

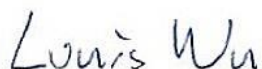


# FCC CO-LOCATION RADIO TEST REPORT

FCC ID : UZ7MC945B  
Equipment : Mobile Computer  
Brand Name : ZEBRA  
Model Name : MC945B  
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 Nov. 28, 2023 and testing was performed from Jan. 18, 2024 to Jan. 19, 2024. We, Sporton International Inc. Wensan 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 from Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.



Approved by: Louis Wu

**Sporton International Inc. Wensan Laboratory**

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)



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## History of this test report

| Report No. | Version | Description             | Issue Date    |
|------------|---------|-------------------------|---------------|
| FR3N2803G  | 01      | Initial issue of report | Feb. 05, 2024 |
|            |         |                         |               |
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|            |         |                         |               |

## Summary of Test Result

| Report Clause | Ref Std. Clause     | Test Items          | Result (PASS/FAIL) | Remark                                 |
|---------------|---------------------|---------------------|--------------------|----------------------------------------|
| 3.1           | 15.407(b)           | Unwanted Emissions  | Pass               | 3.67 dB under the limit at 7311.00 MHz |
| 3.2           | 15.203<br>15.407(a) | Antenna Requirement | Pass               | -                                      |

**Conformity Assessment Condition:**

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty".

**Disclaimer:**

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

**Reviewed by: Keven Cheng**

**Report Producer: Rachel Hsieh**

# 1 General Description

## 1.1 Product Feature of Equipment Under Test

| Product Feature                 |                                                                                                                                                     |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Equipment                       | Mobile Computer                                                                                                                                     |
| Brand Name                      | ZEBRA                                                                                                                                               |
| Model Name                      | MC945B                                                                                                                                              |
| FCC ID                          | UZ7MC945B                                                                                                                                           |
| Sample 1                        | SE5800 + with Camera                                                                                                                                |
| Sample 2                        | SE4770 + without Camera                                                                                                                             |
| EUT supports Radios application | WCDMA/LTE/5G NR/GNSS/NFC<br>WLAN 11a/b/g/n HT20/HT40<br>WLAN 11ac VHT20/VHT40/VHT80/VHT160<br>WLAN 11ax HE20/HE40/HE80/HE160<br>Bluetooth BR/EDR/LE |
| HW Version                      | DV2                                                                                                                                                 |
| SW Version                      | 13-10-31.00-TN-U00-PRD-NEM-04                                                                                                                       |
| FW Version                      | FUSION_QA_6_1.1.0.004_T                                                                                                                             |
| MFD                             | 10NOV23                                                                                                                                             |
| EUT Stage                       | Identical Prototype                                                                                                                                 |

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

| Specification of Accessories            |            |       |              |                    |
|-----------------------------------------|------------|-------|--------------|--------------------|
| Adapter USB Wall Charger                | Brand Name | Zebra | Part Number  | PWR-WUA5V12W0US    |
| Battery 1<br>Standard Battery (7000mAh) | Brand Name | Zebra | Model Number | BT-000370          |
| Battery 2<br>Standard Battery (7000mAh) | Brand Name | Zebra | Model Number | BT-000370B         |
| Earphone<br>USB-C Audio Headset         | Brand Name | Zebra | Part Number  | HDST-USBC-PTT1-01  |
| USB Cable (Type C to Type A)            | Brand Name | Zebra | Part Number  | CBL-TC2X-USBC-01   |
| Holster                                 | Brand Name | Zebra | Part Number  | SG-MC9X-SHLSTG-01  |
| USB Cable (CUP)                         | Brand Name | Zebra | Part Number  | CBL-MC93-USBCHG-01 |

## 1.2 Product Specification of Equipment Under Test

| Product Specification is subject to this standard |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |               |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|
| <b>Tx/Rx Channel Frequency Range</b>              | 2402 MHz ~ 2480 MHz<br>2412 MHz ~ 2462 MHz<br>5180 MHz ~ 5240 MHz                                                                                                                                                                                                                                                                                                                                                                                       |               |               |
| <b>Antenna Type / Gain</b>                        | <b>&lt;Bluetooth – LE&gt;</b><br><b>&lt;Ant. 6&gt;</b> : PIFA Antenna Antenna with gain 1.95 dBi<br><b>&lt;2412 MHz ~ 2462 MHz&gt;</b><br><b>&lt;Ant. 6&gt;</b> : PIFA Antenna Antenna with gain 1.95 dBi<br><b>&lt;Ant. 7&gt;</b> : PIFA Antenna Antenna with gain 2.51 dBi<br><b>&lt;5180 MHz ~ 5240MHz&gt;</b><br><b>&lt;Ant. 6&gt;</b> : PIFA Antenna Antenna with gain 2.21 dBi<br><b>&lt;Ant. 7&gt;</b> : PIFA Antenna Antenna with gain 2.21 dBi |               |               |
| <b>Type of Modulation</b>                         | Bluetooth LE: GFSK<br>802.11b: DSSS (DBPSK / DQPSK / CCK)<br>802.11a: OFDM (BPSK / QPSK / 16QAM / 64QAM)                                                                                                                                                                                                                                                                                                                                                |               |               |
| <b>Antenna Function for Transmitter</b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Ant. 6</b> | <b>Ant. 7</b> |
|                                                   | Bluetooth-LE                                                                                                                                                                                                                                                                                                                                                                                                                                            | V             | -             |
|                                                   | 802.11b                                                                                                                                                                                                                                                                                                                                                                                                                                                 | V             | -             |
|                                                   | 802.11b/a<br>MIMO                                                                                                                                                                                                                                                                                                                                                                                                                                       | V             | V             |

**Remark:**

1. MIMO Ant. 6+7 is a calculated result from sum of the power MIMO Ant. 6 and MIMO Ant. 7.
2. The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

## 1.3 Modification of EUT

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

## 1.4 Testing Location

|                           |                                                                                                                                                  |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Site</b>          | Sporton International Inc. Wensan Laboratory                                                                                                     |
| <b>Test Site Location</b> | No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist.,<br>Taoyuan City 333010, Taiwan (R.O.C.)<br>TEL: +886-3-327-0868<br>FAX: +886-3-327-0855 |
| <b>Test Site No.</b>      | <b>Sporton Site No.</b><br>03CH20-HY                                                                                                             |

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

FCC designation No.: TW3786



## 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 Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 15.247 Meas Guidance v05r02
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. 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

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: radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and only the worst case emissions were reported in this report.

### 2.1 Carrier Frequency and Channel

| 2400-2483.5 MHz |             |
|-----------------|-------------|
| Bluetooth - LE  |             |
| Channel         | Freq. (MHz) |
| 39              | 2480        |

| 2400-2483.5 MHz |             | 5150-5250 MHz |             |
|-----------------|-------------|---------------|-------------|
| 802.11b         |             | 802.11a       |             |
| Channel         | Freq. (MHz) | Channel       | Freq. (MHz) |
| 06              | 2437        | 44            | 5220        |

**Remark:** During the Radiated Spurious Emission test, the EUT turn on the WWAN functions simultaneously.

### 2.2 Test Mode

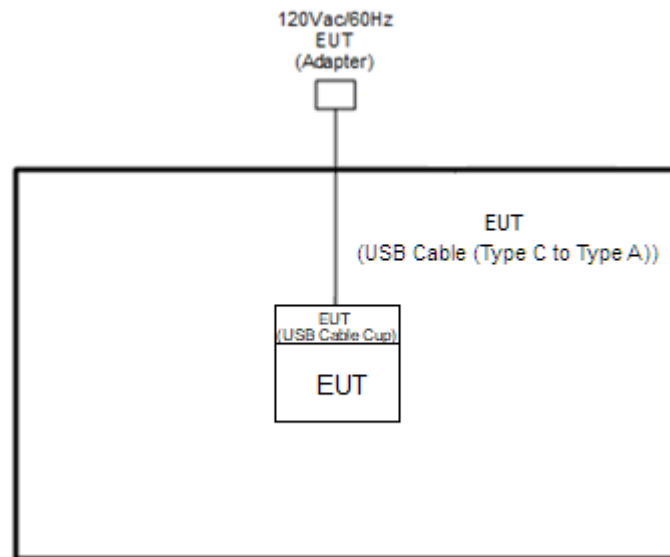
Final test modes are considering the modulation and worse data rates as below table.

<Co-Location>

| Modulation                                                                                             | Data Rate                 |
|--------------------------------------------------------------------------------------------------------|---------------------------|
| 2.4GHz 802.11b for MIMO <Ant. 6+7> + 5GHz 802.11a for MIMO<br><Ant. 6+7> + LTE Band 5                  | MCS0 + MCS0 + QPSK        |
| Bluetooth-LE for Ant. 6 + 2.4GHz 802.11b for Ant. 7 + 5GHz<br>802.11a for MIMO <Ant. 6+7> + LTE Band 5 | GFSK + MCS0 + MCS0 + QPSK |

**Remark:** All the tests were performed with Battery 1 Standard Battery (7000mAh) and Sample 1.

## 2.3 Connection Diagram of Test System



## 2.4 EUT Operation Test Setup

The RF test items, utility "QRCT Version 4.0.211.0" 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.

### 3 Test Result

#### 3.1 Unwanted Emissions Measurement

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

##### 3.1.1 Limit of Unwanted Emissions

(1) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits as below table:

| Frequency (MHz) | Field Strength (microvolts/meter) | Measurement Distance (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.

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

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

(2) 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.

##### 3.1.2 Measuring Instruments

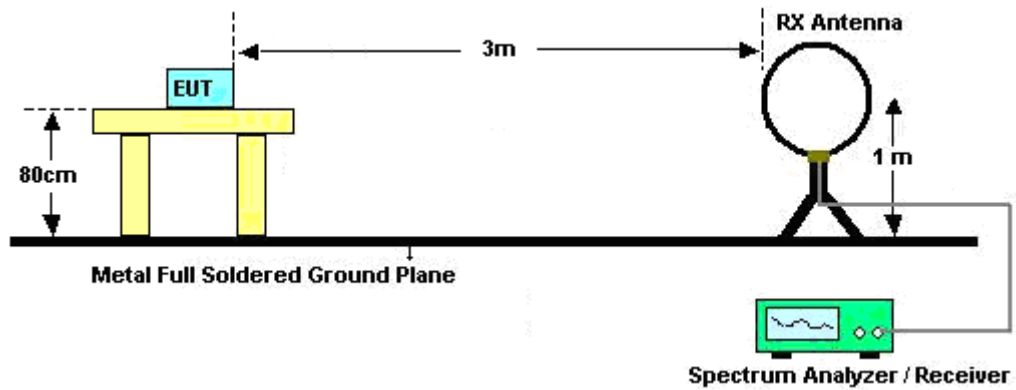
Please refer to the measuring equipment list in this test report.

### 3.1.3 Test Procedures

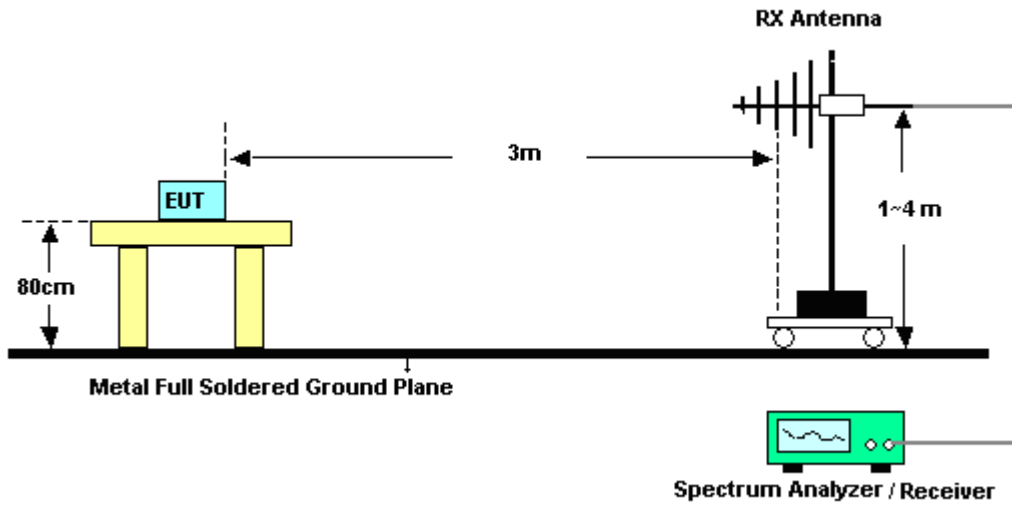
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.  
Section G) Unwanted emissions measurement.
  - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
    - RBW = 120 kHz
    - VBW = 300 kHz
    - Detector = Peak
    - Trace mode = max hold
  - (2) Procedure 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 is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
3. The EUT is set 3 meters away from the receiving antenna which is 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 is 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. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit line, the position is marked as “-”.
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as “-”.

### 3.1.4 Test Setup

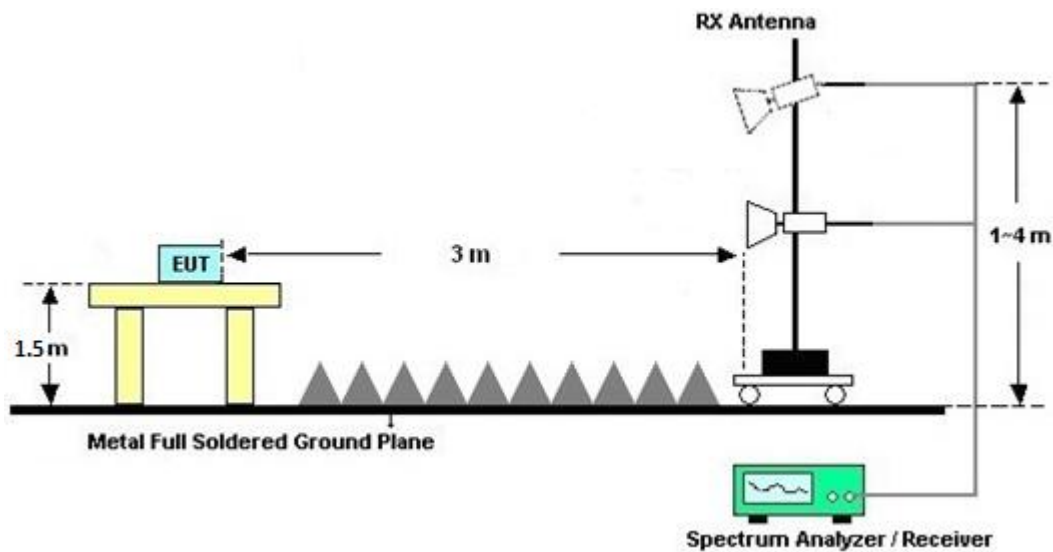
For radiated emissions below 30MHz



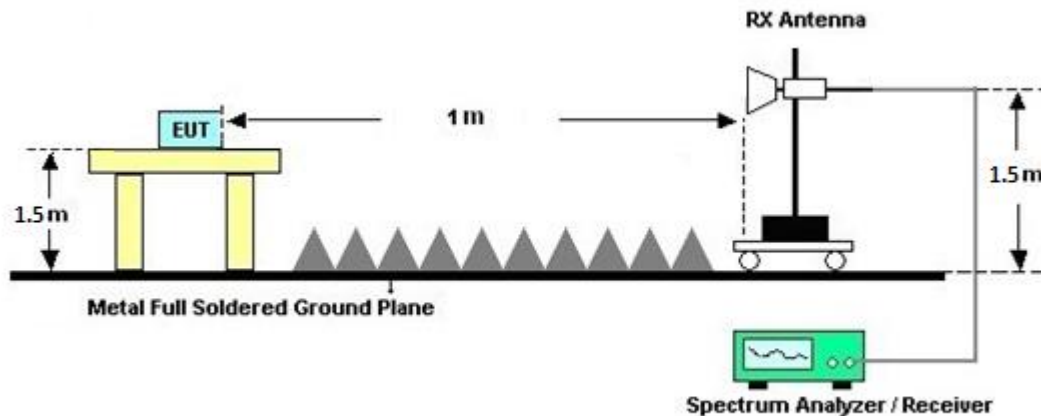
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



### 3.1.5 Test Results of Radiated Spurious 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 adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

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

Please refer to Appendix A and B.

### 3.1.7 Duty Cycle

Please refer to Appendix C.

### 3.1.8 Test Result of Radiated Spurious Emissions (30MHz ~ 10th Harmonic)

Please refer to Appendix A and B.



## **3.2 Antenna Requirements**

### **3.2.1 Standard Applicable**

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

### **3.2.2 Antenna Anti-Replacement Construction**

An embedded-in antenna design is used.



## 4 List of Measuring Equipment

| Instrument              | Brand Name        | Model No.                       | Serial No.                     | Characteristics                  | Calibration Date | Test Date                       | Due Date      | Remark                   |
|-------------------------|-------------------|---------------------------------|--------------------------------|----------------------------------|------------------|---------------------------------|---------------|--------------------------|
| EMI Test Receiver       | Keysight          | N9038A(MXE)                     | MY54130085                     | N/A                              | Oct. 06, 2023    | Jan. 18, 2024~<br>Jan. 19, 2024 | Oct. 05, 2024 | Radiation<br>(03CH20-HY) |
| Loop Antenna            | Rohde & Schwarz   | HFH2-Z2                         | 100488                         | 9 kHz~30 MHz                     | Sep. 12, 2023    | Jan. 18, 2024~<br>Jan. 19, 2024 | Sep. 11, 2024 | Radiation<br>(03CH20-HY) |
| Preamplifier            | EMEC              | EM18G40G                        | 060873                         | 18GHz~40GHz                      | Sep. 06, 2023    | Jan. 18, 2024~<br>Jan. 19, 2024 | Sep. 05, 2024 | Radiation<br>(03CH20-HY) |
| Controller              | ChainTek          | 3000-1                          | N/A                            | Control Turn<br>table & Ant Mast | N/A              | Jan. 18, 2024~<br>Jan. 19, 2024 | N/A           | Radiation<br>(03CH20-HY) |
| Antenna Mast            | ChainTek          | MBS-520-1                       | N/A                            | 1m~4m                            | N/A              | Jan. 18, 2024~<br>Jan. 19, 2024 | N/A           | Radiation<br>(03CH20-HY) |
| Turn Table              | ChainTek          | T-200-S-1                       | N/A                            | 0~360 Degree                     | N/A              | Jan. 18, 2024~<br>Jan. 19, 2024 | N/A           | Radiation<br>(03CH20-HY) |
| Signal Analyzer         | Keysight          | N9010B                          | MY60240520                     | N/A                              | Dec. 12, 2023    | Jan. 18, 2024~<br>Jan. 19, 2024 | Dec. 11, 2024 | Radiation<br>(03CH20-HY) |
| Bilog Antenna           | TESEQ             | CBL<br>6111D&00802N1<br>D01N-06 | 55606 & 08                     | 30MHz~1GHz                       | Oct. 20, 2023    | Jan. 18, 2024~<br>Jan. 19, 2024 | Oct. 19, 2024 | Radiation<br>(03CH20-HY) |
| Horn Antenna            | SCHWARZBE<br>CK   | BBHA 9120 D                     | 02360                          | 1GHz-18GHz                       | Oct. 30, 2023    | Jan. 18, 2024~<br>Jan. 19, 2024 | Oct. 29, 2024 | Radiation<br>(03CH20-HY) |
| SHF-EHF Horn<br>Antenna | SCHWARZBE<br>CK   | BBHA 9170                       | 1224                           | 18GHz-40GHz                      | Jul. 10, 2023    | Jan. 18, 2024~<br>Jan. 19, 2024 | Jul. 09, 2024 | Radiation<br>(03CH20-HY) |
| Preamplifier            | COM-POWE<br>R     | PAM-103                         | 18020201                       | 1MHz-1000MHz                     | Jan. 01, 2024    | Jan. 18, 2024~<br>Jan. 19, 2024 | Dec. 31, 2024 | Radiation<br>(03CH20-HY) |
| Amplifier               | EMCI              | EMC118A45SE                     | 980792                         | N/A                              | Nov. 13, 2023    | Jan. 18, 2024~<br>Jan. 19, 2024 | Nov. 12, 2024 | Radiation<br>(03CH20-HY) |
| RF Cable                | HUBER +<br>SUHNER | SUCOFLEX 102                    | 519229/2,80401<br>5/2,804027/2 | N/A                              | Jan. 17, 2024    | Jan. 18, 2024~<br>Jan. 19, 2024 | Jan. 16, 2025 | Radiation<br>(03CH20-HY) |
| Hygrometer              | TECPEL            | DTM-303B                        | TP200728                       | N/A                              | Mar. 28, 2023    | Jan. 18, 2024~<br>Jan. 19, 2024 | Mar. 27, 2024 | Radiation<br>(03CH20-HY) |
| Software                | Audix             | N/A                             | RK-002156                      | N/A                              | N/A              | Jan. 18, 2024~<br>Jan. 19, 2024 | N/A           | Radiation<br>(03CH20-HY) |



## 5 Measurement Uncertainty

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

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

### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 6000 MHz)

|                                                                            |        |
|----------------------------------------------------------------------------|--------|
| Measuring Uncertainty for a Level of Confidence<br>of 95% ( $U = 2Uc(y)$ ) | 4.5 dB |
|----------------------------------------------------------------------------|--------|

### Uncertainty of Radiated Emission Measurement (6000 MHz ~ 18000 MHz)

|                                                                            |        |
|----------------------------------------------------------------------------|--------|
| Measuring Uncertainty for a Level of Confidence<br>of 95% ( $U = 2Uc(y)$ ) | 4.6 dB |
|----------------------------------------------------------------------------|--------|

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

|                                                                            |        |
|----------------------------------------------------------------------------|--------|
| Measuring Uncertainty for a Level of Confidence<br>of 95% ( $U = 2Uc(y)$ ) | 5.4 dB |
|----------------------------------------------------------------------------|--------|



## Appendix A. Radiated Spurious Emission

|                 |                                         |                     |             |
|-----------------|-----------------------------------------|---------------------|-------------|
| Test Engineer : | John Chuang, David Dai and Howard Huang | Temperature :       | 18.9~23.4°C |
|                 |                                         | Relative Humidity : | 65.7~69.9%  |

2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz + LTE Band 5 Link

WIFI 802.11b (Band edge @ 3m)

| WIFI<br>Ant<br>6+7          | Note                                                                       | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Margin<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-----------------------------|----------------------------------------------------------------------------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11b<br>CH 06<br>2437MHz |                                                                            | 2388.56              | 50.55               | -23.45           | 74                          | 40.25                     | 27.25                         | 8.69                   | 36.24                      | 100                  | 72                      | P                       | H               |
|                             |                                                                            | 2389.68              | 41.07               | -12.93           | 54                          | 30.76                     | 27.26                         | 8.69                   | 36.24                      | 100                  | 72                      | A                       | H               |
|                             | *                                                                          | 2437                 | 114.5               | -                | -                           | 103.93                    | 27.45                         | 8.78                   | 36.26                      | 100                  | 72                      | P                       | H               |
|                             | *                                                                          | 2437                 | 111.28              | -                | -                           | 100.71                    | 27.45                         | 8.78                   | 36.26                      | 100                  | 72                      | A                       | H               |
|                             |                                                                            | 2491.84              | 50.9                | -23.1            | 74                          | 40.05                     | 27.67                         | 8.88                   | 36.28                      | 100                  | 72                      | P                       | H               |
|                             |                                                                            | 2496.32              | 45.33               | -8.67            | 54                          | 34.45                     | 27.69                         | 8.89                   | 36.28                      | 100                  | 72                      | A                       | H               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                            | 2381.04              | 50.65               | -23.35           | 74                          | 40.4                      | 27.22                         | 8.67                   | 36.24                      | 200                  | 252                     | P                       | V               |
|                             |                                                                            | 2389.52              | 40.79               | -13.21           | 54                          | 30.48                     | 27.26                         | 8.69                   | 36.24                      | 200                  | 252                     | A                       | V               |
|                             | *                                                                          | 2437                 | 113.31              | -                | -                           | 102.74                    | 27.45                         | 8.78                   | 36.26                      | 200                  | 252                     | P                       | V               |
|                             | *                                                                          | 2437                 | 110.31              | -                | -                           | 99.74                     | 27.45                         | 8.78                   | 36.26                      | 200                  | 252                     | A                       | V               |
|                             |                                                                            | 2491.04              | 51.03               | -22.97           | 74                          | 40.19                     | 27.66                         | 8.88                   | 36.28                      | 200                  | 252                     | P                       | V               |
|                             |                                                                            | 2496.32              | 43.32               | -10.68           | 54                          | 32.44                     | 27.69                         | 8.89                   | 36.28                      | 200                  | 252                     | A                       | V               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against limit line. |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## 2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz + LTE Band 5 Link

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

| WIFI<br>Ant.<br>6+7         | Note                                                                       | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Margin<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 44<br>5220MHz |                                                                            | 5149.5               | 52.84               | -21.16           | 74                          | 44.28                   | 32.9                          | 12.91                  | 37.78                      | 100                  | 124                     | P                     | H             |
|                             |                                                                            | 5150                 | 43.39               | -10.61           | 54                          | 34.84                   | 32.9                          | 12.91                  | 37.78                      | 100                  | 124                     | A                     | H             |
|                             | *                                                                          | 5220                 | 115.91              | -                | -                           | 107.27                  | 32.96                         | 12.99                  | 37.83                      | 100                  | 124                     | P                     | H             |
|                             | *                                                                          | 5220                 | 108.99              | -                | -                           | 100.35                  | 32.96                         | 12.99                  | 37.83                      | 100                  | 124                     | A                     | H             |
|                             |                                                                            | 5374.32              | 47.58               | -26.42           | 74                          | 38.98                   | 32.8                          | 13.22                  | 37.94                      | 100                  | 124                     | P                     | H             |
|                             |                                                                            | 5458.04              | 38.09               | -15.91           | 54                          | 29.28                   | 32.98                         | 13.33                  | 38                         | 100                  | 124                     | A                     | H             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | H             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | H             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | H             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | H             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | H             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | H             |
|                             |                                                                            | 5134.16              | 51.64               | -22.36           | 74                          | 43.05                   | 32.93                         | 12.9                   | 37.77                      | 250                  | 95                      | P                     | V             |
|                             |                                                                            | 5148.72              | 41.59               | -12.41           | 54                          | 33.03                   | 32.9                          | 12.91                  | 37.78                      | 250                  | 95                      | A                     | V             |
|                             | *                                                                          | 5220                 | 113.54              | -                | -                           | 104.9                   | 32.96                         | 12.99                  | 37.83                      | 250                  | 95                      | P                     | V             |
|                             | *                                                                          | 5220                 | 106.71              | -                | -                           | 98.07                   | 32.96                         | 12.99                  | 37.83                      | 250                  | 95                      | A                     | V             |
|                             |                                                                            | 5391.96              | 48.12               | -25.88           | 74                          | 39.43                   | 32.87                         | 13.25                  | 37.95                      | 250                  | 95                      | P                     | V             |
|                             |                                                                            | 5454.96              | 37.95               | -16.05           | 54                          | 29.14                   | 32.99                         | 13.32                  | 38                         | 250                  | 95                      | A                     | V             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | V             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | V             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | V             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | V             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | V             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | V             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | V             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | V             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | V             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | V             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | V             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | V             |
|                             |                                                                            |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | V             |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against limit line. |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       |               |


**2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz + LTE Band 5 Link**
**802.11b\_Tx\_Ch06 + 802.11a\_Tx\_Ch44 + LTE Band 5 (Harmonic @ 3m)**

|                                                                         | Note                                                                                                                                                                                                                  | Frequency | Level      | Margin | Limit      | Read   | Antenna  | Path   | Preamp | Ant    | Table   | Peak  | Pol.  |
|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                                                                    |                                                                                                                                                                                                                       |           |            |        | Line       | Level  | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| Simultaneously                                                          |                                                                                                                                                                                                                       | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | (dBμV) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| <b>802.11b<br/>Ch06<br/>+<br/>802.11a<br/>Ch44<br/>+<br/>LTE Band 5</b> |                                                                                                                                                                                                                       | 4042      | 55.78      | -18.22 | 74         | 49.75  | 30.8     | 11.68  | 37.18  | 250    | 34      | P     | H     |
|                                                                         |                                                                                                                                                                                                                       | 4042      | 46.73      | -7.27  | 54         | 40.7   | 30.8     | 11.68  | 37.18  | 250    | 34      | A     | H     |
|                                                                         |                                                                                                                                                                                                                       | 4874      | 47.18      | -26.82 | 74         | 39.18  | 32.5     | 12.55  | 37.56  | -      | -       | P     | H     |
|                                                                         |                                                                                                                                                                                                                       | 5758      | 54.63      | -13.57 | 68.2       | 44.64  | 33.83    | 13.7   | 37.97  | 250    | 66      | P     | H     |
|                                                                         |                                                                                                                                                                                                                       | 6958      | 56         | -12.2  | 68.2       | 42.74  | 35.92    | 15.08  | 38.32  | 350    | 351     | P     | H     |
|                                                                         |                                                                                                                                                                                                                       | 7311      | 55.99      | -18.01 | 74         | 41     | 36.9     | 15.44  | 38.61  | 299    | 351     | P     | H     |
|                                                                         |                                                                                                                                                                                                                       | 7311      | 48.44      | -5.56  | 54         | 33.45  | 36.9     | 15.44  | 38.61  | 299    | 351     | A     | H     |
|                                                                         |                                                                                                                                                                                                                       | 10440     | 50.62      | -17.58 | 68.2       | 34.33  | 38.74    | 18.51  | 41.47  | -      | -       | P     | H     |
|                                                                         |                                                                                                                                                                                                                       | 15660     | 52.49      | -21.51 | 74         | 35.81  | 37.92    | 22.91  | 44.62  | 200    | 12      | P     | H     |
|                                                                         |                                                                                                                                                                                                                       | 15660     | 41.21      | -12.79 | 54         | 24.53  | 37.92    | 22.91  | 44.62  | 200    | 12      | A     | H     |
|                                                                         |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                                                                         |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                                                                         |                                                                                                                                                                                                                       | 4042      | 56.06      | -17.94 | 74         | 50.03  | 30.8     | 11.68  | 37.18  | 150    | 56      | P     | V     |
|                                                                         |                                                                                                                                                                                                                       | 4042      | 48.1       | -5.9   | 54         | 42.07  | 30.8     | 11.68  | 37.18  | 150    | 56      | A     | V     |
|                                                                         |                                                                                                                                                                                                                       | 4874      | 47.85      | -26.15 | 74         | 39.85  | 32.5     | 12.55  | 37.56  | -      | -       | P     | V     |
|                                                                         |                                                                                                                                                                                                                       | 5758      | 54.67      | -13.53 | 68.2       | 44.68  | 33.83    | 13.7   | 37.97  | 350    | 25      | P     | V     |
|                                                                         |                                                                                                                                                                                                                       | 6958      | 54.18      | -14.02 | 68.2       | 40.92  | 35.92    | 15.08  | 38.32  | 300    | 108     | P     | V     |
|                                                                         |                                                                                                                                                                                                                       | 7311      | 56.73      | -17.27 | 74         | 41.74  | 36.9     | 15.44  | 38.61  | 264    | 349     | P     | V     |
|                                                                         |                                                                                                                                                                                                                       | 7311      | 50.33      | -3.67  | 54         | 35.34  | 36.9     | 15.44  | 38.61  | 264    | 349     | A     | V     |
|                                                                         |                                                                                                                                                                                                                       | 10440     | 50.88      | -17.32 | 68.2       | 34.59  | 38.74    | 18.51  | 41.47  | -      | -       | P     | V     |
|                                                                         |                                                                                                                                                                                                                       | 15660     | 52.79      | -21.21 | 74         | 36.11  | 37.92    | 22.91  | 44.62  | 100    | 42      | P     | V     |
|                                                                         |                                                                                                                                                                                                                       | 15660     | 41.2       | -12.8  | 54         | 24.52  | 37.92    | 22.91  | 44.62  | 100    | 42      | A     | V     |
|                                                                         |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | V     |
|                                                                         |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | V     |
| <b>Remark</b>                                                           | 1. No other spurious found.<br>2. All results are PASS against limit line.<br>3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. |           |            |        |            |        |          |        |        |        |         |       |       |
|                                                                         |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       |       |

**Bluetooth-LE + 2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz + LTE Band 5 Link**

### Bluetooth-LE (2M) (Band edge @ 3m)

| BLE<br>Ant<br>6         | Note                                                                       | Frequency<br><br>( MHz ) | Level<br><br>( dBμV/m ) | Margin<br><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 ) |
|-------------------------|----------------------------------------------------------------------------|--------------------------|-------------------------|----------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BLE<br>CH 39<br>2480MHz | *                                                                          | 2480                     | 98.78                   | -                    | -                           | 87.99                     | 27.62                         | 8.86                   | 36.27                      | 399                  | 339                     | P                       | H               |
|                         | *                                                                          | 2480                     | 97.24                   | -                    | -                           | 86.45                     | 27.62                         | 8.86                   | 36.27                      | 399                  | 339                     | A                       | H               |
|                         |                                                                            | 2496.36                  | 54.95                   | -19.05               | 74                          | 44.07                     | 27.69                         | 8.89                   | 36.28                      | 399                  | 339                     | P                       | H               |
|                         |                                                                            | 2496.2                   | 46.15                   | -7.85                | 54                          | 35.28                     | 27.68                         | 8.89                   | 36.28                      | 399                  | 339                     | A                       | H               |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         | *                                                                          | 2480                     | 99.4                    | -                    | -                           | 88.61                     | 27.62                         | 8.86                   | 36.27                      | 100                  | 29                      | P                       | V               |
|                         | *                                                                          | 2480                     | 97.9                    | -                    | -                           | 87.11                     | 27.62                         | 8.86                   | 36.27                      | 100                  | 29                      | A                       | V               |
|                         |                                                                            | 2493.32                  | 52.14                   | -21.86               | 74                          | 41.29                     | 27.67                         | 8.88                   | 36.28                      | 100                  | 29                      | P                       | V               |
|                         |                                                                            | 2496.28                  | 43.16                   | -10.84               | 54                          | 32.28                     | 27.69                         | 8.89                   | 36.28                      | 100                  | 29                      | A                       | V               |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         | V                       |                 |
|                         |                                                                            |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         | V                       |                 |
| Remark                  | 1. No other spurious found.<br>2. All results are PASS against limit line. |                          |                         |                      |                             |                           |                               |                        |                            |                      |                         |                         |                 |



Bluetooth-LE + 2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz + LTE Band 5 Link

WIFI 802.11b (Band edge @ 3m)

| WIFI<br>Ant<br>7            | Note                                                                       | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Margin<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-----------------------------|----------------------------------------------------------------------------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11b<br>CH 06<br>2437MHz |                                                                            | 2377.36              | 52.9                | -21.1            | 74                          | 42.67                     | 27.21                         | 8.67                   | 36.24                      | 400                  | 260                     | P                       | H               |
|                             |                                                                            | 2377.68              | 41.92               | -12.08           | 54                          | 31.69                     | 27.21                         | 8.67                   | 36.24                      | 400                  | 260                     | A                       | H               |
|                             | *                                                                          | 2437                 | 108.93              | -                | -                           | 98.36                     | 27.45                         | 8.78                   | 36.26                      | 400                  | 260                     | P                       | H               |
|                             | *                                                                          | 2437                 | 105.62              | -                | -                           | 95.05                     | 27.45                         | 8.78                   | 36.26                      | 400                  | 260                     | A                       | H               |
|                             |                                                                            | 2496.64              | 52.14               | -21.86           | 74                          | 41.26                     | 27.69                         | 8.89                   | 36.28                      | 400                  | 260                     | P                       | H               |
|                             |                                                                            | 2496.32              | 40.81               | -13.19           | 54                          | 29.93                     | 27.69                         | 8.89                   | 36.28                      | 400                  | 260                     | A                       | H               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                             |                                                                            | 2377.84              | 51.05               | -22.95           | 74                          | 40.82                     | 27.21                         | 8.67                   | 36.24                      | 264                  | 0                       | P                       | V               |
|                             |                                                                            | 2377.84              | 40.35               | -13.65           | 54                          | 30.12                     | 27.21                         | 8.67                   | 36.24                      | 264                  | 0                       | A                       | V               |
|                             | *                                                                          | 2437                 | 110.64              | -                | -                           | 100.07                    | 27.45                         | 8.78                   | 36.26                      | 264                  | 0                       | P                       | V               |
|                             | *                                                                          | 2437                 | 107.38              | -                | -                           | 96.81                     | 27.45                         | 8.78                   | 36.26                      | 264                  | 0                       | A                       | V               |
|                             |                                                                            | 2496.48              | 63.03               | -10.97           | 74                          | 52.15                     | 27.69                         | 8.89                   | 36.28                      | 264                  | 0                       | P                       | V               |
|                             |                                                                            | 2496.24              | 50.3                | -3.7             | 54                          | 39.43                     | 27.68                         | 8.89                   | 36.28                      | 264                  | 0                       | A                       | V               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                             |                                                                            |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against limit line. |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         |                 |

**Bluetooth-LE + 2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz + LTE Band 5 Link**

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

| WIFI                        | Note                                                                       | Frequency | Level      | Margin | Limit              | Read            | Antenna            | Path           | Preamp           | Ant           | Table          | Peak          | Pol.  |   |
|-----------------------------|----------------------------------------------------------------------------|-----------|------------|--------|--------------------|-----------------|--------------------|----------------|------------------|---------------|----------------|---------------|-------|---|
| Ant.                        |                                                                            | ( MHz )   | ( dBμV/m ) | ( dB ) | Line<br>( dBμV/m ) | Level<br>(dBμV) | Factor<br>( dB/m ) | Loss<br>( dB ) | Factor<br>( dB ) | Pos<br>( cm ) | Pos<br>( deg ) | Avg.<br>(P/A) | (H/V) |   |
| 802.11a<br>CH 44<br>5220MHz |                                                                            | 5144.56   | 54.42      | -19.58 | 74                 | 45.84           | 32.91              | 12.91          | 37.77            | 295           | 0              | P             | H     |   |
|                             |                                                                            | 5149.5    | 43.06      | -10.94 | 54                 | 34.5            | 32.9               | 12.91          | 37.78            | 295           | 0              | A             | H     |   |
|                             |                                                                            | 4042      | 53.27      | -20.73 | 74                 | 47.24           | 30.8               | 11.68          | 37.18            | 295           | 0              | P             | H     |   |
|                             |                                                                            | 4042      | 49.41      | -4.59  | 54                 | 43.38           | 30.8               | 11.68          | 37.18            | 295           | 0              | A             | H     |   |
|                             | *                                                                          | 5220      | 115.01     |        |                    | 106.37          | 32.96              | 12.99          | 37.83            | 295           | 0              | P             | H     |   |
|                             | *                                                                          | 5220      | 107.61     |        |                    | 98.97           | 32.96              | 12.99          | 37.83            | 295           | 0              | A             | H     |   |
|                             |                                                                            | 5445.72   | 47.45      | -26.55 | 74                 | 38.64           | 32.99              | 13.31          | 37.99            | 295           | 0              | P             | H     |   |
|                             |                                                                            | 5455.24   | 38.4       | -15.6  | 54                 | 29.59           | 32.99              | 13.32          | 38               | 295           | 0              | A             | H     |   |
|                             |                                                                            |           |            |        |                    |                 |                    |                |                  |               |                |               | H     |   |
|                             |                                                                            |           |            |        |                    |                 |                    |                |                  |               |                |               | H     |   |
|                             |                                                                            |           |            |        |                    |                 |                    |                |                  |               |                |               | H     |   |
|                             |                                                                            |           |            |        |                    |                 |                    |                |                  |               |                |               | H     |   |
|                             |                                                                            | 5149.5    | 59.71      | -14.29 | 74                 | 51.15           | 32.9               | 12.91          | 37.78            | 100           | 357            | P             | V     |   |
|                             |                                                                            | 5150      | 48.66      | -5.34  | 54                 | 40.11           | 32.9               | 12.91          | 37.78            | 100           | 357            | A             | V     |   |
|                             |                                                                            | 4042      | 46.27      | -27.73 | 74                 | 40.24           | 30.8               | 11.68          | 37.18            | 100           | 357            | P             | V     |   |
|                             |                                                                            | 4042      | 39.79      | -14.21 | 54                 | 33.76           | 30.8               | 11.68          | 37.18            | 100           | 357            | A             | V     |   |
|                             | *                                                                          | 5220      | 117.61     |        |                    |                 | 108.97             | 32.95          | 13               | 37.83         | 100            | 357           | P     | V |
|                             | *                                                                          | 5220      | 111.75     |        |                    |                 | 103.11             | 32.95          | 13               | 37.83         | 100            | 357           | A     | V |
|                             |                                                                            | 5354.16   | 49.06      | -24.94 | 74                 | 40.55           | 32.72              | 13.19          | 37.92            | 100           | 357            | P             | V     |   |
|                             |                                                                            | 5354.16   | 39.63      | -14.37 | 54                 | 31.12           | 32.72              | 13.19          | 37.92            | 100           | 357            | A             | V     |   |
|                             |                                                                            |           |            |        |                    |                 |                    |                |                  |               |                |               | V     |   |
|                             |                                                                            |           |            |        |                    |                 |                    |                |                  |               |                |               | V     |   |
|                             |                                                                            |           |            |        |                    |                 |                    |                |                  |               |                |               | V     |   |
|                             |                                                                            |           |            |        |                    |                 |                    |                |                  |               |                |               | V     |   |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against limit line. |           |            |        |                    |                 |                    |                |                  |               |                |               |       |   |



**Bluetooth-LE + 2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz + LTE Band 5 Link**

**Bluetooth-LE (2M) Tx\_Ch39 + 802.11b Tx\_Ch06 + 802.11a Tx\_Ch44 + LTE Band 5 Link (Harmonic @ 3m)**

|                                                                                | Note                                                                                                                                                                                                                  | Frequency | Level      | Margin | Limit      | Read   | Antenna  | Path   | Preamp | Ant    | Table   | Peak  | Pol.  |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                                                                           |                                                                                                                                                                                                                       |           |            |        | Line       | Level  | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| Simultaneously                                                                 |                                                                                                                                                                                                                       | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | (dBμV) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| BLE_Tx_Ch39<br>+<br>802.11b<br>Ch06<br>+<br>802.11a<br>Ch44<br>+<br>LTE Band 5 |                                                                                                                                                                                                                       | 4042      | 55.67      | -18.33 | 74         | 49.64  | 30.8     | 11.68  | 37.18  | 350    | 331     | P     | H     |
|                                                                                |                                                                                                                                                                                                                       | 4042      | 48.78      | -5.22  | 54         | 42.75  | 30.8     | 11.68  | 37.18  | 350    | 331     | A     | H     |
|                                                                                |                                                                                                                                                                                                                       | 4874      | 47.85      | -26.15 | 74         | 39.85  | 32.5     | 12.55  | 37.56  | -      | -       | P     | H     |
|                                                                                |                                                                                                                                                                                                                       | 4960      | 47.98      | -26.02 | 74         | 39.44  | 32.94    | 12.7   | 37.63  | -      | -       | P     | H     |
|                                                                                |                                                                                                                                                                                                                       | 5758      | 54.38      | -13.82 | 68.2       | 44.39  | 33.83    | 13.7   | 37.97  | 300    | 322     | P     | H     |
|                                                                                |                                                                                                                                                                                                                       | 6958      | 54.87      | -13.33 | 68.2       | 41.61  | 35.92    | 15.08  | 38.32  | 150    | 42      | P     | H     |
|                                                                                |                                                                                                                                                                                                                       | 7311      | 51.04      | -22.96 | 74         | 36.05  | 36.9     | 15.44  | 38.61  | 312    | 225     | P     | H     |
|                                                                                |                                                                                                                                                                                                                       | 7311      | 41.44      | -12.56 | 54         | 26.45  | 36.9     | 15.44  | 38.61  | 312    | 225     | A     | H     |
|                                                                                |                                                                                                                                                                                                                       | 7440      | 49.04      | -24.96 | 74         | 34.41  | 36.52    | 15.59  | 38.71  | 100    | 256     | P     | H     |
|                                                                                |                                                                                                                                                                                                                       | 7440      | 40.7       | -13.3  | 54         | 26.07  | 36.52    | 15.59  | 38.71  | 100    | 256     | A     | H     |
|                                                                                |                                                                                                                                                                                                                       | 10440     | 52.94      | -15.26 | 68.2       | 36.65  | 38.74    | 18.51  | 41.47  | -      | -       | P     | H     |
|                                                                                |                                                                                                                                                                                                                       | 15660     | 52.45      | -21.55 | 74         | 35.77  | 37.92    | 22.91  | 44.62  | 178    | 196     | P     | H     |
|                                                                                |                                                                                                                                                                                                                       | 15660     | 43.9       | -10.1  | 54         | 27.22  | 37.92    | 22.91  | 44.62  | 178    | 196     | A     | H     |
|                                                                                |                                                                                                                                                                                                                       | 4042      | 56.72      | -17.28 | 74         | 50.69  | 30.8     | 11.68  | 37.18  | 200    | 254     | P     | V     |
|                                                                                |                                                                                                                                                                                                                       | 4042      | 50.26      | -3.74  | 54         | 44.23  | 30.8     | 11.68  | 37.18  | 200    | 254     | A     | V     |
|                                                                                |                                                                                                                                                                                                                       | 4874      | 47.53      | -26.47 | 74         | 39.53  | 32.5     | 12.55  | 37.56  | -      | -       | P     | V     |
|                                                                                |                                                                                                                                                                                                                       | 4960      | 47.8       | -26.2  | 74         | 39.26  | 32.94    | 12.7   | 37.63  | -      | -       | P     | V     |
|                                                                                |                                                                                                                                                                                                                       | 5758      | 54.92      | -13.28 | 68.2       | 44.93  | 33.83    | 13.7   | 37.97  | 200    | 305     | P     | V     |
|                                                                                |                                                                                                                                                                                                                       | 6958      | 56.59      | -11.61 | 68.2       | 43.33  | 35.92    | 15.08  | 38.32  | 150    | 342     | P     | V     |
|                                                                                |                                                                                                                                                                                                                       | 7311      | 50.2       | -23.8  | 74         | 35.21  | 36.9     | 15.44  | 38.61  | 200    | 355     | P     | V     |
|                                                                                |                                                                                                                                                                                                                       | 7311      | 41.37      | -12.63 | 54         | 26.38  | 36.9     | 15.44  | 38.61  | 200    | 355     | A     | V     |
|                                                                                |                                                                                                                                                                                                                       | 7440      | 49.79      | -24.21 | 74         | 35.16  | 36.52    | 15.59  | 38.71  | 312    | 155     | P     | V     |
|                                                                                |                                                                                                                                                                                                                       | 7440      | 41.17      | -12.83 | 54         | 26.54  | 36.52    | 15.59  | 38.71  | 312    | 155     | A     | V     |
|                                                                                |                                                                                                                                                                                                                       | 10440     | 52.99      | -15.21 | 68.2       | 36.7   | 38.74    | 18.51  | 41.47  | -      | -       | P     | V     |
|                                                                                |                                                                                                                                                                                                                       | 15660     | 51.67      | -22.33 | 74         | 34.99  | 37.92    | 22.91  | 44.62  | 100    | 115     | P     | V     |
|                                                                                |                                                                                                                                                                                                                       | 15660     | 43.89      | -10.11 | 54         | 27.21  | 37.92    | 22.91  | 44.62  | 100    | 115     | A     | V     |
| Remark                                                                         | 1. No other spurious found.<br>2. All results are PASS against limit line.<br>3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. |           |            |        |            |        |          |        |        |        |         |       |       |

## Emission below 1GHz

**802.11b\_Tx\_Ch06 + 802.11a\_Tx\_Ch44 + LTE Band 5 Link (LF @ 3m)**

| Ant.<br>Simultaneously                                           | Note                                                                                                                                                                                                                                             | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Margin<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>(dBμV) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>(P/A) | Pol.<br>(H/V) |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|------------------|-----------------------------|-------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| 802.11b<br>Ch06<br>+<br>802.11a<br>Ch44<br>LF<br>+<br>LTE Band 5 |                                                                                                                                                                                                                                                  | 30                   | 28.97               | -11.03           | 40                          | 28.45                   | 25.01                         | 1                      | 35.76                      | 100                  | 271                     | Q                     | H             |
|                                                                  |                                                                                                                                                                                                                                                  | 133.87               | 29.16               | -14.34           | 43.5                        | 34.73                   | 17.83                         | 2.16                   | 35.62                      | -                    | -                       | P                     | H             |
|                                                                  |                                                                                                                                                                                                                                                  | 181.64               | 28.91               | -14.59           | 43.5                        | 36.8                    | 15.08                         | 2.5                    | 35.53                      | -                    | -                       | P                     | H             |
|                                                                  |                                                                                                                                                                                                                                                  | 404                  | 33.57               | -12.43           | 46                          | 32.77                   | 21.99                         | 3.66                   | 34.97                      | -                    | -                       | P                     | H             |
|                                                                  |                                                                                                                                                                                                                                                  | 656                  | 39.71               | -6.29            | 46                          | 32.69                   | 26.51                         | 4.61                   | 34.28                      | -                    | -                       | P                     | H             |
|                                                                  |                                                                                                                                                                                                                                                  | 942.4                | 40.07               | -5.93            | 46                          | 27.11                   | 30.38                         | 5.48                   | 33.15                      | 300                  | 233                     | Q                     | H             |
|                                                                  |                                                                                                                                                                                                                                                  |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | H             |
|                                                                  |                                                                                                                                                                                                                                                  |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | H             |
|                                                                  |                                                                                                                                                                                                                                                  |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | H             |
|                                                                  |                                                                                                                                                                                                                                                  |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | H             |
|                                                                  |                                                                                                                                                                                                                                                  |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | H             |
|                                                                  |                                                                                                                                                                                                                                                  |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | H             |
|                                                                  |                                                                                                                                                                                                                                                  | 32.38                | 28.29               | -11.71           | 40                          | 28.94                   | 23.88                         | 1.04                   | 35.76                      | 100                  | 102                     | Q                     | V             |
|                                                                  |                                                                                                                                                                                                                                                  | 41.73                | 32.55               | -7.45            | 40                          | 38.27                   | 18.73                         | 1.23                   | 35.75                      | -                    | -                       | P                     | V             |
|                                                                  |                                                                                                                                                                                                                                                  | 129.11               | 28.97               | -14.53           | 43.5                        | 34.68                   | 17.73                         | 2.12                   | 35.63                      | -                    | -                       | P                     | V             |
|                                                                  |                                                                                                                                                                                                                                                  | 262.4                | 31.71               | -14.29           | 46                          | 33.81                   | 20.25                         | 2.97                   | 35.37                      | -                    | -                       | P                     | V             |
|                                                                  |                                                                                                                                                                                                                                                  | 734.4                | 36.98               | -9.02            | 46                          | 27.85                   | 28.04                         | 4.87                   | 33.96                      | 200                  | 315                     | Q                     | V             |
|                                                                  |                                                                                                                                                                                                                                                  | 950.4                | 40.36               | -5.64            | 46                          | 26.94                   | 30.79                         | 5.5                    | 33.13                      | 300                  | 11                      | Q                     | V             |
|                                                                  |                                                                                                                                                                                                                                                  |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | V             |
|                                                                  |                                                                                                                                                                                                                                                  |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       | V             |
|                                                                  |                                                                                                                                                                                                                                                  |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         | V                     |               |
|                                                                  |                                                                                                                                                                                                                                                  |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         | V                     |               |
|                                                                  |                                                                                                                                                                                                                                                  |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         | V                     |               |
|                                                                  |                                                                                                                                                                                                                                                  |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         | V                     |               |
| Remark                                                           | 1. No other spurious found.<br>2. All results are PASS against limit line.<br>3. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only. |                      |                     |                  |                             |                         |                               |                        |                            |                      |                         |                       |               |

## Emission above 18GHz

**802.11b\_Tx\_Ch06 + 802.11a\_Tx\_Ch44 + LTE Band 5 Link (SHF @ 1m)**

| Ant.<br>Simultaneously                                                   | Note                                                                                                                                                                                                                  | Frequency<br><br>( MHz ) | Level<br><br>( dBμV/m ) | Margin<br><br>( dB ) | Limit<br>Line<br><br>( dBμV/m ) | Read<br>Level<br><br>(dBμV) | Antenna<br>Factor<br><br>( dB/m ) | Path<br>Loss<br><br>( dB ) | Preamp<br>Factor<br><br>( dB ) | Ant<br>Pos<br><br>( cm ) | Table<br>Pos<br><br>( deg ) | Peak<br>Avg.<br><br>(P/A) | Pol.<br><br>(H/V) |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------|----------------------|---------------------------------|-----------------------------|-----------------------------------|----------------------------|--------------------------------|--------------------------|-----------------------------|---------------------------|-------------------|
| 802.11b<br>Ch06<br>+<br>802.11a<br>Ch44<br>+<br>LTE Band 5<br>10M<br>SHF |                                                                                                                                                                                                                       | 38908                    | 50.6                    | -23.4                | 74                              | 40.51                       | 44.85                             | 36.71                      | 61.93                          | -                        | -                           | P                         | H                 |
|                                                                          |                                                                                                                                                                                                                       | 38908                    | 40.52                   | -13.48               | 54                              | 30.43                       | 44.85                             | 36.71                      | 61.93                          | -                        | -                           | A                         | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | H                 |
|                                                                          |                                                                                                                                                                                                                       | 38614                    | 50.38                   | -23.62               | 74                              | 40.3                        | 44.34                             | 36.69                      | 61.41                          | -                        | -                           | P                         | V                 |
|                                                                          |                                                                                                                                                                                                                       | 38614                    | 40.37                   | -13.63               | 54                              | 30.29                       | 44.34                             | 36.69                      | 61.41                          | -                        | -                           | A                         | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
|                                                                          |                                                                                                                                                                                                                       |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           | V                 |
| Remark                                                                   | 1. No other spurious found.<br>2. All results are PASS against limit line.<br>3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. |                          |                         |                      |                                 |                             |                                   |                            |                                |                          |                             |                           |                   |



**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>Margin</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<br>Ant.<br>6+7         | Note | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Margin<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-----------------------------|------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11b<br>CH 01<br>2412MHz |      | 2390                 | 55.45               | -18.55           | 74                          | 54.51                     | 32.22                         | 4.58                   | 35.86                      | 103                  | 308                     | P                       | H               |
|                             |      | 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. Margin(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. Margin(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. Margin (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 B. Radiated Spurious Emission Plots

|                        |                                         |                            |             |
|------------------------|-----------------------------------------|----------------------------|-------------|
| <b>Test Engineer :</b> | John Chuang, David Dai and Howard Huang | <b>Temperature :</b>       | 18.9~23.4°C |
|                        |                                         | <b>Relative Humidity :</b> | 65.7~69.9%  |

### Note symbol

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

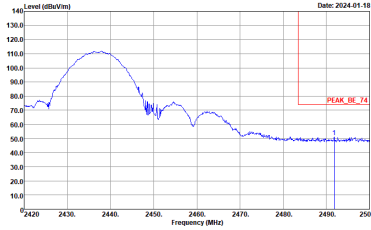
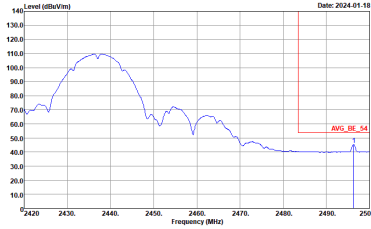


2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz + LTE Band 5 Link

WIFI 802.11b (Band Edge @ 3m)

| WLAN | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                               |                                                                                                                                 |
|------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11b_Tx_Ch06 2437MHz - L                                                                                                        |                                                                                                                                 |
| 6+7  | Horizontal                                                                                                                         | Fundamental                                                                                                                     |
| Peak | <p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Site : 03CH20-HY<br/>Condition : PEAK_74 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. | <p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:1200KHz SWT:Auto</p>      | <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:1200KHz SWT:Auto</p>      |

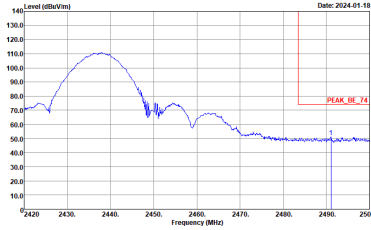
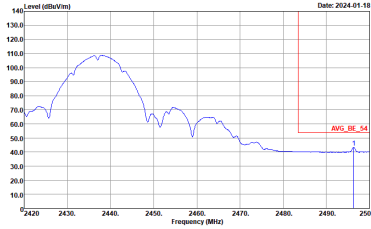


| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                                                 |             |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| ANT  | 802.11b_Tx_Ch06 2437MHz - L                                                                                                                                                                                                                          |             |
| 6+7  | Horizontal                                                                                                                                                                                                                                           | Fundamental |
| Peak | <div><p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p><p>Date: 2024-01-18</p></div>  | Left blank  |
| Avg. | <div><p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p><p>Date: 2024-01-18</p></div> | Left blank  |



| WLAN | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                             |                                                                                                                               |
|------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11b_Tx_Ch06 2437MHz - L                                                                                                      |                                                                                                                               |
| 6+7  | Vertical                                                                                                                         | Fundamental                                                                                                                   |
| Peak | <p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Site : 03CH20-HY<br/>Condition : PEAK_74 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. | <p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:0.200KHz SWT:Auto</p>     | <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:0.200KHz SWT:Auto</p>     |



| WIFI | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                                              |             |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| ANT  | 802.11b_Tx_Ch06 2437MHz - L                                                                                                                                                                                                                       |             |
| 6+7  | Vertical                                                                                                                                                                                                                                          | Fundamental |
| Peak | <div><p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p><p>Date: 2024-01-18</p></div> | Left blank  |
| Avg. | <div><p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 VERTICAL<br/>RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p><p>Date: 2024-01-18</p></div>   | Left blank  |

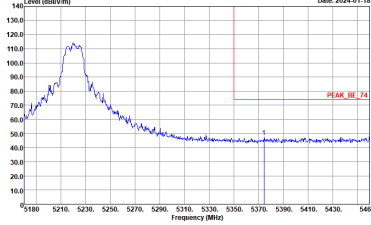
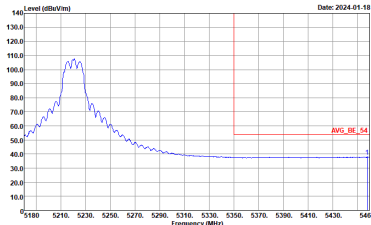


2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz + LTE Band 5 Link

WIFI 802.11a (Band Edge @ 3m)

| WIFI | Band 1 5150~5250MHz Band Edge @ 3m                                                                                                 |                                                                                                                                    |
|------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11a_Tx_Ch44 5220MHz                                                                                                            |                                                                                                                                    |
| 6+7  | Horizontal                                                                                                                         | Fundamental                                                                                                                        |
| Peak | <p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Site : 03CH20-HY<br/>Condition : PEAK(UNIT) 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. | <p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:0.625KHz SWT:Auto</p>     | <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:0.625KHz SWT:Auto</p>        |

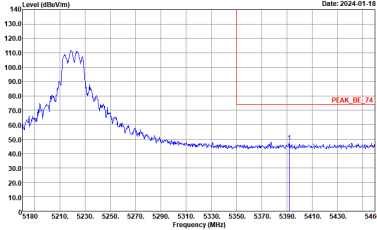
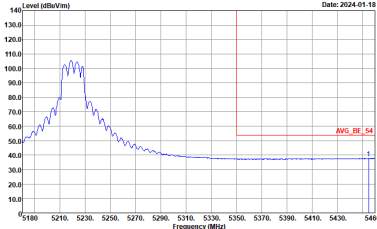


| WIFI | Band 1 5150~5250MHz Band Edge @ 3m                                                                                                                                                                                             |             |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| ANT  | 802.11a_Tx_Ch44 5220MHz                                                                                                                                                                                                        |             |
| 6+7  | Horizontal                                                                                                                                                                                                                     | Fundamental |
| Peak | <div><p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p></div> | Left blank  |
| Avg. | <div><p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:3.000KHz SWT:Auto</p></div>   | Left blank  |



| WIFI | Band 1 5150~5250MHz Band Edge @ 3m                                                                                               |                                                                                                                                  |
|------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11a_Tx_Ch44 5220MHz                                                                                                          |                                                                                                                                  |
| 6+7  | Vertical                                                                                                                         | Fundamental                                                                                                                      |
| Peak | <p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Site : 03CH20-HY<br/>Condition : PEAK(FUND) 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. | <p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:0.620KHz SWT:Auto</p>     | <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:0.620KHz SWT:Auto</p>        |

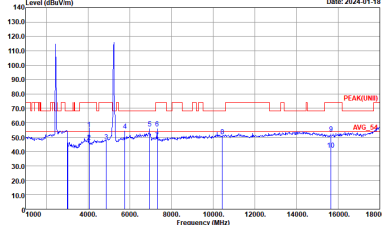
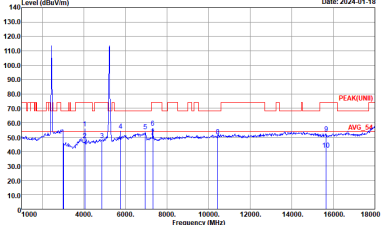


| WIFI | Band 1 5150~5250MHz Band Edge @ 3m                                                                                                                                                                                           |             |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| ANT  | 802.11a_Tx_Ch44 5220MHz                                                                                                                                                                                                      |             |
| 6+7  | Vertical                                                                                                                                                                                                                     | Fundamental |
| Peak | <div><p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p></div> | Left blank  |
| Avg. | <div><p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:0.620KHz SWT:Auto</p></div>   | Left blank  |



2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz + LTE Band 5 Link

802.11b\_Tx\_Ch06 + 802.11a\_Tx\_Ch44 + LTE Band 5 10M (Harmonic @ 3m)

|                | 2.4GHz 2400~2483.5MHz +Band 1 5150~5250MHz Harmonic @ 3m                                                                                                               |                                                                                                                                                                       |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ant.           | 802.11b_Tx_Ch06 + 802.11a_Tx_Ch44 + LTE B5                                                                                                                             |                                                                                                                                                                       |
| Simultaneously | Horizontal                                                                                                                                                             | Vertical                                                                                                                                                              |
| Peak<br>Avg.   |  <p>Site : 03CH20-HY<br/>Condition : :PEAK(UNIT) 3m 9120D_02360_231030 HORIZONTAL</p> |  <p>Site : 03CH20-HY<br/>Condition : :PEAK(UNIT) 3m 9120D_02360_231030 VERTICAL</p> |



|                          | 2.4GHz 2400~2483.5MHz +Band 1 5150~5250MHz Harmonic @ 3m                                                                                             |                                                                                                                                                    |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Ant.                     | 802.11b_Tx_Ch06 + 802.11a_Tx_Ch44 + LTE B5                                                                                                           |                                                                                                                                                    |
| Simultaneously           | Horizontal                                                                                                                                           | Vertical                                                                                                                                           |
| 14.47G<br>~14.5G<br>Avg. | <p>Level (dBuV/m)</p> <p>Date: 2024-01-18</p> <p>Frequency (MHz)</p> <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 HORIZONTAL</p> | <p>Level (dBuV/m)</p> <p>Date: 2024-01-18</p> <p>Frequency (MHz)</p> <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 VERTICAL</p> |
|                          | <p>Level (dBuV/m)</p> <p>Date: 2024-01-18</p> <p>Frequency (MHz)</p> <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 HORIZONTAL</p> | <p>Level (dBuV/m)</p> <p>Date: 2024-01-18</p> <p>Frequency (MHz)</p> <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 VERTICAL</p> |

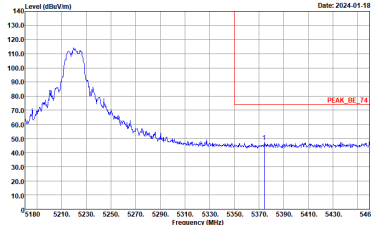
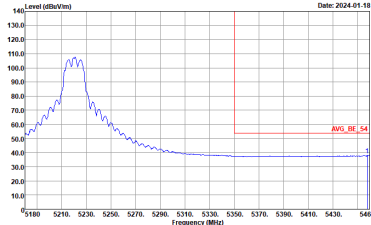


Bluetooth-LE + 2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz + LTE Band 5 Link

WIFI 802.11a (Band Edge @ 3m)

| WIFI | Band 1 5150~5250MHz Band Edge @ 3m                                                                                                 |                                                                                                                                    |
|------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11a_Tx_Ch44 5220MHz                                                                                                            |                                                                                                                                    |
| 6+7  | Horizontal                                                                                                                         | Fundamental                                                                                                                        |
| Peak | <p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Site : 03CH20-HY<br/>Condition : PEAK(FUND) 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. | <p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:0.620KHz SWT:Auto</p>     | <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:0.620KHz SWT:Auto</p>        |

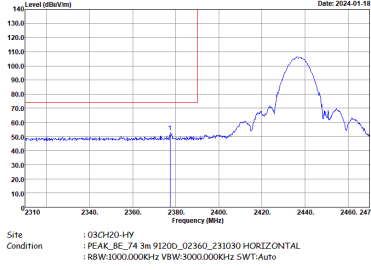
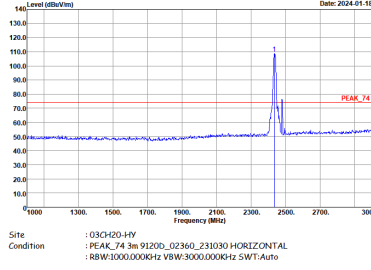
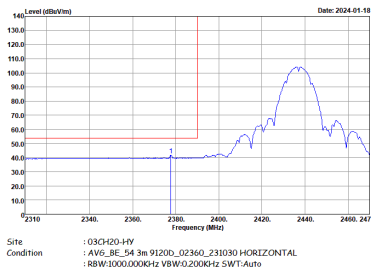
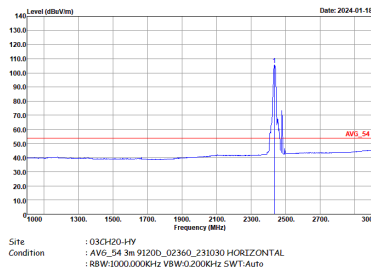


| WIFI | Band 1 5150~5250MHz Band Edge @ 3m                                                                                                                                                                                                                  |             |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| ANT  | 802.11a_Tx_Ch44 5220MHz                                                                                                                                                                                                                             |             |
| 6+7  | Horizontal                                                                                                                                                                                                                                          | Fundamental |
| Peak | <div><p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p><p>Date: 2024-01-18</p></div> | Left blank  |
| Avg. | <div><p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 HORIZONTAL<br/>RBW:1000.000KHz VBW:0.625KHz SWT:Auto</p><p>Date: 2024-01-18</p></div>   | Left blank  |

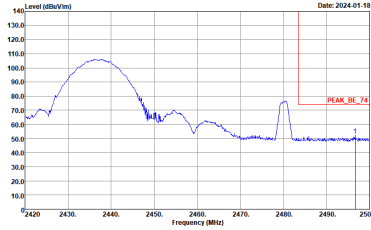
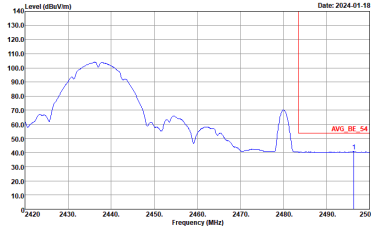


## Bluetooth-LE + 2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz + LTE Band 5 Link

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

| WLAN | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                 |                                                                                                                                                                                                                    |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11b_Tx_Ch06 2437MHz - L                                                                                                                                                                                          |                                                                                                                                                                                                                    |
| 7    | Horizontal                                                                                                                                                                                                           | Fundamental                                                                                                                                                                                                        |
| Peak |  <p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Site : 03CH20-HY<br/>Condition : PEAK_74 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. |  <p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:10.000KHz SWT:Auto</p>  |  <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:10.000KHz SWT:Auto</p>  |

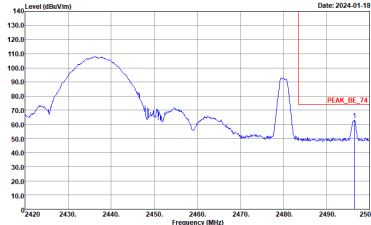
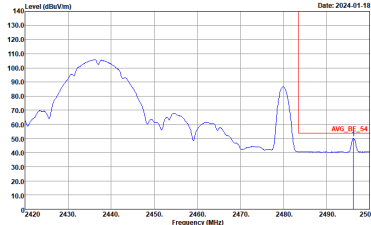


| WLAN | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                                                 |             |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| ANT  | 802.11b_Tx_Ch06 2437MHz - L                                                                                                                                                                                                                          |             |
| 7    | Horizontal                                                                                                                                                                                                                                           | Fundamental |
| Peak | <div><p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p><p>Date: 2024-01-18</p></div>  | Left blank  |
| Avg. | <div><p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p><p>Date: 2024-01-18</p></div> | Left blank  |



| WLAN | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                             |                                                                                                                               |
|------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| ANT  | 802.11b_Tx_Ch06 2437MHz - L                                                                                                      |                                                                                                                               |
| 7    | Vertical                                                                                                                         | Fundamental                                                                                                                   |
| Peak | <p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Site : 03CH20-HY<br/>Condition : PEAK_74 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
|      | <p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:0.200KHz SWT:Auto</p>     | <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:0.200KHz SWT:Auto</p>     |

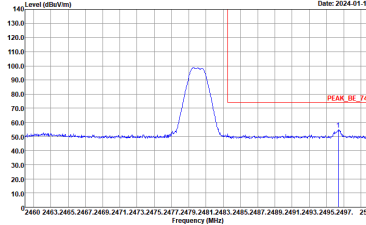
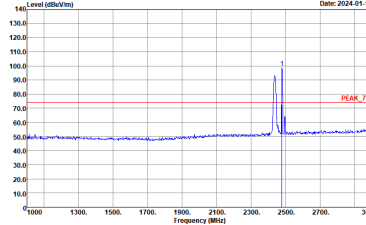
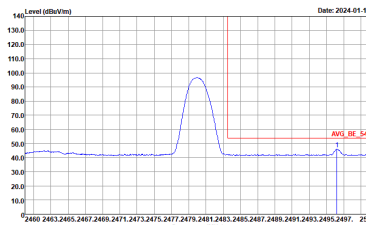
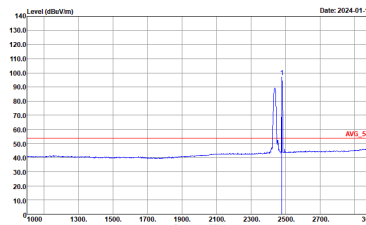


| WLAN | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                          |             |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| ANT  | 802.11b_Tx_Ch06 2437MHz - L                                                                                                                                                                                                   |             |
| 7    | Vertical                                                                                                                                                                                                                      | Fundamental |
| Peak | <div><p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p></div>  | Left blank  |
| Avg. | <div><p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p></div> | Left blank  |

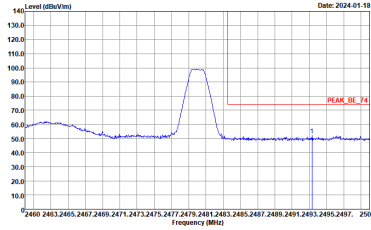
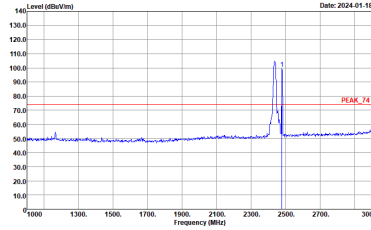
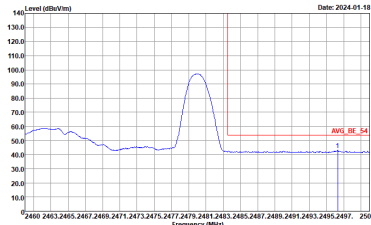
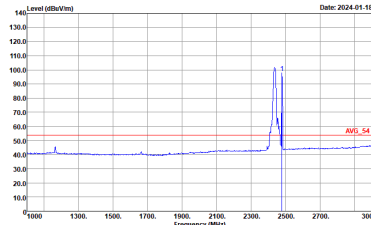


## Bluetooth-LE + 2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz + LTE Band 5 Link

## Bluetooth-LE (2M)\_Tx\_Ch39 (Band Edge @ 3m)

| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                 |                                                                                                                                                                                                                    |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | BLE_Tx_Ch39                                                                                                                                                                                                          |                                                                                                                                                                                                                    |
| 6    | Horizontal                                                                                                                                                                                                           | Fundamental                                                                                                                                                                                                        |
| Peak |  <p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Site : 03CH20-HY<br/>Condition : PEAK_74 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg. |  <p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:5.000KHz SWT:Auto</p>   |  <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:5.000KHz SWT:Auto</p>   |

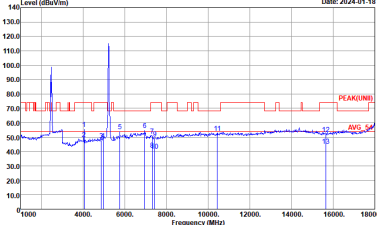
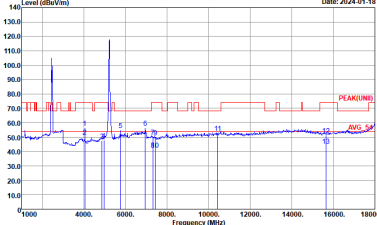


| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                               |                                                                                                                                                                                                                  |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | BLE_Tx_Ch39                                                                                                                                                                                                        |                                                                                                                                                                                                                  |
| 6    | Vertical                                                                                                                                                                                                           | Fundamental                                                                                                                                                                                                      |
| Peak |  <p>Site : 03CH20-HY<br/>Condition : PEAK_BE_74 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Site : 03CH20-HY<br/>Condition : PEAK_74 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
|      |  <p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:5.000KHz SWT:Auto</p>   |  <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:5.000KHz SWT:Auto</p>   |

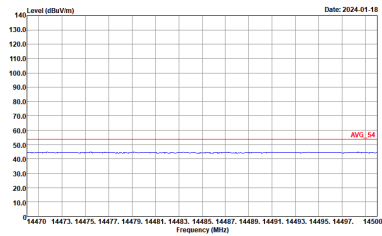
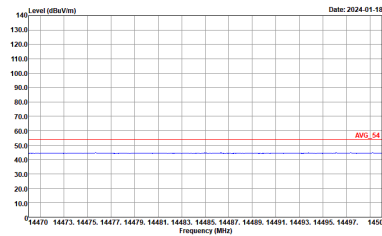
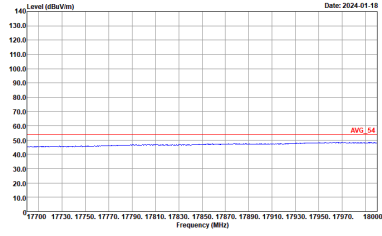
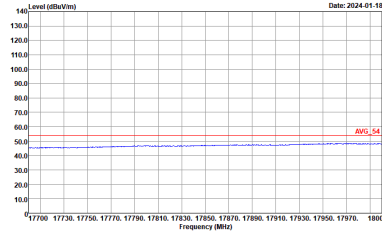


Bluetooth-LE + 2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz + LTE Band 5 Link

Bluetooth-LE\_Tx\_(2M)\_Ch39 + 802.11b\_Tx\_Ch06 + 802.11a\_Tx\_Ch44 + LTE Band 5 (Harmonic @ 3m)

|                | 2.4GHz 2400~2483.5MHz +Band 1 5150~5250MHz Harmonic @ 3m                                                                                                                     |                                                                                                                                                                             |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ant.           | Bluetooth-LE_Tx_(2M)_Ch39 + 802.11b_Tx_Ch06 + 802.11a_Tx_Ch44 + LTE B5                                                                                                       |                                                                                                                                                                             |
| Simultaneously | Horizontal                                                                                                                                                                   | Vertical                                                                                                                                                                    |
| Peak<br>Avg.   |  <p>Site : 03CH20-HY<br/>Condition : :PEAK(UNIT) 3m 91200_02360_231030 HORIZONTAL<br/>:</p> |  <p>Site : 03CH20-HY<br/>Condition : :PEAK(UNIT) 3m 91200_02360_231030 VERTICAL<br/>:</p> |

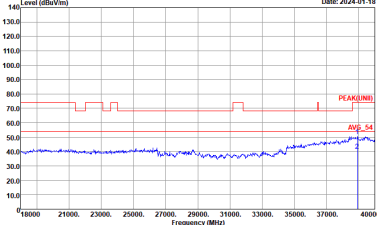
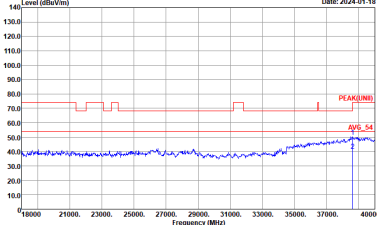


|                          | 2.4GHz 2400~2483.5MHz + Band 1 5150~5250MHz Harmonic @ 3m                                                                                                                  |                                                                                                                                                                           |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ant.                     | Bluetooth-LE_Tx_(2M)_Ch39 + 802.11b_Tx_Ch06 + 802.11a_Tx_Ch44 + LTE B5                                                                                                     |                                                                                                                                                                           |
| Simultaneously           | Horizontal                                                                                                                                                                 | Vertical                                                                                                                                                                  |
| 14.47G<br>~14.5G<br>Avg. |  <p>Site : 03CH20-HY<br/>Condition : AV6_54 3m 91200_02360_231030 HORIZONTAL<br/>..</p>   |  <p>Site : 03CH20-HY<br/>Condition : AV6_54 3m 91200_02360_231030 VERTICAL<br/>..</p>   |
|                          |  <p>Site : 03CH20-HY<br/>Condition : AV6_54 3m 91200_02360_231030 HORIZONTAL<br/>..</p> |  <p>Site : 03CH20-HY<br/>Condition : AV6_54 3m 91200_02360_231030 VERTICAL<br/>..</p> |
| 17.7G<br>~18G<br>Avg     |                                                                                                                                                                            |                                                                                                                                                                           |



Emission above 18GHz

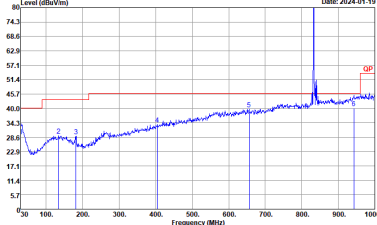
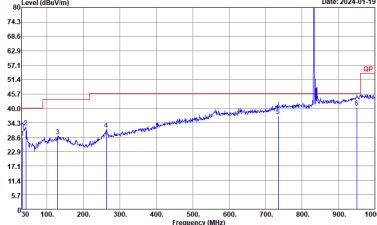
802.11b\_Tx\_Ch06 + 802.11a\_Tx\_Ch44 + LTE Band 5 Link (SHF)

|                | 2.4GHz 2400~2483.5MHz +Band 1 5150~5250MHz                                                                                                                         |                                                                                                                                                                   |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ant.           | 802.11b_Tx_Ch06 + 802.11a_Tx_Ch44 + LTE Band 5 10M                                                                                                                 |                                                                                                                                                                   |
| Simultaneously | Horizontal                                                                                                                                                         | Vertical                                                                                                                                                          |
| Peak<br>Avg.   |  <p>Site : 03GH20-HY<br/>Condition : PEAK(UNIT) 1m SHF_1224_230710 HORIZONTAL</p> |  <p>Site : 03GH20-HY<br/>Condition : PEAK(UNIT) 1m SHF_1224_230710 VERTICAL</p> |



Emission below 1GHz

802.11b\_Tx\_Ch06 + 802.11a\_Tx\_Ch44 + LTE Band 5 Link (LF)

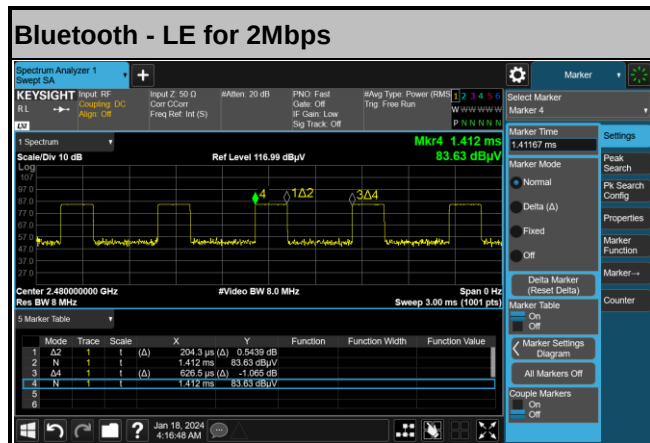
|                | 2.4GHz 2400~2483.5MHz +Band 1 5150~5250MHz LF @ 3m                                                                                                             |                                                                                                                                                               |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ant.           | 802.11b_Tx_Ch06 + 802.11a_Tx_Ch44 + LTE Band 5 10M                                                                                                             |                                                                                                                                                               |
| Simultaneously | Horizontal                                                                                                                                                     | Vertical                                                                                                                                                      |
| QP /<br>Peak   |  <p>Site : 03CH20-HY<br/>Condition : QP 3m LF_55606_231020_200 HORIZONTAL</p> |  <p>Site : 03CH20-HY<br/>Condition : QP 3m LF_55606_231020_200 VERTICAL</p> |
|                |                                                                                                                                                                |                                                                                                                                                               |



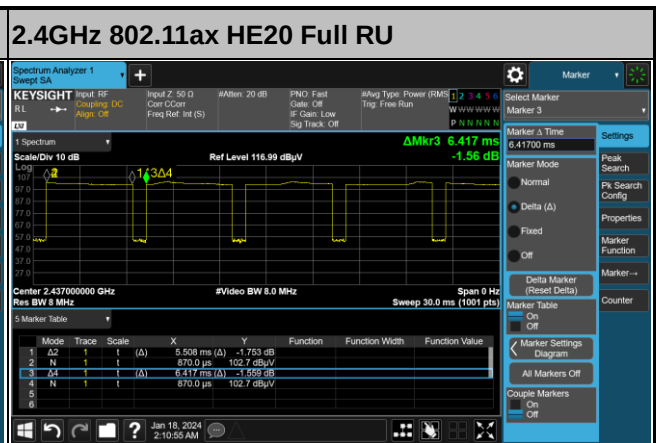
## Appendix C. Duty Cycle Plots

| Antenna | Band                     | Duty Cycle(%) | T(us) | 1/T(kHz) | VBW Setting |
|---------|--------------------------|---------------|-------|----------|-------------|
| 6       | Bluetooth - LE for 2Mbps | 32.64         | 204.3 | 4.89     | 5.1kHz      |
| 7       | 2.4GHz 802.11b           | 85.83         | 5508  | 0.18     | 200Hz       |
| 6+7     | 2.4GHz 802.11b           | 85.51         | 5490  | 0.18     | 200Hz       |
| 6+7     | 5GHz 802.11a             | 86.08         | 1725  | 0.58     | 620Hz       |

&lt;Ant. 6&gt;



&lt;Ant. 7&gt;



MIMO &lt;Ant. 6+7&gt;

