



# FCC RADIO TEST REPORT

**FCC ID** : 2AEM4-71213573  
**Equipment** : Wireless router/access point  
**Brand Name** : eero  
**Model Name** : S010001  
**Applicant** : eero LLC  
660 3rd Street, 4th Floor, San Francisco, CA 94107  
**Manufacturer** : eero LLC  
660 3rd Street, 4th Floor, San Francisco, CA 94107  
**Standard** : FCC Part 15 Subpart C §15.247

The product was received on Aug. 10, 2021 and testing was started from Aug. 11, 2021 and completed on Oct. 19, 2021. We, Sporton International (USA) Inc., 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 test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (USA) Inc., the test report shall not be reproduced except in full.

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Approved by: Neil Kao

***Sporton International (USA) Inc.***

1175 Montague Expressway, Milpitas, CA 95035



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## History of this test report

| Report No.   | Version | Description                         | Issue Date    |
|--------------|---------|-------------------------------------|---------------|
| FR210727001B | 01      | Initial issue of report             | Nov. 17, 2021 |
| FR210727001B | 02      | Revise some content of descriptions | Dec. 16, 2021 |
|              |         |                                     |               |
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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>0.33 dB at<br>7356.000 MHz |
| 3.6           | 15.207                | AC Conducted Emission                              | Pass               | Under limit<br>10.48 dB at<br>0.492 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 product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.

# 1 General Description

## 1.1 Product Feature of Equipment Under Test

The EUT is an indoor AP with radios including Bluetooth - LE, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n/ac/ax, 802.15.4 (Zigbee), equipped with integrated antennas configured below:

| Antenna configuration |                                         |                                  |
|-----------------------|-----------------------------------------|----------------------------------|
| Antenna Type          | <b>WLAN 2.4GHz</b>                      |                                  |
|                       | <Ant. 6>: Flexible PCB Antenna          |                                  |
|                       | <Ant. 3>: Flexible PCB Antenna          |                                  |
|                       | <b>WLAN 5GHz</b>                        |                                  |
|                       | <Ant. 4>: Flexible PCB Antenna          |                                  |
|                       | <Ant. 5>: Flexible PCB Antenna          |                                  |
|                       | <b>Bluetooth</b> : Flexible PCB Antenna |                                  |
|                       | <b>Zigbee</b> : Flexible PCB Antenna    |                                  |
| Antenna information   |                                         |                                  |
| 2400 MHz ~ 2483.5 MHz | Peak Gain (dBi)                         | <Ant. 6>: 4.85<br><Ant. 3>: 2.88 |

**Remark:** The above EUT's information is declared by the manufacturer. Please refer to Comments and Explanations in report summary.

| Specification of Accessories |            |      |            |         |
|------------------------------|------------|------|------------|---------|
| Adapter 1                    | Brand Name | eero | Model Name | C210001 |
| Adapter 2                    | Brand Name | eero | Model Name | C210003 |
| Adapter 3                    | Brand Name | eero | Model Name | C210004 |
| Adapter 4                    | Brand Name | eero | Model Name | C210005 |

**Remark:** The manufacturer declares that all the power supplies listed are electrically identical from one another, the only difference between all the models are the plugs designed for use in different countries. All the test is performed with only one power supply, model C210001 as shown in this report.

## 1.2 Modification of EUT

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



### 1.3 Testing Location

|                    |                                                                   |
|--------------------|-------------------------------------------------------------------|
| Test Site          | Sporton International (USA) Inc.                                  |
| Test Site Location | 1175 Montague Expressway, Milpitas, CA 95035<br>TEL : 408 9043300 |
| Test Site No.      | <b>Sporton Site No.</b><br>TH01-CA, CO01-CA, 03CH02-CA            |

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

### 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 v05r02
- ♦ 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 without any deviation during the test.
2. This EUT has also been tested and shown compliance 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).

Radiated measurements are performed in one orientation which is plane X according to the prescribed placement of the device in normal operation declared by the manufacturer.

- 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

All modulation schemes/data rate are verified by conducted power test case, and the modulation schemes with highest power is used for all test cases. The final test items are considering the modulation schemes and the worst data rates as the table below.

The manufacturer declares that this product would only operate in 2Tx CDD mode, hence all the test cases are performed as instructed.

| Specification | MCS index /Data Rate |
|---------------|----------------------|
| 802.11b       | 1 Mbps               |
| 802.11g       | 6 Mbps               |
| 802.11n HT20  | MCS0                 |
| 802.11n HT40  | MCS0                 |

RF test channels are listed in the following table:

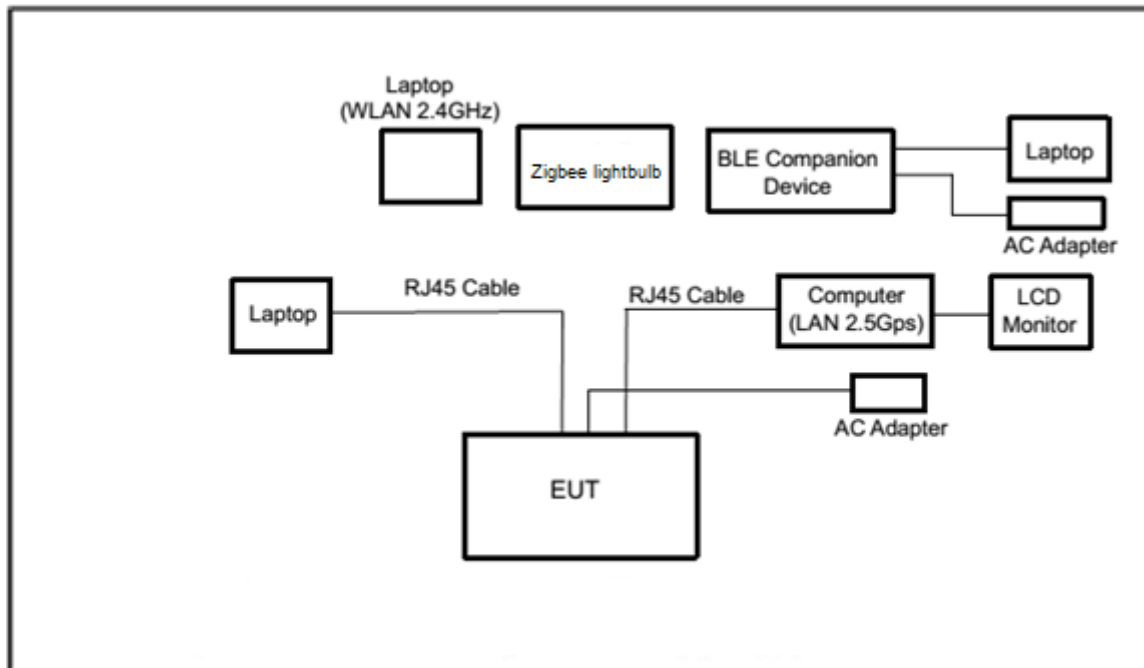
|       | 2400-2483.5 MHz |         |              |              |
|-------|-----------------|---------|--------------|--------------|
|       | 802.11b         | 802.11g | 802.11n HT20 | 802.11n HT40 |
| Ch. # | 01              | 01      | 01           | 03           |
|       | 02              | 02      | 02           | -            |
|       | 03              | 03      | 03           | -            |
|       | 06              | 06      | 06           | 06           |
|       | 09              | 09      | 09           | -            |
|       | 10              | 10      | 10           | -            |
|       | 11              | 11      | 11           | 09           |

AC Conducted Emission Test Cases are listed in the following table:

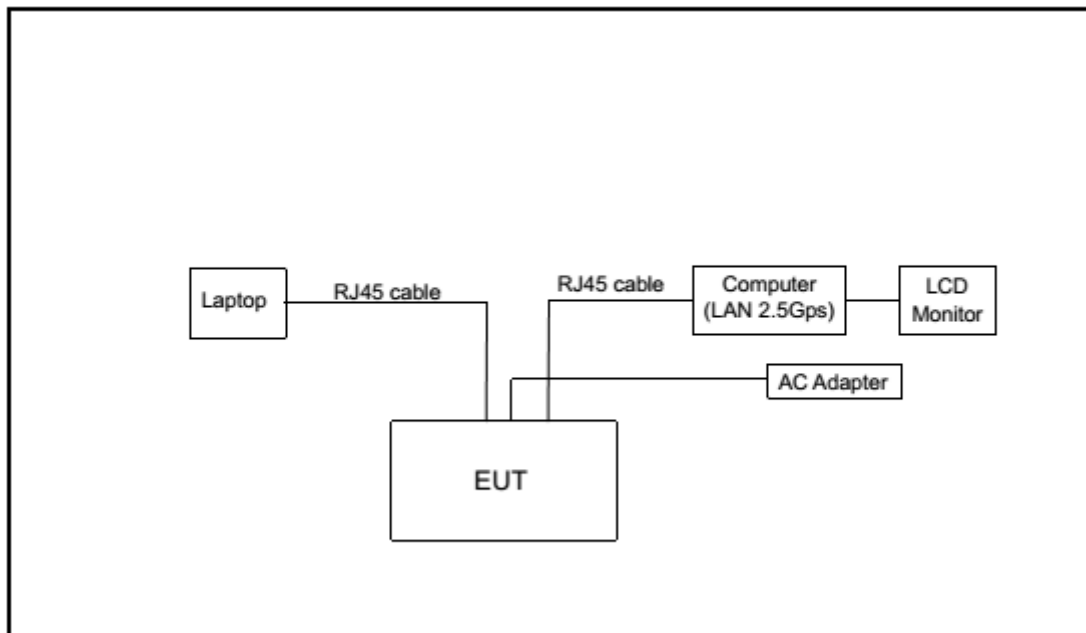
| AC Conducted Emission Test Cases                                                                      |                                                                                      |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| AC Conducted Emission                                                                                 | Mode 1 :WLAN (2.4GHz) Link + Zigbee Link + LAN 1 Link + LAN 2 Link + Adapter         |
|                                                                                                       | Mode 2 :WLAN (2.4GHz) Link + Bluetooth - LE Link + LAN 1 Link + LAN 2 Link + Adapter |
| <b>Remark:</b> The worst case of conducted emission is mode 1; only the test data of it was reported. |                                                                                      |

## 2.3 Connection Diagram of Test System

### <AC Conducted Emission Mode>



### <Radiated Emission Mode>



## 2.4 Support Unit used in test configuration and system

| Item | Equipment             | Brand Name | Model Name                                         | FCC ID        | Data Cable | Power Cord                                                 |
|------|-----------------------|------------|----------------------------------------------------|---------------|------------|------------------------------------------------------------|
| 1.   | Notebook              | Acer       | PS548 G1                                           | FCC DoC       | N/A        | AC I/P:<br>Unshielded, 1.2 m<br>DC O/P:<br>Shielded, 1.8 m |
| 2.   | Notebook              | HP         | 14-dq1043cl                                        | TX2-RTL8822CE | N/A        | AC I/P:<br>Unshielded, 1.2 m<br>DC O/P:<br>Shielded, 1.8 m |
| 3.   | Computer              | Fractal    | FD-C-DEF7A-01<br>(NETINTX550TR<br>Intel X550T2BLK) | FCC DoC       | N/A        | Unshielded, 1.2 m                                          |
| 4.   | LCD Monitor           | Samsung    | LS27E310HZG/ZA                                     | FCC DoC       | N/A        | Unshielded, 1.2m                                           |
| 5.   | Light Bulb for Zigbee | Philips    | Hue                                                | N/A           | N/A        | N/A                                                        |

## 2.5 EUT Operation Test Setup

The RF test items, utility “QRCT V4.0” 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 10 dB attenuator.

*Offset(dB) = RF cable loss(dB) + attenuator factor(dB).*

*= 4.2 + 10 = 14.2 (dB)*

### 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 the maximum power setting and enable the EUT to transmit continuously.
4. For 6 dB bandwidth measurement, the spectrum analyzer's resolution bandwidth (RBW) is set to 100 kHz; video bandwidth is set to 300 kHz. 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 video bandwidth is set to  $\geq 3 * RBW$ .
6. Measure and record the results in the test report.

##### 3.1.4 Test Setup

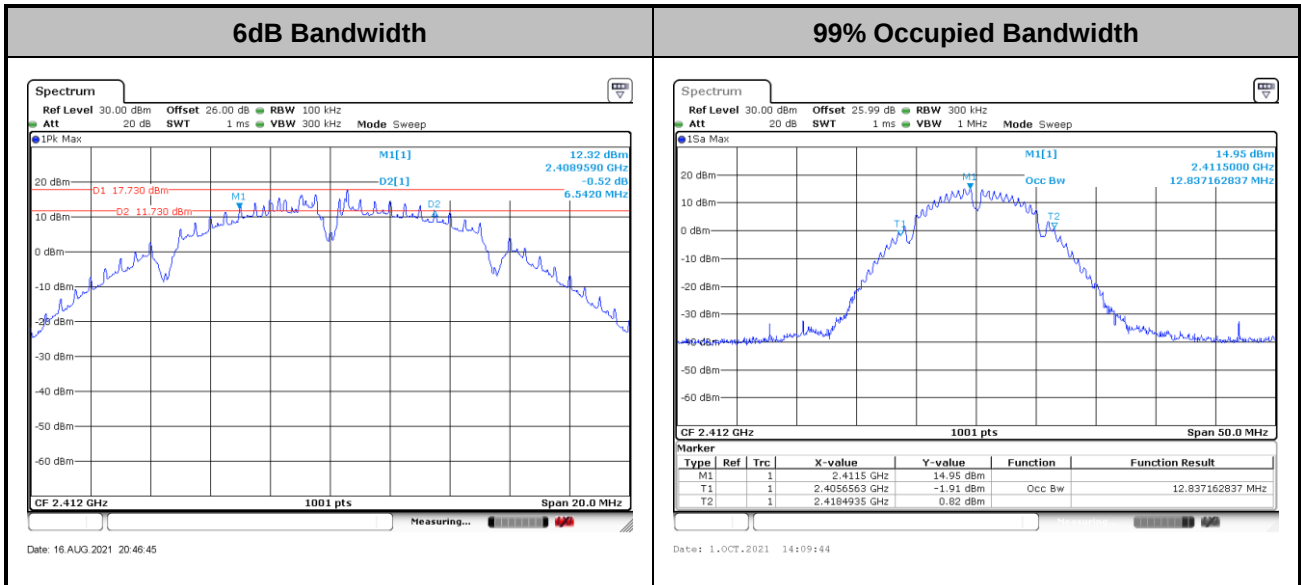


##### 3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.

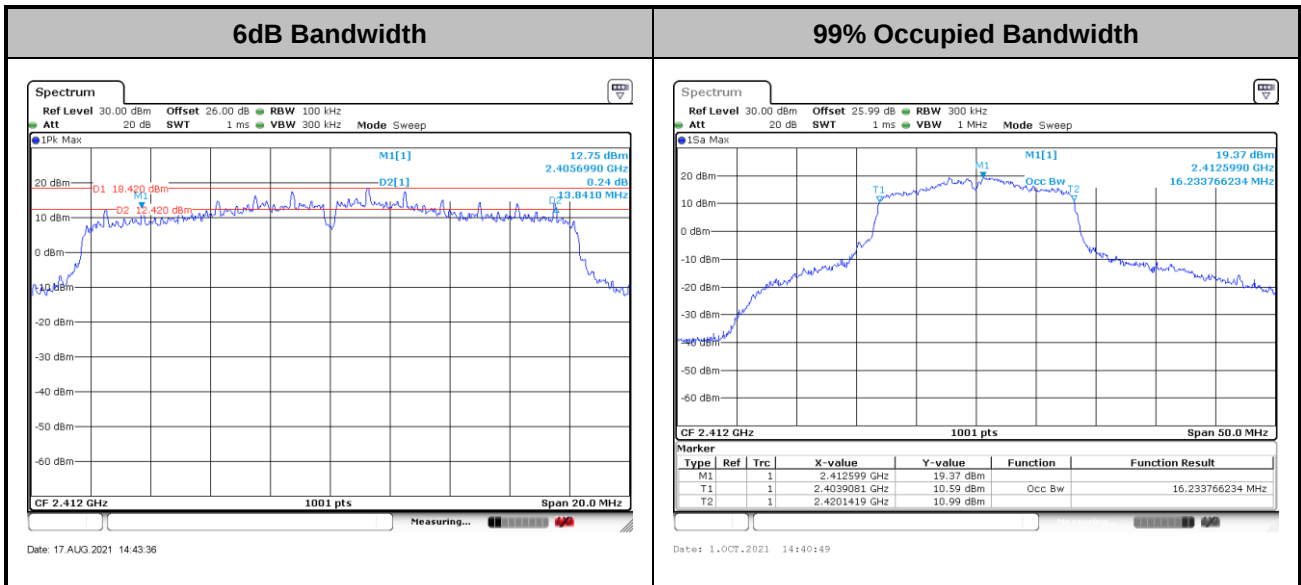


## 802.11b CH01



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

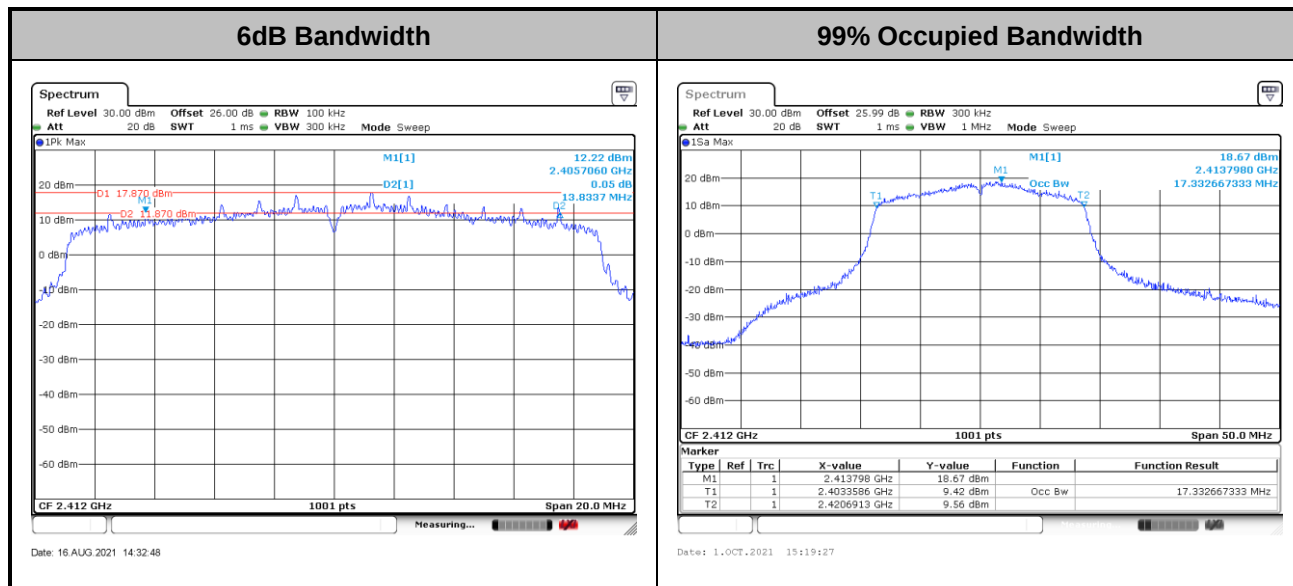
## 802.11g CH01



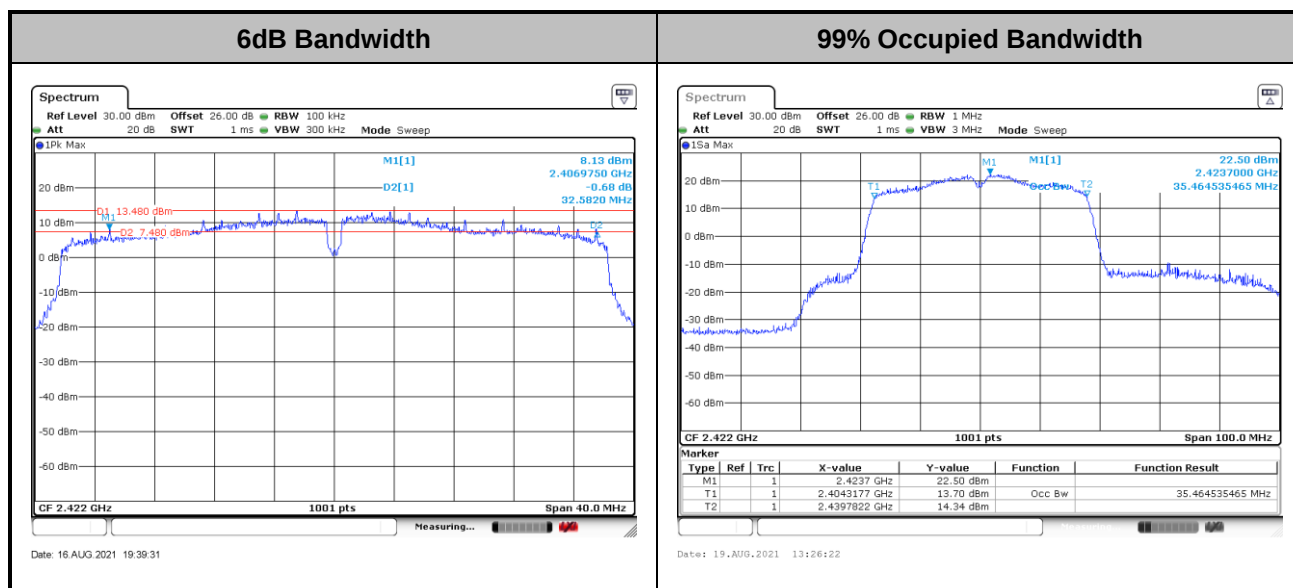
Note: The occupied channel bandwidth is maintained within the band of operation.



## 802.11n HT20 CH01



## 802.11n HT40 CH03



## 3.2 Output Power Measurement

### 3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5 MHz, the limit for output power is 30 dBm. If transmitting antenna with directional gain greater than 6 dBi 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 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

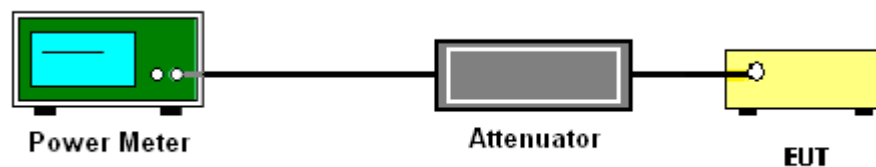
### 3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

### 3.2.3 Test Procedures

1. For Average Power, the testing follows ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G
2. 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.
3. Set the maximum power setting and enable the EUT to transmit continuously.
4. Measure the conducted output power and record the results in the test report.
5. 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 Average Output Power

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 8 dBm in any 3 kHz band at any time interval of continuous transmission.

#### 3.3.2 Measuring Instruments

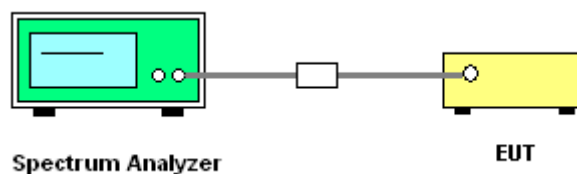
See list of measuring equipment of this test report.

#### 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 the maximum power setting and enable the EUT to 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.

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

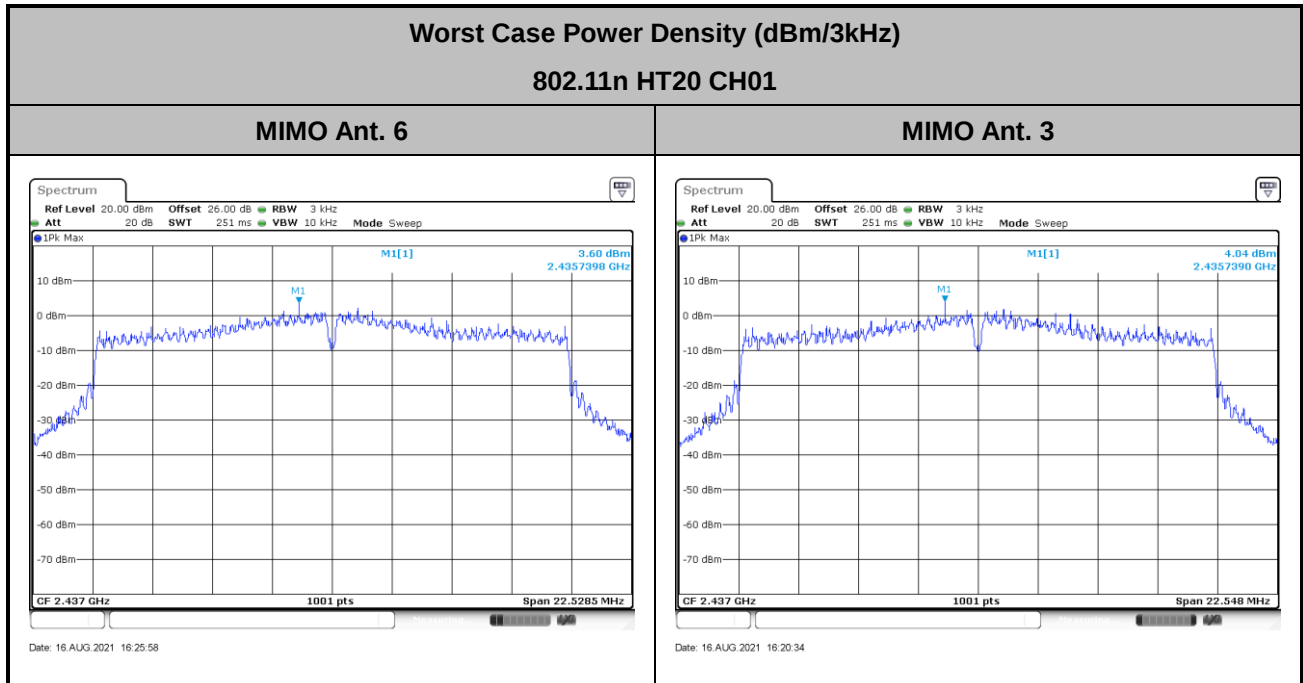
#### 3.3.4 Test Setup





### 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.

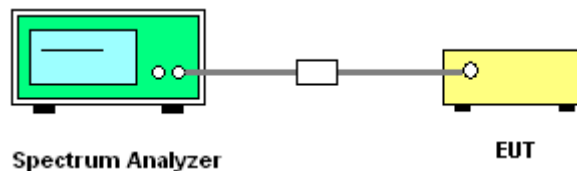
#### 3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.4.3 Test Procedures

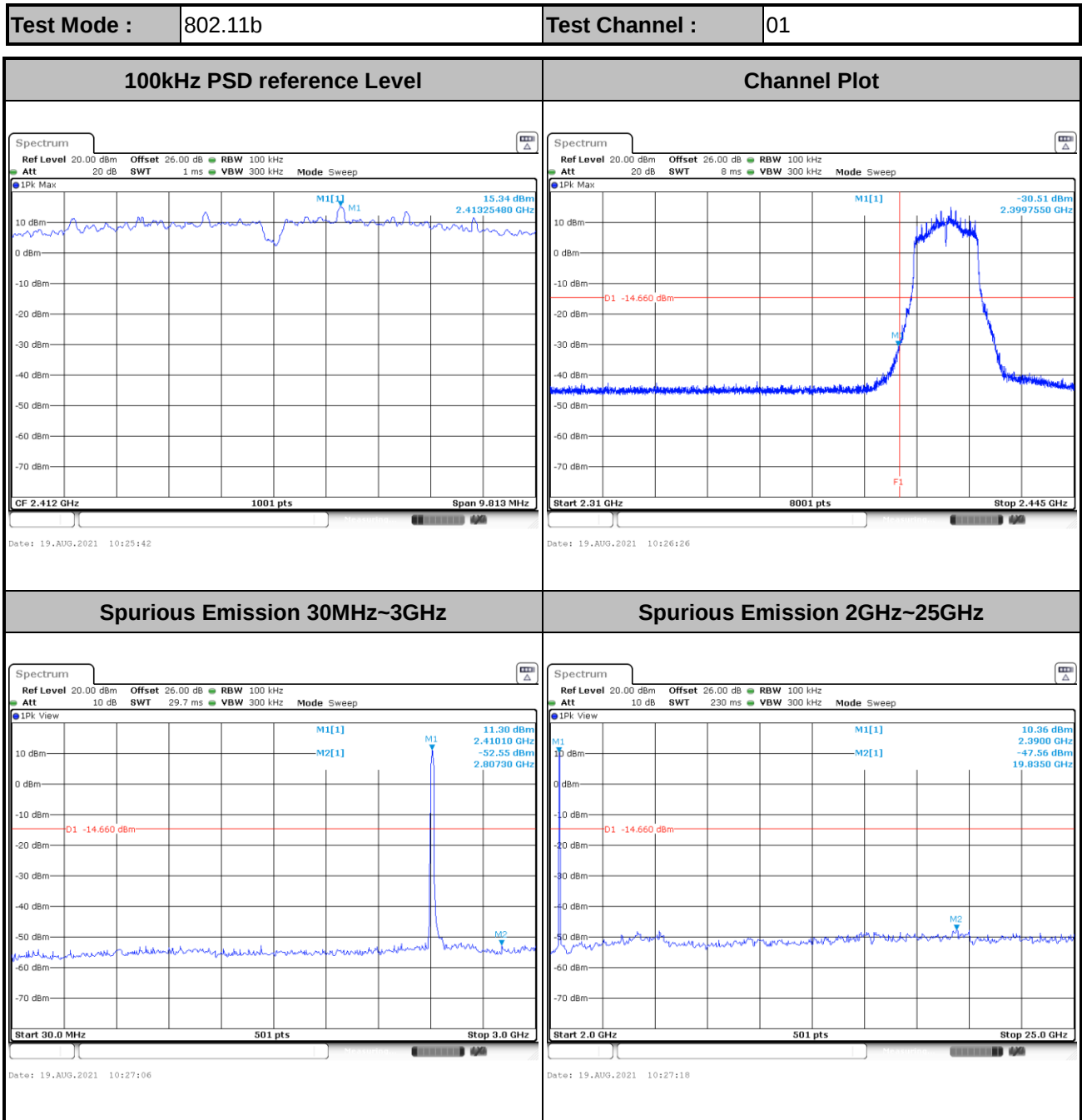
1. The testing follows the ANSI C63.10 Section 11.11.1 General and 11.11.3 Emission level measurement.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to 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

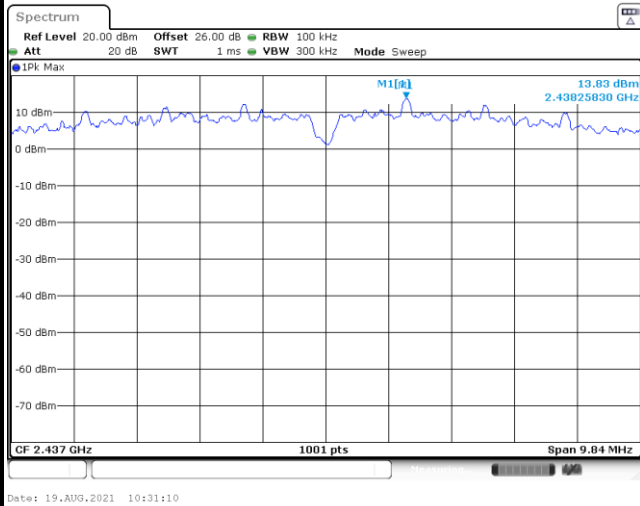
Test result of Ant. 6





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

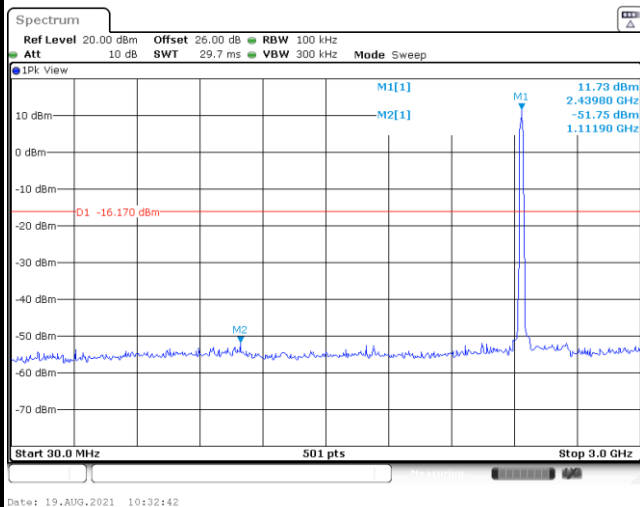
## 100kHz PSD reference Level



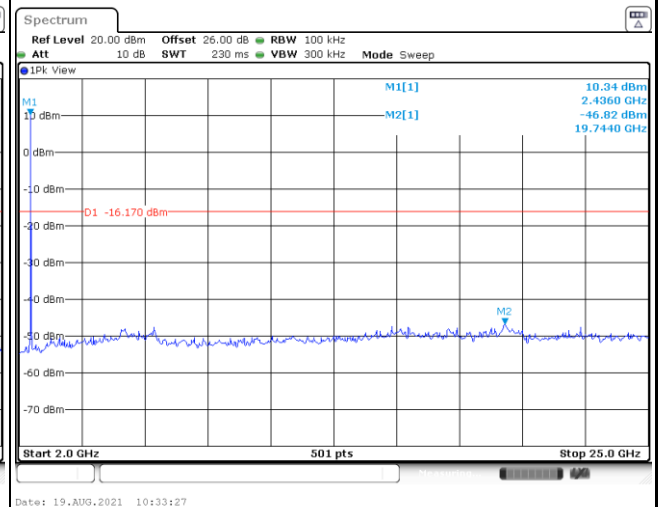
## Channel Plot

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## Spurious Emission 30MHz~3GHz



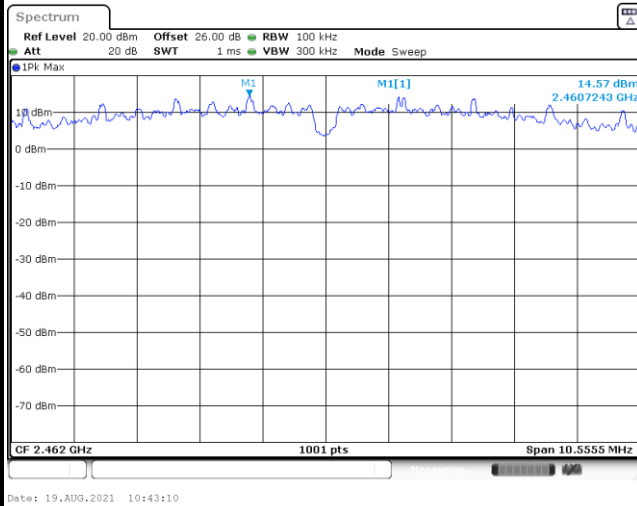
## Spurious Emission 2GHz~25GHz



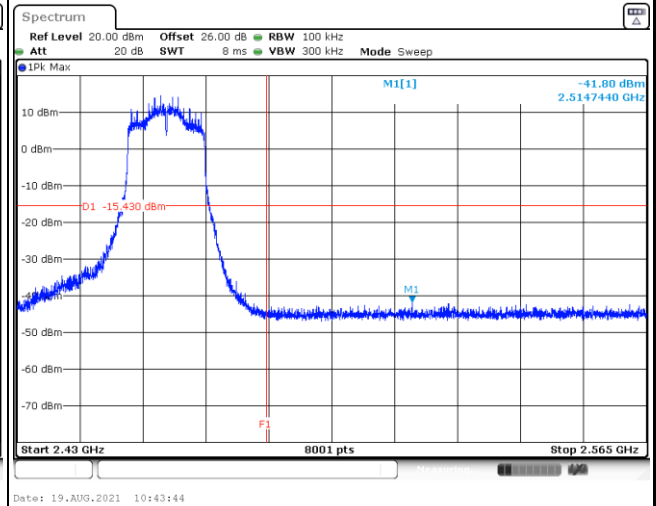


|             |         |                |    |
|-------------|---------|----------------|----|
| Test Mode : | 802.11b | Test Channel : | 11 |
|-------------|---------|----------------|----|

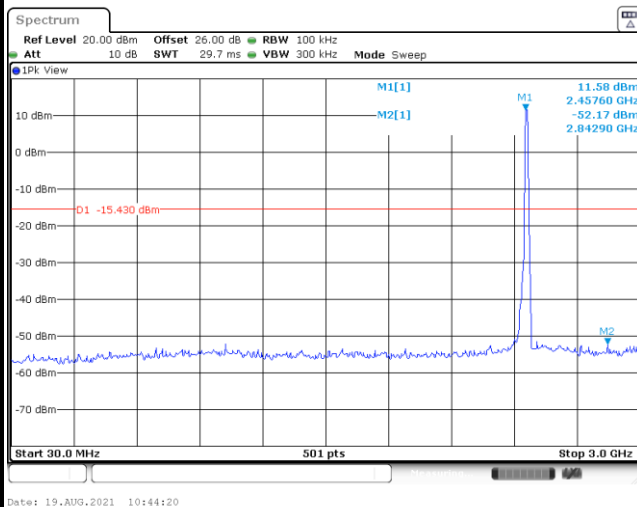
## 100kHz PSD reference Level



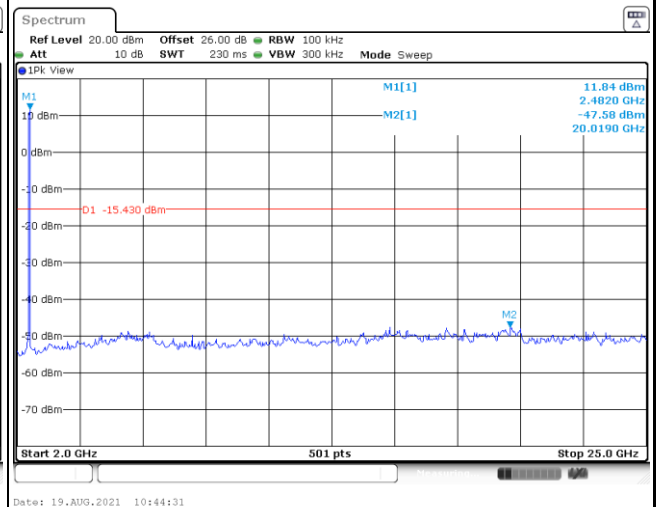
## Channel Plot



## Spurious Emission 30MHz~3GHz



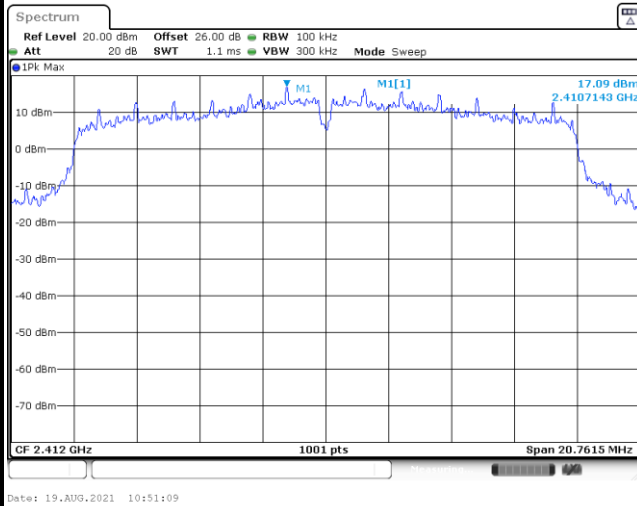
## Spurious Emission 2GHz~25GHz



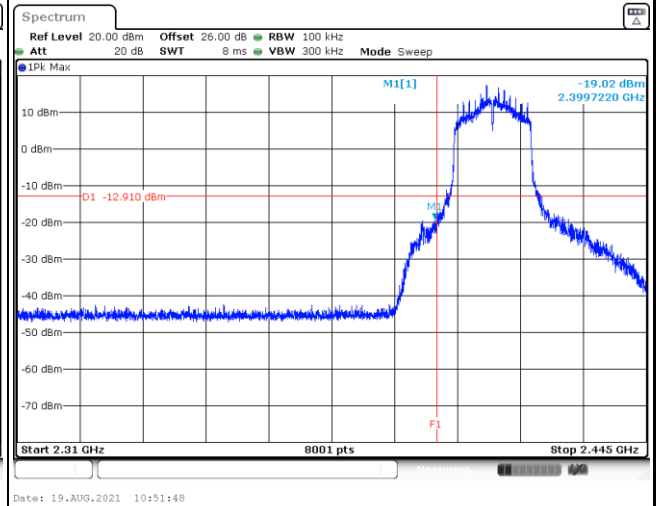


|             |         |                |    |
|-------------|---------|----------------|----|
| Test Mode : | 802.11g | Test Channel : | 01 |
|-------------|---------|----------------|----|

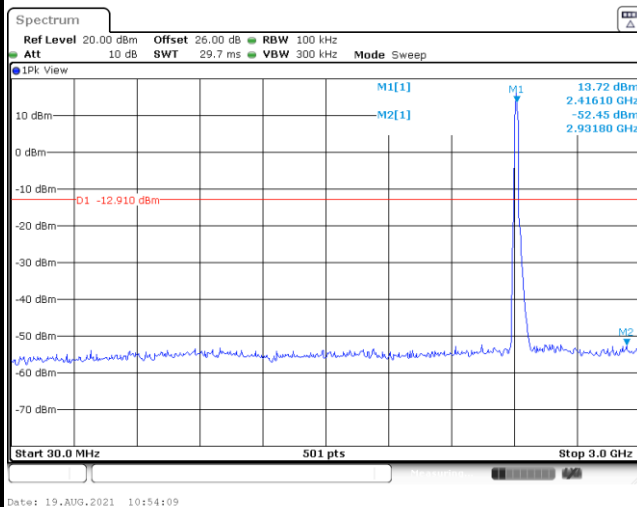
## 100kHz PSD reference Level



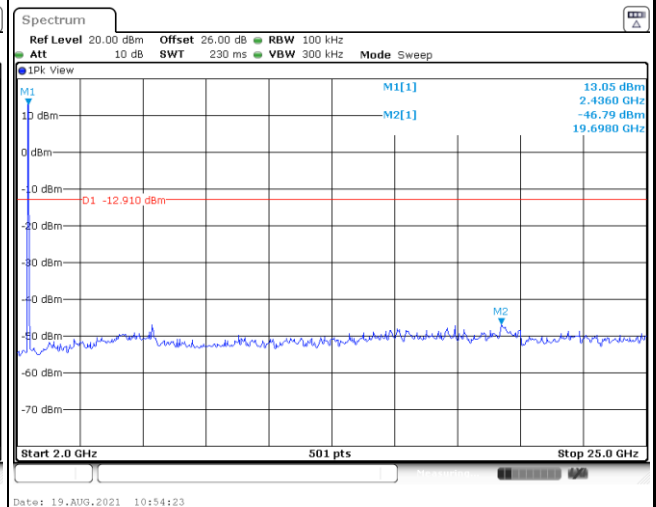
## Channel Plot



## Spurious Emission 30MHz~3GHz



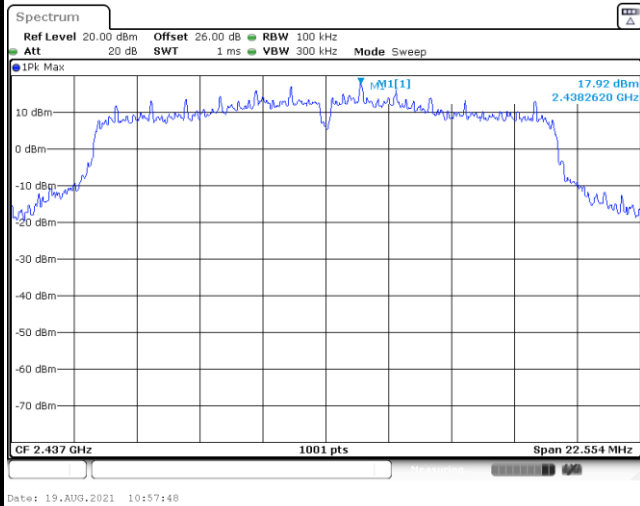
## Spurious Emission 2GHz~25GHz





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

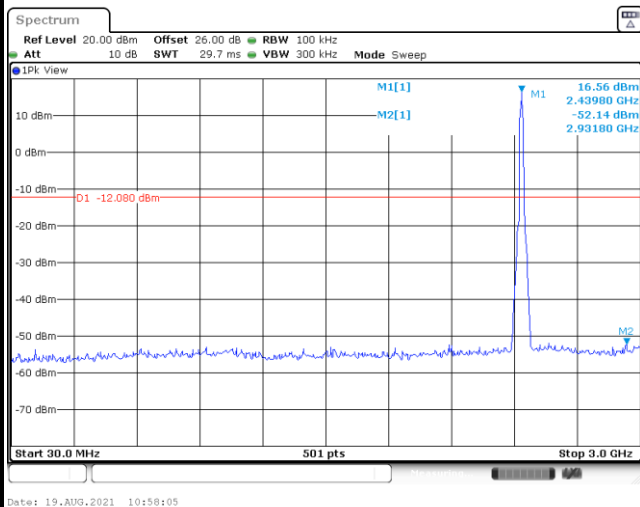
## 100kHz PSD reference Level



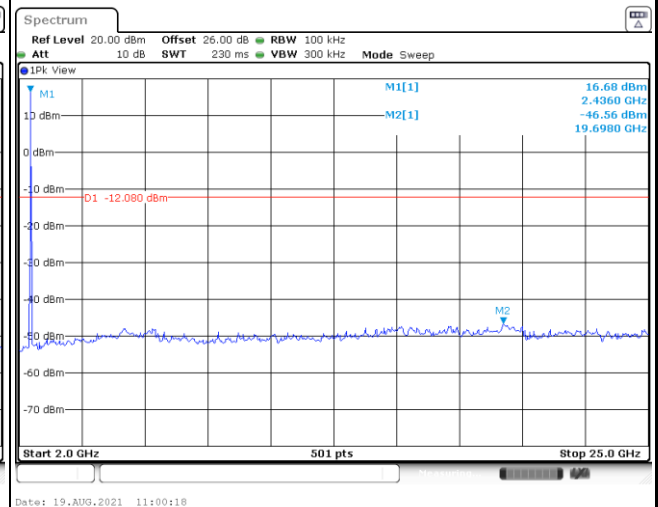
## Channel Plot

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## Spurious Emission 30MHz~3GHz

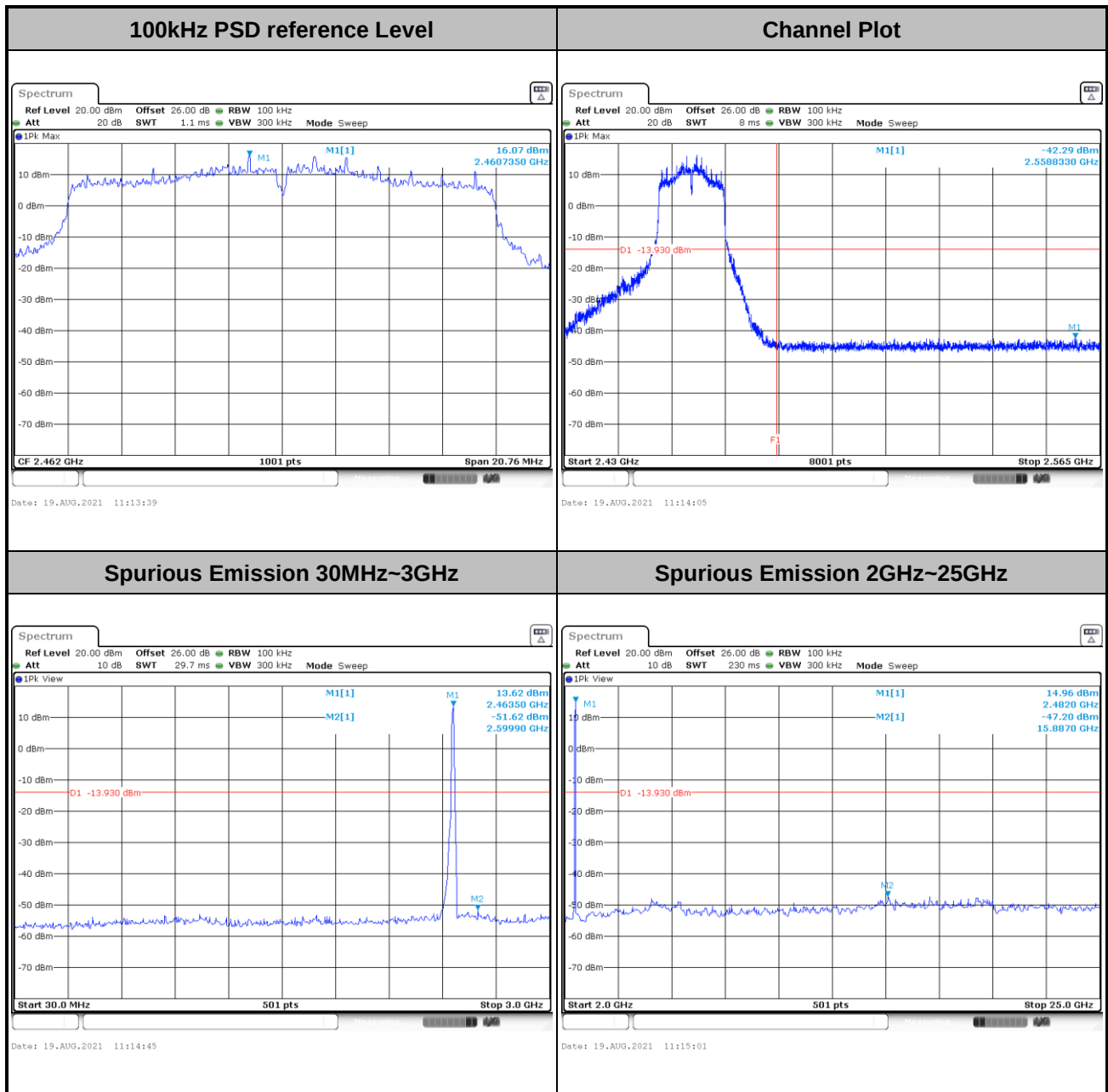


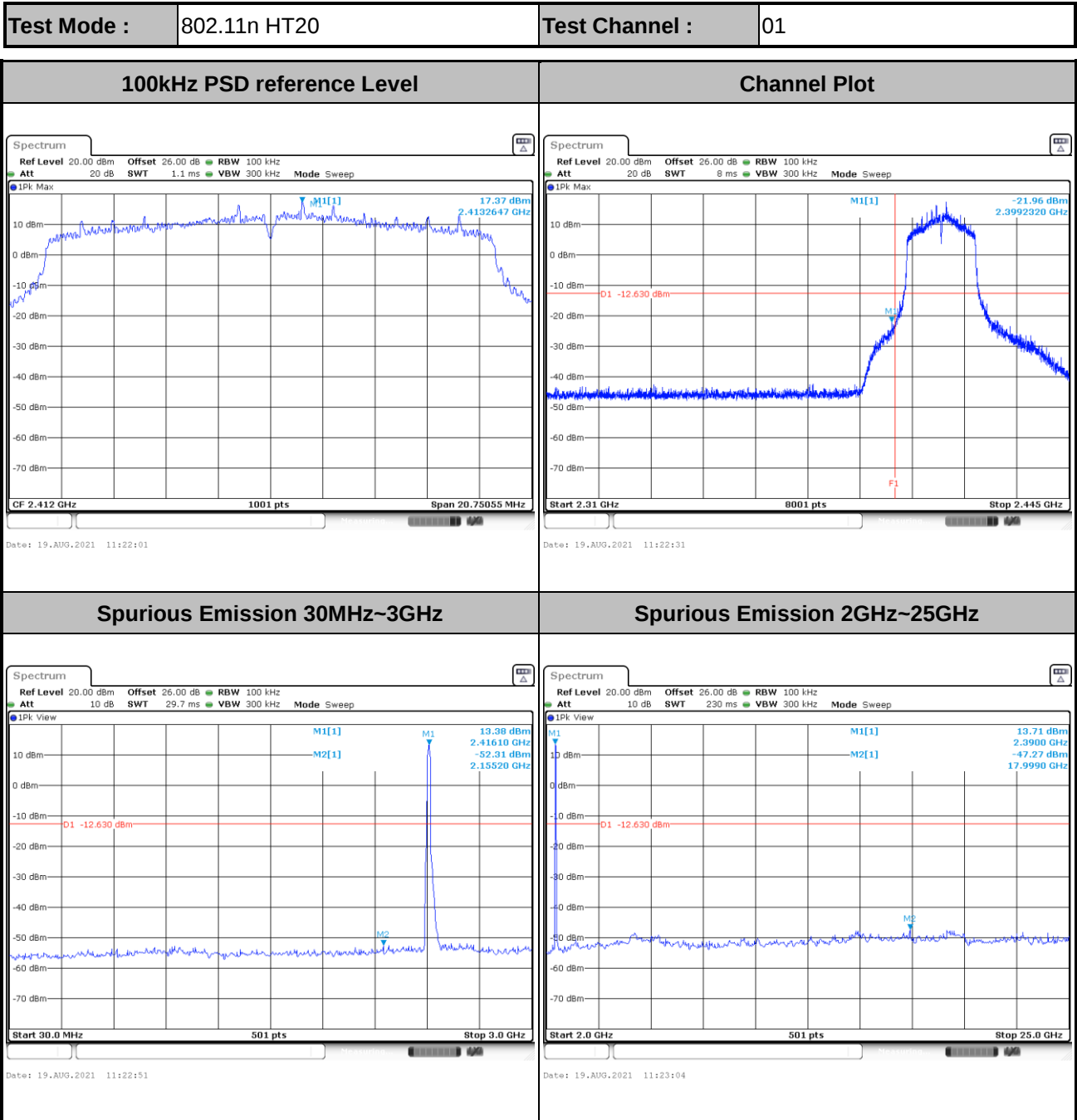
## Spurious Emission 2GHz~25GHz





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

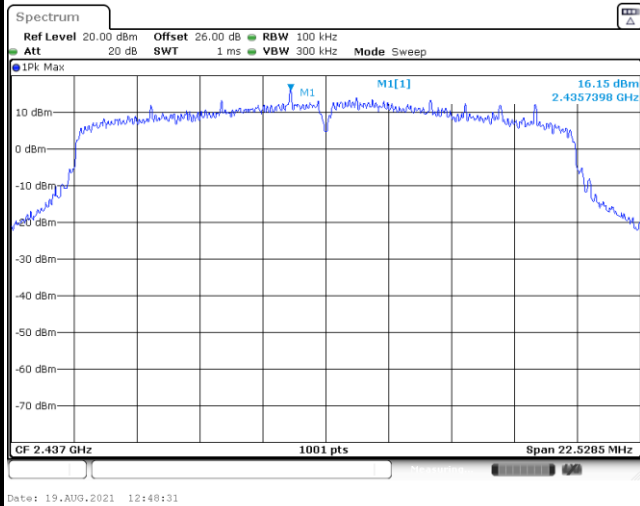






|             |              |                |    |
|-------------|--------------|----------------|----|
| Test Mode : | 802.11n HT20 | Test Channel : | 06 |
|-------------|--------------|----------------|----|

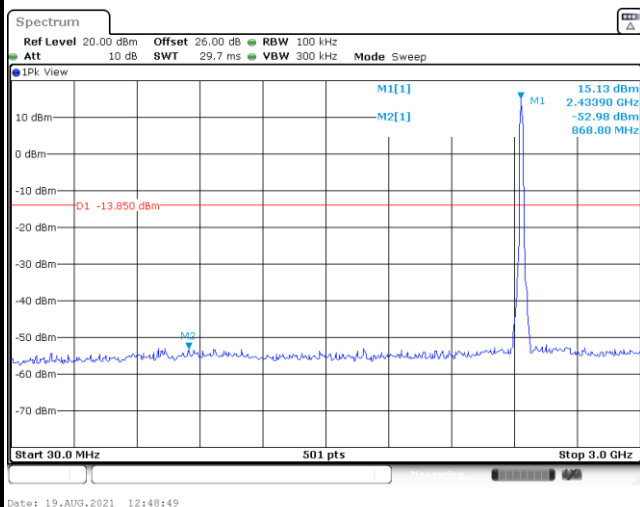
## 100kHz PSD reference Level



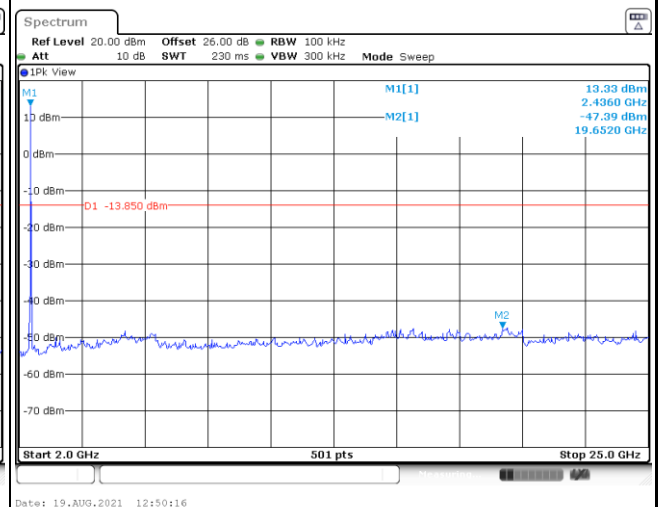
## Channel Plot

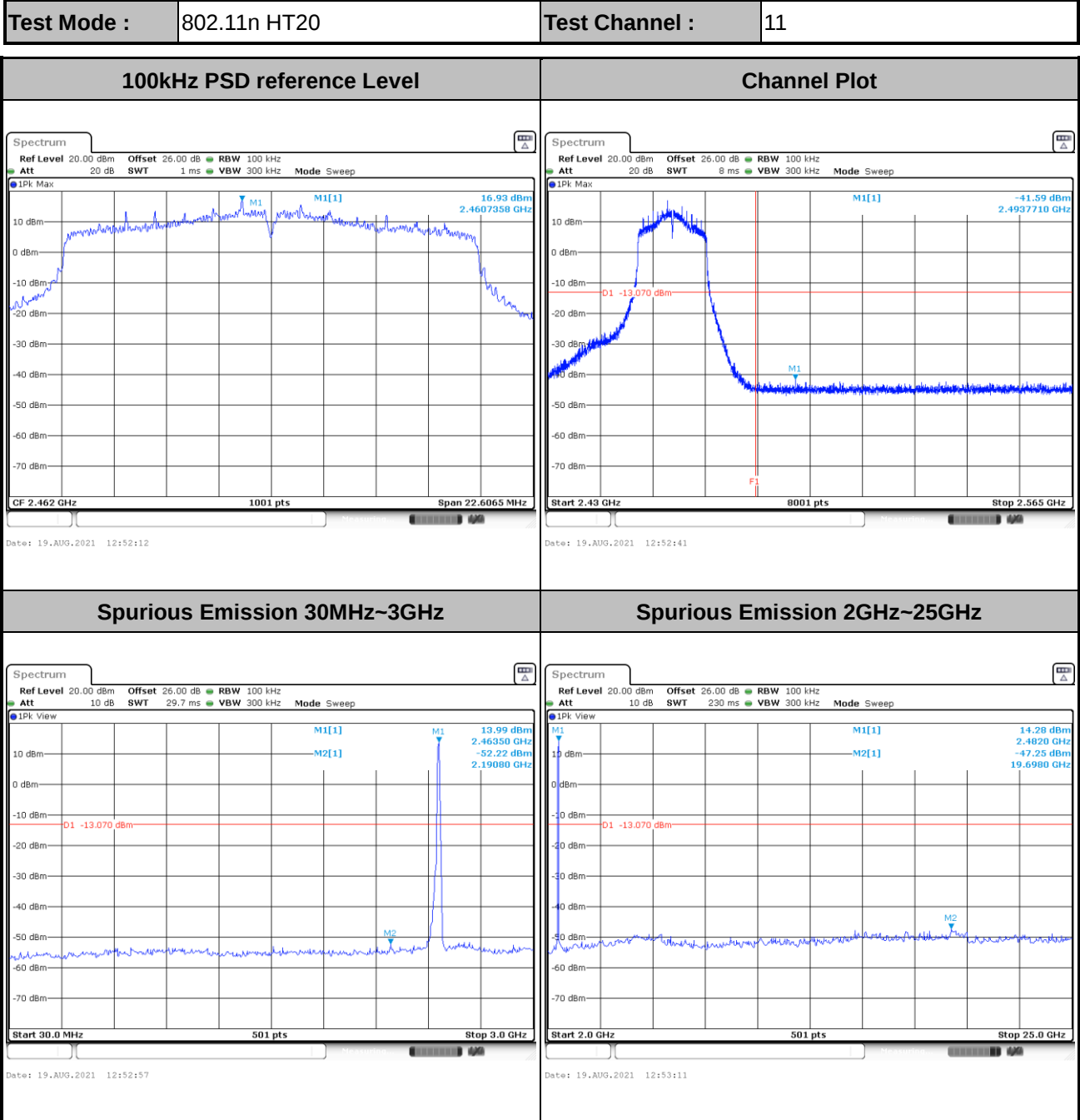
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## Spurious Emission 30MHz~3GHz



## Spurious Emission 2GHz~25GHz



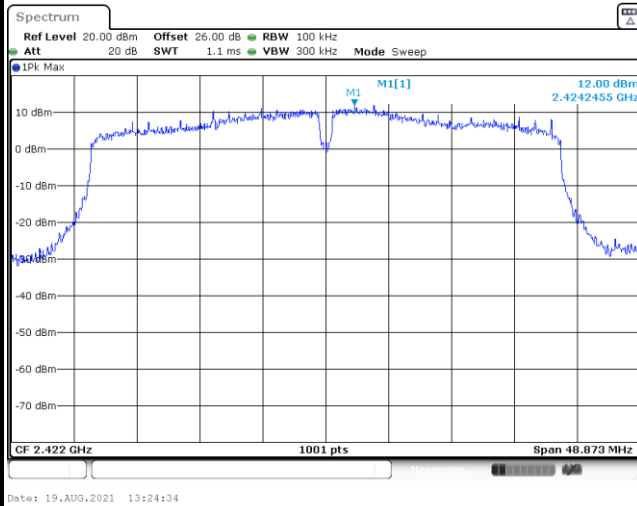




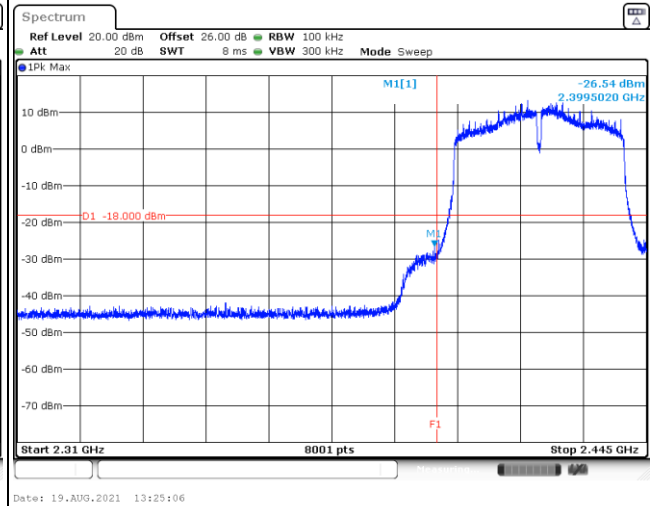
Test Mode : 802.11n HT40

Test Channel : 03

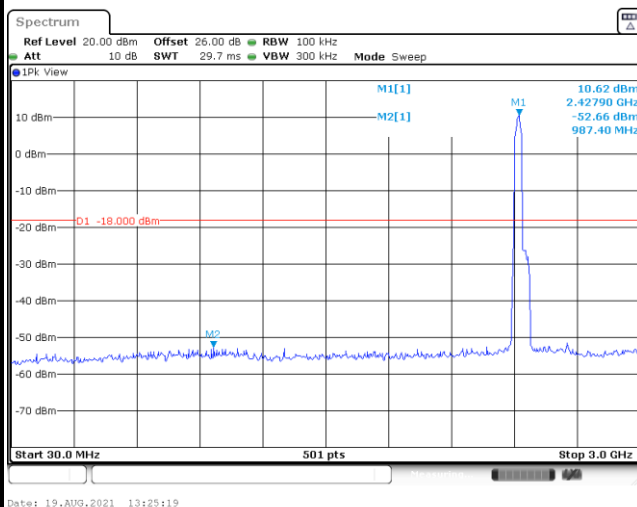
## 100kHz PSD reference Level



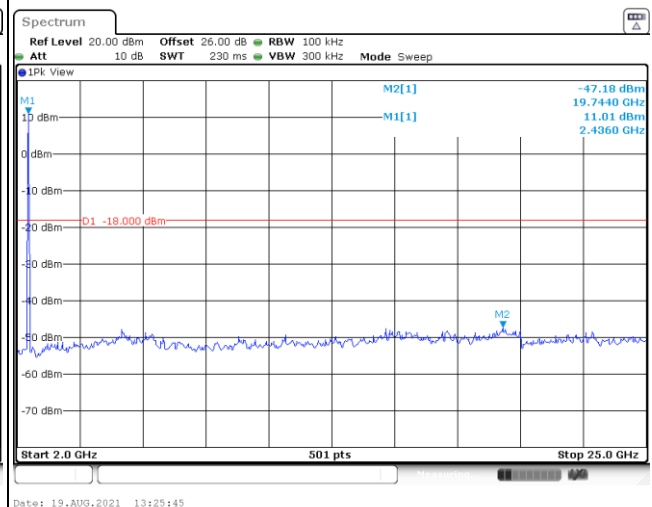
## Channel Plot



## Spurious Emission 30MHz~3GHz



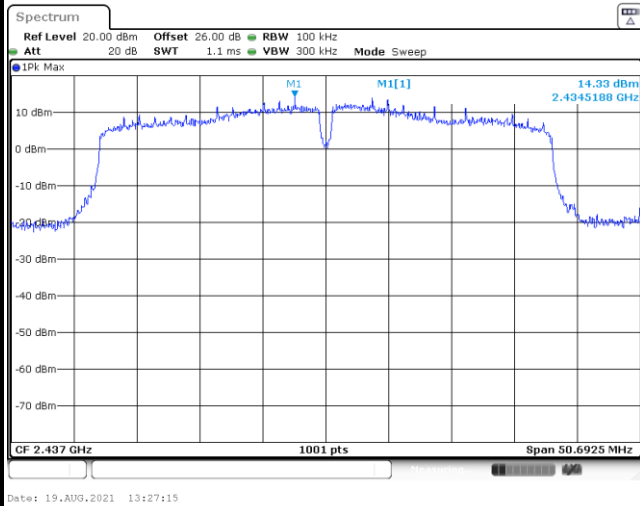
## Spurious Emission 2GHz~25GHz





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

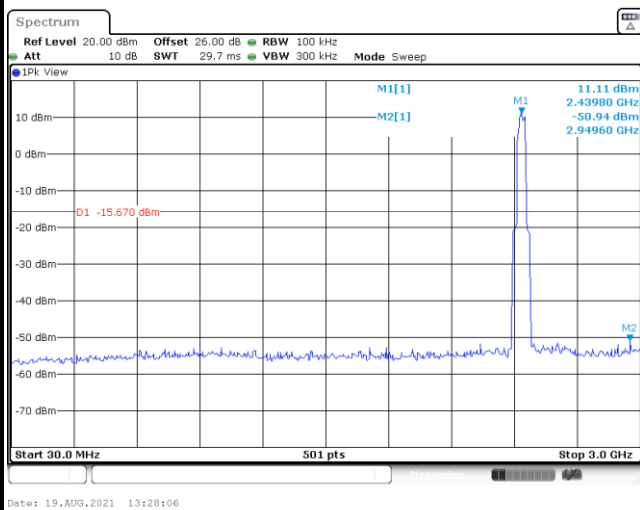
## 100kHz PSD reference Level



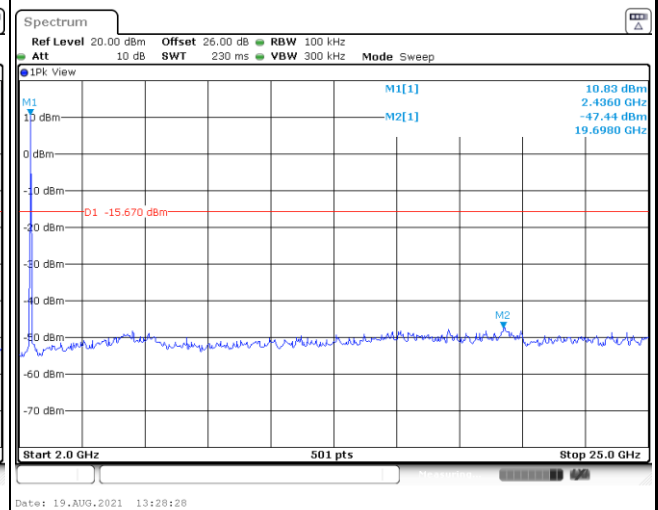
## Channel Plot

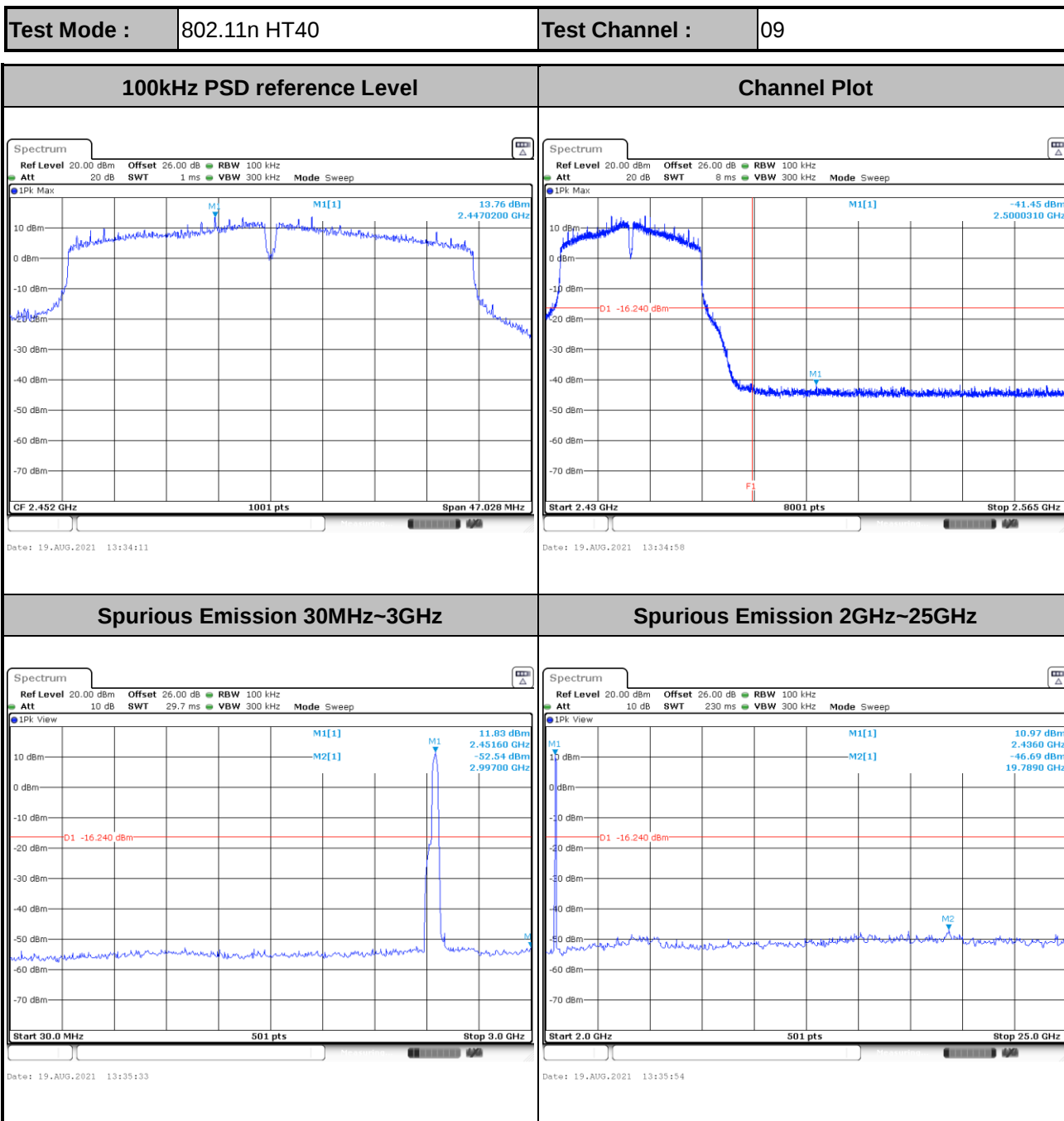
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## Spurious Emission 30MHz~3GHz



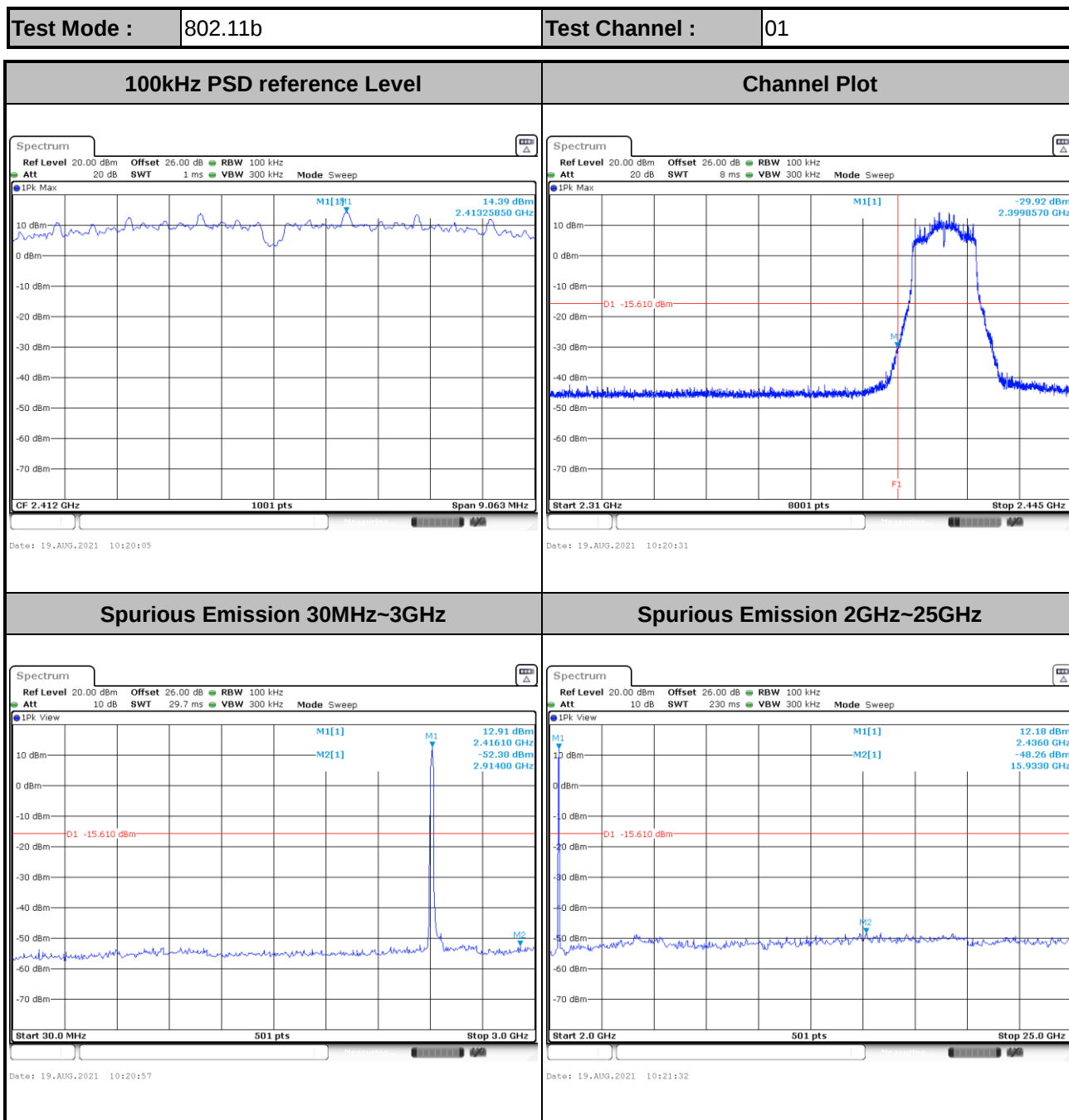
## Spurious Emission 2GHz~25GHz







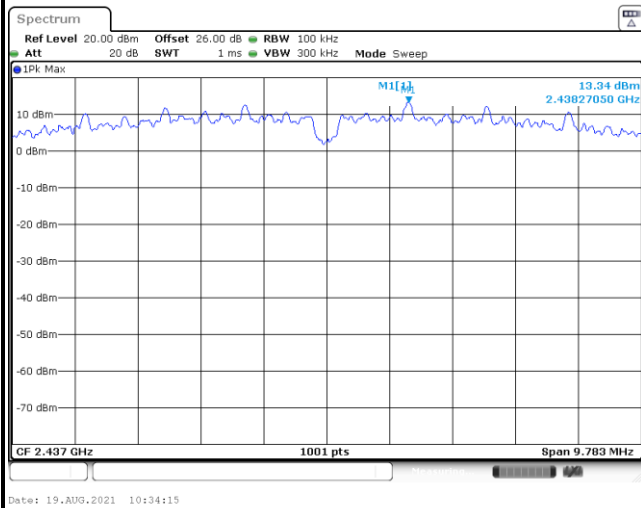
## Test result of Ant. 3





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

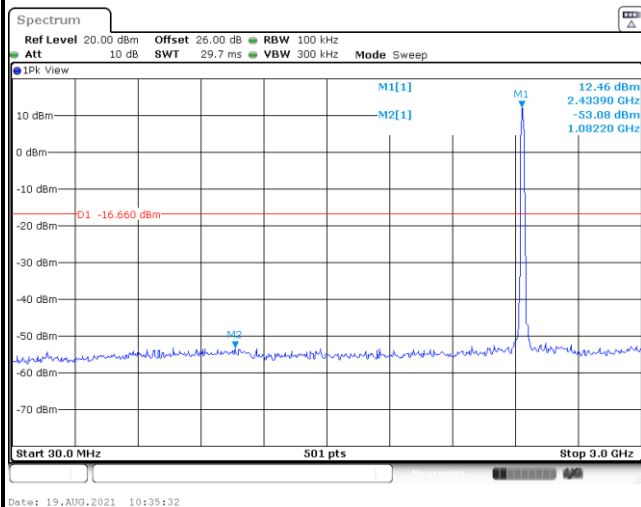
## 100kHz PSD reference Level



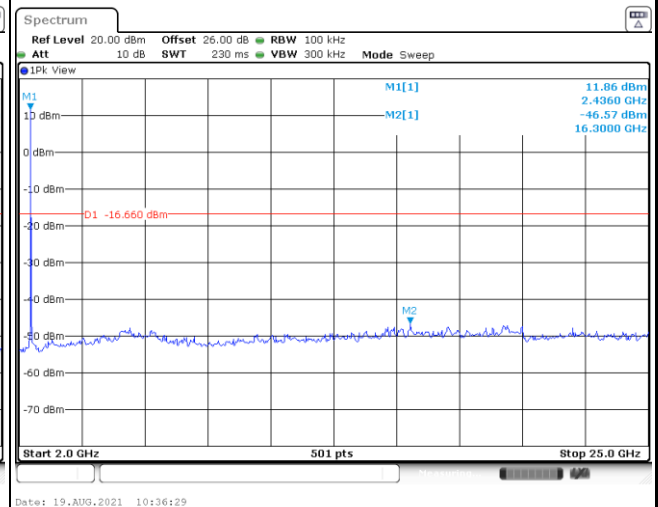
## Channel Plot

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## Spurious Emission 30MHz~3GHz



## Spurious Emission 2GHz~25GHz



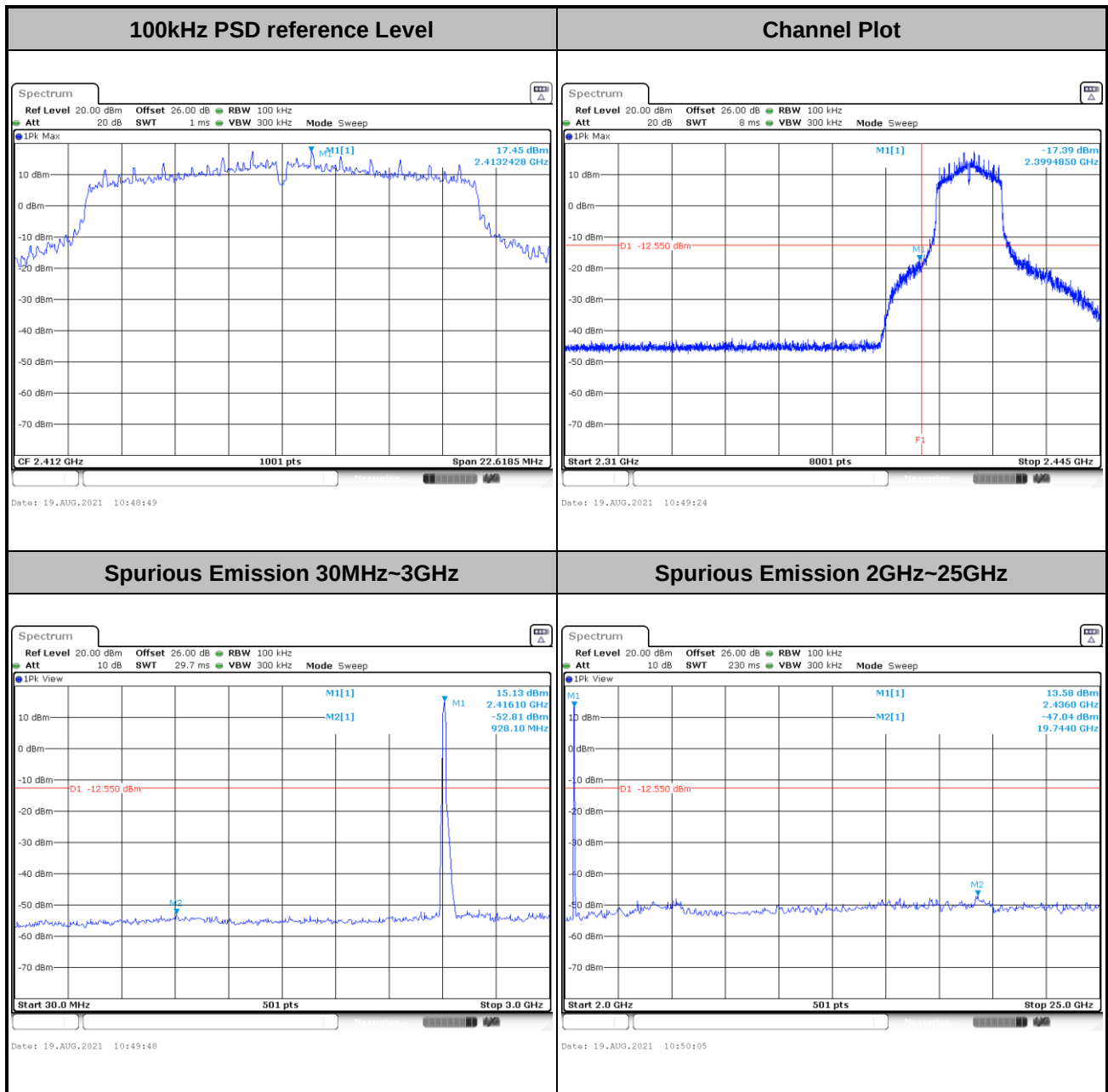


|                    |         |                       |    |
|--------------------|---------|-----------------------|----|
| <b>Test Mode :</b> | 802.11b | <b>Test Channel :</b> | 11 |
|--------------------|---------|-----------------------|----|





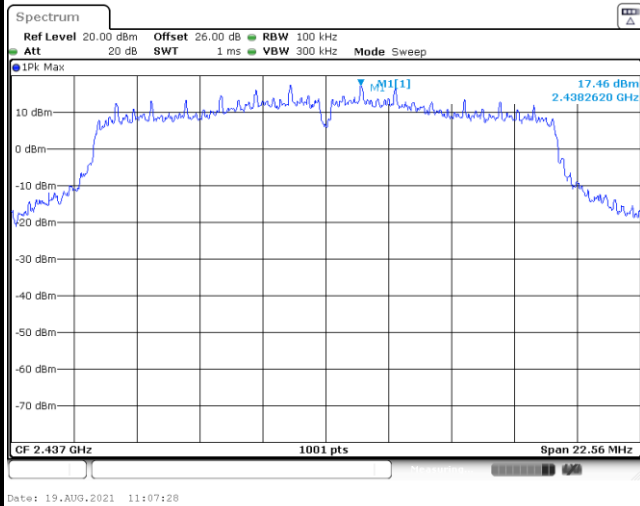
|             |         |                |    |
|-------------|---------|----------------|----|
| Test Mode : | 802.11g | Test Channel : | 01 |
|-------------|---------|----------------|----|





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

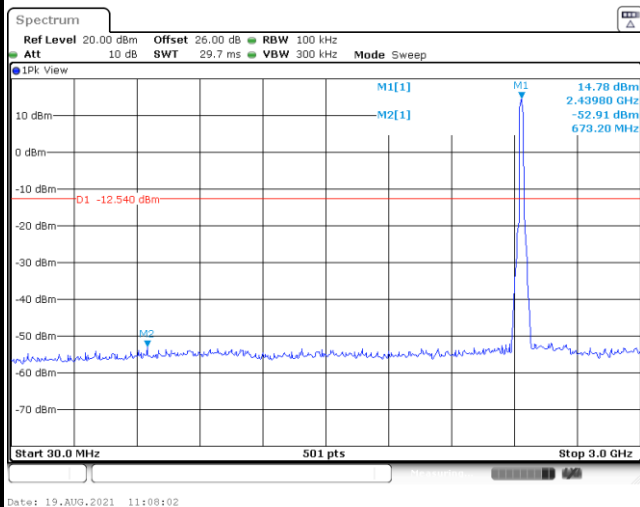
## 100kHz PSD reference Level



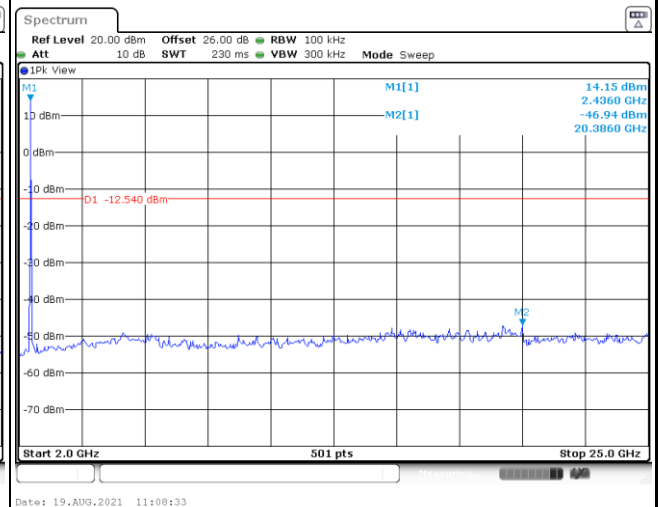
## Channel Plot

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## Spurious Emission 30MHz~3GHz

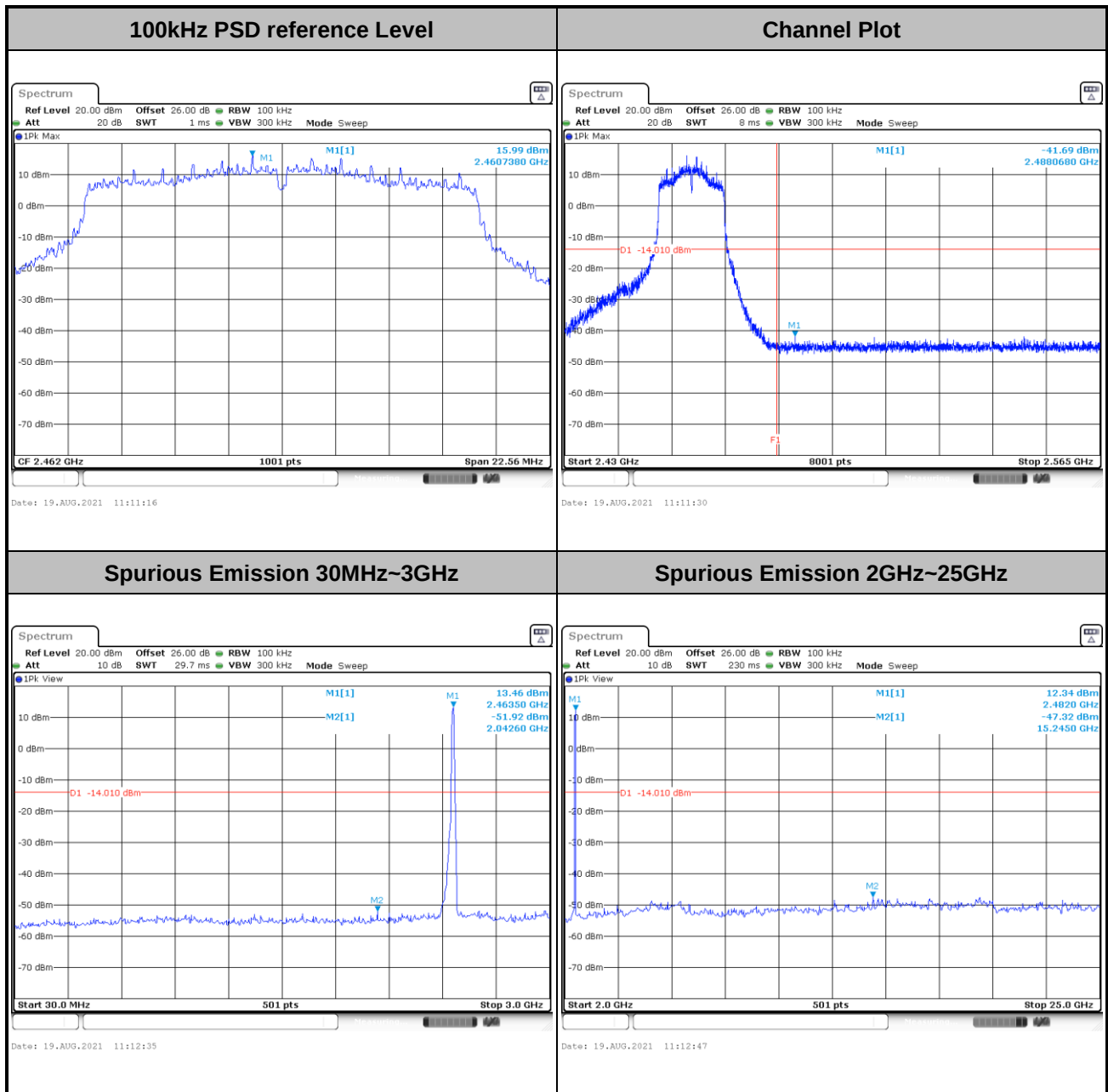


## Spurious Emission 2GHz~25GHz





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

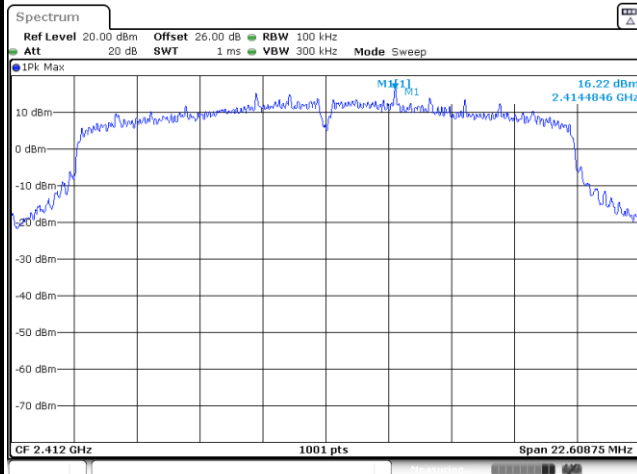




Test Mode : 802.11n HT20

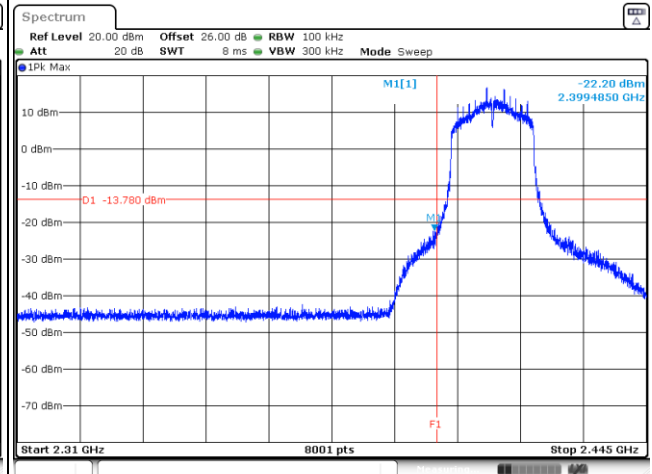
Test Channel : 01

## 100kHz PSD reference Level



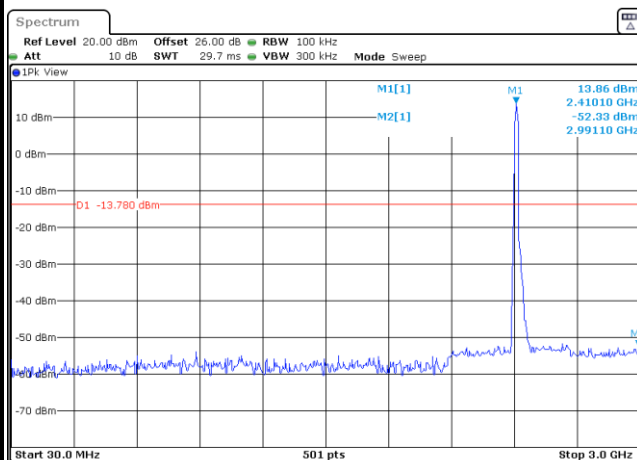
Date: 19.AUG.2021 11:23:56

## Channel Plot



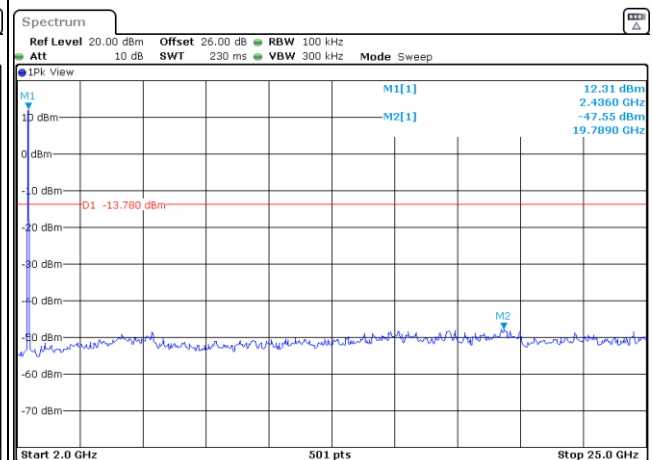
Date: 19.AUG.2021 11:24:55

## Spurious Emission 30MHz~3GHz

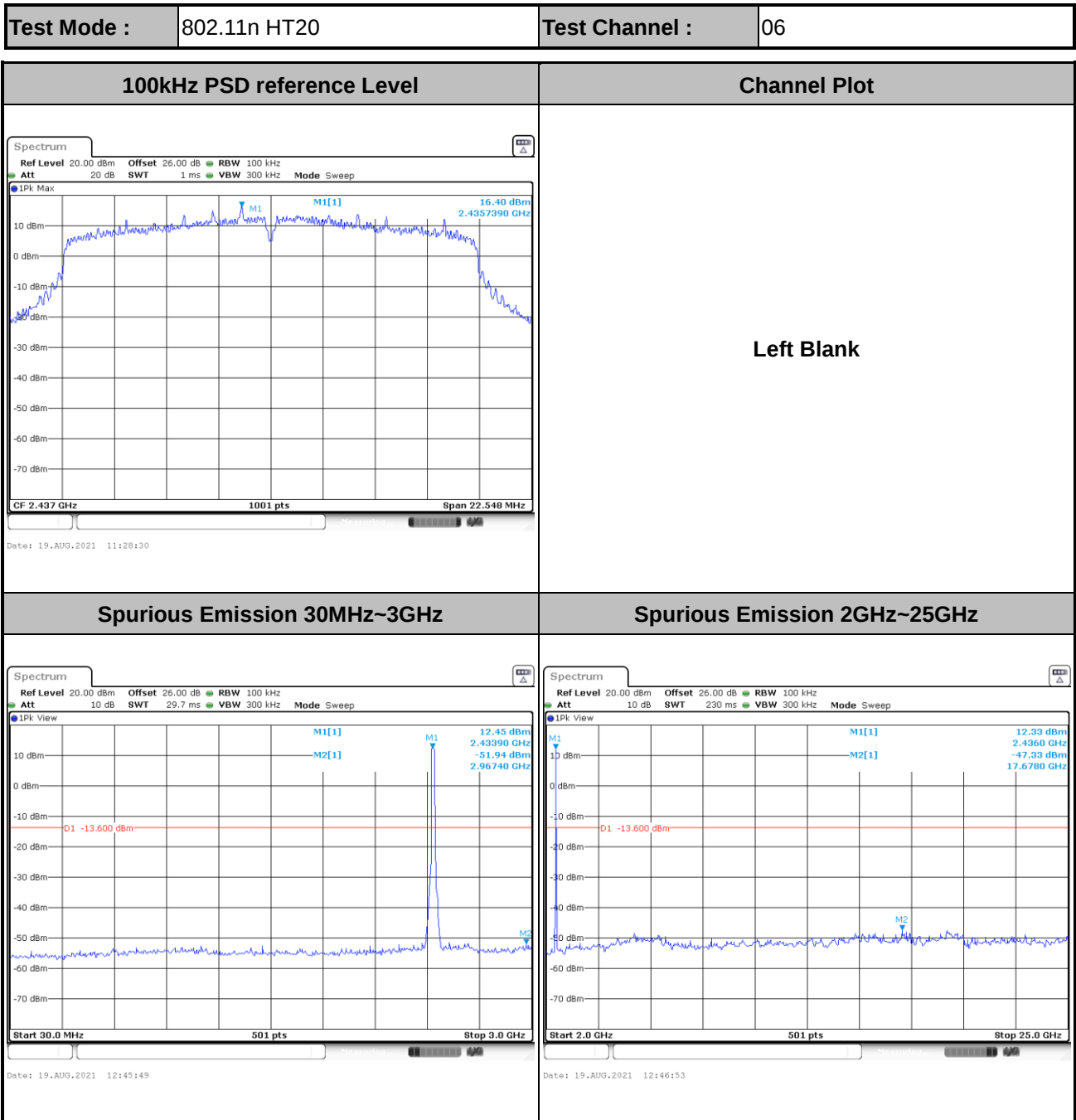


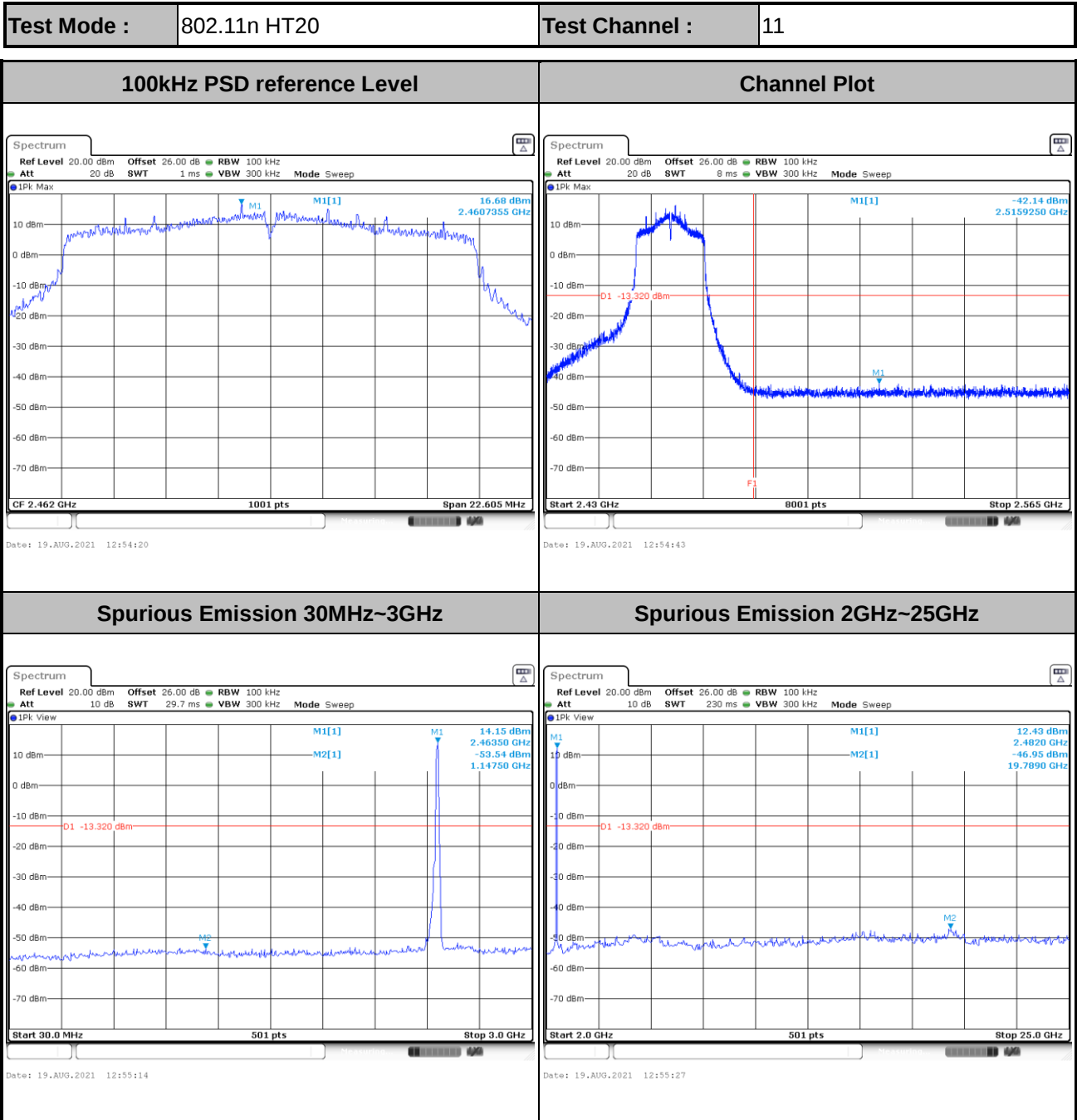
Date: 19.AUG.2021 11:25:18

## Spurious Emission 2GHz~25GHz



Date: 19.AUG.2021 11:25:34



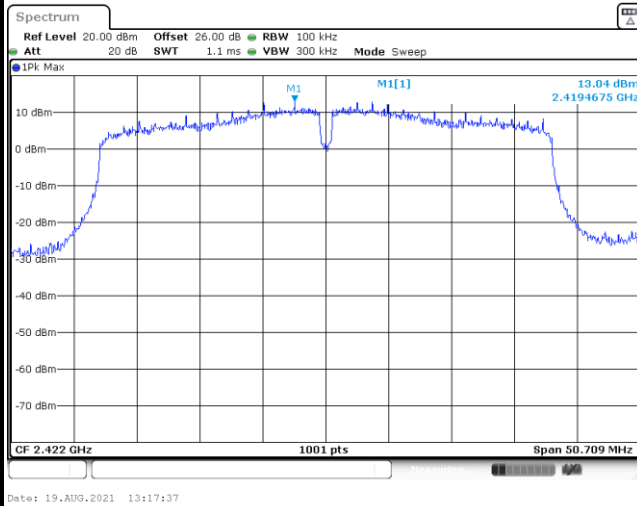




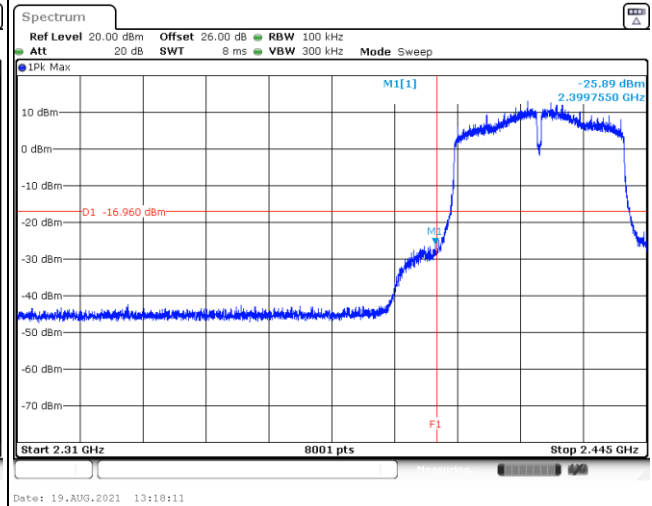
Test Mode : 802.11n HT40

Test Channel : 03

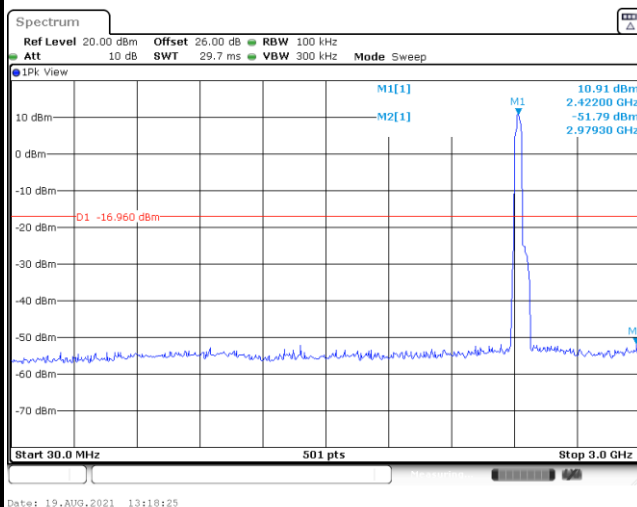
## 100kHz PSD reference Level



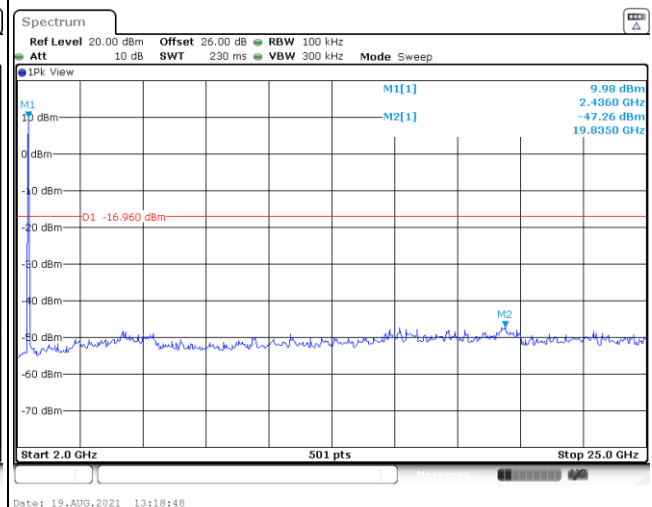
## Channel Plot



## Spurious Emission 30MHz~3GHz



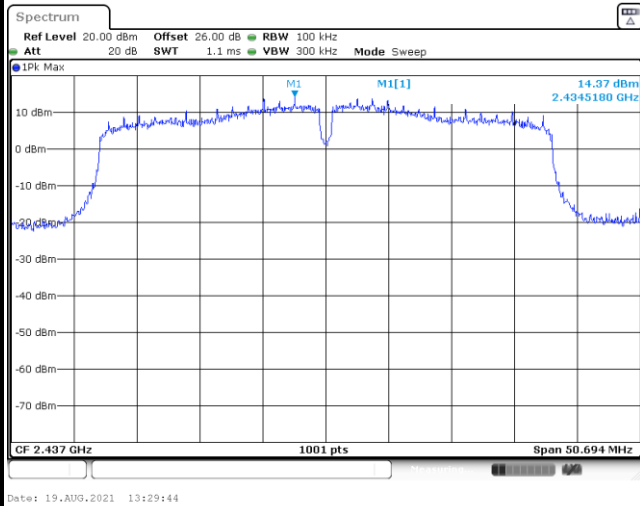
## Spurious Emission 2GHz~25GHz





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

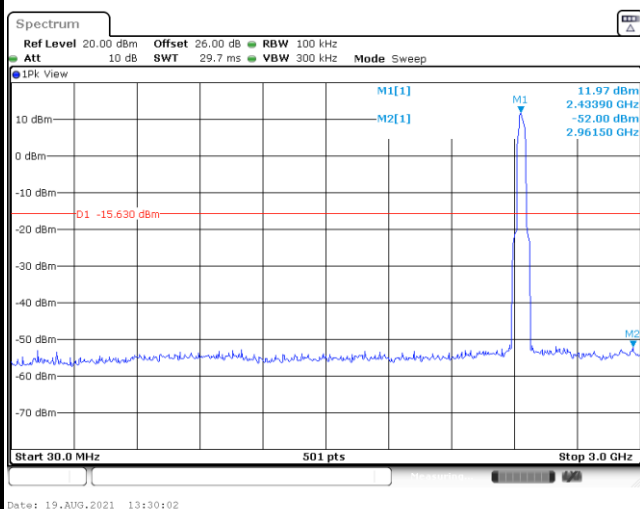
## 100kHz PSD reference Level



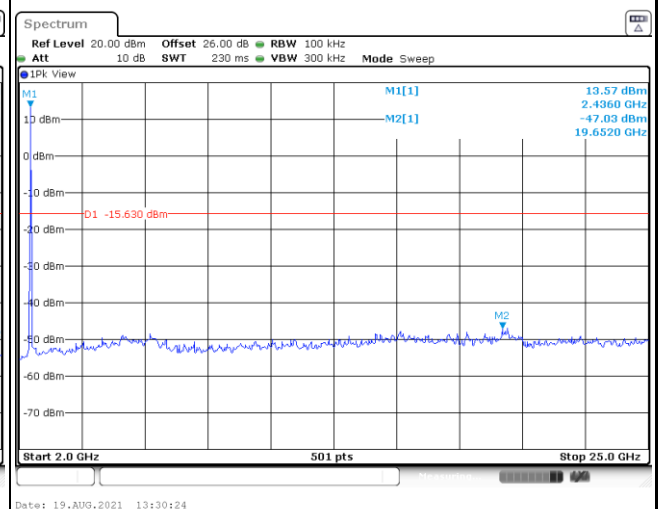
## Channel Plot

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## Spurious Emission 30MHz~3GHz



## Spurious Emission 2GHz~25GHz

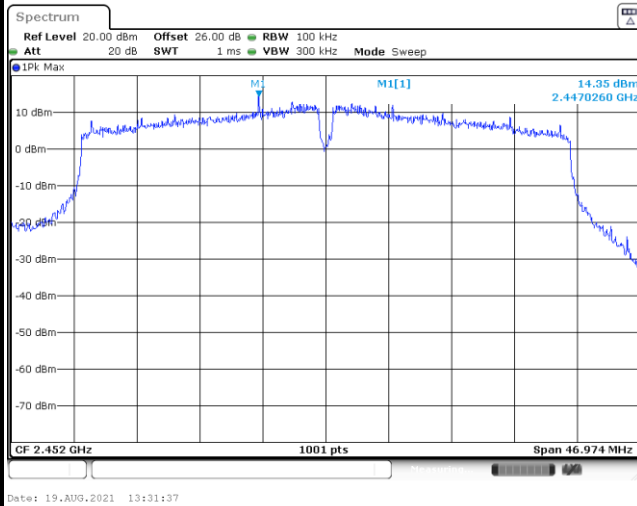




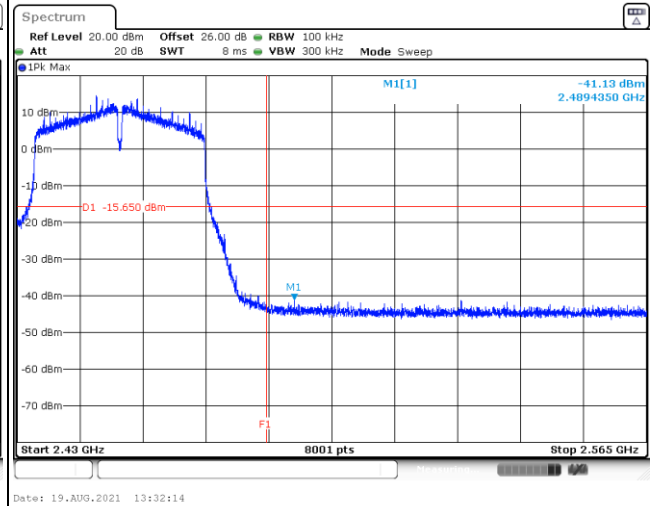
Test Mode : 802.11n HT40

Test Channel : 09

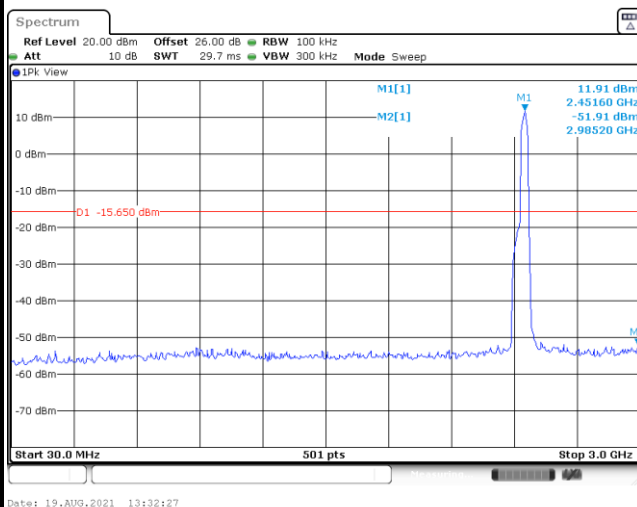
## 100kHz PSD reference Level



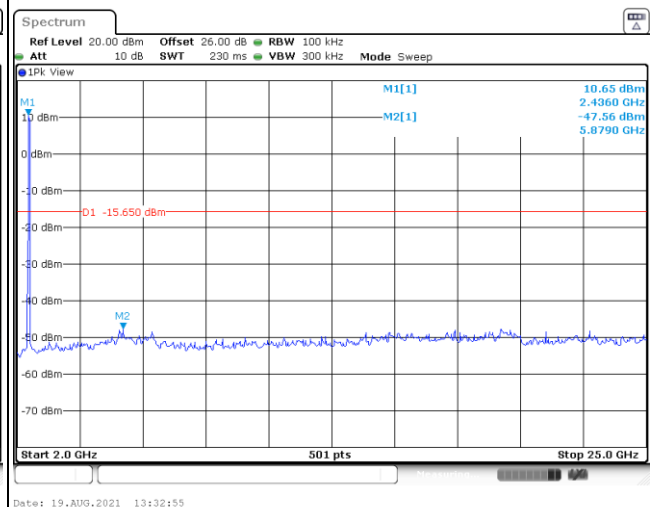
## Channel Plot



## Spurious Emission 30MHz~3GHz



## Spurious Emission 2GHz~25GHz



### 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 shall comply with the general field strength limits as following table:

| 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.

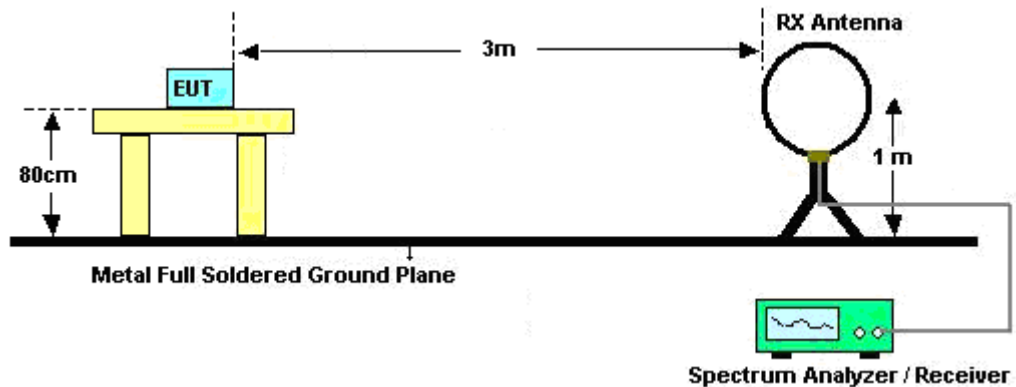


### 3.5.3 Test Procedures

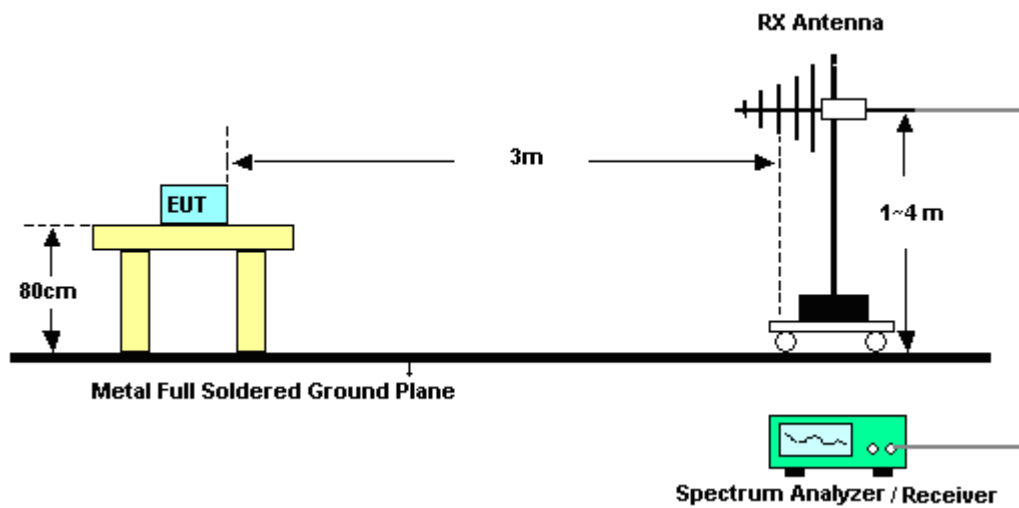
1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
4. The EUT was placed at distance 3 meter from measurement 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. Radiated testing below 1GHz was performed by adjusting the antenna tower from 1m to 4m and by rotating the turn table from 0 degree to 360 degree to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6dB margin against QP limit line, the position is marked as “-”.
7. Radiated testing above 1GHz was performed by adjusting the antenna tower from 1m to 4m and by rotating the turn table from 0 degree to 360 degree to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6dB margin against average limit line, the position is marked as “-”.
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= 3 MHz 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

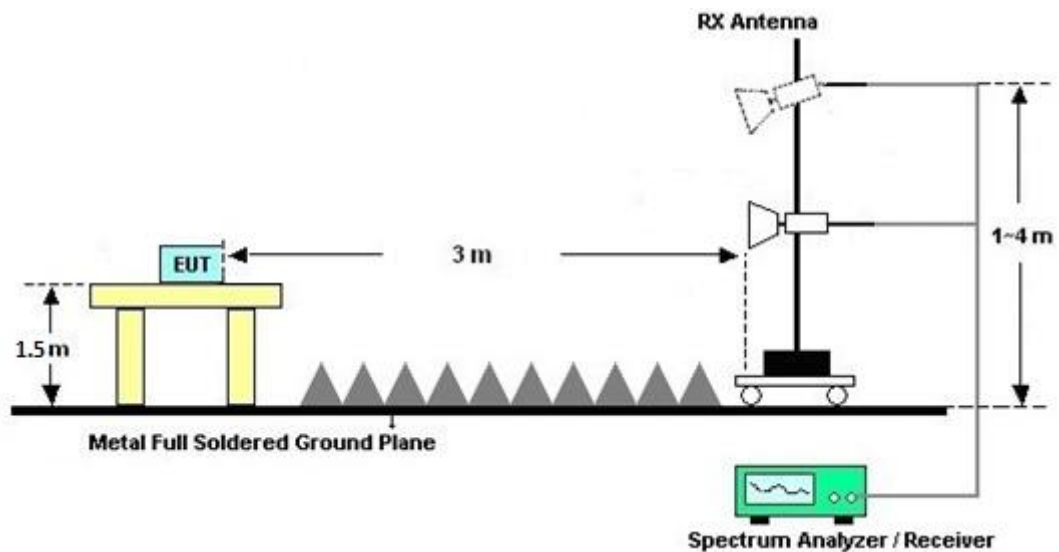
For radiated emissions below 30MHz



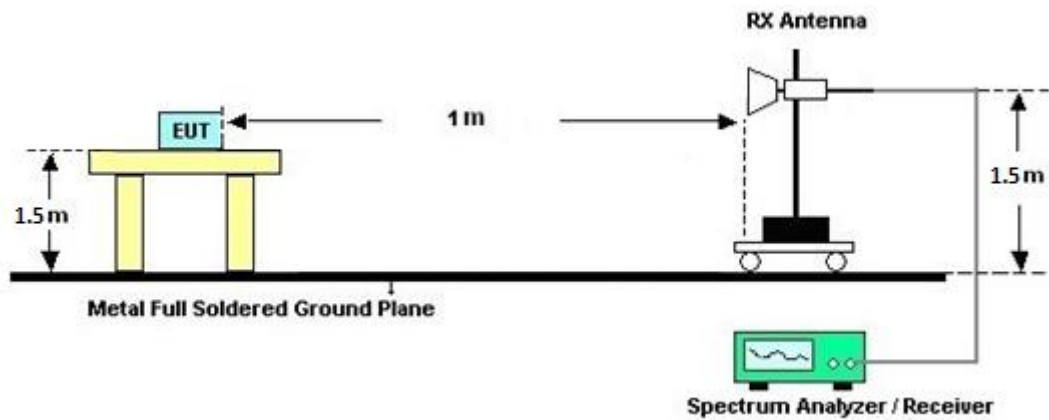
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



### 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 adequate comparison measurement 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.

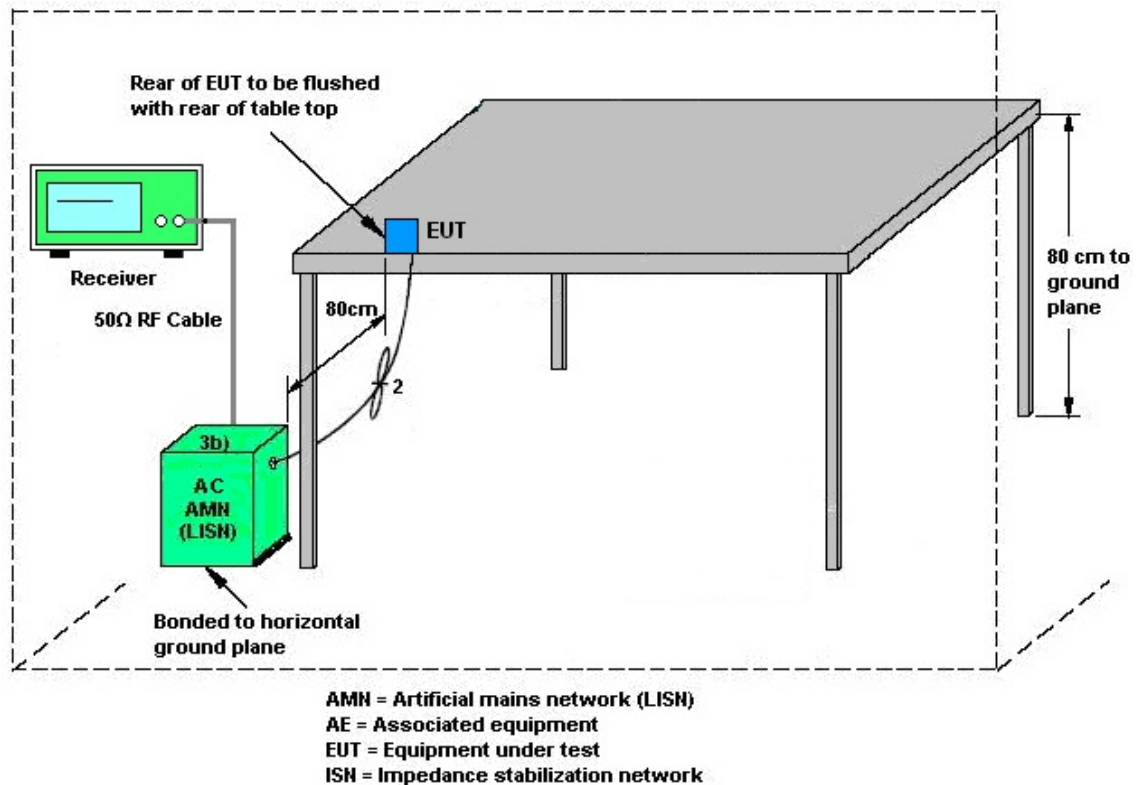
### 3.6.2 Measuring Instruments

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 shall 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 6 dBi, the power and power spectral density limit shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. 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

Refer to FCC KDB 662911 D01 Multiple Transmitter Output v02r01

<CDD Modes>

For power measurements on IEEE 802.11 devices,

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

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

$G_{ANT}$  is set equal to the gain of the antenna having the highest gain.

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

$$DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

$N_{SS}$  = the number of independent spatial streams of data;

$N_{ANT}$  = the total number of antennas

$g_{j,k} = 10^{G_k/20}$  if the  $k$ th antenna is being fed by spatial stream  $j$ , or zero if it is not;  
 $G_k$  is the gain in dBi of the  $k$ th antenna.

As minimum  $N_{SS}=1$  is supported by EUT, the formula can be simplified as:

Directional gain =  $10 \cdot \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}]$  dBi

Where  $G_1, G_2, \dots, G_N$  denote single antenna gain.

For example: If a device has two antenna,  $G_{ANT1} = 3.6\text{dBi}$ ;  $G_{ANT2} = 4.2\text{dBi}$

Directional gain of power measurement =  $\max(3.6, 4.2) + 0 = 4.2\text{ dBi}$

Directional gain of PSD measurement =  $10 * \log[ (10^{3.6/20} + 10^{4.2/20})^2 / 2 ] = 6.92\text{ dBi}$

The directional gain of EUT is listed in the following table:

| <CDD Modes> |        |        |       |       |           |           |
|-------------|--------|--------|-------|-------|-----------|-----------|
|             |        |        | DG    | DG    | Power     | PSD       |
|             |        |        | for   | for   | Limit     | Limit     |
|             | Ant. 6 | Ant. 3 | Power | PSD   | Reduction | Reduction |
|             | (dBi)  | (dBi)  | (dBi) | (dBi) | (dB)      | (dB)      |
| 2.4 GHz     | 4.85   | 2.88   | 4.85  | 6.93  | 0.00      | 0.93      |

Calculation example:

Directional gain of PSD measurement =

$10 \times \log \{ [10^{(4.85\text{dBi}/20)} + 10^{(2.88\text{dBi}/20)}]^2 / 2 \} = 6.93\text{ dBi}$



## 4 List of Measuring Equipment

| Instrument                                | Brand Name      | Model No.                           | Serial No.           | Characteristics                  | Calibration Date | Test Date                       | Due Date      | Remark                   |
|-------------------------------------------|-----------------|-------------------------------------|----------------------|----------------------------------|------------------|---------------------------------|---------------|--------------------------|
| Loop Antenna                              | R&S             | HFH2-Z2E                            | 100840               | 9kHz~30MHz                       | Jun. 21, 2021    | Aug. 11, 2021~<br>Oct. 18, 2021 | Jun. 20, 2022 | Radiation<br>(03CH02-CA) |
| Bilog Antenna                             | TESEQ           | 6111D                               | 50392                | 30MHz~1GHz                       | Aug. 10, 2021    | Aug. 11, 2021~<br>Oct. 18, 2021 | Aug. 09, 2022 | Radiation<br>(03CH02-CA) |
| Horn Antenna                              | SCHWARZBECK     | BBHA 9120D                          | 02113                | 1GHz~18GHz                       | Jul. 08, 2021    | Aug. 11, 2021~<br>Oct. 18, 2021 | Jul. 07, 2022 | Radiation<br>(03CH02-CA) |
| Horn Antenna                              | SCHWARZBECK     | BBHA 9170D                          | 00842                | 18GHz~40GHz                      | Jul. 20, 2021    | Aug. 11, 2021~<br>Oct. 18, 2021 | Jul. 19, 2022 | Radiation<br>(03CH02-CA) |
| Amplifier                                 | SONOMA          | 310N                                | 372240               | N/A                              | Aug. 09, 2021    | Aug. 11, 2021~<br>Oct. 18, 2021 | Aug. 08, 2022 | Radiation<br>(03CH02-CA) |
| Preamplifier                              | Keysight        | 83017A                              | MY53270323           | 1GHz~26.5GHz                     | Jul. 27, 2021    | Aug. 11, 2021~<br>Oct. 18, 2021 | Jul. 26, 2022 | Radiation<br>(03CH02-CA) |
| Preamplifier                              | E-instrument    | ERA-100M-18<br>G-56-01-A70          | EC1900251            | 1GHz~18GHz                       | Mar. 30, 2021    | Aug. 11, 2021~<br>Oct. 18, 2021 | Mar. 29, 2022 | Radiation<br>(03CH02-CA) |
| Preamplifier                              | Jet-Power       | JPA0118-55-30<br>3                  | 17100018000<br>55004 | 1GHz~18GHz                       | Jul. 21, 2021    | Aug. 11, 2021~<br>Oct. 18, 2021 | Jul. 20, 2022 | Radiation<br>(03CH02-CA) |
| Preamplifier                              | EMEC            | EMC18G40G                           | 60725                | 18GHz~40GHz                      | Jul. 21, 2021    | Aug. 11, 2021~<br>Oct. 18, 2021 | Jul. 20, 2022 | Radiation<br>(03CH02-CA) |
| Spectrum Analyzer                         | Keysight        | N9010A                              | MY54200485           | 10Hz~44GHz                       | Mar. 05, 2021    | Aug. 11, 2021~<br>Oct. 18, 2021 | Mar. 04, 2022 | Radiation<br>(03CH02-CA) |
| Filter                                    | Wainwright      | WHKX12-2700<br>-3000-18000-6<br>OST | SN10                 | 3G Highpass                      | Jul. 23, 2021    | Aug. 11, 2021~<br>Oct. 18, 2021 | Jul. 22, 2022 | Radiation<br>(03CH02-CA) |
| Filter                                    | Wainwright      | WLK12-1200-1<br>272-11000-40<br>SS  | SN1                  | 1.2G Low Pass                    | Jul. 23, 2021    | Aug. 11, 2021~<br>Oct. 18, 2021 | Jul. 22, 2022 | Radiation<br>(03CH02-CA) |
| Hygrometer                                | TESEO           | 608-H1                              | 45142602             | N/A                              | Aug. 04, 2021    | Aug. 11, 2021~<br>Oct. 18, 2021 | Aug. 03, 2022 | Radiation<br>(03CH02-CA) |
| Controller                                | ChainTek        | 3000-1                              | N/A                  | Control Turn<br>table & Ant Mast | N/A              | Aug. 11, 2021~<br>Oct. 18, 2021 | N/A           | Radiation<br>(03CH02-CA) |
| Antenna Mast                              | ChainTek        | MBS-520-1                           | N/A                  | 1m~4m                            | N/A              | Aug. 11, 2021~<br>Oct. 18, 2021 | N/A           | Radiation<br>(03CH02-CA) |
| Turn Table                                | ChainTek        | T-200-S-1                           | N/A                  | 0~360 Degree                     | N/A              | Aug. 11, 2021~<br>Oct. 18, 2021 | N/A           | Radiation<br>(03CH02-CA) |
| Software                                  | Audix           | E3                                  | N/A                  | N/A                              | N/A              | Aug. 11, 2021~<br>Oct. 18, 2021 | N/A           | Radiation<br>(03CH02-CA) |
| Hygrometer                                | Testo           | 608-H1                              | 45141354             | N/A                              | Jul. 30, 2021    | Aug. 16, 2021~<br>Oct. 01, 2021 | Jul. 29, 2022 | Conducted<br>(TH01-CA)   |
| Power Sensor                              | DARE!!          | RPR3006W                            | RPR6W-1901<br>024    | 10MHz~6GHz                       | Jul. 13, 2021    | Aug. 16, 2021~<br>Oct. 01, 2021 | Jul. 12, 2022 | Conducted<br>(TH01-CA)   |
| Switch                                    | EM Electronics  | EMSW18                              | SW1070902            | N/A                              | Aug. 03, 2021    | Aug. 16, 2021~<br>Oct. 01, 2021 | Aug. 02, 2022 | Conducted<br>(TH01-CA)   |
| Spectrum Analyzer                         | Rohde & Schwarz | FSV40                               | 101545               | 10Hz~40GHz                       | Jun. 01, 2021    | Aug. 16, 2021~<br>Oct. 01, 2021 | May 31, 2022  | Conducted<br>(TH01-CA)   |
| LISN                                      | TESEQ           | NNB51                               | 47407                | N/A                              | Jul. 21, 2021    | Aug. 16, 2021~<br>Oct. 19, 2021 | Jul. 20, 2022 | Conduction<br>(CO01-CA)  |
| LISN                                      | TESEQ           | NNB51                               | 47415                | N/A                              | Jun. 30, 2021    | Aug. 16, 2021~<br>Oct. 19, 2021 | Jun. 29, 2022 | Conduction<br>(CO01-CA)  |
| EMI Test Receiver                         | R&S             | ESR7                                | 102177               | 9KHz~7GHz                        | Jun. 02, 2021    | Aug. 16, 2021~<br>Oct. 19, 2021 | Jun. 01, 2022 | Conduction<br>(CO01-CA)  |
| Pulse limiter<br>with 10dB<br>attenuation | R&S             | VTSD 9561-F<br>N                    | 9561-F-<br>N00412    | N/A                              | Jul. 07, 2021    | Aug. 16, 2021~<br>Oct. 19, 2021 | Jul. 06, 2022 | Conduction<br>(CO01-CA)  |
| Test Software                             | R&S             | EMC32<br>V10.30.0                   | N/A                  | N/A                              | N/A              | Aug. 16, 2021~<br>Oct. 19, 2021 | N/A           | Conduction<br>(CO01-CA)  |

## 5 Uncertainty of Evaluation

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

|                                                                         |        |
|-------------------------------------------------------------------------|--------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 2.0 dB |
|-------------------------------------------------------------------------|--------|

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

|                                                                         |        |
|-------------------------------------------------------------------------|--------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 4.7 dB |
|-------------------------------------------------------------------------|--------|

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

|                                                                         |        |
|-------------------------------------------------------------------------|--------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 6.2 dB |
|-------------------------------------------------------------------------|--------|

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

|                                                                         |        |
|-------------------------------------------------------------------------|--------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 6.4 dB |
|-------------------------------------------------------------------------|--------|

**Appendix A. Test Result of Conducted Test Items**

|                |                       |                    |             |    |
|----------------|-----------------------|--------------------|-------------|----|
| Test Engineer: | Steve Chen            | Temperature:       | 20.3 ~ 24.0 | °C |
| Test Date:     | 2021/08/16~2021/10/01 | Relative Humidity: | 34.1 ~ 45.6 | %  |

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

| 2.4GHz Band MIMO |           |     |     |             |                       |       |              |       |                    |           |
|------------------|-----------|-----|-----|-------------|-----------------------|-------|--------------|-------|--------------------|-----------|
| Mod.             | Data Rate | NTX | CH. | Freq. (MHz) | 99% Occupied BW (MHz) |       | 6dB BW (MHz) |       | 6dB BW Limit (MHz) | Pass/Fail |
|                  |           |     |     |             | Ant 6                 | Ant 3 | Ant 6        | Ant 3 |                    |           |
| 11b              | 1Mbps     | 2   | 1   | 2412        | 12.84                 | 12.79 | 6.54         | 6.04  | 0.50               | Pass      |
| 11b              | 1Mbps     | 2   | 6   | 2437        | 12.94                 | 12.84 | 6.56         | 6.52  | 0.50               | Pass      |
| 11b              | 1Mbps     | 2   | 11  | 2462        | 12.89                 | 12.74 | 7.04         | 7.10  | 0.50               | Pass      |
| 11g              | 6Mbps     | 2   | 1   | 2412        | 16.23                 | 16.28 | 13.84        | 15.08 | 0.50               | Pass      |
| 11g              | 6Mbps     | 2   | 6   | 2437        | 16.23                 | 16.23 | 15.04        | 15.04 | 0.50               | Pass      |
| 11g              | 6Mbps     | 2   | 11  | 2462        | 16.48                 | 16.33 | 13.84        | 15.04 | 0.50               | Pass      |
| HT20             | MCS0      | 2   | 1   | 2412        | 17.33                 | 17.28 | 13.83        | 15.07 | 0.50               | Pass      |
| HT20             | MCS0      | 2   | 6   | 2437        | 17.28                 | 17.33 | 15.02        | 15.03 | 0.50               | Pass      |
| HT20             | MCS0      | 2   | 11  | 2462        | 17.28                 | 17.33 | 15.07        | 15.07 | 0.50               | Pass      |
| HT40             | MCS0      | 2   | 3   | 2422        | 35.46                 | 35.46 | 32.58        | 33.81 | 0.50               | Pass      |
| HT40             | MCS0      | 2   | 6   | 2437        | 35.66                 | 35.66 | 33.80        | 33.80 | 0.50               | Pass      |
| HT40             | MCS0      | 2   | 9   | 2452        | 35.66                 | 35.56 | 31.35        | 31.32 | 0.50               | Pass      |

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

| 2.4GHz Band MIMO |           |     |     |             |                               |       |       |                             |       |          |       |                  |       |                        |       |            |
|------------------|-----------|-----|-----|-------------|-------------------------------|-------|-------|-----------------------------|-------|----------|-------|------------------|-------|------------------------|-------|------------|
| Mod.             | Data Rate | NTX | CH. | Freq. (MHz) | Average Conducted Power (dBm) |       |       | Conducted Power Limit (dBm) |       | DG (dBi) |       | EIRP Power (dBm) |       | EIRP Power Limit (dBm) |       | Pass /Fail |
|                  |           |     |     |             | Ant 6                         | Ant 3 | SUM   | Ant 6                       | Ant 3 | Ant 6    | Ant 3 | Ant 6            | Ant 3 | Ant 6                  | Ant 3 |            |
| 11b              | 1Mbps     | 2   | 1   | 2412        | 24.80                         | 24.70 | 27.76 | 30.00                       |       | 4.85     |       | 32.61            |       | 36.00                  |       | Pass       |
| 11b              | 1Mbps     | 2   | 2   | 2417        | 24.30                         | 24.30 | 27.31 | 30.00                       |       | 4.85     |       | 32.16            |       | 36.00                  |       | Pass       |
| 11b              | 1Mbps     | 2   | 3   | 2422        | 22.00                         | 21.80 | 24.91 | 30.00                       |       | 4.85     |       | 29.76            |       | 36.00                  |       | Pass       |
| 11b              | 1Mbps     | 2   | 6   | 2437        | 22.30                         | 22.30 | 25.31 | 30.00                       |       | 4.85     |       | 30.16            |       | 36.00                  |       | Pass       |
| 11b              | 1Mbps     | 2   | 9   | 2452        | 23.80                         | 23.90 | 26.86 | 30.00                       |       | 4.85     |       | 31.71            |       | 36.00                  |       | Pass       |
| 11b              | 1Mbps     | 2   | 10  | 2457        | 24.30                         | 24.40 | 27.36 | 30.00                       |       | 4.85     |       | 32.21            |       | 36.00                  |       | Pass       |
| 11b              | 1Mbps     | 2   | 11  | 2462        | 24.40                         | 24.40 | 27.41 | 30.00                       |       | 4.85     |       | 32.26            |       | 36.00                  |       | Pass       |
| 11g              | 6Mbps     | 2   | 1   | 2412        | 26.80                         | 26.70 | 29.76 | 30.00                       |       | 4.85     |       | 34.61            |       | 36.00                  |       | Pass       |
| 11g              | 6Mbps     | 2   | 2   | 2417        | 26.70                         | 26.90 | 29.81 | 30.00                       |       | 4.85     |       | 34.66            |       | 36.00                  |       | Pass       |
| 11g              | 6Mbps     | 2   | 3   | 2422        | 27.00                         | 26.90 | 29.96 | 30.00                       |       | 4.85     |       | 34.81            |       | 36.00                  |       | Pass       |
| 11g              | 6Mbps     | 2   | 6   | 2437        | 26.60                         | 26.80 | 29.71 | 30.00                       |       | 4.85     |       | 34.56            |       | 36.00                  |       | Pass       |
| 11g              | 6Mbps     | 2   | 9   | 2452        | 27.00                         | 26.90 | 29.96 | 30.00                       |       | 4.85     |       | 34.81            |       | 36.00                  |       | Pass       |
| 11g              | 6Mbps     | 2   | 10  | 2457        | 26.90                         | 27.00 | 29.96 | 30.00                       |       | 4.85     |       | 34.81            |       | 36.00                  |       | Pass       |
| 11g              | 6Mbps     | 2   | 11  | 2462        | 26.80                         | 26.80 | 29.81 | 30.00                       |       | 4.85     |       | 34.66            |       | 36.00                  |       | Pass       |
| HT20             | MCS0      | 2   | 1   | 2412        | 25.80                         | 25.80 | 28.81 | 30.00                       |       | 4.85     |       | 33.66            |       | 36.00                  |       | Pass       |
| HT20             | MCS0      | 2   | 2   | 2417        | 26.10                         | 26.00 | 29.06 | 30.00                       |       | 4.85     |       | 33.91            |       | 36.00                  |       | Pass       |
| HT20             | MCS0      | 2   | 3   | 2422        | 26.10                         | 26.10 | 29.11 | 30.00                       |       | 4.85     |       | 33.96            |       | 36.00                  |       | Pass       |
| HT20             | MCS0      | 2   | 6   | 2437        | 25.30                         | 25.50 | 28.41 | 30.00                       |       | 4.85     |       | 33.26            |       | 36.00                  |       | Pass       |
| HT20             | MCS0      | 2   | 9   | 2452        | 26.10                         | 26.10 | 29.11 | 30.00                       |       | 4.85     |       | 33.96            |       | 36.00                  |       | Pass       |
| HT20             | MCS0      | 2   | 10  | 2457        | 26.20                         | 26.10 | 29.16 | 30.00                       |       | 4.85     |       | 34.01            |       | 36.00                  |       | Pass       |
| HT20             | MCS0      | 2   | 11  | 2462        | 25.70                         | 25.60 | 28.66 | 30.00                       |       | 4.85     |       | 33.51            |       | 36.00                  |       | Pass       |
| HT40             | MCS0      | 2   | 3   | 2422        | 25.80                         | 25.80 | 28.81 | 30.00                       |       | 4.85     |       | 33.66            |       | 36.00                  |       | Pass       |
| HT40             | MCS0      | 2   | 6   | 2437        | 26.60                         | 26.60 | 29.61 | 30.00                       |       | 4.85     |       | 34.46            |       | 36.00                  |       | Pass       |
| HT40             | MCS0      | 2   | 9   | 2452        | 26.00                         | 26.00 | 29.01 | 30.00                       |       | 4.85     |       | 33.86            |       | 36.00                  |       | Pass       |

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

| 2.4GHz Band MIMO |           |     |     |             |                     |       |      |          |       |                           |       |           |
|------------------|-----------|-----|-----|-------------|---------------------|-------|------|----------|-------|---------------------------|-------|-----------|
| Mod.             | Data Rate | NTX | CH. | Freq. (MHz) | Peak PSD (dBm/3kHz) |       |      | DG (dBi) |       | Peak PSD Limit (dBm/3kHz) |       | Pass/Fail |
|                  |           |     |     |             | Ant 6               | Ant 3 | SUM  | Ant 6    | Ant 3 | Ant 6                     | Ant 3 |           |
| 11b              | 1Mbps     | 2   | 1   | 2412        | 3.53                | 3.92  | 6.93 | 6.93     |       | 7.07                      |       | Pass      |
| 11b              | 1Mbps     | 2   | 2   | 2417        | 3.48                | 3.35  | 6.49 | 6.93     |       | 7.07                      |       | Pass      |
| 11b              | 1Mbps     | 2   | 3   | 2422        | 3.82                | 3.25  | 6.83 | 6.93     |       | 7.07                      |       | Pass      |
| 11b              | 1Mbps     | 2   | 6   | 2437        | 3.34                | 2.32  | 6.35 | 6.93     |       | 7.07                      |       | Pass      |
| 11b              | 1Mbps     | 2   | 9   | 2452        | 3.42                | 3.39  | 6.43 | 6.93     |       | 7.07                      |       | Pass      |
| 11b              | 1Mbps     | 2   | 10  | 2457        | 3.91                | 3.65  | 6.92 | 6.93     |       | 7.07                      |       | Pass      |
| 11b              | 1Mbps     | 2   | 11  | 2462        | 3.73                | 2.88  | 6.74 | 6.93     |       | 7.07                      |       | Pass      |
| 11g              | 6Mbps     | 2   | 1   | 2412        | 2.32                | 1.56  | 5.33 | 6.93     |       | 7.07                      |       | Pass      |
| 11g              | 6Mbps     | 2   | 2   | 2417        | 2.06                | 2.34  | 5.35 | 6.93     |       | 7.07                      |       | Pass      |
| 11g              | 6Mbps     | 2   | 3   | 2422        | 1.81                | 1.86  | 4.87 | 6.93     |       | 7.07                      |       | Pass      |
| 11g              | 6Mbps     | 2   | 6   | 2437        | 1.29                | 2.13  | 5.14 | 6.93     |       | 7.07                      |       | Pass      |
| 11g              | 6Mbps     | 2   | 9   | 2452        | 1.99                | 1.51  | 5.00 | 6.93     |       | 7.07                      |       | Pass      |
| 11g              | 6Mbps     | 2   | 10  | 2457        | 1.75                | 2.39  | 5.40 | 6.93     |       | 7.07                      |       | Pass      |
| 11g              | 6Mbps     | 2   | 11  | 2462        | 2.46                | 2.44  | 5.47 | 6.93     |       | 7.07                      |       | Pass      |
| HT20             | MCS0      | 2   | 1   | 2412        | 2.34                | 3.97  | 6.98 | 6.93     |       | 7.07                      |       | Pass      |
| HT20             | MCS0      | 2   | 2   | 2417        | 2.91                | 3.95  | 6.96 | 6.93     |       | 7.07                      |       | Pass      |
| HT20             | MCS0      | 2   | 3   | 2422        | 3.27                | 3.90  | 6.91 | 6.93     |       | 7.07                      |       | Pass      |
| HT20             | MCS0      | 2   | 6   | 2437        | 3.60                | 4.04  | 7.05 | 6.93     |       | 7.07                      |       | Pass      |
| HT20             | MCS0      | 2   | 9   | 2452        | 3.83                | 3.90  | 6.91 | 6.93     |       | 7.07                      |       | Pass      |
| HT20             | MCS0      | 2   | 10  | 2457        | 3.72                | 3.63  | 6.73 | 6.93     |       | 7.07                      |       | Pass      |
| HT20             | MCS0      | 2   | 11  | 2462        | 3.08                | 3.92  | 6.93 | 6.93     |       | 7.07                      |       | Pass      |
| HT40             | MCS0      | 2   | 3   | 2422        | -1.12               | -0.54 | 2.47 | 6.93     |       | 7.07                      |       | Pass      |
| HT40             | MCS0      | 2   | 6   | 2437        | -0.46               | -1.05 | 2.55 | 6.93     |       | 7.07                      |       | Pass      |
| HT40             | MCS0      | 2   | 9   | 2452        | -1.09               | -0.90 | 2.11 | 6.93     |       | 7.07                      |       | Pass      |

Note : PSD Sum = Max PSD(Ant. 6, Ant. 3) + 10 log (2)



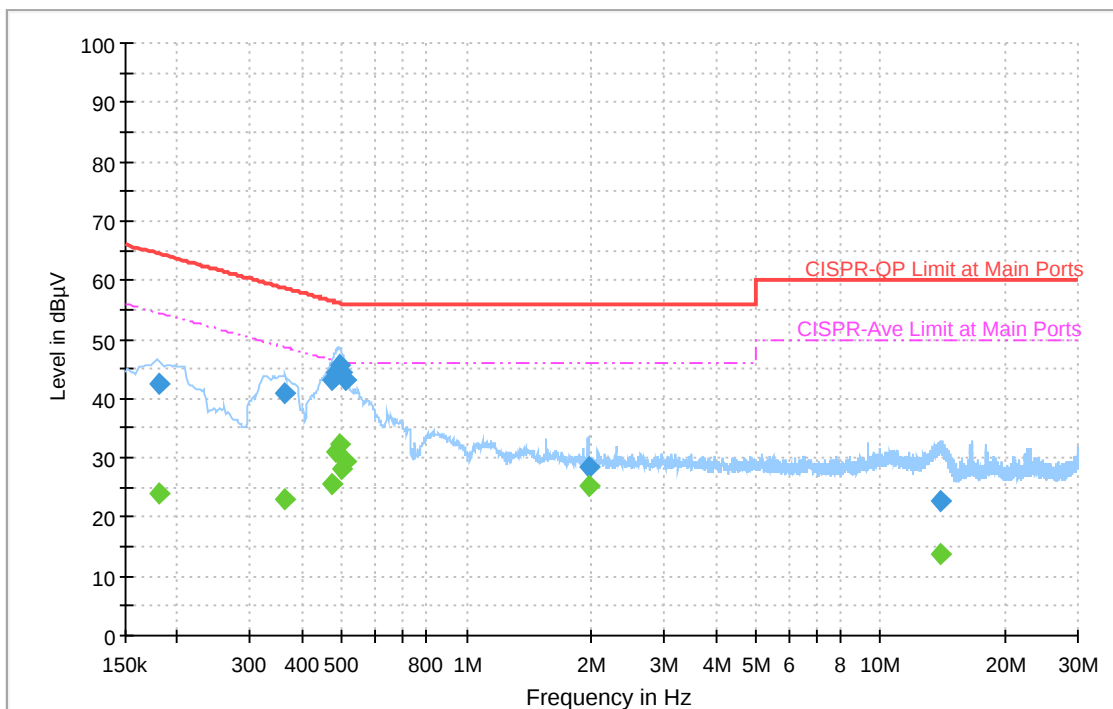
## **Appendix B. AC Conducted Emission Test Results**

|                        |              |                            |         |
|------------------------|--------------|----------------------------|---------|
| <b>Test Engineer :</b> | Jordan Huang | <b>Temperature :</b>       | 24~26°C |
|                        |              | <b>Relative Humidity :</b> | 43~47%  |

## EUT Information

Site: CO01-CA  
Power: 120Vac/60Hz  
Mode: 1

Full Spectrum



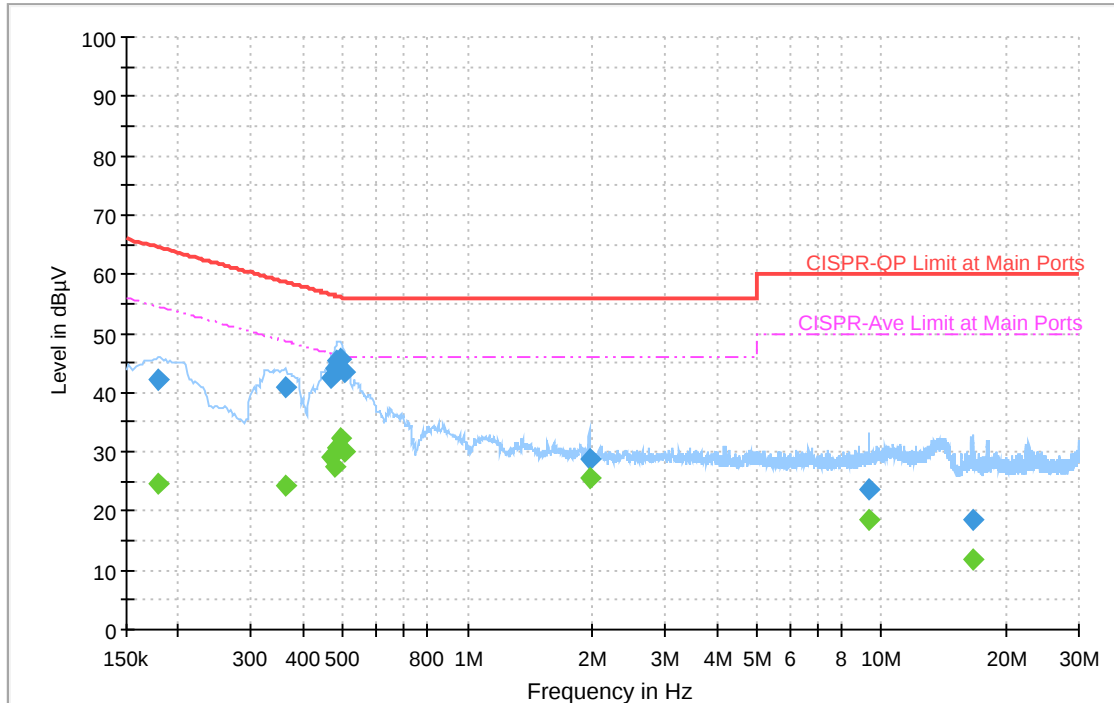
## Final Result

| Frequency (MHz) | QuasiPeak (dBµV) | CAverage (dBµV) | Limit (dBµV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|------|--------|------------|
| 0.181500        | ---              | 23.90           | 54.42        | 30.52       | L1   | OFF    | 20.3       |
| 0.181500        | 42.44            | ---             | 64.42        | 21.98       | L1   | OFF    | 20.3       |
| 0.363750        | ---              | 22.91           | 48.64        | 25.73       | L1   | OFF    | 20.3       |
| 0.363750        | 40.88            | ---             | 58.64        | 17.76       | L1   | OFF    | 20.3       |
| 0.474000        | ---              | 25.51           | 46.44        | 20.93       | L1   | OFF    | 20.3       |
| 0.474000        | 42.99            | ---             | 56.44        | 13.45       | L1   | OFF    | 20.3       |
| 0.480750        | ---              | 31.12           | 46.33        | 15.21       | L1   | OFF    | 20.3       |
| 0.480750        | 44.35            | ---             | 56.33        | 11.98       | L1   | OFF    | 20.3       |
| 0.492000        | ---              | 32.29           | 46.13        | 13.84       | L1   | OFF    | 20.3       |
| 0.492000        | 45.65            | ---             | 56.13        | 10.48       | L1   | OFF    | 20.3       |
| 0.501000        | ---              | 28.02           | 46.00        | 17.98       | L1   | OFF    | 20.3       |
| 0.501000        | 44.53            | ---             | 56.00        | 11.47       | L1   | OFF    | 20.3       |
| 0.507750        | ---              | 29.42           | 46.00        | 16.58       | L1   | OFF    | 20.3       |
| 0.507750        | 43.27            | ---             | 56.00        | 12.73       | L1   | OFF    | 20.3       |
| 1.965750        | ---              | 25.20           | 46.00        | 20.80       | L1   | OFF    | 20.3       |
| 1.965750        | 28.42            | ---             | 56.00        | 27.58       | L1   | OFF    | 20.3       |
| 13.933500       | ---              | 13.65           | 50.00        | 36.35       | L1   | OFF    | 20.5       |
| 13.933500       | 22.72            | ---             | 60.00        | 37.28       | L1   | OFF    | 20.5       |

## EUT Information

Site: CO01-CA  
Power: 120Vac/60Hz  
Mode: 1

Full Spectrum



## Final Result

| Frequency (MHz) | QuasiPeak (dBµV) | CAverage (dBµV) | Limit (dBµV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|------|--------|------------|
| 0.179250        | ---              | 24.53           | 54.52        | 29.99       | N    | OFF    | 20.2       |
| 0.179250        | 42.25            | ---             | 64.52        | 22.27       | N    | OFF    | 20.2       |
| 0.361500        | ---              | 24.29           | 48.69        | 24.40       | N    | OFF    | 20.3       |
| 0.361500        | 40.79            | ---             | 58.69        | 17.90       | N    | OFF    | 20.3       |
| 0.469500        | ---              | 29.05           | 46.52        | 17.47       | N    | OFF    | 20.3       |
| 0.469500        | 42.63            | ---             | 56.52        | 13.89       | N    | OFF    | 20.3       |
| 0.476250        | ---              | 27.58           | 46.40        | 18.82       | N    | OFF    | 20.3       |
| 0.476250        | 43.99            | ---             | 56.40        | 12.41       | N    | OFF    | 20.3       |
| 0.485250        | ---              | 30.64           | 46.25        | 15.61       | N    | OFF    | 20.3       |
| 0.485250        | 45.51            | ---             | 56.25        | 10.74       | N    | OFF    | 20.3       |
| 0.492000        | ---              | 32.38           | 46.13        | 13.75       | N    | OFF    | 20.3       |
| 0.492000        | 45.64            | ---             | 56.13        | 10.49       | N    | OFF    | 20.3       |
| 0.505500        | ---              | 30.04           | 46.00        | 15.96       | N    | OFF    | 20.3       |
| 0.505500        | 43.46            | ---             | 56.00        | 12.54       | N    | OFF    | 20.3       |
| 1.965750        | ---              | 25.40           | 46.00        | 20.60       | N    | OFF    | 20.3       |
| 1.965750        | 28.62            | ---             | 56.00        | 27.38       | N    | OFF    | 20.3       |
| 9.350250        | ---              | 18.54           | 50.00        | 31.46       | N    | OFF    | 20.4       |
| 9.350250        | 23.80            | ---             | 60.00        | 36.20       | N    | OFF    | 20.4       |
| 16.651500       | ---              | 11.90           | 50.00        | 38.10       | N    | OFF    | 20.5       |
| 16.651500       | 18.62            | ---             | 60.00        | 41.38       | N    | OFF    | 20.5       |



## Appendix C. Radiated Spurious Emission

|                 |                            |                     |         |
|-----------------|----------------------------|---------------------|---------|
| Test Engineer : | Michael Bui and Daniel Lee | Temperature :       | 20~24°C |
|                 |                            | Relative Humidity : | 42~48%  |

## 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.    |         |
| 6+3                         |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 802.11b<br>CH 01<br>2412MHz |      | 2376.885  | 55.64      | -18.36 | 74         | 41.63    | 27.77    | 17.53  | 31.29  | 400    | 180     | P       | H       |
|                             |      | 2318.61   | 44.89      | -9.11  | 54         | 30.68    | 28.11    | 17.42  | 31.32  | 400    | 180     | A       | H       |
|                             | *    | 2412      | 124.61     | -      | -          | 110.71   | 27.58    | 17.59  | 31.27  | 400    | 180     | P       | H       |
|                             | *    | 2412      | 121.23     | -      | -          | 107.33   | 27.58    | 17.59  | 31.27  | 400    | 180     | A       | H       |
|                             |      |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |      |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |      | 2387.28   | 55.49      | -18.51 | 74         | 41.16    | 28.06    | 17.55  | 31.28  | 396    | 163     | P       | V       |
|                             |      | 2386.02   | 44.62      | -9.38  | 54         | 30.29    | 28.06    | 17.55  | 31.28  | 396    | 163     | A       | V       |
|                             | *    | 2412      | 116.59     | -      | -          | 102.41   | 27.86    | 17.59  | 31.27  | 396    | 163     | P       | V       |
|                             | *    | 2412      | 114.11     | -      | -          | 99.93    | 27.86    | 17.59  | 31.27  | 396    | 163     | A       | V       |
|                             |      |           |            |        |            |          |          |        |        |        |         |         | V       |
|                             |      |           |            |        |            |          |          |        |        |        |         |         | V       |
| 802.11b<br>CH 02<br>2417MHz |      | 2352.24   | 55.68      | -18.32 | 74         | 41.56    | 27.94    | 17.48  | 31.3   | 400    | 175     | P       | H       |
|                             |      | 2326.08   | 44.9       | -9.1   | 54         | 30.72    | 28.07    | 17.43  | 31.32  | 400    | 175     | A       | H       |
|                             | *    | 2417      | 124.53     | -      | -          | 110.63   | 27.57    | 17.6   | 31.27  | 400    | 175     | P       | H       |
|                             | *    | 2417      | 121.14     | -      | -          | 107.24   | 27.57    | 17.6   | 31.27  | 400    | 175     | A       | H       |
|                             |      |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |      |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |      | 2366.88   | 55.07      | -18.93 | 74         | 40.83    | 28.03    | 17.51  | 31.3   | 396    | 163     | P       | V       |
|                             |      | 2381.88   | 44.63      | -9.37  | 54         | 30.3     | 28.08    | 17.54  | 31.29  | 396    | 163     | A       | V       |
|                             | *    | 2417      | 118.74     | -      | -          | 104.6    | 27.81    | 17.6   | 31.27  | 396    | 163     | P       | V       |
|                             | *    | 2417      | 116.1      | -      | -          | 101.96   | 27.81    | 17.6   | 31.27  | 396    | 163     | A       | V       |
|                             |      |           |            |        |            |          |          |        |        |        |         |         | V       |
|                             |      |           |            |        |            |          |          |        |        |        |         |         | V       |



|                             |   |         |        |        |    |        |       |       |       |     |     |   |   |
|-----------------------------|---|---------|--------|--------|----|--------|-------|-------|-------|-----|-----|---|---|
| 802.11b<br>CH 03<br>2437MHz |   | 2328.36 | 55.57  | -18.43 | 74 | 41.39  | 28.06 | 17.44 | 31.32 | 360 | 184 | P | H |
|                             |   | 2310.36 | 44.8   | -9.2   | 54 | 30.56  | 28.15 | 17.41 | 31.32 | 360 | 184 | A | H |
|                             | * | 2422    | 123.81 | -      | -  | 109.92 | 27.55 | 17.61 | 31.27 | 360 | 184 | P | H |
|                             | * | 2422    | 121.06 | -      | -  | 107.17 | 27.55 | 17.61 | 31.27 | 360 | 184 | A | H |
|                             |   |         |        |        |    |        |       |       |       |     |     |   | H |
|                             |   |         |        |        |    |        |       |       |       |     |     |   | H |
|                             |   | 2373.48 | 55.35  | -18.65 | 74 | 41.06  | 28.06 | 17.52 | 31.29 | 306 | 111 | P | V |
|                             |   | 2383.08 | 44.81  | -9.19  | 54 | 30.49  | 28.07 | 17.54 | 31.29 | 306 | 111 | A | V |
|                             | * | 2422    | 121.76 | -      | -  | 107.65 | 27.77 | 17.61 | 31.27 | 306 | 111 | P | V |
|                             | * | 2422    | 118.77 | -      | -  | 104.66 | 27.77 | 17.61 | 31.27 | 306 | 111 | A | V |
|                             |   |         |        |        |    |        |       |       |       |     |     |   | V |
|                             |   |         |        |        |    |        |       |       |       |     |     |   | V |
|                             |   |         |        |        |    |        |       |       |       |     |     |   |   |
| 802.11b<br>CH 06<br>2437MHz |   | 2366.42 | 55.87  | -18.13 | 74 | 41.82  | 27.84 | 17.51 | 31.3  | 108 | 187 | P | H |
|                             |   | 2344.02 | 44.92  | -9.08  | 54 | 30.78  | 27.98 | 17.47 | 31.31 | 108 | 187 | A | H |
|                             | * | 2437    | 124.67 | -      | -  | 110.78 | 27.51 | 17.64 | 31.26 | 108 | 187 | P | H |
|                             | * | 2437    | 121.81 | -      | -  | 107.92 | 27.51 | 17.64 | 31.26 | 108 | 187 | A | H |
|                             |   | 2494.72 | 54.98  | -19.02 | 74 | 40.97  | 27.48 | 17.76 | 31.23 | 108 | 187 | P | H |
|                             |   | 2491.12 | 44.81  | -9.19  | 54 | 30.81  | 27.48 | 17.75 | 31.23 | 108 | 187 | A | H |
|                             |   | 2348.5  | 55.77  | -18.23 | 74 | 41.67  | 27.93 | 17.48 | 31.31 | 390 | 149 | P | V |
|                             |   | 2379.02 | 44.63  | -9.37  | 54 | 30.31  | 28.08 | 17.53 | 31.29 | 390 | 149 | A | V |
|                             | * | 2437    | 118.21 | -      | -  | 104.12 | 27.71 | 17.64 | 31.26 | 390 | 149 | P | V |
|                             | * | 2437    | 115.67 | -      | -  | 101.58 | 27.71 | 17.64 | 31.26 | 390 | 149 | A | V |
|                             |   | 2491.28 | 54.96  | -19.04 | 74 | 40.93  | 27.51 | 17.75 | 31.23 | 390 | 149 | P | V |
|                             |   | 2500    | 44.39  | -9.61  | 54 | 30.35  | 27.5  | 17.77 | 31.23 | 390 | 149 | A | V |
|                             |   |         |        |        |    |        |       |       |       |     |     |   |   |



|                             |   |         |        |        |    |        |       |       |       |     |     |   |   |
|-----------------------------|---|---------|--------|--------|----|--------|-------|-------|-------|-----|-----|---|---|
| 802.11b<br>CH 09<br>2452MHz | * | 2452    | 124.91 | -      | -  | 111.01 | 27.47 | 17.68 | 31.25 | 132 | 182 | P | H |
|                             | * | 2452    | 121.39 | -      | -  | 107.49 | 27.47 | 17.68 | 31.25 | 132 | 182 | A | H |
|                             |   | 2484.1  | 55.09  | -18.91 | 74 | 41.1   | 27.48 | 17.75 | 31.24 | 132 | 182 | P | H |
|                             |   | 2486.55 | 44.84  | -9.16  | 54 | 30.85  | 27.48 | 17.75 | 31.24 | 132 | 182 | A | H |
|                             |   |         |        |        |    |        |       |       |       |     |     |   | H |
|                             |   |         |        |        |    |        |       |       |       |     |     |   | H |
|                             | * | 2452    | 115.62 | -      | -  | 101.58 | 27.61 | 17.68 | 31.25 | 299 | 157 | P | V |
|                             | * | 2452    | 113.13 | -      | -  | 99.09  | 27.61 | 17.68 | 31.25 | 299 | 157 | A | V |
|                             |   | 2493.95 | 54.51  | -19.49 | 74 | 40.46  | 27.51 | 17.77 | 31.23 | 299 | 157 | P | V |
|                             |   | 2499.9  | 44.37  | -9.63  | 54 | 30.32  | 27.5  | 17.78 | 31.23 | 299 | 157 | A | V |
|                             |   |         |        |        |    |        |       |       |       |     |     |   | V |
|                             |   |         |        |        |    |        |       |       |       |     |     |   | V |
| 802.11b<br>CH 10<br>2457MHz | * | 2457    | 124.65 | -      | -  | 110.74 | 27.47 | 17.69 | 31.25 | 162 | 178 | P | H |
|                             | * | 2457    | 121.56 | -      | -  | 107.65 | 27.47 | 17.69 | 31.25 | 162 | 178 | A | H |
|                             |   | 2498.95 | 55.04  | -18.96 | 74 | 41.01  | 27.48 | 17.78 | 31.23 | 162 | 178 | P | H |
|                             |   | 2499.15 | 44.51  | -9.49  | 54 | 30.48  | 27.48 | 17.78 | 31.23 | 162 | 178 | A | H |
|                             |   |         |        |        |    |        |       |       |       |     |     |   | H |
|                             |   |         |        |        |    |        |       |       |       |     |     |   | H |
|                             | * | 2457    | 114.7  | -      | -  | 100.68 | 27.58 | 17.69 | 31.25 | 311 | 238 | P | V |
|                             | * | 2457    | 112.24 | -      | -  | 98.22  | 27.58 | 17.69 | 31.25 | 311 | 238 | A | V |
|                             |   | 2488.2  | 54.93  | -19.07 | 74 | 40.89  | 27.52 | 17.76 | 31.24 | 311 | 238 | P | V |
|                             |   | 2483.8  | 44.51  | -9.49  | 54 | 30.48  | 27.52 | 17.75 | 31.24 | 311 | 238 | A | V |
|                             |   |         |        |        |    |        |       |       |       |     |     |   | V |
|                             |   |         |        |        |    |        |       |       |       |     |     |   | V |



|                                                  |                                                                                             |         |        |        |    |        |       |       |       |     |     |   |   |
|--------------------------------------------------|---------------------------------------------------------------------------------------------|---------|--------|--------|----|--------|-------|-------|-------|-----|-----|---|---|
| <b>802.11b</b><br><b>CH 11</b><br><b>2462MHz</b> | *                                                                                           | 2462    | 123.12 | -      | -  | 109.2  | 27.47 | 17.7  | 31.25 | 161 | 174 | P | H |
|                                                  | *                                                                                           | 2462    | 120.54 | -      | -  | 106.62 | 27.47 | 17.7  | 31.25 | 161 | 174 | A | H |
|                                                  |                                                                                             | 2497.3  | 55.5   | -18.5  | 74 | 41.48  | 27.48 | 17.77 | 31.23 | 161 | 174 | P | H |
|                                                  |                                                                                             | 2495.9  | 44.93  | -9.07  | 54 | 30.91  | 27.48 | 17.77 | 31.23 | 161 | 174 | A | H |
|                                                  |                                                                                             |         |        |        |    |        |       |       |       |     |     |   | H |
|                                                  |                                                                                             |         |        |        |    |        |       |       |       |     |     |   | H |
|                                                  | *                                                                                           | 2462    | 115.93 | -      | -  | 101.93 | 27.55 | 17.7  | 31.25 | 371 | 170 | P | V |
|                                                  | *                                                                                           | 2462    | 113.5  | -      | -  | 99.5   | 27.55 | 17.7  | 31.25 | 371 | 170 | A | V |
|                                                  |                                                                                             | 2491.6  | 54.66  | -19.34 | 74 | 40.62  | 27.51 | 17.76 | 31.23 | 371 | 170 | P | V |
|                                                  |                                                                                             | 2490.35 | 44.33  | -9.67  | 54 | 30.28  | 27.52 | 17.76 | 31.23 | 371 | 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 802.11b (Harmonic @ 3m)

| WIFI<br>Ant.<br>6+3         | 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                 | 47.23               | -26.77                  | 74                          | 72.45                     | 31.45                         | 11.52                  | 68.19                      | -                    | -                       | P                       | H               |
|                             |      | 10890                | 50.19               | -23.81                  | 74                          | 61.09                     | 40.31                         | 16.95                  | 68.16                      | -                    | -                       | P                       | H               |
|                             |      | 10890                | 39.52               | -14.48                  | 54                          | 50.42                     | 40.31                         | 16.95                  | 68.16                      | -                    | -                       | A                       | H               |
|                             |      | 14490                | 50.79               | -23.21                  | 74                          | 56.87                     | 41.76                         | 19.9                   | 67.74                      | -                    | -                       | P                       | H               |
|                             |      | 14490                | 41.43               | -12.57                  | 54                          | 47.51                     | 41.76                         | 19.9                   | 67.74                      | -                    | -                       | A                       | H               |
|                             |      | 18000                | 61.19               | -12.81                  | 74                          | 59.21                     | 48.43                         | 22.97                  | 69.42                      | -                    | -                       | P                       | H               |
|                             |      | 18000                | 50.32               | -3.68                   | 54                          | 48.34                     | 48.43                         | 22.97                  | 69.42                      | -                    | -                       | A                       | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      | 4824                 | 47.45               | -26.55                  | 74                          | 72.65                     | 31.47                         | 11.52                  | 68.19                      | -                    | -                       | P                       | V               |
|                             |      | 11910                | 49.59               | -24.41                  | 74                          | 60.39                     | 39.17                         | 17.79                  | 67.76                      | -                    | -                       | P                       | V               |
|                             |      | 11910                | 39.54               | -14.46                  | 54                          | 50.34                     | 39.17                         | 17.79                  | 67.76                      | -                    | -                       | A                       | V               |
|                             |      | 14490                | 50.88               | -23.12                  | 74                          | 57.09                     | 41.63                         | 19.9                   | 67.74                      | -                    | -                       | P                       | V               |
|                             |      | 14490                | 41.34               | -12.66                  | 54                          | 47.55                     | 41.63                         | 19.9                   | 67.74                      | -                    | -                       | A                       | V               |
|                             |      | 18000                | 60.85               | -13.15                  | 74                          | 59.29                     | 48.01                         | 22.97                  | 69.42                      | -                    | -                       | P                       | V               |
|                             |      | 18000                | 49.91               | -4.09                   | 54                          | 48.35                     | 48.01                         | 22.97                  | 69.42                      | -                    | -                       | A                       | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |



| WIFI<br>Ant.<br>6+3         | 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 02<br>2417MHz |      | 4834                 | 45.37               | -28.63                  | 74                          | 70.58                     | 31.45                         | 11.53                  | 68.19                      | -                    | -                       | P                       | H               |
|                             |      | 7251                 | 54.14               | -19.86                  | 74                          | 70.85                     | 36.37                         | 13.74                  | 66.82                      | 224                  | 262                     | P                       | H               |
|                             |      | 7251                 | 49.42               | -4.58                   | 54                          | 66.13                     | 36.37                         | 13.74                  | 66.82                      | 224                  | 262                     | A                       | H               |
|                             |      | 10920                | 49.18               | -24.82                  | 74                          | 59.99                     | 40.34                         | 16.97                  | 68.12                      | -                    | -                       | P                       | H               |
|                             |      | 10920                | 39.57               | -14.43                  | 54                          | 50.38                     | 40.34                         | 16.97                  | 68.12                      | -                    | -                       | A                       | H               |
|                             |      | 14490                | 49.38               | -24.62                  | 74                          | 55.46                     | 41.76                         | 19.9                   | 67.74                      | -                    | -                       | P                       | H               |
|                             |      | 14490                | 41.45               | -12.55                  | 54                          | 47.53                     | 41.76                         | 19.9                   | 67.74                      | -                    | -                       | A                       | H               |
|                             |      | 18000                | 60.5                | -13.5                   | 74                          | 58.52                     | 48.43                         | 22.97                  | 69.42                      | -                    | -                       | P                       | H               |
|                             |      | 18000                | 49.93               | -4.07                   | 54                          | 47.95                     | 48.43                         | 22.97                  | 69.42                      | -                    | -                       | A                       | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      | 4834                 | 45.42               | -28.58                  | 74                          | 70.58                     | 31.5                          | 11.53                  | 68.19                      | -                    | -                       | P                       | V               |
|                             |      | 7251                 | 53.16               | -20.84                  | 74                          | 69.94                     | 36.3                          | 13.74                  | 66.82                      | 219                  | 93                      | P                       | V               |
|                             |      | 7251                 | 48.17               | -5.83                   | 54                          | 64.95                     | 36.3                          | 13.74                  | 66.82                      | 219                  | 93                      | A                       | V               |
|                             |      | 10830                | 49.27               | -24.73                  | 74                          | 60.5                      | 40.11                         | 16.9                   | 68.24                      | -                    | -                       | P                       | V               |
|                             |      | 10830                | 38.5                | -15.5                   | 54                          | 49.73                     | 40.11                         | 16.9                   | 68.24                      | -                    | -                       | A                       | V               |
|                             |      | 14490                | 50.09               | -23.91                  | 74                          | 56.3                      | 41.63                         | 19.9                   | 67.74                      | -                    | -                       | P                       | V               |
|                             |      | 14490                | 41.34               | -12.66                  | 54                          | 47.55                     | 41.63                         | 19.9                   | 67.74                      | -                    | -                       | A                       | V               |
|                             |      | 18000                | 60.02               | -13.98                  | 74                          | 58.46                     | 48.01                         | 22.97                  | 69.42                      | -                    | -                       | P                       | V               |
|                             |      | 18000                | 49.47               | -4.53                   | 54                          | 47.91                     | 48.01                         | 22.97                  | 69.42                      | -                    | -                       | A                       | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |



| WIFI<br>Ant.<br>6+3         | 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 03<br>2422MHz |      | 4844                 | 46.75               | -27.25                  | 74                          | 71.92                     | 31.46                         | 11.55                  | 68.18                      | -                    | -                       | P                       | H               |
|                             |      | 7266                 | 53.84               | -20.16                  | 74                          | 70.52                     | 36.38                         | 13.76                  | 66.82                      | 268                  | 241                     | P                       | H               |
|                             |      | 7266                 | 49.41               | -4.59                   | 54                          | 66.09                     | 36.38                         | 13.76                  | 66.82                      | 268                  | 241                     | A                       | H               |
|                             |      | 11265                | 49.37               | -24.63                  | 74                          | 60.09                     | 39.82                         | 17.25                  | 67.79                      | -                    | -                       | P                       | H               |
|                             |      | 11265                | 39.62               | -14.38                  | 54                          | 50.34                     | 39.82                         | 17.25                  | 67.79                      | -                    | -                       | A                       | H               |
|                             |      | 14490                | 50.16               | -23.84                  | 74                          | 56.24                     | 41.76                         | 19.9                   | 67.74                      | -                    | -                       | P                       | H               |
|                             |      | 14490                | 41.47               | -12.53                  | 54                          | 47.55                     | 41.76                         | 19.9                   | 67.74                      | -                    | -                       | A                       | H               |
|                             |      | 18000                | 60.08               | -13.92                  | 74                          | 58.1                      | 48.43                         | 22.97                  | 69.42                      | -                    | -                       | P                       | H               |
|                             |      | 18000                | 49.76               | -4.24                   | 54                          | 47.78                     | 48.43                         | 22.97                  | 69.42                      | -                    | -                       | A                       | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      | 4844                 | 47.87               | -26.13                  | 74                          | 72.97                     | 31.53                         | 11.55                  | 68.18                      | -                    | -                       | P                       | V               |
|                             |      | 7266                 | 53.27               | -20.73                  | 74                          | 70.01                     | 36.32                         | 13.76                  | 66.82                      | 208                  | 86                      | P                       | V               |
|                             |      | 7266                 | 48.83               | -5.17                   | 54                          | 65.57                     | 36.32                         | 13.76                  | 66.82                      | 208                  | 86                      | A                       | V               |
|                             |      | 11670                | 49.86               | -24.14                  | 74                          | 60.2                      | 39.74                         | 17.58                  | 67.66                      | -                    | -                       | P                       | V               |
|                             |      | 11670                | 39.28               | -14.72                  | 54                          | 49.62                     | 39.74                         | 17.58                  | 67.66                      | -                    | -                       | A                       | V               |
|                             |      | 14490                | 49.59               | -24.41                  | 74                          | 55.8                      | 41.63                         | 19.9                   | 67.74                      | -                    | -                       | P                       | V               |
|                             |      | 14490                | 41.35               | -12.65                  | 54                          | 47.56                     | 41.63                         | 19.9                   | 67.74                      | -                    | -                       | A                       | V               |
|                             |      | 18000                | 59.86               | -14.14                  | 74                          | 58.3                      | 48.01                         | 22.97                  | 69.42                      | -                    | -                       | P                       | V               |
|                             |      | 18000                | 49.31               | -4.69                   | 54                          | 47.75                     | 48.01                         | 22.97                  | 69.42                      | -                    | -                       | A                       | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |



| WIFI<br>Ant.<br>6+3                  | 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 ) |
|--------------------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| <b>802.11b<br/>CH 06<br/>2437MHz</b> |      | 4874                 | 51.11               | -22.89                  | 74                          | 76.21                     | 31.45                         | 11.61                  | 68.16                      | 251                  | 162                     | P                       | H               |
|                                      |      | 4874                 | 48.95               | -5.05                   | 54                          | 74.05                     | 31.45                         | 11.61                  | 68.16                      | 251                  | 162                     | A                       | H               |
|                                      |      | 7311                 | 54.45               | -19.55                  | 74                          | 71.06                     | 36.4                          | 13.81                  | 66.82                      | 220                  | 259                     | P                       | H               |
|                                      |      | 7311                 | 49.91               | -4.09                   | 54                          | 66.52                     | 36.4                          | 13.81                  | 66.82                      | 220                  | 259                     | A                       | H               |
|                                      |      | 10845                | 50.45               | -23.55                  | 74                          | 61.6                      | 40.16                         | 16.91                  | 68.22                      | -                    | -                       | P                       | H               |
|                                      |      | 10845                | 39.49               | -14.51                  | 54                          | 50.64                     | 40.16                         | 16.91                  | 68.22                      | -                    | -                       | A                       | H               |
|                                      |      | 14490                | 51.78               | -22.22                  | 74                          | 57.86                     | 41.76                         | 19.9                   | 67.74                      | -                    | -                       | P                       | H               |
|                                      |      | 14490                | 41.47               | -12.53                  | 54                          | 47.55                     | 41.76                         | 19.9                   | 67.74                      | -                    | -                       | A                       | H               |
|                                      |      | 18000                | 60.99               | -13.01                  | 74                          | 59.01                     | 48.43                         | 22.97                  | 69.42                      | -                    | -                       | P                       | H               |
|                                      |      | 18000                | 49.86               | -4.14                   | 54                          | 47.88                     | 48.43                         | 22.97                  | 69.42                      | -                    | -                       | A                       | H               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                      |      | 4874                 | 52.52               | -21.48                  | 74                          | 77.54                     | 31.53                         | 11.61                  | 68.16                      | 109                  | 246                     | P                       | V               |
|                                      |      | 4874                 | 50.38               | -3.62                   | 54                          | 75.4                      | 31.53                         | 11.61                  | 68.16                      | 109                  | 246                     | A                       | V               |
|                                      |      | 7311                 | 53.81               | -20.19                  | 74                          | 70.47                     | 36.35                         | 13.81                  | 66.82                      | 205                  | 86                      | P                       | V               |
|                                      |      | 7311                 | 48.97               | -5.03                   | 54                          | 65.63                     | 36.35                         | 13.81                  | 66.82                      | 205                  | 86                      | A                       | V               |
|                                      |      | 11430                | 49.79               | -24.21                  | 74                          | 59.9                      | 40.15                         | 17.39                  | 67.65                      | -                    | -                       | P                       | V               |
|                                      |      | 11430                | 40.51               | -13.49                  | 54                          | 50.62                     | 40.15                         | 17.39                  | 67.65                      | -                    | -                       | A                       | V               |
|                                      |      | 14490                | 51.01               | -22.99                  | 74                          | 57.22                     | 41.63                         | 19.9                   | 67.74                      | -                    | -                       | P                       | V               |
|                                      |      | 14490                | 41.32               | -12.68                  | 54                          | 47.53                     | 41.63                         | 19.9                   | 67.74                      | -                    | -                       | A                       | V               |
|                                      |      | 18000                | 59.96               | -14.04                  | 74                          | 58.4                      | 48.01                         | 22.97                  | 69.42                      | -                    | -                       | P                       | V               |
|                                      |      | 18000                | 49.47               | -4.53                   | 54                          | 47.91                     | 48.01                         | 22.97                  | 69.42                      | -                    | -                       | A                       | V               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |



| WIFI<br>Ant.<br>6+3         | 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 09<br>2452MHz |      | 4904                 | 46.54               | -27.46                  | 74                          | 71.61                     | 31.43                         | 11.64                  | 68.14                      | -                    | -                       | P                       | H               |
|                             |      | 7356                 | 57.58               | -16.42                  | 74                          | 74.13                     | 36.45                         | 13.83                  | 66.83                      | 223                  | 259                     | P                       | H               |
|                             |      | 7356                 | 53.67               | -0.33                   | 54                          | 70.22                     | 36.45                         | 13.83                  | 66.83                      | 223                  | 259                     | A                       | H               |
|                             |      | 11055                | 49.31               | -24.69                  | 74                          | 60.01                     | 40.2                          | 17.07                  | 67.97                      | -                    | -                       | P                       | H               |
|                             |      | 11055                | 39.72               | -14.28                  | 54                          | 50.42                     | 40.2                          | 17.07                  | 67.97                      | -                    | -                       | A                       | H               |
|                             |      | 14490                | 49.16               | -24.84                  | 74                          | 55.24                     | 41.76                         | 19.9                   | 67.74                      | -                    | -                       | P                       | H               |
|                             |      | 14490                | 41.51               | -12.49                  | 54                          | 47.59                     | 41.76                         | 19.9                   | 67.74                      | -                    | -                       | A                       | H               |
|                             |      | 18000                | 60.85               | -13.15                  | 74                          | 58.87                     | 48.43                         | 22.97                  | 69.42                      | -                    | -                       | P                       | H               |
|                             |      | 18000                | 49.99               | -4.01                   | 54                          | 48.01                     | 48.43                         | 22.97                  | 69.42                      | -                    | -                       | A                       | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |      | 4904                 | 47.7                | -26.3                   | 74                          | 72.69                     | 31.51                         | 11.64                  | 68.14                      | -                    | -                       | P                       | V               |
|                             |      | 7356                 | 56.35               | -17.65                  | 74                          | 73.01                     | 36.34                         | 13.83                  | 66.83                      | 211                  | 89                      | P                       | V               |
|                             |      | 7356                 | 52.16               | -1.84                   | 54                          | 68.82                     | 36.34                         | 13.83                  | 66.83                      | 211                  | 89                      | A                       | V               |
|                             |      | 11370                | 49.73               | -24.27                  | 74                          | 60.1                      | 39.99                         | 17.34                  | 67.7                       | -                    | -                       | P                       | V               |
|                             |      | 11370                | 39.46               | -14.54                  | 54                          | 49.83                     | 39.99                         | 17.34                  | 67.7                       | -                    | -                       | A                       | V               |
|                             |      | 14490                | 49.86               | -24.14                  | 74                          | 56.07                     | 41.63                         | 19.9                   | 67.74                      | -                    | -                       | P                       | V               |
|                             |      | 14490                | 41.36               | -12.64                  | 54                          | 47.57                     | 41.63                         | 19.9                   | 67.74                      | -                    | -                       | A                       | V               |
|                             |      | 18000                | 60.78               | -13.22                  | 74                          | 59.22                     | 48.01                         | 22.97                  | 69.42                      | -                    | -                       | P                       | V               |
|                             |      | 18000                | 49.55               | -4.45                   | 54                          | 47.99                     | 48.01                         | 22.97                  | 69.42                      | -                    | -                       | A                       | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |



| WIFI<br>Ant.<br>6+3                  | 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 ) |
|--------------------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| <b>802.11b<br/>CH 10<br/>2457MHz</b> |      | 4914                 | 44.15               | -29.85                  | 74                          | 69.22                     | 31.45                         | 11.61                  | 68.13                      | -                    | -                       | P                       | H               |
|                                      |      | 7371                 | 57.26               | -16.74                  | 74                          | 73.78                     | 36.48                         | 13.83                  | 66.83                      | 216                  | 266                     | P                       | H               |
|                                      |      | 7371                 | 53.52               | -0.48                   | 54                          | 70.04                     | 36.48                         | 13.83                  | 66.83                      | 216                  | 266                     | A                       | H               |
|                                      |      | 11445                | 49.01               | -24.99                  | 74                          | 59.1                      | 40.15                         | 17.4                   | 67.64                      | -                    | -                       | P                       | H               |
|                                      |      | 11445                | 39.74               | -14.26                  | 54                          | 49.83                     | 40.15                         | 17.4                   | 67.64                      | -                    | -                       | A                       | H               |
|                                      |      | 14490                | 50.32               | -23.68                  | 74                          | 56.4                      | 41.76                         | 19.9                   | 67.74                      | -                    | -                       | P                       | H               |
|                                      |      | 14490                | 41.48               | -12.52                  | 54                          | 47.56                     | 41.76                         | 19.9                   | 67.74                      | -                    | -                       | A                       | H               |
|                                      |      | 18000                | 60.64               | -13.36                  | 74                          | 58.66                     | 48.43                         | 22.97                  | 69.42                      | -                    | -                       | P                       | H               |
|                                      |      | 18000                | 49.98               | -4.02                   | 54                          | 48                        | 48.43                         | 22.97                  | 69.42                      | -                    | -                       | A                       | H               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                      |      | 4914                 | 47.16               | -26.84                  | 74                          | 72.18                     | 31.5                          | 11.61                  | 68.13                      | -                    | -                       | P                       | V               |
|                                      |      | 7371                 | 55.69               | -18.31                  | 74                          | 72.34                     | 36.35                         | 13.83                  | 66.83                      | 211                  | 87                      | P                       | V               |
|                                      |      | 7371                 | 51.73               | -2.27                   | 54                          | 68.38                     | 36.35                         | 13.83                  | 66.83                      | 211                  | 87                      | A                       | V               |
|                                      |      | 11025                | 49.59               | -24.41                  | 74                          | 60.3                      | 40.24                         | 17.05                  | 68                         | -                    | -                       | P                       | V               |
|                                      |      | 11025                | 39.72               | -14.28                  | 54                          | 50.43                     | 40.24                         | 17.05                  | 68                         | -                    | -                       | A                       | V               |
|                                      |      | 14490                | 49.8                | -24.2                   | 74                          | 56.01                     | 41.63                         | 19.9                   | 67.74                      | -                    | -                       | P                       | V               |
|                                      |      | 14490                | 41.34               | -12.66                  | 54                          | 47.55                     | 41.63                         | 19.9                   | 67.74                      | -                    | -                       | A                       | V               |
|                                      |      | 18000                | 59.65               | -14.35                  | 74                          | 58.09                     | 48.01                         | 22.97                  | 69.42                      | -                    | -                       | P                       | V               |
|                                      |      | 18000                | 49.52               | -4.48                   | 54                          | 47.96                     | 48.01                         | 22.97                  | 69.42                      | -                    | -                       | A                       | V               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |

| WIFI                        | Note                                                                                                                                                   | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Path   | Preamp | Ant    | Table   | Peak    | Pol.    |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant.                        |                                                                                                                                                        | ( MHz )   | ( dBμV/m ) | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
| 6+3                         |                                                                                                                                                        |           |            | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 802.11b<br>CH 11<br>2462MHz |                                                                                                                                                        | 4924      | 42.15      | -31.85 | 74         | 67.24    | 31.46    | 11.57  | 68.12  | -      | -       | P       | H       |
|                             |                                                                                                                                                        | 7386      | 56.75      | -17.25 | 74         | 73.22    | 36.52    | 13.84  | 66.83  | 299    | 247     | P       | H       |
|                             |                                                                                                                                                        | 7386      | 52.41      | -1.59  | 54         | 68.88    | 36.52    | 13.84  | 66.83  | 299    | 247     | A       | H       |
|                             |                                                                                                                                                        | 10920     | 49.28      | -24.72 | 74         | 60.09    | 40.34    | 16.97  | 68.12  | -      | -       | P       | H       |
|                             |                                                                                                                                                        | 10920     | 39         | -15    | 54         | 49.81    | 40.34    | 16.97  | 68.12  | -      | -       | A       | H       |
|                             |                                                                                                                                                        | 14490     | 50.28      | -23.72 | 74         | 56.36    | 41.76    | 19.9   | 67.74  | -      | -       | P       | H       |
|                             |                                                                                                                                                        | 14490     | 41.48      | -12.52 | 54         | 47.56    | 41.76    | 19.9   | 67.74  | -      | -       | A       | H       |
|                             |                                                                                                                                                        | 18000     | 60.99      | -13.01 | 74         | 59.01    | 48.43    | 22.97  | 69.42  | -      | -       | P       | H       |
|                             |                                                                                                                                                        | 18000     | 50.26      | -3.74  | 54         | 48.28    | 48.43    | 22.97  | 69.42  | -      | -       | A       | H       |
|                             |                                                                                                                                                        |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                                                                                        |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                                                                                        |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                                                                                        | 4924      | 44.69      | -29.31 | 74         | 69.76    | 31.48    | 11.57  | 68.12  | -      | -       | P       | V       |
|                             |                                                                                                                                                        | 7386      | 55.9       | -18.1  | 74         | 72.53    | 36.36    | 13.84  | 66.83  | 218    | 83      | P       | V       |
|                             |                                                                                                                                                        | 7386      | 51.76      | -2.24  | 54         | 68.39    | 36.36    | 13.84  | 66.83  | 218    | 83      | A       | V       |
|                             |                                                                                                                                                        | 11340     | 49.62      | -24.38 | 74         | 60.09    | 39.94    | 17.32  | 67.73  | -      | -       | P       | V       |
|                             |                                                                                                                                                        | 11340     | 39.45      | -14.55 | 54         | 49.92    | 39.94    | 17.32  | 67.73  | -      | -       | A       | V       |
|                             |                                                                                                                                                        | 14490     | 49.74      | -24.26 | 74         | 55.95    | 41.63    | 19.9   | 67.74  | -      | -       | P       | V       |
|                             |                                                                                                                                                        | 14490     | 41.38      | -12.62 | 54         | 47.59    | 41.63    | 19.9   | 67.74  | -      | -       | A       | V       |
|                             |                                                                                                                                                        | 18000     | 60.23      | -13.77 | 74         | 58.67    | 48.01    | 22.97  | 69.42  | -      | -       | P       | V       |
|                             |                                                                                                                                                        | 18000     | 49.85      | -4.15  | 54         | 48.29    | 48.01    | 22.97  | 69.42  | -      | -       | A       | V       |
|                             |                                                                                                                                                        |           |            |        |            |          |          |        |        |        |         |         | V       |
|                             |                                                                                                                                                        |           |            |        |            |          |          |        |        |        |         |         | V       |
|                             |                                                                                                                                                        |           |            |        |            |          |          |        |        |        |         |         | V       |
| Remark                      | 1. No other spurious found.                                                                                                                            |           |            |        |            |          |          |        |        |        |         |         |         |
|                             | 2. All results are PASS against Peak and Average limit line.                                                                                           |           |            |        |            |          |          |        |        |        |         |         |         |
|                             | 3. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or noise floor only. |           |            |        |            |          |          |        |        |        |         |         |         |
|                             | 4. The emission level close to 18GHz is checked that the average emission level is noise floor only.                                                   |           |            |        |            |          |          |        |        |        |         |         |         |



**2.4GHz 2400~2483.5MHz**  
**WIFI 802.11g (Band Edge @ 3m)**

| WIFI<br>Ant.<br>6+3                  | 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 ) |
|--------------------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| <b>802.11g<br/>CH 01<br/>2412MHz</b> |      | 2389.065             | 60.25               | -13.75                  | 74                          | 46.29                     | 27.69                         | 17.55                  | 31.28                      | 245                  | 172                     | P                       | H               |
|                                      |      | 2390                 | 51.94               | -2.06                   | 54                          | 37.98                     | 27.69                         | 17.55                  | 31.28                      | 245                  | 172                     | A                       | H               |
|                                      | *    | 2412                 | 126.39              | -                       | -                           | 112.49                    | 27.58                         | 17.59                  | 31.27                      | 245                  | 172                     | P                       | H               |
|                                      | *    | 2412                 | 119.83              | -                       | -                           | 105.93                    | 27.58                         | 17.59                  | 31.27                      | 245                  | 172                     | A                       | H               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                      |      | 2390                 | 58.62               | -15.38                  | 74                          | 44.31                     | 28.04                         | 17.55                  | 31.28                      | 396                  | 165                     | P                       | V               |
|                                      |      | 2390                 | 47.42               | -6.58                   | 54                          | 33.11                     | 28.04                         | 17.55                  | 31.28                      | 396                  | 165                     | A                       | V               |
|                                      | *    | 2412                 | 120.86              | -                       | -                           | 106.68                    | 27.86                         | 17.59                  | 31.27                      | 396                  | 165                     | P                       | V               |
|                                      | *    | 2412                 | 113.58              | -                       | -                           | 99.4                      | 27.86                         | 17.59                  | 31.27                      | 396                  | 165                     | A                       | V               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| <b>802.11g<br/>CH 02<br/>2417MHz</b> |      | 2389.44              | 57.36               | -16.64                  | 74                          | 43.4                      | 27.69                         | 17.55                  | 31.28                      | 245                  | 177                     | P                       | H               |
|                                      |      | 2390                 | 48.68               | -5.32                   | 54                          | 34.72                     | 27.69                         | 17.55                  | 31.28                      | 245                  | 177                     | A                       | H               |
|                                      | *    | 2417                 | 125.48              | -                       | -                           | 111.58                    | 27.57                         | 17.6                   | 31.27                      | 245                  | 177                     | P                       | H               |
|                                      | *    | 2417                 | 119.62              | -                       | -                           | 105.72                    | 27.57                         | 17.6                   | 31.27                      | 245                  | 177                     | A                       | H               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                      |      | 2366.64              | 54.99               | -19.01                  | 74                          | 40.76                     | 28.02                         | 17.51                  | 31.3                       | 397                  | 160                     | P                       | V               |
|                                      |      | 2390                 | 45.73               | -8.27                   | 54                          | 31.42                     | 28.04                         | 17.55                  | 31.28                      | 397                  | 160                     | A                       | V               |
|                                      | *    | 2417                 | 121.24              | -                       | -                           | 107.1                     | 27.81                         | 17.6                   | 31.27                      | 397                  | 160                     | P                       | V               |
|                                      | *    | 2417                 | 113.94              | -                       | -                           | 99.8                      | 27.81                         | 17.6                   | 31.27                      | 397                  | 160                     | A                       | V               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                      |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |



|                                                  |   |         |        |        |    |        |       |       |       |     |     |   |   |
|--------------------------------------------------|---|---------|--------|--------|----|--------|-------|-------|-------|-----|-----|---|---|
| <b>802.11g</b><br><b>CH 03</b><br><b>2422MHz</b> |   | 2321.04 | 55.53  | -18.47 | 74 | 41.32  | 28.1  | 17.43 | 31.32 | 249 | 176 | P | H |
|                                                  |   | 2390    | 46.11  | -7.89  | 54 | 32.15  | 27.69 | 17.55 | 31.28 | 249 | 176 | A | H |
|                                                  | * | 2422    | 126.36 | -      | -  | 112.47 | 27.55 | 17.61 | 31.27 | 249 | 176 | P | H |
|                                                  | * | 2422    | 119.68 | -      | -  | 105.79 | 27.55 | 17.61 | 31.27 | 249 | 176 | A | H |
|                                                  |   |         |        |        |    |        |       |       |       |     |     |   | H |
|                                                  |   |         |        |        |    |        |       |       |       |     |     |   | H |
|                                                  |   | 2389.68 | 55.78  | -18.22 | 74 | 41.46  | 28.05 | 17.55 | 31.28 | 395 | 162 | P | V |
|                                                  |   | 2389.92 | 45.36  | -8.64  | 54 | 31.05  | 28.04 | 17.55 | 31.28 | 395 | 162 | A | V |
|                                                  | * | 2422    | 120.23 | -      | -  | 106.12 | 27.77 | 17.61 | 31.27 | 395 | 162 | P | V |
|                                                  | * | 2422    | 113.42 | -      | -  | 99.31  | 27.77 | 17.61 | 31.27 | 395 | 162 | A | V |
|                                                  |   |         |        |        |    |        |       |       |       |     |     |   | V |
|                                                  |   |         |        |        |    |        |       |       |       |     |     |   | V |
|                                                  |   |         |        |        |    |        |       |       |       |     |     |   |   |
| <b>802.11g</b><br><b>CH 06</b><br><b>2437MHz</b> |   | 2363.44 | 55.61  | -18.39 | 74 | 41.54  | 27.86 | 17.51 | 31.3  | 108 | 175 | P | H |
|                                                  |   | 2344.24 | 45.88  | -8.12  | 54 | 31.74  | 27.98 | 17.47 | 31.31 | 108 | 175 | A | H |
|                                                  | * | 2437    | 126.29 | -      | -  | 112.4  | 27.51 | 17.64 | 31.26 | 108 | 175 | P | H |
|                                                  | * | 2437    | 119.91 | -      | -  | 106.02 | 27.51 | 17.64 | 31.26 | 108 | 175 | A | H |
|                                                  |   | 2493.84 | 55.45  | -18.55 | 74 | 41.43  | 27.48 | 17.77 | 31.23 | 108 | 175 | P | H |
|                                                  |   | 2496.56 | 45.67  | -8.33  | 54 | 31.65  | 27.48 | 17.77 | 31.23 | 108 | 175 | A | H |
|                                                  |   | 2361.36 | 56.12  | -17.88 | 74 | 41.92  | 28    | 17.5  | 31.3  | 388 | 158 | P | V |
|                                                  |   | 2389.36 | 45.71  | -8.29  | 54 | 31.39  | 28.05 | 17.55 | 31.28 | 388 | 158 | A | V |
|                                                  | * | 2437    | 121.57 | -      | -  | 107.48 | 27.71 | 17.64 | 31.26 | 388 | 158 | P | V |
|                                                  | * | 2437    | 114.2  | -      | -  | 100.11 | 27.71 | 17.64 | 31.26 | 388 | 158 | A | V |
|                                                  |   | 2494.08 | 55.08  | -18.92 | 74 | 41.03  | 27.51 | 17.77 | 31.23 | 388 | 158 | P | V |
|                                                  |   | 2497.28 | 45.23  | -8.77  | 54 | 31.18  | 27.51 | 17.77 | 31.23 | 388 | 158 | A | V |
|                                                  |   |         |        |        |    |        |       |       |       |     |     |   |   |



|                                                  |   |         |        |        |    |        |       |       |       |     |     |   |   |
|--------------------------------------------------|---|---------|--------|--------|----|--------|-------|-------|-------|-----|-----|---|---|
| <b>802.11g</b><br><b>CH 09</b><br><b>2452MHz</b> | * | 2452    | 125.94 | -      | -  | 112.04 | 27.47 | 17.68 | 31.25 | 100 | 174 | P | H |
|                                                  | * | 2452    | 119.7  | -      | -  | 105.8  | 27.47 | 17.68 | 31.25 | 100 | 174 | A | H |
|                                                  |   | 2490.76 | 55.35  | -18.65 | 74 | 41.34  | 27.48 | 17.76 | 31.23 | 100 | 174 | P | H |
|                                                  |   | 2492.23 | 45.87  | -8.13  | 54 | 31.86  | 27.48 | 17.76 | 31.23 | 100 | 174 | A | H |
|                                                  |   |         |        |        |    |        |       |       |       |     |     |   | H |
|                                                  |   |         |        |        |    |        |       |       |       |     |     |   | H |
|                                                  | * | 2452    | 120.8  | -      | -  | 106.76 | 27.61 | 17.68 | 31.25 | 380 | 152 | P | V |
|                                                  | * | 2452    | 113.74 | -      | -  | 99.7   | 27.61 | 17.68 | 31.25 | 380 | 152 | A | V |
|                                                  |   | 2490.69 | 54.72  | -19.28 | 74 | 40.68  | 27.51 | 17.76 | 31.23 | 380 | 152 | P | V |
|                                                  |   | 2497.97 | 45.16  | -8.84  | 54 | 31.1   | 27.51 | 17.78 | 31.23 | 380 | 152 | A | V |
|                                                  |   |         |        |        |    |        |       |       |       |     |     |   | V |
|                                                  |   |         |        |        |    |        |       |       |       |     |     |   | V |
| <b>802.11g</b><br><b>CH 10</b><br><b>2457MHz</b> | * | 2457    | 126.24 | -      | -  | 112.33 | 27.47 | 17.69 | 31.25 | 100 | 186 | P | H |
|                                                  | * | 2457    | 119.6  | -      | -  | 105.69 | 27.47 | 17.69 | 31.25 | 100 | 186 | A | H |
|                                                  |   | 2483.55 | 56.56  | -17.44 | 74 | 42.57  | 27.48 | 17.75 | 31.24 | 100 | 186 | P | H |
|                                                  |   | 2490.34 | 46.42  | -7.58  | 54 | 32.41  | 27.48 | 17.76 | 31.23 | 100 | 186 | A | H |
|                                                  |   |         |        |        |    |        |       |       |       |     |     |   | H |
|                                                  |   |         |        |        |    |        |       |       |       |     |     |   | H |
|                                                  | * | 2457    | 120.6  | -      | -  | 106.58 | 27.58 | 17.69 | 31.25 | 380 | 149 | P | V |
|                                                  | * | 2457    | 113.79 | -      | -  | 99.77  | 27.58 | 17.69 | 31.25 | 380 | 149 | A | V |
|                                                  |   | 2491.6  | 56.24  | -17.76 | 74 | 42.2   | 27.51 | 17.76 | 31.23 | 380 | 149 | P | V |
|                                                  |   | 2491.18 | 45.21  | -8.79  | 54 | 31.17  | 27.51 | 17.76 | 31.23 | 380 | 149 | A | V |
|                                                  |   |         |        |        |    |        |       |       |       |     |     |   | V |
|                                                  |   |         |        |        |    |        |       |       |       |     |     |   | V |



|                                      |                                                                                             |         |        |        |    |        |       |       |       |     |     |   |   |
|--------------------------------------|---------------------------------------------------------------------------------------------|---------|--------|--------|----|--------|-------|-------|-------|-----|-----|---|---|
| <b>802.11g<br/>CH 11<br/>2462MHz</b> | *                                                                                           | 2462    | 124.39 | -      | -  | 110.47 | 27.47 | 17.7  | 31.25 | 378 | 187 | P | H |
|                                      | *                                                                                           | 2462    | 117.31 | -      | -  | 103.39 | 27.47 | 17.7  | 31.25 | 378 | 187 | A | H |
|                                      |                                                                                             | 2486.32 | 57.51  | -16.49 | 74 | 43.52  | 27.48 | 17.75 | 31.24 | 378 | 187 | P | H |
|                                      |                                                                                             | 2485.76 | 47.46  | -6.54  | 54 | 33.47  | 27.48 | 17.75 | 31.24 | 378 | 187 | A | H |
|                                      |                                                                                             |         |        |        |    |        |       |       |       |     |     |   | H |
|                                      |                                                                                             |         |        |        |    |        |       |       |       |     |     |   | H |
|                                      | *                                                                                           | 2462    | 124.64 | -      | -  | 110.64 | 27.55 | 17.7  | 31.25 | 335 | 106 | P | V |
|                                      | *                                                                                           | 2462    | 117.71 | -      | -  | 103.71 | 27.55 | 17.7  | 31.25 | 335 | 106 | A | V |
|                                      |                                                                                             | 2483.68 | 59.1   | -14.9  | 74 | 45.07  | 27.52 | 17.75 | 31.24 | 335 | 106 | P | V |
|                                      |                                                                                             | 2483.52 | 49.57  | -4.43  | 54 | 35.54  | 27.52 | 17.75 | 31.24 | 335 | 106 | A | V |
|                                      |                                                                                             |         |        |        |    |        |       |       |       |     |     |   | V |
|                                      |                                                                                             |         |        |        |    |        |       |       |       |     |     |   | V |
| <b>Remark</b>                        | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |         |        |        |    |        |       |       |       |     |     |   |   |