



# FCC RADIO TEST REPORT

**FCC ID** : UZ7KC50A15  
**Equipment** : KC50A15 Kiosk Computer  
**Brand Name** : Zebra  
**Model Name** : KC50A15  
**Applicant** : Zebra Technologies Corporation  
3 Overlook Point, Lincolnshire, IL 60069 USA  
**Manufacturer** : Zebra Technologies Corporation  
3 Overlook Point, Lincolnshire, IL 60069 USA  
**Standard** : FCC Part 15 Subpart C §15.247

The product was received on May 14, 2024 and testing was performed from May 14, 2024 to Jul. 10, 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.

*Louis Wu*

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    |
|------------|---------|-------------------------|---------------|
| FR450111B  | 01      | Initial issue of report | Jul. 29, 2024 |
|            |         |                         |               |
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## Summary of Test Result

| Report Clause | Ref Std. Clause              | Test Items                                 | Result (PASS/FAIL) | Remark                               |
|---------------|------------------------------|--------------------------------------------|--------------------|--------------------------------------|
| 3.1           | 15.247(a)(2)                 | 6dB Bandwidth                              | Pass               | -                                    |
| 3.1           | 2.1049                       | 99% Occupied Bandwidth                     | Pass               | -                                    |
| 3.2           | 15.247(b)(3)<br>15.247(b)(4) | Output Power                               | Pass               | -                                    |
| 3.3           | 15.247(e)                    | Power Spectral Density                     | Pass               | -                                    |
| 3.4           | 15.247(d)                    | Conducted Band Edges and Spurious Emission | Pass               | -                                    |
| 3.5           | 15.247(d)                    | Radiated Band Edges and Spurious Emission  | Pass               | 4.91 dB under the limit at 49.38 MHz |
| 3.6           | 15.207                       | AC Conducted Emission                      | Pass               | 9.80 dB under the limit at 13.56 MHz |
| 3.7           | 15.203                       | 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: Yun Huang**

**Report Producer: Wilda Wei**



# 1 General Description

## 1.1 Product Feature of Equipment Under Test

| Product Feature                 |                                                                                                                                |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Equipment                       | KC50A15 Kiosk Computer                                                                                                         |
| Brand Name                      | Zebra                                                                                                                          |
| Model Name                      | KC50A15                                                                                                                        |
| FCC ID                          | UZ7KC50A15                                                                                                                     |
| EUT supports Radios application | 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                      | REV:PT                                                                                                                         |
| SW Version                      | 13-29-29.00-TG-U00-STD-ATH-04                                                                                                  |
| OS Version                      | Android 13                                                                                                                     |
| MFD                             | 11MAY24                                                                                                                        |
| EUT Stage                       | Identical Prototype                                                                                                            |

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

| Specification of Accessories |            |       |             |                     |
|------------------------------|------------|-------|-------------|---------------------|
| AC Adapter                   | Brand Name | ZEBRA | Model Name  | PS000088A01         |
| USB C-C Cable                | Brand Name | ZEBRA | Part Number | CBL-EC5X-USBC3A-01  |
| Stand                        | Brand Name | ZEBRA | Part Number | 3PTY-SC-2000-CF2-01 |
| Printer                      | Brand Name | ZEBRA | Model Name  | ZD230t              |
| 2nd display                  | Brand Name | ZEBRA | Model Name  | TD50-15F00          |
| Edge scanner                 | Brand Name | ZEBRA | Part Number | ZFLX-SCNR-E00       |
| Edge LED Light Bar           | Brand Name | ZEBRA | Part Number | ZFLX-LTBAR-200      |
| USB Cable                    | Brand Name | ZEBRA | Part Number | 300283-002          |

## 1.2 Product Specification of Equipment Under Test

| Product Specification is subject to this standard |                                                                                                                                                                                                                                            |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tx/Rx Frequency Range</b>                      | 2402 MHz ~ 2480 MHz                                                                                                                                                                                                                        |
| <b>Number of Channels</b>                         | 40                                                                                                                                                                                                                                         |
| <b>Carrier Frequency of Each Channel</b>          | 40 Channel (37 hopping + 3 advertising channel)                                                                                                                                                                                            |
| <b>Maximum Output Power to Antenna</b>            | <b>&lt;Ant. 1&gt;</b><br>Bluetooth – LE (1Mbps): 4.90 dBm / 0.0031 W<br>Bluetooth – LE (2Mbps): 4.90 dBm / 0.0031 W<br><b>&lt;Ant. 2&gt;</b><br>Bluetooth – LE (1Mbps): 4.40 dBm / 0.0028 W<br>Bluetooth – LE (2Mbps): 4.30 dBm / 0.0027 W |
| <b>99% Occupied Bandwidth</b>                     | <b>&lt;Ant. 1&gt;</b><br>1.019 MHz for 1Mbps<br>2.002 MHz for 2Mbps<br><b>&lt;Ant. 2&gt;</b><br>1.021 MHz for 1Mbps<br>2.002 MHz for 2Mbps                                                                                                 |
| <b>Antenna Type / Gain</b>                        | <b>&lt;Ant. 1&gt;</b> :Coupling with gain 2.89 dBi<br><b>&lt;Ant. 2&gt;</b> : PIFA with gain 2.98 dBi                                                                                                                                      |
| <b>Type of Modulation</b>                         | Bluetooth LE: GFSK                                                                                                                                                                                                                         |

**Remark:** The above EUT's information was declared by manufacturer. Please refer to Disclaimer in report summary.

## 1.3 Modification of EUT

No modifications made to the EUT during the testing.



## 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>                                                                                                                          |
|                           | TH05-HY, CO07-HY, 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 declared by the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 15.247 Meas Guidance v05r02
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01
- ♦ ANSI C63.10-2013

**Remark:**

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
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

### 2.1 Carrier Frequency Channel

| Frequency Band  | Channel | Freq.<br>(MHz) | Channel | Freq.<br>(MHz) |
|-----------------|---------|----------------|---------|----------------|
| 2400-2483.5 MHz | 0       | 2402           | 21      | 2444           |
|                 | 1       | 2404           | 22      | 2446           |
|                 | 2       | 2406           | 23      | 2448           |
|                 | 3       | 2408           | 24      | 2450           |
|                 | 4       | 2410           | 25      | 2452           |
|                 | 5       | 2412           | 26      | 2454           |
|                 | 6       | 2414           | 27      | 2456           |
|                 | 7       | 2416           | 28      | 2458           |
|                 | 8       | 2418           | 29      | 2460           |
|                 | 9       | 2420           | 30      | 2462           |
|                 | 10      | 2422           | 31      | 2464           |
|                 | 11      | 2424           | 32      | 2466           |
|                 | 12      | 2426           | 33      | 2468           |
|                 | 13      | 2428           | 34      | 2470           |
|                 | 14      | 2430           | 35      | 2472           |
|                 | 15      | 2432           | 36      | 2474           |
|                 | 16      | 2434           | 37      | 2476           |
|                 | 17      | 2436           | 38      | 2478           |
|                 | 18      | 2438           | 39      | 2480           |
|                 | 19      | 2440           | -       | -              |
|                 | 20      | 2442           | -       | -              |

## 2.2 Test Mode

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

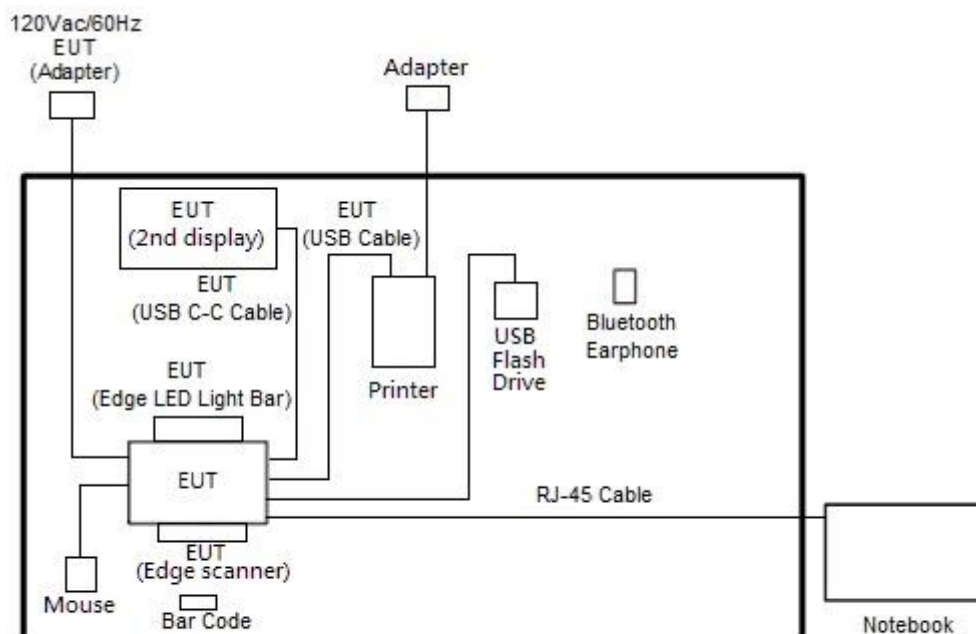
The following summary table is showing all test modes to demonstrate in compliance with the standard.

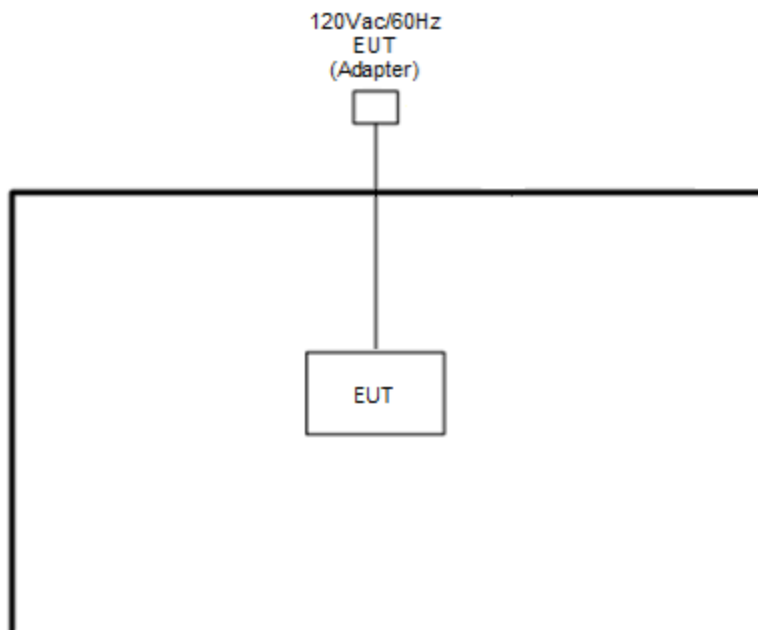
| Summary table of Test Cases     |                                          |
|---------------------------------|------------------------------------------|
| Test Item                       | Data Rate / Modulation                   |
| <b>Conducted<br/>Test Cases</b> | <b>Bluetooth – LE / GFSK</b>             |
|                                 | <b>&lt;Ant. 1&gt;&lt;Ant. 2&gt;</b>      |
|                                 | Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps |
|                                 | Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps |
|                                 | Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps |
|                                 | Mode 4: Bluetooth Tx CH00_2402 MHz_2Mbps |
|                                 | Mode 5: Bluetooth Tx CH19_2440 MHz_2Mbps |
|                                 | Mode 6: Bluetooth Tx CH39_2480 MHz_2Mbps |
| <b>Radiated<br/>Test Cases</b>  | <b>&lt;Ant. 1&gt;</b>                    |
|                                 | Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps |
|                                 | Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps |
|                                 | Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps |
|                                 | Mode 4: Bluetooth Tx CH00_2402 MHz_2Mbps |
|                                 | Mode 5: Bluetooth Tx CH19_2440 MHz_2Mbps |
|                                 | Mode 6: Bluetooth Tx CH39_2480 MHz_2Mbps |
|                                 | <b>&lt;Ant. 2&gt;</b>                    |
|                                 | Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps |
|                                 | Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps |
|                                 | Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps |
|                                 | Mode 4: Bluetooth Tx CH00_2402 MHz_2Mbps |
|                                 | Mode 5: Bluetooth Tx CH19_2440 MHz_2Mbps |
|                                 | Mode 6: Bluetooth Tx CH39_2480 MHz_2Mbps |

| Summary table of Test Cases                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AC Conducted Emission</b>                                                                                                                                                                                                                                                                                          | Mode 1: WLAN (2.4GHz) Link + Bluetooth Link + Scan Bar Code + USB C-C Cable Display with 2nd display + USB Cable with Printer + AC Adapter + LAN Link with Notebook + Edge USB-C with (Edge scanner + (Data Link with USB Flash Drive (USB to SD Card) + Edge LED Light Bar + Mouse) + Stand |
| <b>Remark:</b> <ol style="list-style-type: none"> <li>For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.</li> <li>Data Link with USB Flash Drive means data application transferred mode between EUT and USB Flash Drive.</li> </ol> |                                                                                                                                                                                                                                                                                              |

## 2.3 Connection Diagram of Test System

### <AC Conducted Emission Mode>



**<Bluetooth -LE Tx Mode>**

**2.4 Support Unit used in test configuration and system**

| Item | Equipment          | Brand Name    | Model Name    | FCC ID       | Data Cable     | Power Cord                                                 |
|------|--------------------|---------------|---------------|--------------|----------------|------------------------------------------------------------|
| 1.   | Bluetooth Earphone | Sony Ericsson | MW600         | PY7DDA-2029  | N/A            | N/A                                                        |
| 2.   | WLAN AP            | ASUS          | RT-AC52       | MSQ-RTAC4A00 | N/A            | Unshielded, 1.8 m                                          |
| 3.   | Notebook           | DELL          | Latitude 3400 | FCC DoC      | N/A            | AC I/P:<br>Unshielded, 1.2 m<br>DC O/P:<br>Shielded, 1.8 m |
| 4.   | Notebook           | DELL          | Latitude 5310 | FCC DoC      | N/A            | AC I/P:<br>Unshielded, 1.2 m<br>DC O/P:<br>Shielded, 1.8 m |
| 5.   | Mouse              | ACER          | MOANUOA       | FCC DoC      | Shielded, 1.7m | N/A                                                        |
| 6.   | Barcode            | N/A           | N/A           | N/A          | N/A            | N/A                                                        |
| 7.   | USB Flash Drive    | SanDisk       | E4BDC         | FCC DoC      | N/A            | N/A                                                        |
| 8.   | SD Card            | SanDisk       | MicroSD HC    | FCC DoC      | N/A            | N/A                                                        |



## 2.5 EUT Operation Test Setup

The RF test items, utility "QRCT4.0.211.0" 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.

## 2.6 Measurement Results Explanation Example

**For all conducted test items:**

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

Example :

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

*Offset = RF cable loss + attenuator factor.*

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

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

### 3 Test Result

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

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

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

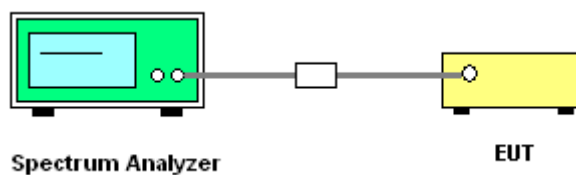
##### 3.1.2 Measuring Instruments

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

##### 3.1.3 Test Procedures

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

##### 3.1.4 Test Setup



##### 3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A.

##### 3.1.6 Test Result of 99% Occupied Bandwidth

Please refer to Appendix A.

## 3.2 Output Power Measurement

### 3.2.1 Limit of Output Power

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

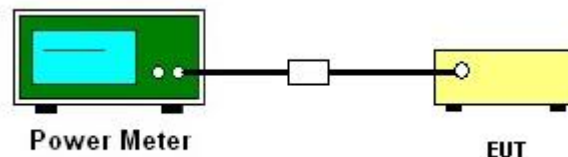
### 3.2.2 Measuring Instruments

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

### 3.2.3 Test Procedures

1. For Average Power, the testing follows ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G
2. The RF output of EUT is connected to the power meter by RF cable and attenuator.
3. The path loss is compensated to the results for each measurement.
4. Set the maximum power setting and enable the EUT to transmit continuously.
5. Measure the conducted output power and record the results in the test report.

### 3.2.4 Test Setup



### 3.2.5 Test Result of Average Output Power

Please refer to Appendix A.

### 3.3 Power Spectral Density Measurement

#### 3.3.1 Limit of Power Spectral Density

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

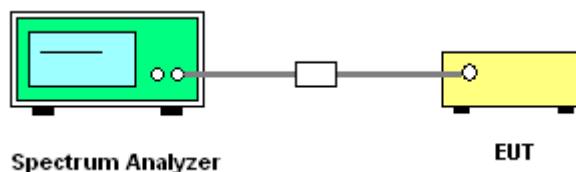
#### 3.3.2 Measuring Instruments

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

#### 3.3.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.10.2 Method PKPSD.
2. The RF output of EUT is connected to the spectrum analyzer by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth (VBW) = 10 kHz. In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6 dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.
7. The Measured power density (dBm)/ 100 kHz is a reference level and is used as 20 dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

#### 3.3.4 Test Setup



#### 3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

### 3.4 Conducted Band Edges and Spurious Emission Measurement

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

All harmonics/spurious must be at least 30 dB down from the highest emission level within the authorized band.

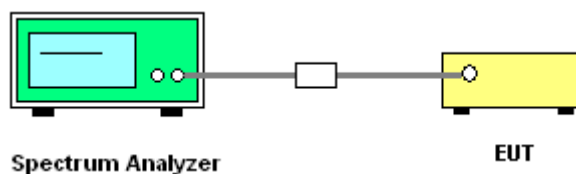
#### 3.4.2 Measuring Instruments

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

#### 3.4.3 Test Procedure

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

#### 3.4.4 Test Setup



#### 3.4.5 Test Result of Conducted Band Edges Plots

Please refer to Appendix A.

#### 3.4.6 Test Result of Conducted Spurious Emission Plots

Please refer to Appendix A.



### 3.5 Radiated Band Edges and Spurious Emission Measurement

#### 3.5.1 Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

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

#### 3.5.2 Measuring Instruments

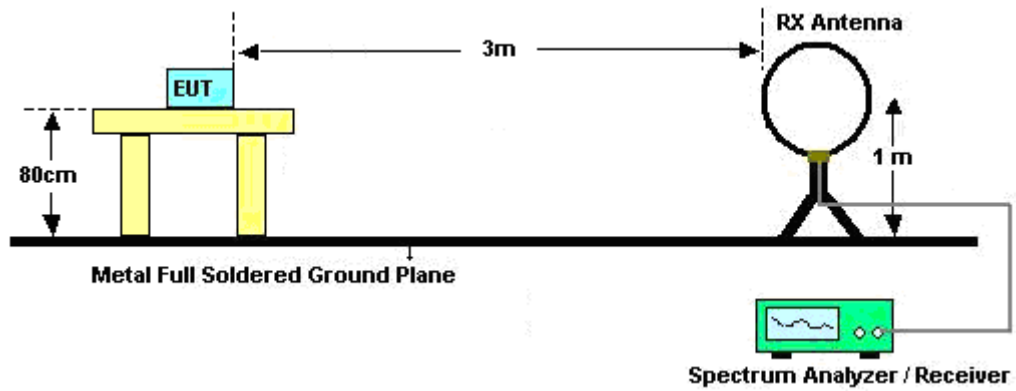
Please refer to the measuring equipment list in this test report.

### 3.5.3 Test Procedures

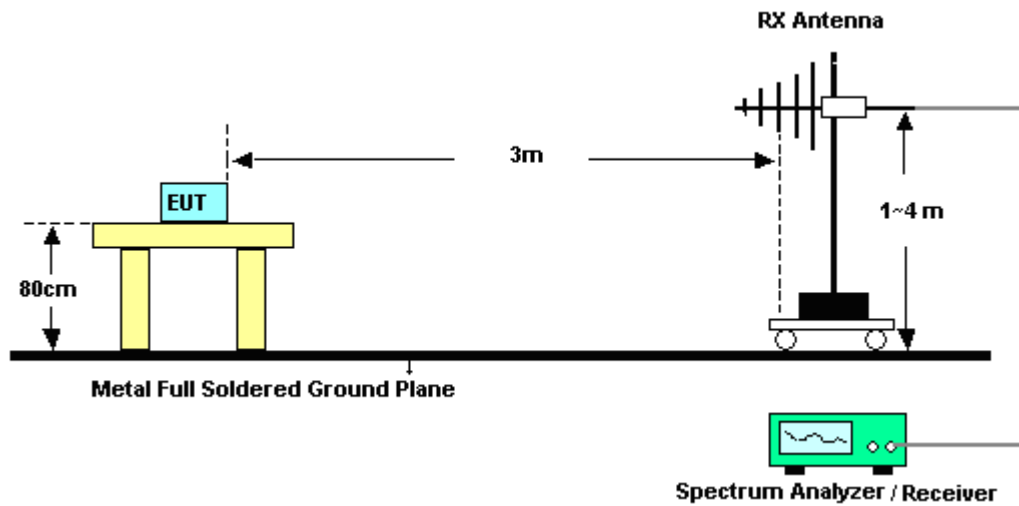
1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements.
2. The EUT is arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT 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.
4. The EUT is set 3 meters away from the receiving antenna, which is mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. Radiated testing below 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 “-”.
8. Use the following spectrum analyzer settings:
  - (1) Span shall wide enough to fully capture the emission being measured;
  - (2) Set RBW = 100 kHz for  $f < 1$  GHz; VBW  $\geq$  RBW; Sweep = auto; Detector function = peak; Trace = max hold;
  - (3) Set RBW = 1 MHz, VBW = 3 MHz for  $f \geq 1$  GHz for peak measurement.For average measurement:
  - VBW = 10 Hz, when duty cycle is no less than 98 percent.
  - VBW  $\geq 1/T$ , when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

### 3.5.4 Test Setup

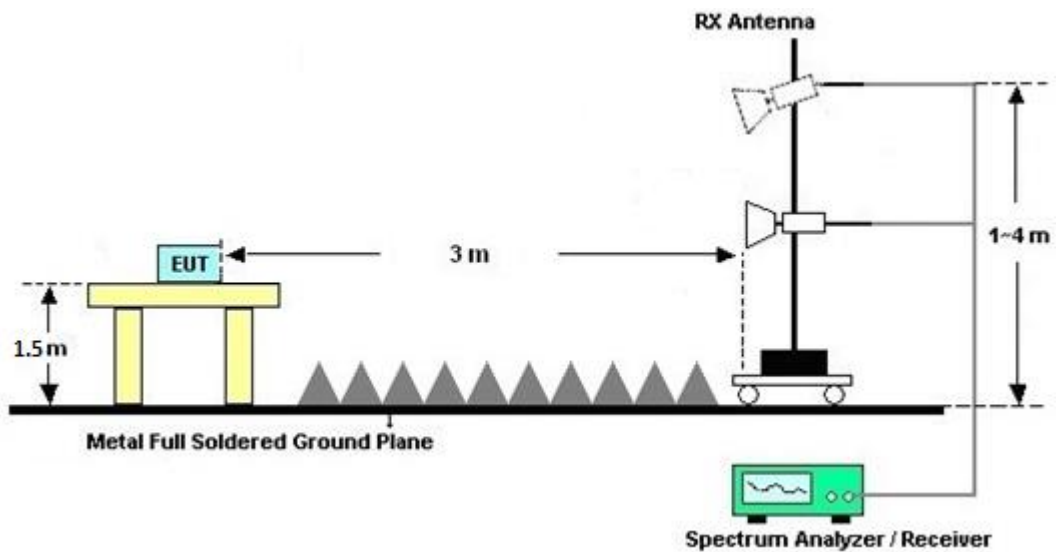
For radiated test below 30MHz



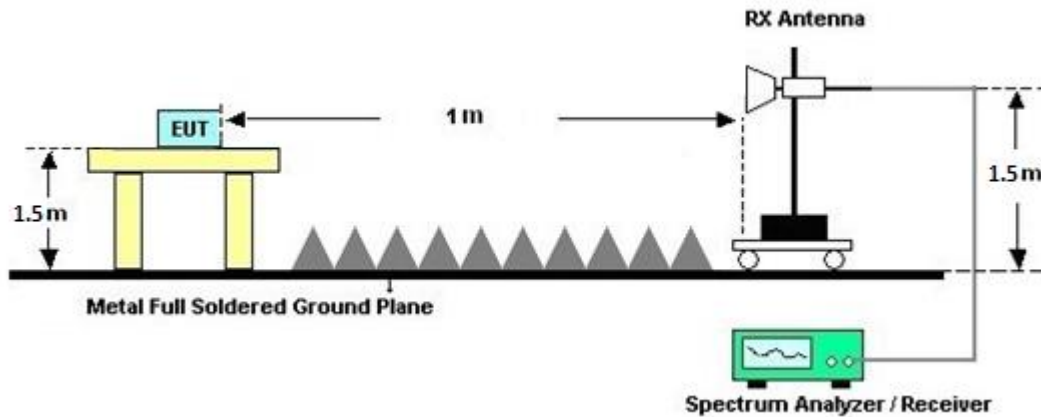
For radiated test from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



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

The low frequency, which starts from 9 kHz to 30 MHz, is pre-scanned and the result which is 20 dB lower than the limit line is 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 comes out very similar.

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

Please refer to Appendix C and D.

### 3.5.7 Duty Cycle

Please refer to Appendix E.

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

Please refer to Appendix C and D.

## 3.6 AC Conducted Emission Measurement

### 3.6.1 Limit of AC Conducted Emission

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

| Frequency of emission (MHz) | Conducted limit (dB $\mu$ V) |           |
|-----------------------------|------------------------------|-----------|
|                             | Quasi-peak                   | Average   |
| 0.15-0.5                    | 66 to 56*                    | 56 to 46* |
| 0.5-5                       | 56                           | 46        |
| 5-30                        | 60                           | 50        |

\*Decreases with the logarithm of the frequency.

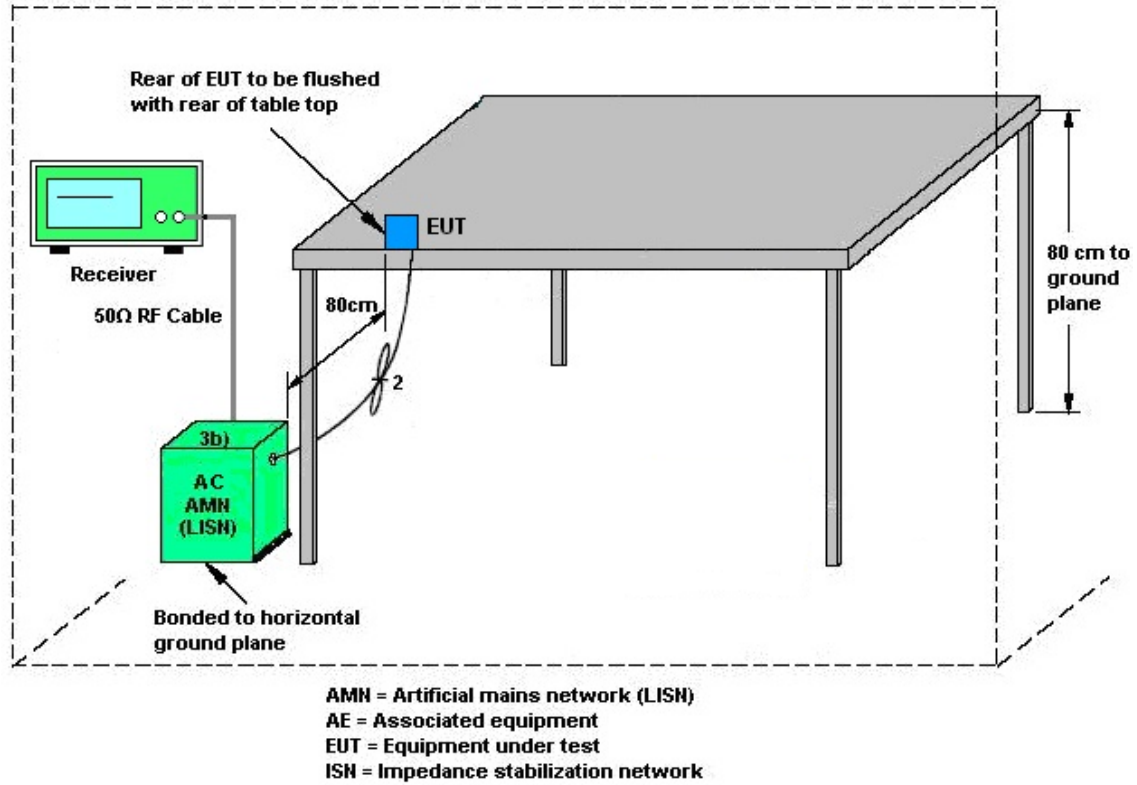
### 3.6.2 Measuring Instruments

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

### 3.6.3 Test Procedures

1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN shall be used.
6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
7. The frequency range from 150 kHz to 30 MHz is scanned.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9 kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

### 3.6.4 Test Setup



### 3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



## **3.7 Antenna Requirements**

### **3.7.1 Standard Applicable**

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

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

An embedded-in antenna design is used.



## 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    | May 14, 2024~<br>Jul. 10, 2024 | Oct. 05, 2024 | Radiation<br>(03CH20-HY) |
| Loop Antenna         | Rohde & Schwarz | HFH2-Z2                         | 100488                         | 9 kHz~30 MHz                     | Sep. 12, 2023    | May 14, 2024~<br>Jul. 10, 2024 | Sep. 11, 2024 | Radiation<br>(03CH20-HY) |
| Preamplifier         | EMEC            | EM18G40G                        | 060871                         | 18GHz~40GHz                      | Aug. 30, 2023    | May 14, 2024~<br>Jul. 10, 2024 | Aug. 29, 2024 | Radiation<br>(03CH20-HY) |
| Controller           | ChainTek        | 3000-1                          | N/A                            | Control Turn<br>table & Ant Mast | N/A              | May 14, 2024~<br>Jul. 10, 2024 | N/A           | Radiation<br>(03CH20-HY) |
| Antenna Mast         | ChainTek        | MBS-520-1                       | N/A                            | 1m~4m                            | N/A              | May 14, 2024~<br>Jul. 10, 2024 | N/A           | Radiation<br>(03CH20-HY) |
| Turn Table           | ChainTek        | T-200-S-1                       | N/A                            | 0~360 Degree                     | N/A              | May 14, 2024~<br>Jul. 10, 2024 | N/A           | Radiation<br>(03CH20-HY) |
| Signal Analyzer      | Keysight        | N9010B                          | MY60240520                     | N/A                              | Dec. 12, 2023    | May 14, 2024~<br>Jul. 10, 2024 | Dec. 11, 2024 | Radiation<br>(03CH20-HY) |
| Bilog Antenna        | TESEQ           | CBL<br>6111D&00802N<br>1D01N-06 | 55606 & 08                     | 30MHz~1GHz                       | Oct. 20, 2023    | May 14, 2024~<br>Jul. 10, 2024 | Oct. 19, 2024 | Radiation<br>(03CH20-HY) |
| Horn Antenna         | SCHWARZBECK     | BBHA 9120 D                     | 02360                          | 1GHz-18GHz                       | Oct. 30, 2023    | May 14, 2024~<br>Jul. 10, 2024 | Oct. 29, 2024 | Radiation<br>(03CH20-HY) |
| SHF-EHF Horn Antenna | SCHWARZBECK     | BBHA 9170                       | 00993                          | 18GHz-40GHz                      | Nov. 24, 2023    | May 14, 2024~<br>Jul. 10, 2024 | Nov. 23, 2024 | Radiation<br>(03CH20-HY) |
| Preamplifier         | COM-POWER       | PAM-103                         | 18020201                       | 1MHz-1000MHz                     | Jan. 01, 2024    | May 14, 2024~<br>Jul. 10, 2024 | Dec. 31, 2024 | Radiation<br>(03CH20-HY) |
| Amplifier            | EMCI            | EMC118A45SE                     | 980792                         | N/A                              | Nov. 13, 2023    | May 14, 2024~<br>Jul. 10, 2024 | Nov. 12, 2024 | Radiation<br>(03CH20-HY) |
| RF Cable             | HUBER + SUHNER  | SUCOFLEX<br>102                 | 519229/2,8040<br>15/2,804027/2 | N/A                              | Jan. 17, 2024    | May 14, 2024~<br>Jul. 10, 2024 | Jan. 16, 2025 | Radiation<br>(03CH20-HY) |
| Hygrometer           | TECEPEL         | DTM-303A                        | TP211382                       | N/A                              | Mar. 27, 2024    | May 14, 2024~<br>Jul. 10, 2024 | Mar. 26, 2025 | Radiation<br>(03CH20-HY) |
| Software             | Audix           | N/A                             | RK-002156                      | N/A                              | N/A              | May 14, 2024~<br>Jul. 10, 2024 | N/A           | Radiation<br>(03CH20-HY) |
| AC Power Source      | ACPOWER         | AFC-11003G                      | F317040033                     | N/A                              | N/A              | Jun. 26, 2024                  | N/A           | Conduction<br>(CO07-HY)  |
| Software             | Rohde & Schwarz | EMC32 V10.30                    | N/A                            | N/A                              | N/A              | Jun. 26, 2024                  | N/A           | Conduction<br>(CO07-HY)  |
| Pulse Limiter        | SCHWARZBECK     | VTSD 9561-F N                   | 9561-F<br>N00373               | 9kHz-200MHz                      | Oct. 20, 2023    | Jun. 26, 2024                  | Oct. 19, 2024 | Conduction<br>(CO07-HY)  |
| RF Cable             | HUBER + SUHNER  | RG 214/U                        | 1358175                        | 9kHz~30MHz                       | Mar. 14, 2024    | Jun. 26, 2024                  | Mar. 13, 2025 | Conduction<br>(CO07-HY)  |
| Two-Line V-Network   | TESEQ           | NNB 51                          | 45051                          | N/A                              | Mar. 10, 2024    | Jun. 26, 2024                  | Mar. 09, 2025 | Conduction<br>(CO07-HY)  |
| Four-Line V-Network  | TESEQ           | NNB 52                          | 36122                          | N/A                              | Mar. 07, 2024    | Jun. 26, 2024                  | Mar. 06, 2025 | Conduction<br>(CO07-HY)  |
| EMI Test Receiver    | Rohde & Schwarz | ESR3                            | 102317                         | 9kHz~3.6GHz                      | Sep. 20, 2023    | Jun. 26, 2024                  | Sep. 19, 2024 | Conduction<br>(CO07-HY)  |



| Instrument      | Brand Name      | Model No. | Serial No.                 | Characteristics | Calibration Date | Test Date                     | Due Date      | Remark                 |
|-----------------|-----------------|-----------|----------------------------|-----------------|------------------|-------------------------------|---------------|------------------------|
| Hygrometer      | TECPEL          | DTM-303A  | TP201996                   | N/A             | Nov. 07, 2023    | May 14, 2024~<br>May 19, 2024 | Nov. 06, 2024 | Conducted<br>(TH05-HY) |
| Power Sensor    | DARE            | RPR3006W  | 17I00015SNO<br>35 (NO:109) | 10MHz~6GHz      | Jan. 15, 2024    | May 14, 2024~<br>May 19, 2024 | Jan. 14, 2025 | Conducted<br>(TH05-HY) |
| Signal Analyzer | Rohde & Schwarz | FSV40     | 101566                     | 10Hz~40GHz      | Aug. 23, 2023    | May 14, 2024~<br>May 19, 2024 | Aug. 22, 2024 | Conducted<br>(TH05-HY) |

## 5 Measurement Uncertainty

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

|                                                                         |         |
|-------------------------------------------------------------------------|---------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 3.44 dB |
|-------------------------------------------------------------------------|---------|

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

|                                                                         |         |
|-------------------------------------------------------------------------|---------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 6.40 dB |
|-------------------------------------------------------------------------|---------|

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

|                                                                         |         |
|-------------------------------------------------------------------------|---------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 4.50 dB |
|-------------------------------------------------------------------------|---------|

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

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

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

|                                                                         |         |
|-------------------------------------------------------------------------|---------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 5.40 dB |
|-------------------------------------------------------------------------|---------|

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

|                |                       |                    |       |    |
|----------------|-----------------------|--------------------|-------|----|
| Test Engineer: | Sylvia Li             | Temperature:       | 21~25 | °C |
| Test Date:     | 2024/05/13~2024/05/19 | Relative Humidity: | 51~54 | %  |

&lt;Ant. 1&gt;

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

| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | 99% Occupied BW (MHz) | 6dB BW (MHz) | 6dB BW Limit (MHz) | Pass/Fail |
|------|-----------|-----|-----|-------------|-----------------------|--------------|--------------------|-----------|
| BLE  | 1Mbps     | 1   | 0   | 2402        | 1.019                 | 0.675        | 0.50               | Pass      |
| BLE  | 1Mbps     | 1   | 19  | 2440        | 1.019                 | 0.676        | 0.50               | Pass      |
| BLE  | 1Mbps     | 1   | 39  | 2480        | 1.019                 | 0.674        | 0.50               | Pass      |

**TEST RESULTS DATA**  
**Average Power Table**

| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | Average Conducted Power (dBm) | Conducted Power Limit (dBm) | DG (dBi) | EIRP Power (dBm) | EIRP Power Limit (dBm) | Pass /Fail |
|------|-----------|-----|-----|-------------|-------------------------------|-----------------------------|----------|------------------|------------------------|------------|
| BLE  | 1Mbps     | 1   | 0   | 2402        | 4.90                          | 30.00                       | 2.89     | 7.79             | 36.00                  | Pass       |
| BLE  | 1Mbps     | 1   | 19  | 2440        | 4.40                          | 30.00                       | 2.89     | 7.29             | 36.00                  | Pass       |
| BLE  | 1Mbps     | 1   | 39  | 2480        | 4.50                          | 30.00                       | 2.89     | 7.39             | 36.00                  | Pass       |

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

| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | Peak PSD (dBm /100kHz) | Peak PSD (dBm /3kHz) | DG (dBi) | Peak PSD Limit (dBm /3kHz) | Pass/Fail |
|------|-----------|-----|-----|-------------|------------------------|----------------------|----------|----------------------------|-----------|
| BLE  | 1Mbps     | 1   | 0   | 2402        | 4.54                   | -9.77                | 2.89     | 8.00                       | Pass      |
| BLE  | 1Mbps     | 1   | 19  | 2440        | 3.92                   | -10.35               | 2.89     | 8.00                       | Pass      |
| BLE  | 1Mbps     | 1   | 39  | 2480        | 4.69                   | -9.63                | 2.89     | 8.00                       | Pass      |

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 30dBc limit.

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

| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | 99% Occupied BW (MHz) | 6dB BW (MHz) | 6dB BW Limit (MHz) | Pass/Fail |
|------|-----------|-----|-----|-------------|-----------------------|--------------|--------------------|-----------|
| BLE  | 2Mbps     | 1   | 0   | 2402        | 1.998                 | 1.151        | 0.50               | Pass      |
| BLE  | 2Mbps     | 1   | 19  | 2440        | 1.998                 | 1.152        | 0.50               | Pass      |
| BLE  | 2Mbps     | 1   | 39  | 2480        | 2.002                 | 1.150        | 0.50               | Pass      |

**TEST RESULTS DATA**  
**Average Power Table**

| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | Average Conducted Power (dBm) | Conducted Power Limit (dBm) | DG (dBi) | EIRP Power (dBm) | EIRP Power Limit (dBm) | Pass /Fail |
|------|-----------|-----|-----|-------------|-------------------------------|-----------------------------|----------|------------------|------------------------|------------|
| BLE  | 2Mbps     | 1   | 0   | 2402        | 4.90                          | 30.00                       | 2.89     | 7.79             | 36.00                  | Pass       |
| BLE  | 2Mbps     | 1   | 19  | 2440        | 4.40                          | 30.00                       | 2.89     | 7.29             | 36.00                  | Pass       |
| BLE  | 2Mbps     | 1   | 39  | 2480        | 4.50                          | 30.00                       | 2.89     | 7.39             | 36.00                  | Pass       |

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

| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | Peak PSD (dBm /100kHz) | Peak PSD (dBm /3kHz) | DG (dBi) | Peak PSD Limit (dBm /3kHz) | Pass/Fail |
|------|-----------|-----|-----|-------------|------------------------|----------------------|----------|----------------------------|-----------|
| BLE  | 2Mbps     | 1   | 0   | 2402        | 4.50                   | -12.74               | 2.89     | 8.00                       | Pass      |
| BLE  | 2Mbps     | 1   | 19  | 2440        | 3.95                   | -13.26               | 2.89     | 8.00                       | Pass      |
| BLE  | 2Mbps     | 1   | 39  | 2480        | 4.71                   | -12.50               | 2.89     | 8.00                       | Pass      |

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 30dBc limit.

&lt;Ant. 2&gt;

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

| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | 99% Occupied BW (MHz) | 6dB BW (MHz) | 6dB BW Limit (MHz) | Pass/Fail |
|------|-----------|-----|-----|-------------|-----------------------|--------------|--------------------|-----------|
| BLE  | 1Mbps     | 1   | 0   | 2402        | 1.021                 | 0.677        | 0.50               | Pass      |
| BLE  | 1Mbps     | 1   | 19  | 2440        | 1.021                 | 0.676        | 0.50               | Pass      |
| BLE  | 1Mbps     | 1   | 39  | 2480        | 1.019                 | 0.676        | 0.50               | Pass      |

**TEST RESULTS DATA**  
**Average Power Table**

| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | Average Conducted Power (dBm) | Conducted Power Limit (dBm) | DG (dBi) | EIRP Power (dBm) | EIRP Power Limit (dBm) | Pass /Fail |
|------|-----------|-----|-----|-------------|-------------------------------|-----------------------------|----------|------------------|------------------------|------------|
| BLE  | 1Mbps     | 1   | 0   | 2402        | 3.90                          | 30.00                       | 2.98     | 6.88             | 36.00                  | Pass       |
| BLE  | 1Mbps     | 1   | 19  | 2440        | 4.40                          | 30.00                       | 2.98     | 7.38             | 36.00                  | Pass       |
| BLE  | 1Mbps     | 1   | 39  | 2480        | 4.00                          | 30.00                       | 2.98     | 6.98             | 36.00                  | Pass       |

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

| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | Peak PSD (dBm /100kHz) | Peak PSD (dBm /3kHz) | DG (dBi) | Peak PSD Limit (dBm /3kHz) | Pass/Fail |
|------|-----------|-----|-----|-------------|------------------------|----------------------|----------|----------------------------|-----------|
| BLE  | 1Mbps     | 1   | 0   | 2402        | 3.25                   | -11.01               | 2.98     | 8.00                       | Pass      |
| BLE  | 1Mbps     | 1   | 19  | 2440        | 3.65                   | -10.64               | 2.98     | 8.00                       | Pass      |
| BLE  | 1Mbps     | 1   | 39  | 2480        | 3.09                   | -11.16               | 2.98     | 8.00                       | Pass      |

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 30dBc limit.

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

| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | 99% Occupied BW (MHz) | 6dB BW (MHz) | 6dB BW Limit (MHz) | Pass/Fail |
|------|-----------|-----|-----|-------------|-----------------------|--------------|--------------------|-----------|
| BLE  | 2Mbps     | 1   | 0   | 2402        | 2.002                 | 1.152        | 0.50               | Pass      |
| BLE  | 2Mbps     | 1   | 19  | 2440        | 1.994                 | 1.147        | 0.50               | Pass      |
| BLE  | 2Mbps     | 1   | 39  | 2480        | 1.998                 | 1.152        | 0.50               | Pass      |

**TEST RESULTS DATA**  
**Average Power Table**

| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | Average Conducted Power (dBm) | Conducted Power Limit (dBm) | DG (dBi) | EIRP Power (dBm) | EIRP Power Limit (dBm) | Pass /Fail |
|------|-----------|-----|-----|-------------|-------------------------------|-----------------------------|----------|------------------|------------------------|------------|
| BLE  | 2Mbps     | 1   | 0   | 2402        | 3.80                          | 30.00                       | 2.98     | 6.78             | 36.00                  | Pass       |
| BLE  | 2Mbps     | 1   | 19  | 2440        | 4.30                          | 30.00                       | 2.98     | 7.28             | 36.00                  | Pass       |
| BLE  | 2Mbps     | 1   | 39  | 2480        | 4.00                          | 30.00                       | 2.98     | 6.98             | 36.00                  | Pass       |

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

| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | Peak PSD (dBm /100kHz) | Peak PSD (dBm /3kHz) | DG (dBi) | Peak PSD Limit (dBm /3kHz) | Pass/Fail |
|------|-----------|-----|-----|-------------|------------------------|----------------------|----------|----------------------------|-----------|
| BLE  | 2Mbps     | 1   | 0   | 2402        | 3.23                   | -13.97               | 2.98     | 8.00                       | Pass      |
| BLE  | 2Mbps     | 1   | 19  | 2440        | 3.62                   | -13.60               | 2.98     | 8.00                       | Pass      |
| BLE  | 2Mbps     | 1   | 39  | 2480        | 3.10                   | -14.11               | 2.98     | 8.00                       | Pass      |

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 30dBc limit.

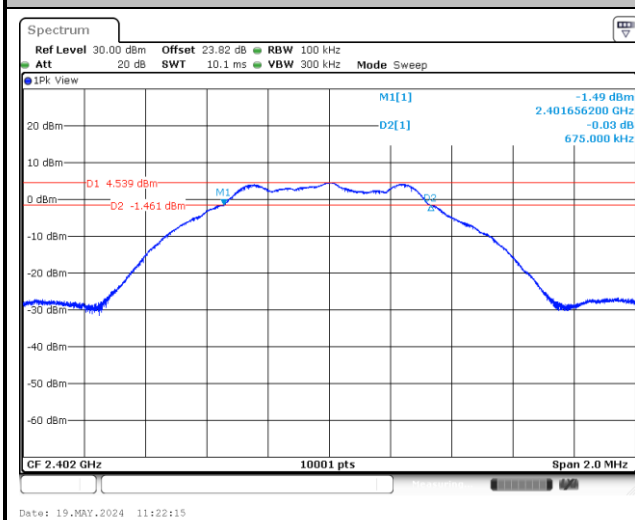


&lt;Ant. 1&gt;

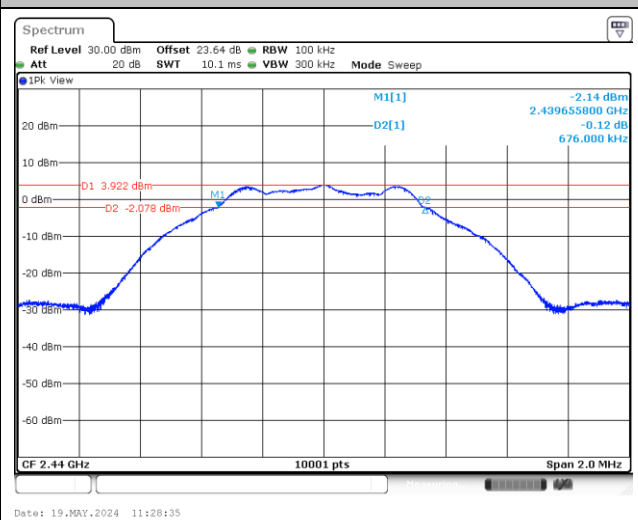
**6dB Bandwidth**

&lt;1Mbps&gt;

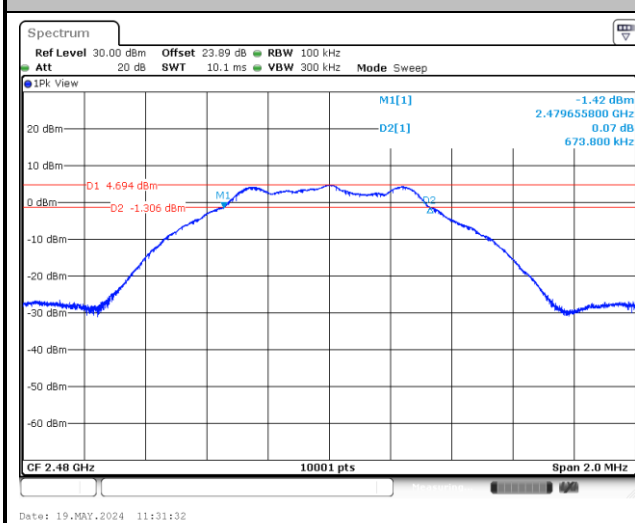
6 dB Bandwidth Plot on Channel 00



6 dB Bandwidth Plot on Channel 19



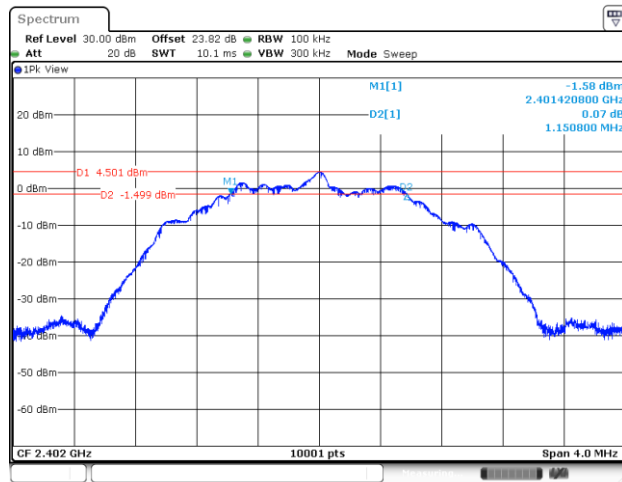
6 dB Bandwidth Plot on Channel 39



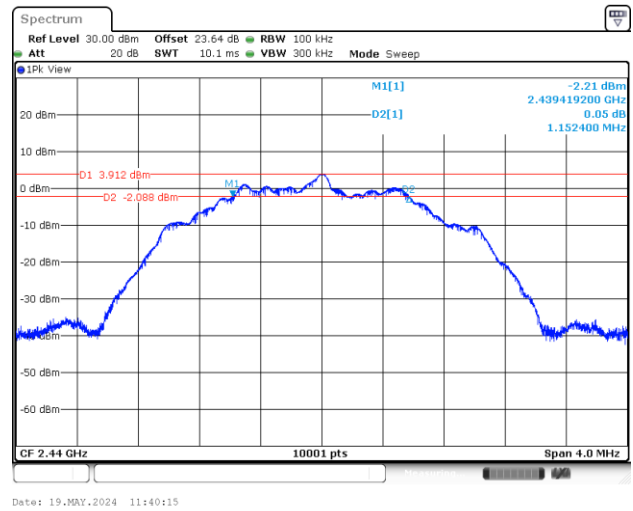


&lt;2Mbps&gt;

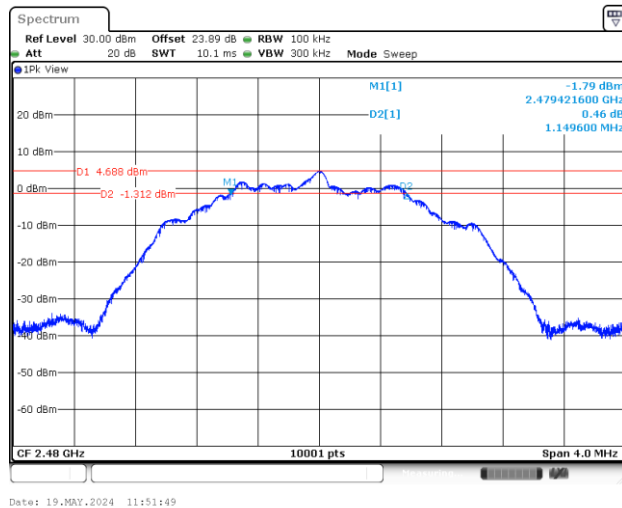
6 dB Bandwidth Plot on Channel 00



6 dB Bandwidth Plot on Channel 19



6 dB Bandwidth Plot on Channel 39

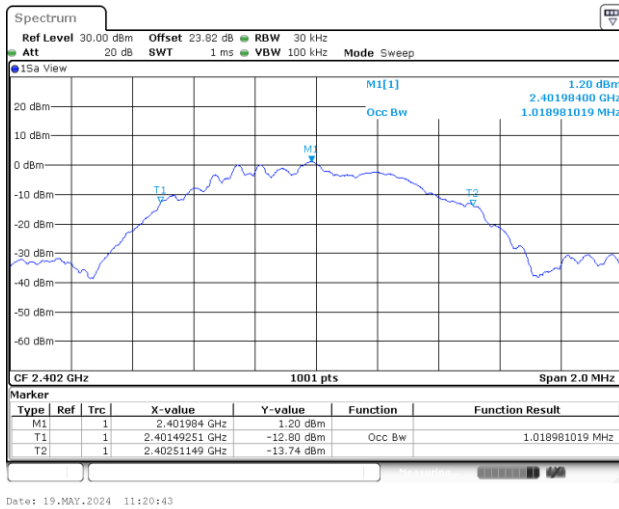




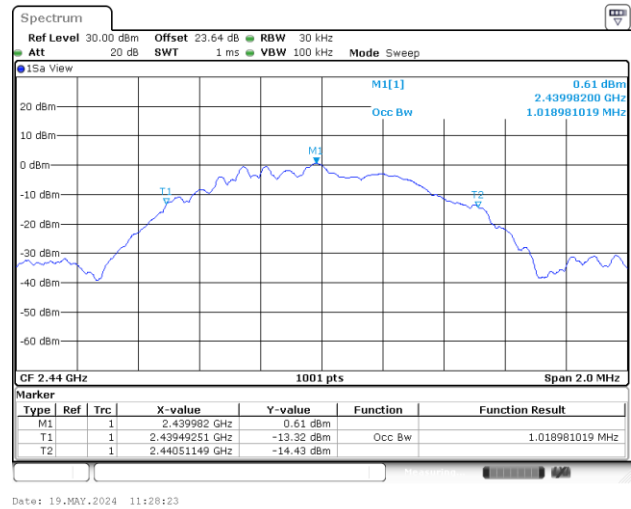
## 99% Occupied Bandwidth

&lt;1Mbps&gt;

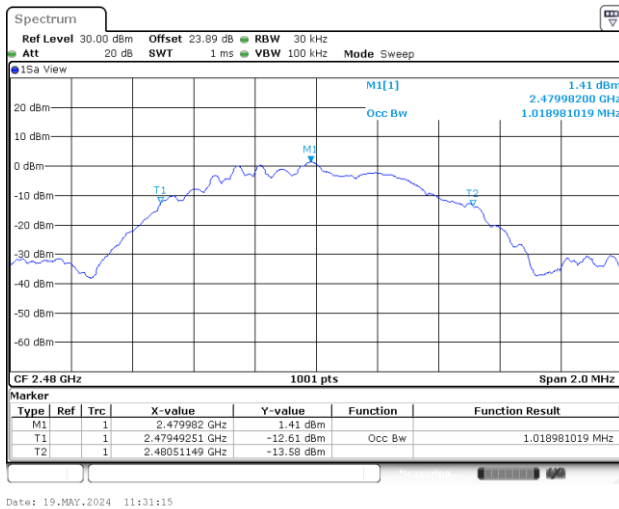
99% Occupied Bandwidth Plot on Channel 00



99% Occupied Bandwidth Plot on Channel 19



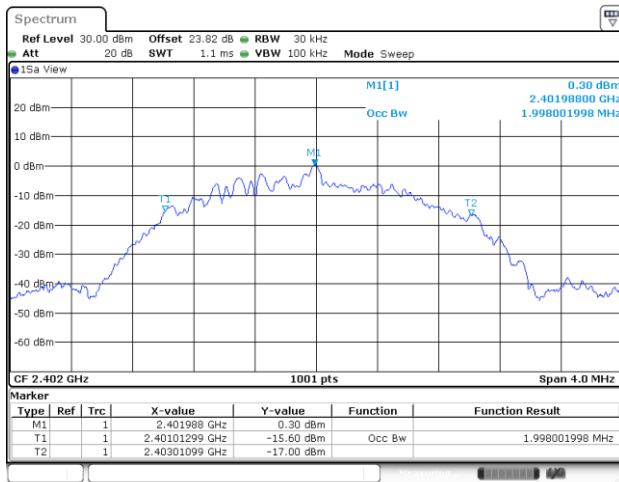
99% Occupied Bandwidth Plot on Channel 39



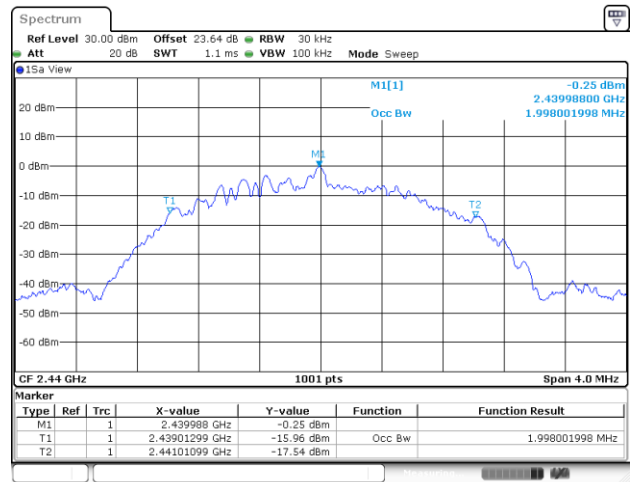


&lt;2Mbps&gt;

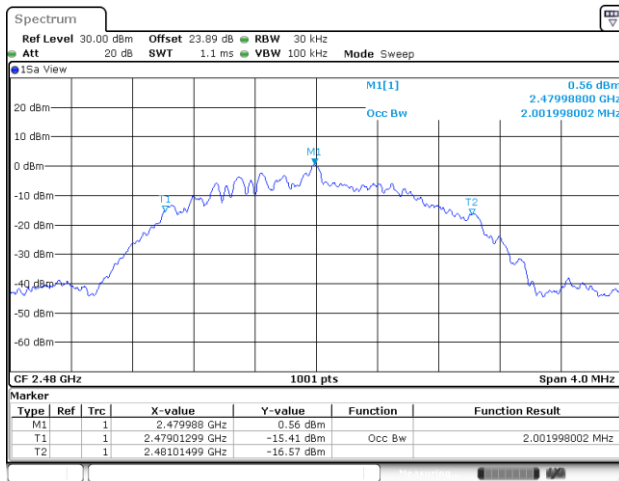
## 99% Occupied Bandwidth Plot on Channel 00



## 99% Occupied Bandwidth Plot on Channel 19



## 99% Occupied Bandwidth Plot on Channel 39

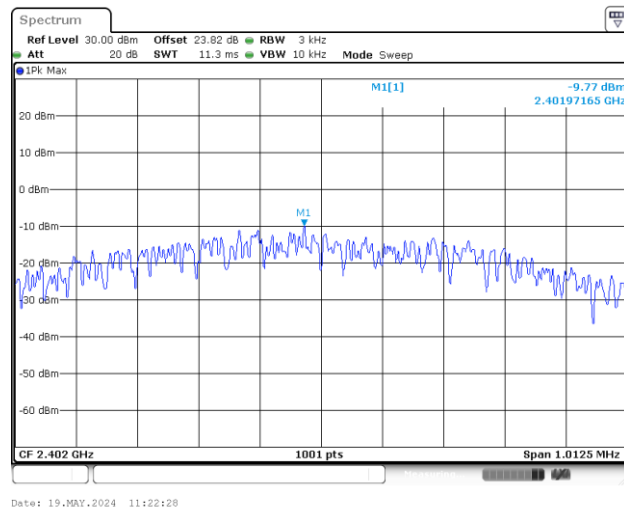




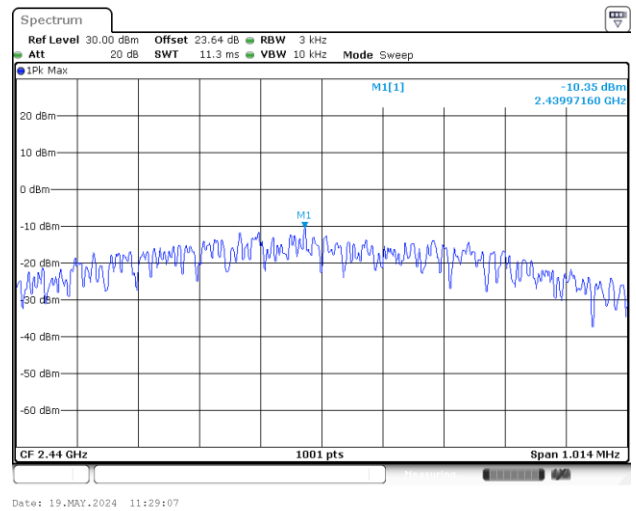
## Power Spectral Density (dBm/3kHz)

&lt;1Mbps&gt;

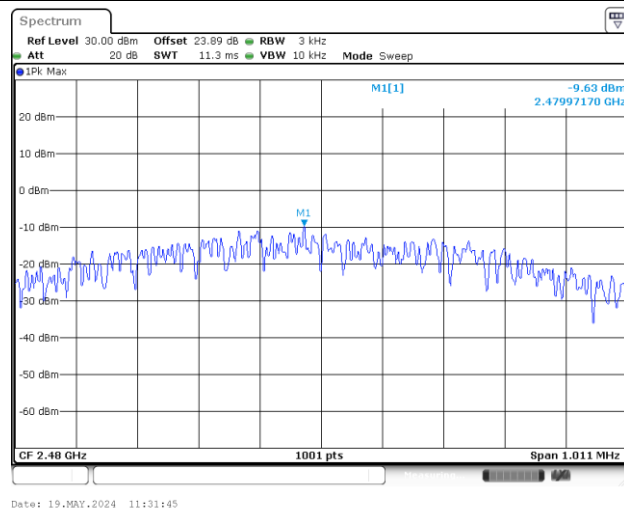
Power Density (dBm/3kHz) Plot Channel 00



Power Density (dBm/3kHz) Plot Channel 19



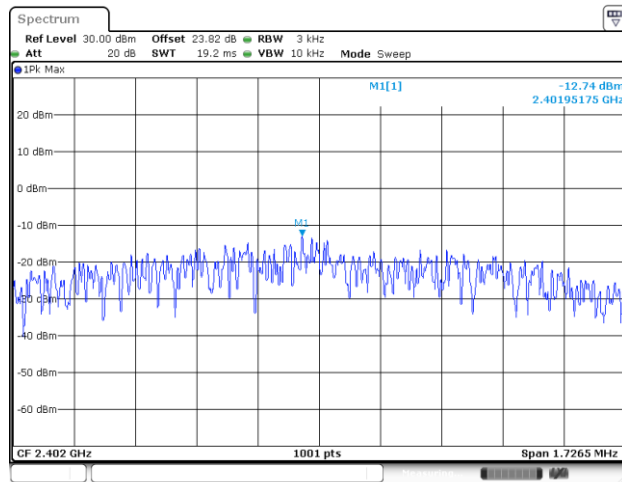
Power Density (dBm/3kHz) Plot Channel 39



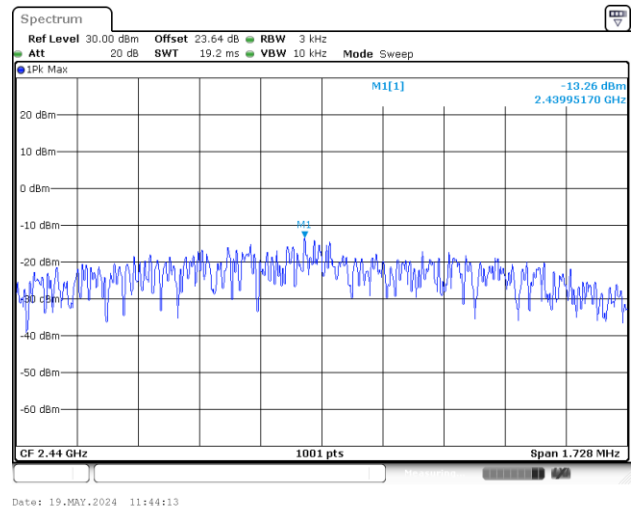


&lt;2Mbps&gt;

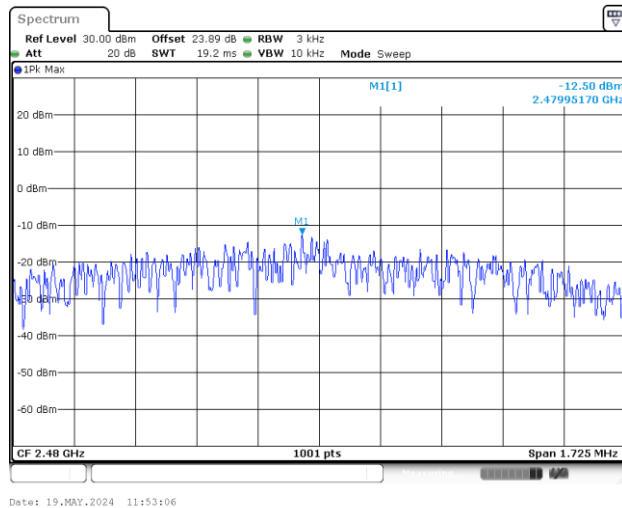
Power Density (dBm/3kHz) Plot Channel 00



Power Density (dBm/3kHz) Plot Channel 19



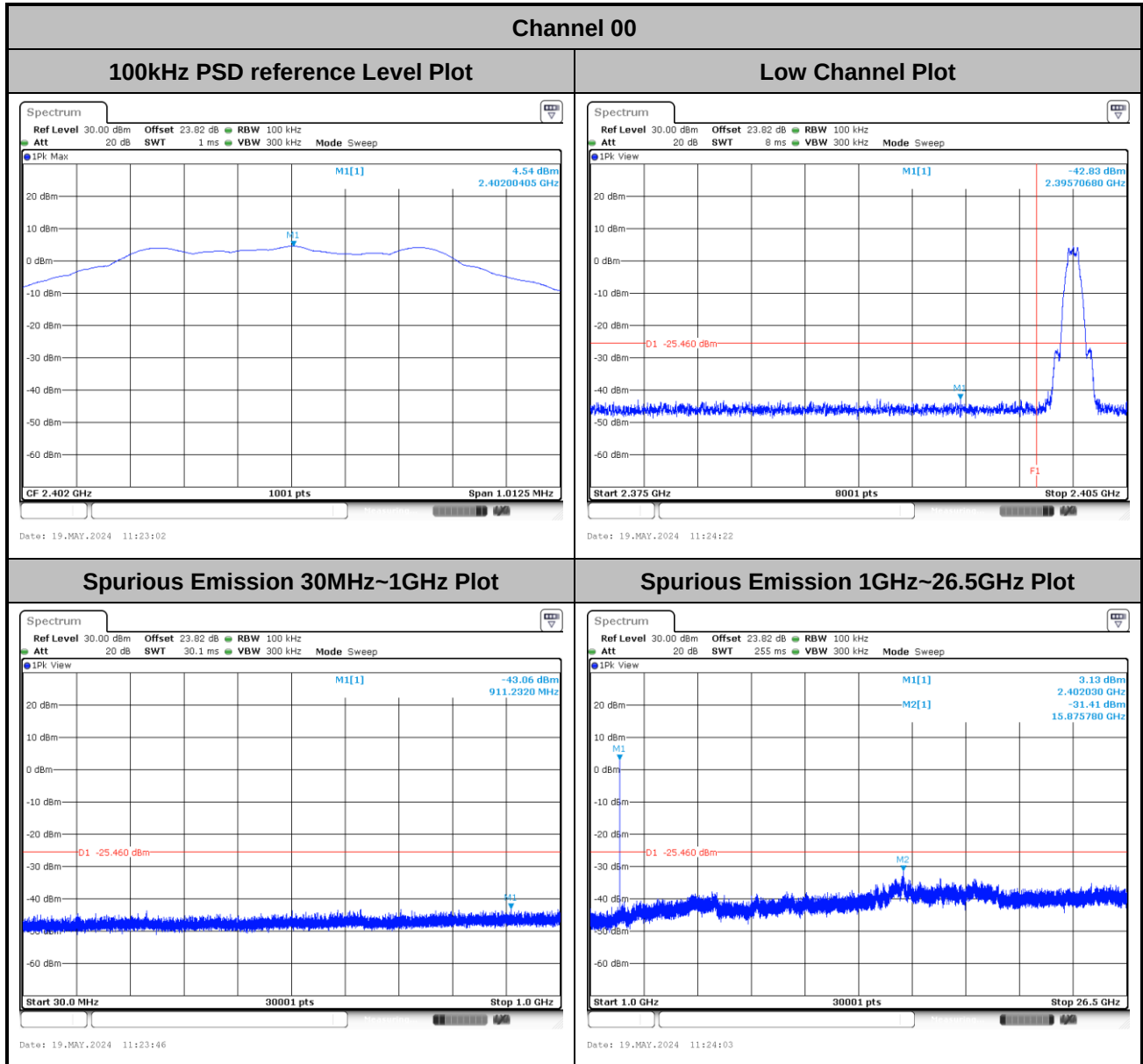
Power Density (dBm/3kHz) Plot Channel 39





## Band Edge and Conducted Spurious Emission

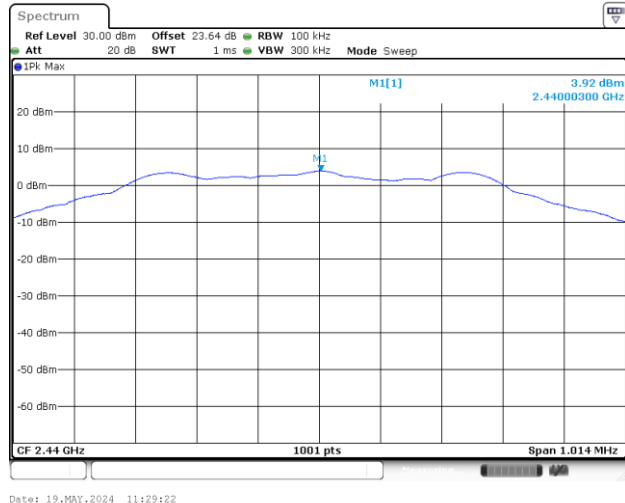
&lt;1Mbps&gt;





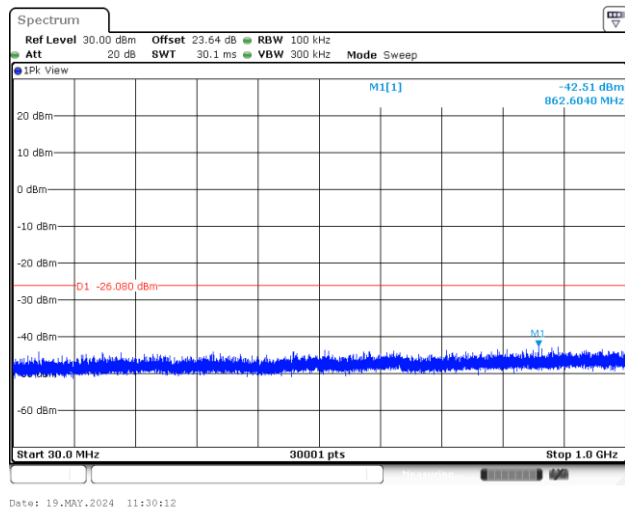
## Channel 19

## 100kHz PSD reference Level Plot

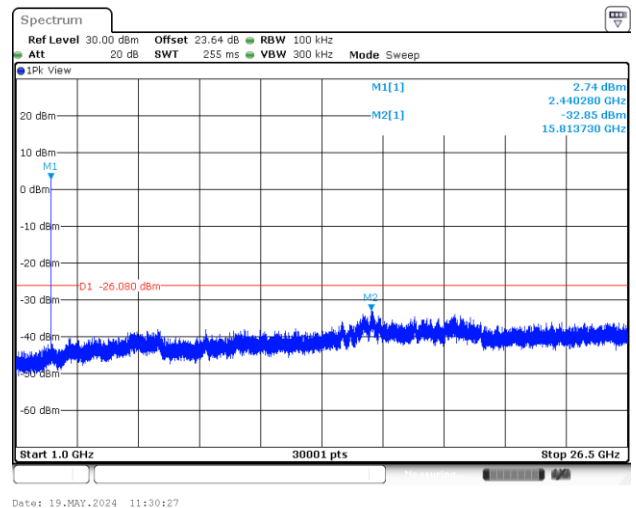


## Mid Channel Plot

## Spurious Emission 30MHz~1GHz Plot



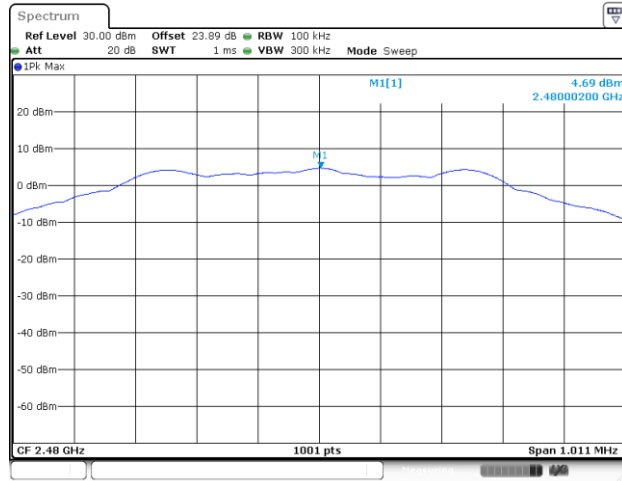
## Spurious Emission 1GHz~26.5GHz Plot



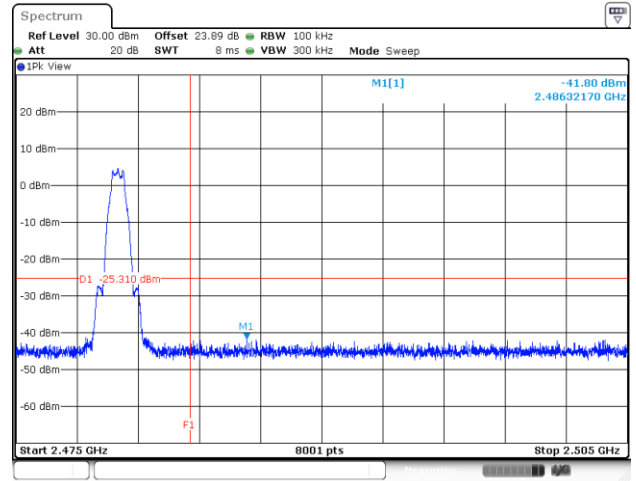


## Channel 39

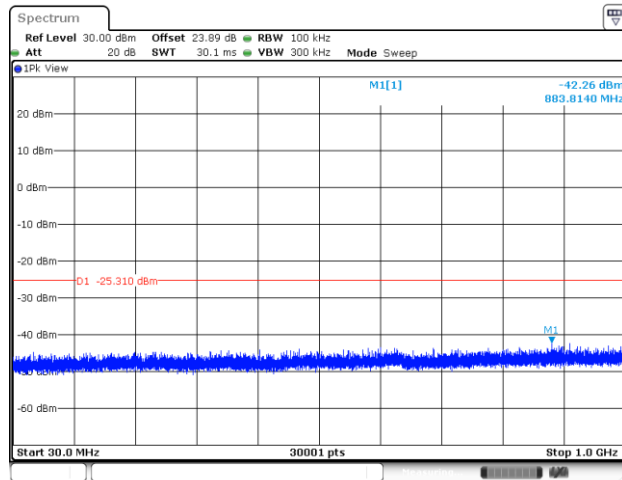
## 100kHz PSD reference Level Plot



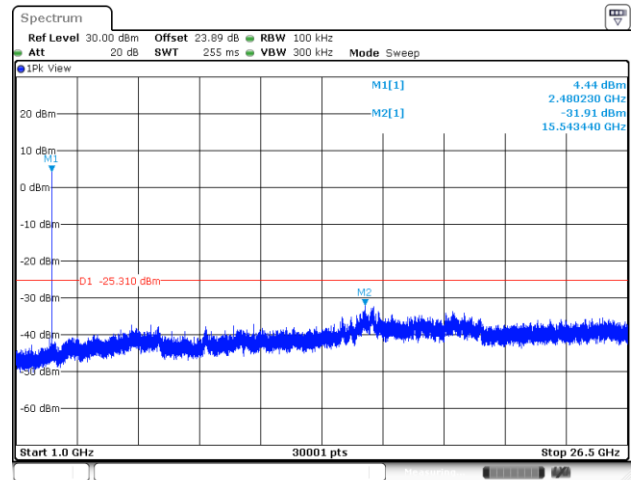
## High Channel Plot



## Spurious Emission 30MHz~1GHz Plot

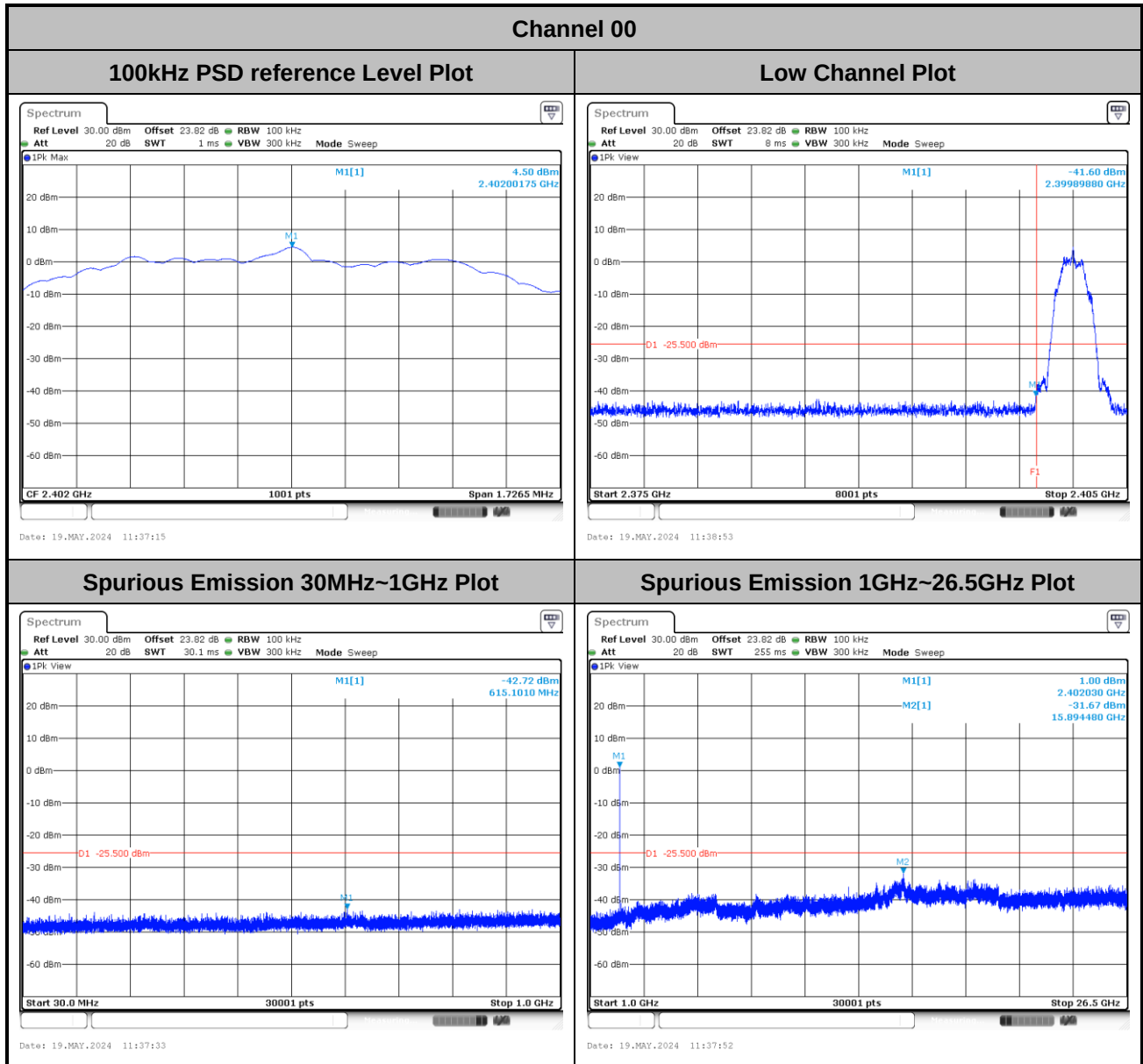


## Spurious Emission 1GHz~26.5GHz Plot





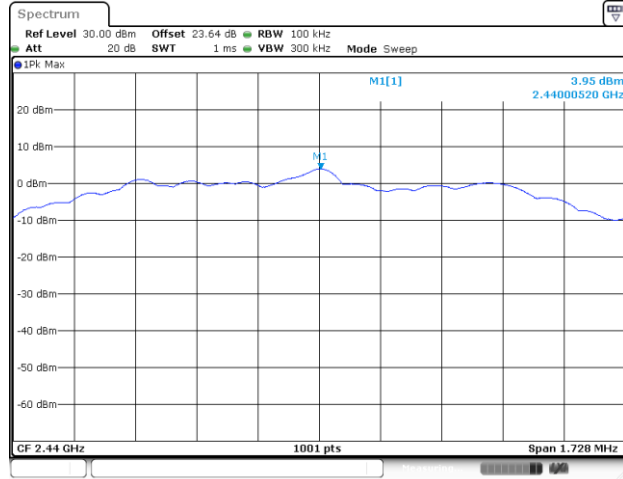
&lt;2Mbps&gt;





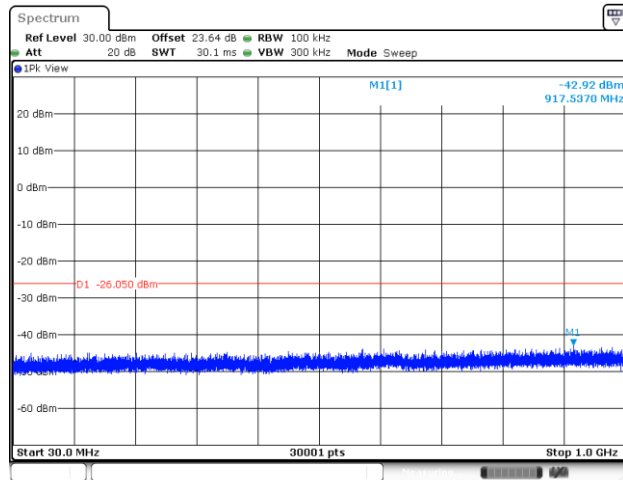
## Channel 19

## 100kHz PSD reference Level Plot

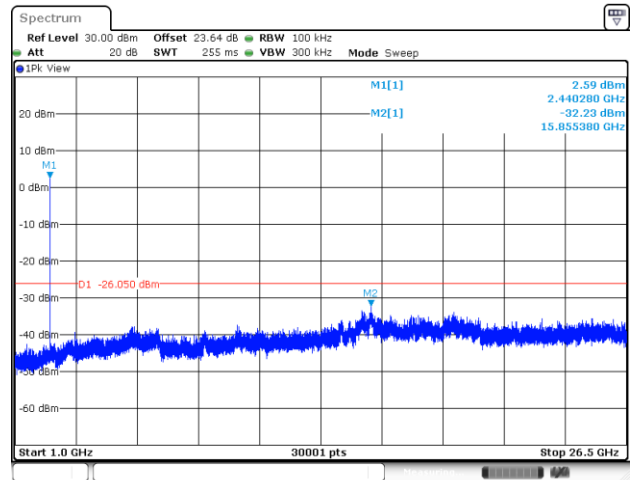


## Mid Channel Plot

## Spurious Emission 30MHz~1GHz Plot



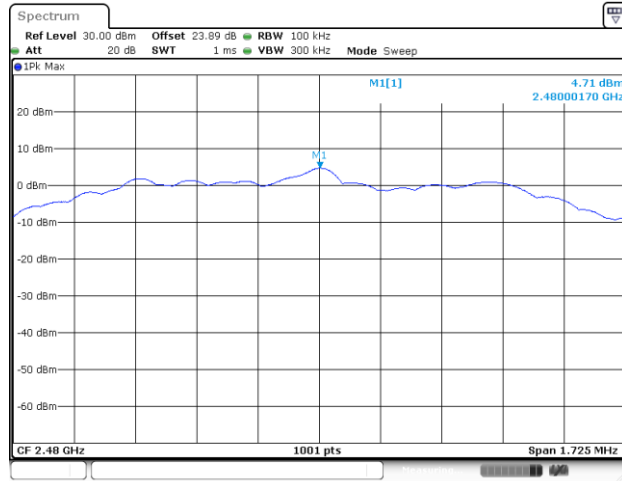
## Spurious Emission 1GHz~26.5GHz Plot



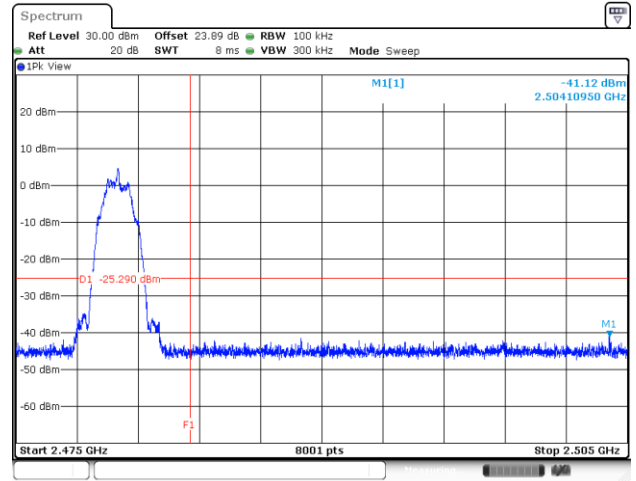


## Channel 39

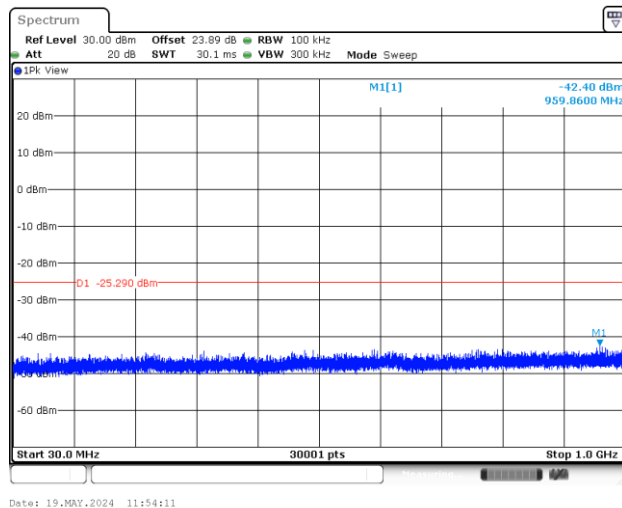
## 100kHz PSD reference Level Plot



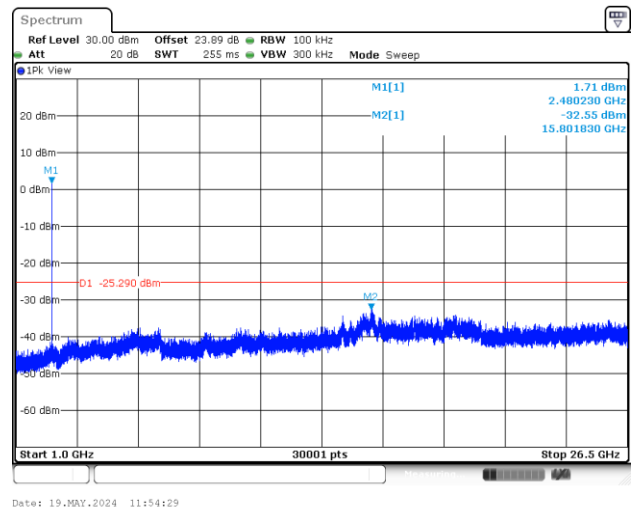
## High Channel Plot



## Spurious Emission 30MHz~1GHz Plot



## Spurious Emission 1GHz~26.5GHz Plot



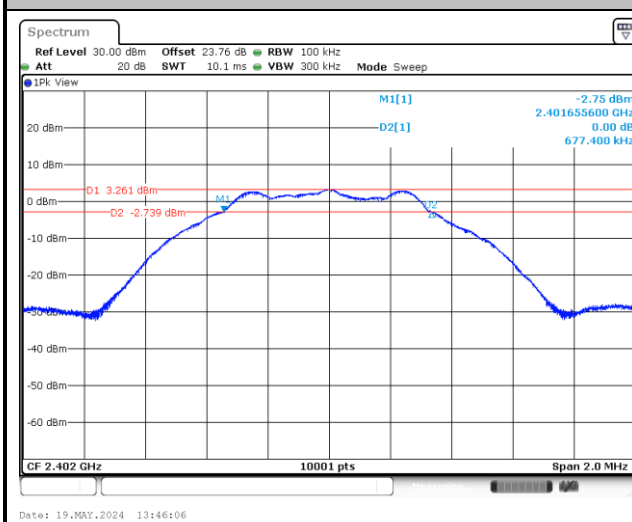


&lt;Ant. 2&gt;

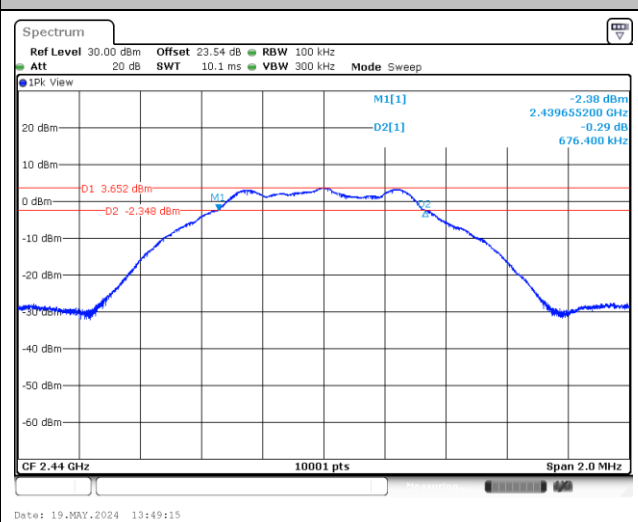
**6dB Bandwidth**

&lt;1Mbps&gt;

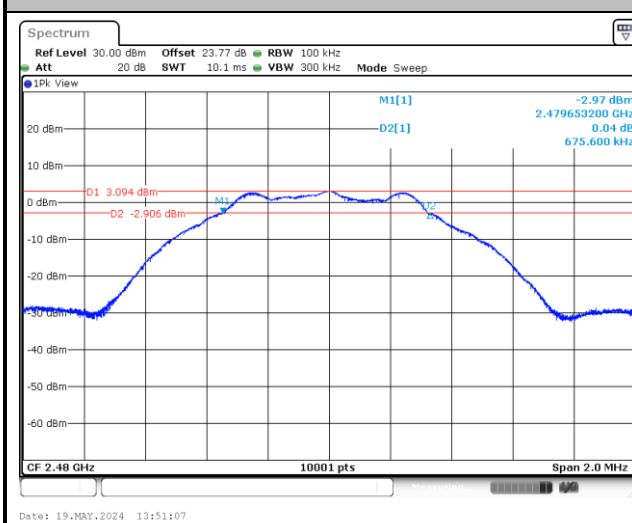
6 dB Bandwidth Plot on Channel 00



6 dB Bandwidth Plot on Channel 19

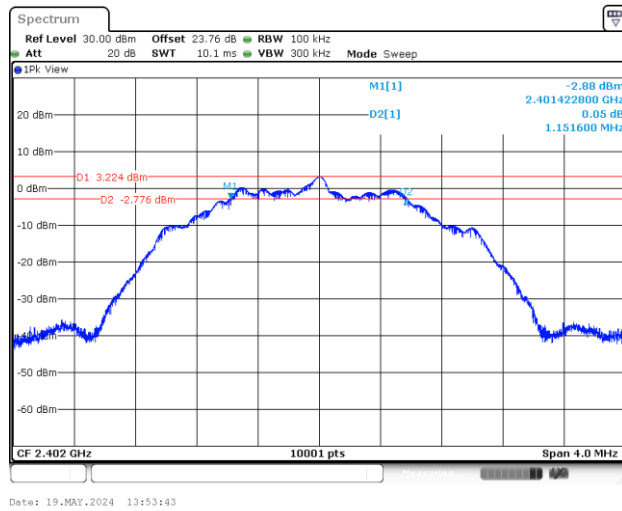


6 dB Bandwidth Plot on Channel 39

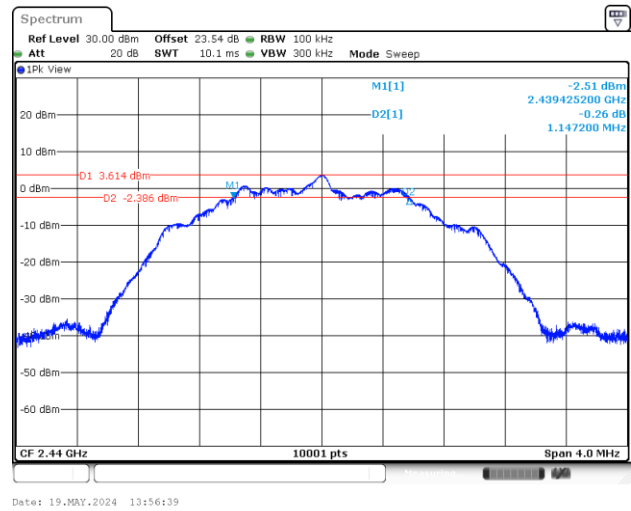


<2Mbps>

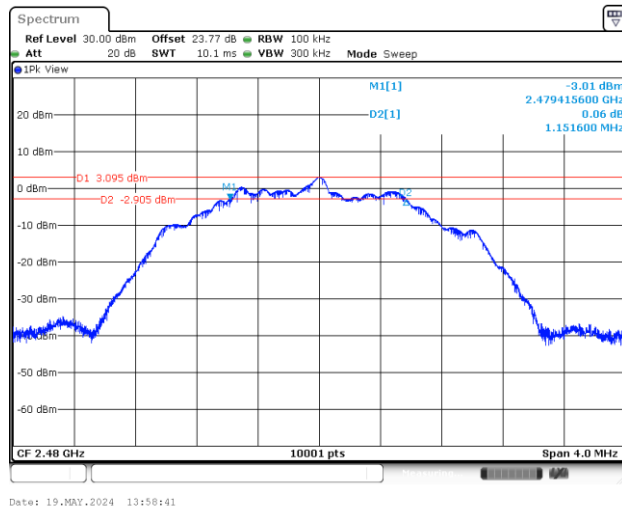
6 dB Bandwidth Plot on Channel 00



6 dB Bandwidth Plot on Channel 19

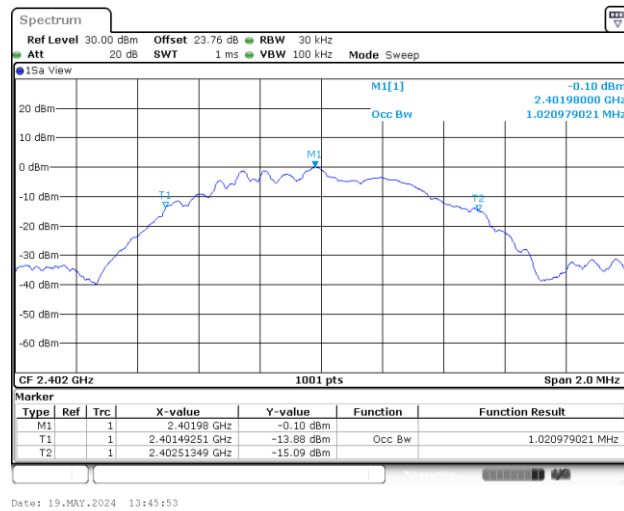
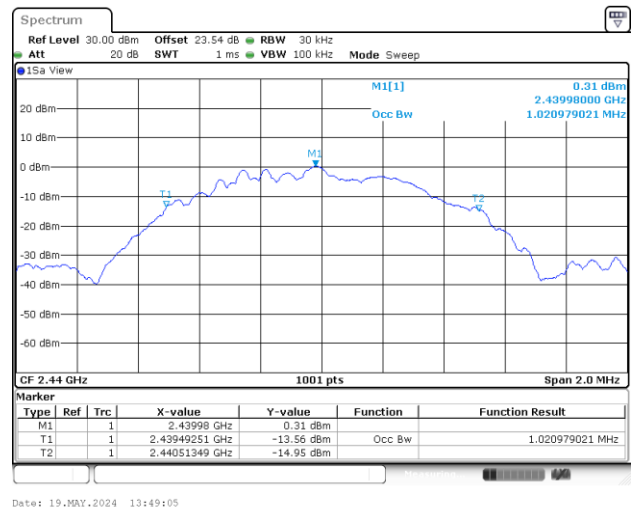
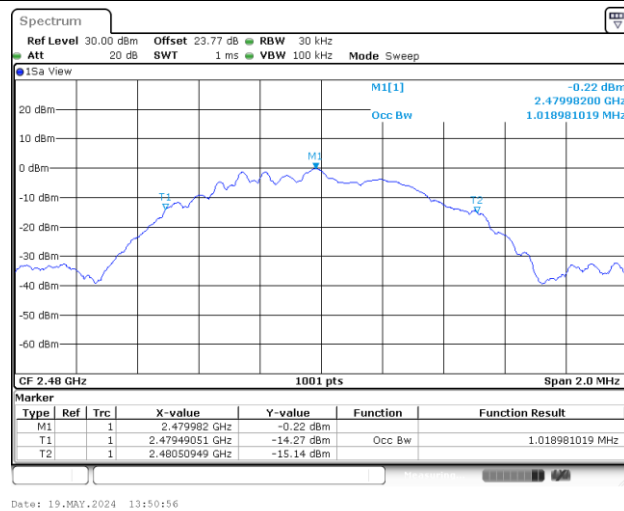


6 dB Bandwidth Plot on Channel 39



**99% Occupied Bandwidth**

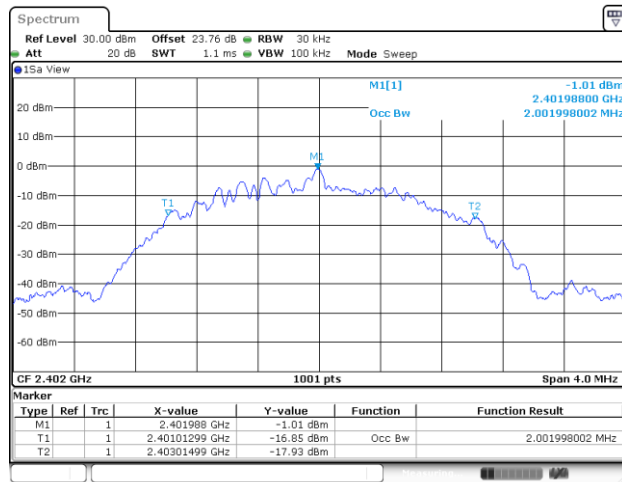
&lt;1Mbps&gt;

**99% Occupied Bandwidth Plot on Channel 00****99% Occupied Bandwidth Plot on Channel 19****99% Occupied Bandwidth Plot on Channel 39**

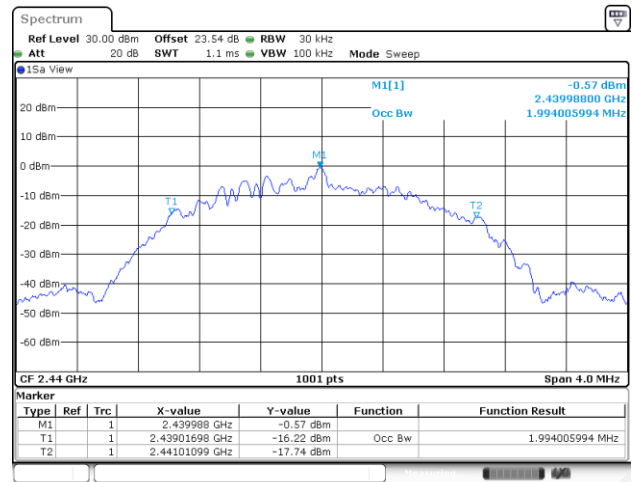


&lt;2Mbps&gt;

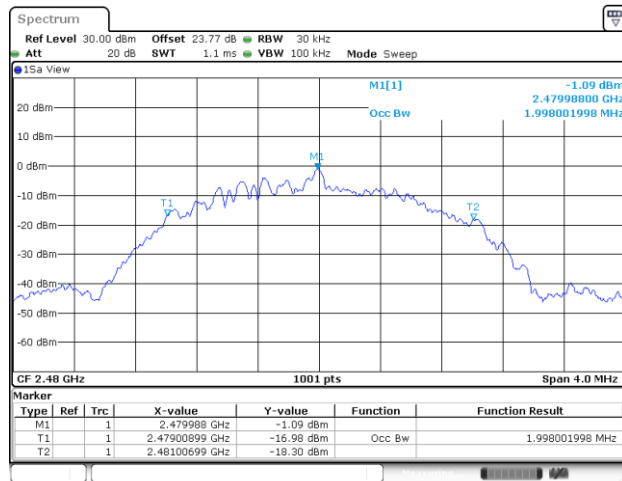
## 99% Occupied Bandwidth Plot on Channel 00



## 99% Occupied Bandwidth Plot on Channel 19



## 99% Occupied Bandwidth Plot on Channel 39

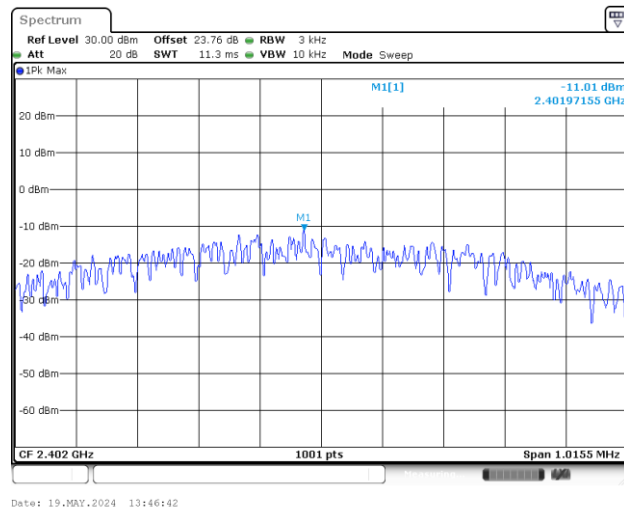




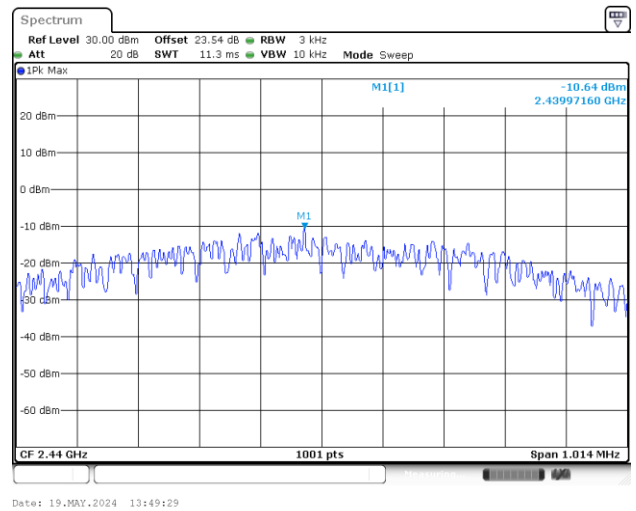
## Power Spectral Density (dBm/3kHz)

&lt;1Mbps&gt;

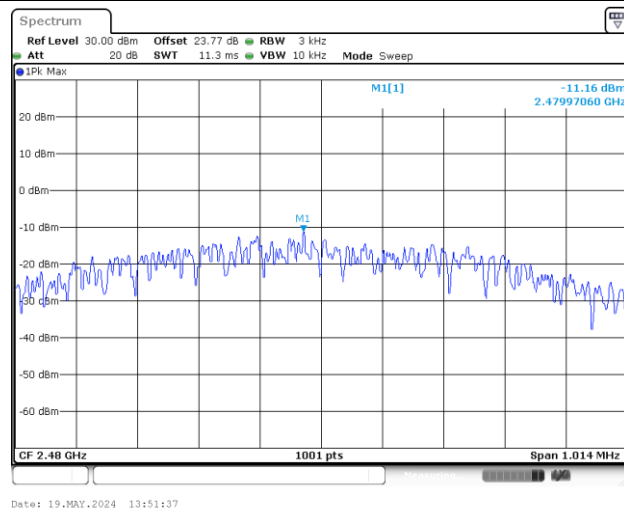
Power Density (dBm/3kHz) Plot Channel 00



Power Density (dBm/3kHz) Plot Channel 19



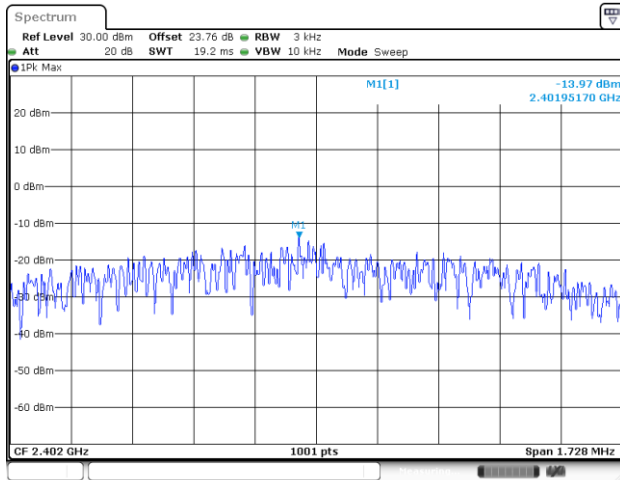
Power Density (dBm/3kHz) Plot Channel 39





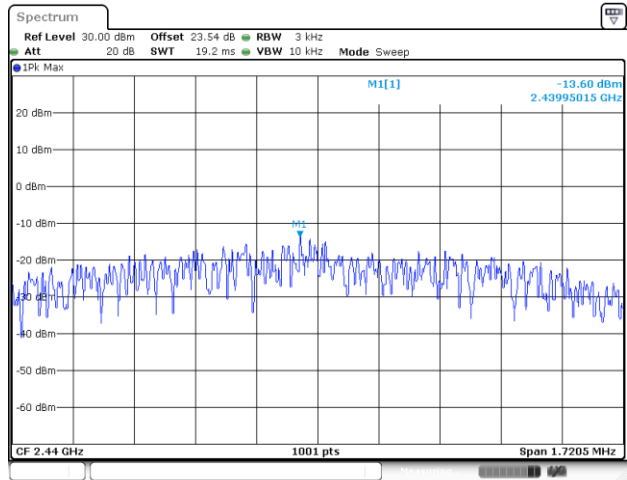
<2Mbps>

Power Density (dBm/3kHz) Plot Channel 00



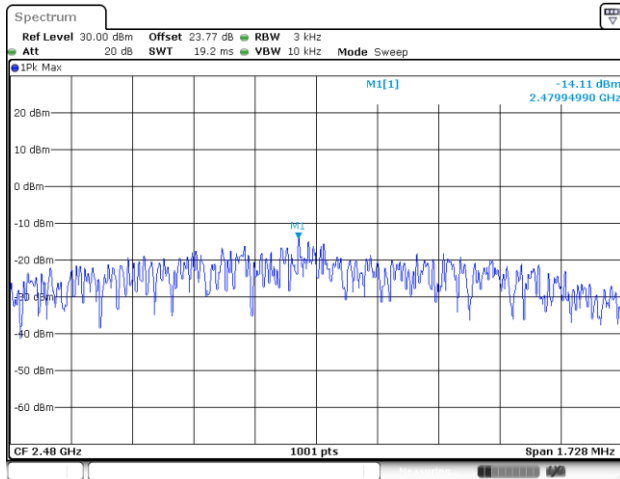
Date: 19.MAY.2024 13:54:14

Power Density (dBm/3kHz) Plot Channel 19



Date: 19.MAY.2024 13:56:49

Power Density (dBm/3kHz) Plot Channel 39

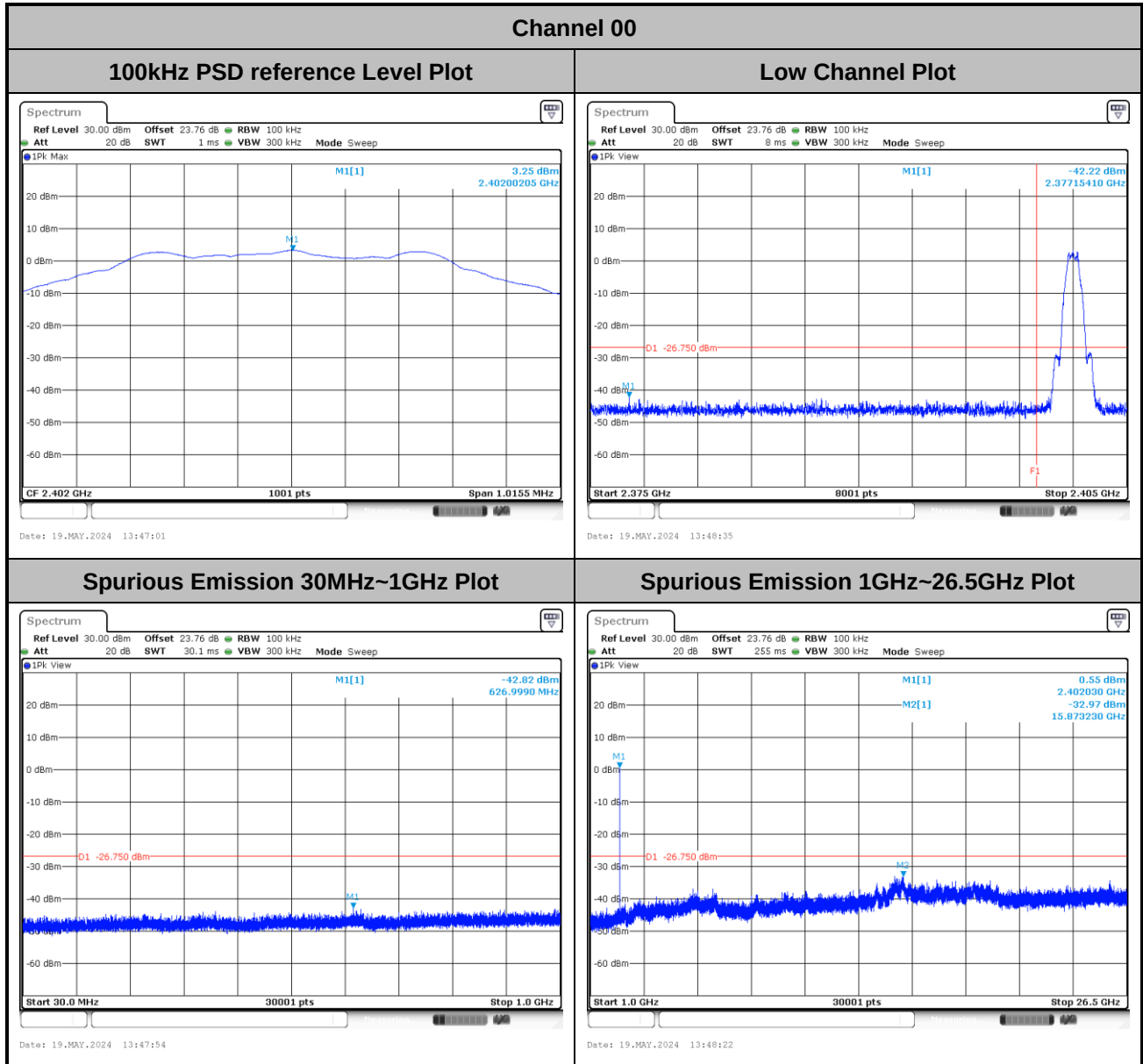


Date: 19.MAY.2024 13:58:51



## Band Edge and Conducted Spurious Emission

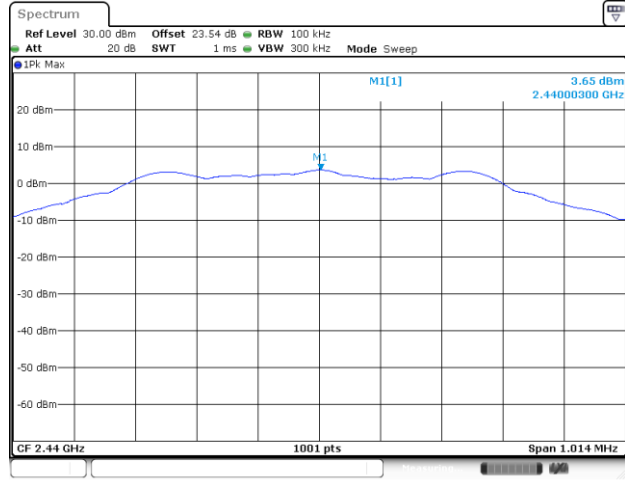
&lt;1Mbps&gt;





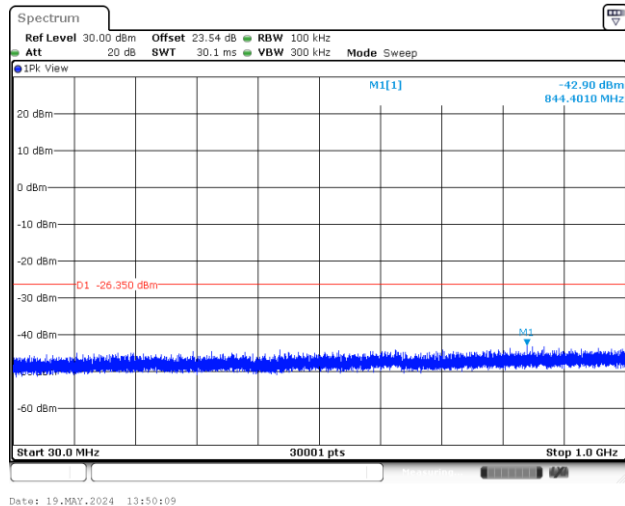
## Channel 19

## 100kHz PSD reference Level Plot

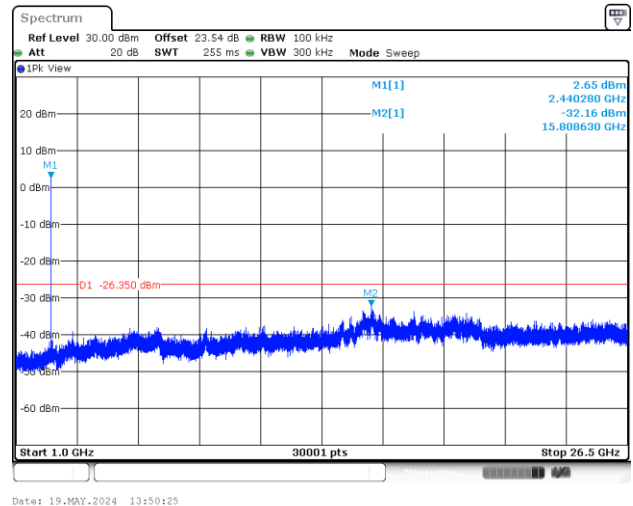


## Mid Channel Plot

## Spurious Emission 30MHz~1GHz Plot



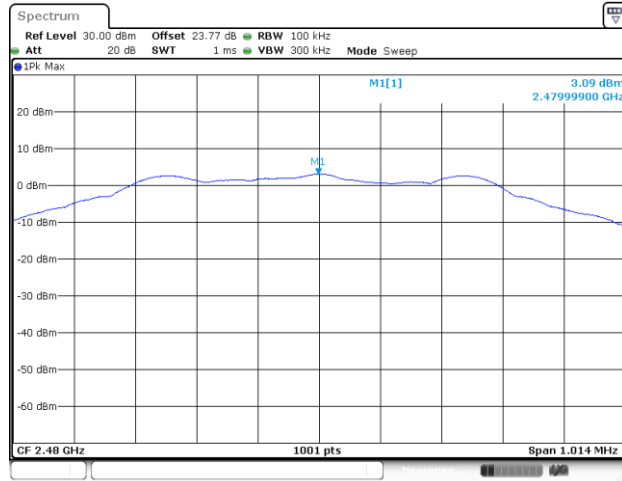
## Spurious Emission 1GHz~26.5GHz Plot



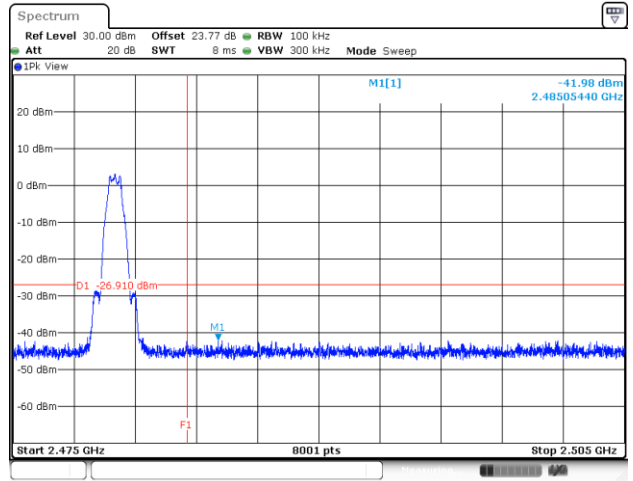


## Channel 39

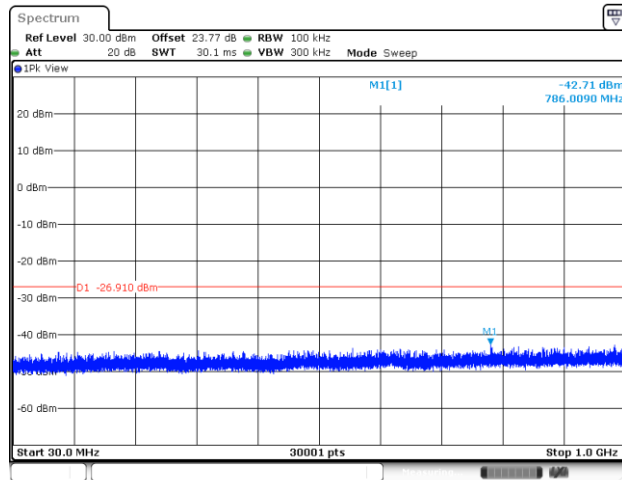
## 100kHz PSD reference Level Plot



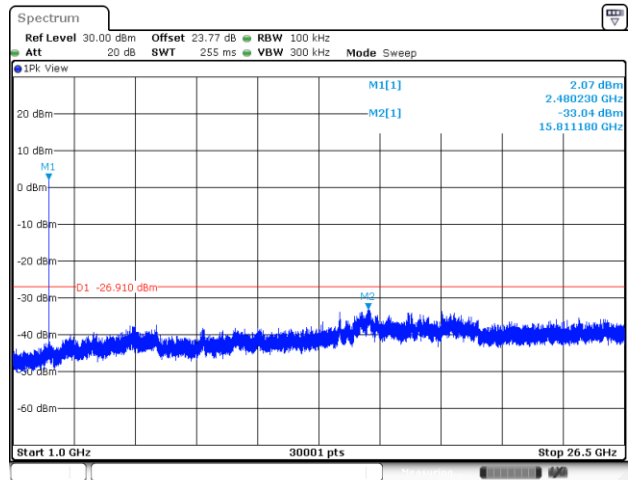
## High Channel Plot



## Spurious Emission 30MHz~1GHz Plot

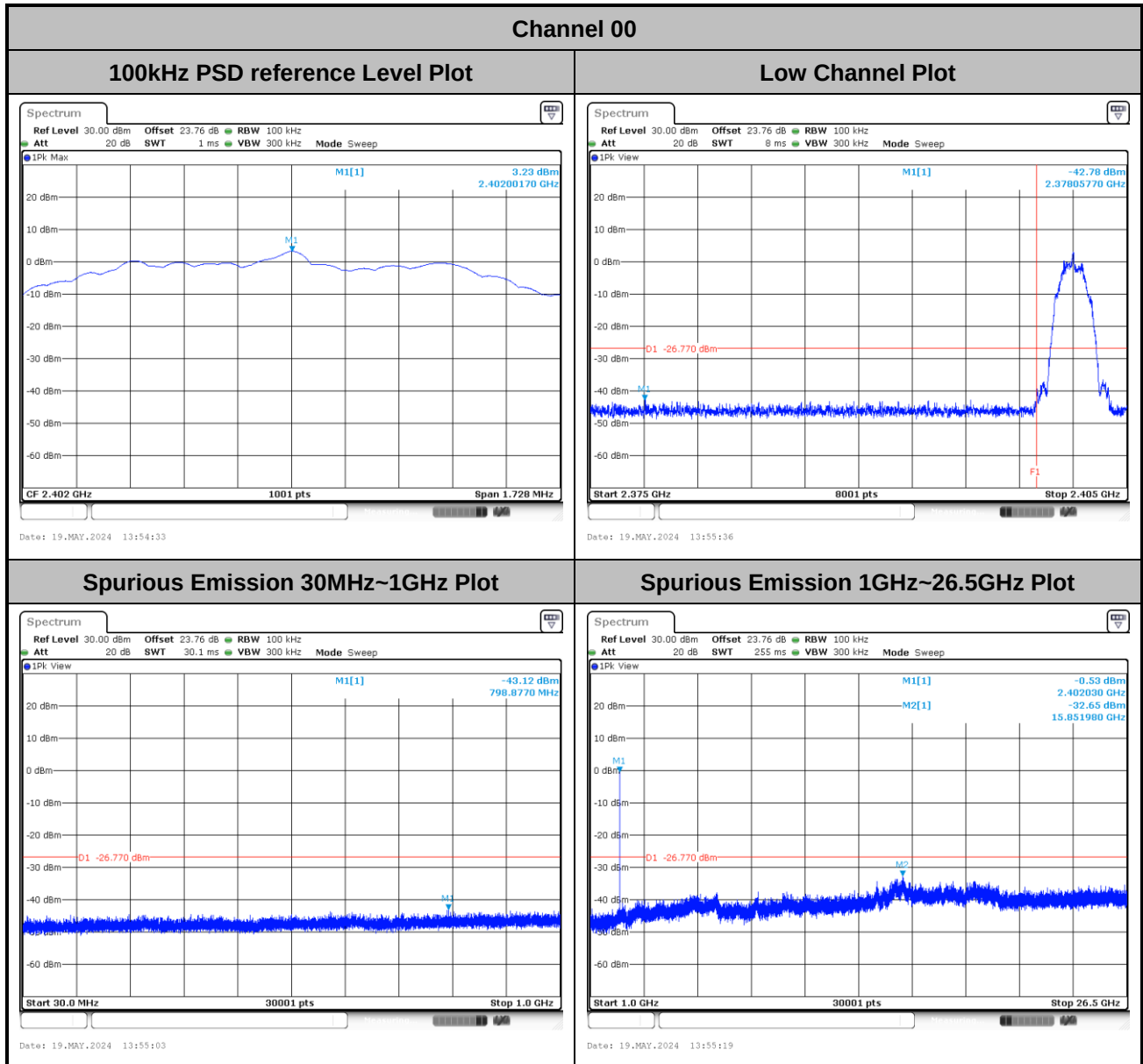


## Spurious Emission 1GHz~26.5GHz Plot





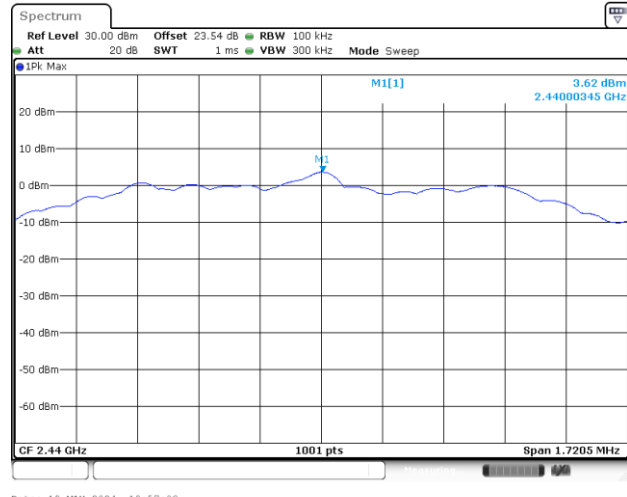
&lt;2Mbps&gt;





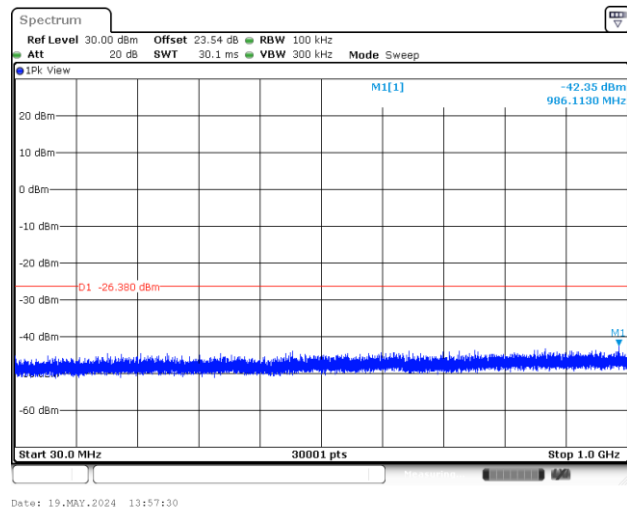
## Channel 19

## 100kHz PSD reference Level Plot

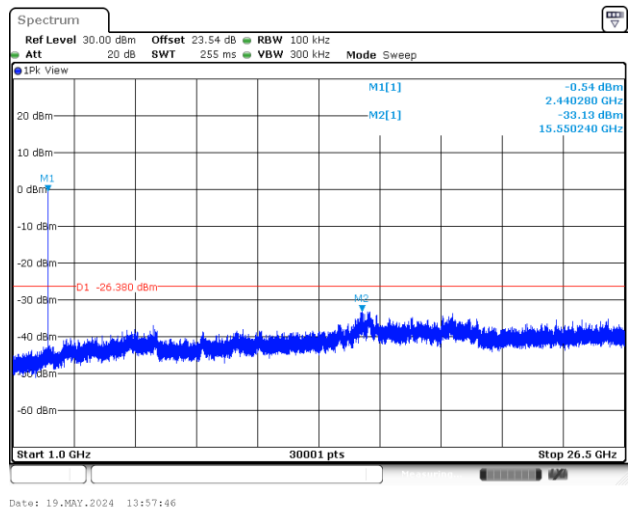


## Mid Channel Plot

## Spurious Emission 30MHz~1GHz Plot



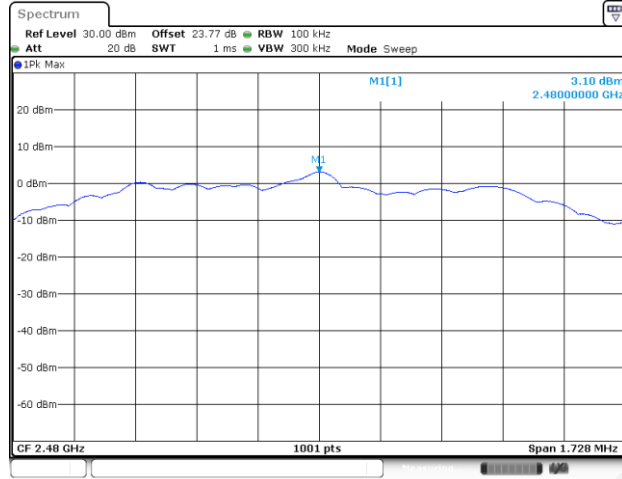
## Spurious Emission 1GHz~26.5GHz Plot



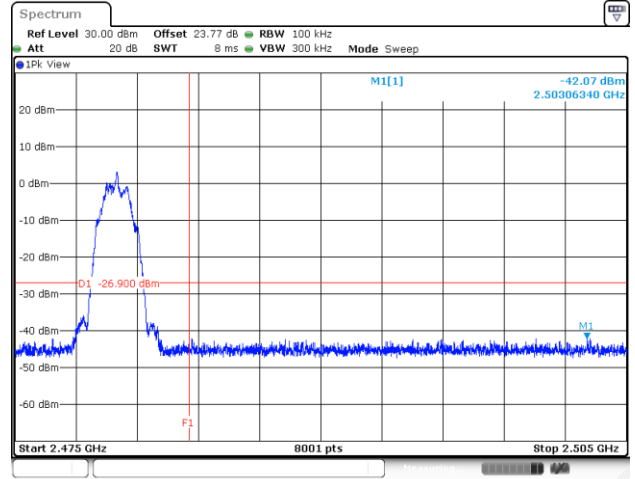


## Channel 39

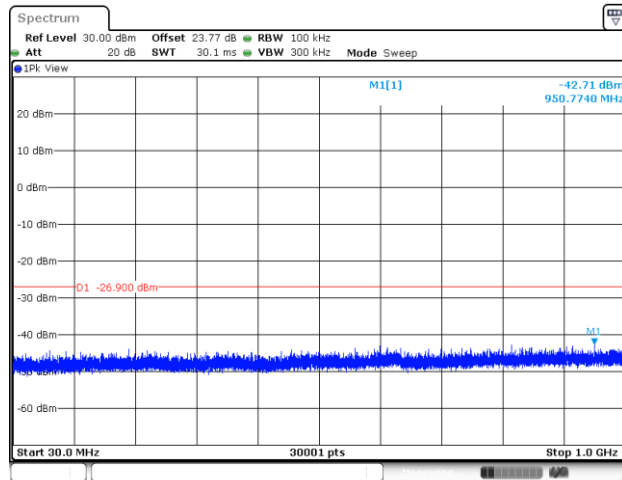
## 100kHz PSD reference Level Plot



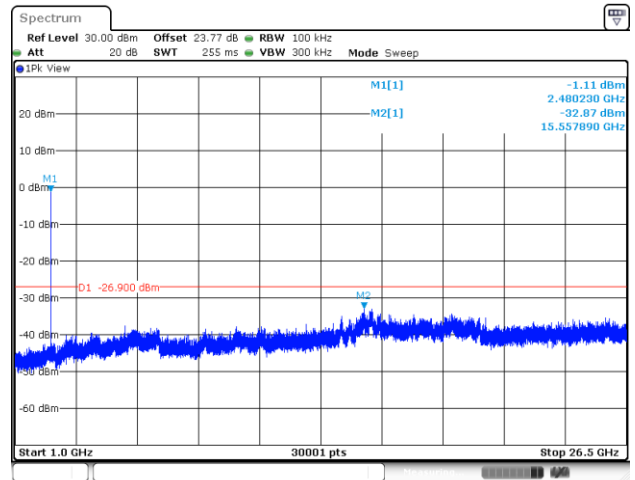
## High Channel Plot



## Spurious Emission 30MHz~1GHz Plot



## Spurious Emission 1GHz~26.5GHz Plot





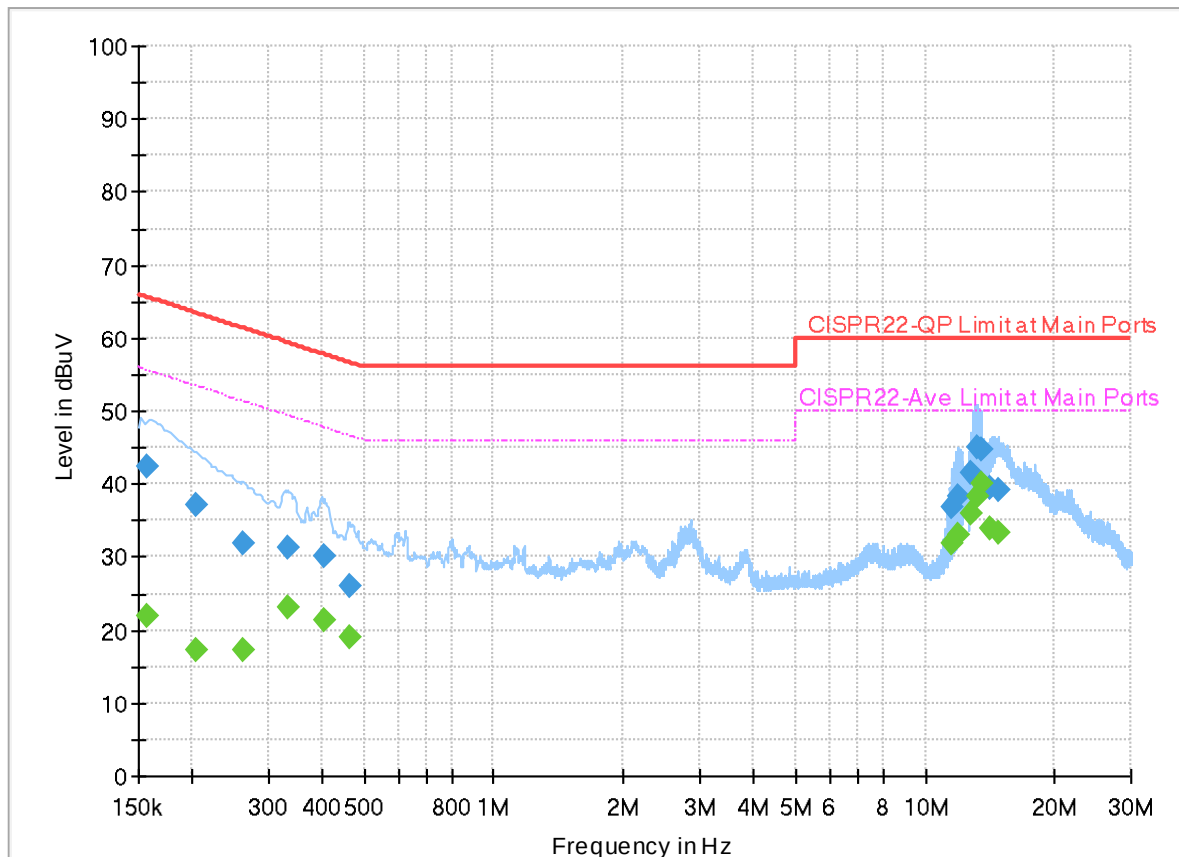
## Appendix B. AC Conducted Emission Test Results

|                 |             |                     |             |
|-----------------|-------------|---------------------|-------------|
| Test Engineer : | Louis Chung | Temperature :       | 22.3~24.7°C |
|                 |             | Relative Humidity : | 40.4~48.9%  |

## EUT Information

Report NO : 450111  
Test Mode : Mode 1  
Test Voltage : 120Vac/60Hz  
Phase : Line

Full Spectrum



## Final\_Result

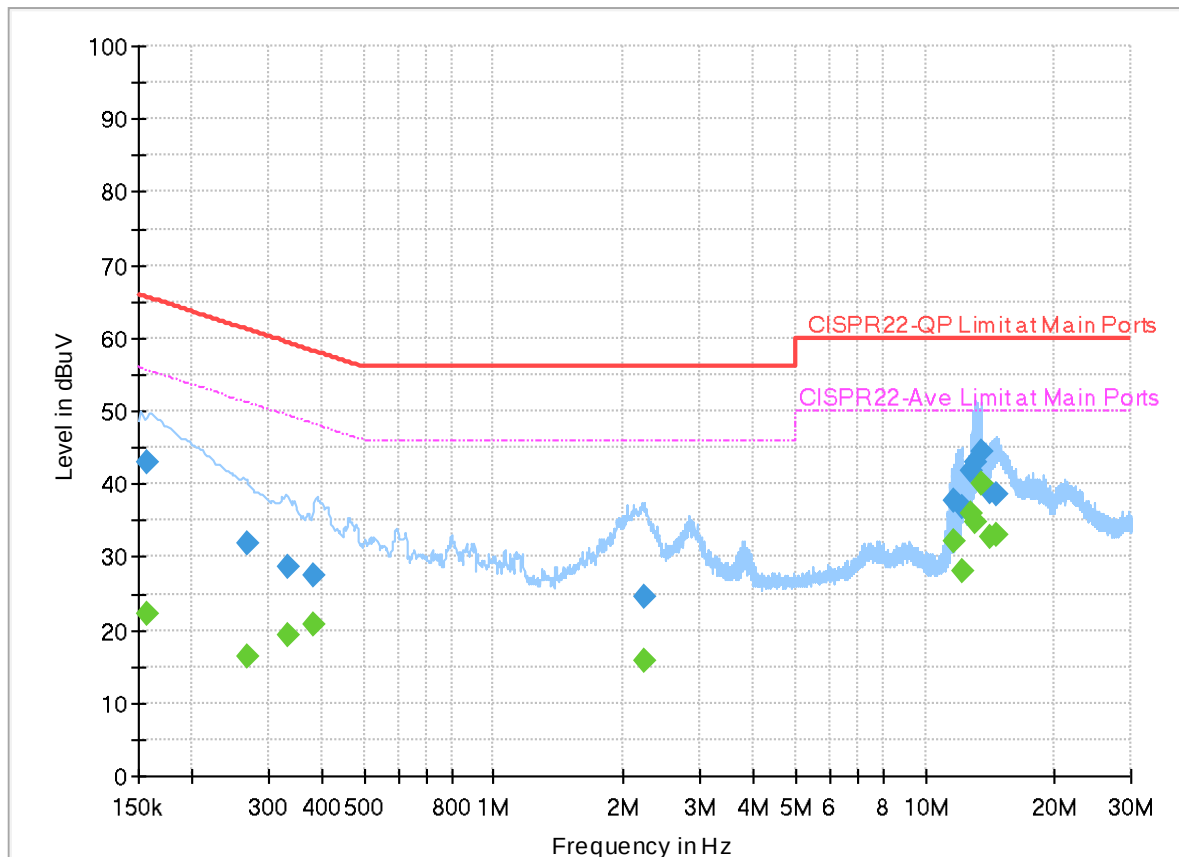
| Frequency (MHz) | QuasiPeak (dBuV) | CAverage (dBuV) | Limit (dBuV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|------|--------|------------|
| 0.156750        | ---              | 21.94           | 55.63        | 33.69       | L1   | OFF    | 19.9       |
| 0.156750        | 42.26            | ---             | 65.63        | 23.37       | L1   | OFF    | 19.9       |
| 0.204000        | ---              | 17.35           | 53.45        | 36.10       | L1   | OFF    | 19.9       |
| 0.204000        | 36.99            | ---             | 63.45        | 26.46       | L1   | OFF    | 19.9       |
| 0.261240        | ---              | 17.30           | 51.39        | 34.09       | L1   | OFF    | 19.9       |
| 0.261240        | 31.87            | ---             | 61.39        | 29.52       | L1   | OFF    | 19.9       |
| 0.332160        | ---              | 23.23           | 49.40        | 26.17       | L1   | OFF    | 19.9       |
| 0.332160        | 31.28            | ---             | 59.40        | 28.12       | L1   | OFF    | 19.9       |
| 0.403530        | ---              | 21.35           | 47.78        | 26.43       | L1   | OFF    | 19.9       |
| 0.403530        | 30.07            | ---             | 57.78        | 27.71       | L1   | OFF    | 19.9       |
| 0.465000        | ---              | 18.98           | 46.60        | 27.62       | L1   | OFF    | 19.9       |
| 0.465000        | 26.05            | ---             | 56.60        | 30.55       | L1   | OFF    | 19.9       |
| 11.559750       | ---              | 31.89           | 50.00        | 18.11       | L1   | OFF    | 20.1       |
| 11.559750       | 36.81            | ---             | 60.00        | 23.19       | L1   | OFF    | 20.1       |
| 11.930010       | ---              | 33.02           | 50.00        | 16.98       | L1   | OFF    | 20.1       |
| 11.930010       | 38.27            | ---             | 60.00        | 21.73       | L1   | OFF    | 20.1       |
| 12.757380       | ---              | 36.00           | 50.00        | 14.00       | L1   | OFF    | 20.1       |
| 12.757380       | 41.65            | ---             | 60.00        | 18.35       | L1   | OFF    | 20.1       |
| 13.144290       | ---              | 38.20           | 50.00        | 11.80       | L1   | OFF    | 20.1       |

|           |       |       |       |       |    |     |      |
|-----------|-------|-------|-------|-------|----|-----|------|
| 13.144290 | 45.06 | ---   | 60.00 | 14.94 | L1 | OFF | 20.1 |
| 13.559910 | ---   | 40.20 | 50.00 | 9.80  | L1 | OFF | 20.1 |
| 13.559910 | 44.76 | ---   | 60.00 | 15.24 | L1 | OFF | 20.1 |
| 14.148600 | ---   | 33.99 | 50.00 | 16.01 | L1 | OFF | 20.1 |
| 14.148600 | 39.44 | ---   | 60.00 | 20.56 | L1 | OFF | 20.1 |
| 14.739000 | ---   | 33.34 | 50.00 | 16.66 | L1 | OFF | 20.1 |
| 14.739000 | 39.24 | ---   | 60.00 | 20.76 | L1 | OFF | 20.1 |

## EUT Information

Report NO : 450111  
Test Mode : Mode 1  
Test Voltage : 120Vac/60Hz  
Phase : Neutral

Full Spectrum



## Final\_Result

| Frequency (MHz) | QuasiPeak (dBuV) | CAverage (dBuV) | Limit (dBuV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|------|--------|------------|
| 0.156750        | ---              | 22.12           | 55.63        | 33.51       | N    | OFF    | 19.9       |
| 0.156750        | 42.96            | ---             | 65.63        | 22.67       | N    | OFF    | 19.9       |
| 0.267900        | ---              | 16.39           | 51.18        | 34.79       | N    | OFF    | 19.9       |
| 0.267900        | 31.93            | ---             | 61.18        | 29.25       | N    | OFF    | 19.9       |
| 0.332430        | ---              | 19.40           | 49.39        | 29.99       | N    | OFF    | 19.9       |
| 0.332430        | 28.56            | ---             | 59.39        | 30.83       | N    | OFF    | 19.9       |
| 0.384000        | ---              | 20.78           | 48.19        | 27.41       | N    | OFF    | 19.9       |
| 0.384000        | 27.60            | ---             | 58.19        | 30.59       | N    | OFF    | 19.9       |
| 2.229000        | ---              | 15.66           | 46.00        | 30.34       | N    | OFF    | 20.0       |
| 2.229000        | 24.62            | ---             | 56.00        | 31.38       | N    | OFF    | 20.0       |
| 11.656860       | ---              | 32.26           | 50.00        | 17.74       | N    | OFF    | 20.1       |
| 11.656860       | 37.75            | ---             | 60.00        | 22.25       | N    | OFF    | 20.1       |
| 12.130080       | ---              | 28.14           | 50.00        | 21.86       | N    | OFF    | 20.1       |
| 12.130080       | 36.81            | ---             | 60.00        | 23.19       | N    | OFF    | 20.1       |
| 12.753780       | ---              | 35.94           | 50.00        | 14.06       | N    | OFF    | 20.1       |
| 12.753780       | 41.70            | ---             | 60.00        | 18.30       | N    | OFF    | 20.1       |
| 13.058250       | ---              | 34.74           | 50.00        | 15.26       | N    | OFF    | 20.1       |
| 13.058250       | 43.11            | ---             | 60.00        | 16.89       | N    | OFF    | 20.1       |
| 13.560360       | ---              | 40.08           | 50.00        | 9.92        | N    | OFF    | 20.1       |

|           |       |       |       |       |   |     |      |
|-----------|-------|-------|-------|-------|---|-----|------|
| 13.560360 | 44.50 | ---   | 60.00 | 15.50 | N | OFF | 20.1 |
| 14.150130 | ---   | 32.87 | 50.00 | 17.13 | N | OFF | 20.1 |
| 14.150130 | 38.88 | ---   | 60.00 | 21.12 | N | OFF | 20.1 |
| 14.632440 | ---   | 32.93 | 50.00 | 17.07 | N | OFF | 20.1 |
| 14.632440 | 38.63 | ---   | 60.00 | 21.37 | N | OFF | 20.1 |



## Appendix C. Radiated Spurious Emission

|                 |                                     |                     |             |
|-----------------|-------------------------------------|---------------------|-------------|
| Test Engineer : | John Chuang, David Dai and Sam Chou | Temperature :       | 19.7~23.5°C |
|                 |                                     | Relative Humidity : | 64.9~70.8%  |

&lt;Ant. 1\_1Mbps&gt;

2.4GHz 2400~2483.5MHz

BLE (Band Edge @ 3m)

| BLE Ant                 | Note | Frequency | Level      | Margin | Limit Line | Read Level | Antenna Factor | Path Loss | Preamp Factor | Ant Pos | Table Pos | Peak Avg. | Pol.    |
|-------------------------|------|-----------|------------|--------|------------|------------|----------------|-----------|---------------|---------|-----------|-----------|---------|
|                         |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV )   | ( dB/m )       | ( dB )    | ( dB )        | ( cm )  | ( deg )   | ( P/A )   | ( H/V ) |
| BLE<br>CH 00<br>2402MHz |      | 2353.89   | 49.74      | -24.26 | 74         | 40.2       | 27.12          | 18.65     | 36.23         | 130     | 58        | P         | H       |
|                         |      | 2387.175  | 40.33      | -13.67 | 54         | 30.6       | 27.25          | 18.72     | 36.24         | 130     | 58        | A         | H       |
|                         | *    | 2402      | 102.65     | -      | -          | 92.85      | 27.31          | 18.74     | 36.25         | 130     | 58        | P         | H       |
|                         | *    | 2402      | 102.13     | -      | -          | 92.33      | 27.31          | 18.74     | 36.25         | 130     | 58        | A         | H       |
|                         |      |           |            |        |            |            |                |           |               |         |           |           | H       |
|                         |      | 2338.14   | 49.8       | -24.2  | 74         | 40.3       | 27.1           | 18.62     | 36.22         | 300     | 106       | P         | V       |
|                         |      | 2388.54   | 40.19      | -13.81 | 54         | 30.46      | 27.25          | 18.72     | 36.24         | 300     | 106       | A         | V       |
|                         | *    | 2402      | 100.41     | -      | -          | 90.61      | 27.31          | 18.74     | 36.25         | 300     | 106       | P         | V       |
|                         | *    | 2402      | 99.83      | -      | -          | 90.03      | 27.31          | 18.74     | 36.25         | 300     | 106       | A         | V       |
|                         |      |           |            |        |            |            |                |           |               |         |           |           | V       |
| BLE<br>CH 19<br>2440MHz |      | 2345.04   | 49.71      | -24.29 | 74         | 40.2       | 27.1           | 18.64     | 36.23         | 150     | 67        | P         | H       |
|                         |      | 2389.52   | 40.13      | -13.87 | 54         | 30.39      | 27.26          | 18.72     | 36.24         | 150     | 67        | A         | H       |
|                         | *    | 2440      | 101.86     | -      | -          | 91.85      | 27.46          | 18.81     | 36.26         | 150     | 67        | P         | H       |
|                         | *    | 2440      | 101.29     | -      | -          | 91.28      | 27.46          | 18.81     | 36.26         | 150     | 67        | A         | H       |
|                         |      | 2494.96   | 50.17      | -23.83 | 74         | 39.85      | 27.68          | 18.92     | 36.28         | 150     | 67        | P         | H       |
|                         |      | 2493.28   | 40.72      | -13.28 | 54         | 30.42      | 27.67          | 18.91     | 36.28         | 150     | 67        | A         | H       |
|                         |      | 2352.24   | 49.61      | -24.39 | 74         | 40.08      | 27.11          | 18.65     | 36.23         | 350     | 97        | P         | V       |
|                         |      | 2379.44   | 40.29      | -13.71 | 54         | 30.61      | 27.22          | 18.7      | 36.24         | 350     | 97        | A         | V       |
|                         | *    | 2440      | 101.35     | -      | -          | 91.34      | 27.46          | 18.81     | 36.26         | 350     | 97        | P         | V       |
|                         | *    | 2440      | 100.81     | -      | -          | 90.8       | 27.46          | 18.81     | 36.26         | 350     | 97        | A         | V       |
|                         |      | 2491.12   | 49.98      | -24.02 | 74         | 39.69      | 27.66          | 18.91     | 36.28         | 350     | 97        | P         | V       |
|                         |      | 2489.2    | 40.58      | -13.42 | 54         | 30.29      | 27.66          | 18.91     | 36.28         | 350     | 97        | A         | V       |



| BLE<br>Ant              | 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 ) |
|-------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BLE<br>CH 39<br>2480MHz | *                                                                                           | 2480                 | 101.4               | -                | -                           | 91.16                     | 27.62                         | 18.89                  | 36.27                      | 147                  | 62                      | P                       | H               |
|                         | *                                                                                           | 2480                 | 100.88              | -                | -                           | 90.64                     | 27.62                         | 18.89                  | 36.27                      | 147                  | 62                      | A                       | H               |
|                         |                                                                                             | 2487.88              | 51.39               | -22.61           | 74                          | 41.12                     | 27.65                         | 18.9                   | 36.28                      | 147                  | 62                      | P                       | H               |
|                         |                                                                                             | 2484.28              | 40.97               | -13.03           | 54                          | 30.7                      | 27.64                         | 18.9                   | 36.27                      | 147                  | 62                      | A                       | H               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         | *                                                                                           | 2480                 | 100.3               | -                | -                           | 90.06                     | 27.62                         | 18.89                  | 36.27                      | 350                  | 104                     | P                       | V               |
|                         | *                                                                                           | 2480                 | 99.73               | -                | -                           | 89.49                     | 27.62                         | 18.89                  | 36.27                      | 350                  | 104                     | A                       | V               |
|                         |                                                                                             | 2488.6               | 50.47               | -23.53           | 74                          | 40.2                      | 27.65                         | 18.9                   | 36.28                      | 350                  | 104                     | P                       | V               |
|                         |                                                                                             | 2484.64              | 40.79               | -13.21           | 54                          | 30.52                     | 27.64                         | 18.9                   | 36.27                      | 350                  | 104                     | A                       | V               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                  | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## 2.4GHz 2400~2483.5MHz

## BLE (Harmonic @ 3m)

| BLE<br>Ant              | Note | Frequency<br>( MHz ) | Level<br>( dB $\mu$ V/m ) | Margin<br>( dB ) | Limit<br>Line<br>( dB $\mu$ V/m ) | Read<br>Level<br>( dB $\mu$ V ) | 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 00<br>2402MHz |      | 4804                 | 43.51                     | -30.49           | 74                                | 35.35                           | 32.4                          | 13.26                  | 37.5                       | -                    | -                       | P                       | H               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | H               |
|                         |      | 4804                 | 42.58                     | -31.42           | 74                                | 34.42                           | 32.4                          | 13.26                  | 37.5                       | -                    | -                       | P                       | V               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                           |                  |                                   |                                 |                               |                        |                            |                      |                         |                         | V               |



| BLE<br>Ant              | 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 ) |
|-------------------------|------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BLE<br>CH 19<br>2440MHz |      | 4880                 | 43.62               | -30.38           | 74                          | 35.43                     | 32.52                         | 13.23                  | 37.56                      | -                    | -                       | P                       | H               |
|                         |      | 7320                 | 47.75               | -26.25           | 74                          | 33.66                     | 36.9                          | 15.8                   | 38.61                      | -                    | -                       | P                       | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      | 4880                 | 43.62               | -30.38           | 74                          | 35.43                     | 32.52                         | 13.23                  | 37.56                      | -                    | -                       | P                       | V               |
|                         |      | 7320                 | 47.93               | -26.07           | 74                          | 33.84                     | 36.9                          | 15.8                   | 38.61                      | -                    | -                       | P                       | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |



| BLE<br>Ant              | 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 ) |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BLE<br>CH 39<br>2480MHz |                                                                                                                                                                                                                                        | 4960                 | 44.6                | -29.4            | 74                          | 36.09                     | 32.94                         | 13.2                   | 37.63                      | -                    | -                       | P                       | H               |
|                         |                                                                                                                                                                                                                                        | 7440                 | 47.16               | -26.84           | 74                          | 33.43                     | 36.52                         | 15.92                  | 38.71                      | -                    | -                       | P                       | H               |
|                         |                                                                                                                                                                                                                                        |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                                                                                                                                                                                        |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                                                                                                                                                                                        |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                                                                                                                                                                                        |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                                                                                                                                                                                        |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                                                                                                                                                                                        |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                                                                                                                                                                                        |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                                                                                                                                                                                        |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                                                                                                                                                                                        |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                                                                                                                                                                                        |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                                                                                                                                                                                        |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                                                                                                                                                                                        | 4960                 | 44.09               | -29.91           | 74                          | 35.58                     | 32.94                         | 13.2                   | 37.63                      | -                    | -                       | P                       | V               |
|                         |                                                                                                                                                                                                                                        | 7440                 | 47.73               | -26.27           | 74                          | 34                        | 36.52                         | 15.92                  | 38.71                      | -                    | -                       | P                       | 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 Peak and Average limit line.<br>3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         |                 |



&lt;Ant. 1\_2Mbps&gt;

2.4GHz 2400~2483.5MHz

BLE (Band Edge @ 3m)

| BLE<br>Ant              | Note | Frequency | Level      | Margin | Limit<br>Line | Read<br>Level | Antenna<br>Factor | Path<br>Loss | Preamp<br>Factor | Ant<br>Pos | Table<br>Pos | Peak<br>Avg. | Pol.    |
|-------------------------|------|-----------|------------|--------|---------------|---------------|-------------------|--------------|------------------|------------|--------------|--------------|---------|
|                         |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m )    | ( dBμV )      | ( dB/m )          | ( dB )       | ( dB )           | ( cm )     | ( deg )      | ( P/A )      | ( H/V ) |
| BLE<br>CH 00<br>2402MHz |      | 2343.285  | 49.58      | -24.42 | 74            | 40.08         | 27.1              | 18.63        | 36.23            | 131        | 59           | P            | H       |
|                         |      | 2388.225  | 41.05      | -12.95 | 54            | 31.32         | 27.25             | 18.72        | 36.24            | 131        | 59           | A            | H       |
|                         | *    | 2402      | 102.99     | -      | -             | 93.19         | 27.31             | 18.74        | 36.25            | 131        | 59           | P            | H       |
|                         | *    | 2402      | 101.58     | -      | -             | 91.78         | 27.31             | 18.74        | 36.25            | 131        | 59           | A            | H       |
|                         |      |           |            |        |               |               |                   |              |                  |            |              |              | H       |
|                         |      |           |            |        |               |               |                   |              |                  |            |              |              | H       |
|                         |      | 2317.875  | 50.4       | -23.6  | 74            | 40.94         | 27.1              | 18.58        | 36.22            | 300        | 97           | P            | V       |
|                         |      | 2388.855  | 40.8       | -13.2  | 54            | 31.06         | 27.26             | 18.72        | 36.24            | 300        | 97           | A            | V       |
|                         | *    | 2402      | 100.43     | -      | -             | 90.63         | 27.31             | 18.74        | 36.25            | 300        | 97           | P            | V       |
|                         | *    | 2402      | 98.94      | -      | -             | 89.14         | 27.31             | 18.74        | 36.25            | 300        | 97           | A            | V       |
|                         |      |           |            |        |               |               |                   |              |                  |            |              |              | V       |
|                         |      |           |            |        |               |               |                   |              |                  |            |              |              | V       |
| BLE<br>CH 19<br>2440MHz |      | 2378.16   | 49.42      | -24.58 | 74            | 39.75         | 27.21             | 18.7         | 36.24            | 138        | 57           | P            | H       |
|                         |      | 2338      | 40.72      | -13.28 | 54            | 31.22         | 27.1              | 18.62        | 36.22            | 138        | 57           | A            | H       |
|                         | *    | 2440      | 103.54     | -      | -             | 93.53         | 27.46             | 18.81        | 36.26            | 138        | 57           | P            | H       |
|                         | *    | 2440      | 101.99     | -      | -             | 91.98         | 27.46             | 18.81        | 36.26            | 138        | 57           | A            | H       |
|                         |      | 2495.44   | 49.7       | -24.3  | 74            | 39.38         | 27.68             | 18.92        | 36.28            | 138        | 57           | P            | H       |
|                         |      | 2493.92   | 41.4       | -12.6  | 54            | 31.09         | 27.68             | 18.91        | 36.28            | 138        | 57           | A            | H       |
|                         |      | 2386.16   | 49.45      | -24.55 | 74            | 39.74         | 27.24             | 18.71        | 36.24            | 350        | 98           | P            | V       |
|                         |      | 2377.04   | 40.75      | -13.25 | 54            | 31.08         | 27.21             | 18.7         | 36.24            | 350        | 98           | A            | V       |
|                         | *    | 2440      | 101.51     | -      | -             | 91.5          | 27.46             | 18.81        | 36.26            | 350        | 98           | P            | V       |
|                         | *    | 2440      | 100.03     | -      | -             | 90.02         | 27.46             | 18.81        | 36.26            | 350        | 98           | A            | V       |
|                         |      | 2497.92   | 49.92      | -24.08 | 74            | 39.59         | 27.69             | 18.92        | 36.28            | 350        | 98           | P            | V       |
|                         |      | 2494.24   | 41.16      | -12.84 | 54            | 30.85         | 27.68             | 18.91        | 36.28            | 350        | 98           | A            | V       |



| BLE<br>Ant              | 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 ) |
|-------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BLE<br>CH 39<br>2480MHz | *                                                                                           | 2480                 | 102.54              | -                | -                           | 92.3                      | 27.62                         | 18.89                  | 36.27                      | 118                  | 60                      | P                       | H               |
|                         | *                                                                                           | 2480                 | 101.16              | -                | -                           | 90.92                     | 27.62                         | 18.89                  | 36.27                      | 118                  | 60                      | A                       | H               |
|                         |                                                                                             | 2484.28              | 51.3                | -22.7            | 74                          | 41.03                     | 27.64                         | 18.9                   | 36.27                      | 118                  | 60                      | P                       | H               |
|                         |                                                                                             | 2485.2               | 41.63               | -12.37           | 54                          | 31.36                     | 27.64                         | 18.9                   | 36.27                      | 118                  | 60                      | A                       | H               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         | *                                                                                           | 2480                 | 100.67              | -                | -                           | 90.43                     | 27.62                         | 18.89                  | 36.27                      | 300                  | 103                     | P                       | V               |
|                         | *                                                                                           | 2480                 | 99.25               | -                | -                           | 89.01                     | 27.62                         | 18.89                  | 36.27                      | 300                  | 103                     | A                       | V               |
|                         |                                                                                             | 2484.68              | 51.13               | -22.87           | 74                          | 40.86                     | 27.64                         | 18.9                   | 36.27                      | 300                  | 103                     | P                       | V               |
|                         |                                                                                             | 2490.16              | 41.35               | -12.65           | 54                          | 31.06                     | 27.66                         | 18.91                  | 36.28                      | 300                  | 103                     | A                       | V               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                  | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## 2.4GHz 2400~2483.5MHz

## BLE (Harmonic @ 3m)

| BLE<br>Ant              | 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 ) |
|-------------------------|------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BLE<br>CH 00<br>2402MHz |      | 4804                 | 43.66               | -30.34           | 74                          | 35.5                      | 32.4                          | 13.26                  | 37.5                       | -                    | -                       | P                       | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      | 4804                 | 43.25               | -30.75           | 74                          | 35.09                     | 32.4                          | 13.26                  | 37.5                       | -                    | -                       | P                       | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |



| BLE<br>Ant              | 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 ) |
|-------------------------|------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BLE<br>CH 19<br>2440MHz |      | 4880                 | 43.59               | -30.41           | 74                          | 35.4                      | 32.52                         | 13.23                  | 37.56                      | -                    | -                       | P                       | H               |
|                         |      | 7320                 | 48.06               | -25.94           | 74                          | 33.97                     | 36.9                          | 15.8                   | 38.61                      | 200                  | 312                     | P                       | H               |
|                         |      | 7320                 | 39.66               | -14.34           | 54                          | 25.57                     | 36.9                          | 15.8                   | 38.61                      | 200                  | 312                     | A                       | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      | 4880                 | 43.45               | -30.55           | 74                          | 35.26                     | 32.52                         | 13.23                  | 37.56                      | -                    | -                       | P                       | V               |
|                         |      | 7320                 | 48.35               | -25.65           | 74                          | 34.26                     | 36.9                          | 15.8                   | 38.61                      | 100                  | 156                     | P                       | V               |
|                         |      | 7320                 | 39.98               | -14.02           | 54                          | 25.89                     | 36.9                          | 15.8                   | 38.61                      | 100                  | 156                     | A                       | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |

[illegible]



## Emission above 18GHz

## 2.4GHz BLE (SHF)

| BLE                  | Note                                                                                                                                                                                                                  | Frequency | Level      | Margin | Limit      | Read   | Antenna  | Path   | Preamp | Ant    | Table   | Peak  | Pol.  |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
| Ant                  |                                                                                                                                                                                                                       |           |            |        | Line       | Level  | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
|                      |                                                                                                                                                                                                                       | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | (dBμV) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 2.4GHz<br>BLE<br>SHF |                                                                                                                                                                                                                       | 24797     | 40.96      | -33.04 | 74         | 42.41  | 39.19    | 19.7   | 60.34  | -      | -       | P     | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       | 21535     | 41.11      | -32.89 | 74         | 46.26  | 38       | 17.74  | 60.89  | -      | -       | P     | 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. |           |            |        |            |        |          |        |        |        |         |       |       |

## Emission below 1GHz

## 2.4GHz BLE (LF)

| BLE                         | Note                                                                                                                                                               | Frequency | Level      | Margin | Limit      | Read   | Antenna  | Path   | Preamp | Ant    | Table   | Peak  | Pol.  |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
| Ant                         |                                                                                                                                                                    |           |            |        | Line       | Level  | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
|                             |                                                                                                                                                                    | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | (dBμV) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 2.4GHz<br><br>BLE<br><br>LF |                                                                                                                                                                    | 49.55     | 34.02      | -5.98  | 40         | 53.11  | 14.88    | 1.59   | 35.56  | 391    | 141     | Q     | H     |
|                             |                                                                                                                                                                    | 95.96     | 27.32      | -16.18 | 43.5       | 45.3   | 15.51    | 2.02   | 35.51  | -      | -       | P     | H     |
|                             |                                                                                                                                                                    | 197.79    | 29.58      | -13.92 | 43.5       | 47.13  | 14.99    | 2.79   | 35.33  | -      | -       | P     | H     |
|                             |                                                                                                                                                                    | 207.2     | 31.55      | -11.95 | 43.5       | 48.76  | 15.26    | 2.84   | 35.31  | -      | -       | P     | H     |
|                             |                                                                                                                                                                    | 747.2     | 35.28      | -10.72 | 46         | 35.69  | 28.23    | 5.05   | 33.69  | -      | -       | P     | H     |
|                             |                                                                                                                                                                    | 951.2     | 35.69      | -10.31 | 46         | 32.24  | 30.82    | 5.6    | 32.97  | -      | -       | P     | H     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | H     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | H     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | H     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | H     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | H     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | H     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | H     |
|                             |                                                                                                                                                                    | 30.17     | 26.22      | -13.78 | 40         | 35.63  | 24.92    | 1.26   | 35.59  | -      | -       | P     | V     |
|                             |                                                                                                                                                                    | 49.38     | 35.09      | -4.91  | 40         | 54.11  | 14.95    | 1.59   | 35.56  | 100    | 233     | Q     | V     |
|                             |                                                                                                                                                                    | 198.98    | 27.74      | -15.76 | 43.5       | 45.27  | 15       | 2.79   | 35.32  | -      | -       | P     | V     |
|                             |                                                                                                                                                                    | 206.4     | 30.27      | -13.23 | 43.5       | 47.51  | 15.23    | 2.84   | 35.31  | -      | -       | P     | V     |
|                             |                                                                                                                                                                    | 731.2     | 36.03      | -9.97  | 46         | 36.91  | 27.89    | 5.01   | 33.78  | -      | -       | P     | V     |
|                             |                                                                                                                                                                    | 954.4     | 36.08      | -9.92  | 46         | 32.52  | 30.92    | 5.6    | 32.96  | -      | -       | P     | V     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | V     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | V     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | V     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | V     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | V     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         | V     |       |
| Remark                      | 1. No other spurious found.                                                                                                                                        |           |            |        |            |        |          |        |        |        |         |       |       |
|                             | 2. All results are PASS against limit line.                                                                                                                        |           |            |        |            |        |          |        |        |        |         |       |       |
|                             | 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. |           |            |        |            |        |          |        |        |        |         |       |       |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       |       |



&lt;Ant. 2\_1Mbps&gt;

2.4GHz 2400~2483.5MHz

BLE (Band Edge @ 3m)

| BLE<br>Ant              | 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 ) |
|-------------------------|------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BLE<br>CH 00<br>2402MHz |      | 2362.29              | 49.49               | -24.51           | 74                          | 39.9                      | 27.15                         | 18.67                  | 36.23                      | 287                  | 61                      | P                       | H               |
|                         |      | 2382.765             | 40.25               | -13.75           | 54                          | 30.55                     | 27.23                         | 18.71                  | 36.24                      | 287                  | 61                      | A                       | H               |
|                         | *    | 2402                 | 98.27               | -                | -                           | 88.47                     | 27.31                         | 18.74                  | 36.25                      | 287                  | 61                      | P                       | H               |
|                         | *    | 2402                 | 97.68               | -                | -                           | 87.88                     | 27.31                         | 18.74                  | 36.25                      | 287                  | 61                      | A                       | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      | 2330.475             | 49.44               | -24.56           | 74                          | 39.95                     | 27.1                          | 18.61                  | 36.22                      | 348                  | 319                     | P                       | V               |
|                         |      | 2374.26              | 40.09               | -13.91           | 54                          | 30.44                     | 27.2                          | 18.69                  | 36.24                      | 348                  | 319                     | A                       | V               |
|                         | *    | 2402                 | 95.03               | -                | -                           | 85.23                     | 27.31                         | 18.74                  | 36.25                      | 348                  | 319                     | P                       | V               |
|                         | *    | 2402                 | 94.47               | -                | -                           | 84.67                     | 27.31                         | 18.74                  | 36.25                      | 348                  | 319                     | A                       | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| BLE<br>CH 19<br>2440MHz |      | 2310.8               | 50.01               | -23.99           | 74                          | 40.56                     | 27.1                          | 18.57                  | 36.22                      | 279                  | 69                      | P                       | H               |
|                         |      | 2389.84              | 39.88               | -14.12           | 54                          | 30.14                     | 27.26                         | 18.72                  | 36.24                      | 279                  | 69                      | A                       | H               |
|                         | *    | 2440                 | 96.39               | -                | -                           | 86.38                     | 27.46                         | 18.81                  | 36.26                      | 279                  | 69                      | P                       | H               |
|                         | *    | 2440                 | 95.82               | -                | -                           | 85.81                     | 27.46                         | 18.81                  | 36.26                      | 279                  | 69                      | A                       | H               |
|                         |      | 2491.92              | 50.06               | -23.94           | 74                          | 39.76                     | 27.67                         | 18.91                  | 36.28                      | 279                  | 69                      | P                       | H               |
|                         |      | 2487.28              | 40.48               | -13.52           | 54                          | 30.21                     | 27.65                         | 18.9                   | 36.28                      | 279                  | 69                      | A                       | H               |
|                         |      | 2312.24              | 49.69               | -24.31           | 74                          | 40.24                     | 27.1                          | 18.57                  | 36.22                      | 367                  | 11                      | P                       | V               |
|                         |      | 2388.4               | 39.86               | -14.14           | 54                          | 30.13                     | 27.25                         | 18.72                  | 36.24                      | 367                  | 11                      | A                       | V               |
|                         | *    | 2440                 | 97.58               | -                | -                           | 87.57                     | 27.46                         | 18.81                  | 36.26                      | 367                  | 11                      | P                       | V               |
|                         | *    | 2440                 | 96.97               | -                | -                           | 86.96                     | 27.46                         | 18.81                  | 36.26                      | 367                  | 11                      | A                       | V               |
|                         |      | 2496.72              | 50.25               | -23.75           | 74                          | 39.92                     | 27.69                         | 18.92                  | 36.28                      | 367                  | 11                      | P                       | V               |
|                         |      | 2485.76              | 40.42               | -13.58           | 54                          | 30.16                     | 27.64                         | 18.9                   | 36.28                      | 367                  | 11                      | A                       | V               |



| BLE<br>Ant              | 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 ) |
|-------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BLE<br>CH 39<br>2480MHz | *                                                                                           | 2480                 | 97.49               | -                | -                           | 87.25                     | 27.62                         | 18.89                  | 36.27                      | 290                  | 5                       | P                       | H               |
|                         | *                                                                                           | 2480                 | 96.99               | -                | -                           | 86.75                     | 27.62                         | 18.89                  | 36.27                      | 290                  | 5                       | A                       | H               |
|                         |                                                                                             | 2494.8               | 51                  | -23              | 74                          | 40.68                     | 27.68                         | 18.92                  | 36.28                      | 290                  | 5                       | P                       | H               |
|                         |                                                                                             | 2487.2               | 40.48               | -13.52           | 54                          | 30.21                     | 27.65                         | 18.9                   | 36.28                      | 290                  | 5                       | A                       | H               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         | *                                                                                           | 2480                 | 97.98               | -                | -                           | 87.74                     | 27.62                         | 18.89                  | 36.27                      | 345                  | 316                     | P                       | V               |
|                         | *                                                                                           | 2480                 | 97.4                | -                | -                           | 87.16                     | 27.62                         | 18.89                  | 36.27                      | 345                  | 316                     | A                       | V               |
|                         |                                                                                             | 2497.8               | 49.87               | -24.13           | 74                          | 39.54                     | 27.69                         | 18.92                  | 36.28                      | 345                  | 316                     | P                       | V               |
|                         |                                                                                             | 2485.52              | 40.53               | -13.47           | 54                          | 30.27                     | 27.64                         | 18.9                   | 36.28                      | 345                  | 316                     | A                       | V               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                  | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         |                 |

**2.4GHz 2400~2483.5MHz****BLE (Harmonic @ 3m)**

| BLE<br>Ant              | 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 ) |
|-------------------------|------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BLE<br>CH 00<br>2402MHz |      | 4804                 | 43.19               | -30.81           | 74                          | 35.03                     | 32.4                          | 13.26                  | 37.5                       | -                    | -                       | P                       | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      | 4804                 | 44.2                | -29.8            | 74                          | 36.04                     | 32.4                          | 13.26                  | 37.5                       | -                    | -                       | P                       | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |



| BLE<br>Ant              | 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 ) |
|-------------------------|------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BLE<br>CH 19<br>2440MHz |      | 4880                 | 44.03               | -29.97           | 74                          | 35.84                     | 32.52                         | 13.23                  | 37.56                      | -                    | -                       | P                       | H               |
|                         |      | 7320                 | 49.63               | -24.37           | 74                          | 35.54                     | 36.9                          | 15.8                   | 38.61                      | 250                  | 246                     | P                       | H               |
|                         |      | 7320                 | 39.23               | -14.77           | 54                          | 25.14                     | 36.9                          | 15.8                   | 38.61                      | 250                  | 246                     | A                       | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      | 4880                 | 44.55               | -29.45           | 74                          | 36.36                     | 32.52                         | 13.23                  | 37.56                      | -                    | -                       | P                       | V               |
|                         |      | 7320                 | 48.44               | -25.56           | 74                          | 34.35                     | 36.9                          | 15.8                   | 38.61                      | 250                  | 218                     | P                       | V               |
|                         |      | 7320                 | 39.11               | -14.89           | 54                          | 25.02                     | 36.9                          | 15.8                   | 38.61                      | 250                  | 218                     | A                       | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |

[illegible]



&lt;Ant. 2\_2Mbps&gt;

2.4GHz 2400~2483.5MHz

BLE (Band Edge @ 3m)

| BLE Ant                 | Note | Frequency | Level      | Margin | Limit Line | Read Level | Antenna Factor | Path Loss | Preamp Factor | Ant Pos | Table Pos | Peak Avg. | Pol.    |
|-------------------------|------|-----------|------------|--------|------------|------------|----------------|-----------|---------------|---------|-----------|-----------|---------|
|                         |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV )   | ( dB/m )       | ( dB )    | ( dB )        | ( cm )  | ( deg )   | ( P/A )   | ( H/V ) |
| BLE<br>CH 00<br>2402MHz |      | 2384.025  | 49.79      | -24.21 | 74         | 40.08      | 27.24          | 18.71     | 36.24         | 100     | 25        | P         | H       |
|                         |      | 2373.42   | 40.85      | -13.15 | 54         | 31.21      | 27.19          | 18.69     | 36.24         | 100     | 25        | A         | H       |
|                         | *    | 2402      | 98.12      | -      | -          | 88.32      | 27.31          | 18.74     | 36.25         | 100     | 25        | P         | H       |
|                         | *    | 2402      | 96.69      | -      | -          | 86.89      | 27.31          | 18.74     | 36.25         | 100     | 25        | A         | H       |
|                         |      |           |            |        |            |            |                |           |               |         |           |           | H       |
|                         |      |           |            |        |            |            |                |           |               |         |           |           | H       |
|                         |      | 2344.44   | 49.61      | -24.39 | 74         | 40.11      | 27.1           | 18.63     | 36.23         | 100     | 13        | P         | V       |
|                         |      | 2380.14   | 40.74      | -13.26 | 54         | 31.06      | 27.22          | 18.7      | 36.24         | 100     | 13        | A         | V       |
|                         | *    | 2402      | 98.08      | -      | -          | 88.28      | 27.31          | 18.74     | 36.25         | 100     | 13        | P         | V       |
|                         | *    | 2402      | 96.75      | -      | -          | 86.95      | 27.31          | 18.74     | 36.25         | 100     | 13        | A         | V       |
|                         |      |           |            |        |            |            |                |           |               |         |           |           | V       |
|                         |      |           |            |        |            |            |                |           |               |         |           |           | V       |
| BLE<br>CH 19<br>2440MHz |      | 2361.84   | 49.31      | -24.69 | 74         | 39.72      | 27.15          | 18.67     | 36.23         | 100     | 198       | P         | H       |
|                         |      | 2389.68   | 40.9       | -13.1  | 54         | 31.16      | 27.26          | 18.72     | 36.24         | 100     | 198       | A         | H       |
|                         | *    | 2440      | 97.94      | -      | -          | 87.93      | 27.46          | 18.81     | 36.26         | 100     | 198       | P         | H       |
|                         | *    | 2440      | 96.44      | -      | -          | 86.43      | 27.46          | 18.81     | 36.26         | 100     | 198       | A         | H       |
|                         |      | 2499.36   | 50.21      | -23.79 | 74         | 39.87      | 27.7           | 18.92     | 36.28         | 100     | 198       | P         | H       |
|                         |      | 2483.76   | 41.48      | -12.52 | 54         | 31.22      | 27.64          | 18.89     | 36.27         | 100     | 198       | A         | H       |
|                         |      | 2336.08   | 49.66      | -24.34 | 74         | 40.16      | 27.1           | 18.62     | 36.22         | 100     | 174       | P         | V       |
|                         |      | 2333.52   | 40.89      | -13.11 | 54         | 31.4       | 27.1           | 18.61     | 36.22         | 100     | 174       | A         | V       |
|                         | *    | 2440      | 98.01      | -      | -          | 88         | 27.46          | 18.81     | 36.26         | 100     | 174       | P         | V       |
|                         | *    | 2440      | 96.6       | -      | -          | 86.59      | 27.46          | 18.81     | 36.26         | 100     | 174       | A         | V       |
|                         |      | 2494.24   | 50.76      | -23.24 | 74         | 40.45      | 27.68          | 18.91     | 36.28         | 100     | 174       | P         | V       |
|                         |      | 2484.88   | 41.33      | -12.67 | 54         | 31.06      | 27.64          | 18.9      | 36.27         | 100     | 174       | A         | V       |



| BLE<br>Ant              | 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 ) |
|-------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BLE<br>CH 39<br>2480MHz | *                                                                                           | 2480                 | 98.05               | -                | -                           | 87.81                     | 27.62                         | 18.89                  | 36.27                      | 100                  | 357                     | P                       | H               |
|                         | *                                                                                           | 2480                 | 96.5                | -                | -                           | 86.26                     | 27.62                         | 18.89                  | 36.27                      | 100                  | 357                     | A                       | H               |
|                         |                                                                                             | 2490.8               | 50.43               | -23.57           | 74                          | 40.14                     | 27.66                         | 18.91                  | 36.28                      | 100                  | 357                     | P                       | H               |
|                         |                                                                                             | 2484.28              | 41.35               | -12.65           | 54                          | 31.08                     | 27.64                         | 18.9                   | 36.27                      | 100                  | 357                     | A                       | H               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         | *                                                                                           | 2480                 | 96.78               | -                | -                           | 86.54                     | 27.62                         | 18.89                  | 36.27                      | 150                  | 9                       | P                       | V               |
|                         | *                                                                                           | 2480                 | 95.32               | -                | -                           | 85.08                     | 27.62                         | 18.89                  | 36.27                      | 150                  | 9                       | A                       | V               |
|                         |                                                                                             | 2488.92              | 50.82               | -23.18           | 74                          | 40.54                     | 27.66                         | 18.9                   | 36.28                      | 150                  | 9                       | P                       | V               |
|                         |                                                                                             | 2496.08              | 41.25               | -12.75           | 54                          | 30.93                     | 27.68                         | 18.92                  | 36.28                      | 150                  | 9                       | A                       | V               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |                                                                                             |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
| Remark                  | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## 2.4GHz 2400~2483.5MHz

## BLE (Harmonic @ 3m)

| BLE<br>Ant              | 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 ) |
|-------------------------|------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BLE<br>CH 00<br>2402MHz |      | 4804                 | 42.54               | -31.46           | 74                          | 34.38                     | 32.4                          | 13.26                  | 37.5                       | -                    | -                       | P                       | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      | 4804                 | 42.88               | -31.12           | 74                          | 34.72                     | 32.4                          | 13.26                  | 37.5                       | -                    | -                       | P                       | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |



| BLE<br>Ant              | 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 ) |
|-------------------------|------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BLE<br>CH 19<br>2440MHz |      | 4880                 | 43.7                | -30.3            | 74                          | 35.51                     | 32.52                         | 13.23                  | 37.56                      | -                    | -                       | P                       | H               |
|                         |      | 7320                 | 47.82               | -26.18           | 74                          | 33.73                     | 36.9                          | 15.8                   | 38.61                      | -                    | -                       | P                       | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | H               |
|                         |      | 4880                 | 43.93               | -30.07           | 74                          | 35.74                     | 32.52                         | 13.23                  | 37.56                      | -                    | -                       | P                       | V               |
|                         |      | 7320                 | 48.6                | -25.4            | 74                          | 34.51                     | 36.9                          | 15.8                   | 38.61                      | 150                  | 33                      | P                       | V               |
|                         |      | 7320                 | 39.16               | -14.84           | 54                          | 25.07                     | 36.9                          | 15.8                   | 38.61                      | 150                  | 33                      | A                       | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         | V               |



| BLE<br>Ant              | 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) |
|-------------------------|------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| BLE<br>CH 39<br>2480MHz |      | 4960                 | 44.63               | -29.37           | 74                          | 36.12                     | 32.94                         | 13.2                   | 37.63                      | -                    | -                       | P                     | H             |
|                         |      | 7440                 | 47.35               | -26.65           | 74                          | 33.62                     | 36.52                         | 15.92                  | 38.71                      | -                    | -                       | P                     | H             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | H             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | H             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | H             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | H             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | H             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | H             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | H             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | H             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | H             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | H             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | H             |
|                         |      | 4960                 | 43.32               | -30.68           | 74                          | 34.81                     | 32.94                         | 13.2                   | 37.63                      | -                    | -                       | P                     | V             |
|                         |      | 7440                 | 47.37               | -26.63           | 74                          | 33.64                     | 36.52                         | 15.92                  | 38.71                      | -                    | -                       | P                     | V             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | V             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | V             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | V             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | V             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | V             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       | V             |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         | V                     |               |
|                         |      |                      |                     |                  |                             |                           |                               |                        |                            | </                   |                         |                       |               |



## Emission above 18GHz

## 2.4GHz BLE (SHF)

| BLE                  | Note                                                                                                                                                                                                                  | Frequency | Level      | Margin | Limit      | Read   | Antenna  | Path   | Preamp | Ant    | Table   | Peak  | Pol.  |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
| Ant                  |                                                                                                                                                                                                                       |           |            |        | Line       | Level  | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
|                      |                                                                                                                                                                                                                       | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | (dBμV) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 2.4GHz<br>BLE<br>SHF |                                                                                                                                                                                                                       | 24580     | 40.95      | -33.05 | 74         | 42.66  | 39.1     | 19.57  | 60.38  | -      | -       | P     | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       |           |            |        |            |        |          |        |        |        |         |       | H     |
|                      |                                                                                                                                                                                                                       | 24622     | 41.63      | -32.37 | 74         | 43.27  | 39.14    | 19.6   | 60.38  | -      | -       | P     | 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. |           |            |        |            |        |          |        |        |        |         |       |       |

## Emission below 1GHz

## 2.4GHz BLE (LF)

| BLE                         | Note                                                                                                                                                               | Frequency | Level      | Margin | Limit      | Read   | Antenna  | Path   | Preamp | Ant    | Table   | Peak  | Pol.  |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
| Ant                         |                                                                                                                                                                    |           |            |        | Line       | Level  | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
|                             |                                                                                                                                                                    | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | (dBμV) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 2.4GHz<br><br>BLE<br><br>LF |                                                                                                                                                                    | 49.72     | 34.16      | -5.84  | 40         | 53.31  | 14.81    | 1.6    | 35.56  | 389    | 128     | Q     | H     |
|                             |                                                                                                                                                                    | 95.62     | 26.39      | -17.11 | 43.5       | 44.43  | 15.45    | 2.02   | 35.51  | -      | -       | P     | H     |
|                             |                                                                                                                                                                    | 200       | 28.15      | -15.35 | 43.5       | 45.64  | 15.03    | 2.8    | 35.32  | -      | -       | P     | H     |
|                             |                                                                                                                                                                    | 205.6     | 29.61      | -13.89 | 43.5       | 46.9   | 15.19    | 2.83   | 35.31  | -      | -       | P     | H     |
|                             |                                                                                                                                                                    | 733.6     | 34.99      | -11.01 | 46         | 35.73  | 28       | 5.02   | 33.76  | -      | -       | P     | H     |
|                             |                                                                                                                                                                    | 957.6     | 35.81      | -10.19 | 46         | 32.15  | 30.99    | 5.61   | 32.94  | -      | -       | P     | H     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | H     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | H     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | H     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | H     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | H     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | H     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | H     |
|                             |                                                                                                                                                                    | 49.55     | 35.03      | -4.97  | 40         | 54.12  | 14.88    | 1.59   | 35.56  | 103    | 241     | Q     | V     |
|                             |                                                                                                                                                                    | 56.35     | 25.42      | -14.58 | 40         | 46.64  | 12.7     | 1.64   | 35.56  | -      | -       | P     | V     |
|                             |                                                                                                                                                                    | 194.39    | 29.92      | -13.58 | 43.5       | 47.54  | 14.94    | 2.77   | 35.33  | -      | -       | P     | V     |
|                             |                                                                                                                                                                    | 205.6     | 31.92      | -11.58 | 43.5       | 49.21  | 15.19    | 2.83   | 35.31  | -      | -       | P     | V     |
|                             |                                                                                                                                                                    | 900.8     | 35.73      | -10.27 | 46         | 34.37  | 29.01    | 5.52   | 33.17  | -      | -       | P     | V     |
|                             |                                                                                                                                                                    | 956.8     | 35.75      | -10.25 | 46         | 32.11  | 30.98    | 5.61   | 32.95  | -      | -       | P     | V     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | V     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | V     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | V     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | V     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       | V     |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         | V     |       |
| Remark                      | 1. No other spurious found.                                                                                                                                        |           |            |        |            |        |          |        |        |        |         |       |       |
|                             | 2. All results are PASS against limit line.                                                                                                                        |           |            |        |            |        |          |        |        |        |         |       |       |
|                             | 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. |           |            |        |            |        |          |        |        |        |         |       |       |
|                             |                                                                                                                                                                    |           |            |        |            |        |          |        |        |        |         |       |       |



**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:**

| BLE                     | Note | Frequency | Level      | Margin | Limit      | Read     | Antenna  | Path   | Preamp | Ant    | Table   | Peak    | Pol.    |
|-------------------------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
|                         |      |           |            |        | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
|                         |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| BLE<br>CH 00<br>2402MHz |      | 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 D. Radiated Spurious Emission Plots

|                        |                                     |                            |             |
|------------------------|-------------------------------------|----------------------------|-------------|
| <b>Test Engineer :</b> | John Chuang, David Dai and Sam Chou | <b>Temperature :</b>       | 19.7~23.5°C |
|                        |                                     | <b>Relative Humidity :</b> | 64.9~70.8%  |

### Note symbol

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



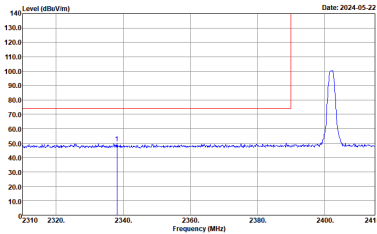
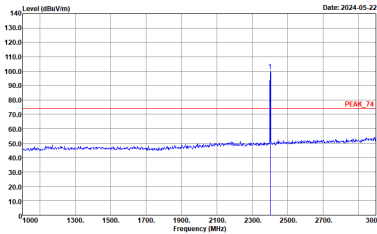
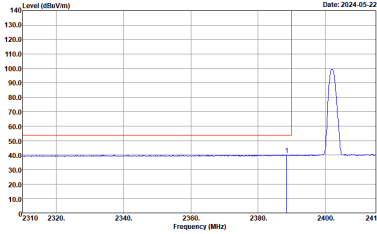
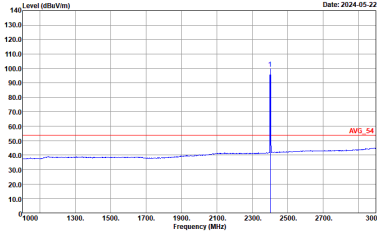
&lt;Ant. 1\_1Mbps&gt;

2.4GHz 2400~2483.5MHz

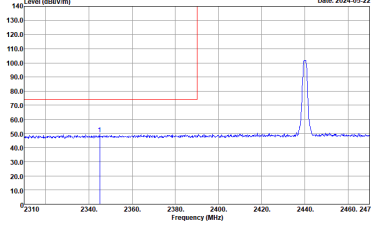
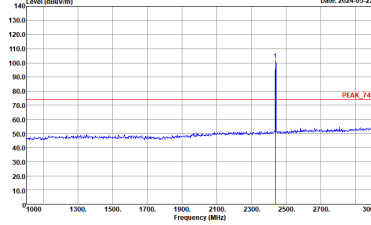
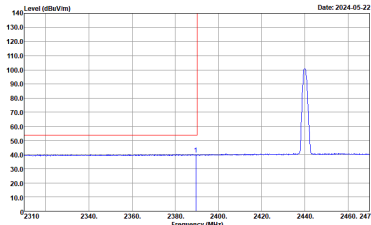
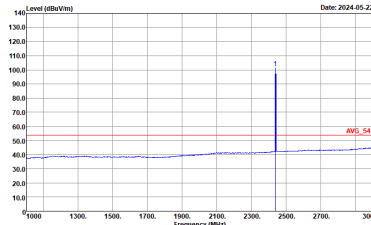
BLE (Band Edge @ 3m)

| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                               |                                                                                                                                 |
|------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| ANT  | BLE CH00 2402MHz                                                                                                                   |                                                                                                                                 |
|      | 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:2.700KHz SWT:Auto</p>     | <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:2.700KHz SWT:Auto</p>     |

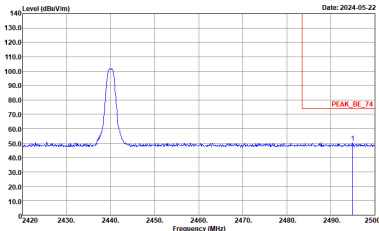
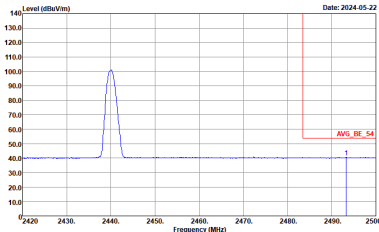


| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                       |                                                                                                                                                                                                                          |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | BLE CH00 2402MHz                                                                                                                                                                                                           |                                                                                                                                                                                                                          |
|      | 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> | <div><p>Site : 03CH20-HY<br/>Condition : PEAK_74 3m 91200_02360_231030 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p></div> |
| Avg  | <div><p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 VERTICAL<br/>RBW:1000.000KHz VBW:2.700KHz SWT:Auto</p></div>   | <div><p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 VERTICAL<br/>RBW:1000.000KHz VBW:2.700KHz SWT:Auto</p></div>   |



| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                 |                                                                                                                                                                                                                    |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | BLE CH19 2440MHz - L                                                                                                                                                                                                 |                                                                                                                                                                                                                    |
|      | 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:2.700kHz SWT:Auto</p>   |  <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000kHz VBW:2.700kHz SWT:Auto</p>   |

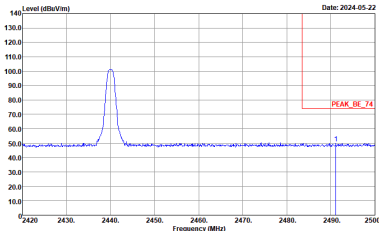
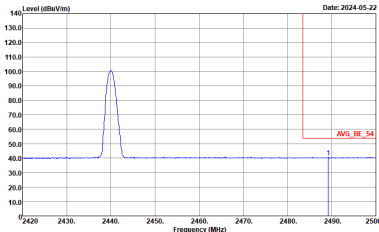


|      |                                                                                                                                                                                                                              |             |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                         |             |
| ANT  | BLE CH19 2440MHz - R                                                                                                                                                                                                         |             |
|      | 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:2700kHz SWT:Auto</p></div>    | Left blank  |



| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                             |                                                                                                                               |
|------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| ANT  | BLE CH19 2440MHz - L                                                                                                             |                                                                                                                               |
|      | 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:2.700KHz SWT:Auto</p>     | <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:2.700KHz SWT:Auto</p>     |



|      |                                                                                                                                                                                                                            |             |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                       |             |
| ANT  | BLE CH19 2440MHz - R                                                                                                                                                                                                       |             |
|      | 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:2700kHz SWT:Auto</p></div>    | Left blank  |



| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                               |                                                                                                                                 |
|------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| ANT  | BLE CH39 2480MHz                                                                                                                   |                                                                                                                                 |
|      | 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:2.700KHz SWT:Auto</p>     | <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:2.700KHz SWT:Auto</p>     |



| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                             |                                                                                                                               |
|------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| ANT  | BLE CH39 2480MHz                                                                                                                 |                                                                                                                               |
|      | 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:2.700KHz SWT:Auto</p>     | <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:2.700KHz SWT:Auto</p>     |

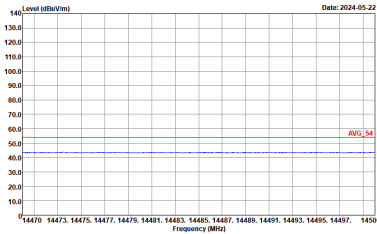
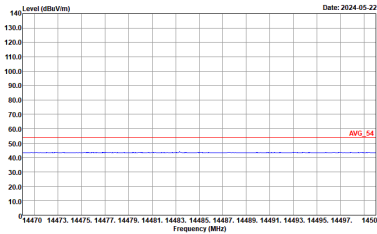
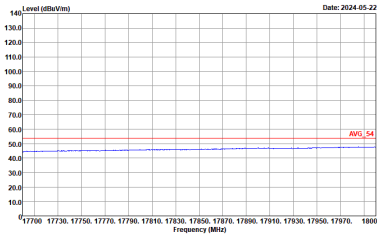
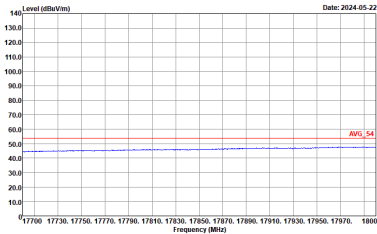


2.4GHz 2400~2483.5MHz

BLE (Harmonic @ 3m)

|              |                                                                                                   |                                                                                                 |
|--------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| BLE          | 2.4GHz 2400~2483.5MHz Harmonic @ 3m                                                               |                                                                                                 |
| ANT          | BLE CH00 2402MHz                                                                                  |                                                                                                 |
|              | Horizontal                                                                                        | Vertical                                                                                        |
| Peak<br>Avg. | <div><p>Site : 03CH20-4Y<br/>Condition : PEAK_74 3m 9120D_02360_231030 HORIZONTAL<br/>:</p></div> | <div><p>Site : 03CH20-4Y<br/>Condition : PEAK_74 3m 9120D_02360_231030 VERTICAL<br/>:</p></div> |

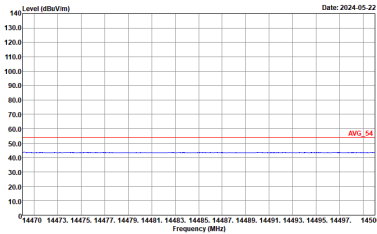
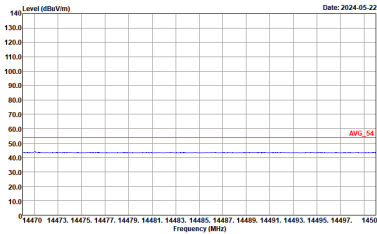
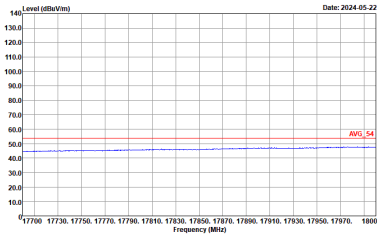
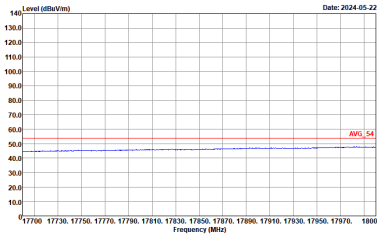


| BLE                      | 2.4GHz 2400~2483.5MHz Harmonic @ 3m                                                                                                                                       |                                                                                                                                                                          |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT                      | BLE CH00 2402MHz                                                                                                                                                          |                                                                                                                                                                          |
|                          | 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>   |
| 17.7G<br>~18G<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> |

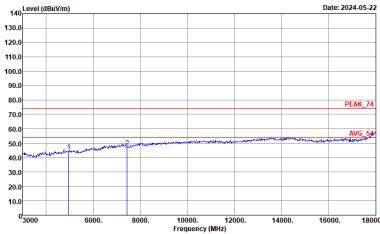
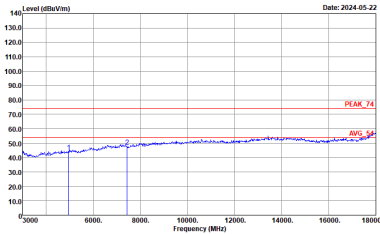


|              |                                                                                                                                               |                                                                                                                                             |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| BLE          | 2.4GHz 2400~2483.5MHz Harmonic @ 3m                                                                                                           |                                                                                                                                             |
| ANT          | BLE CH19 2440MHz                                                                                                                              |                                                                                                                                             |
|              | Horizontal                                                                                                                                    | Vertical                                                                                                                                    |
| Peak<br>Avg. | <div><p>Level (dBuV/m)</p><p>Date: 2024-05-22</p><p>Site : 03CH20-HY<br/>Condition : PEAK_74 3m 91200_02360_231030 HORIZONTAL<br/>:</p></div> | <div><p>Level (dBuV/m)</p><p>Date: 2024-05-22</p><p>Site : 03CH20-HY<br/>Condition : PEAK_74 3m 91200_02360_231030 VERTICAL<br/>:</p></div> |

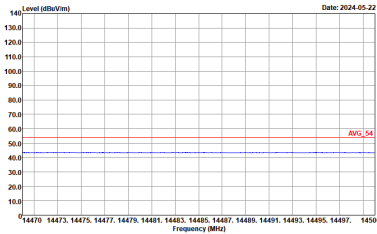
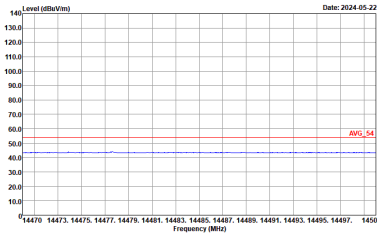
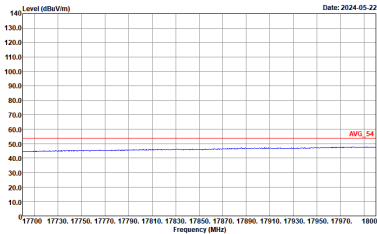
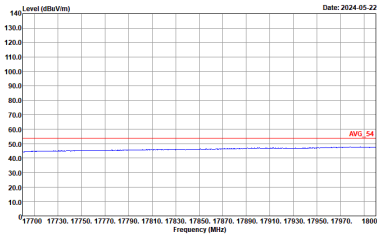


| BLE                      | 2.4GHz 2400~2483.5MHz Harmonic @ 3m                                                                                                                                       |                                                                                                                                                                          |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT                      | BLE CH19 2440MHz                                                                                                                                                          |                                                                                                                                                                          |
|                          | 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>   |
| 17.7G<br>~18G<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> |



|      |                                                                                                                                                                                    |                                                                                                                                                                                   |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BLE  | 2.4GHz 2400~2483.5MHz Harmonic @ 3m                                                                                                                                                |                                                                                                                                                                                   |
| ANT  | BLE CH39 2480MHz                                                                                                                                                                   |                                                                                                                                                                                   |
|      | Horizontal                                                                                                                                                                         | Vertical                                                                                                                                                                          |
| Peak | <div><p>Site : 03CH20-HY<br/>Condition : PEAK_74 3m 91200_02360_231030 HORIZONTAL<br/>:</p></div> | <div><p>Site : 03CH20-HY<br/>Condition : PEAK_74 3m 91200_02360_231030 VERTICAL<br/>:</p></div> |



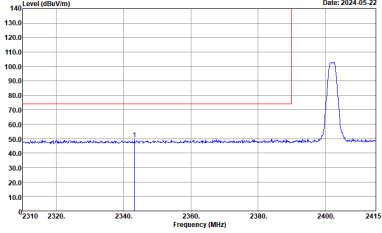
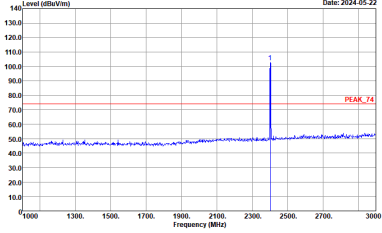
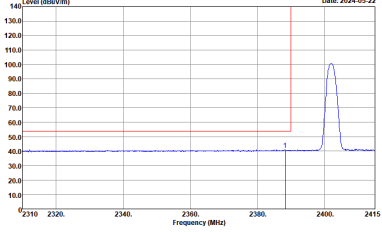
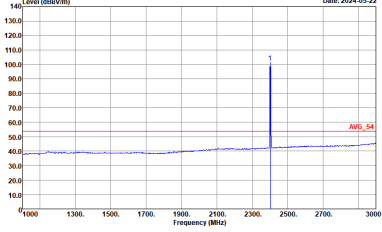
| BLE                      | 2.4GHz 2400~2483.5MHz Harmonic @ 3m                                                                                                                                 |                                                                                                                                                                    |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT                      | BLE CH39 2480MHz                                                                                                                                                    |                                                                                                                                                                    |
|                          | Horizontal                                                                                                                                                          | Vertical                                                                                                                                                           |
| 14.47G<br>~14.5G<br>Avg. |  <p>Site : 03CH20-HY<br/>Condition : AV6_54 3m 91200_02360_231030 HORIZONTAL</p>   |  <p>Site : 03CH20-HY<br/>Condition : AV6_54 3m 91200_02360_231030 VERTICAL</p>   |
| 17.7G<br>~18G<br>Avg     |  <p>Site : 03CH20-HY<br/>Condition : AV6_54 3m 91200_02360_231030 HORIZONTAL</p> |  <p>Site : 03CH20-HY<br/>Condition : AV6_54 3m 91200_02360_231030 VERTICAL</p> |



&lt;Ant. 1\_2Mbps&gt;

2.4GHz 2400~2483.5MHz

BLE (Band Edge @ 3m)

| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                               |                                                                                                                                                                                                                  |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT  | BLE CH00 2402MHz                                                                                                                                                                                                   |                                                                                                                                                                                                                  |
|      | 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>   |

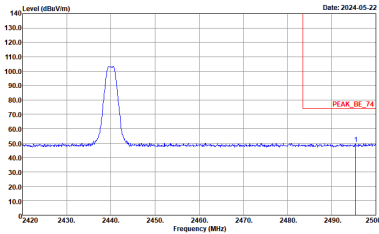
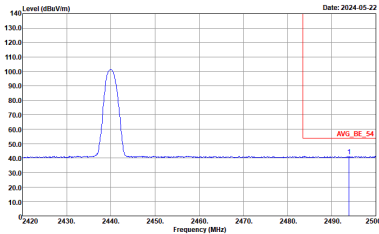


| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                             |                                                                                                                               |
|------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| ANT  | BLE CH00 2402MHz                                                                                                                 |                                                                                                                               |
|      | 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:5.100KHz SWT:Auto</p>     | <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:5.100KHz SWT:Auto</p>     |

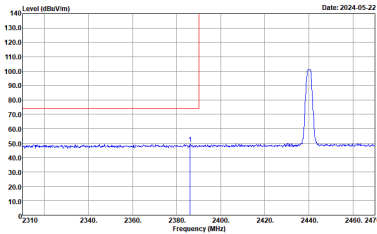
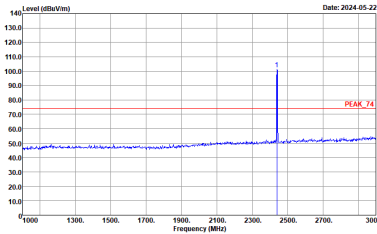
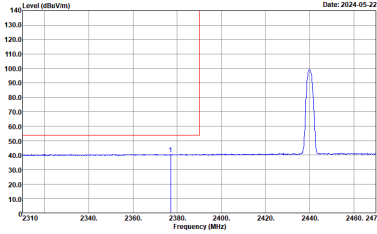
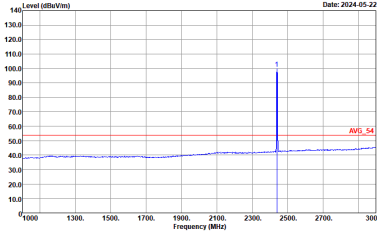


| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                               |                                                                                                                                 |
|------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| ANT  | BLE CH19 2440MHz - L                                                                                                               |                                                                                                                                 |
|      | 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>     |

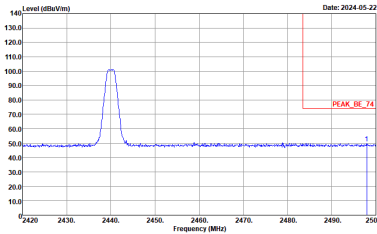
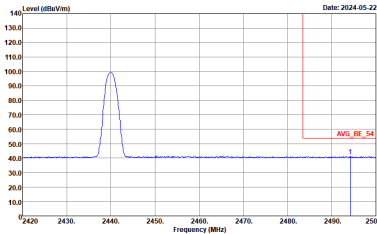


| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                         |             |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| ANT  | BLE CH19 2440MHz - R                                                                                                                                                                                                         |             |
|      | 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:5.000kHz SWT:Auto</p></div>   | Left blank  |



|      |                                                                                                                                                                                                                              |                                                                                                                                                                                                                            |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                         |                                                                                                                                                                                                                            |
| ANT  | BLE CH19 2440MHz - L                                                                                                                                                                                                         |                                                                                                                                                                                                                            |
|      | 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> | <div><p>Site : 03CH20-HY<br/>Condition : PEAK_74 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p></div> |
| Avg. | <div><p>Site : 03CH20-HY<br/>Condition : AVG_BE_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:5.100KHz SWT:Auto</p></div>   | <div><p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:5.100KHz SWT:Auto</p></div>   |



| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                       |             |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| ANT  | BLE CH19 2440MHz - R                                                                                                                                                                                                       |             |
|      | 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:5.000kHz SWT:Auto</p></div>   | Left blank  |



| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                               |                                                                                                                                 |
|------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| ANT  | BLE CH39 2480MHz                                                                                                                   |                                                                                                                                 |
|      | 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:5.100KHz SWT:Auto</p>     | <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 HORIZONTAL<br/>: RBW:1000.000KHz VBW:5.100KHz SWT:Auto</p>     |



| BLE  | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                             |                                                                                                                               |
|------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| ANT  | BLE CH39 2480MHz                                                                                                                 |                                                                                                                               |
|      | 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:5.100KHz SWT:Auto</p>     | <p>Site : 03CH20-HY<br/>Condition : AVG_54 3m 91200_02360_231030 VERTICAL<br/>: RBW:1000.000KHz VBW:5.100KHz SWT:Auto</p>     |