58.34                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11b<br>CH 11<br>2462MHz |                                                                                             | 4924                 | 39.11               | -34.89                  | 74                          | 57.08                     | 31.37                         | 8.8                    | 58.14                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             | 7386                 | 43.16               | -30.84                  | 74                          | 53.7                      | 36.5                          | 11.28                  | 58.32                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             | 4924                 | 40.24               | -33.76                  | 74                          | 58.21                     | 31.37                         | 8.8                    | 58.14                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             | 7386                 | 44.09               | -29.91                  | 74                          | 54.63                     | 36.5                          | 11.28                  | 58.32                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## 2.4GHz 2400~2483.5MHz

## WIFI 802.11g (Band Edge @ 3m)

| WIFI<br>Ant.<br>2           | Note | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-----------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11g<br>CH 01<br>2412MHz |      | 2390                 | 54.21               | -19.79                  | 74                          | 41.68                     | 27.6                          | 15.78                  | 30.85                      | 100                  | 36                      | P                       | H               |
|                             |      | 2390                 | 44.79               | -9.21                   | 54                          | 32.26                     | 27.6                          | 15.78                  | 30.85                      | 100                  | 36                      | A                       | H               |
|                             | *    | 2412                 | 110.71              | -                       | -                           | 98.15                     | 27.6                          | 15.81                  | 30.85                      | 100                  | 36                      | P                       | H               |
|                             | *    | 2412                 | 102.99              | -                       | -                           | 90.43                     | 27.6                          | 15.81                  | 30.85                      | 100                  | 36                      | A                       | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      | 2319.66              | 53.58               | -20.42                  | 74                          | 41.03                     | 27.77                         | 15.67                  | 30.89                      | 377                  | 115                     | P                       | V               |
|                             |      | 2390                 | 43.48               | -10.52                  | 54                          | 30.95                     | 27.6                          | 15.78                  | 30.85                      | 377                  | 115                     | A                       | V               |
|                             | *    | 2412                 | 108.11              | -                       | -                           | 95.55                     | 27.6                          | 15.81                  | 30.85                      | 377                  | 115                     | P                       | V               |
|                             | *    | 2412                 | 100.22              | -                       | -                           | 87.66                     | 27.6                          | 15.81                  | 30.85                      | 377                  | 115                     | A                       | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11g<br>CH 06<br>2437MHz |      | 2386.72              | 53.46               | -20.54                  | 74                          | 40.95                     | 27.6                          | 15.77                  | 30.86                      | 119                  | 35                      | P                       | H               |
|                             |      | 2389.94              | 42.93               | -11.07                  | 54                          | 30.41                     | 27.6                          | 15.77                  | 30.85                      | 119                  | 35                      | A                       | H               |
|                             | *    | 2437                 | 109.09              | -                       | -                           | 96.49                     | 27.6                          | 15.84                  | 30.84                      | 119                  | 35                      | P                       | H               |
|                             | *    | 2437                 | 101.37              | -                       | -                           | 88.77                     | 27.6                          | 15.84                  | 30.84                      | 119                  | 35                      | A                       | H               |
|                             |      | 2485.23              | 53.29               | -20.71                  | 74                          | 40.73                     | 27.47                         | 15.91                  | 30.82                      | 119                  | 35                      | P                       | H               |
|                             |      | 2483.5               | 43.05               | -10.95                  | 54                          | 30.49                     | 27.47                         | 15.91                  | 30.82                      | 119                  | 35                      | A                       | H               |
|                             |      | 2358.58              | 53.18               | -20.82                  | 74                          | 40.66                     | 27.67                         | 15.73                  | 30.88                      | 326                  | 186                     | P                       | V               |
|                             |      | 2389.94              | 42.74               | -11.26                  | 54                          | 30.22                     | 27.6                          | 15.77                  | 30.85                      | 326                  | 186                     | A                       | V               |
|                             | *    | 2437                 | 106.96              | -                       | -                           | 94.36                     | 27.6                          | 15.84                  | 30.84                      | 326                  | 186                     | P                       | V               |
|                             | *    | 2437                 | 99.32               | -                       | -                           | 86.72                     | 27.6                          | 15.84                  | 30.84                      | 326                  | 186                     | A                       | V               |
|                             |      | 2498.95              | 52.73               | -21.27                  | 74                          | 40.21                     | 27.4                          | 15.93                  | 30.81                      | 326                  | 186                     | P                       | V               |
|                             |      | 2484.32              | 42.68               | -11.32                  | 54                          | 30.12                     | 27.47                         | 15.91                  | 30.82                      | 326                  | 186                     | A                       | V               |



|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   |   |
|--------------------------------------------------|---------------------------------------------------------------------------------------------|---------|--------|--------|----|-------|-------|-------|-------|-----|-----|---|---|
| <b>802.11g</b><br><b>CH 11</b><br><b>2462MHz</b> | *                                                                                           | 2462    | 110.56 | -      | -  | 97.98 | 27.53 | 15.88 | 30.83 | 107 | 45  | P | H |
|                                                  | *                                                                                           | 2462    | 102.97 | -      | -  | 90.39 | 27.53 | 15.88 | 30.83 | 107 | 45  | A | H |
|                                                  |                                                                                             | 2483.56 | 63.96  | -10.04 | 74 | 51.4  | 27.47 | 15.91 | 30.82 | 107 | 45  | P | H |
|                                                  |                                                                                             | 2483.52 | 53.05  | -0.95  | 54 | 40.49 | 27.47 | 15.91 | 30.82 | 107 | 45  | A | H |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | H |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | H |
|                                                  | *                                                                                           | 2462    | 107.82 | -      | -  | 95.24 | 27.53 | 15.88 | 30.83 | 400 | 114 | P | V |
|                                                  | *                                                                                           | 2462    | 100.02 | -      | -  | 87.44 | 27.53 | 15.88 | 30.83 | 400 | 114 | A | V |
|                                                  |                                                                                             | 2483.52 | 60.89  | -13.11 | 74 | 48.33 | 27.47 | 15.91 | 30.82 | 400 | 114 | P | V |
|                                                  |                                                                                             | 2483.52 | 49.39  | -4.61  | 54 | 36.83 | 27.47 | 15.91 | 30.82 | 400 | 114 | A | V |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | V |
|                                                  |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | V |
| <b>Remark</b>                                    | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |         |        |        |    |       |       |       |       |     |     |   |   |



## 2.4GHz 2400~2483.5MHz

## WIFI 802.11g (Harmonic @ 3m)

| WIFI<br>Ant.<br>2           | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-----------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11g<br>CH 01<br>2412MHz |                                                                                             | 4824                 | 38.68               | -35.32                  | 74                          | 56.94                     | 31.3                          | 8.5                    | 58.06                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             | 4824                 | 37.64               | -36.36                  | 74                          | 55.9                      | 31.3                          | 8.5                    | 58.06                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11g<br>CH 06<br>2437MHz |                                                                                             | 4874                 | 37.98               | -36.02                  | 74                          | 56.13                     | 31.3                          | 8.65                   | 58.1                       | 100                  | 0                       | P                       | H               |
|                             |                                                                                             | 7311                 | 43.23               | -30.77                  | 74                          | 54.1                      | 36.2                          | 11.27                  | 58.34                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             | 4874                 | 37.34               | -36.66                  | 74                          | 55.49                     | 31.3                          | 8.65                   | 58.1                       | 100                  | 0                       | P                       | V               |
|                             |                                                                                             | 7311                 | 43.32               | -30.68                  | 74                          | 54.19                     | 36.2                          | 11.27                  | 58.34                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11g<br>CH 11<br>2462MHz |                                                                                             | 4924                 | 37.82               | -36.18                  | 74                          | 55.79                     | 31.37                         | 8.8                    | 58.14                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             | 7386                 | 49.33               | -24.67                  | 74                          | 59.87                     | 36.5                          | 11.28                  | 58.32                      | 100                  | 0                       | P                       | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                                             | 4924                 | 38.26               | -35.74                  | 74                          | 56.23                     | 31.37                         | 8.8                    | 58.14                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             | 7386                 | 49.53               | -24.47                  | 74                          | 60.07                     | 36.5                          | 11.28                  | 58.32                      | 100                  | 0                       | P                       | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## Emission below 1GHz

## 2.4GHz WIFI 802.11g (LF)

| WIFI                    | Note                                                                       | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Path   | Preamp | Ant    | Table   | Peak    | Pol.    |
|-------------------------|----------------------------------------------------------------------------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant.                    |                                                                            |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
| 2                       |                                                                            | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 2.4GHz<br>802.11g<br>LF |                                                                            | 30.97     | 23         | -17    | 40         | 30.13    | 24.81    | 0.68   | 32.62  | -      | -       | P       | H       |
|                         |                                                                            | 134.76    | 17.38      | -26.12 | 43.5       | 30.71    | 17.7     | 1.47   | 32.5   | -      | -       | P       | H       |
|                         |                                                                            | 304.51    | 24.57      | -21.43 | 46         | 35.6     | 19.3     | 2.21   | 32.54  | -      | -       | P       | H       |
|                         |                                                                            | 394.72    | 25.61      | -20.39 | 46         | 33.99    | 21.69    | 2.48   | 32.55  | -      | -       | P       | H       |
|                         |                                                                            | 661.47    | 29.27      | -16.73 | 46         | 32.07    | 26.53    | 3.15   | 32.48  | -      | -       | P       | H       |
|                         |                                                                            | 716.76    | 34.06      | -11.94 | 46         | 36.15    | 27.01    | 3.27   | 32.37  | 100    | 0       | P       | H       |
|                         |                                                                            |           |            |        |            |          |          |        |        |        |         |         | H       |
|                         |                                                                            |           |            |        |            |          |          |        |        |        |         |         | H       |
|                         |                                                                            |           |            |        |            |          |          |        |        |        |         |         | H       |
|                         |                                                                            |           |            |        |            |          |          |        |        |        |         |         | H       |
|                         |                                                                            |           |            |        |            |          |          |        |        |        |         |         | H       |
|                         |                                                                            |           |            |        |            |          |          |        |        |        |         |         | H       |
|                         |                                                                            | 30.97     | 23.14      | -16.86 | 40         | 30.27    | 24.81    | 0.68   | 32.62  | -      | -       | P       | V       |
|                         |                                                                            | 204.6     | 17.66      | -25.84 | 43.5       | 33.09    | 15.18    | 1.88   | 32.49  | -      | -       | P       | V       |
|                         |                                                                            | 303.54    | 23.68      | -22.32 | 46         | 34.71    | 19.3     | 2.21   | 32.54  | -      | -       | P       | V       |
|                         |                                                                            | 395.69    | 24.01      | -21.99 | 46         | 32.35    | 21.73    | 2.48   | 32.55  | -      | -       | P       | V       |
|                         |                                                                            | 568.35    | 28.55      | -17.45 | 46         | 31.82    | 26.33    | 2.99   | 32.59  | -      | -       | P       | V       |
|                         |                                                                            | 757.5     | 31.06      | -14.94 | 46         | 31.61    | 28.4     | 3.34   | 32.29  | 100    | 0       | P       | V       |
|                         |                                                                            |           |            |        |            |          |          |        |        |        |         |         | V       |
|                         |                                                                            |           |            |        |            |          |          |        |        |        |         |         | V       |
|                         |                                                                            |           |            |        |            |          |          |        |        |        |         |         | V       |
|                         |                                                                            |           |            |        |            |          |          |        |        |        |         |         | V       |
|                         |                                                                            |           |            |        |            |          |          |        |        |        |         |         | V       |
|                         |                                                                            |           |            |        |            |          |          |        |        |        |         |         | V       |
|                         |                                                                            |           |            |        |            |          |          |        |        |        |         |         | V       |
| Remark                  | 1. No other spurious found.<br>2. All results are PASS against limit line. |           |            |        |            |          |          |        |        |        |         |         |         |



## 2.4GHz 2400~2483.5MHz

## WIFI 802.11n HT20 (Band Edge @ 3m)

| WIFI                                | Note | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Path   | Preamp | Ant    | Table   | Peak  | Pol.  |
|-------------------------------------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                                |      |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 1+2                                 |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 802.11n<br>HT20<br>CH 01<br>2412MHz |      | 2389.8    | 54.9       | -19.1  | 74         | 42.38    | 27.6     | 15.77  | 30.85  | 370    | 117     | P     | H     |
|                                     |      | 2390      | 45.66      | -8.34  | 54         | 33.13    | 27.6     | 15.78  | 30.85  | 370    | 117     | A     | H     |
|                                     | *    | 2412      | 109.04     | -      | -          | 96.48    | 27.6     | 15.81  | 30.85  | 370    | 117     | P     | H     |
|                                     | *    | 2412      | 101.79     | -      | -          | 89.23    | 27.6     | 15.81  | 30.85  | 370    | 117     | A     | H     |
|                                     |      |           |            |        |            |          |          |        |        |        |         |       | H     |
|                                     |      |           |            |        |            |          |          |        |        |        |         |       | H     |
|                                     |      | 2390      | 55.36      | -18.64 | 74         | 42.83    | 27.6     | 15.78  | 30.85  | 398    | 140     | P     | V     |
|                                     |      | 2390      | 45.14      | -8.86  | 54         | 32.61    | 27.6     | 15.78  | 30.85  | 398    | 140     | A     | V     |
|                                     | *    | 2412      | 108.75     | -      | -          | 96.19    | 27.6     | 15.81  | 30.85  | 398    | 140     | P     | V     |
|                                     | *    | 2412      | 101.36     | -      | -          | 88.8     | 27.6     | 15.81  | 30.85  | 398    | 140     | A     | V     |
|                                     |      |           |            |        |            |          |          |        |        |        |         |       | V     |
|                                     |      |           |            |        |            |          |          |        |        |        |         |       | V     |
| 802.11n<br>HT20<br>CH 06<br>2437MHz |      | 2383.78   | 53.77      | -20.23 | 74         | 41.23    | 27.63    | 15.77  | 30.86  | 358    | 114     | P     | H     |
|                                     |      | 2389.94   | 42.81      | -11.19 | 54         | 30.29    | 27.6     | 15.77  | 30.85  | 358    | 114     | A     | H     |
|                                     | *    | 2437      | 110.45     | -      | -          | 97.85    | 27.6     | 15.84  | 30.84  | 358    | 114     | P     | H     |
|                                     | *    | 2437      | 102.77     | -      | -          | 90.17    | 27.6     | 15.84  | 30.84  | 358    | 114     | A     | H     |
|                                     |      | 2484.18   | 54.49      | -19.51 | 74         | 41.93    | 27.47    | 15.91  | 30.82  | 358    | 114     | P     | H     |
|                                     |      | 2483.5    | 44.61      | -9.39  | 54         | 32.05    | 27.47    | 15.91  | 30.82  | 358    | 114     | A     | H     |
|                                     |      | 2357.74   | 54.06      | -19.94 | 74         | 41.54    | 27.67    | 15.73  | 30.88  | 351    | 170     | P     | V     |
|                                     |      | 2389.66   | 42.74      | -11.26 | 54         | 30.23    | 27.6     | 15.77  | 30.86  | 351    | 170     | A     | V     |
|                                     | *    | 2437      | 110.26     | -      | -          | 97.66    | 27.6     | 15.84  | 30.84  | 351    | 170     | P     | V     |
|                                     | *    | 2437      | 102.75     | -      | -          | 90.15    | 27.6     | 15.84  | 30.84  | 351    | 170     | A     | V     |
|                                     |      | 2484.39   | 53.69      | -20.31 | 74         | 41.13    | 27.47    | 15.91  | 30.82  | 351    | 170     | P     | V     |
|                                     |      | 2483.5    | 43.27      | -10.73 | 54         | 30.71    | 27.47    | 15.91  | 30.82  | 351    | 170     | A     | V     |



|                                               |                                                                                             |         |        |        |    |       |       |       |       |     |     |   |   |
|-----------------------------------------------|---------------------------------------------------------------------------------------------|---------|--------|--------|----|-------|-------|-------|-------|-----|-----|---|---|
| <b>802.11n<br/>HT20<br/>CH 11<br/>2462MHz</b> | *                                                                                           | 2462    | 110.52 | -      | -  | 97.94 | 27.53 | 15.88 | 30.83 | 353 | 124 | P | H |
|                                               | *                                                                                           | 2462    | 102.94 | -      | -  | 90.36 | 27.53 | 15.88 | 30.83 | 353 | 124 | A | H |
|                                               |                                                                                             | 2484    | 66.71  | -7.29  | 74 | 54.15 | 27.47 | 15.91 | 30.82 | 353 | 124 | P | H |
|                                               |                                                                                             | 2483.52 | 53.59  | -0.41  | 54 | 41.03 | 27.47 | 15.91 | 30.82 | 353 | 124 | A | H |
|                                               |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | H |
|                                               |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | H |
|                                               | *                                                                                           | 2462    | 110.41 | -      | -  | 97.83 | 27.53 | 15.88 | 30.83 | 400 | 170 | P | V |
|                                               | *                                                                                           | 2462    | 102.35 | -      | -  | 89.77 | 27.53 | 15.88 | 30.83 | 400 | 170 | A | V |
|                                               |                                                                                             | 2483.76 | 62.65  | -11.35 | 74 | 50.09 | 27.47 | 15.91 | 30.82 | 400 | 170 | P | V |
|                                               |                                                                                             | 2483.52 | 51.76  | -2.24  | 54 | 39.2  | 27.47 | 15.91 | 30.82 | 400 | 170 | A | V |
|                                               |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | V |
|                                               |                                                                                             |         |        |        |    |       |       |       |       |     |     |   | V |
| <b>Remark</b>                                 | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |         |        |        |    |       |       |       |       |     |     |   |   |



## 2.4GHz 2400~2483.5MHz

## WIFI 802.11n HT20 (Harmonic @ 3m)

| WIFI<br>Ant.<br>1+2                 | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-------------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11n<br>HT20<br>CH 01<br>2412MHz |                                                                                             | 4824                 | 38.19               | -35.81                  | 74                          | 56.45                     | 31.3                          | 8.5                    | 58.06                      | 100                  | 0                       | P                       | H               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                     |                                                                                             | 4824                 | 37.54               | -36.46                  | 74                          | 55.8                      | 31.3                          | 8.5                    | 58.06                      | 100                  | 0                       | P                       | V               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11n<br>HT20<br>CH 06<br>2437MHz |                                                                                             | 4874                 | 38.96               | -35.04                  | 74                          | 57.11                     | 31.3                          | 8.65                   | 58.1                       | 100                  | 0                       | P                       | H               |
|                                     |                                                                                             | 7311                 | 43.15               | -30.85                  | 74                          | 54.02                     | 36.2                          | 11.27                  | 58.34                      | 100                  | 0                       | P                       | H               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                     |                                                                                             | 4874                 | 37.78               | -36.22                  | 74                          | 55.93                     | 31.3                          | 8.65                   | 58.1                       | 100                  | 0                       | P                       | V               |
|                                     |                                                                                             | 7311                 | 42.71               | -31.29                  | 74                          | 53.58                     | 36.2                          | 11.27                  | 58.34                      | 100                  | 0                       | P                       | V               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11n<br>HT20<br>CH 11<br>2462MHz |                                                                                             | 4924                 | 37.94               | -36.06                  | 74                          | 55.91                     | 31.37                         | 8.8                    | 58.14                      | 100                  | 0                       | P                       | H               |
|                                     |                                                                                             | 7386                 | 43.53               | -30.47                  | 74                          | 54.07                     | 36.5                          | 11.28                  | 58.32                      | 100                  | 0                       | P                       | H               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                     |                                                                                             | 4924                 | 37.57               | -36.43                  | 74                          | 55.54                     | 31.37                         | 8.8                    | 58.14                      | 100                  | 0                       | P                       | V               |
|                                     |                                                                                             | 7386                 | 43.05               | -30.95                  | 74                          | 53.59                     | 36.5                          | 11.28                  | 58.32                      | 100                  | 0                       | P                       | V               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                              | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## 2.4GHz 2400~2483.5MHz

## WIFI 802.11n HT40 (Band Edge @ 3m)

| WIFI<br>Ant.<br>1+2                 | Note | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-------------------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11n<br>HT40<br>CH 03<br>2422MHz |      | 2389.8               | 60.53               | -13.47                  | 74                          | 48.01                     | 27.6                          | 15.77                  | 30.85                      | 328                  | 129                     | P                       | H               |
|                                     |      | 2389.94              | 53.24               | -0.76                   | 54                          | 40.72                     | 27.6                          | 15.77                  | 30.85                      | 328                  | 129                     | A                       | H               |
|                                     | *    | 2422                 | 108.36              | -                       | -                           | 95.78                     | 27.6                          | 15.82                  | 30.84                      | 328                  | 129                     | P                       | H               |
|                                     | *    | 2422                 | 100.94              | -                       | -                           | 88.36                     | 27.6                          | 15.82                  | 30.84                      | 328                  | 129                     | A                       | H               |
|                                     |      | 2484.11              | 54.64               | -19.36                  | 74                          | 42.08                     | 27.47                         | 15.91                  | 30.82                      | 328                  | 129                     | P                       | H               |
|                                     |      | 2483.9               | 45.7                | -8.3                    | 54                          | 33.14                     | 27.47                         | 15.91                  | 30.82                      | 328                  | 129                     | A                       | H               |
|                                     |      | 2389.94              | 59.61               | -14.39                  | 74                          | 47.09                     | 27.6                          | 15.77                  | 30.85                      | 360                  | 168                     | P                       | V               |
|                                     |      | 2389.94              | 51.4                | -2.6                    | 54                          | 38.88                     | 27.6                          | 15.77                  | 30.85                      | 360                  | 168                     | A                       | V               |
|                                     | *    | 2422                 | 106.22              | -                       | -                           | 93.64                     | 27.6                          | 15.82                  | 30.84                      | 360                  | 168                     | P                       | V               |
|                                     | *    | 2422                 | 98.75               | -                       | -                           | 86.17                     | 27.6                          | 15.82                  | 30.84                      | 360                  | 168                     | A                       | V               |
|                                     |      | 2486.98              | 54.48               | -19.52                  | 74                          | 41.92                     | 27.47                         | 15.91                  | 30.82                      | 360                  | 168                     | P                       | V               |
|                                     |      | 2485.37              | 44.87               | -9.13                   | 54                          | 32.31                     | 27.47                         | 15.91                  | 30.82                      | 360                  | 168                     | A                       | V               |
| 802.11n<br>HT40<br>CH 06<br>2437MHz |      | 2389.66              | 55.37               | -18.63                  | 74                          | 42.86                     | 27.6                          | 5.85                   | 30.86                      | 360                  | 116                     | P                       | H               |
|                                     |      | 2389.94              | 45.62               | -8.38                   | 54                          | 33.1                      | 27.6                          | 5.85                   | 30.85                      | 360                  | 116                     | A                       | H               |
|                                     |      | 2437                 | 108.9               | -                       | -                           | 96.3                      | 27.6                          | 5.92                   | 30.84                      | 360                  | 116                     | P                       | H               |
|                                     |      | 2437                 | 100.88              | -                       | -                           | 88.28                     | 27.6                          | 5.92                   | 30.84                      | 360                  | 116                     | A                       | H               |
|                                     |      | 2483.69              | 63.3                | -10.7                   | 74                          | 50.74                     | 27.47                         | 5.99                   | 30.82                      | 360                  | 116                     | P                       | H               |
|                                     |      | 2483.5               | 53.86               | -0.14                   | 54                          | 41.3                      | 27.47                         | 5.99                   | 30.82                      | 360                  | 116                     | A                       | H               |
|                                     |      | 2389.94              | 54.6                | -19.4                   | 74                          | 42.08                     | 27.6                          | 5.85                   | 30.85                      | 399                  | 170                     | P                       | V               |
|                                     |      | 2389.94              | 45.42               | -8.58                   | 54                          | 32.9                      | 27.6                          | 5.85                   | 30.85                      | 399                  | 170                     | A                       | V               |
|                                     |      | 2437                 | 108.25              | -                       | -                           | 95.65                     | 27.6                          | 5.92                   | 30.84                      | 399                  | 170                     | P                       | V               |
|                                     |      | 2437                 | 100.58              | -                       | -                           | 87.98                     | 27.6                          | 5.92                   | 30.84                      | 399                  | 170                     | A                       | V               |
|                                     |      | 2483.83              | 56.45               | -17.55                  | 74                          | 43.89                     | 27.47                         | 5.99                   | 30.82                      | 399                  | 170                     | P                       | V               |
|                                     |      | 2483.5               | 47.83               | -6.17                   | 54                          | 35.27                     | 27.47                         | 5.99                   | 30.82                      | 399                  | 170                     | A                       | V               |



|                                               |                                                                                             |         |        |        |    |       |       |       |       |     |     |   |   |
|-----------------------------------------------|---------------------------------------------------------------------------------------------|---------|--------|--------|----|-------|-------|-------|-------|-----|-----|---|---|
| <b>802.11n<br/>HT40<br/>CH 09<br/>2452MHz</b> |                                                                                             | 2312.1  | 53.43  | -20.57 | 74 | 40.84 | 27.83 | 15.66 | 30.9  | 356 | 117 | P | H |
|                                               |                                                                                             | 2361.94 | 44.55  | -9.45  | 54 | 32.03 | 27.67 | 15.73 | 30.88 | 356 | 117 | A | H |
|                                               | *                                                                                           | 2452    | 104.49 | -      | -  | 91.86 | 27.6  | 15.86 | 30.83 | 356 | 117 | P | H |
|                                               | *                                                                                           | 2452    | 97.01  | -      | -  | 84.38 | 27.6  | 15.86 | 30.83 | 356 | 117 | A | H |
|                                               |                                                                                             | 2483.83 | 62.1   | -11.9  | 74 | 49.54 | 27.47 | 15.91 | 30.82 | 356 | 117 | P | H |
|                                               |                                                                                             | 2483.55 | 53.43  | -0.57  | 54 | 40.87 | 27.47 | 15.91 | 30.82 | 356 | 117 | A | H |
|                                               |                                                                                             | 2322.74 | 53.86  | -20.14 | 74 | 41.31 | 27.77 | 15.67 | 30.89 | 400 | 171 | P | V |
|                                               |                                                                                             | 2359.84 | 44.56  | -9.44  | 54 | 32.04 | 27.67 | 15.73 | 30.88 | 400 | 171 | A | V |
|                                               | *                                                                                           | 2452    | 104.75 | -      | -  | 92.12 | 27.6  | 15.86 | 30.83 | 400 | 171 | P | V |
|                                               | *                                                                                           | 2452    | 96.75  | -      | -  | 84.12 | 27.6  | 15.86 | 30.83 | 400 | 171 | A | V |
|                                               |                                                                                             | 2486.14 | 58.11  | -15.89 | 74 | 45.55 | 27.47 | 15.91 | 30.82 | 400 | 171 | P | V |
|                                               |                                                                                             | 2485.72 | 49.56  | -4.44  | 54 | 37    | 27.47 | 15.91 | 30.82 | 400 | 171 | A | V |
| <b>Remark</b>                                 | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |         |        |        |    |       |       |       |       |     |     |   |   |



## 2.4GHz 2400~2483.5MHz

## WIFI 802.11n HT40 (Harmonic @ 3m)

| WIFI<br>Ant.<br>1+2                 | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-------------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11n<br>HT40<br>CH 03<br>2422MHz |                                                                                             | 4844                 | 38.88               | -35.12                  | 74                          | 57.1                      | 31.3                          | 8.56                   | 58.08                      | 100                  | 0                       | P                       | H               |
|                                     |                                                                                             | 7266                 | 43.33               | -30.67                  | 74                          | 54.22                     | 36.2                          | 11.26                  | 58.35                      | 100                  | 0                       | P                       | H               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                     |                                                                                             | 4844                 | 37.44               | -36.56                  | 74                          | 55.66                     | 31.3                          | 8.56                   | 58.08                      | 100                  | 0                       | P                       | V               |
|                                     |                                                                                             | 7266                 | 43.92               | -30.08                  | 74                          | 54.81                     | 36.2                          | 11.26                  | 58.35                      | 100                  | 0                       | P                       | V               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11n<br>HT40<br>CH 06<br>2437MHz |                                                                                             | 4874                 | 38.64               | -35.36                  | 74                          | 56.79                     | 31.3                          | 8.65                   | 58.1                       | 100                  | 0                       | P                       | H               |
|                                     |                                                                                             | 7311                 | 43.21               | -30.79                  | 74                          | 54.08                     | 36.2                          | 11.27                  | 58.34                      | 100                  | 0                       | P                       | H               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                     |                                                                                             | 4874                 | 38.12               | -35.88                  | 74                          | 56.27                     | 31.3                          | 8.65                   | 58.1                       | 100                  | 0                       | P                       | V               |
|                                     |                                                                                             | 7311                 | 43.68               | -30.32                  | 74                          | 54.55                     | 36.2                          | 11.27                  | 58.34                      | 100                  | 0                       | P                       | V               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11n<br>HT40<br>CH 09<br>2452MHz |                                                                                             | 4904                 | 37.49               | -36.51                  | 74                          | 55.54                     | 31.33                         | 8.74                   | 58.12                      | 100                  | 0                       | P                       | H               |
|                                     |                                                                                             | 7356                 | 42.75               | -31.25                  | 74                          | 53.5                      | 36.3                          | 11.28                  | 58.33                      | 100                  | 0                       | P                       | H               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                     |                                                                                             | 4904                 | 38.01               | -35.99                  | 74                          | 56.06                     | 31.33                         | 8.74                   | 58.12                      | 100                  | 0                       | P                       | V               |
|                                     |                                                                                             | 7356                 | 43.2                | -30.8                   | 74                          | 53.95                     | 36.3                          | 11.28                  | 58.33                      | 100                  | 0                       | P                       | V               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                     |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                              | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## 2.4GHz 2400~2483.5MHz

## Emission below 1GHz

## 2.4GHz WIFI 802.11n HT40 (LF)

| WIFI Ant.                       | Note                                                                       | Frequency | Level      | Over Limit | Limit Line | Read Level | Antenna Factor | Path Loss | Preamp Factor | Ant Pos | Table Pos | Peak Avg. | Pol.    |
|---------------------------------|----------------------------------------------------------------------------|-----------|------------|------------|------------|------------|----------------|-----------|---------------|---------|-----------|-----------|---------|
| 1+2                             |                                                                            | ( MHz )   | ( dBμV/m ) | ( dB )     | ( dBμV/m ) | ( dBμV )   | ( dB/m )       | ( dB )    | ( dB )        | ( cm )  | ( deg )   | ( P/A )   | ( H/V ) |
| 2.4GHz<br>802.11n<br>HT40<br>LF |                                                                            | 30.97     | 24.93      | -15.07     | 40         | 32.06      | 24.81          | 0.68      | 32.62         | -       | -         | P         | H       |
|                                 |                                                                            | 249.22    | 19.65      | -26.35     | 46         | 31.63      | 18.49          | 2.04      | 32.51         | -       | -         | P         | H       |
|                                 |                                                                            | 304.51    | 25.02      | -20.98     | 46         | 36.05      | 19.3           | 2.21      | 32.54         | -       | -         | P         | H       |
|                                 |                                                                            | 407.33    | 24.86      | -21.14     | 46         | 32.75      | 22.15          | 2.51      | 32.55         | -       | -         | P         | H       |
|                                 |                                                                            | 573.2     | 26.98      | -19.02     | 46         | 30.4       | 26.17          | 3         | 32.59         | -       | -         | P         | H       |
|                                 |                                                                            | 894.27    | 34.14      | -11.86     | 46         | 33.29      | 28.81          | 3.72      | 31.68         | 100     | 0         | P         | H       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | H       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | H       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | H       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | H       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | H       |
|                                 |                                                                            | 32.91     | 22.77      | -17.23     | 40         | 31.04      | 23.65          | 0.7       | 32.62         | -       | -         | P         | V       |
|                                 |                                                                            | 210.42    | 19.99      | -23.51     | 43.5       | 35.44      | 15.17          | 1.88      | 32.5          | -       | -         | P         | V       |
|                                 |                                                                            | 303.54    | 23.27      | -22.73     | 46         | 34.3       | 19.3           | 2.21      | 32.54         | -       | -         | P         | V       |
|                                 |                                                                            | 421.88    | 25.36      | -20.64     | 46         | 32.73      | 22.64          | 2.54      | 32.55         | -       | -         | P         | V       |
|                                 |                                                                            | 645.95    | 29.6       | -16.4      | 46         | 32.29      | 26.68          | 3.14      | 32.51         | -       | -         | P         | V       |
|                                 |                                                                            | 741.98    | 32.76      | -13.24     | 46         | 33.63      | 28.14          | 3.31      | 32.32         | 100     | 0         | P         | V       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V       |
|                                 |                                                                            |           |            |            |            |            |                |           |               |         |           |           | V       |
| Remark                          | 1. No other spurious found.<br>2. All results are PASS against limit line. |           |            |            |            |            |                |           |               |         |           |           |         |



**Note symbol**

|     |                                                                                                                                                          |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| *   | <b>Fundamental Frequency</b> which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency. |
| !   | Test result is <b>over limit</b> line.                                                                                                                   |
| P/A | <b>Peak</b> or <b>Average</b>                                                                                                                            |
| H/V | <b>Horizontal</b> or <b>Vertical</b>                                                                                                                     |



A calculation example for radiated spurious emission is shown as below:

| WIFI    | Note | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Path   | Preamp | Ant    | Table   | Peak    | Pol.    |
|---------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant.    |      |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
| 1       |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 802.11b |      | 2390      | 55.45      | -18.55 | 74         | 54.51    | 32.22    | 4.58   | 35.86  | 103    | 308     | P       | H       |
| CH 01   |      |           |            |        |            |          |          |        |        |        |         |         |         |
| 2412MHz |      | 2390      | 43.54      | -10.46 | 54         | 42.6     | 32.22    | 4.58   | 35.86  | 103    | 308     | A       | H       |

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) =  
Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

**For Peak Limit @ 2390MHz:**

1. Level(dBμV/m)  
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)  
= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)  
= 55.45 (dBμV/m)
2. Over Limit(dB)  
= Level(dBμV/m) – Limit Line(dBμV/m)  
= 55.45(dBμV/m) – 74(dBμV/m)  
= -18.55(dB)

**For Average Limit @ 2390MHz:**

1. Level(dBμV/m)  
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)  
= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)  
= 43.54 (dBμV/m)
2. Over Limit(dB)  
= Level(dBμV/m) – Limit Line(dBμV/m)  
= 43.54(dBμV/m) – 54(dBμV/m)  
= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.



## Appendix D. Radiated Spurious Emission Plots

|                 |                                        |                     |         |
|-----------------|----------------------------------------|---------------------|---------|
| Test Engineer : | Watt Tseng, Karl Hou, and BigShow Wang | Temperature :       | 24~26°C |
|                 |                                        | Relative Humidity : | 47~58%  |

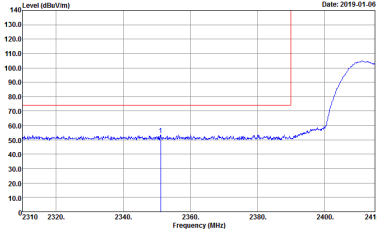
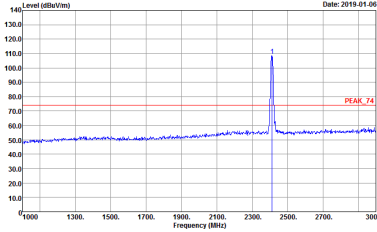
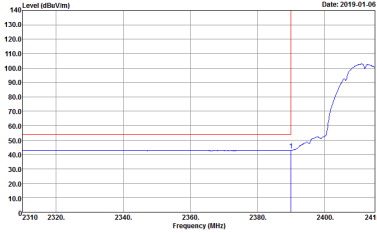
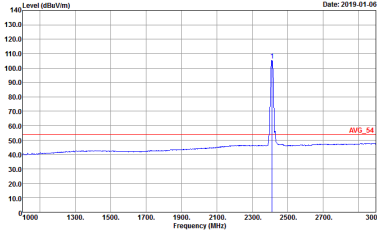
### Note symbol

|    |                       |
|----|-----------------------|
| -L | Low channel location  |
| -R | High channel location |

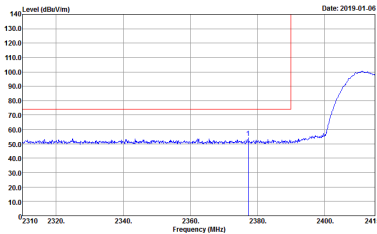
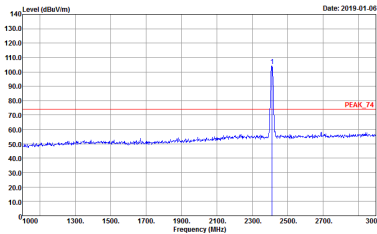
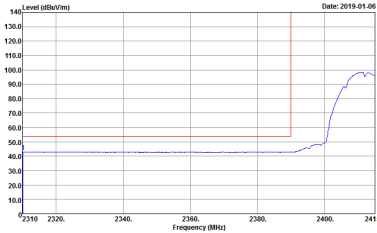
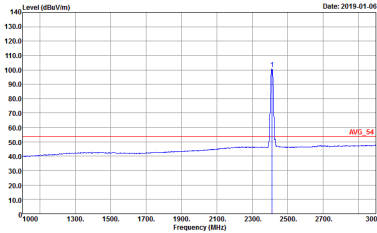


## 2.4GHz 2400~2483.5MHz

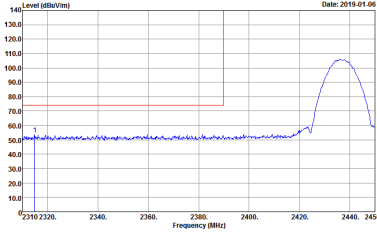
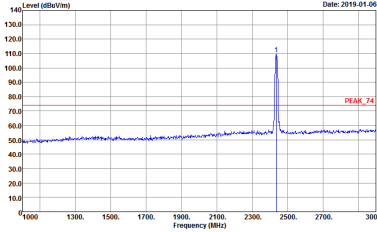
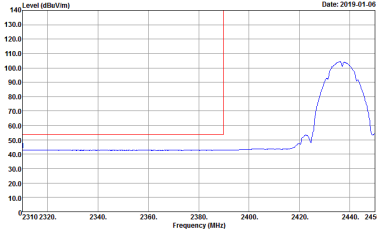
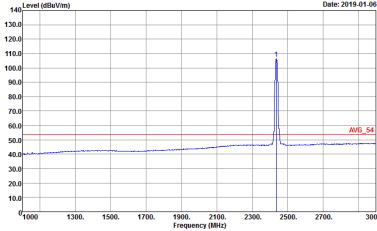
## WIFI 802.11b (Band Edge @ 3m)

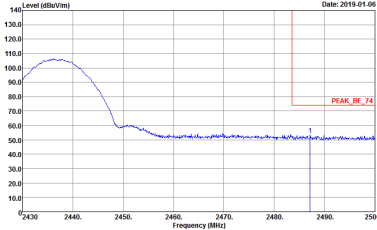
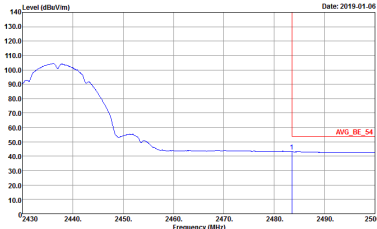
| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                    |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11b CH01 2412MHz                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                    |
| 1    | Horizontal                                                                                                                                                                                                                                                           | Fundamental                                                                                                                                                                                                                                                        |
| Peak |  <p>Site : 03CH15-HY<br/>Condition : PEAK_BE_74 3m 91200_15_1620 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 802018<br/>Mode : 12</p> |  <p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 802018<br/>Mode : 12</p> |
| Avg. |  <p>Site : 03CH15-HY<br/>Condition : AVG_BE_54 3m 91200_15_1620 HORIZONTAL<br/>RBW:1000.000KHz VBW:0.010KHz SWT:Auto<br/>Detector : Peak<br/>Project : 802018<br/>Mode : 12</p>   |  <p>Site : 03CH15-HY<br/>Condition : AVG_54 3m 91200_15_1620 HORIZONTAL<br/>RBW:1000.000KHz VBW:0.010KHz SWT:Auto<br/>Detector : Peak<br/>Project : 802018<br/>Mode : 12</p>   |



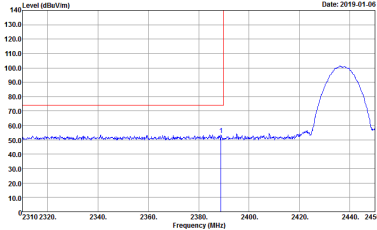
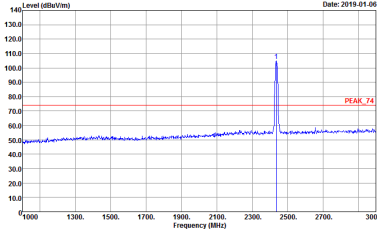
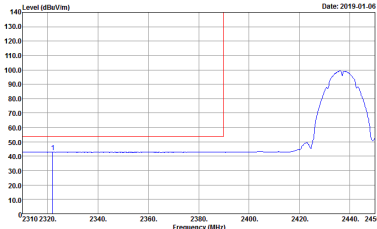
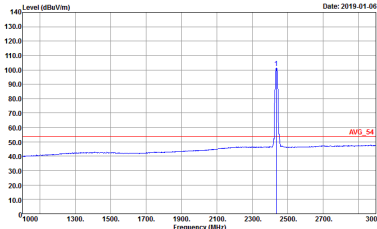
| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11b CH01 2412MHz                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |
| 1    | Vertical                                                                                                                                                                                                                                                                      | Fundamental                                                                                                                                                                                                                                                                 |
| Peak | <div><p>Site : 03CH15-HY<br/>Condition : PEAK_BE_74 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 12</p></div>  | <div><p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 12</p></div>  |
| Avg. | <div><p>Site : 03CH15-HY<br/>Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 12</p></div> | <div><p>Site : 03CH15-HY<br/>Condition : AVG_54 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 12</p></div> |

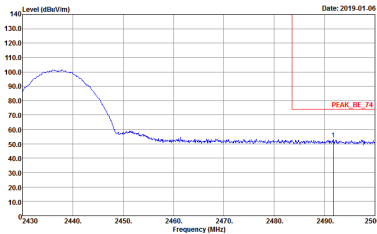
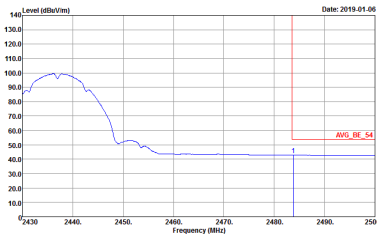


| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                     |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11b CH06 2437MHz - L                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                     |
| 1    | Horizontal                                                                                                                                                                                                                                                            | Fundamental                                                                                                                                                                                                                                                         |
| Peak |  <p>Site : 03CH15-HY<br/>Condition : PEAK_BE_74 3m 91200_15_1620 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 13</p>  |  <p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 13</p>  |
| Avg. |  <p>Site : 03CH15-HY<br/>Condition : AVG_BE_54 3m 91200_15_1620 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 13</p> |  <p>Site : 03CH15-HY<br/>Condition : AVG_54 3m 91200_15_1620 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 13</p> |

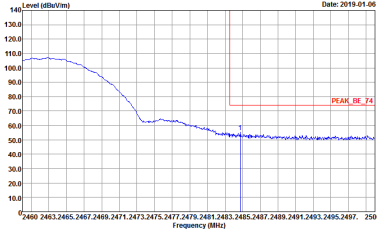
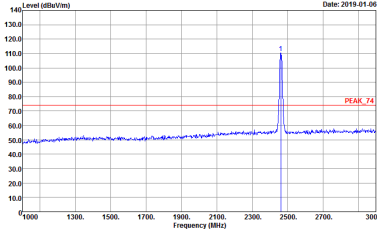
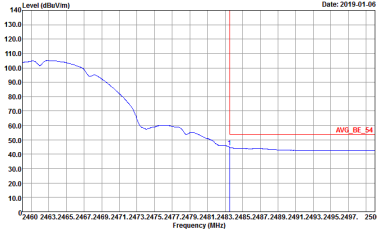
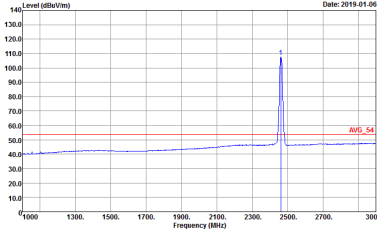
| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                                                                                     |             |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| ANT  | 802.11b CH06 2437MHz - R                                                                                                                                                                                                                                                                 |             |
| 1    | Horizontal                                                                                                                                                                                                                                                                               | Fundamental |
| Peak |  <p>           Site : 03CH15-HY<br/>           Condition : PEAK_BE_74 3m 91200_15_1620 HORIZONTAL<br/>           Detector : Peak<br/>           Project : 8D2018<br/>           Mode : 13         </p>  | Left blank  |
| Avg. |  <p>           Site : 03CH15-HY<br/>           Condition : AVG_BE_54 3m 91200_15_1620 HORIZONTAL<br/>           Detector : Peak<br/>           Project : 8D2018<br/>           Mode : 13         </p> | Left blank  |



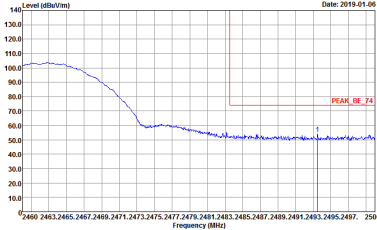
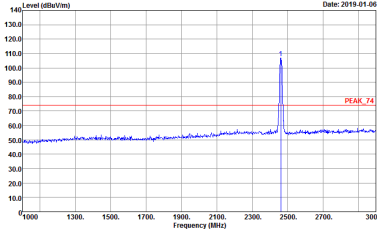
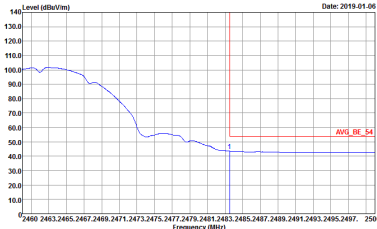
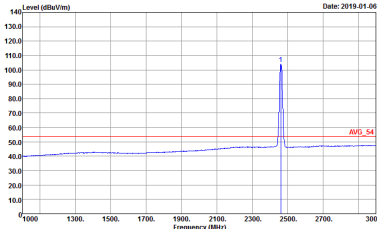
| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11b CH06 2437MHz - L                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                             |
| 1    | Vertical                                                                                                                                                                                                                                                                      | Fundamental                                                                                                                                                                                                                                                                 |
| Peak | <div><p>Site : 03CH15-HY<br/>Condition : PEAK_BE_74 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 13</p></div>  | <div><p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 13</p></div>  |
| Avg. | <div><p>Site : 03CH15-HY<br/>Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 13</p></div> | <div><p>Site : 03CH15-HY<br/>Condition : AVG_54 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 13</p></div> |

| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                                                                                   |             |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| ANT  | 802.11b CH06 2437MHz - R                                                                                                                                                                                                                                                               |             |
| 1    | Vertical                                                                                                                                                                                                                                                                               | Fundamental |
| Peak |  <p>           Site : 03CH15-HY<br/>           Condition : PEAK_BE_74 3m 91200_15_1620 VERTICAL<br/>           Detector : Peak<br/>           Project : 8D2018<br/>           Mode : 13         </p>  | Left blank  |
| Avg. |  <p>           Site : 03CH15-HY<br/>           Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL<br/>           Detector : Peak<br/>           Project : 8D2018<br/>           Mode : 13         </p> | Left blank  |



| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                     |                                                                                                                                                                                                                        |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11b CH11 2462MHz                                                                                                                                                                                                     |                                                                                                                                                                                                                        |
| 1    | Horizontal                                                                                                                                                                                                               | Fundamental                                                                                                                                                                                                            |
| Peak |  <p>Site : 03CH15-HY<br/>Condition : PEAK_BE_74 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 14</p>  |  <p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 14</p>  |
|      |  <p>Site : 03CH15-HY<br/>Condition : AVG_BE_54 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 14</p> |  <p>Site : 03CH15-HY<br/>Condition : AVG_54 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 14</p> |
| Avg. |                                                                                                                                                                                                                          |                                                                                                                                                                                                                        |

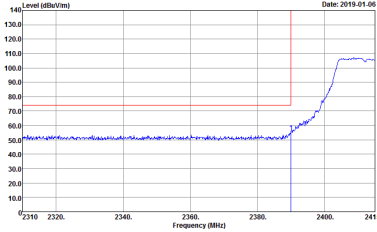
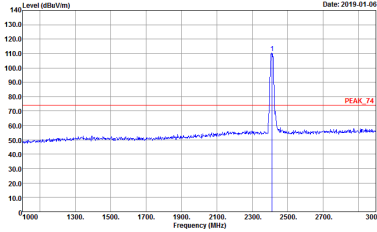
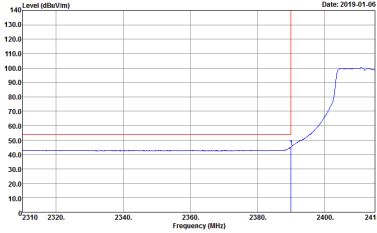
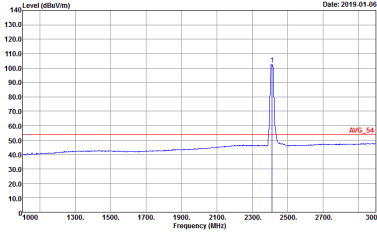


| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                   |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11b CH11 2462MHz                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                   |
| 1    | Vertical                                                                                                                                                                                                                                                            | Fundamental                                                                                                                                                                                                                                                       |
| Peak |  <p>Site : 03CH15-HY<br/>Condition : PEAK_BE_74 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 14</p>  |  <p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 14</p>  |
| Avg. |  <p>Site : 03CH15-HY<br/>Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 14</p> |  <p>Site : 03CH15-HY<br/>Condition : AVG_54 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 14</p> |

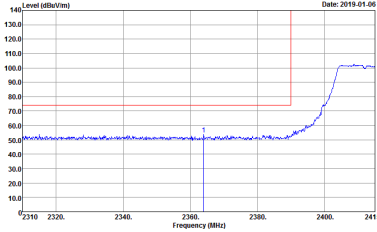
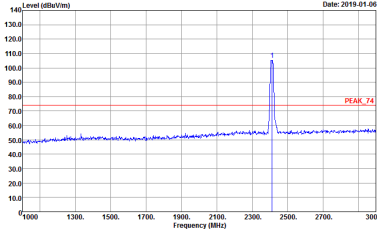
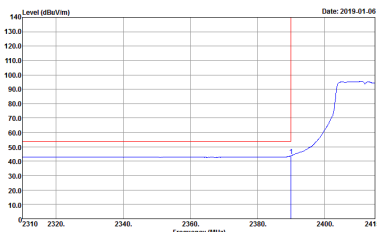
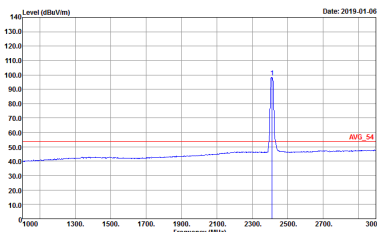


## 2.4GHz 2400~2483.5MHz

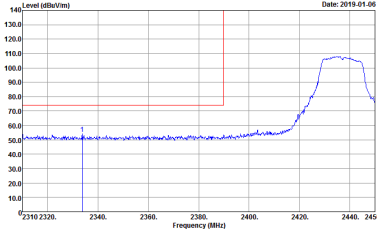
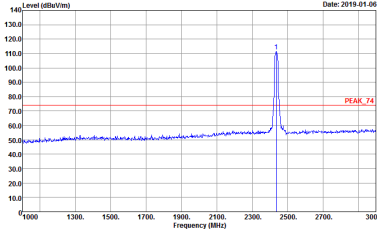
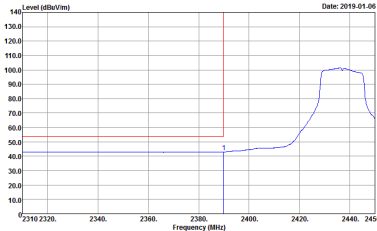
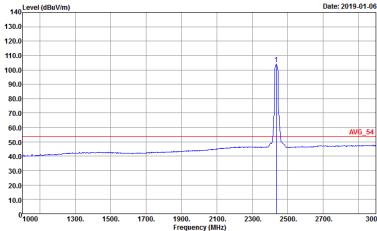
## WIFI 802.11g (Band Edge @ 3m)

| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                    |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11g CH01 2412MHz                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                    |
| 1    | Horizontal                                                                                                                                                                                                                                                           | Fundamental                                                                                                                                                                                                                                                        |
| Peak |  <p>Site : 03CH15-HY<br/>Condition : PEAK_BE_74 3m 91200_15_1620 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 15</p> |  <p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 15</p> |
| Avg. |  <p>Site : 03CH15-HY<br/>Condition : AVG_BE_54 3m 91200_15_1620 HORIZONTAL<br/>RBW:1000.000KHz VBW:0.010KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 15</p>   |  <p>Site : 03CH15-HY<br/>Condition : AVG_54 3m 91200_15_1620 HORIZONTAL<br/>RBW:1000.000KHz VBW:0.010KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 15</p>   |

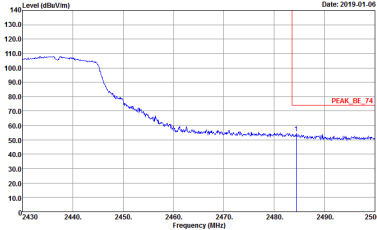
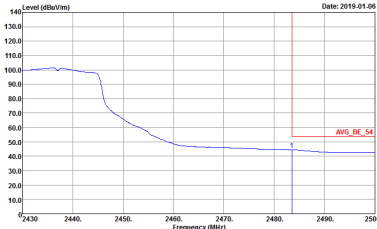


| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11g CH01 2412MHz                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |
| 1    | Vertical                                                                                                                                                                                                                                                                      | Fundamental                                                                                                                                                                                                                                                                 |
| Peak | <div><p>Site : 03CH15-HY<br/>Condition : PEAK_BE_74 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 15</p></div>  | <div><p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 15</p></div>  |
| Avg. | <div><p>Site : 03CH15-HY<br/>Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 15</p></div> | <div><p>Site : 03CH15-HY<br/>Condition : AVG_54 3m 91200_15_1620 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 15</p></div> |

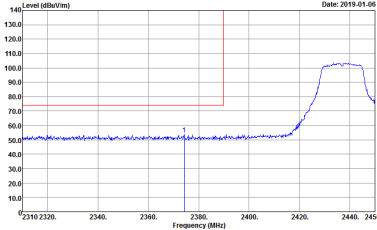
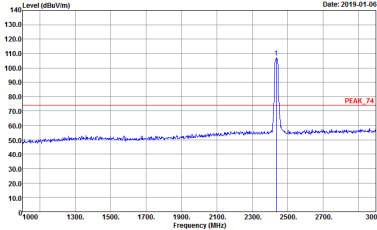
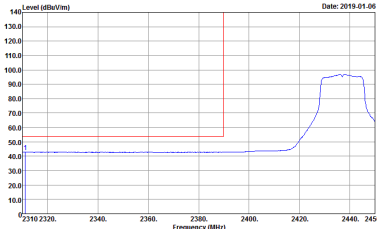
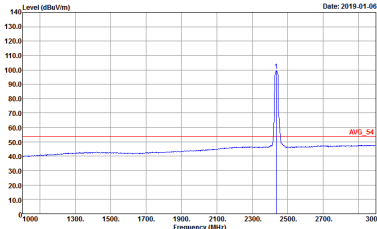


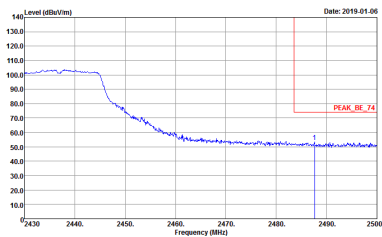
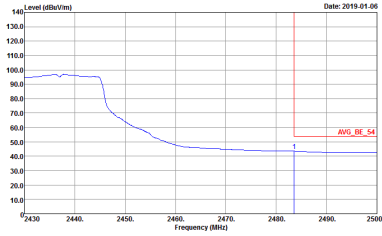
| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                               |                                                                                                                                                                                                                                  |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11g CH06 2437MHz - L                                                                                                                                                                                                           |                                                                                                                                                                                                                                  |
| 1    | Horizontal                                                                                                                                                                                                                         | Fundamental                                                                                                                                                                                                                      |
| Peak | <div><p>Site : 03CH15-HY<br/>Condition : PEAK_BE_74 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 16</p></div>  | <div><p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 16</p></div>  |
| Avg. | <div><p>Site : 03CH15-HY<br/>Condition : AVG_BE_54 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 16</p></div> | <div><p>Site : 03CH15-HY<br/>Condition : AVG_54 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 16</p></div> |



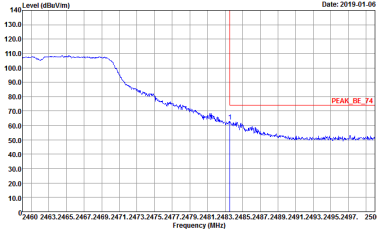
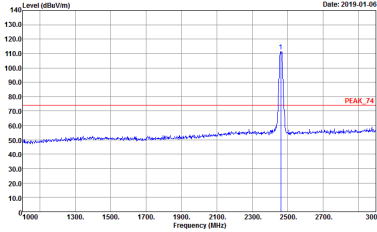
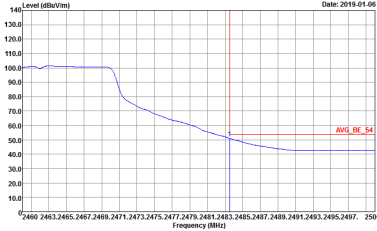
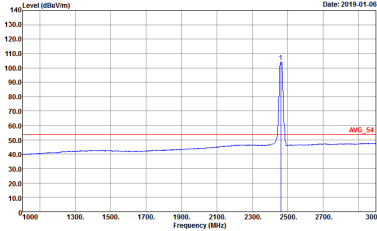
| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                               |             |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| ANT  | 802.11g CH06 2437MHz - R                                                                                                                                                                                                           |             |
| 1    | Horizontal                                                                                                                                                                                                                         | Fundamental |
| Peak | <div><p>Site : 03CH15-HY<br/>Condition : PEAK_BE_74 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 16</p></div>  | Left blank  |
| Avg. | <div><p>Site : 03CH15-HY<br/>Condition : AVG_BE_54 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 16</p></div> | Left blank  |



| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                   |                                                                                                                                                                                                                      |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11g CH06 2437MHz - L                                                                                                                                                                                               |                                                                                                                                                                                                                      |
| 1    | Vertical                                                                                                                                                                                                               | Fundamental                                                                                                                                                                                                          |
| Peak |  <p>Site : 03CH15-HY<br/>Condition : PEAK_BE_74 3m 91200_15_1620 VERTICAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 16</p>  |  <p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 VERTICAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 16</p>  |
| Avg. |  <p>Site : 03CH15-HY<br/>Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 16</p> |  <p>Site : 03CH15-HY<br/>Condition : AVG_54 3m 91200_15_1620 VERTICAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 16</p> |

| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                                                                                   |             |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| ANT  | 802.11g CH06 2437MHz - R                                                                                                                                                                                                                                                               |             |
| 1    | Vertical                                                                                                                                                                                                                                                                               | Fundamental |
| Peak |  <p>           Site : 03CH15-HY<br/>           Condition : PEAK_BE_74 3m 91200_15_1620 VERTICAL<br/>           Detector : Peak<br/>           Project : 8D2018<br/>           Mode : 16         </p>  | Left blank  |
| Avg. |  <p>           Site : 03CH15-HY<br/>           Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL<br/>           Detector : Peak<br/>           Project : 8D2018<br/>           Mode : 16         </p> | Left blank  |



| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                               |                                                                                                                                                                                                                                  |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11g CH11 2462MHz                                                                                                                                                                                                               |                                                                                                                                                                                                                                  |
| 1    | Horizontal                                                                                                                                                                                                                         | Fundamental                                                                                                                                                                                                                      |
| Peak | <div><p>Site : 03CH15-HY<br/>Condition : PEAK_BE_74 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 17</p></div>  | <div><p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 17</p></div>  |
| Avg. | <div><p>Site : 03CH15-HY<br/>Condition : AVG_BE_54 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 17</p></div> | <div><p>Site : 03CH15-HY<br/>Condition : AVG_54 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 17</p></div> |



| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                |                                                                                                                                  |
|------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11g CH11 2462MHz                                                                                                                |                                                                                                                                  |
| 1    | Vertical                                                                                                                            | Fundamental                                                                                                                      |
| Peak | <p>Site : 03CH15-HY<br/>Condition : PEAK_BE_74 3m 91200_15_1620 VERTICAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 17</p> | <p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 VERTICAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 17</p> |
| Avg. | <p>Site : 03CH15-HY<br/>Condition : AVG_BE_54 3m 91200_15_1620 VERTICAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 17</p>  | <p>Site : 03CH15-HY<br/>Condition : AVG_54 3m 91200_15_1620 VERTICAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 17</p>  |



2.4GHz 2400~2483.5MHz  
WIFI 802.11b (Harmonic @ 3m)

| WIFI         | 2.4GHz 2400~2483.5MHz Harmonic @ 3m                                                                                                           |                                                                                                                                             |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| ANT          | 802.11b CH01 2412MHz                                                                                                                          |                                                                                                                                             |
| 1            | Horizontal                                                                                                                                    | Vertical                                                                                                                                    |
| Peak<br>Avg. | <div><p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 12</p></div> | <div><p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 VERTICAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 12</p></div> |



| WIFI                       | 2.4GHz 2400~2483.5MHz Harmonic @ 3m                                                                                                 |                                                                                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| ANT                        | 802.11b CH06 2437MHz                                                                                                                |                                                                                                                                   |
| 1                          | Horizontal                                                                                                                          | Vertical                                                                                                                          |
| <b>Peak</b><br><b>Avg.</b> | <p>Site : 03CH15-11Y<br/>Condition : PEAK_74 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 13</p> | <p>Site : 03CH15-11Y<br/>Condition : PEAK_74 3m 91200_15_1620 VERTICAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 13</p> |
|                            |                                                                                                                                     |                                                                                                                                   |

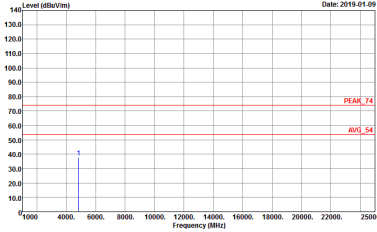
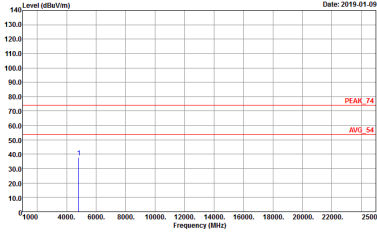


| WIFI                       | 2.4GHz 2400~2483.5MHz Harmonic @ 3m                                                                                                 |                                                                                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| ANT                        | 802.11b CH11 2462MHz                                                                                                                |                                                                                                                                   |
| 1                          | Horizontal                                                                                                                          | Vertical                                                                                                                          |
| <b>Peak</b><br><b>Avg.</b> | <p>Site : 03CH15-11Y<br/>Condition : PEAK_74 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 14</p> | <p>Site : 03CH15-11Y<br/>Condition : PEAK_74 3m 91200_15_1620 VERTICAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 14</p> |
|                            |                                                                                                                                     |                                                                                                                                   |



2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

| WIFI         | 2.4GHz 2400~2483.5MHz Harmonic @ 3m                                                                                                                                                                                            |                                                                                                                                                                                                                               |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT          | 802.11g CH01 2412MHz                                                                                                                                                                                                           |                                                                                                                                                                                                                               |
| 1            | Horizontal                                                                                                                                                                                                                     | Vertical                                                                                                                                                                                                                      |
| Peak<br>Avg. | <div><p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 15</p></div> | <div><p>Site : 03CH15-HY<br/>Condition : PEAK_74 3m 91200_15_1620 VERTICAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 15</p></div> |

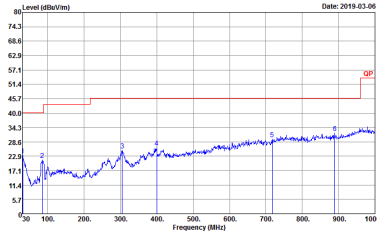
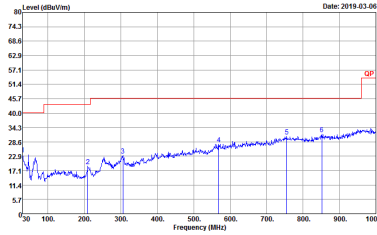


| WIFI                       | 2.4GHz 2400~2483.5MHz Harmonic @ 3m                                                                                                 |                                                                                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| ANT                        | 802.11g CH06 2437MHz                                                                                                                |                                                                                                                                   |
| 1                          | Horizontal                                                                                                                          | Vertical                                                                                                                          |
| <b>Peak</b><br><b>Avg.</b> | <p>Site : 03CH15-11Y<br/>Condition : PEAK_74 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 16</p> | <p>Site : 03CH15-11Y<br/>Condition : PEAK_74 3m 91200_15_1620 VERTICAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 16</p> |
|                            |                                                                                                                                     |                                                                                                                                   |



| WIFI                       | 2.4GHz 2400~2483.5MHz Harmonic @ 3m                                                                                                 |                                                                                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| ANT                        | 802.11g CH11 2462MHz                                                                                                                |                                                                                                                                   |
| 1                          | Horizontal                                                                                                                          | Vertical                                                                                                                          |
| <b>Peak</b><br><b>Avg.</b> | <p>Site : 03CH15-11Y<br/>Condition : PEAK_74 3m 91200_15_1620 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 17</p> | <p>Site : 03CH15-11Y<br/>Condition : PEAK_74 3m 91200_15_1620 VERTICAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 17</p> |
|                            |                                                                                                                                     |                                                                                                                                   |

**Emission below 1GHz**
**2.4GHz WIFI 802.11g (LF)**

| WIFI         | 2.4GHz 2400~2483.5MHz                                                                                                                                                                                            |                                                                                                                                                                                                                 |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT          | 802.11g LF                                                                                                                                                                                                       |                                                                                                                                                                                                                 |
| 1            | Horizontal                                                                                                                                                                                                       | Vertical                                                                                                                                                                                                        |
| QP /<br>Peak |  <p>Site : 03CH15-HY<br/>Condition : QP 3m B1LOG_15_41912 HORIZONTAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 18</p> |  <p>Site : 03CH15-HY<br/>Condition : QP 3m B1LOG_15_41912 VERTICAL<br/>Detector : Peak<br/>Project : 8D2018<br/>Mode : 18</p> |
|              |                                                                                                                                                                                                                  |                                                                                                                                                                                                                 |