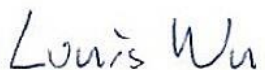


# FCC RADIO TEST REPORT

FCC ID : UZ7MC220K  
Equipment : Mobile computer  
Brand Name : Zebra  
Model Name : MC220K  
Applicant : Zebra Technologies Corporation  
1 Zebra Plaza, Holtsville, NY 11742  
Manufacturer : Zebra Technologies Corporation  
1 Zebra Plaza, Holtsville, NY 11742  
Standard : FCC Part 15 Subpart E §15.407

The product was received on Apr. 07, 2020 and testing was started from Apr. 11, 2020 and completed on Jul. 09, 2020. We, SPORTON INTERNATIONAL INC., EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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



Approved by: Louis Wu

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

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



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## History of this test report

| Report No.   | Version | Description             | Issued Date   |
|--------------|---------|-------------------------|---------------|
| FR040803-02F | 01      | Initial issue of report | Aug. 28, 2020 |
|              |         |                         |               |
|              |         |                         |               |
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|              |         |                         |               |
|              |         |                         |               |

## Summary of Test Result

| Report Clause | Ref Std. Clause        | Test Items                             | Result (PASS/FAIL) | Remark                                    |
|---------------|------------------------|----------------------------------------|--------------------|-------------------------------------------|
| 3.1           | 15.403 (i)             | 6dB & 26dB Bandwidth                   | Pass               | -                                         |
| 3.1           | 2.1049                 | 99% Occupied Bandwidth                 | Reporting only     | -                                         |
| 3.2           | 15.407 (a)             | Maximum Conducted Output Power         | Pass               | -                                         |
| 3.3           | 15.407 (a)             | Power Spectral Density                 | Pass               | -                                         |
| 3.4           | 15.407(b)              | Unwanted Emissions                     | Pass               | Under limit<br>2.32 dB at<br>5648.600 MHz |
| 3.5           | 15.207                 | AC Conducted Emission                  | Pass               | Under limit<br>14.88 dB at<br>13.560 MHz  |
| 3.6           | 15.407 (c)             | Automatically Discontinue Transmission | Pass               | -                                         |
| 3.7           | 15.203 &<br>15.407 (a) | Antenna Requirement                    | Pass               | -                                         |

**Declaration of Conformity:**

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

**Comments and Explanations:**

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

**Reviewed by: Wii Chang**

**Report Producer: Dara Chiu**

# 1 General Description

## 1.1 Product Feature of Equipment Under Test

| Product Specification subjective to this standard |                                                                                       |
|---------------------------------------------------|---------------------------------------------------------------------------------------|
| Equipment                                         | Mobile computer                                                                       |
| Brand Name                                        | Zebra                                                                                 |
| Model Name                                        | MC220K                                                                                |
| FCC ID                                            | UZ7MC220K                                                                             |
| EUT supports Radios application                   | NFC<br>WLAN 11a/b/g/n HT20/HT40<br>WLAN 11ac VHT20/VHT40/VHT80<br>Bluetooth BR/EDR/LE |
| HW Version                                        | EV1                                                                                   |
| SW Version                                        | 10-11-31.00-QG-U00-PRD-HEL-04                                                         |
| OS Version                                        | Android 10                                                                            |
| MFD                                               | 22APR20                                                                               |
| EUT Stage                                         | Engineering Sample                                                                    |

**Remark:** The above EUT's information was declared by manufacturer.

| Specification of Accessories            |            |       |             |                  |
|-----------------------------------------|------------|-------|-------------|------------------|
| AC Adapter                              | Brand Name | Zebra | Part Number | PWR-WUA5V12W0US  |
| Battery                                 | Brand Name | Zebra | Part Number | BT-000418-10     |
| USB Cable<br>(TypeA plug to TypeC plug) | Brand Name | Zebra | Part Number | CBL-TC2X-USBC-01 |
| Trigger Handle                          | Brand Name | Zebra | Part Number | TRG-MC2X-SNP1-01 |
| Holster 1                               | Brand Name | Zebra | Part Number | SG-MC2X-HLSTR-01 |
| Holster 2                               | Brand Name | Zebra | Part Number | SG-MC3021212-01R |

## 1.2 Product Specification of Equipment Under Test

| Standards-related Product Specification |                                                                                                                                                                                                                                      |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tx/Rx Frequency Range                   | 5725 MHz ~ 5850 MHz                                                                                                                                                                                                                  |
| Maximum Output Power to Antenna         | 802.11a : 21.30 dBm / 0.1349 W<br>802.11n HT20 : 21.00 dBm / 0.1259 W<br>802.11n HT40 : 21.10 dBm / 0.1288 W<br>802.11ac VHT20: 21.10 dBm / 0.1288 W<br>802.11ac VHT40: 21.20 dBm / 0.1318 W<br>802.11ac VHT80: 21.20 dBm / 0.1318 W |
| 99% Occupied Bandwidth                  | 802.11a : 25.82 MHz<br>802.11ac VHT20 : 26.17 MHz<br>802.11ac VHT40 : 48.25 MHz<br>802.11ac VHT80 : 79.24 MHz                                                                                                                        |
| Type of Modulation                      | 802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)<br>802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)                                                                                                                             |
| Antenna Type/ Gain                      | Monopole Antenna with gain 3.40 dBi                                                                                                                                                                                                  |

### 1.3 Modification of EUT

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

### 1.4 Testing Location

|                    |                                                                                                                       |         |           |
|--------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-----------|
| Test Site          | SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory                                                   |         |           |
| Test Site Location | No.52, Huaya 1st Rd., Guishan Dist.,<br>Taoyuan City, Taiwan (R.O.C.)<br>TEL: +886-3-327-3456<br>FAX: +886-3-328-4978 |         |           |
| Test Site No.      | Sporton Site No.                                                                                                      |         |           |
|                    | TH05-HY                                                                                                               | CO05-HY | 03CH07-HY |

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

FCC designation No.: TW1190

### 1.5 Applicable Standards

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

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ ANSI C63.10-2013

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. The TAF code is not including all the FCC KDB listed without accreditation.
3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

## 2 Test Configuration of Equipment Under Test

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

### 2.1 Carrier Frequency and Channel

| Frequency Band                       | Channel          | Freq. (MHz) | Channel | Freq. (MHz) |
|--------------------------------------|------------------|-------------|---------|-------------|
| 5725-5850 MHz<br>Band 4<br>(U-NII-3) | 149              | 5745        | 157     | 5785        |
|                                      | 151*             | 5755        | 159*    | 5795        |
|                                      | 153              | 5765        | 161     | 5805        |
|                                      | 155 <sup>#</sup> | 5775        | 165     | 5825        |

**Note:**

- The above Frequency and Channel in "\*" were 802.11n HT40 and 802.11ac VHT40.
- The above Frequency and Channel in "<sup>#</sup>" were 802.11ac VHT80.

### 2.2 Test Mode

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

| Modulation                      | Data Rate |
|---------------------------------|-----------|
| 802.11a                         | 6 Mbps    |
| 802.11n HT20 (Covered by VHT20) | MCS0      |
| 802.11n HT40 (Covered by VHT40) | MCS0      |
| 802.11ac VHT20                  | MCS0      |
| 802.11ac VHT40                  | MCS0      |
| 802.11ac VHT80                  | MCS0      |

| Test Cases            |                                                                                                        |
|-----------------------|--------------------------------------------------------------------------------------------------------|
| AC Conducted Emission | Mode 1: WLAN (5GHz) Link + NFC On + Bluetooth Link + USB Cable<br>(Charging from AC Adapter) + Battery |

| Ch. # |        | Band IV : 5725-5850 MHz |                |                |                |
|-------|--------|-------------------------|----------------|----------------|----------------|
|       |        | 802.11a                 | 802.11ac VHT20 | 802.11ac VHT40 | 802.11ac VHT80 |
| L     | Low    | 149                     | 149            | 151            | -              |
| M     | Middle | 157                     | 157            | -              | 155            |
| H     | High   | 165                     | 165            | 159            | -              |

**Remark:** For radiation spurious emission, the final modulation and the worst data rate was reference the max RF conducted power.

| 802.11a RF Output Power (dBm) |                    |                 |                    |                 |       |       |       |       |       |       |
|-------------------------------|--------------------|-----------------|--------------------|-----------------|-------|-------|-------|-------|-------|-------|
| Power vs. Channel             |                    |                 | Power vs Data Rate |                 |       |       |       |       |       |       |
| Channel                       | Frequency<br>(MHz) | Data Rate (bps) | Channel            | Data Rate (bps) |       |       |       |       |       |       |
|                               |                    | 6M              |                    | 9M              | 12M   | 18M   | 24M   | 36M   | 48M   | 54M   |
| CH 149                        | 5745               | 20.70           | CH 165             | 20.90           | 20.90 | 21.10 | 21.10 | 20.50 | 20.50 | 20.50 |
| CH 157                        | 5785               | 20.90           |                    |                 |       |       |       |       |       |       |
| CH 165                        | 5825               | 21.30           |                    |                 |       |       |       |       |       |       |

| 802.11n HT20 RF Output Power (dBm) |                    |           |                    |           |       |       |       |       |       |       |
|------------------------------------|--------------------|-----------|--------------------|-----------|-------|-------|-------|-------|-------|-------|
| Power vs. Channel                  |                    |           | Power vs Data Rate |           |       |       |       |       |       |       |
| Channel                            | Frequency<br>(MHz) | MCS Index | Channel            | MCS Index |       |       |       |       |       |       |
|                                    |                    | MCS0      |                    | MCS1      | MCS2  | MCS3  | MCS4  | MCS5  | MCS6  | MCS7  |
| CH 149                             | 5745               | 21.00     | CH 149             | 20.80     | 20.80 | 20.80 | 20.50 | 20.50 | 20.50 | 20.50 |
| CH 157                             | 5785               | 20.80     |                    |           |       |       |       |       |       |       |
| CH 165                             | 5825               | 20.10     |                    |           |       |       |       |       |       |       |

| 802.11n HT40 RF Output Power (dBm) |                    |           |                    |           |      |      |      |      |      |      |
|------------------------------------|--------------------|-----------|--------------------|-----------|------|------|------|------|------|------|
| Power vs. Channel                  |                    |           | Power vs Data Rate |           |      |      |      |      |      |      |
| Channel                            | Frequency<br>(MHz) | MCS Index | Channel            | MCS Index |      |      |      |      |      |      |
|                                    |                    | MCS0      |                    | MCS1      | MCS2 | MCS3 | MCS4 | MCS5 | MCS6 | MCS7 |
| CH 151                             | 5755               | 20.60     | CH 159             | 20.8      | 20.6 | 20.6 | 20   | 20   | 20   | 20.1 |
| CH 159                             | 5795               | 21.10     |                    |           |      |      |      |      |      |      |



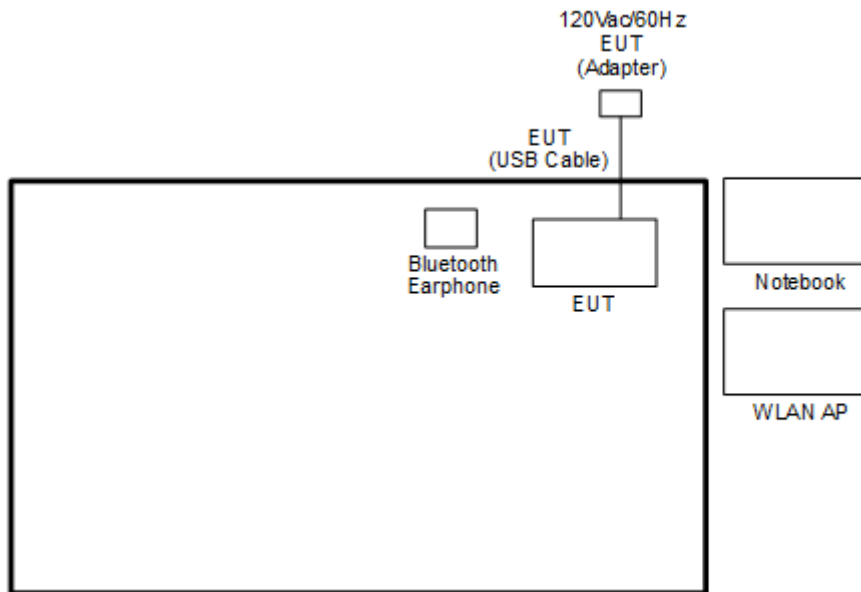
| 802.11ac VHT20 RF Output Power (dBm) |                    |           |                    |           |       |       |       |       |       |       |       |
|--------------------------------------|--------------------|-----------|--------------------|-----------|-------|-------|-------|-------|-------|-------|-------|
| Power vs. Channel                    |                    |           | Power vs Data Rate |           |       |       |       |       |       |       |       |
| Channel                              | Frequency<br>(MHz) | MCS Index | Channel            | MCS Index |       |       |       |       |       |       |       |
|                                      |                    | MCS0      |                    | MCS1      | MCS2  | MCS3  | MCS4  | MCS5  | MCS6  | MCS7  | MCS8  |
| CH 149                               | 5745               | 21.10     | CH 149             | 20.90     | 20.90 | 20.90 | 20.60 | 20.60 | 20.60 | 20.60 | 20.60 |
| CH 157                               | 5785               | 20.90     |                    |           |       |       |       |       |       |       |       |
| CH 165                               | 5825               | 20.20     |                    |           |       |       |       |       |       |       |       |

| 802.11ac VHT40 RF Output Power (dBm) |                    |           |                    |           |      |      |      |      |      |      |      |      |
|--------------------------------------|--------------------|-----------|--------------------|-----------|------|------|------|------|------|------|------|------|
| Power vs. Channel                    |                    |           | Power vs Data Rate |           |      |      |      |      |      |      |      |      |
| Channel                              | Frequency<br>(MHz) | MCS Index | Channel            | MCS Index |      |      |      |      |      |      |      |      |
|                                      |                    | MCS0      |                    | MCS1      | MCS2 | MCS3 | MCS4 | MCS5 | MCS6 | MCS7 | MCS8 | MCS9 |
| CH 151                               | 5755               | 20.70     | CH 159             | 20.8      | 20.6 | 20.6 | 20   | 20   | 20   | 20.1 | 20.1 | 20.1 |
| CH 159                               | 5795               | 21.20     |                    |           |      |      |      |      |      |      |      |      |

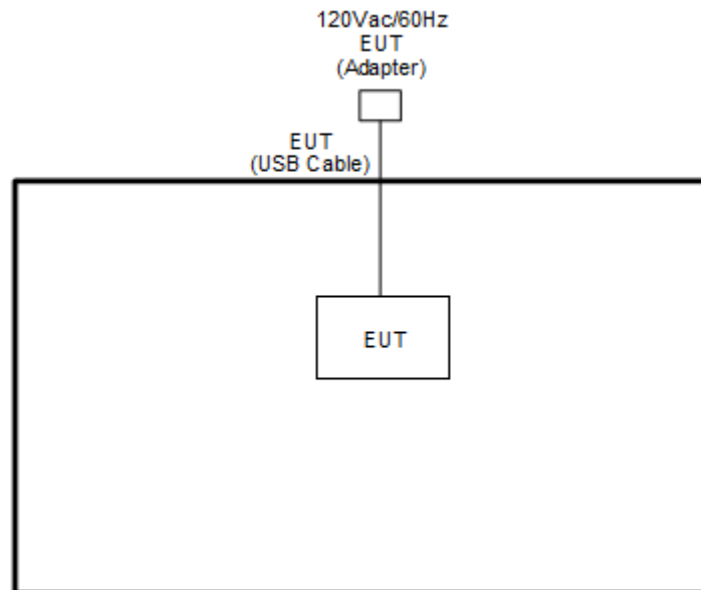
| 802.11ac VHT80 RF Output Power (dBm) |                    |           |                    |           |       |       |       |       |       |       |       |       |
|--------------------------------------|--------------------|-----------|--------------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|
| Power vs. Channel                    |                    |           | Power vs Data Rate |           |       |       |       |       |       |       |       |       |
| Channel                              | Frequency<br>(MHz) | MCS Index | Channel            | MCS Index |       |       |       |       |       |       |       |       |
|                                      |                    | MCS0      |                    | MCS1      | MCS2  | MCS3  | MCS4  | MCS5  | MCS6  | MCS7  | MCS8  | MCS9  |
| CH 155                               | 5775               | 21.20     | CH 155             | 20.90     | 21.00 | 20.90 | 20.40 | 20.40 | 20.40 | 20.30 | 20.30 | 20.30 |

## 2.3 Connection Diagram of Test System

<AC Conducted Emission Mode>



<For WLAN Tx Mode>



## 2.4 Support Unit used in test configuration and system

| Item | Equipment          | Trade Name    | Model Name    | FCC ID      | Data Cable | Power Cord                                                 |
|------|--------------------|---------------|---------------|-------------|------------|------------------------------------------------------------|
| 1.   | Bluetooth Earphone | Sony Ericsson | MW600         | PY7DDA-2029 | N/A        | N/A                                                        |
| 2.   | WLAN AP            | ASUS          | RT-AC66U      | MSQ-RTAC66U | N/A        | Unshielded, 1.8 m                                          |
| 3.   | Notebook           | DELL          | Latitude 3400 | FCC DoC     | N/A        | AC I/P:<br>Unshielded, 1.2 m<br>DC O/P:<br>Shielded, 1.8 m |
| 4.   | SD Card            | SanDisk       | MicroSD HC    | FCC DoC     | N/A        | N/A                                                        |

## 2.5 EUT Operation Test Setup

The RF test items, utility “QRCT V4.0.00156.0” 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 10dB attenuator.

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

### 3 Test Result

#### 3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement

##### 3.1.1 Description of 6dB and 26dB and 99% Occupied Bandwidth

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

26dB and 99% Occupied bandwidth are reporting only.

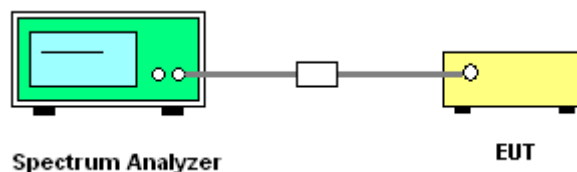
##### 3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

##### 3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.  
Section C) Emission bandwidth for the band 5.725-5.85GHz
2. Set RBW = 100kHz.
3. Set the VBW  $\geq 3 \times$  RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.
7. Measure and record the results in the test report.

##### 3.1.4 Test Setup

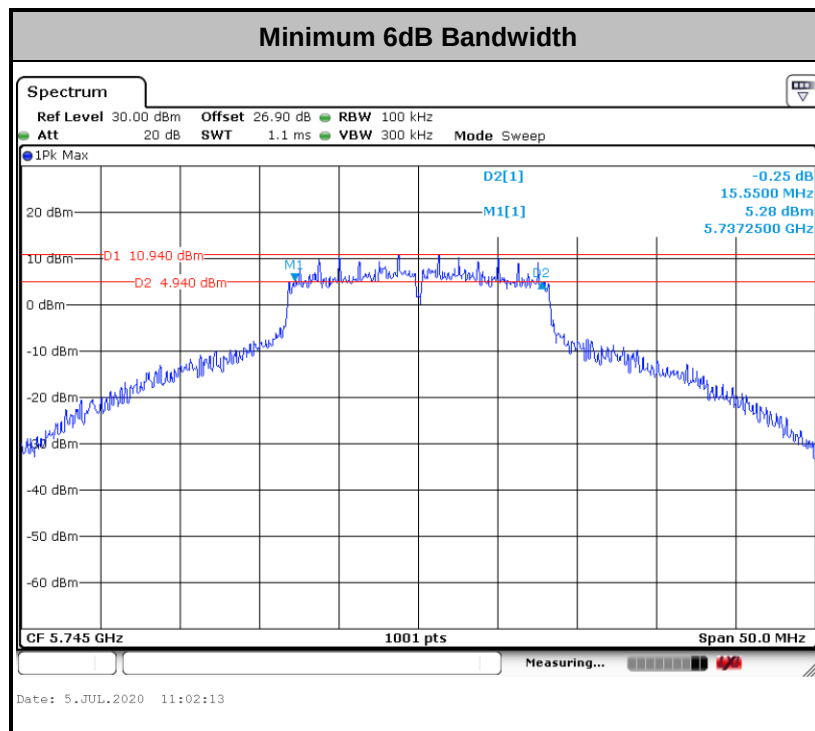


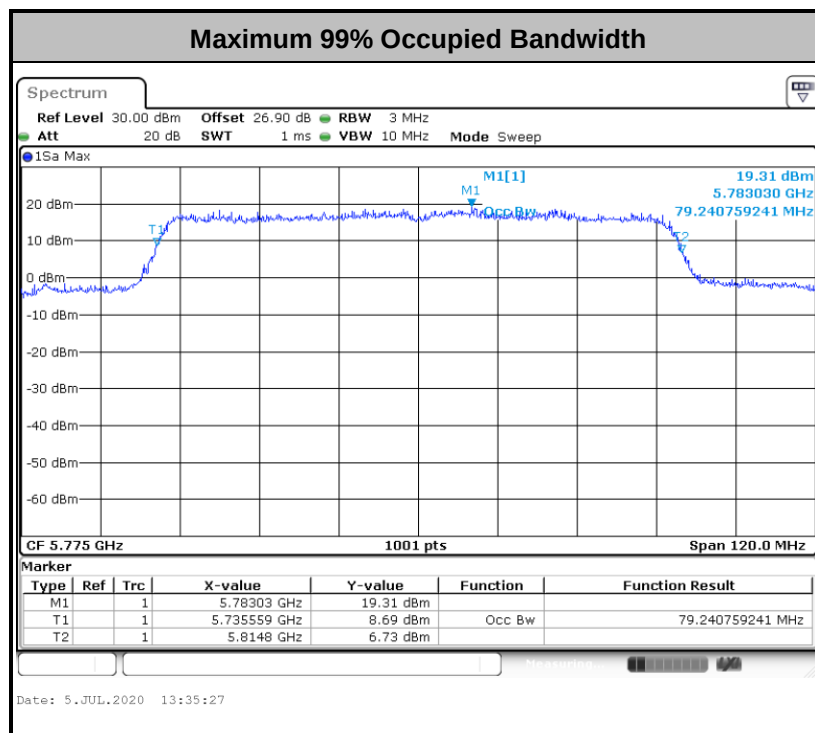
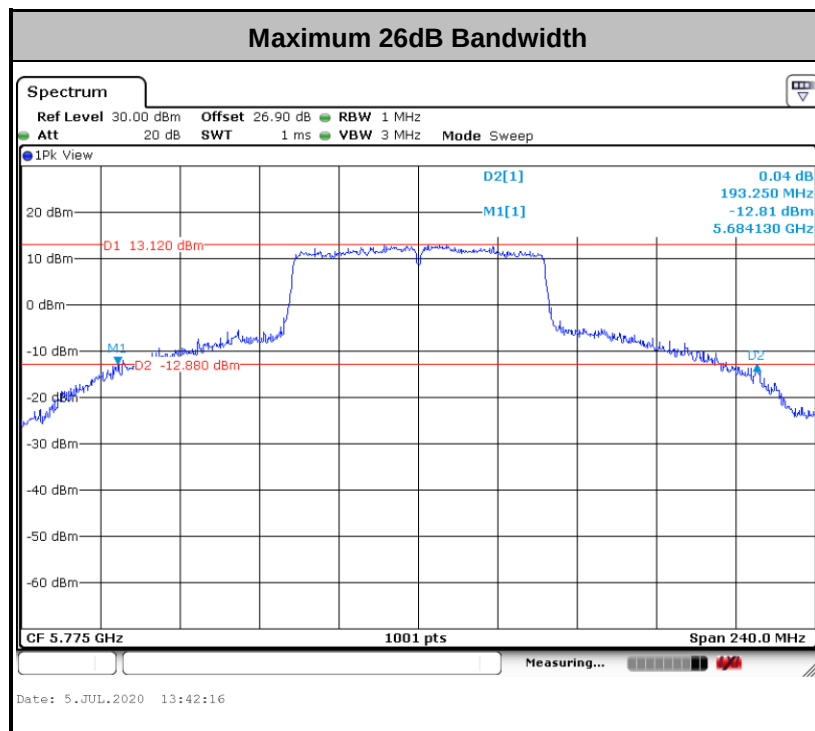


## 3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

|                 |                        |                     |              |
|-----------------|------------------------|---------------------|--------------|
| Test Engineer : | Hank Hsu and Tommy Lee | Temperature :       | 21.1 ~ 24.9℃ |
|                 |                        | Relative Humidity : | 50.1 ~ 58.8% |

| Band IV single antenna |           |     |     |             |                     |       |                      |       |                      |       |                                 |           |
|------------------------|-----------|-----|-----|-------------|---------------------|-------|----------------------|-------|----------------------|-------|---------------------------------|-----------|
| Mod.                   | Data Rate | NTX | CH. | Freq. (MHz) | 99% Bandwidth (MHz) |       | 26dB Bandwidth (MHz) |       | 6 dB Bandwidth (MHz) |       | 6 dB Bandwidth Min. Limit (MHz) | Pass/Fail |
|                        |           |     |     |             | Ant 1               | Ant 2 | Ant 1                | Ant 2 | Ant 1                | Ant 2 |                                 |           |
| 11a                    | 6Mbps     | 1   | 149 | 5745        | 22.83               | -     | 39.10                | -     | 15.55                | -     | 0.5                             | Pass      |
| 11a                    | 6Mbps     | 1   | 157 | 5785        | 24.58               | -     | 39.95                | -     | 15.80                | -     | 0.5                             | Pass      |
| 11a                    | 6Mbps     | 1   | 165 | 5825        | 25.82               | -     | 41.55                | -     | 16.05                | -     | 0.5                             | Pass      |
| VHT20                  | MCS0      | 1   | 149 | 5745        | 26.17               | -     | 45.00                | -     | 17.55                | -     | 0.5                             | Pass      |
| VHT20                  | MCS0      | 1   | 157 | 5785        | 24.53               | -     | 38.45                | -     | 17.55                | -     | 0.5                             | Pass      |
| VHT20                  | MCS0      | 1   | 165 | 5825        | 20.58               | -     | 37.65                | -     | 17.55                | -     | 0.5                             | Pass      |
| VHT40                  | MCS0      | 1   | 151 | 5755        | 40.46               | -     | 90.39                | -     | 36.27                | -     | 0.5                             | Pass      |
| VHT40                  | MCS0      | 1   | 159 | 5795        | 48.25               | -     | 94.35                | -     | 36.00                | -     | 0.5                             | Pass      |
| VHT80                  | MCS0      | 1   | 155 | 5775        | 79.24               | -     | 193.25               | -     | 75.20                | -     | 0.5                             | Pass      |





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

## 3.2 Maximum Conducted Output Power Measurement

### 3.2.1 Limit of Maximum Conducted Output Power

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in 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.

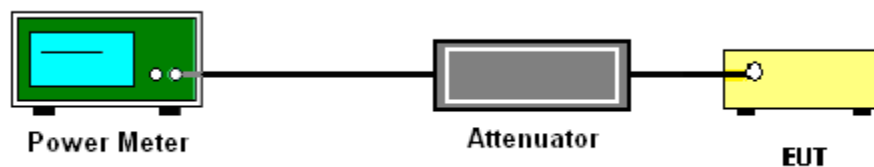
### 3.2.3 Test Procedures

Method PM-G of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01

Method PM-G (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit at its maximum power control level.
3. Measure the average power of the transmitter
4. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

### 3.2.4 Test Setup





## 3.2.5 Test Result of Maximum Conducted Output Power

|                 |                        |                     |              |
|-----------------|------------------------|---------------------|--------------|
| Test Engineer : | Hank Hsu and Tommy Lee | Temperature :       | 21.1 ~ 24.9℃ |
|                 |                        | Relative Humidity : | 50.1 ~ 58.8% |

| Band IV single antenna |           |                 |     |             |                               |       |     |                                 |       |          |       |           |
|------------------------|-----------|-----------------|-----|-------------|-------------------------------|-------|-----|---------------------------------|-------|----------|-------|-----------|
| Mod.                   | Data Rate | N <sub>TX</sub> | CH. | Freq. (MHz) | Average Conducted Power (dBm) |       |     | FCC Conducted Power Limit (dBm) |       | DG (dBi) |       | Pass/Fail |
|                        |           |                 |     |             | Ant 1                         | Ant 2 | SUM | Ant 1                           | Ant 2 | Ant 1    | Ant 2 |           |
| 11a                    | 6Mbps     | 1               | 149 | 5745        | 20.70                         | -     | -   | 30.00                           | -     | 3.40     | -     | Pass      |
| 11a                    | 6Mbps     | 1               | 157 | 5785        | 20.90                         | -     |     | 30.00                           | -     | 3.40     | -     | Pass      |
| 11a                    | 6Mbps     | 1               | 165 | 5825        | 21.30                         | -     |     | 30.00                           | -     | 3.40     | -     | Pass      |
| HT20                   | MCS0      | 1               | 149 | 5745        | 21.00                         | -     |     | 30.00                           | -     | 3.40     | -     | Pass      |
| HT20                   | MCS0      | 1               | 157 | 5785        | 20.80                         | -     |     | 30.00                           | -     | 3.40     | -     | Pass      |
| HT20                   | MCS0      | 1               | 165 | 5825        | 20.10                         | -     |     | 30.00                           | -     | 3.40     | -     | Pass      |
| HT40                   | MCS0      | 1               | 151 | 5755        | 20.60                         | -     |     | 30.00                           | -     | 3.40     | -     | Pass      |
| HT40                   | MCS0      | 1               | 159 | 5795        | 21.10                         | -     |     | 30.00                           | -     | 3.40     | -     | Pass      |
| VHT20                  | MCS0      | 1               | 149 | 5745        | 21.10                         | -     |     | 30.00                           | -     | 3.40     | -     | Pass      |
| VHT20                  | MCS0      | 1               | 157 | 5785        | 20.90                         | -     |     | 30.00                           | -     | 3.40     | -     | Pass      |
| VHT20                  | MCS0      | 1               | 165 | 5825        | 20.20                         | -     |     | 30.00                           | -     | 3.40     | -     | Pass      |
| VHT40                  | MCS0      | 1               | 151 | 5755        | 20.70                         | -     |     | 30.00                           | -     | 3.40     | -     | Pass      |
| VHT40                  | MCS0      | 1               | 159 | 5795        | 21.20                         | -     |     | 30.00                           | -     | 3.40     | -     | Pass      |
| VHT80                  | MCS0      | 1               | 155 | 5775        | 21.20                         | -     |     | 30.00                           | -     | 3.40     | -     | Pass      |



### 3.3 Power Spectral Density Measurement

#### 3.3.1 Limit of Power Spectral Density

For the band 5.725–5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### 3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

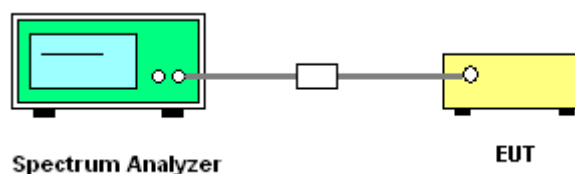
Section F) Maximum power spectral density.

##### # Method SA-3 #

(power averaging (rms) detection with max hold):

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
  - Set RBW = 1 MHz.
  - Set VBW  $\geq$  3 MHz
  - Number of points in sweep  $\geq$  2 Span / RBW.
  - Sweep time  $\leq$  (number of points in sweep)  $\times$  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.
  - Detector = power averaging (rms).
  - Trace mode = max hold.
  - Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.
1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
  2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

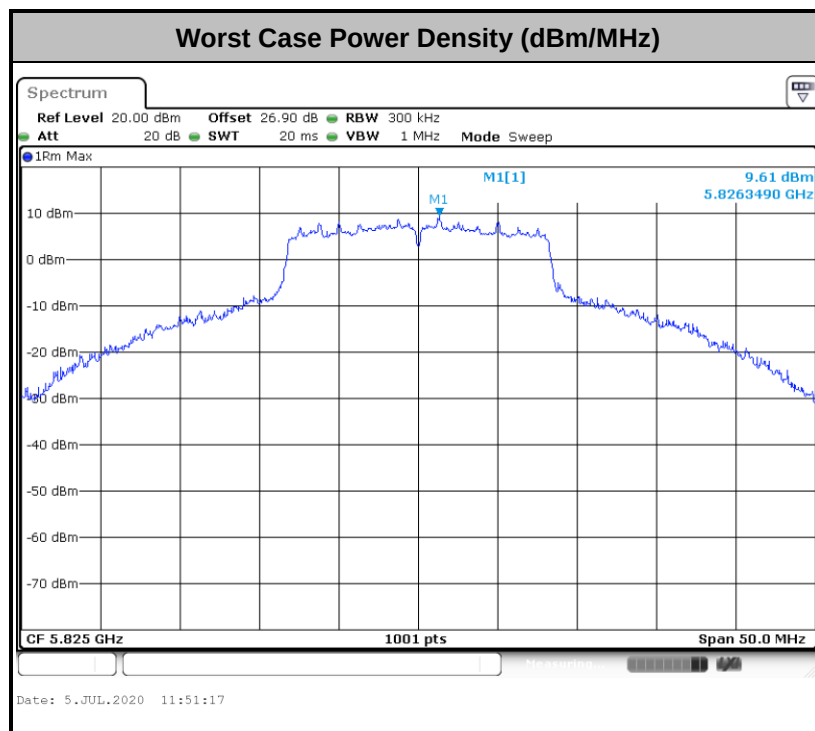
#### 3.3.4 Test Setup



### 3.3.5 Test Result of Power Spectral Density

|                        |                        |                            |              |
|------------------------|------------------------|----------------------------|--------------|
| <b>Test Engineer :</b> | Hank Hsu and Tommy Lee | <b>Temperature :</b>       | 21.1 ~ 24.9℃ |
|                        |                        | <b>Relative Humidity :</b> | 50.1 ~ 58.8% |

| Band IV single antenna |           |                 |     |             |                                 |       |                                    |       |     |                                |       |          |       |            |
|------------------------|-----------|-----------------|-----|-------------|---------------------------------|-------|------------------------------------|-------|-----|--------------------------------|-------|----------|-------|------------|
| Mod.                   | Data Rate | N <sub>TX</sub> | CH. | Freq. (MHz) | 10log (500kHz /RBW) Factor (dB) |       | Average Power Density (dBm/500kHz) |       |     | Average PSD Limit (dBm/500kHz) |       | DG (dBi) |       | Pass /Fail |
|                        |           |                 |     |             | Ant 1                           | Ant 2 | Ant 1                              | Ant 2 | SUM | Ant 1                          | Ant 2 | Ant 1    | Ant 2 |            |
| 11a                    | 6Mbps     | 1               | 149 | 5745        | 2.22                            | -     | 10.92                              | -     | -   | 30.00                          | -     | 3.40     | -     | Pass       |
| 11a                    | 6Mbps     | 1               | 157 | 5785        | 2.22                            | -     | 11.46                              | -     |     | 30.00                          | -     | 3.40     | -     | Pass       |
| 11a                    | 6Mbps     | 1               | 165 | 5825        | 2.22                            | -     | 11.83                              | -     |     | 30.00                          | -     | 3.40     | -     | Pass       |
| VHT20                  | MCS0      | 1               | 149 | 5745        | 2.22                            | -     | 11.69                              | -     |     | 30.00                          | -     | 3.40     | -     | Pass       |
| VHT20                  | MCS0      | 1               | 157 | 5785        | 2.22                            | -     | 11.30                              | -     |     | 30.00                          | -     | 3.40     | -     | Pass       |
| VHT20                  | MCS0      | 1               | 165 | 5825        | 2.22                            | -     | 10.65                              | -     |     | 30.00                          | -     | 3.40     | -     | Pass       |
| VHT40                  | MCS0      | 1               | 151 | 5755        | 2.22                            | -     | 7.00                               | -     |     | 30.00                          | -     | 3.40     | -     | Pass       |
| VHT40                  | MCS0      | 1               | 159 | 5795        | 2.22                            | -     | 7.67                               | -     |     | 30.00                          | -     | 3.40     | -     | Pass       |
| VHT80                  | MCS0      | 1               | 155 | 5775        | 2.22                            | -     | 6.02                               | -     |     | 30.00                          | -     | 3.40     | -     | Pass       |



### 3.4 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

#### 3.4.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5.725-5.85 GHz band:

15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

- (2) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits as below 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                                |

**Note:** The following formula is used to convert the EIRP to field strength.

$$E = \frac{1000000\sqrt{30P}}{3} \quad \mu\text{V/m, where P is the eirp (Watts)}$$

| EIRP (dBm) | Field Strength at 3m (dBμV/m) |
|------------|-------------------------------|
| - 27       | 68.3                          |

- (3) KDB789033 D02 v02r01 G)2)c)

- (i) Sections 15.407(b)(1-3) specifies the unwanted emissions limit for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.
- (ii) Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are based on the use of a peak detector.

### 3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

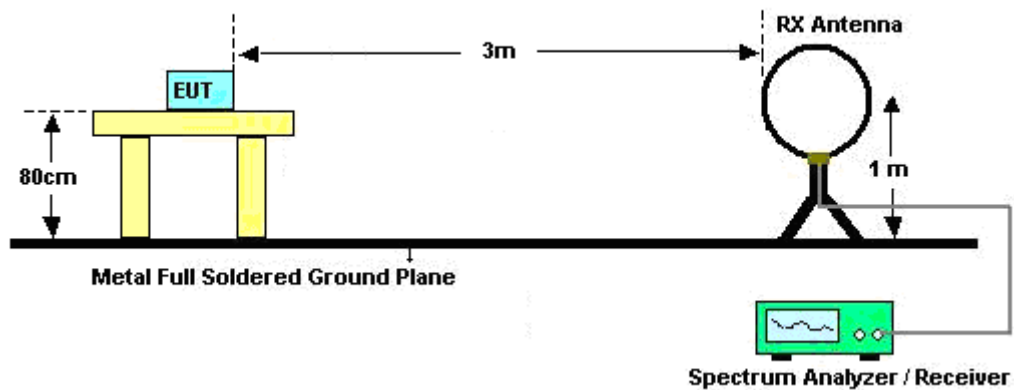
### 3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.  
Section G) Unwanted emissions measurement.  
(1) Procedure for Unwanted Emissions Measurements Below 1000MHz
  - RBW = 120 kHz
  - VBW = 300 kHz
  - Detector = Peak
  - Trace mode = max hold  
(2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
  - RBW = 1 MHz
  - VBW  $\geq$  3 MHz
  - Detector = Peak
  - Sweep time = auto
  - Trace mode = max hold  
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
  - RBW = 1 MHz
  - 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.
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.

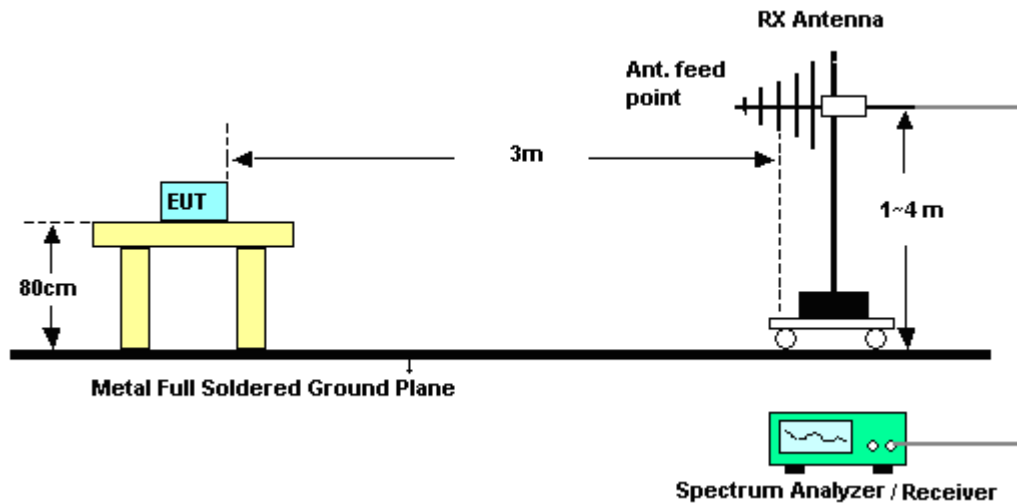
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

### 3.4.4 Test Setup

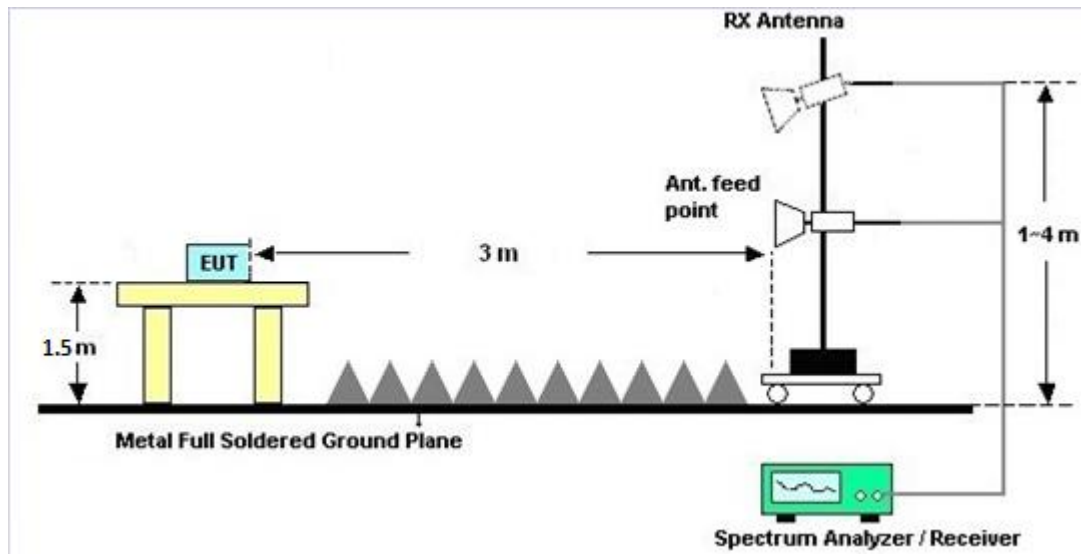
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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

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

### 3.4.6 Test Result of Radiated Band Edges

Please refer to Appendix B and C.

### 3.4.7 Duty Cycle

Please refer to Appendix D.

### 3.4.8 Test Result of Unwanted Radiated Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix B and C.

### 3.5 AC Conducted Emission Measurement

#### 3.5.1 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 (MHz) | Conducted limit (dBμV) |           |
|-----------------------------|------------------------|-----------|
|                             | 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.

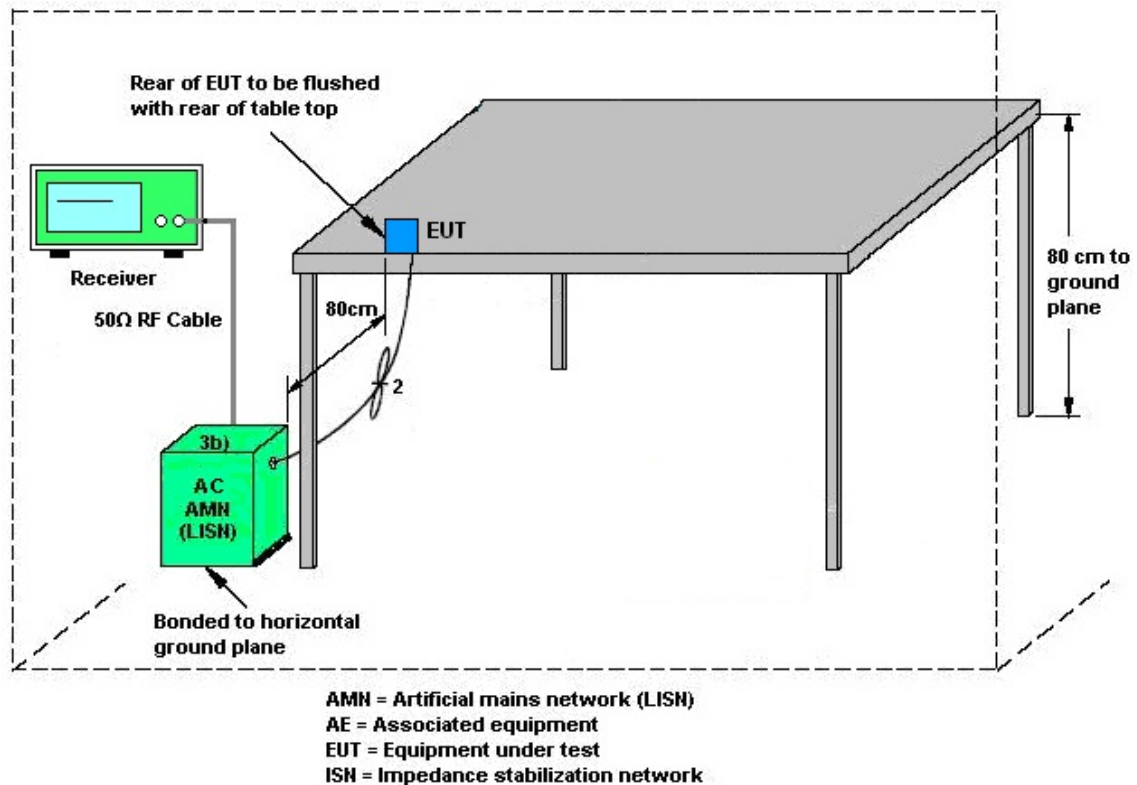
#### 3.5.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.5.3 Test Procedures

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

### 3.5.4 Test Setup



### 3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix A.



## **3.6 Automatically Discontinue Transmission**

### **3.6.1 Limit of Automatically Discontinue Transmission**

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

### **3.6.2 Measuring Instruments**

See list of measuring equipment of this test report.

### **3.6.3 Test Result of Automatically Discontinue Transmission**

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.



## **3.7 Antenna Requirements**

### **3.7.1 Standard Applicable**

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### **3.7.2 Antenna Anti-Replacement Construction**

An embedded-in antenna design is used.

### **3.7.3 Antenna Gain**

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



## 4 List of Measuring Equipment

| Instrument                           | Manufacturer    | Model No.                          | Serial No.         | Characteristics | Calibration Date | Test Date                     | Due Date      | Remark                |
|--------------------------------------|-----------------|------------------------------------|--------------------|-----------------|------------------|-------------------------------|---------------|-----------------------|
| Hygrometer                           | Testo           | 608-H1                             | 34893241           | N/A             | Mar. 02. 2020    | Apr. 11, 2020 ~ Jul. 09, 2020 | Mar. 01. 2021 | Conducted (TH05-HY)   |
| Power Sensor                         | DARE            | RPR3006W                           | 16I00054SNO10      | 10MHz~6GHz      | Dec. 23, 2019    | Apr. 11, 2020 ~ Jul. 09, 2020 | Dec. 22, 2020 | Conducted (TH05-HY)   |
| Signal Analyzer                      | Rohde & Schwarz | FSV40                              | 101566             | 10Hz~40GHz      | Jul. 15, 2019    | Apr. 11, 2020 ~ Jul. 09, 2020 | Jul. 14, 2020 | Conducted (TH05-HY)   |
| Switch Box & RF Cable                | Burgeon         | ETF-058                            | EC1300484          | N/A             | Aug. 22, 2019    | Apr. 11, 2020 ~ Jul. 09, 2020 | Aug. 21, 2020 | Conducted (TH05-HY)   |
| AC Power Source                      | ChainTek        | APC-1000W                          | N/A                | N/A             | N/A              | Jun. 25, 2020                 | N/A           | Conduction (CO05-HY)  |
| EMI Test Receiver                    | Rohde & Schwarz | ESR3                               | 102388             | 9kHz~3.6GHz     | Nov. 15, 2019    | Jun. 25, 2020                 | Nov. 14, 2020 | Conduction (CO05-HY)  |
| Hygrometer                           | Testo           | 608-H1                             | 34913912           | N/A             | Nov. 07, 2019    | Jun. 25, 2020                 | Nov. 06, 2020 | Conduction (CO05-HY)  |
| LISN                                 | Rohde & Schwarz | ENV216                             | 100081             | 9kHz~30MHz      | Nov. 15, 2019    | Jun. 25, 2020                 | Nov. 14, 2020 | Conduction (CO05-HY)  |
| Software                             | Rohde & Schwarz | EMC32 V10.30                       | N/A                | N/A             | N/A              | Jun. 25, 2020                 | N/A           | Conduction (CO05-HY)  |
| LF Cable                             | HUBER + SUHNER  | RG-214/U                           | LF01               | N/A             | Jan. 02, 2020    | Jun. 25, 2020                 | Jan. 01, 2021 | Conduction (CO05-HY)  |
| Pulse Limiter                        | Rohde & Schwarz | ESH3-Z2                            | 100851             | N/A             | Jan. 02, 2020    | Jun. 25, 2020                 | Jan. 01, 2021 | Conduction (CO05-HY)  |
| Bilog Antenna                        | TESEQ           | CBL 6111D & 00800N1D01N-06         | 35419 & 03         | 30MHz~1GHz      | Apr. 30, 2019    | Apr. 22, 2020 ~ Apr. 28, 2020 | Apr. 29, 2020 | Radiation (03CH07-HY) |
| Bilog Antenna                        | TESEQ           | CBL 6111D & 00800N1D01N-06         | 35419 & 03         | 30MHz~1GHz      | Apr. 29, 2020    | Apr. 29, 2020 ~ Jul. 09, 2020 | Apr. 28, 2021 | Radiation (03CH07-HY) |
| Double Ridge Horn Antenna            | ESCO            | 3117                               | 00075962           | 1GHz ~ 18GHz    | Dec. 06, 2019    | Apr. 22, 2020 ~ Jul. 09, 2020 | Dec. 05, 2020 | Radiation (03CH07-HY) |
| EMI Test Receiver                    | Agilent         | N9038A(MXE)                        | MY53290053         | 20Hz~26.5GHz    | Jan. 18, 2020    | Apr. 22, 2020 ~ Jul. 09, 2020 | Jan. 17, 2021 | Radiation (03CH07-HY) |
| Loop Antenna                         | Rohde & Schwarz | HFH2-Z2                            | 100315             | 9 kHz~30 MHz    | Dec. 26, 2019    | Apr. 22, 2020 ~ Jul. 09, 2020 | Dec. 25, 2020 | Radiation (03CH07-HY) |
| Preamplifier                         | MITEQ           | AMF-7D-0010 1800-30-10P            | 1590075            | 1GHz~18GHz      | Apr. 24, 2019    | Apr. 22, 2020 ~ Apr. 22, 2020 | Apr. 23, 2020 | Radiation (03CH07-HY) |
| Preamplifier                         | MITEQ           | AMF-7D-0010 1800-30-10P            | 1590075            | 1GHz~18GHz      | Apr. 23, 2020    | Apr. 23, 2020 ~ Jul. 09, 2020 | Apr. 22, 2021 | Radiation (03CH07-HY) |
| Preamplifier                         | COM-POWER       | PA-103A                            | 161241             | 10MHz~1GHz      | May 20, 2019     | Apr. 22, 2020 ~ May 18, 2020  | May 19, 2020  | Radiation (03CH07-HY) |
| Preamplifier                         | COM-POWER       | PA-103A                            | 161241             | 10MHz~1GHz      | May 19, 2020     | May 19, 2020 ~ Jul. 09, 2020  | May 18, 2021  | Radiation (03CH07-HY) |
| Notch Filter                         | Wainwright      | WRCJV12-569 5-5725-5850-5 880-40SS | SN1                | 5G Band 4       | Mar. 15, 2020    | Apr. 22, 2020 ~ Jul. 09, 2020 | Mar. 14, 2021 | Radiation (03CH07-HY) |
| 3m Semi Anechoic Chamber (NSA)       | TDK             | SAC-3M                             | 03CH07-HY          | 30MHz~1GHz      | Jan. 01, 2020    | Apr. 22, 2020 ~ Jul. 09, 2020 | Dec. 31, 2020 | Radiation (03CH07-HY) |
| 3m Semi Anechoic Chamber (Site VSWR) | TDK             | SAC-3M                             | 03CH07-HY          | 1GHz~18GHz      | Dec. 24, 2019    | Apr. 22, 2020 ~ Jul. 09, 2020 | Dec. 23, 2020 | Radiation (03CH07-HY) |
| RF Cable                             | HUBER + SUHNER  | SUCOFLEX 102                       | MY2858/2,80 1606/2 | 18GHz~40GHz     | Feb. 25, 2020    | Apr. 22, 2020 ~ Jul. 09, 2020 | Feb. 24, 2021 | Radiation (03CH07-HY) |
| RF Cable                             | HUBER + SUHNER  | SUCOFLEX 126                       | 532078/126E        | 30MHz~18GHz     | N/A              | Apr. 22, 2020 ~ Jul. 09, 2020 | N/A           | Radiation (03CH07-HY) |



| Instrument           | Manufacturer   | Model No.      | Serial No.                      | Characteristics    | Calibration Date | Test Date                     | Due Date      | Remark                |
|----------------------|----------------|----------------|---------------------------------|--------------------|------------------|-------------------------------|---------------|-----------------------|
| RF Cable             | HUBER + SUHNER | SUCOFLEX 104   | MY24971/4, MY28655/4            | 9kHz~30MHz         | Feb. 25, 2020    | Apr. 22, 2020 ~ Jul. 09, 2020 | Feb. 24, 2021 | Radiation (03CH07-HY) |
| RF Cable             | HUBER + SUHNER | SUCOFLEX 104   | MY28655/4, MY24971/4, MY15682/4 | 30MHz~1GHz         | Feb. 25, 2020    | Apr. 22, 2020 ~ Jul. 09, 2020 | Feb. 24, 2021 | Radiation (03CH07-HY) |
| RF Cable             | HUBER + SUHNER | SUCOFLEX 104   | MY28655/4, MY24971/4, MY15682/4 | 1GHz~18GHz         | Feb. 25, 2020    | Apr. 22, 2020 ~ Jul. 09, 2020 | Feb. 24, 2021 | Radiation (03CH07-HY) |
| Controller           | ChainTek       | Chaintek 3000  | N/A                             | Control Turn table | N/A              | Apr. 22, 2020 ~ Jul. 09, 2020 | N/A           | Radiation (03CH07-HY) |
| Controller           | Max-Full       | MF7802         | MF780208368                     | Control Ant Mast   | N/A              | Apr. 22, 2020 ~ Jul. 09, 2020 | N/A           | Radiation (03CH07-HY) |
| Antenna Mast         | Max-Full       | MFA520BS       | N/A                             | 1m~4m              | N/A              | Apr. 22, 2020 ~ Jul. 09, 2020 | N/A           | Radiation (03CH07-HY) |
| Turn Table           | ChainTek       | Chaintek 3000  | N/A                             | 0~360 Degree       | N/A              | Apr. 22, 2020 ~ Jul. 09, 2020 | N/A           | Radiation (03CH07-HY) |
| USB Data Logger      | TECPEL         | TR-32          | HE17XB2495                      | N/A                | N/A              | Apr. 22, 2020 ~ Jul. 09, 2020 | N/A           | Radiation (03CH07-HY) |
| SHF-EHF Horn Antenna | SCHWARZBECK    | BBHA 9170      | BBHA9170251                     | 18GHz~40GHz        | Nov. 26, 2019    | Apr. 22, 2020 ~ Jul. 09, 2020 | Nov. 25, 2020 | Radiation (03CH07-HY) |
| Spectrum Analyzer    | Keysight       | N9010A         | MY54200485                      | 10Hz~44GHz         | Feb. 10, 2020    | Apr. 22, 2020 ~ Jul. 09, 2020 | Feb. 09, 2021 | Radiation (03CH07-HY) |
| Preamplifier         | EMEC           | EM18G40G       | 060801                          | 18GHz~40GHz        | N/A              | Apr. 22, 2020 ~ Jul. 09, 2020 | N/A           | Radiation (03CH07-HY) |
| Software             | Audix          | E3 6.2009-8-24 | 80504004656H                    | N/A                | N/A              | Apr. 22, 2020 ~ Jul. 09, 2020 | N/A           | Radiation (03CH07-HY) |



## 5 Uncertainty of Evaluation

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

|                                                                         |      |
|-------------------------------------------------------------------------|------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 2.30 |
|-------------------------------------------------------------------------|------|

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

|                                                                         |      |
|-------------------------------------------------------------------------|------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 4.60 |
|-------------------------------------------------------------------------|------|

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

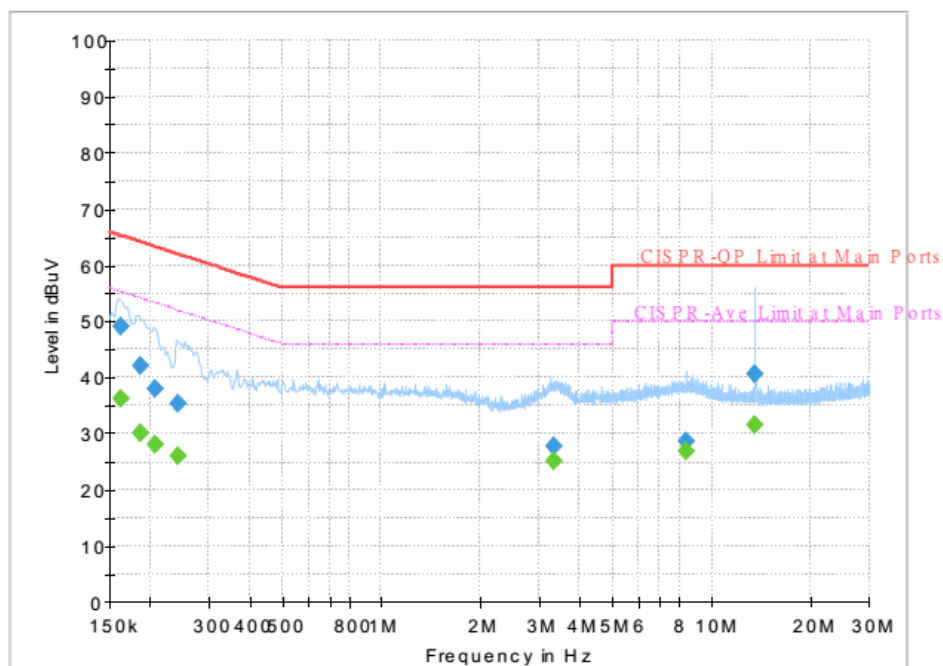
|                                                                         |      |
|-------------------------------------------------------------------------|------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 5.20 |
|-------------------------------------------------------------------------|------|

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

|                                                                         |      |
|-------------------------------------------------------------------------|------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 5.30 |
|-------------------------------------------------------------------------|------|

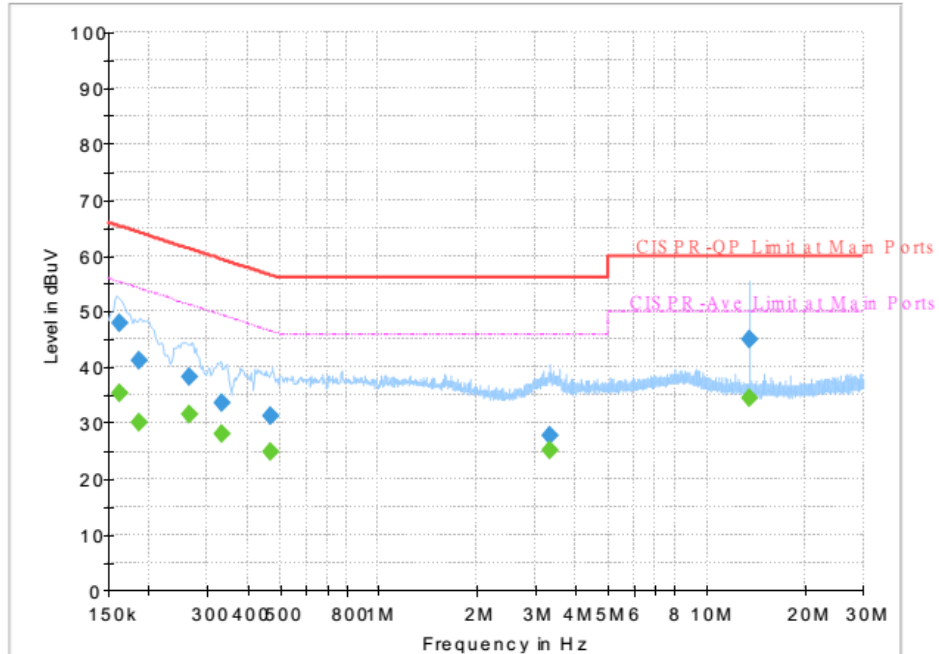
## Appendix A. AC Conducted Emission Test Results

|                        |               |                            |        |
|------------------------|---------------|----------------------------|--------|
| <b>Test Engineer :</b> | Tom Lee       | <b>Temperature :</b>       | 23~25℃ |
|                        |               | <b>Relative Humidity :</b> | 42~50% |
| <b>Test Voltage :</b>  | 120Vac / 60Hz | <b>Phase :</b>             | Line   |



| Frequency (MHz) | QuasiPeak (dBuV) | CAverage (dBuV) | Limit (dBuV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|------|--------|------------|
| 0.161790        | ---              | 36.28           | 55.37        | 19.09       | L1   | OFF    | 19.6       |
| 0.161790        | 49.25            | ---             | 65.37        | 16.12       | L1   | OFF    | 19.6       |
| 0.186000        | ---              | 30.12           | 54.21        | 24.09       | L1   | OFF    | 19.6       |
| 0.186000        | 42.17            | ---             | 64.21        | 22.04       | L1   | OFF    | 19.6       |
| 0.206970        | ---              | 28.13           | 53.33        | 25.20       | L1   | OFF    | 19.6       |
| 0.206970        | 37.91            | ---             | 63.33        | 25.42       | L1   | OFF    | 19.6       |
| 0.242880        | ---              | 25.93           | 52.00        | 26.07       | L1   | OFF    | 19.6       |
| 0.242880        | 35.42            | ---             | 62.00        | 26.58       | L1   | OFF    | 19.6       |
| 3.315750        | ---              | 25.04           | 46.00        | 20.96       | L1   | OFF    | 19.7       |
| 3.315750        | 27.65            | ---             | 56.00        | 28.35       | L1   | OFF    | 19.7       |
| 8.379780        | ---              | 26.76           | 50.00        | 23.24       | L1   | OFF    | 20.0       |
| 8.379780        | 28.74            | ---             | 60.00        | 31.26       | L1   | OFF    | 20.0       |
| 13.560000       | ---              | 31.69           | 50.00        | 18.31       | L1   | OFF    | 20.2       |
| 13.560000       | 40.69            | ---             | 60.00        | 19.31       | L1   | OFF    | 20.2       |

|                        |               |                            |         |
|------------------------|---------------|----------------------------|---------|
| <b>Test Engineer :</b> | Tom Lee       | <b>Temperature :</b>       | 23~25℃  |
|                        |               | <b>Relative Humidity :</b> | 42~50%  |
| <b>Test Voltage :</b>  | 120Vac / 60Hz | <b>Phase :</b>             | Neutral |



| Frequency (MHz) | QuasiPeak (dBuV) | CAverage (dBuV) | Limit (dBuV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|------|--------|------------|
| 0.162510        | ---              | 35.24           | 55.34        | 20.10       | N    | OFF    | 19.5       |
| 0.162510        | 47.94            | ---             | 65.34        | 17.40       | N    | OFF    | 19.5       |
| 0.186000        | ---              | 30.02           | 54.21        | 24.19       | N    | OFF    | 19.5       |
| 0.186000        | 41.20            | ---             | 64.21        | 23.01       | N    | OFF    | 19.5       |
| 0.264750        | ---              | 31.59           | 51.28        | 19.69       | N    | OFF    | 19.5       |
| 0.264750        | 38.30            | ---             | 61.28        | 22.98       | N    | OFF    | 19.5       |
| 0.331800        | ---              | 28.04           | 49.41        | 21.37       | N    | OFF    | 19.5       |
| 0.331800        | 33.76            | ---             | 59.41        | 25.65       | N    | OFF    | 19.5       |
| 0.471300        | ---              | 24.86           | 46.49        | 21.63       | N    | OFF    | 19.5       |
| 0.471300        | 31.15            | ---             | 56.49        | 25.34       | N    | OFF    | 19.5       |
| 3.343020        | ---              | 25.00           | 46.00        | 21.00       | N    | OFF    | 19.6       |
| 3.343020        | 27.84            | ---             | 56.00        | 28.16       | N    | OFF    | 19.6       |
| 13.560000       | ---              | 34.55           | 50.00        | 15.45       | N    | OFF    | 19.9       |
| 13.560000       | 45.12            | ---             | 60.00        | 14.88       | N    | OFF    | 19.9       |



## Appendix B. Radiated Spurious Emission

|                 |                                    |                     |         |
|-----------------|------------------------------------|---------------------|---------|
| Test Engineer : | Jesse Wang, Stan Hsieh, and Ken Wu | Temperature :       | 21~25°C |
|                 |                                    | Relative Humidity : | 48~53%  |

## Band 4 - 5725~5850MHz

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

| WIFI Ant.                    | Note | Frequency | Level      | Over Limit | Limit Line | Read Level | Antenna Factor | Path Loss | Preamp Factor | Ant Pos | Table Pos | Peak Avg. | Pol.    |
|------------------------------|------|-----------|------------|------------|------------|------------|----------------|-----------|---------------|---------|-----------|-----------|---------|
| 1                            |      | ( MHz )   | ( dBμV/m ) | ( dB )     | ( dBμV/m ) | ( dBμV )   | ( dB/m )       | ( dB )    | ( dB )        | ( cm )  | ( deg )   | ( P/A )   | ( H/V ) |
| 802.11a<br>CH 149<br>5745MHz |      | 5620.2    | 49.32      | -18.88     | 68.2       | 37.66      | 34.9           | 12.07     | 35.31         | 304     | 78        | P         | H       |
|                              |      | 5699      | 50.23      | -54.23     | 104.46     | 38.35      | 35             | 12.2      | 35.32         | 304     | 78        | P         | H       |
|                              |      | 5720      | 65.83      | -44.97     | 110.8      | 53.91      | 35             | 12.24     | 35.32         | 304     | 78        | P         | H       |
|                              |      | 5725      | 75.61      | -46.59     | 122.2      | 63.68      | 35             | 12.25     | 35.32         | 304     | 78        | P         | H       |
|                              | *    | 5745      | 110.25     | -          | -          | 98.29      | 35             | 12.28     | 35.32         | 304     | 78        | P         | H       |
|                              | *    | 5745      | 102.35     | -          | -          | 90.39      | 35             | 12.28     | 35.32         | 304     | 78        | A         | H       |
|                              |      |           |            |            |            |            |                |           |               |         |           |           | H       |
|                              |      |           |            |            |            |            |                |           |               |         |           |           | H       |
|                              |      | 5619.6    | 49.97      | -18.23     | 68.2       | 38.31      | 34.9           | 12.07     | 35.31         | 149     | 357       | P         | V       |
|                              |      | 5698.4    | 56.24      | -47.78     | 104.02     | 44.36      | 35             | 12.2      | 35.32         | 149     | 357       | P         | V       |
|                              |      | 5717      | 73.81      | -36.15     | 109.96     | 61.9       | 35             | 12.23     | 35.32         | 149     | 357       | P         | V       |
|                              |      | 5724.2    | 84.52      | -35.86     | 120.38     | 72.6       | 35             | 12.24     | 35.32         | 149     | 357       | P         | V       |
|                              | *    | 5745      | 115.55     | -          | -          | 103.59     | 35             | 12.28     | 35.32         | 149     | 357       | P         | V       |
|                              | *    | 5745      | 107.77     | -          | -          | 95.81      | 35             | 12.28     | 35.32         | 149     | 357       | A         | V       |
|                              |      |           |            |            |            |            |                |           |               |         |           |           | V       |
|                              |      |           |            |            |            |            |                |           |               |         |           |           | V       |





| WIFI<br>Ant.<br>1            | Note | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|------------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11a<br>CH 157<br>5785MHz |      | 5603.6               | 48.54               | -19.66                  | 68.2                        | 36.8                      | 35                            | 12.05                  | 35.31                      | 313                  | 60                      | P                       | H               |
|                              |      | 5685.6               | 49.98               | -44.6                   | 94.58                       | 38.12                     | 35                            | 12.18                  | 35.32                      | 313                  | 60                      | P                       | H               |
|                              |      | 5715                 | 49.84               | -59.56                  | 109.4                       | 37.93                     | 35                            | 12.23                  | 35.32                      | 313                  | 60                      | P                       | H               |
|                              |      | 5722                 | 49.27               | -66.09                  | 115.36                      | 37.35                     | 35                            | 12.24                  | 35.32                      | 313                  | 60                      | P                       | H               |
|                              | *    | 5785                 | 111.32              | -                       | -                           | 99.3                      | 35                            | 12.35                  | 35.33                      | 313                  | 60                      | P                       | H               |
|                              | *    | 5785                 | 104.02              | -                       | -                           | 92                        | 35                            | 12.35                  | 35.33                      | 313                  | 60                      | A                       | H               |
|                              |      | 5854                 | 49.77               | -63.31                  | 113.08                      | 37.64                     | 35.07                         | 12.4                   | 35.34                      | 313                  | 60                      | P                       | H               |
|                              |      | 5859.4               | 50.15               | -59.42                  | 109.57                      | 38.02                     | 35.07                         | 12.4                   | 35.34                      | 313                  | 60                      | P                       | H               |
|                              |      | 5883.6               | 51                  | -47.81                  | 98.81                       | 38.8                      | 35.13                         | 12.41                  | 35.34                      | 313                  | 60                      | P                       | H               |
|                              |      | 5932                 | 49.22               | -18.98                  | 68.2                        | 36.92                     | 35.2                          | 12.44                  | 35.34                      | 313                  | 60                      | P                       | H               |
|                              |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                              |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                              |      | 5615.2               | 49                  | -19.2                   | 68.2                        | 37.24                     | 35                            | 12.07                  | 35.31                      | 146                  | 358                     | P                       | V               |
|                              |      | 5682.4               | 50.04               | -42.17                  | 92.21                       | 38.33                     | 34.85                         | 12.18                  | 35.32                      | 146                  | 358                     | P                       | V               |
|                              |      | 5708                 | 51.14               | -56.3                   | 107.44                      | 39.24                     | 35                            | 12.22                  | 35.32                      | 146                  | 358                     | P                       | V               |
|                              |      | 5720.6               | 52.02               | -60.15                  | 112.17                      | 40.1                      | 35                            | 12.24                  | 35.32                      | 146                  | 358                     | P                       | V               |
|                              | *    | 5785                 | 116.62              | -                       | -                           | 104.6                     | 35                            | 12.35                  | 35.33                      | 146                  | 358                     | P                       | V               |
|                              | *    | 5785                 | 108.62              | -                       | -                           | 96.6                      | 35                            | 12.35                  | 35.33                      | 146                  | 358                     | A                       | V               |
|                              |      | 5853.6               | 51.13               | -62.86                  | 113.99                      | 39                        | 35.07                         | 12.4                   | 35.34                      | 146                  | 358                     | P                       | V               |
|                              |      | 5867                 | 52.2                | -55.24                  | 107.44                      | 40.07                     | 35.07                         | 12.4                   | 35.34                      | 146                  | 358                     | P                       | V               |
|                              |      | 5886.2               | 50.12               | -46.76                  | 96.88                       | 37.92                     | 35.13                         | 12.41                  | 35.34                      | 146                  | 358                     | P                       | V               |
|                              |      | 5925.8               | 50.48               | -17.72                  | 68.2                        | 38.19                     | 35.2                          | 12.43                  | 35.34                      | 146                  | 358                     | P                       | V               |
|                              |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                              |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |



| WIFI<br>Ant.<br>1                     | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|---------------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| <b>802.11a<br/>CH 165<br/>5825MHz</b> | *                                                                                           | 5825                 | 112.45              | -                       | -                           | 100.4                     | 35                            | 12.38                  | 35.33                      | 310                  | 63                      | P                       | H               |
|                                       | *                                                                                           | 5825                 | 104.35              | -                       | -                           | 92.3                      | 35                            | 12.38                  | 35.33                      | 310                  | 63                      | A                       | H               |
|                                       |                                                                                             | 5850                 | 71.31               | -50.89                  | 122.2                       | 59.24                     | 35                            | 12.4                   | 35.33                      | 310                  | 63                      | P                       | H               |
|                                       |                                                                                             | 5855.4               | 60.18               | -50.51                  | 110.69                      | 48.05                     | 35.07                         | 12.4                   | 35.34                      | 310                  | 63                      | P                       | H               |
|                                       |                                                                                             | 5876.6               | 52.95               | -51.06                  | 104.01                      | 40.75                     | 35.13                         | 12.41                  | 35.34                      | 310                  | 63                      | P                       | H               |
|                                       |                                                                                             | 5930.6               | 50.52               | -17.68                  | 68.2                        | 38.22                     | 35.2                          | 12.44                  | 35.34                      | 310                  | 63                      | P                       | H               |
|                                       |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                       |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                       | *                                                                                           | 5825                 | 115.95              | -                       | -                           | 103.9                     | 35                            | 12.38                  | 35.33                      | 145                  | 357                     | P                       | V               |
|                                       | *                                                                                           | 5825                 | 108.35              | -                       | -                           | 96.3                      | 35                            | 12.38                  | 35.33                      | 145                  | 357                     | A                       | V               |
|                                       |                                                                                             | 5851.6               | 74.62               | -43.93                  | 118.55                      | 62.56                     | 35                            | 12.4                   | 35.34                      | 145                  | 357                     | P                       | V               |
|                                       |                                                                                             | 5856.4               | 66.5                | -43.91                  | 110.41                      | 54.37                     | 35.07                         | 12.4                   | 35.34                      | 145                  | 357                     | P                       | V               |
|                                       |                                                                                             | 5879.8               | 59.72               | -41.91                  | 101.63                      | 47.52                     | 35.13                         | 12.41                  | 35.34                      | 145                  | 357                     | P                       | V               |
|                                       |                                                                                             | 5945.2               | 49.9                | -18.3                   | 68.2                        | 37.6                      | 35.2                          | 12.44                  | 35.34                      | 145                  | 357                     | P                       | V               |
|                                       |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                       |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                       |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                       |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| <b>Remark</b>                         | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## Band 4 5725~5850MHz

## WIFI 802.11a (Harmonic @ 3m)

| WIFI<br>Ant.<br>1            | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11a<br>CH 149<br>5745MHz |                                                                                             | 11490                | 49.01               | -24.99                  | 74                          | 49.87                     | 38.18                         | 18.48                  | 57.52                      | 100                  | 0                       | P                       | H               |
|                              |                                                                                             | 17235                | 50.09               | -18.11                  | 68.2                        | 41.92                     | 41.53                         | 22.95                  | 56.31                      | 100                  | 0                       | P                       | H               |
|                              |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                              |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                              |                                                                                             | 11490                | 48.06               | -25.94                  | 74                          | 48.92                     | 38.18                         | 18.48                  | 57.52                      | 100                  | 0                       | P                       | V               |
|                              |                                                                                             | 17235                | 50.32               | -17.88                  | 68.2                        | 42.15                     | 41.53                         | 22.95                  | 56.31                      | 100                  | 0                       | P                       | V               |
|                              |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                              |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11a<br>CH 157<br>5785MHz |                                                                                             | 11570                | 49.56               | -24.44                  | 74                          | 50.02                     | 38.33                         | 18.55                  | 57.34                      | 100                  | 0                       | P                       | H               |
|                              |                                                                                             | 17355                | 52.67               | -15.53                  | 68.2                        | 44.5                      | 41.5                          | 23.02                  | 56.35                      | 100                  | 0                       | P                       | H               |
|                              |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                              |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                              |                                                                                             | 11570                | 48.93               | -25.07                  | 74                          | 49.39                     | 38.33                         | 18.55                  | 57.34                      | 100                  | 0                       | P                       | V               |
|                              |                                                                                             | 17355                | 50.98               | -17.22                  | 68.2                        | 42.81                     | 41.5                          | 23.02                  | 56.35                      | 100                  | 0                       | P                       | V               |
|                              |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                              |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11a<br>CH 165<br>5825MHz |                                                                                             | 11650                | 47.23               | -26.77                  | 74                          | 47.31                     | 38.44                         | 18.63                  | 57.15                      | 100                  | 0                       | P                       | H               |
|                              |                                                                                             | 17475                | 49.61               | -18.59                  | 68.2                        | 41.57                     | 41.33                         | 23.09                  | 56.38                      | 100                  | 0                       | P                       | H               |
|                              |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                              |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                              |                                                                                             | 11650                | 46.33               | -27.67                  | 74                          | 46.41                     | 38.44                         | 18.63                  | 57.15                      | 100                  | 0                       | P                       | V               |
|                              |                                                                                             | 17475                | 49.72               | -18.48                  | 68.2                        | 41.68                     | 41.33                         | 23.09                  | 56.38                      | 100                  | 0                       | P                       | V               |
|                              |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                              |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                       | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |

**Band 4 5725~5850MHz****WIFI 802.11ac VHT20 (Band Edge @ 3m)**

| WIFI<br>Ant.<br>1                                | Note | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|--------------------------------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| <b>802.11ac<br/>VHT20<br/>CH 149<br/>5745MHz</b> |      | 5620.8               | 48.6                | -19.6                   | 68.2                        | 36.94                     | 34.9                          | 12.07                  | 35.31                      | 304                  | 78                      | P                       | H               |
|                                                  |      | 5692                 | 54.43               | -44.87                  | 99.3                        | 42.56                     | 35                            | 12.19                  | 35.32                      | 304                  | 78                      | P                       | H               |
|                                                  |      | 5720                 | 72.25               | -38.55                  | 110.8                       | 60.33                     | 35                            | 12.24                  | 35.32                      | 304                  | 78                      | P                       | H               |
|                                                  |      | 5725                 | 81.63               | -40.57                  | 122.2                       | 69.7                      | 35                            | 12.25                  | 35.32                      | 304                  | 78                      | P                       | H               |
|                                                  | *    | 5745                 | 109.55              | -                       | -                           | 97.59                     | 35                            | 12.28                  | 35.32                      | 304                  | 78                      | P                       | H               |
|                                                  | *    | 5745                 | 102.45              | -                       | -                           | 90.49                     | 35                            | 12.28                  | 35.32                      | 304                  | 78                      | A                       | H               |
|                                                  |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                                  |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                                  |      | 5644.4               | 49.26               | -18.94                  | 68.2                        | 37.66                     | 34.8                          | 12.11                  | 35.31                      | 149                  | 357                     | P                       | V               |
|                                                  |      | 5698.6               | 59.13               | -45.04                  | 104.17                      | 47.25                     | 35                            | 12.2                   | 35.32                      | 149                  | 357                     | P                       | V               |
|                                                  |      | 5718.6               | 77.92               | -32.49                  | 110.41                      | 66                        | 35                            | 12.24                  | 35.32                      | 149                  | 357                     | P                       | V               |
|                                                  |      | 5723.2               | 84.64               | -33.46                  | 118.1                       | 72.72                     | 35                            | 12.24                  | 35.32                      | 149                  | 357                     | P                       | V               |
|                                                  | *    | 5745                 | 116.25              | -                       | -                           | 104.29                    | 35                            | 12.28                  | 35.32                      | 149                  | 357                     | P                       | V               |
|                                                  | *    | 5745                 | 108.25              | -                       | -                           | 96.29                     | 35                            | 12.28                  | 35.32                      | 149                  | 357                     | A                       | V               |
|                                                  |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                                  |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |



| WIFI<br>Ant.<br>1                      | Note | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|----------------------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11ac<br>VHT20<br>CH 157<br>5785MHz |      | 5639.4               | 48                  | -20.2                   | 68.2                        | 36.4                      | 34.8                          | 12.11                  | 35.31                      | 313                  | 60                      | P                       | H               |
|                                        |      | 5678.6               | 50.08               | -39.32                  | 89.4                        | 38.38                     | 34.85                         | 12.17                  | 35.32                      | 313                  | 60                      | P                       | H               |
|                                        |      | 5705                 | 48.74               | -57.86                  | 106.6                       | 36.85                     | 35                            | 12.21                  | 35.32                      | 313                  | 60                      | P                       | H               |
|                                        |      | 5722.2               | 49.37               | -66.45                  | 115.82                      | 37.45                     | 35                            | 12.24                  | 35.32                      | 313                  | 60                      | P                       | H               |
|                                        | *    | 5785                 | 111.67              | -                       | -                           | 99.65                     | 35                            | 12.35                  | 35.33                      | 313                  | 60                      | P                       | H               |
|                                        | *    | 5785                 | 103.62              | -                       | -                           | 91.6                      | 35                            | 12.35                  | 35.33                      | 313                  | 60                      | A                       | H               |
|                                        |      | 5851                 | 52.01               | -67.91                  | 119.92                      | 39.95                     | 35                            | 12.4                   | 35.34                      | 313                  | 60                      | P                       | H               |
|                                        |      | 5861.2               | 49.09               | -59.97                  | 109.06                      | 36.96                     | 35.07                         | 12.4                   | 35.34                      | 313                  | 60                      | P                       | H               |
|                                        |      | 5904.2               | 49.68               | -33.87                  | 83.55                       | 37.4                      | 35.2                          | 12.42                  | 35.34                      | 313                  | 60                      | P                       | H               |
|                                        |      | 5931.8               | 50.61               | -17.59                  | 68.2                        | 38.31                     | 35.2                          | 12.44                  | 35.34                      | 313                  | 60                      | P                       | H               |
|                                        |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        |      | 5648.6               | 49.33               | -18.87                  | 68.2                        | 37.72                     | 34.8                          | 12.12                  | 35.31                      | 146                  | 358                     | P                       | V               |
|                                        |      | 5671.8               | 49.28               | -35.09                  | 84.37                       | 37.59                     | 34.85                         | 12.16                  | 35.32                      | 146                  | 358                     | P                       | V               |
|                                        |      | 5717.4               | 51.41               | -58.66                  | 110.07                      | 39.5                      | 35                            | 12.23                  | 35.32                      | 146                  | 358                     | P                       | V               |
|                                        |      | 5724.6               | 54.52               | -66.77                  | 121.29                      | 42.59                     | 35                            | 12.25                  | 35.32                      | 146                  | 358                     | P                       | V               |
|                                        | *    | 5785                 | 115.72              | -                       | -                           | 103.7                     | 35                            | 12.35                  | 35.33                      | 146                  | 358                     | P                       | V               |
|                                        | *    | 5785                 | 108.25              | -                       | -                           | 96.23                     | 35                            | 12.35                  | 35.33                      | 146                  | 358                     | A                       | V               |
|                                        |      | 5853.4               | 50.4                | -64.05                  | 114.45                      | 38.34                     | 35                            | 12.4                   | 35.34                      | 146                  | 358                     | P                       | V               |
|                                        |      | 5860.4               | 56.78               | -52.51                  | 109.29                      | 44.65                     | 35.07                         | 12.4                   | 35.34                      | 146                  | 358                     | P                       | V               |
|                                        |      | 5883.6               | 50.71               | -48.1                   | 98.81                       | 38.51                     | 35.13                         | 12.41                  | 35.34                      | 146                  | 358                     | P                       | V               |
|                                        |      | 5928.6               | 50.73               | -17.47                  | 68.2                        | 38.44                     | 35.2                          | 12.43                  | 35.34                      | 146                  | 358                     | P                       | V               |
|                                        |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                        |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |



| WIFI<br>Ant.<br>1                      | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|----------------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11ac<br>VHT20<br>CH 165<br>5825MHz | *                                                                                           | 5825                 | 112.2               | -                       | -                           | 100.15                    | 35                            | 12.38                  | 35.33                      | 310                  | 63                      | P                       | H               |
|                                        | *                                                                                           | 5825                 | 103.95              | -                       | -                           | 91.9                      | 35                            | 12.38                  | 35.33                      | 310                  | 63                      | A                       | H               |
|                                        |                                                                                             | 5850                 | 74.59               | -47.61                  | 122.2                       | 62.52                     | 35                            | 12.4                   | 35.33                      | 310                  | 63                      | P                       | H               |
|                                        |                                                                                             | 5857.2               | 65.5                | -44.68                  | 110.18                      | 53.37                     | 35.07                         | 12.4                   | 35.34                      | 310                  | 63                      | P                       | H               |
|                                        |                                                                                             | 5876.8               | 55.86               | -48                     | 103.86                      | 43.66                     | 35.13                         | 12.41                  | 35.34                      | 310                  | 63                      | P                       | H               |
|                                        |                                                                                             | 5949.6               | 51.09               | -17.11                  | 68.2                        | 38.79                     | 35.2                          | 12.44                  | 35.34                      | 310                  | 63                      | P                       | H               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        | *                                                                                           | 5825                 | 115.15              | -                       | -                           | 103.1                     | 35                            | 12.38                  | 35.33                      | 145                  | 357                     | P                       | V               |
|                                        | *                                                                                           | 5825                 | 107.55              | -                       | -                           | 95.5                      | 35                            | 12.38                  | 35.33                      | 145                  | 357                     | A                       | V               |
|                                        |                                                                                             | 5850                 | 78.68               | -43.52                  | 122.2                       | 66.61                     | 35                            | 12.4                   | 35.33                      | 145                  | 357                     | P                       | V               |
|                                        |                                                                                             | 5855.4               | 67.6                | -43.09                  | 110.69                      | 55.47                     | 35.07                         | 12.4                   | 35.34                      | 145                  | 357                     | P                       | V               |
|                                        |                                                                                             | 5875.8               | 57.42               | -47.19                  | 104.61                      | 45.22                     | 35.13                         | 12.41                  | 35.34                      | 145                  | 357                     | P                       | V               |
|                                        |                                                                                             | 5934                 | 50.33               | -17.87                  | 68.2                        | 38.03                     | 35.2                          | 12.44                  | 35.34                      | 145                  | 357                     | P                       | V               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                                 | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## Band 4 5725~5850MHz

## WIFI 802.11ac VHT20 (Harmonic @ 3m)

| WIFI<br>Ant.<br>1                      | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|----------------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11ac<br>VHT20<br>CH 149<br>5745MHz |                                                                                             | 11490                | 52.38               | -21.62                  | 74                          | 53.24                     | 38.18                         | 18.48                  | 57.52                      | 181                  | 339                     | P                       | H               |
|                                        |                                                                                             | 11490                | 42.51               | -11.49                  | 54                          | 43.37                     | 38.18                         | 18.48                  | 57.52                      | 181                  | 339                     | A                       | H               |
|                                        |                                                                                             | 17235                | 52.09               | -16.11                  | 68.2                        | 43.92                     | 41.53                         | 22.95                  | 56.31                      | 100                  | 0                       | P                       | H               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        |                                                                                             | 11490                | 47.18               | -26.82                  | 74                          | 48.04                     | 38.18                         | 18.48                  | 57.52                      | 100                  | 0                       | P                       | V               |
|                                        |                                                                                             | 17235                | 50.67               | -17.53                  | 68.2                        | 42.5                      | 41.53                         | 22.95                  | 56.31                      | 100                  | 0                       | P                       | V               |
|                                        |                                                                                             | 11490                | 47.18               | -26.82                  | 74                          | 48.04                     | 38.18                         | 18.48                  | 57.52                      | 100                  | 0                       | P                       | V               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11ac<br>VHT20<br>CH 157<br>5785MHz |                                                                                             | 11570                | 52.95               | -21.05                  | 74                          | 53.41                     | 38.33                         | 18.55                  | 57.34                      | 178                  | 339                     | P                       | H               |
|                                        |                                                                                             | 11570                | 42.13               | -11.87                  | 54                          | 42.59                     | 38.33                         | 18.55                  | 57.34                      | 178                  | 339                     | A                       | H               |
|                                        |                                                                                             | 17355                | 52.35               | -15.85                  | 68.2                        | 44.18                     | 41.5                          | 23.02                  | 56.35                      | 100                  | 0                       | P                       | H               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        |                                                                                             | 11570                | 46.96               | -27.04                  | 74                          | 47.42                     | 38.33                         | 18.55                  | 57.34                      | 100                  | 0                       | P                       | V               |
|                                        |                                                                                             | 17355                | 51.5                | -16.7                   | 68.2                        | 43.33                     | 41.5                          | 23.02                  | 56.35                      | 100                  | 0                       | P                       | V               |
|                                        |                                                                                             | 11570                | 46.96               | -27.04                  | 74                          | 47.42                     | 38.33                         | 18.55                  | 57.34                      | 100                  | 0                       | P                       | V               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11ac<br>VHT20<br>CH 165<br>5825MHz |                                                                                             | 11650                | 47.78               | -26.22                  | 74                          | 47.86                     | 38.44                         | 18.63                  | 57.15                      | 100                  | 0                       | P                       | H               |
|                                        |                                                                                             | 17475                | 49.62               | -18.58                  | 68.2                        | 41.58                     | 41.33                         | 23.09                  | 56.38                      | 100                  | 0                       | P                       | H               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        |                                                                                             | 11650                | 47.26               | -26.74                  | 74                          | 47.34                     | 38.44                         | 18.63                  | 57.15                      | 100                  | 0                       | P                       | V               |
|                                        |                                                                                             | 17475                | 49.89               | -18.31                  | 68.2                        | 41.85                     | 41.33                         | 23.09                  | 56.38                      | 100                  | 0                       | P                       | V               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                                 | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## Band 4 5725~5850MHz

## WIFI 802.11ac VHT40 (Band Edge @ 3m)

| WIFI<br>Ant.<br>1                      | Note | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|----------------------------------------|------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11ac<br>VHT40<br>CH 151<br>5755MHz |      | 5614.6               | 48.89               | -19.31                  | 68.2                        | 37.14                     | 35                            | 12.06                  | 35.31                      | 316                  | 61                      | P                       | H               |
|                                        |      | 5694.4               | 60.21               | -40.86                  | 101.07                      | 48.33                     | 35                            | 12.2                   | 35.32                      | 316                  | 61                      | P                       | H               |
|                                        |      | 5719.4               | 78.32               | -32.31                  | 110.63                      | 66.4                      | 35                            | 12.24                  | 35.32                      | 316                  | 61                      | P                       | H               |
|                                        |      | 5723.4               | 81.95               | -36.6                   | 118.55                      | 70.03                     | 35                            | 12.24                  | 35.32                      | 316                  | 61                      | P                       | H               |
|                                        | *    | 5755                 | 108.87              | -                       | -                           | 96.9                      | 35                            | 12.3                   | 35.33                      | 316                  | 61                      | P                       | H               |
|                                        | *    | 5755                 | 100.97              | -                       | -                           | 89                        | 35                            | 12.3                   | 35.33                      | 316                  | 61                      | A                       | H               |
|                                        |      | 5854.2               | 53.13               | -59.49                  | 112.62                      | 41                        | 35.07                         | 12.4                   | 35.34                      | 316                  | 61                      | P                       | H               |
|                                        |      | 5858.6               | 51.96               | -57.83                  | 109.79                      | 39.83                     | 35.07                         | 12.4                   | 35.34                      | 316                  | 61                      | P                       | H               |
|                                        |      | 5875.6               | 51.35               | -53.4                   | 104.75                      | 39.15                     | 35.13                         | 12.41                  | 35.34                      | 316                  | 61                      | P                       | H               |
|                                        |      | 5944.4               | 49.88               | -18.32                  | 68.2                        | 37.58                     | 35.2                          | 12.44                  | 35.34                      | 316                  | 61                      | P                       | H               |
|                                        |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        |      | 5650                 | 55.23               | -12.97                  | 68.2                        | 43.72                     | 34.7                          | 12.12                  | 35.31                      | 157                  | 357                     | P                       | V               |
|                                        |      | 5696.8               | 70.88               | -31.96                  | 102.84                      | 59                        | 35                            | 12.2                   | 35.32                      | 157                  | 357                     | P                       | V               |
|                                        |      | 5718.4               | 87.41               | -22.94                  | 110.35                      | 75.49                     | 35                            | 12.24                  | 35.32                      | 157                  | 357                     | P                       | V               |
|                                        |      | 5724.6               | 90.83               | -30.46                  | 121.29                      | 78.9                      | 35                            | 12.25                  | 35.32                      | 157                  | 357                     | P                       | V               |
|                                        | *    | 5755                 | 113.31              | -                       | -                           | 101.34                    | 35                            | 12.3                   | 35.33                      | 157                  | 357                     | P                       | V               |
|                                        | *    | 5755                 | 105.67              | -                       | -                           | 93.7                      | 35                            | 12.3                   | 35.33                      | 157                  | 357                     | A                       | V               |
|                                        |      | 5853.4               | 53.37               | -61.08                  | 114.45                      | 41.31                     | 35                            | 12.4                   | 35.34                      | 157                  | 357                     | P                       | V               |
|                                        |      | 5858.6               | 50.6                | -59.19                  | 109.79                      | 38.47                     | 35.07                         | 12.4                   | 35.34                      | 157                  | 357                     | P                       | V               |
|                                        |      | 5908.4               | 51.9                | -28.55                  | 80.45                       | 39.62                     | 35.2                          | 12.42                  | 35.34                      | 157                  | 357                     | P                       | V               |
|                                        |      | 5937.8               | 51                  | -17.2                   | 68.2                        | 38.7                      | 35.2                          | 12.44                  | 35.34                      | 157                  | 357                     | P                       | V               |
|                                        |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                        |      |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |





| WIFI<br>Ant.<br>1                                | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|--------------------------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| <b>802.11ac<br/>VHT40<br/>CH 159<br/>5795MHz</b> |                                                                                             | 5644.4               | 49.03               | -19.17                  | 68.2                        | 37.43                     | 34.8                          | 12.11                  | 35.31                      | 361                  | 63                      | P                       | H               |
|                                                  |                                                                                             | 5694                 | 53.23               | -47.55                  | 100.78                      | 41.35                     | 35                            | 12.2                   | 35.32                      | 361                  | 63                      | P                       | H               |
|                                                  |                                                                                             | 5718                 | 56.55               | -53.69                  | 110.24                      | 44.64                     | 35                            | 12.23                  | 35.32                      | 361                  | 63                      | P                       | H               |
|                                                  |                                                                                             | 5724                 | 58.69               | -61.23                  | 119.92                      | 46.77                     | 35                            | 12.24                  | 35.32                      | 361                  | 63                      | P                       | H               |
|                                                  | *                                                                                           | 5795                 | 110.6               | -                       | -                           | 98.57                     | 35                            | 12.36                  | 35.33                      | 361                  | 63                      | P                       | H               |
|                                                  | *                                                                                           | 5795                 | 102.26              | -                       | -                           | 90.23                     | 35                            | 12.36                  | 35.33                      | 361                  | 63                      | A                       | H               |
|                                                  |                                                                                             | 5850                 | 66.58               | -55.62                  | 122.2                       | 54.51                     | 35                            | 12.4                   | 35.33                      | 361                  | 63                      | P                       | H               |
|                                                  |                                                                                             | 5858                 | 65.49               | -44.47                  | 109.96                      | 53.36                     | 35.07                         | 12.4                   | 35.34                      | 361                  | 63                      | P                       | H               |
|                                                  |                                                                                             | 5875                 | 57.65               | -47.55                  | 105.2                       | 45.45                     | 35.13                         | 12.41                  | 35.34                      | 361                  | 63                      | P                       | H               |
|                                                  |                                                                                             | 5925.8               | 52.8                | -15.4                   | 68.2                        | 40.51                     | 35.2                          | 12.43                  | 35.34                      | 361                  | 63                      | P                       | H               |
|                                                  |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                                  |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                                  |                                                                                             | 5647.4               | 49.34               | -18.86                  | 68.2                        | 37.73                     | 34.8                          | 12.12                  | 35.31                      | 136                  | 355                     | P                       | V               |
|                                                  |                                                                                             | 5699.6               | 57.75               | -47.16                  | 104.91                      | 45.87                     | 35                            | 12.2                   | 35.32                      | 136                  | 355                     | P                       | V               |
|                                                  |                                                                                             | 5716.6               | 63.33               | -46.52                  | 109.85                      | 51.42                     | 35                            | 12.23                  | 35.32                      | 136                  | 355                     | P                       | V               |
|                                                  |                                                                                             | 5724.2               | 65.16               | -55.22                  | 120.38                      | 53.24                     | 35                            | 12.24                  | 35.32                      | 136                  | 355                     | P                       | V               |
|                                                  | *                                                                                           | 5795                 | 113.63              | -                       | -                           | 101.6                     | 35                            | 12.36                  | 35.33                      | 136                  | 355                     | P                       | V               |
|                                                  | *                                                                                           | 5795                 | 105.43              | -                       | -                           | 93.4                      | 35                            | 12.36                  | 35.33                      | 136                  | 355                     | A                       | V               |
|                                                  |                                                                                             | 5851.6               | 59.28               | -59.27                  | 118.55                      | 47.22                     | 35                            | 12.4                   | 35.34                      | 136                  | 355                     | P                       | V               |
|                                                  |                                                                                             | 5862                 | 59.2                | -49.64                  | 108.84                      | 47.07                     | 35.07                         | 12.4                   | 35.34                      | 136                  | 355                     | P                       | V               |
|                                                  |                                                                                             | 5893.8               | 52.33               | -38.92                  | 91.25                       | 40.05                     | 35.2                          | 12.42                  | 35.34                      | 136                  | 355                     | P                       | V               |
|                                                  |                                                                                             | 5936.2               | 50.18               | -18.02                  | 68.2                        | 37.88                     | 35.2                          | 12.44                  | 35.34                      | 136                  | 355                     | P                       | V               |
|                                                  |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                                  |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| <b>Remark</b>                                    | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## Band 4 5725~5850MHz

## WIFI 802.11ac VHT40 (Harmonic @ 3m)

| WIFI<br>Ant.<br>1                      | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|----------------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11ac<br>VHT40<br>CH 151<br>5755MHz |                                                                                             | 11510                | 46.64               | -27.36                  | 74                          | 47.41                     | 38.2                          | 18.51                  | 57.48                      | 100                  | 0                       | P                       | H               |
|                                        |                                                                                             | 17265                | 49.54               | -18.66                  | 68.2                        | 41.43                     | 41.47                         | 22.96                  | 56.32                      | 100                  | 0                       | P                       | H               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        |                                                                                             | 11510                | 45.84               | -28.16                  | 74                          | 46.61                     | 38.2                          | 18.51                  | 57.48                      | 100                  | 0                       | P                       | V               |
|                                        |                                                                                             | 17265                | 49.66               | -18.54                  | 68.2                        | 41.55                     | 41.47                         | 22.96                  | 56.32                      | 100                  | 0                       | P                       | V               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| 802.11ac<br>VHT40<br>CH 159<br>5795MHz |                                                                                             | 11590                | 47.43               | -26.57                  | 74                          | 47.78                     | 38.37                         | 18.57                  | 57.29                      | 100                  | 0                       | P                       | H               |
|                                        |                                                                                             | 17385                | 50.7                | -17.5                   | 68.2                        | 42.45                     | 41.57                         | 23.04                  | 56.36                      | 100                  | 0                       | P                       | H               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        |                                                                                             | 11590                | 46.17               | -27.83                  | 74                          | 46.52                     | 38.37                         | 18.57                  | 57.29                      | 100                  | 0                       | P                       | V               |
|                                        |                                                                                             | 17385                | 50.51               | -17.69                  | 68.2                        | 42.26                     | 41.57                         | 23.04                  | 56.36                      | 100                  | 0                       | P                       | V               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                        |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                                 | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## Band 4 5725~5850MHz

## WIFI 802.11ac VHT80 (Band Edge @ 3m)

| WIFI<br>Ant.<br>1                      | Note                                                         | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|----------------------------------------|--------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11ac<br>VHT80<br>CH 155<br>5775MHz |                                                              | 5639                 | 58.71               | -9.49                   | 68.2                        | 47.12                     | 34.8                          | 12.1                   | 35.31                      | 362                  | 67                      | P                       | H               |
|                                        |                                                              | 5696.6               | 76.87               | -25.82                  | 102.69                      | 64.99                     | 35                            | 12.2                   | 35.32                      | 362                  | 67                      | P                       | H               |
|                                        |                                                              | 5715.6               | 81.58               | -27.99                  | 109.57                      | 69.67                     | 35                            | 12.23                  | 35.32                      | 362                  | 67                      | P                       | H               |
|                                        |                                                              | 5723.2               | 82.77               | -35.33                  | 118.1                       | 70.85                     | 35                            | 12.24                  | 35.32                      | 362                  | 67                      | P                       | H               |
|                                        | *                                                            | 5775                 | 105.43              | -                       | -                           | 93.43                     | 35                            | 12.33                  | 35.33                      | 362                  | 46                      | P                       | H               |
|                                        | *                                                            | 5775                 | 95.3                | -                       | -                           | 83.3                      | 35                            | 12.33                  | 35.33                      | 362                  | 46                      | A                       | H               |
|                                        |                                                              | 5852.8               | 79.37               | -36.45                  | 115.82                      | 67.31                     | 35                            | 12.4                   | 35.34                      | 362                  | 44                      | P                       | H               |
|                                        |                                                              | 5856.4               | 78.63               | -31.78                  | 110.41                      | 66.5                      | 35.07                         | 12.4                   | 35.34                      | 362                  | 44                      | P                       | H               |
|                                        |                                                              | 5875.4               | 72.86               | -32.04                  | 104.9                       | 60.66                     | 35.13                         | 12.41                  | 35.34                      | 362                  | 44                      | P                       | H               |
|                                        |                                                              | 5927.2               | 58.56               | -9.64                   | 68.2                        | 46.27                     | 35.2                          | 12.43                  | 35.34                      | 362                  | 44                      | P                       | H               |
|                                        |                                                              |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        |                                                              |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                        |                                                              | 5648.6               | 65.88               | -2.32                   | 68.2                        | 54.27                     | 34.8                          | 12.12                  | 35.31                      | 148                  | 360                     | P                       | V               |
|                                        |                                                              | 5699.4               | 84.63               | -20.13                  | 104.76                      | 72.75                     | 35                            | 12.2                   | 35.32                      | 148                  | 360                     | P                       | V               |
|                                        |                                                              | 5717.4               | 87.22               | -22.85                  | 110.07                      | 75.31                     | 35                            | 12.23                  | 35.32                      | 148                  | 360                     | P                       | V               |
|                                        |                                                              | 5723.2               | 87.63               | -30.47                  | 118.1                       | 75.71                     | 35                            | 12.24                  | 35.32                      | 148                  | 360                     | P                       | V               |
|                                        | *                                                            | 5775                 | 110.52              | -                       | -                           | 98.52                     | 35                            | 12.33                  | 35.33                      | 148                  | 360                     | P                       | V               |
|                                        | *                                                            | 5775                 | 102.53              | -                       | -                           | 90.53                     | 35                            | 12.33                  | 35.33                      | 148                  | 360                     | A                       | V               |
|                                        |                                                              | 5850.6               | 85.74               | -35.09                  | 120.83                      | 73.68                     | 35                            | 12.4                   | 35.34                      | 148                  | 360                     | P                       | V               |
|                                        |                                                              | 5857.8               | 84.57               | -25.44                  | 110.01                      | 72.44                     | 35.07                         | 12.4                   | 35.34                      | 148                  | 360                     | P                       | V               |
|                                        |                                                              | 5877                 | 79.81               | -23.9                   | 103.71                      | 67.61                     | 35.13                         | 12.41                  | 35.34                      | 148                  | 360                     | P                       | V               |
|                                        |                                                              | 5927                 | 62.7                | -5.5                    | 68.2                        | 50.41                     | 35.2                          | 12.43                  | 35.34                      | 148                  | 360                     | P                       | V               |
|                                        |                                                              |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                        |                                                              |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                                 | 1. No other spurious found.                                  |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |
|                                        | 2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |

**Band 4 5725~5850MHz****WIFI 802.11ac VHT80 (Harmonic @ 3m)**

| WIFI<br>Ant.<br>1                                | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|--------------------------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| <b>802.11ac<br/>VHT80<br/>CH 155<br/>5775MHz</b> |                                                                                             | 11550                | 46.45               | -27.55                  | 74                          | 46.99                     | 38.3                          | 18.54                  | 57.38                      | 100                  | 0                       | P                       | H               |
|                                                  |                                                                                             | 17325                | 50.05               | -18.15                  | 68.2                        | 41.96                     | 41.43                         | 23                     | 56.34                      | 100                  | 0                       | P                       | H               |
|                                                  |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                                  |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                                                  |                                                                                             | 11550                | 46.04               | -27.96                  | 74                          | 46.58                     | 38.3                          | 18.54                  | 57.38                      | 100                  | 0                       | P                       | V               |
|                                                  |                                                                                             | 17325                | 50.41               | -17.79                  | 68.2                        | 42.32                     | 41.43                         | 23                     | 56.34                      | 100                  | 0                       | P                       | V               |
|                                                  |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                                                  |                                                                                             |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| <b>Remark</b>                                    | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## Emission below 1GHz

## 5GHz WIFI 802.11ac VHT80 (LF)

| WIFI                            | Note                                                                       | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Path   | Preamp | Ant    | Table   | Peak    | Pol.    |
|---------------------------------|----------------------------------------------------------------------------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant.                            |                                                                            |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
| 1                               |                                                                            | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 5GHz<br>802.11ac<br>VHT80<br>LF |                                                                            | 30        | 23.14      | -16.86 | 40         | 27.9     | 24.32    | 0.93   | 30.01  | -      | -       | P       | H       |
|                                 |                                                                            | 46.74     | 18.41      | -21.59 | 40         | 31.29    | 15.96    | 1.15   | 29.99  | -      | -       | P       | H       |
|                                 |                                                                            | 131.79    | 20.36      | -23.14 | 43.5       | 30.83    | 17.57    | 1.92   | 29.96  | -      | -       | P       | H       |
|                                 |                                                                            | 870.5     | 31.27      | -14.73 | 46         | 26.47    | 28.9     | 5.03   | 29.13  | -      | -       | P       | H       |
|                                 |                                                                            | 929.3     | 32.31      | -13.69 | 46         | 26.63    | 29.3     | 5.2    | 28.82  | -      | -       | P       | H       |
|                                 |                                                                            | 953.1     | 33.4       | -12.6  | 46         | 26.39    | 30.42    | 5.27   | 28.68  | 100    | 0       | P       | H       |
|                                 |                                                                            |           |            |        |            |          |          |        |        |        |         |         |         |
|                                 |                                                                            |           |            |        |            |          |          |        |        |        |         |         |         |
|                                 |                                                                            |           |            |        |            |          |          |        |        |        |         |         |         |
|                                 |                                                                            |           |            |        |            |          |          |        |        |        |         |         |         |
|                                 |                                                                            |           |            |        |            |          |          |        |        |        |         |         |         |
|                                 |                                                                            |           |            |        |            |          |          |        |        |        |         |         |         |
|                                 |                                                                            | 30.27     | 31.34      | -8.66  | 40         | 36.1     | 24.32    | 0.93   | 30.01  | 100    | 0       | P       | V       |
|                                 |                                                                            | 40.26     | 27.4       | -12.6  | 40         | 37.33    | 19       | 1.07   | 30     | -      | -       | P       | V       |
|                                 |                                                                            | 58.89     | 22.44      | -17.56 | 40         | 39.2     | 11.94    | 1.29   | 29.99  | -      | -       | P       | V       |
|                                 |                                                                            | 864.2     | 31.63      | -14.37 | 46         | 26.89    | 28.88    | 5.01   | 29.15  | -      | -       | P       | V       |
|                                 |                                                                            | 923.7     | 32.08      | -13.92 | 46         | 26.64    | 29.1     | 5.19   | 28.85  | -      | -       | P       | V       |
|                                 |                                                                            | 953.1     | 33.93      | -12.07 | 46         | 26.92    | 30.42    | 5.27   | 28.68  | -      | -       | P       | V       |
|                                 |                                                                            |           |            |        |            |          |          |        |        |        |         |         |         |
|                                 |                                                                            |           |            |        |            |          |          |        |        |        |         |         |         |
|                                 |                                                                            |           |            |        |            |          |          |        |        |        |         |         |         |
|                                 |                                                                            |           |            |        |            |          |          |        |        |        |         |         |         |
|                                 |                                                                            |           |            |        |            |          |          |        |        |        |         |         |         |
|                                 |                                                                            |           |            |        |            |          |          |        |        |        |         |         |         |
| Remark                          | 1. No other spurious found.<br>2. All results are PASS against limit line. |           |            |        |            |          |          |        |        |        |         |         |         |



**Note symbol**

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

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

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

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

**For Peak Limit @ 2390MHz:**

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

**For Average Limit @ 2390MHz:**

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

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



## Appendix C. Radiated Spurious Emission Plots

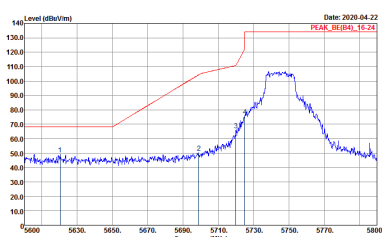
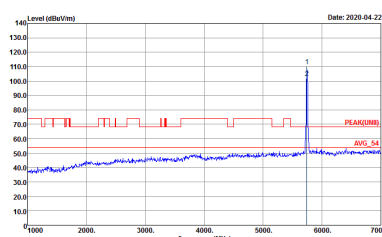
|                 |                                    |                     |         |
|-----------------|------------------------------------|---------------------|---------|
| Test Engineer : | Jesse Wang, Stan Hsieh, and Ken Wu | Temperature :       | 21~25°C |
|                 |                                    | Relative Humidity : | 48~53%  |

### Note symbol

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

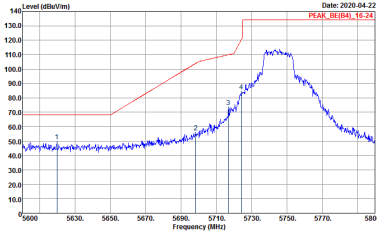
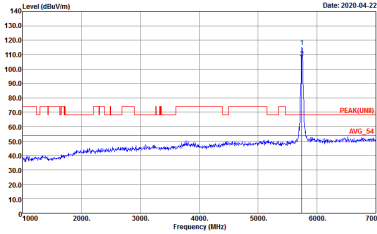
### Band 4 - 5725~5850MHz

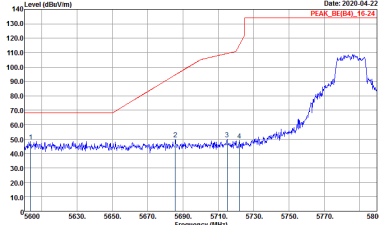
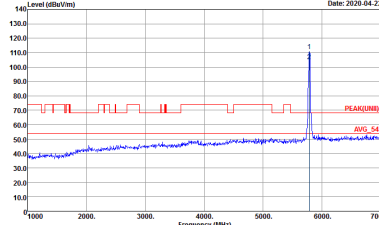
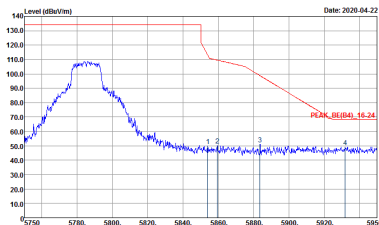
#### WIFI 802.11a (Band Edge @ 3m)

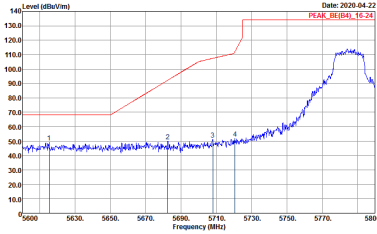
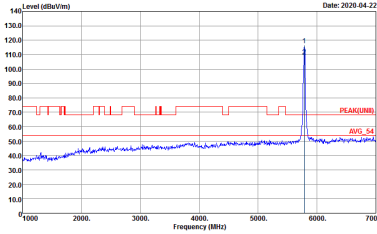
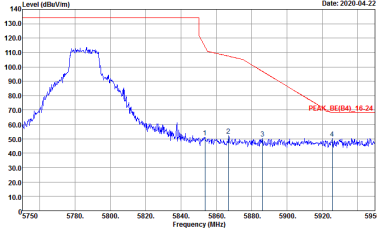
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                     |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11a CH149 5745MHz                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                     |
| 1    | Horizontal                                                                                                                                                                                                                                                               | Fundamental                                                                                                                                                                                                                                                         |
| Peak |  <p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : 34<br/>Power setting : 22</p> |  <p>Site : 03CH07-HY<br/>Condition : PEAK(UN(0)) 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : 34<br/>Power setting : 22</p> |
|      |                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                     |





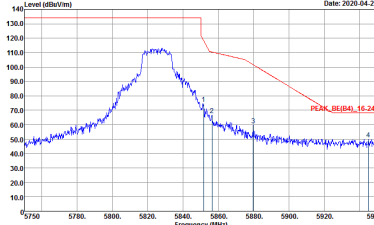
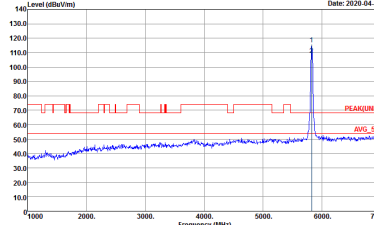
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                    |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11a CH149 5745MHz                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                    |
| 1    | Vertical                                                                                                                                                                                                                                                                                  | Fundamental                                                                                                                                                                                                                                                                        |
| Peak | <div><p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : Peak<br/>Power setting : 34<br/>: 22</p></div> | <div><p>Site : 03CH07-HY<br/>Condition : PEAK(FUN) 3m HF_ANT_00075962 VERTICAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : Peak<br/>Power setting : 34<br/>: 22</p></div> |

| WIFI | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                     |                                                                                                                                                                                                                                      |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11a CH157 5785MHz                                                                                                                                                                                                                  |                                                                                                                                                                                                                                      |
| 1    | Horizontal                                                                                                                                                                                                                             | Fundamental                                                                                                                                                                                                                          |
| Peak |  <p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : Peak<br/>Mode : 35<br/>Power setting : 22.5</p>   |  <p>Site : 03CH07-HY<br/>Condition : PEAK_UR(B)_16-24 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : Peak<br/>Mode : 35<br/>Power setting : 22.5</p> |
|      |  <p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : Peak<br/>Mode : 35<br/>Power setting : 22.5</p> | Left blank                                                                                                                                                                                                                           |

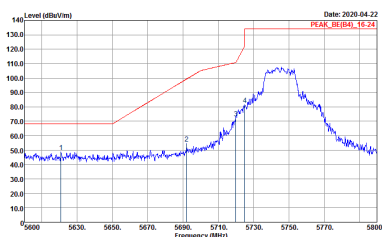
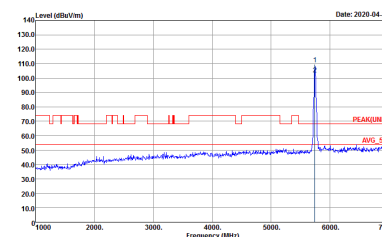
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                          |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11a CH157 5785MHz                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                          |
| 1    | Vertical                                                                                                                                                                                                                                                                                          | Fundamental                                                                                                                                                                                                                                                                              |
| Peak |  <p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : Peak<br/>Power setting : 35<br/>Power setting : 22.5</p>   |  <p>Site : 03CH07-HY<br/>Condition : PEAK(UNI) 3m HF_ANT_00075962 VERTICAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : Peak<br/>Power setting : 35<br/>Power setting : 22.5</p> |
|      |  <p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : Peak<br/>Power setting : 35<br/>Power setting : 22.5</p> | Left blank                                                                                                                                                                                                                                                                               |



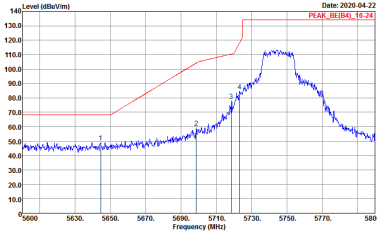
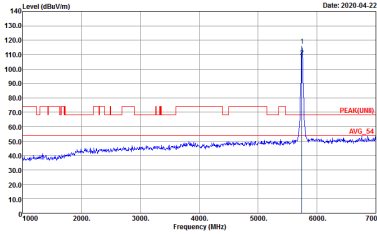
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                     |                                                                                                                                                                                                 |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11a CH165 5825MHz                                                                                                                                                                                  |                                                                                                                                                                                                 |
| 1    | Horizontal                                                                                                                                                                                             | Fundamental                                                                                                                                                                                     |
| Peak | <div><p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : Peak<br/>Power setting : 36 : 22</p></div> | <div><p>Site : 03CH07-HY<br/>Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : Peak<br/>Power setting : 36 : 22</p></div> |

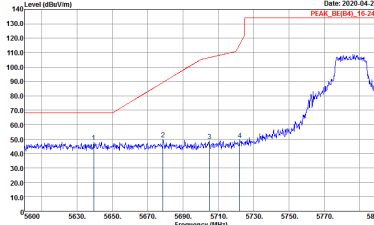
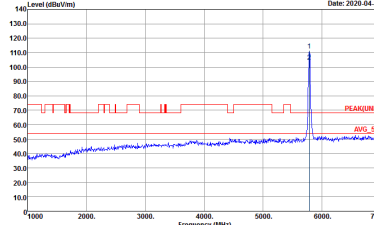
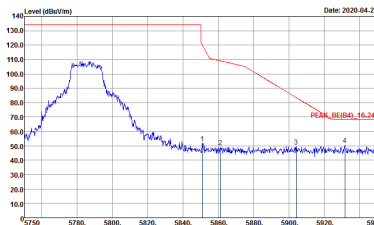
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                      |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11a CH165 5825MHz                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                      |
| 1    | Vertical                                                                                                                                                                                                                                                                                                                                                   | Fundamental                                                                                                                                                                                                                                                                                                                                          |
| Peak |  <p>           Site : 03CH07-HY<br/>           Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL<br/>           Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>           Mode : Peak<br/>           Power setting : 36<br/>           : 22         </p> |  <p>           Site : 03CH07-HY<br/>           Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL<br/>           Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>           Mode : Peak<br/>           Power setting : 36<br/>           : 22         </p> |

**Band 4 5725~5850MHz**  
**WIFI 802.11ac VHT20 (Band Edge @ 3m)**

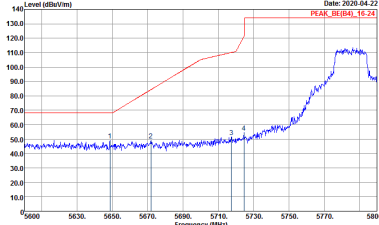
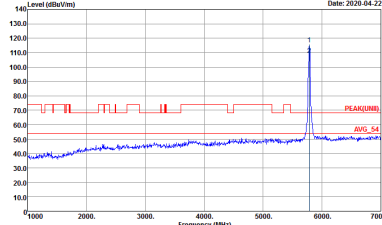
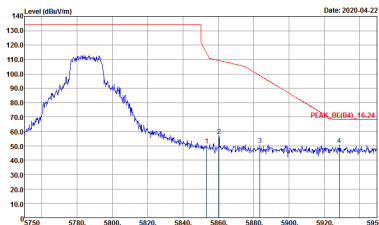
| WIFI        | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                      |                                                                                                                                                                                                                                          |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT         | 802.11ac VHT20 CH149 5745MHz                                                                                                                                                                                                            |                                                                                                                                                                                                                                          |
| 1           | Horizontal                                                                                                                                                                                                                              | Fundamental                                                                                                                                                                                                                              |
| <b>Peak</b> |  <p>Site : 03CH07-HY<br/> Condition : PEAK_R(149_15-24 3m HF_ANT_00075962 HORIZONTAL<br/> Detector : Peak<br/> Mode : 37<br/> Power setting : 22.5</p> |  <p>Site : 03CH07-HY<br/> Condition : PEAK_L(149_15-24 3m HF_ANT_00075962 HORIZONTAL<br/> Detector : Peak<br/> Mode : 37<br/> Power setting : 22.5</p> |
|             |                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                          |



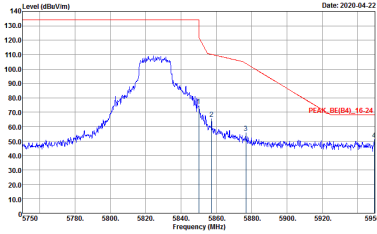
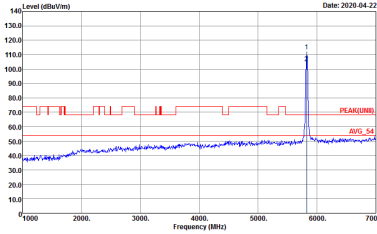
| WIFI         | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                            |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT          | 802.11ac VHT20 CH149 5745MHz                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                            |
| 1            | Vertical                                                                                                                                                                                                                                                                         | Fundamental                                                                                                                                                                                                                                                                |
| Peak<br>Avg. | <div><p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : 37<br/>Power setting : 22.5</p></div> | <div><p>Site : 03CH07-HY<br/>Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : 37<br/>Power setting : 22.5</p></div> |

| WIFI | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                             |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11ac VHT20 CH157 5785MHz                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                             |
| 1    | Horizontal                                                                                                                                                                                                                                                                                          | Fundamental                                                                                                                                                                                                                                                                                 |
| Peak |  <p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_15-24 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : Peak<br/>Power setting : 38<br/>Power setting : 22.5</p>   |  <p>Site : 03CH07-HY<br/>Condition : PEAK(FUND) 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : Peak<br/>Power setting : 38<br/>Power setting : 22.5</p> |
|      |  <p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_15-24 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : Peak<br/>Power setting : 38<br/>Power setting : 22.5</p> | Left blank                                                                                                                                                                                                                                                                                  |



| WIFI | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                             |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11ac VHT20 CH157 5785MHz                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                             |
| 1    | Vertical                                                                                                                                                                                                                                                                                             | Fundamental                                                                                                                                                                                                                                                                                 |
| Peak |  <p>           Site : 03CH07-HY<br/>           Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL<br/>           Detector : Peak<br/>           Mode : 38<br/>           Power setting : 22.5         </p>   |  <p>           Site : 03CH07-HY<br/>           Condition : PEAK(UNI) 3m HF_ANT_00075962 VERTICAL<br/>           Detector : Peak<br/>           Mode : 38<br/>           Power setting : 22.5         </p> |
|      |  <p>           Site : 03CH07-HY<br/>           Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL<br/>           Detector : Peak<br/>           Mode : 38<br/>           Power setting : 22.5         </p> | Left blank                                                                                                                                                                                                                                                                                  |

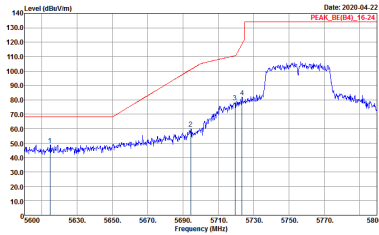
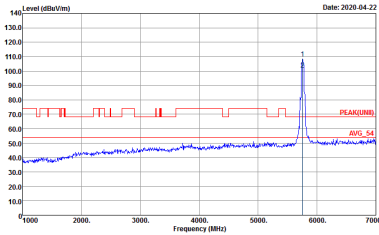
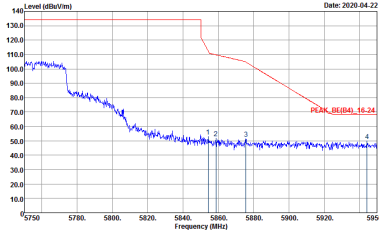


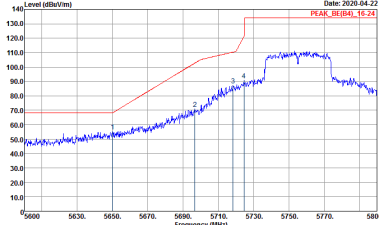
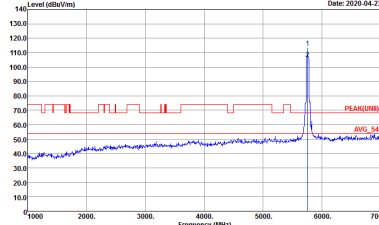
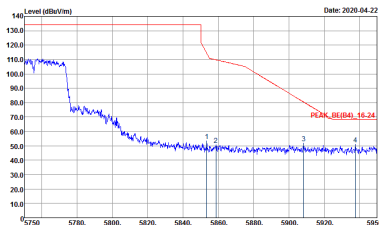
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                   |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11ac VHT20 CH165 5825MHz                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                   |
| 1    | Horizontal                                                                                                                                                                                                                                                                              | Fundamental                                                                                                                                                                                                                                                                       |
| Peak | <div><p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : Peak<br/>Power setting : 39 : 22</p></div> | <div><p>Site : 03CH07-HY<br/>Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : Peak<br/>Power setting : 39 : 22</p></div> |

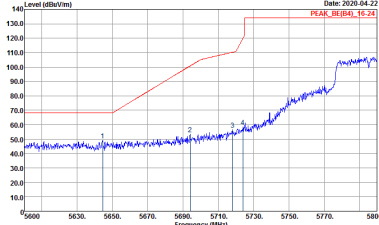
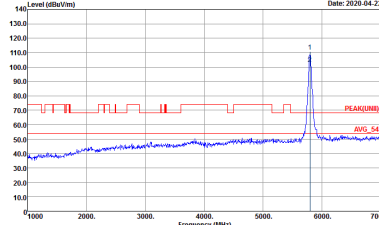
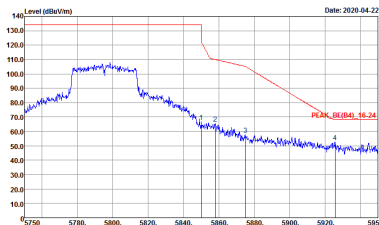


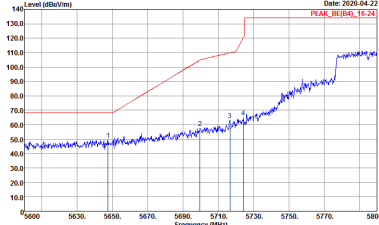
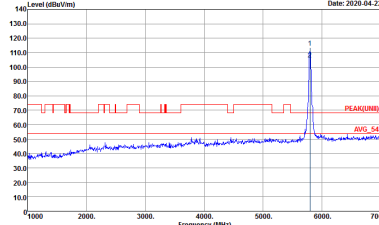
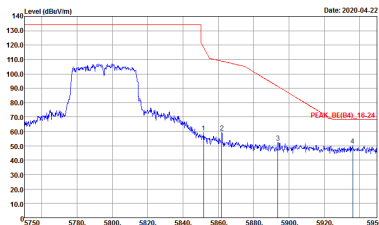
| WIFI         | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                            |                                                                                                                                                                                       |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT          | 802.11ac VHT20 CH165 5825MHz                                                                                                                                                                  |                                                                                                                                                                                       |
| 1            | Vertical                                                                                                                                                                                      | Fundamental                                                                                                                                                                           |
| Peak<br>Avg. | <div><p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : 39<br/>Power setting : 22</p></div> | <div><p>Site : 03CH07-HY<br/>Condition : PEAK_FUND 3m HF_ANT_00075962 VERTICAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Mode : 39<br/>Power setting : 22</p></div> |

**Band 4 5725~5850MHz**  
**WIFI 802.11ac VHT40 (Band Edge @ 3m)**

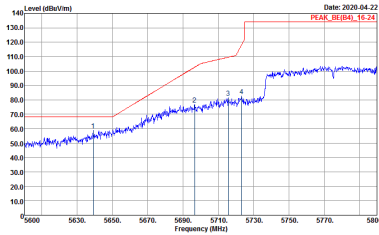
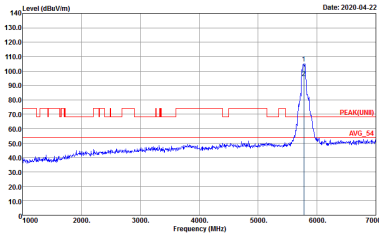
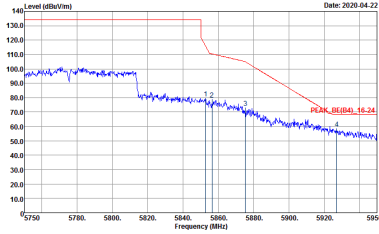
| WIFI        | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                       |                                                                                                                                                                                                                                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT         | 802.11ac VHT40 CH151 5755MHz                                                                                                                                                                                                             |                                                                                                                                                                                                                                |
| 1           | Horizontal                                                                                                                                                                                                                               | Fundamental                                                                                                                                                                                                                    |
| <b>Peak</b> |  <p>Site : 03CH07-HY<br/> Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL<br/> Detector : Peak<br/> Mode : 40<br/> Power setting : 21</p>   |  <p>Site : 03CH07-HY<br/> Condition : PEAK_LNB 3m HF_ANT_00075962 HORIZONTAL<br/> Detector : Peak<br/> Mode : 40<br/> Power setting : 21</p> |
|             |  <p>Site : 03CH07-HY<br/> Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL<br/> Detector : Peak<br/> Mode : 40<br/> Power setting : 21</p> | <b>Left blank</b>                                                                                                                                                                                                              |

| WIFI | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                   |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11ac VHT40 CH151 5755MHz                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                   |
| 1    | Vertical                                                                                                                                                                                                                                                                                  | Fundamental                                                                                                                                                                                                                                                                       |
| Peak |  <p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Project : Peak<br/>Mode : 40<br/>Power setting : 21</p>   |  <p>Site : 03CH07-HY<br/>Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Project : Peak<br/>Mode : 40<br/>Power setting : 21</p> |
| Peak |  <p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Project : Peak<br/>Mode : 40<br/>Power setting : 21</p> | Left blank                                                                                                                                                                                                                                                                        |

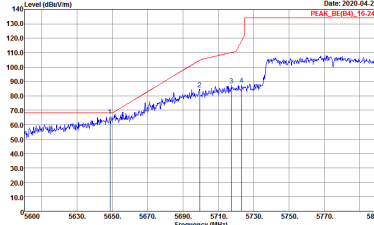
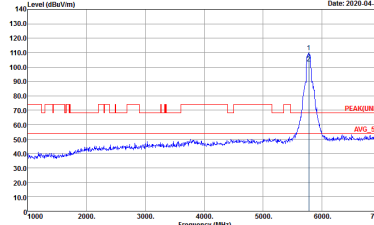
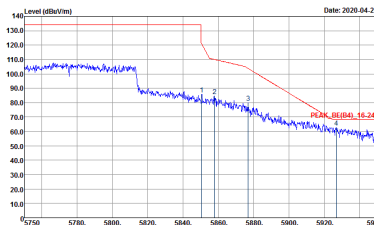
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                      |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11ac VHT40 CH159 5795MHz                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                      |
| 1    | Horizontal                                                                                                                                                                                                                                                                                                                               | Fundamental                                                                                                                                                                                                                                                                                                                          |
| Peak |  <p>           Site : 03CH07-HY<br/>           Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL<br/>           Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>           Mode : 41<br/>           Power setting : 22         </p>   |  <p>           Site : 03CH07-HY<br/>           Condition : PEAK(BE)_16-24 3m HF_ANT_00075962 HORIZONTAL<br/>           Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>           Mode : 41<br/>           Power setting : 22         </p> |
|      |  <p>           Site : 03CH07-HY<br/>           Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL<br/>           Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>           Mode : 41<br/>           Power setting : 22         </p> | Left blank                                                                                                                                                                                                                                                                                                                           |

| WIFI | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11ac VHT40 CH159 5795MHz                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                |
| 1    | Vertical                                                                                                                                                                                                                                                                                                                               | Fundamental                                                                                                                                                                                                                                                                                                                    |
| Peak |  <p>           Site : 03CH07-HY<br/>           Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL<br/>           Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>           Mode : 41<br/>           Power setting : 22         </p>   |  <p>           Site : 03CH07-HY<br/>           Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL<br/>           Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>           Mode : 41<br/>           Power setting : 22         </p> |
|      |  <p>           Site : 03CH07-HY<br/>           Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL<br/>           Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>           Mode : 41<br/>           Power setting : 22         </p> | Left blank                                                                                                                                                                                                                                                                                                                     |

**Band 4 5725~5850MHz**  
**WIFI 802.11ac VHT80 (Band Edge @ 3m)**

| WIFI        | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                       |                                                                                                                                                                                                                                  |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT         | 802.11ac VHT80 CH155 5775MHz                                                                                                                                                                                                             |                                                                                                                                                                                                                                  |
| 1           | Horizontal                                                                                                                                                                                                                               | Fundamental                                                                                                                                                                                                                      |
| <b>Peak</b> |  <p>Site : 03CH07-HY<br/> Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL<br/> Detector : Peak<br/> Mode : 42<br/> Power setting : 22</p>   |  <p>Site : 03CH07-HY<br/> Condition : PEAK(LUN0) 3m HF_ANT_00075962 HORIZONTAL<br/> Detector : Peak<br/> Mode : 42<br/> Power setting : 22</p> |
|             |  <p>Site : 03CH07-HY<br/> Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL<br/> Detector : Peak<br/> Mode : 42<br/> Power setting : 22</p> | <b>Left blank</b>                                                                                                                                                                                                                |

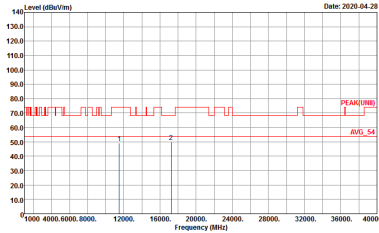
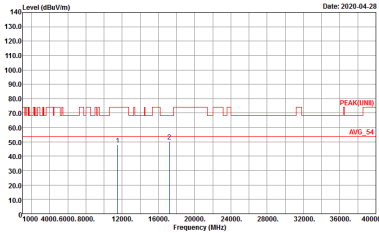


| WIFI | Band 4 5725~5850MHz Band Edge @ 3m                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                   |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11ac VHT80 CH155 5775MHz                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                   |
| 1    | Vertical                                                                                                                                                                                                                                                                                    | Fundamental                                                                                                                                                                                                                                                                       |
| Peak |  <p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_15-24 3m HF_ANT_00075962 VERTICAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Project : Peak<br/>Mode : 040803<br/>Power setting : 42</p> |  <p>Site : 03CH07-HY<br/>Condition : PEAK(FUND) 3m HF_ANT_00075962 VERTICAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Project : Peak<br/>Mode : 42<br/>Power setting : 22</p> |
|      |  <p>Site : 03CH07-HY<br/>Condition : PEAK_BE(B4)_15-24 3m HF_ANT_00075962 VERTICAL<br/>Detector : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto<br/>Project : Peak<br/>Mode : 42<br/>Power setting : 22</p>   | Left blank                                                                                                                                                                                                                                                                        |

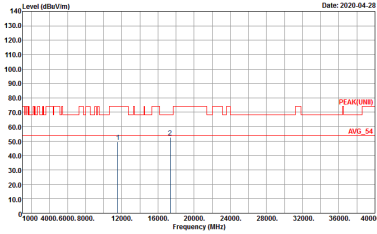
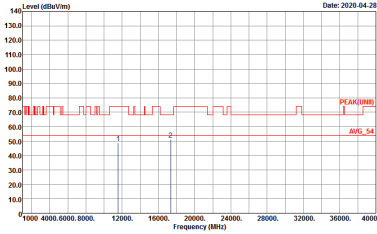


## Band 4 - 5725~5850MHz

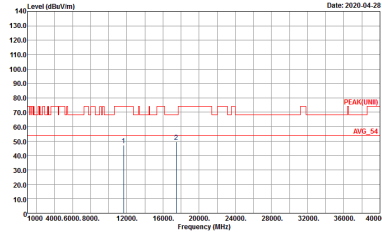
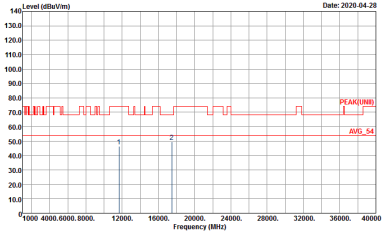
## WIFI 802.11a (Harmonic @ 3m)

| WIFI         | Band 4 5725~5850MHz Harmonic @ 3m                                                                                                                                                                                          |                                                                                                                                                                                                                           |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT          | 802.11a CH149 5745MHz                                                                                                                                                                                                      |                                                                                                                                                                                                                           |
| 1            | Horizontal                                                                                                                                                                                                                 | Vertical                                                                                                                                                                                                                  |
| Peak<br>Avg. |  <p>Site : 03CH07-HY<br/>Condition : PEAK(UNI) 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : Peak<br/>Mode : 34<br/>Power setting : 22</p> |  <p>Site : 03CH07-HY<br/>Condition : PEAK(UNI) 3m HF_ANT_00075962 VERTICAL<br/>Detector : Peak<br/>Mode : 34<br/>Power setting : 22</p> |
|              |                                                                                                                                                                                                                            |                                                                                                                                                                                                                           |

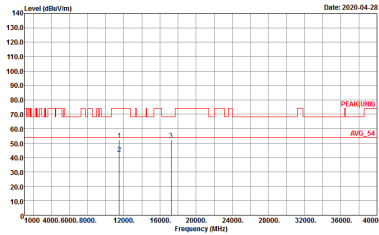
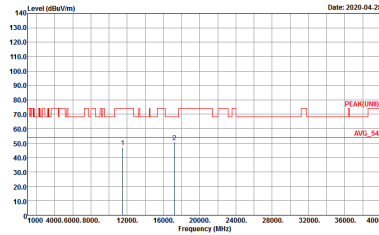


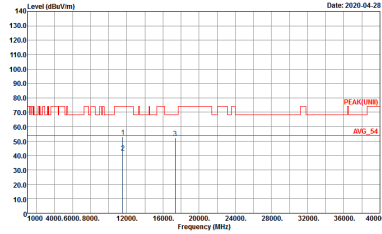
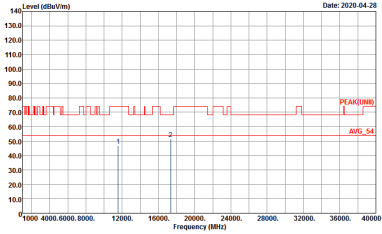
| WIFI         | Band 4 5725~5850MHz Harmonic @ 3m                                                                                                                                                                                                       |                                                                                                                                                                                                                                        |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT          | 802.11a CH157 5785MHz                                                                                                                                                                                                                   |                                                                                                                                                                                                                                        |
| 1            | Horizontal                                                                                                                                                                                                                              | Vertical                                                                                                                                                                                                                               |
| Peak<br>Avg. | <div><p>Site : 03CH07-HY<br/>Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : Peak<br/>Mode : 35<br/>Power setting : 22.5</p></div> | <div><p>Site : 03CH07-HY<br/>Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL<br/>Detector : Peak<br/>Mode : 35<br/>Power setting : 22.5</p></div> |
|              |                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                        |



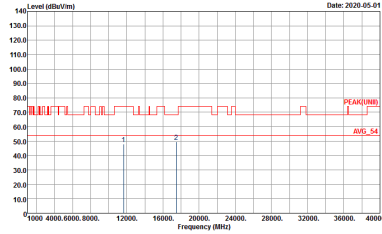
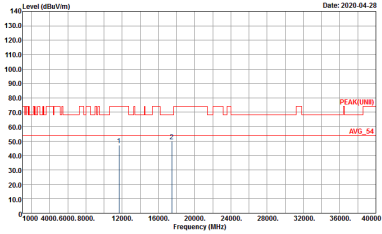
| WIFI         | Band 4 5725~5850MHz Harmonic @ 3m                                                                                                                                                                                                     |                                                                                                                                                                                                                                      |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT          | 802.11a CH165 5825MHz                                                                                                                                                                                                                 |                                                                                                                                                                                                                                      |
| 1            | Horizontal                                                                                                                                                                                                                            | Vertical                                                                                                                                                                                                                             |
| Peak<br>Avg. | <div><p>Site : 03CH07-HY<br/>Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : Peak<br/>Mode : 36<br/>Power setting : 22</p></div> | <div><p>Site : 03CH07-HY<br/>Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL<br/>Detector : Peak<br/>Mode : 36<br/>Power setting : 22</p></div> |
|              |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                      |

**Band 4 5725~5850MHz**  
**WIFI 802.11ac VHT20 (Harmonic @ 3m)**

| WIFI                           | Band 4 5725~5850MHz Harmonic @ 3m                                                                                                                                                                                                 |                                                                                                                                                                                                                                  |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT                            | 802.11ac VHT20 CH149 5745MHz                                                                                                                                                                                                      |                                                                                                                                                                                                                                  |
| 1                              | Horizontal                                                                                                                                                                                                                        | Vertical                                                                                                                                                                                                                         |
| <b>Peak</b><br><br><b>Avg.</b> |  <p>Site : 03CH07-HY<br/> Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL<br/> Detector : Peak<br/> Mode : 37<br/> Power setting : 22.5</p> |  <p>Site : 03CH07-HY<br/> Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL<br/> Detector : Peak<br/> Mode : 37<br/> Power setting : 22.5</p> |

| WIFI                           | Band 4 5725~5850MHz Harmonic @ 3m                                                                                                                                                                                                 |                                                                                                                                                                                                                                  |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT                            | 802.11ac VHT20 CH157 5785MHz                                                                                                                                                                                                      |                                                                                                                                                                                                                                  |
| 1                              | Horizontal                                                                                                                                                                                                                        | Vertical                                                                                                                                                                                                                         |
| <b>Peak</b><br><br><b>Avg.</b> |  <p>Site : 03CH07-HY<br/> Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL<br/> Detector : Peak<br/> Mode : 38<br/> Power setting : 22.5</p> |  <p>Site : 03CH07-HY<br/> Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL<br/> Detector : Peak<br/> Mode : 38<br/> Power setting : 22.5</p> |



| WIFI         | Band 4 5725~5850MHz Harmonic @ 3m                                                                                                                                                                                                     |                                                                                                                                                                                                                                      |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT          | 802.11ac VHT20 CH165 5825MHz                                                                                                                                                                                                          |                                                                                                                                                                                                                                      |
| 1            | Horizontal                                                                                                                                                                                                                            | Vertical                                                                                                                                                                                                                             |
| Peak<br>Avg. | <div><p>Site : 03CH07-HY<br/>Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : Peak<br/>Mode : 39<br/>Power setting : 22</p></div> | <div><p>Site : 03CH07-HY<br/>Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL<br/>Detector : Peak<br/>Mode : 39<br/>Power setting : 22</p></div> |
|              |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                      |

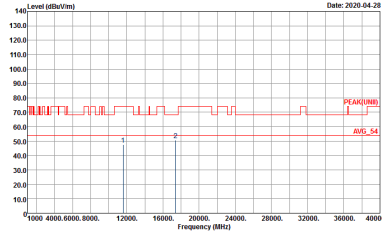
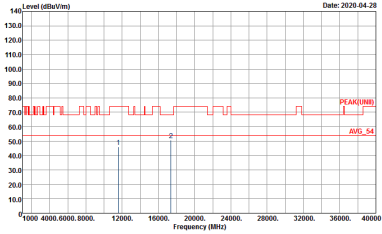


Band 4 5725~5850MHz  
WIFI 802.11ac VHT40 (Harmonic @ 3m)

| WIFI         | Band 4 5725~5850MHz Harmonic @ 3m                                                                                                                                                                |                                                                                                                                                                                                |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT          | 802.11ac VHT40 CH151 5755MHz                                                                                                                                                                     |                                                                                                                                                                                                |
| 1            | Horizontal                                                                                                                                                                                       | Vertical                                                                                                                                                                                       |
| Peak<br>Avg. | <div><p>Level (dBuV/m)</p><p>Date: 2020-04-28</p><p>Site : 03CH07-HY<br/>Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : Peak<br/>Mode : 40<br/>Power setting : 21</p></div> | <div><p>Level (dBuV/m)</p><p>Date: 2020-04-28</p><p>Site : 03CH07-HY<br/>Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL<br/>Detector : Peak<br/>Mode : 40<br/>Power setting : 21</p></div> |

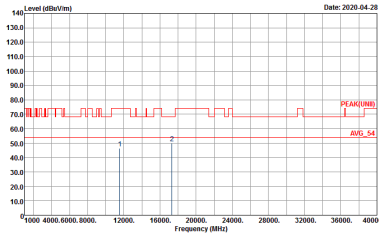
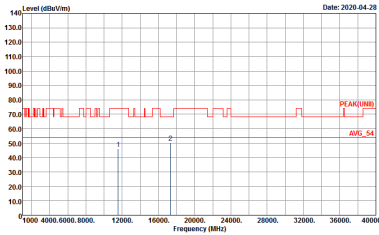




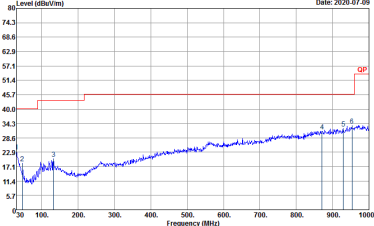
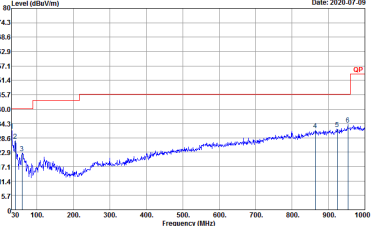
| WIFI         | Band 4 5725~5850MHz Harmonic @ 3m                                                                                                                                                                                                    |                                                                                                                                                                                                                                     |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT          | 802.11ac VHT40 CH159 5795MHz                                                                                                                                                                                                         |                                                                                                                                                                                                                                     |
| 1            | Horizontal                                                                                                                                                                                                                           | Vertical                                                                                                                                                                                                                            |
| Peak<br>Avg. | <div><p>Site : 03CH07-HY<br/>Condition : PEAK(UNI) 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : Peak<br/>Mode : 41<br/>Power setting : 22</p></div> | <div><p>Site : 03CH07-HY<br/>Condition : PEAK(UNI) 3m HF_ANT_00075962 VERTICAL<br/>Detector : Peak<br/>Mode : 41<br/>Power setting : 22</p></div> |
|              |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                     |



**Band 4 5725~5850MHz**  
**WIFI 802.11ac VHT80 (Harmonic @ 3m)**

| WIFI                       | Band 4 5725~5850MHz Harmonic @ 3m                                                                                                                                                                                                     |                                                                                                                                                                                                                                      |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT                        | 802.11ac VHT80 CH155 5775MHz                                                                                                                                                                                                          |                                                                                                                                                                                                                                      |
| 1                          | Horizontal                                                                                                                                                                                                                            | Vertical                                                                                                                                                                                                                             |
| <b>Peak</b><br><b>Avg.</b> | <div><p>Site : 03CH07-HY<br/>Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL<br/>Detector : Peak<br/>Mode : 42<br/>Power setting : 22</p></div> | <div><p>Site : 03CH07-HY<br/>Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL<br/>Detector : Peak<br/>Mode : 42<br/>Power setting : 22</p></div> |

**Emission below 1GHz**  
**5GHz WIFI 802.11ac VHT80 (LF)**

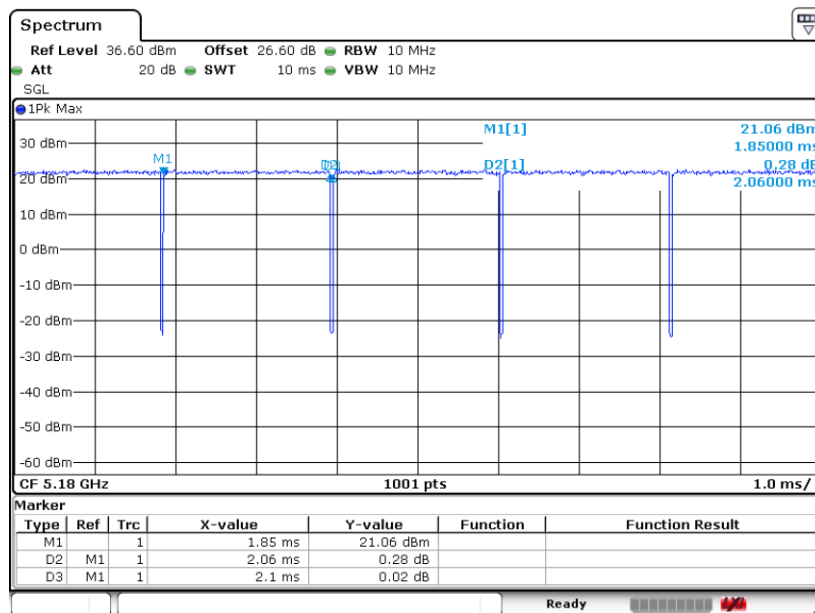
| WIFI                 | 5GHz WIFI                                                                                                                                                                                         |                                                                                                                                                                                                  |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT                  | 802.11ac VHT80 LF                                                                                                                                                                                 |                                                                                                                                                                                                  |
| 1                    | Horizontal                                                                                                                                                                                        | Vertical                                                                                                                                                                                         |
| <b>QP /<br/>Peak</b> |  <p> Site : 03CH07-HY<br/> Condition : QP 3m LF-ANT-35419(6) HORIZONTAL<br/> Detector : Peak<br/> Mode : 43 </p> |  <p> Site : 03CH07-HY<br/> Condition : QP 3m LF-ANT-35419(6) VERTICAL<br/> Detector : Peak<br/> Mode : 43 </p> |
|                      |                                                                                                                                                                                                   |                                                                                                                                                                                                  |



## Appendix D. Duty Cycle Plots

| Band                | Duty Cycle (%) | T(us) | 1/T(kHz) | VBW Setting | Duty Factor (dB) |
|---------------------|----------------|-------|----------|-------------|------------------|
| 802.11a             | 98.10          | -     | -        | 10Hz        | 0.08             |
| 5GHz 802.11ac VHT20 | 97.97          | 1935  | 0.52     | 1kHz        | 0.09             |
| 5GHz 802.11ac VHT40 | 95.43          | 940   | 1.06     | 3kHz        | 0.20             |
| 5GHz 802.11ac VHT80 | 92.00          | 460   | 2.17     | 3kHz        | 0.36             |

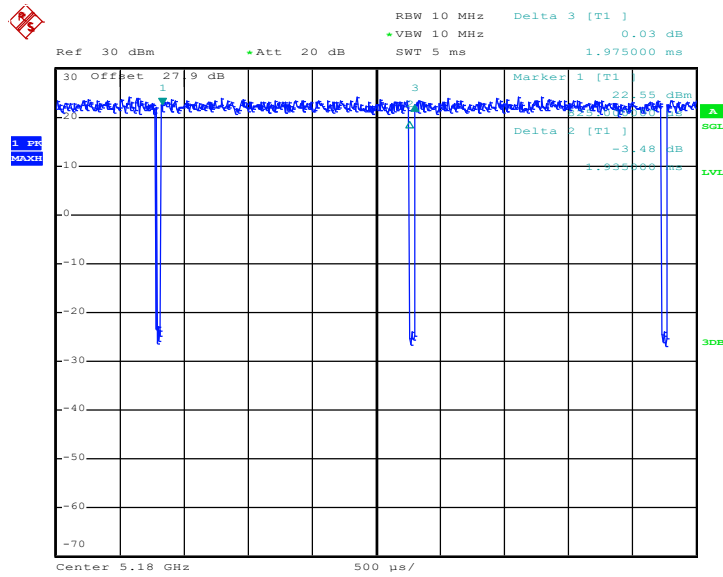
### 802.11a



Date: 11.APR.2020 01:13:20

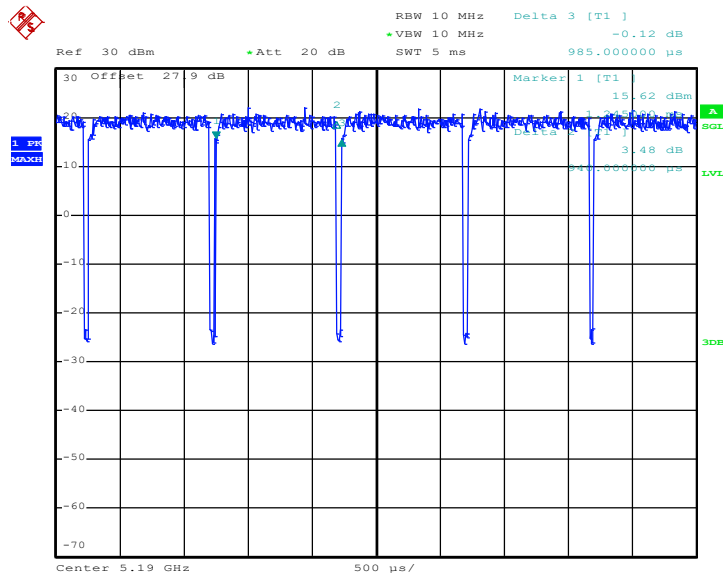


802.11ac VHT20



Date: 25.APR.2020 18:57:36

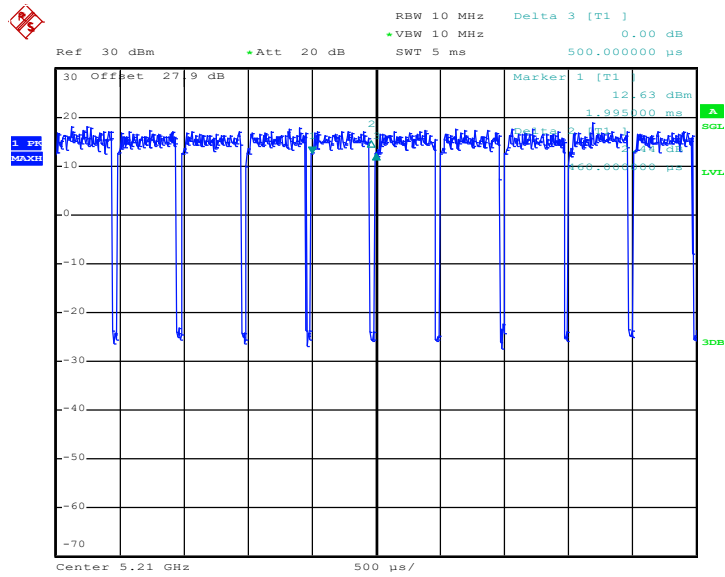
802.11ac VHT40



Date: 25.APR.2020 19:05:32



802.11ac VHT80



Date: 25.APR.2020 19:57:35