

**FCC/ISED - TEST REPORT**

Report Number : **68.950.24.0619.01** Date of Issue: **2025-01-16**

Model/HVIN : **FS2345**

Product Type : AURIA module

Applicant : Frontier Smart Technologies Ltd

Address : Harston, Harston Mill, Cambridge, CB22 7GG, UNITED KINGDOM

Manufacturer : Frontier Smart Technologies Ltd

Address : Harston, Harston Mill, Cambridge, CB22 7GG, UNITED KINGDOM

Test Result : ☒ **Positive** ☐ **Negative**

Total pages including Appendices : **71**

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## 2 Details about the Test Laboratory

### Details about the Test Laboratory

#### Test Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch  
Building 12&13, Zhiheng Wisdomland Business Park, Guankou Erlu, Nantou,  
Nanshan District, Shenzhen City, 518052, P. R. China

Telephone: 86 755 8828 6998

Fax: 86 755 828 5299

FCC Registration No.: 514049

FCC Designation No.: CN5009

IC Registration No.: 10320A

ISED CAB identifier: CN0077

### 3 Description of the Equipment Under Test

|                            |                                                                                                                                                                                                                                                   |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product:                   | AURIA module                                                                                                                                                                                                                                      |
| Model no.:                 | FS2345                                                                                                                                                                                                                                            |
| FCC ID:                    | YYX-FS2345                                                                                                                                                                                                                                        |
| IC:                        | 11458A-FS2345                                                                                                                                                                                                                                     |
| PMN:                       | AURIA                                                                                                                                                                                                                                             |
| HVIN:                      | FS2345                                                                                                                                                                                                                                            |
| Rating:                    | 5VDC                                                                                                                                                                                                                                              |
| RF Transmission Frequency: | 2402MHz-2480MHz                                                                                                                                                                                                                                   |
| No. of Operated Channel:   | 40                                                                                                                                                                                                                                                |
| Modulation:                | GFSK                                                                                                                                                                                                                                              |
| Antenna Type:              | Ant 1: Internal PIFA Antenna<br>Ant 2: External PIFA Antenna                                                                                                                                                                                      |
| Antenna Gain:              | Ant 1: 1.86dBi<br>Ant 2: 2.21dBi<br>FS2345 does not support MIMO, only one of Ant 1 or Ant 2 can transmit through a switch selection                                                                                                              |
| S/N                        | Conducted Method Module: 241500278RYA02<br>Conducted Method Platform: FS2345032403053<br>Radiated Method Module: 241500246RYA02<br>Radiated Method Platform: FS2345032403028<br>Normal Module: 240100004RYA02<br>Normal Platform: FS2345032403037 |
| Description of the EUT:    | The Equipment Under Test (EUT) is a AURIA module supports Bluetooth Low Energy / Bluetooth BR+EDR/ Wi-Fi functions                                                                                                                                |
| Remark:                    | This report is only for Bluetooth Low Energy.                                                                                                                                                                                                     |

## 4 Summary of Test Standards

| Test Standards                                                                         |                                                                                                                                     |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| FCC Part 15 Subpart C<br>10-1-2023 Edition                                             | PART 15 - RADIO FREQUENCY DEVICES<br>Subpart C - Intentional Radiators                                                              |
| RSS-Gen Issue 5 April 2018<br>Amendment 1 March 2019 +<br>Amendment 2 February<br>2021 | General Requirements for Compliance of Radio Apparatus                                                                              |
| RSS-247<br>Issue 3 August 2023                                                         | Digital Transmission Systems (DTSS), Frequency Hopping<br>Systems (FHSS) and License-Exempt Local Area Network (LE-<br>LAN) Devices |

All the test methods were according to KDB 558074 D01 15.247 Meas Guidance v05r02 Measurement Guidance and ANSI C63.10-2013.

## 5 Summary of Test Results

| Technical Requirements                                      |                                             |            |             |
|-------------------------------------------------------------|---------------------------------------------|------------|-------------|
| FCC Part 15 Subpart C/ RSS-247 Issue 3/RSS-Gen Issue 5      |                                             |            |             |
| Test Condition                                              |                                             | Test Site  | Test Result |
| §15.207 & RSS-GEN 8.8                                       | Conducted emission AC power port            | Site 1     | Pass        |
| §15.247 (b) (3) & RSS-247 5.4(d)                            | Conducted peak output power                 | Site 1     | Pass        |
| RSS-247 5.4(d)                                              | Equivalent Isotropic Radiated Power         | Site 1     | Pass        |
| §15.247(a)(2) & RSS-247 5.2(a) & RSS-GEN 6.7                | 6dB bandwidth and 99% Occupied Bandwidth    | Site 1     | Pass        |
| §15.247(e) & RSS-247 5.2(b)                                 | Power spectral density                      | Site 1     | Pass        |
| §15.247(d) & RSS-247 5.5                                    | Spurious RF conducted emissions             | Site 1     | Pass        |
| §15.247(d) & RSS-247 5.5                                    | Band edge                                   | Site 1     | Pass        |
| §15.247(d) & §15.209 & §15.205 & RSS-247 5.5 & RSS-Gen 6.13 | Spurious radiated emissions for transmitter | Site 1     | Pass        |
| §15.203 & RSS-Gen 6.8                                       | Antenna requirement                         | See note 2 | Pass        |

Note 1: N/A=Not Applicable.

Note 2: The EUT uses an Internal Integrated PIFA Antenna, which gain is 1.86dBi and an External Integrated PIFA Antenna, which gain is 2.21dBi. In accordance to §15.203 & RSS-Gen 6.8, it is considered sufficiently to comply with the provisions of this section.

## 6 General Remarks

### Remarks

This submittal(s) (test report) is intended for FCC ID: YYX-FS2345, complies with Section 15.207, 15.209, 15.205, 15.247 of the FCC Part 15, Subpart C.

This submittal(s) (test report) is intended for IC:11458A-FS2345, complies with RSS-247, RSS-GEN.

The Model: FS2345 supports Bluetooth Low Energy/Bluetooth BR+EDR/Wi-Fi functions, power by 5VDC.

The TX and RX range is 2402MHz-2480MHz for Bluetooth, 2412MHz – 2462MHz for 2.4GHz Wi-Fi, 5180MHz – 5320MHz, 5500MHz – 5700MHz, 5745MHz – 5825MHz for 5GHz Wi-Fi.

(This device shall not be capable of transmitting in the band 5600-5650MHz for Canada. This restriction is for the protection of Terminal Doppler Weather Radar (TDWR) operating in this band.)

This report is for the Bluetooth Low Energy part.

### SUMMARY:

All tests according to the regulations cited on page 6 were

■ - Performed

□ - **Not** Performed

The Equipment under Test

■ - **Fulfills** the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

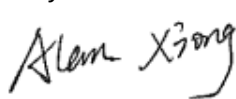
Sample Received Date: 2024-07-02

Testing Start Date: 2024-07-02

Testing End Date: 2024-08-05

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch

Reviewed by:



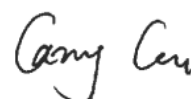
Alan Xiong  
Project Manager

Prepared by:



Henry Chen  
Project Engineer

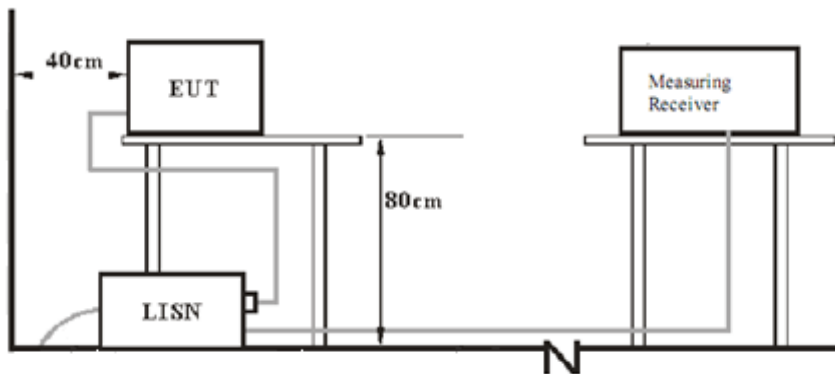
Tested by:



Carry Cai  
Test Engineer

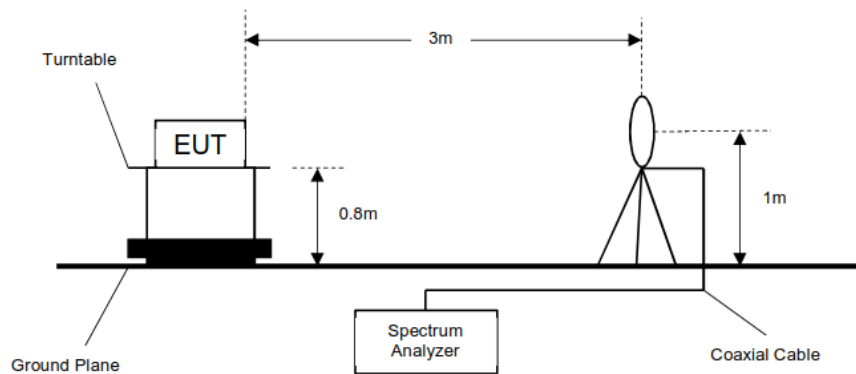
## 7 Test Setups

### 7.1 AC Power Line Conducted Emission test setups

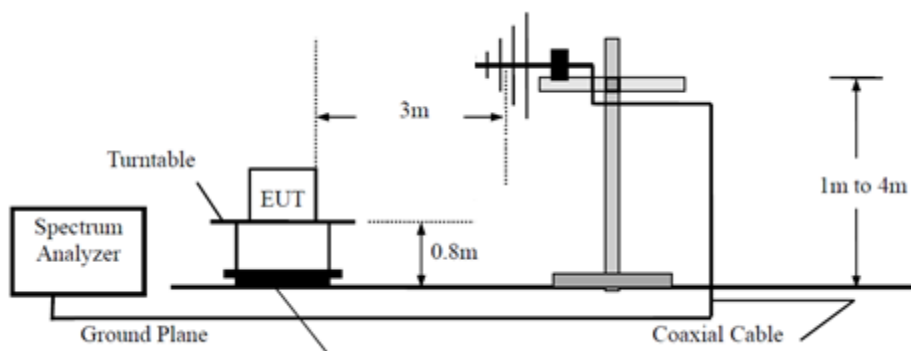


### 7.2 Radiated test setups

#### 9KHz - 30MHz

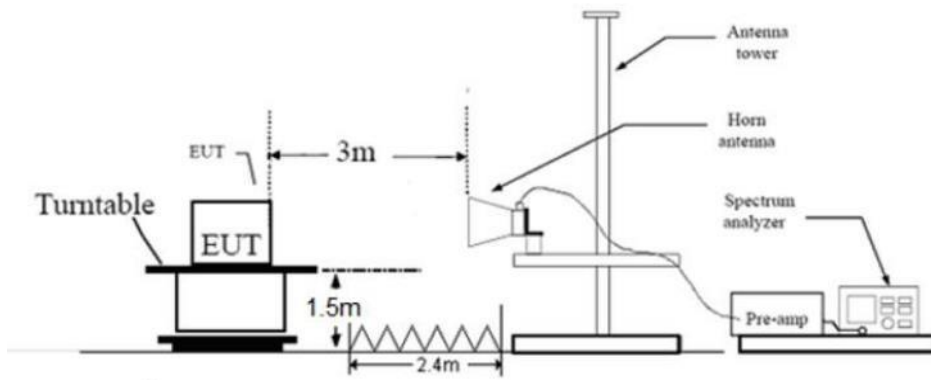


#### 30MHz - 1GHz

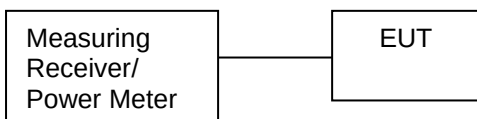




## Above 1GHz



## 7.3 Conducted RF test setups



## 8 Systems Test Configuration

### Auxiliary Equipment Used during Test:

| Description | Manufacturer | Model NO. | S/N     |
|-------------|--------------|-----------|---------|
| Laptop      | Thinkpad     | X230      | 0A72162 |

### Test software information:

| Test Software Version | RTLBTAPP   |                  |
|-----------------------|------------|------------------|
| Frequency             | Modulation | Setting TX Power |
| 2402-2480MHz          | GFSK       | Default          |

The system was configured to non-hopping mode, testing channel 0, 19, 39.

## 9 Technical Requirement

### 9.1 Conducted Emission

#### Test Method

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

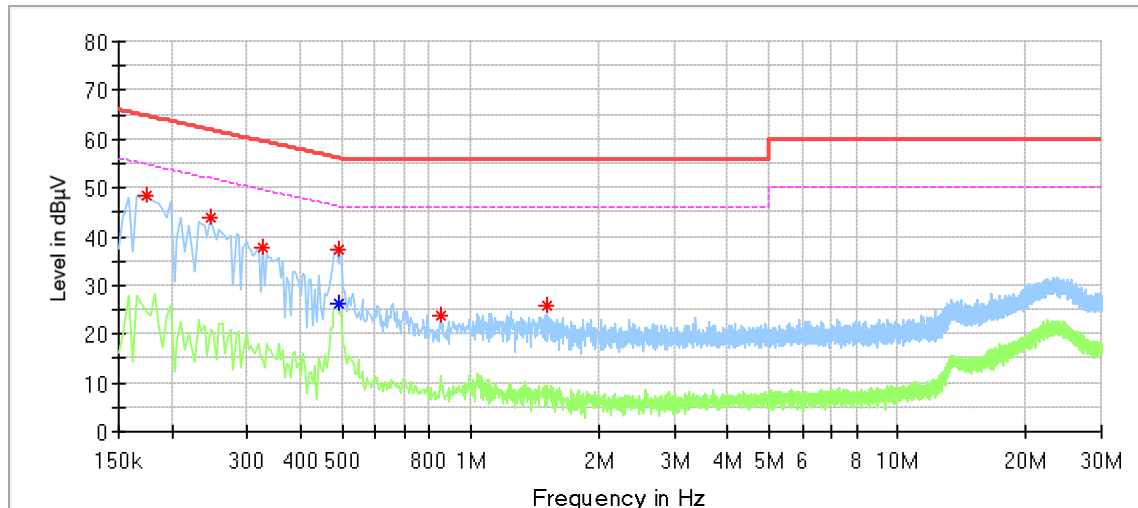
#### Limit

| Frequency<br>MHz | QP Limit<br>dB $\mu$ V | AV Limit<br>dB $\mu$ V |
|------------------|------------------------|------------------------|
| 0.150-0.500      | 66-56*                 | 56-46*                 |
| 0.500-5          | 56                     | 46                     |
| 5-30             | 60                     | 50                     |

\*Decreases with the logarithm of the frequency.

## Conducted Emission

Product Type : AURIA module  
 M/N : FS2345  
 Operating Condition : Transmitting  
 Test Specification : Line  
 Comment : 5VDC Power by Laptop (AC 120V/60Hz)



## Critical Freqs

| Frequency (MHz) | MaxPeak (dBμV) | Average (dBμV) | Limit (dBμV) | Margin (dB) | Line | Corr. (dB) |
|-----------------|----------------|----------------|--------------|-------------|------|------------|
| 0.174000        | 48.50          | ---            | 64.77        | 16.27       | L1   | 9.54       |
| 0.246000        | 43.82          | ---            | 61.89        | 18.07       | L1   | 9.56       |
| 0.326000        | 37.80          | ---            | 59.55        | 21.75       | L1   | 9.57       |
| 0.490000        | ---            | 26.26          | 46.17        | 19.91       | L1   | 9.59       |
| 0.494000        | 37.16          | ---            | 56.10        | 18.94       | L1   | 9.59       |
| 0.850000        | 23.64          | ---            | 56.00        | 32.36       | L1   | 9.60       |
| 1.510000        | 25.80          | ---            | 56.00        | 30.20       | L1   | 9.61       |

Remark:

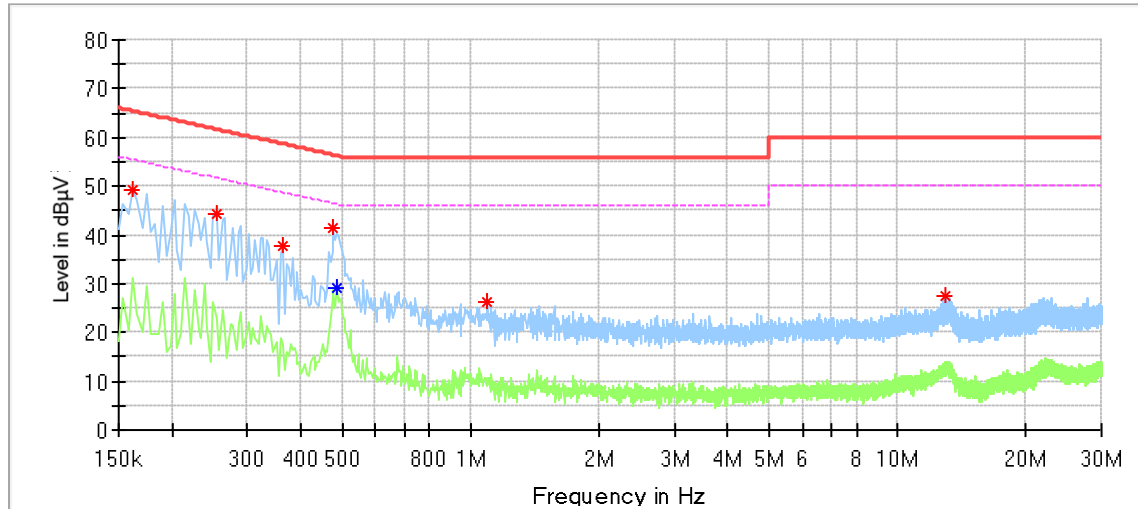
Level=Reading Level + Correction Factor

Correction Factor=Cable Loss + LISN Factor

(The Reading Level is recorded by software which is not shown in the sheet)

## Conducted Emission

Product Type : AURIA module  
 M/N : FS2345  
 Operating Condition : Transmitting  
 Test Specification : Neutral  
 Comment : 5VDC Power by Laptop (AC 120V/60Hz)



## Critical Freqs

| Frequency (MHz) | MaxPeak (dBμV) | Average (dBμV) | Limit (dBμV) | Margin (dB) | Line | Corr. (dB) |
|-----------------|----------------|----------------|--------------|-------------|------|------------|
| 0.162000        | 49.0           | ---            | 65.36        | 16.29       | N    | 9.57       |
| 0.254000        | 44.3           | ---            | 61.63        | 17.30       | N    | 9.59       |
| 0.362000        | 37.7           | ---            | 58.68        | 20.92       | N    | 9.61       |
| 0.478000        | 41.35          | ---            | 56.37        | 15.03       | N    | 9.61       |
| 0.486000        | ---            | 28.99          | 46.24        | 17.25       | N    | 9.62       |
| 1.098000        | 26.14          | ---            | 56.00        | 29.86       | N    | 9.63       |
| 12.958000       | 27.55          | ---            | 60.00        | 32.45       | N    | 9.99       |

Remark:

Level=Reading Level + Correction Factor

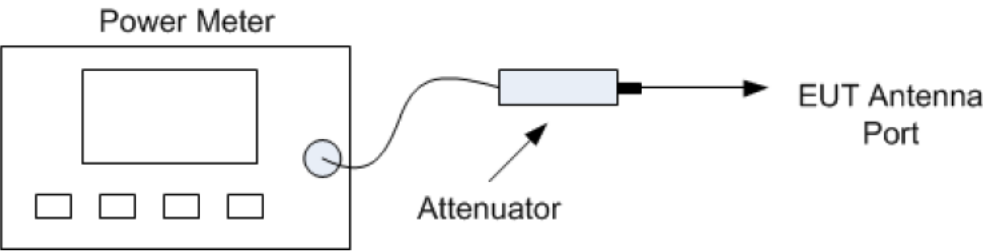
Correction Factor=Cable Loss + LISN Factor

(The Reading Level is recorded by software which is not shown in the sheet)

9.2 Conducted Output Power & EIRP

Test Method

- 1) The EUT is configured to transmit continuously, or to transmit with a constant duty cycle.
- 2) At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.
- 3) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
- 4) Measure the peak power of the transmitter. This measurement is a peak over both the ON and OFF periods of the transmitter.



Power meter conducted test setup

Limits

According to §15.247 (b) (3) & RSS-247 5.4(d), conducted output power limit as below:

| Frequency Range<br>MHz | Limit<br>W | Limit<br>dBm |
|------------------------|------------|--------------|
| 2400-2483.5            | ≤1         | ≤30          |

According to & RSS-247 5.4(d), EIRP limit as below:

| Frequency Range<br>MHz | Limit<br>W | Limit<br>dBm |
|------------------------|------------|--------------|
| 2400-2483.5            | ≤4         | ≤36          |

## Conducted Output Power & EIRP

| Mode | TX Type | Frequency (MHz) | Maximum Peak Conducted Output Power (dBm) |       | Verdict |
|------|---------|-----------------|-------------------------------------------|-------|---------|
|      |         |                 | ANT1                                      | Limit |         |
| 1M   | SISO    | 2402            | 5.45                                      | <=30  | Pass    |
|      |         | 2440            | 5.23                                      | <=30  | Pass    |
|      |         | 2480            | 4.76                                      | <=30  | Pass    |
| 2M   | SISO    | 2402            | <b>5.45</b>                               | <=30  | Pass    |
|      |         | 2440            | 5.35                                      | <=30  | Pass    |
|      |         | 2480            | 4.93                                      | <=30  | Pass    |

| Mode | TX Type | Frequency (MHz) | Maximum Peak Conducted Output Power (dBm) |       | Verdict |
|------|---------|-----------------|-------------------------------------------|-------|---------|
|      |         |                 | ANT2                                      | Limit |         |
| 1M   | SISO    | 2402            | 5.07                                      | <=30  | Pass    |
|      |         | 2440            | 5.02                                      | <=30  | Pass    |
|      |         | 2480            | 4.65                                      | <=30  | Pass    |
| 2M   | SISO    | 2402            | 5.06                                      | <=30  | Pass    |
|      |         | 2440            | <b>5.54</b>                               | <=30  | Pass    |
|      |         | 2480            | 5.14                                      | <=30  | Pass    |

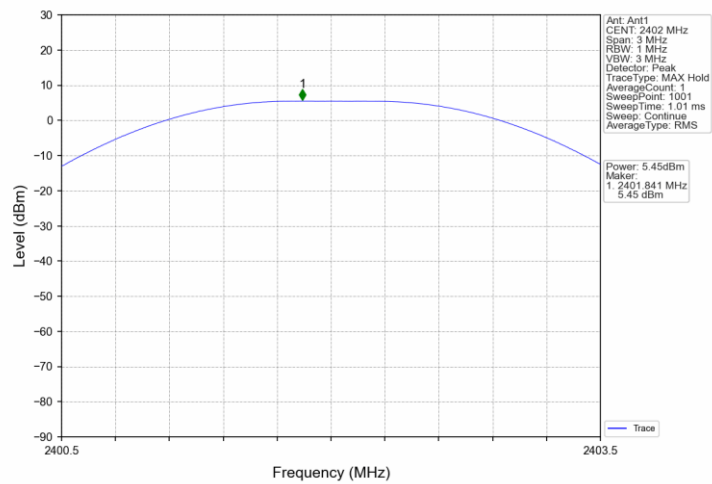
| Mode | TX Type | Frequency (MHz) | EIRP (dBm)  |       | Verdict |
|------|---------|-----------------|-------------|-------|---------|
|      |         |                 | ANT1        | Limit |         |
| 1M   | SISO    | 2402            | 7.28        | <=30  | Pass    |
|      |         | 2440            | 7.23        | <=30  | Pass    |
|      |         | 2480            | 6.86        | <=30  | Pass    |
| 2M   | SISO    | 2402            | 7.27        | <=30  | Pass    |
|      |         | 2440            | <b>7.75</b> | <=30  | Pass    |
|      |         | 2480            | 7.35        | <=30  | Pass    |

Note: ANT1 gain is 1.86 dBi

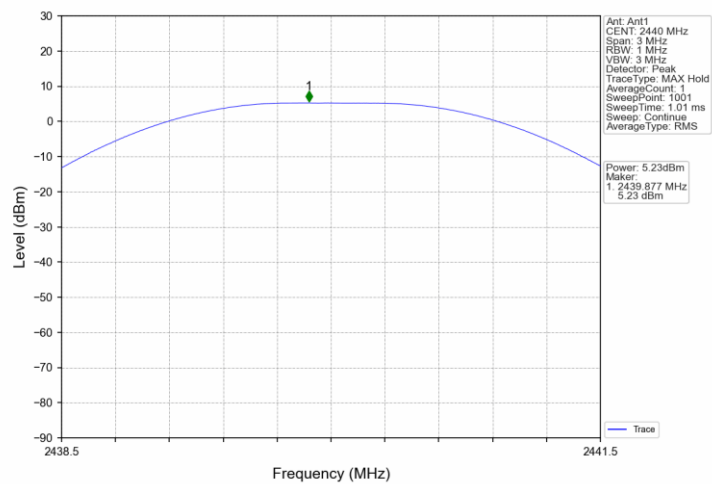
| Mode | TX Type | Frequency (MHz) | EIRP (dBm) |       | Verdict |
|------|---------|-----------------|------------|-------|---------|
|      |         |                 | ANT2       | Limit |         |
| 1M   | SISO    | 2402            | 6.93       | <=30  | Pass    |
|      |         | 2440            | 6.88       | <=30  | Pass    |
|      |         | 2480            | 6.51       | <=30  | Pass    |
| 2M   | SISO    | 2402            | 6.92       | <=30  | Pass    |
|      |         | 2440            | <b>7.4</b> | <=30  | Pass    |
|      |         | 2480            | 7          | <=30  | Pass    |

Note: ANT2 gain is 2.21 dBi

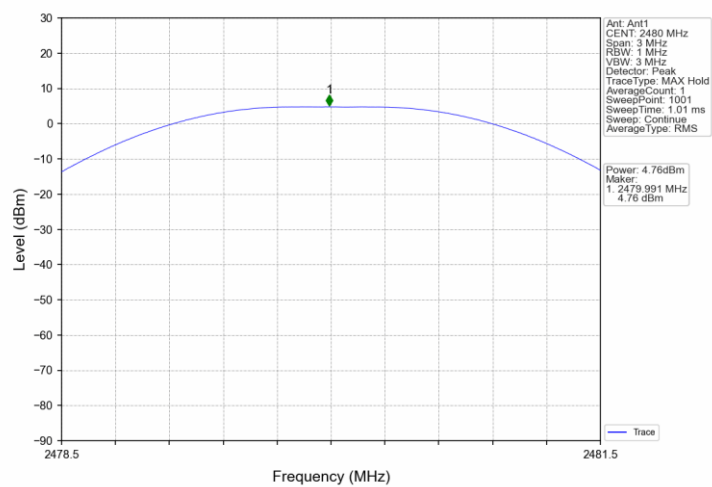
## 1M\_LCH\_2402MHz\_Ant1\_NTNV



## 1M\_MCH\_2440MHz\_Ant1\_NTNV

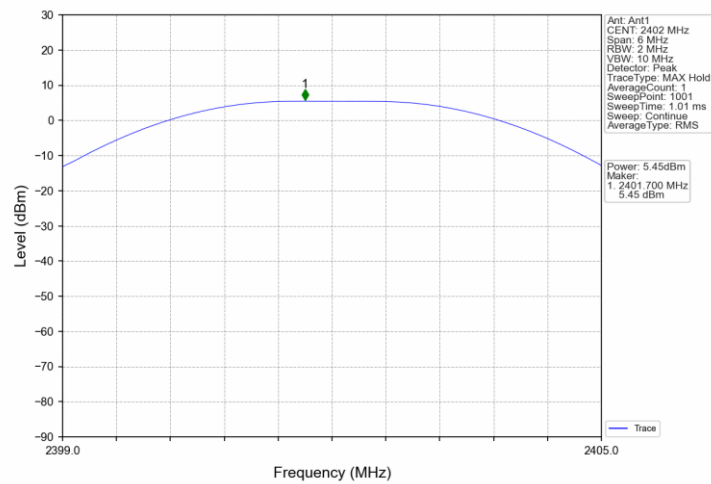


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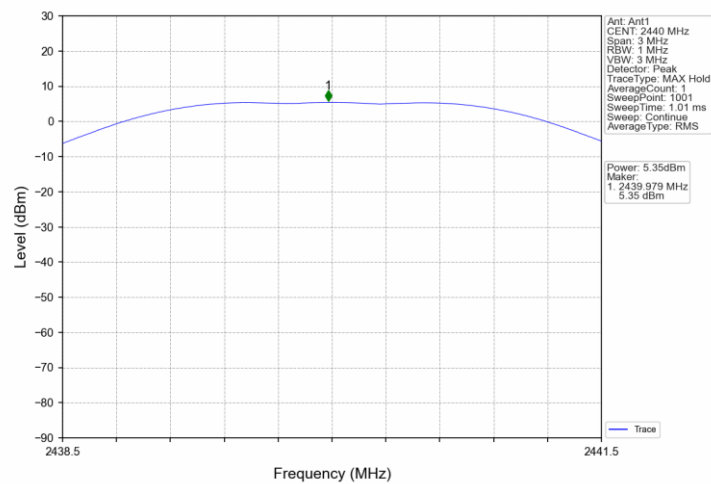




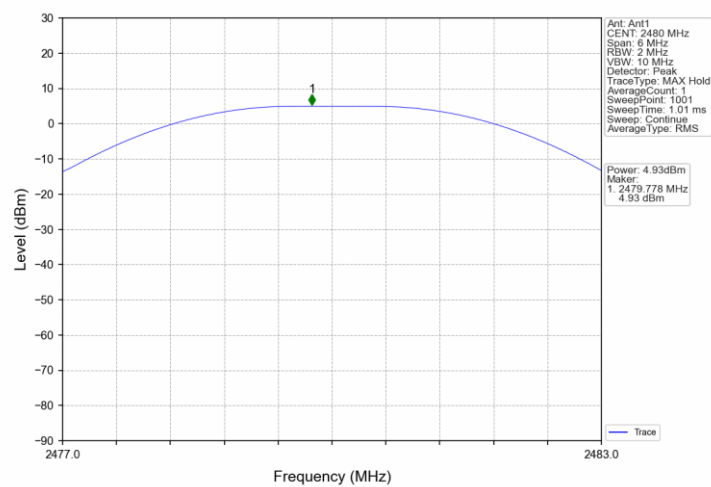
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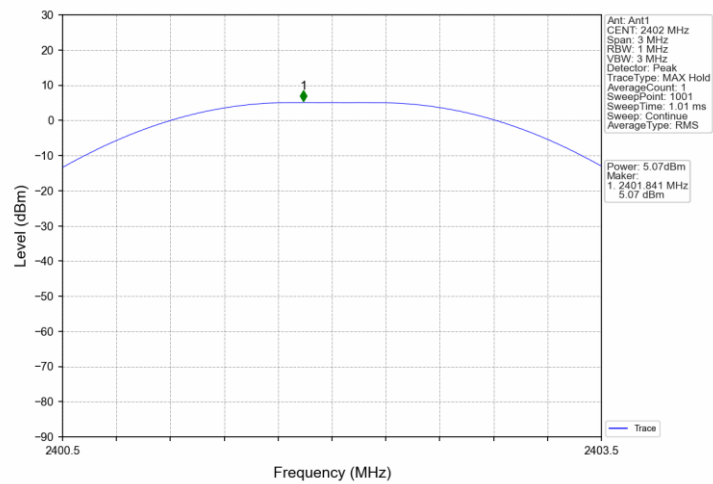
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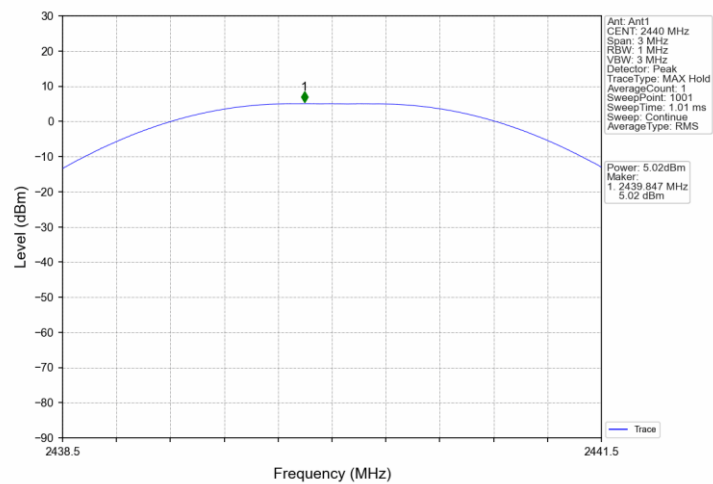
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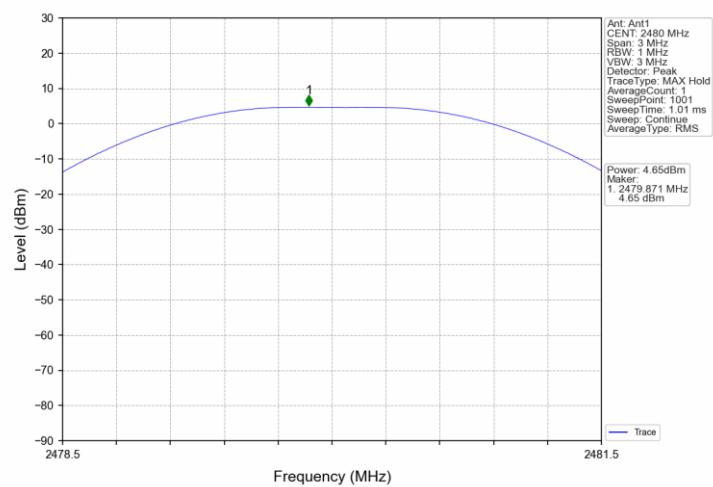
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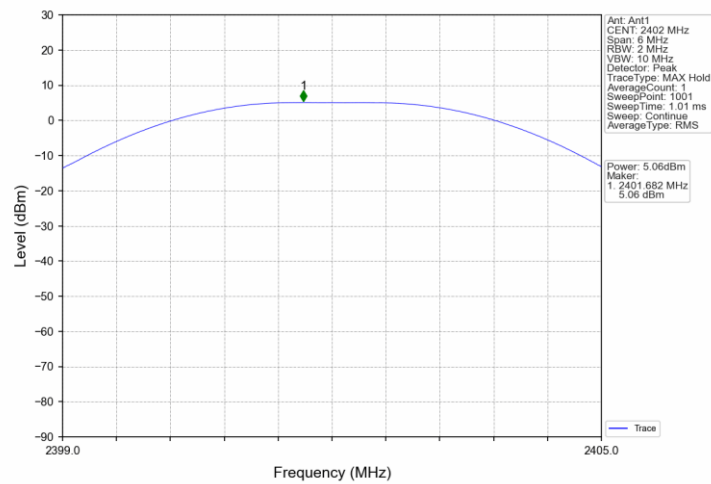
## 1M\_MCH\_2440MHz\_Ant2\_NTNV



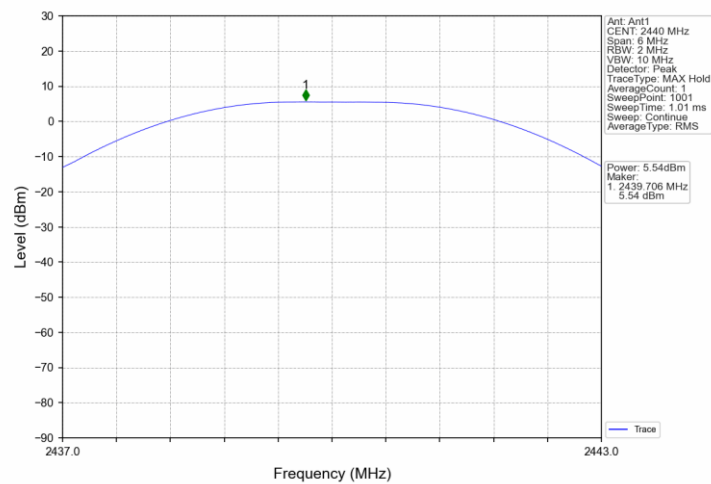
## 1M\_HCH\_2480MHz\_Ant2\_NTNV



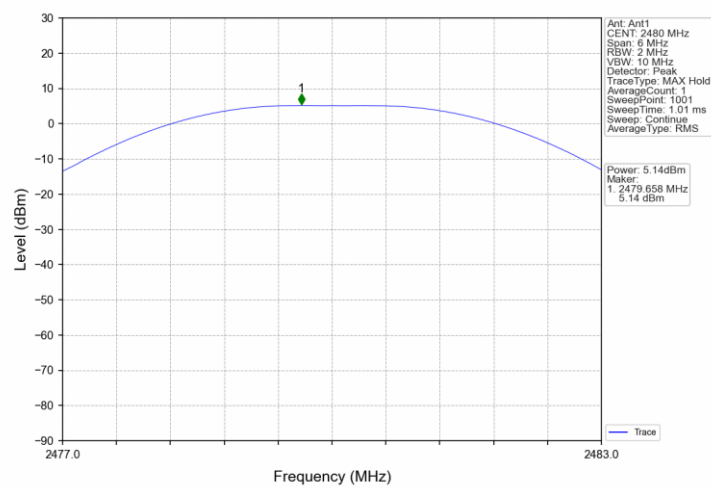
## 2M\_LCH\_2402MHz\_Ant2\_NTNV



## 2M\_MCH\_2440MHz\_Ant2\_NTNV



## 2M\_HCH\_2480MHz\_Ant2\_NTNV



### 9.3 Power Spectral Density

#### Test Method

1. The RF output of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
4. Set analyzer center frequency to DTS channel center frequency. RBW=3kHz, VBW≥3RBW, Span=1.5 times DTS bandwidth, Detector=Peak, Sweep=auto, Trace= max hold.
5. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
6. Repeat above procedures until other frequencies measured were completed.

#### Limit

Limit [dBm/3KHz]

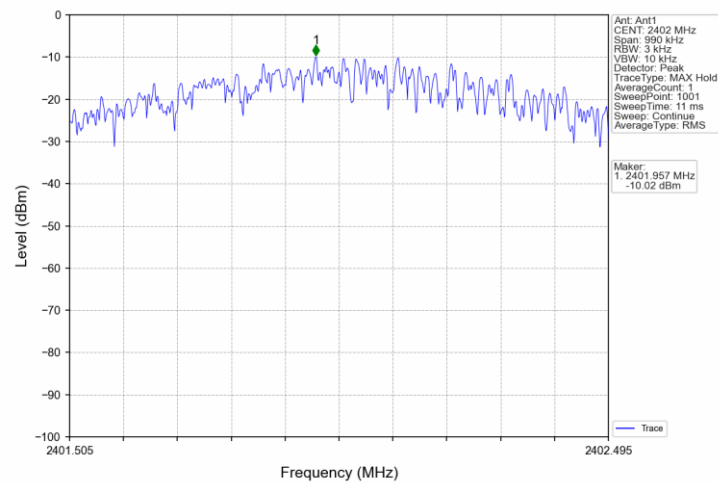
≤8

#### Test result

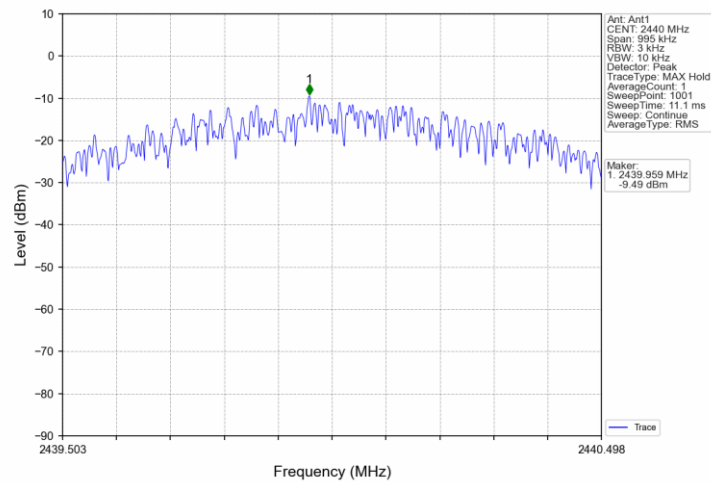
| Mode | TX Type | Frequency (MHz) | Maximum PSD (dBm/3kHz) |       | Verdict |
|------|---------|-----------------|------------------------|-------|---------|
|      |         |                 | ANT1                   | Limit |         |
| 1M   | SISO    | 2402            | -10.02                 | ≤8    | Pass    |
|      |         | 2440            | -9.49                  | ≤8    | Pass    |
|      |         | 2480            | -10.50                 | ≤8    | Pass    |
| 2M   | SISO    | 2402            | -14.01                 | ≤8    | Pass    |
|      |         | 2440            | -12.67                 | ≤8    | Pass    |
|      |         | 2480            | -12.99                 | ≤8    | Pass    |

| Mode | TX Type | Frequency (MHz) | Maximum PSD (dBm/3kHz) |       | Verdict |
|------|---------|-----------------|------------------------|-------|---------|
|      |         |                 | ANT2                   | Limit |         |
| 1M   | SISO    | 2402            | -10.36                 | ≤8    | Pass    |
|      |         | 2440            | -8.96                  | ≤8    | Pass    |
|      |         | 2480            | -9.32                  | ≤8    | Pass    |
| 2M   | SISO    | 2402            | -13.01                 | ≤8    | Pass    |
|      |         | 2440            | -13.39                 | ≤8    | Pass    |
|      |         | 2480            | -12.97                 | ≤8    | Pass    |

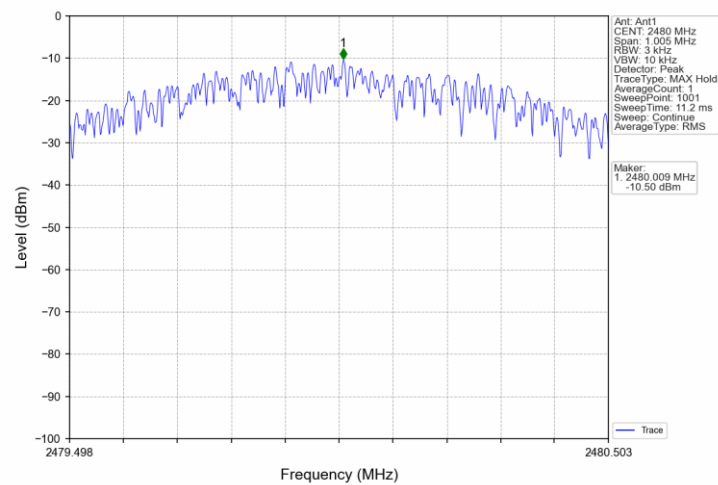
## 1M\_LCH\_2402MHz\_Ant1\_NTNV



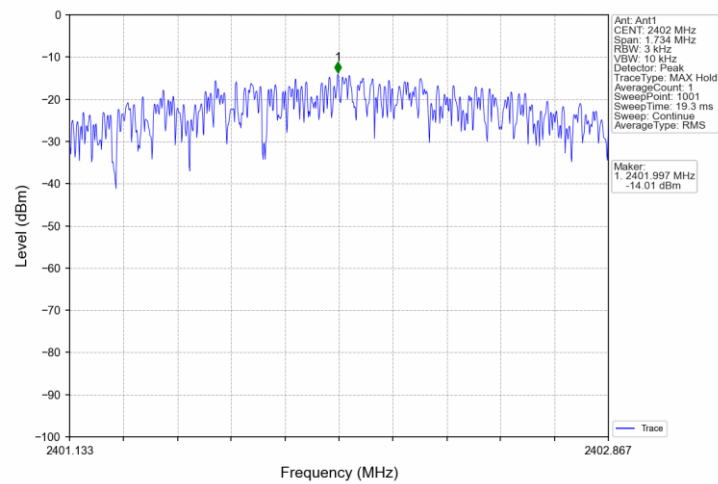
## 1M\_MCH\_2440MHz\_Ant1\_NTNV



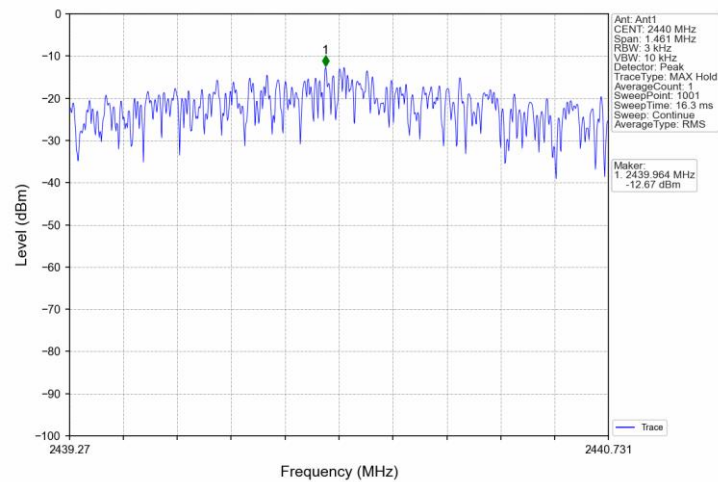
## 1M\_HCH\_2480MHz\_Ant1\_NTNV



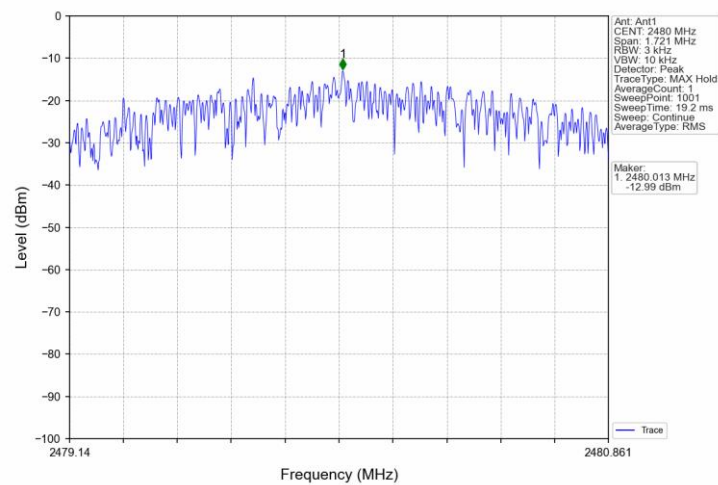
## 2M\_LCH\_2402MHz\_Ant1\_NTNV



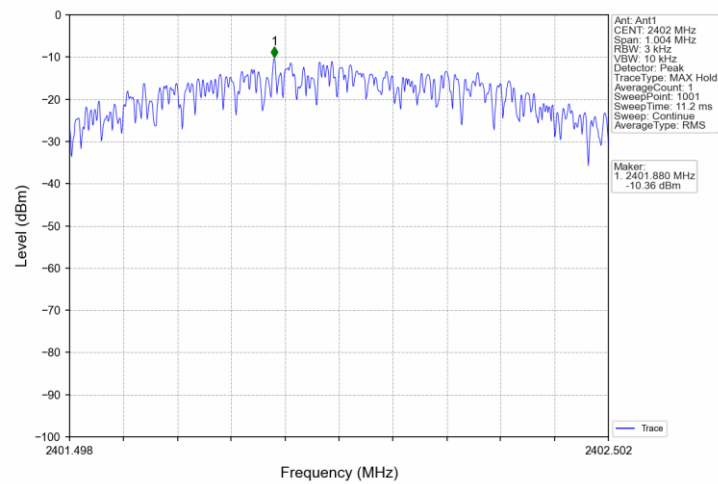
## 2M\_MCH\_2440MHz\_Ant1\_NTNV



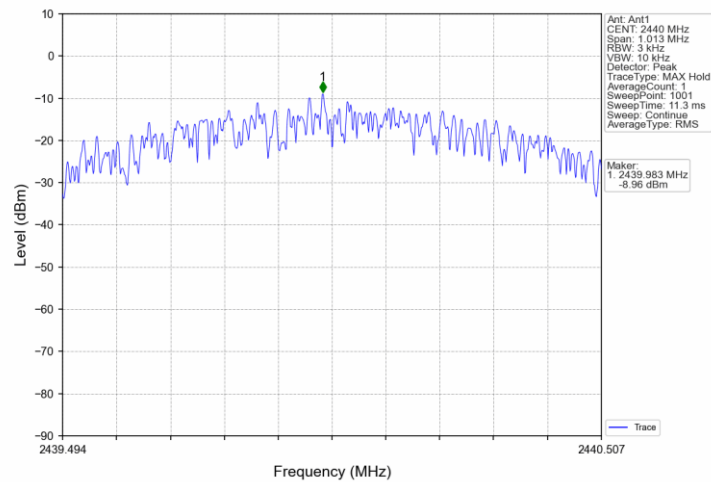
## 2M\_HCH\_2480MHz\_Ant1\_NTNV



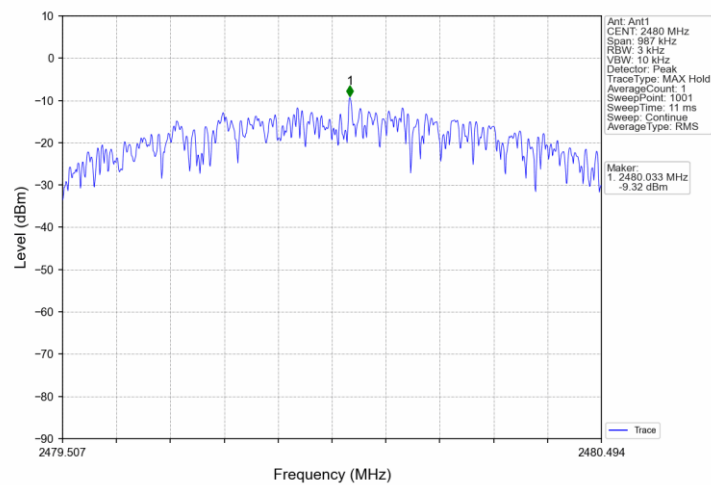
## 1M\_LCH\_2402MHz\_Ant2\_NTNV



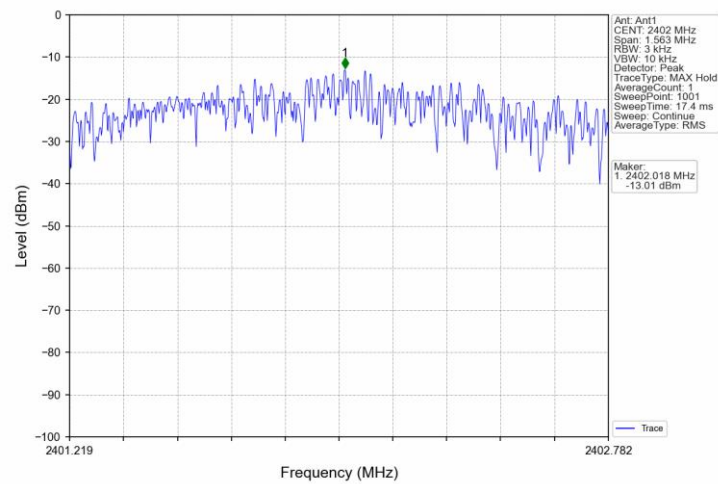
## 1M\_MCH\_2440MHz\_Ant2\_NTNV



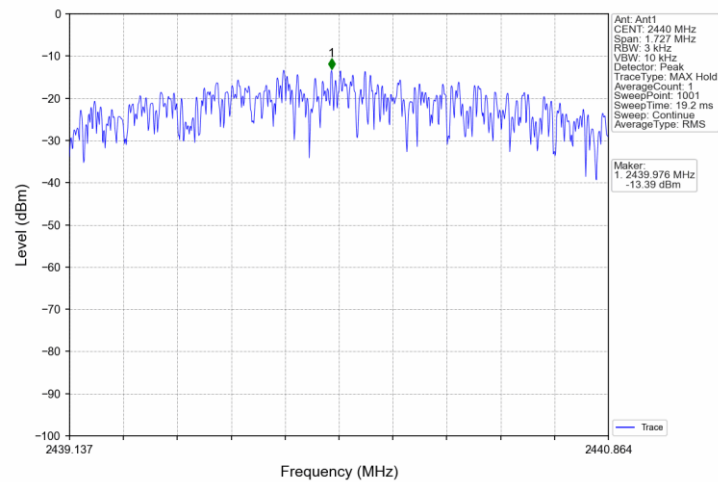
## 1M\_HCH\_2480MHz\_Ant2\_NTNV



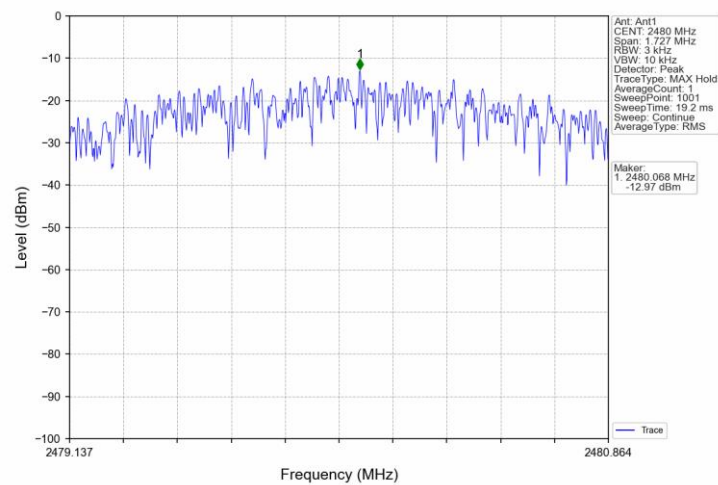
## 2M\_LCH\_2402MHz\_Ant2\_NTNV



## 2M\_MCH\_2440MHz\_Ant2\_NTNV



## 2M\_HCH\_2480MHz\_Ant2\_NTNV





## 9.4 6 dB Bandwidth and 99% Occupied Bandwidth

### Test Method for 6 dB Bandwidth

1. The RF output of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:  
RBW=100KHz, VBW $\geq$ 3RBW, Sweep = auto, Detector function = peak, Trace = max hold
4. Use the automatic bandwidth measurement capability of an instrument, use the X dB bandwidth mode with X set to 6 dB.
5. Allow the trace to stabilize, record the 6 dB Bandwidth value.

### Limit

Limit [kHz]

---

$\geq 500$

### Test Method for 99 % Bandwidth

1. Set center frequency to the nominal EUT channel center frequency
2. Set span = 1.5 times to 5.0 times the OBW. Set RBW = 1 % to 5 % of the OBW  
Set VBW  $\geq$  3 RBW Trace mode = max hold. Sweep = auto couple.  
Allow the trace to stabilize.
3. Use the 99 % power bandwidth function of the instrument.
4. Record the results in the test report.

### Limit

Limit [kHz]

---

---

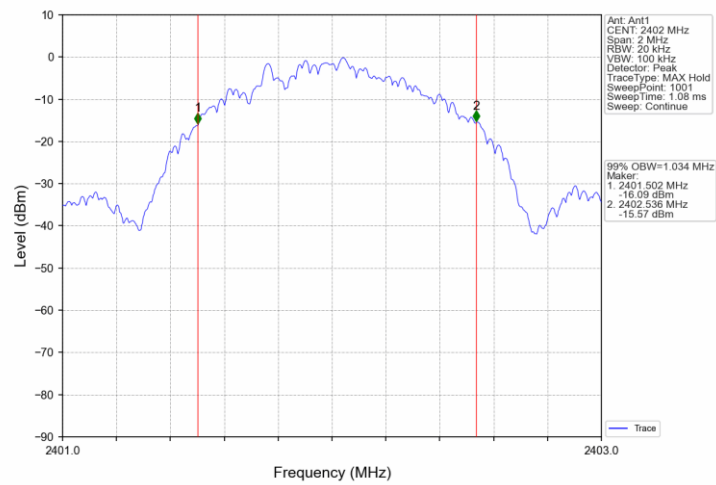
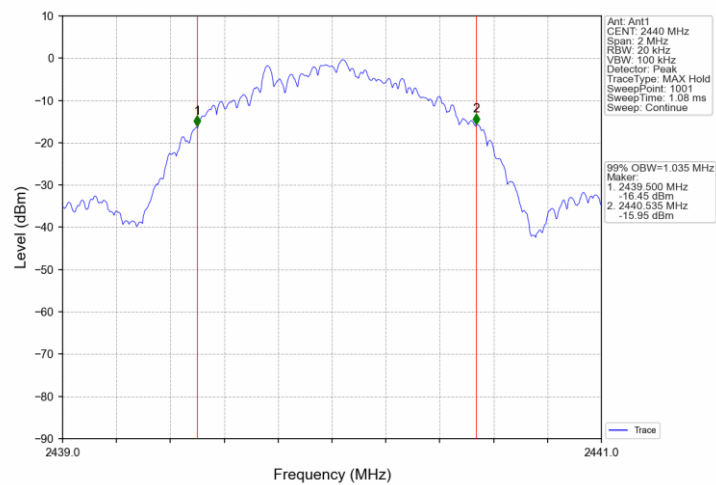
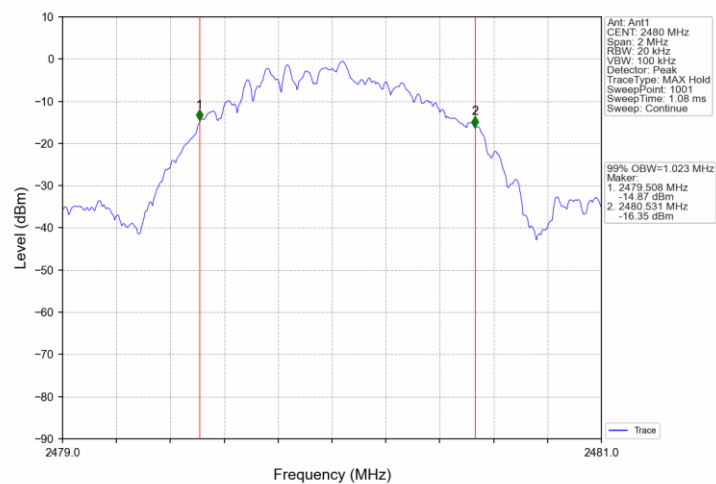
**Test result**

| Mode | TX Type | Frequency (MHz) | ANT | 99% Occupied Bandwidth (MHz) |       | Verdict |
|------|---------|-----------------|-----|------------------------------|-------|---------|
|      |         |                 |     | Result                       | Limit |         |
| 1M   | SISO    | 2402            | 1   | 1.034                        | /     | Pass    |
|      |         | 2440            | 1   | 1.035                        | /     | Pass    |
|      |         | 2480            | 1   | 1.023                        | /     | Pass    |
| 2M   | SISO    | 2402            | 1   | 2.059                        | /     | Pass    |
|      |         | 2440            | 1   | 2.048                        | /     | Pass    |
|      |         | 2480            | 1   | 2.049                        | /     | Pass    |

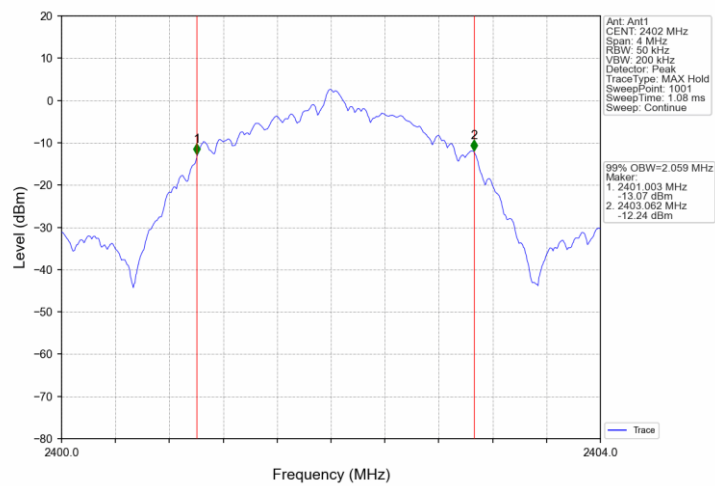
| Mode | TX Type | Frequency (MHz) | ANT | 6dB Bandwidth (MHz) |            | Verdict |
|------|---------|-----------------|-----|---------------------|------------|---------|
|      |         |                 |     | Result              | Limit      |         |
| 1M   | SISO    | 2402            | 1   | 0.660               | $\geq 0.5$ | Pass    |
|      |         | 2440            | 1   | 0.663               | $\geq 0.5$ | Pass    |
|      |         | 2480            | 1   | 0.670               | $\geq 0.5$ | Pass    |
| 2M   | SISO    | 2402            | 1   | 1.156               | $\geq 0.5$ | Pass    |
|      |         | 2440            | 1   | 0.974               | $\geq 0.5$ | Pass    |
|      |         | 2480            | 1   | 1.147               | $\geq 0.5$ | Pass    |

| Mode | TX Type | Frequency (MHz) | ANT | 99% Occupied Bandwidth (MHz) |       | Verdict |
|------|---------|-----------------|-----|------------------------------|-------|---------|
|      |         |                 |     | Result                       | Limit |         |
| 1M   | SISO    | 2402            | 2   | 1.019                        | /     | Pass    |
|      |         | 2440            | 2   | 1.030                        | /     | Pass    |
|      |         | 2480            | 2   | 1.037                        | /     | Pass    |
| 2M   | SISO    | 2402            | 2   | 2.048                        | /     | Pass    |
|      |         | 2440            | 2   | 2.044                        | /     | Pass    |
|      |         | 2480            | 2   | 2.051                        | /     | Pass    |

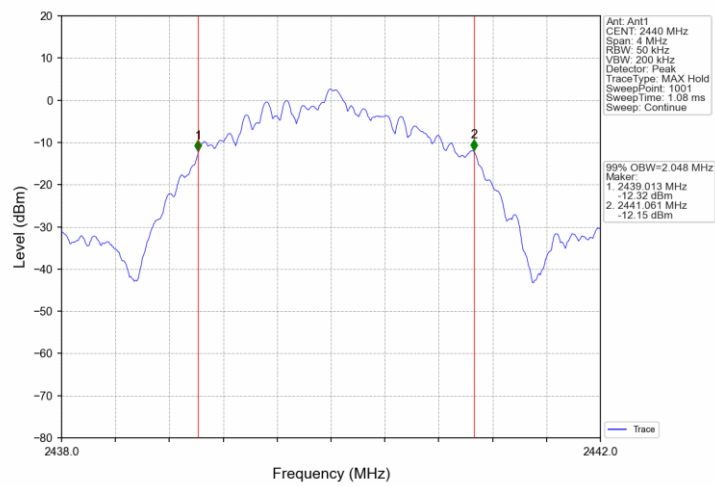
| Mode | TX Type | Frequency (MHz) | ANT | 6dB Bandwidth (MHz) |            | Verdict |
|------|---------|-----------------|-----|---------------------|------------|---------|
|      |         |                 |     | Result              | Limit      |         |
| 1M   | SISO    | 2402            | 2   | 0.669               | $\geq 0.5$ | Pass    |
|      |         | 2440            | 2   | 0.675               | $\geq 0.5$ | Pass    |
|      |         | 2480            | 2   | 0.658               | $\geq 0.5$ | Pass    |
| 2M   | SISO    | 2402            | 2   | 1.042               | $\geq 0.5$ | Pass    |
|      |         | 2440            | 2   | 1.151               | $\geq 0.5$ | Pass    |
|      |         | 2480            | 2   | 1.151               | $\geq 0.5$ | Pass    |

**99% Bandwidth****1M\_LCH\_2402MHz\_Ant1\_NTNV****1M\_MCH\_2440MHz\_Ant1\_NTNV****1M\_HCH\_2480MHz\_Ant1\_NTNV**

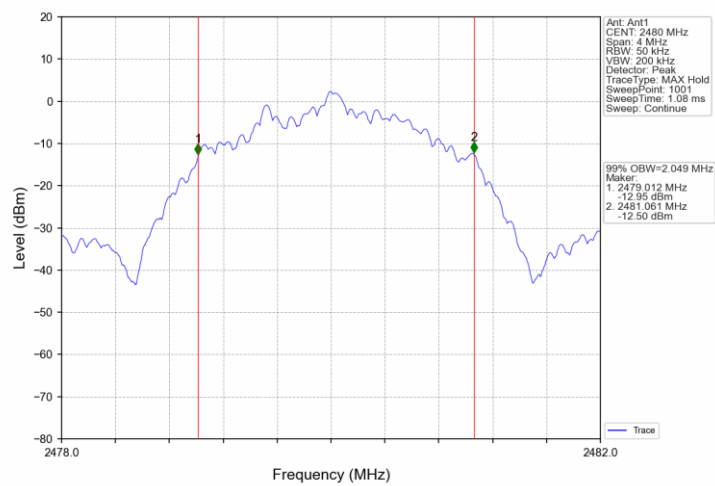
## 2M\_LCH\_2402MHz\_Ant1\_NTNV



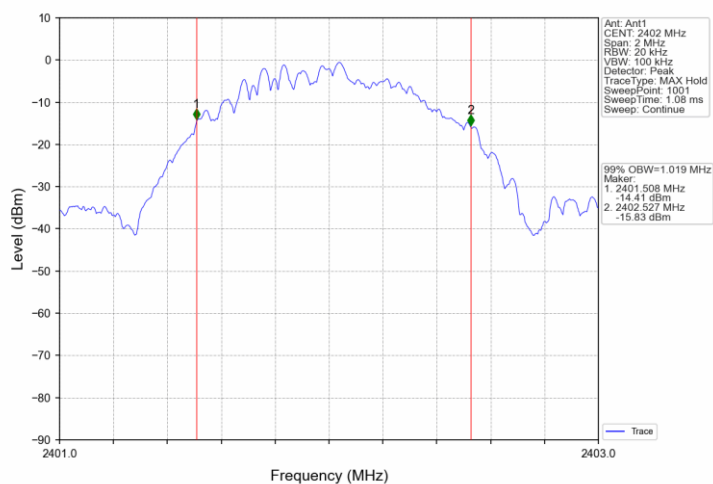
## 2M\_MCH\_2440MHz\_Ant1\_NTNV



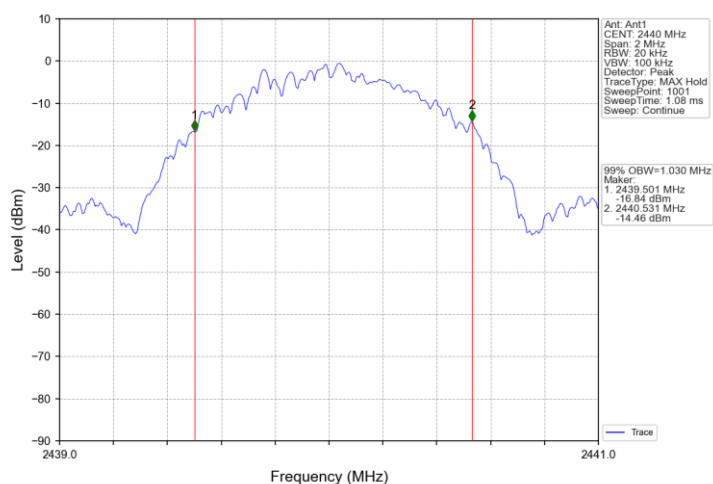
## 2M\_HCH\_2480MHz\_Ant1\_NTNV



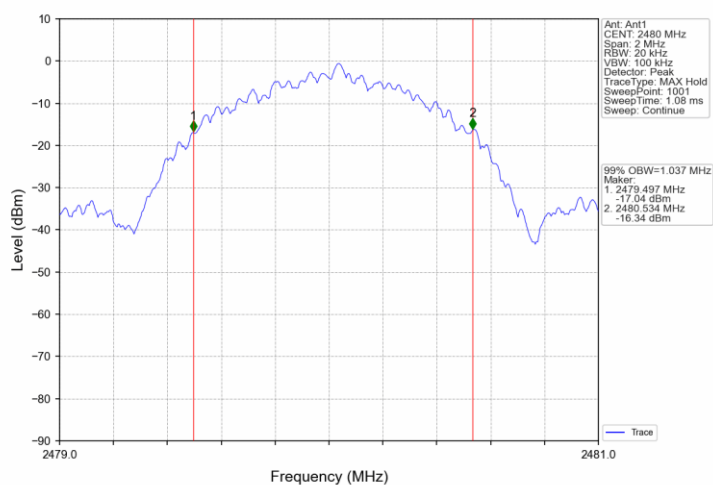
## 1M\_LCH\_2402MHz\_Ant2\_NTNV



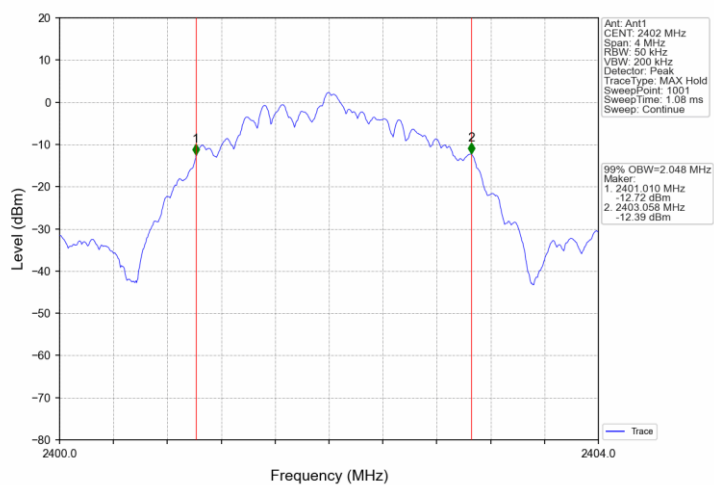
## 1M\_MCH\_2440MHz\_Ant2\_NTNV



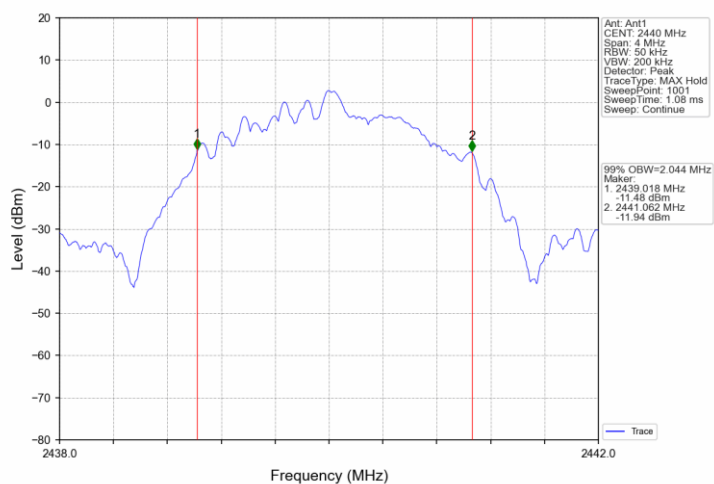
## 1M\_HCH\_2480MHz\_Ant2\_NTNV



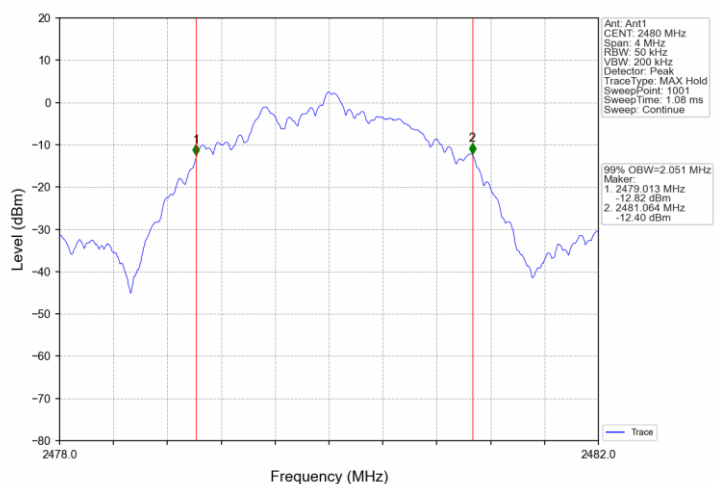
## 2M\_LCH\_2402MHz\_Ant2\_NTNV

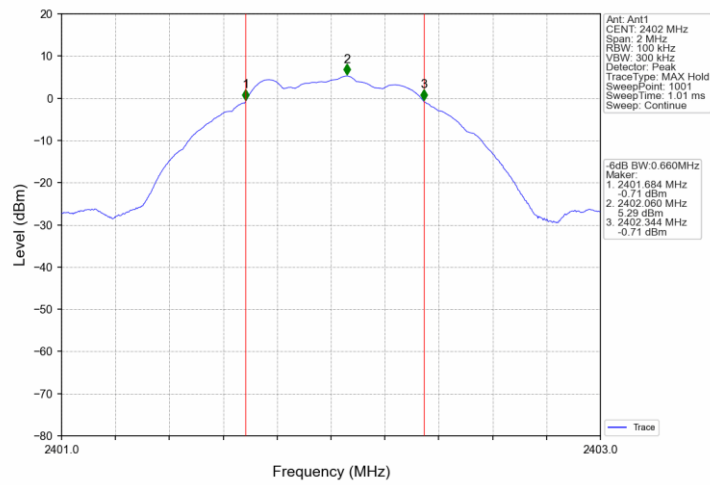
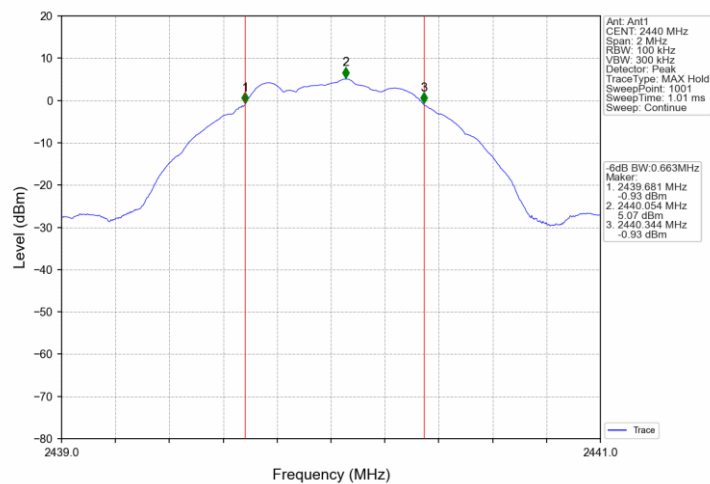
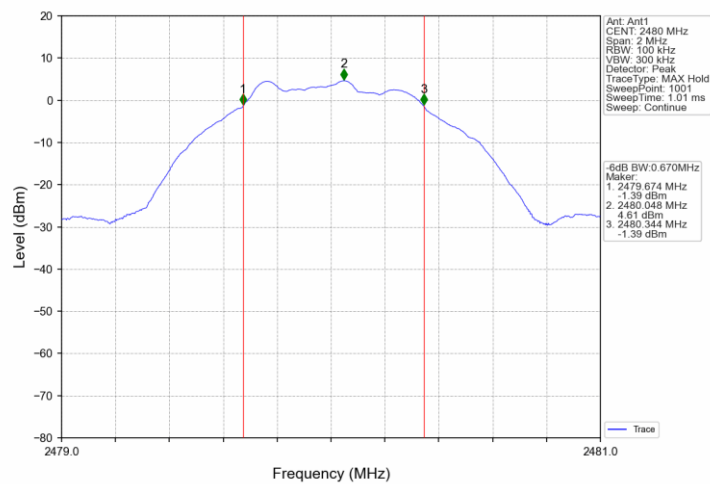


## 2M\_MCH\_2440MHz\_Ant2\_NTNV

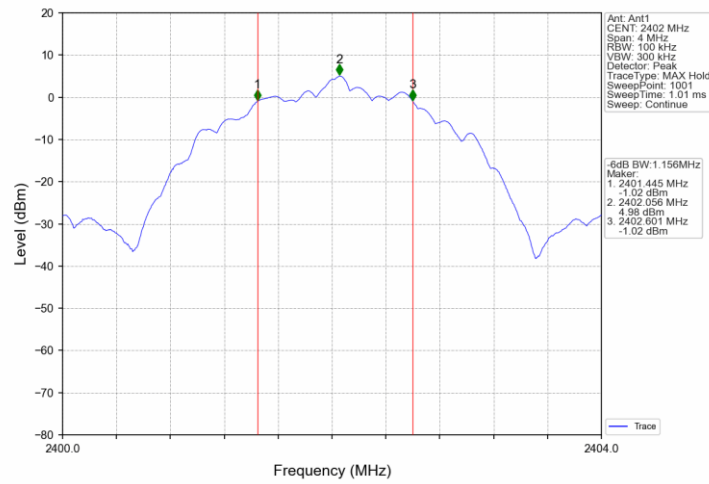


## 2M\_HCH\_2480MHz\_Ant2\_NTNV

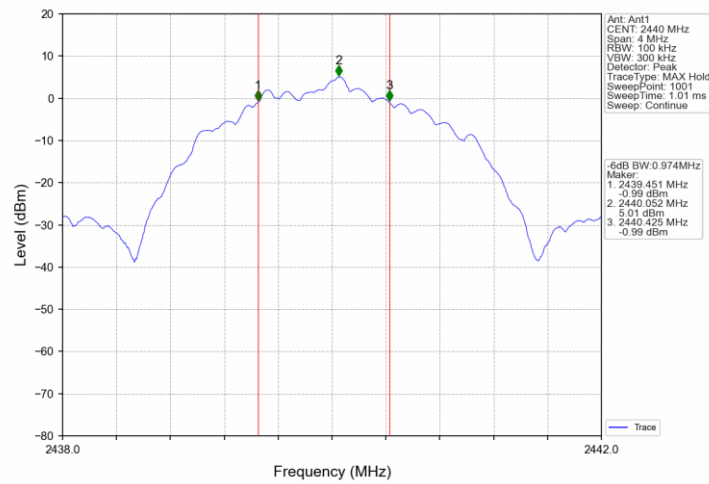


**6dB Bandwidth****1M\_LCH\_2402MHz\_Ant1\_NTNV****1M\_MCH\_2440MHz\_Ant1\_NTNV****1M\_HCH\_2480MHz\_Ant1\_NTNV**

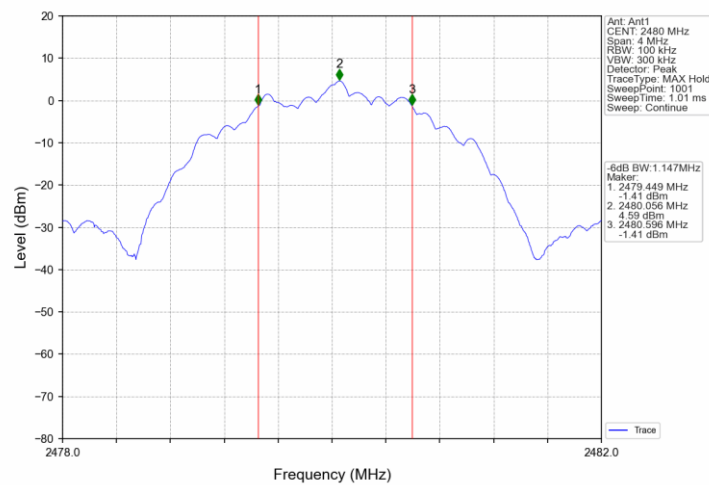
### 2M\_LCH\_2402MHz\_Ant1\_NTNV



### 2M\_MCH\_2440MHz\_Ant1\_NTNV

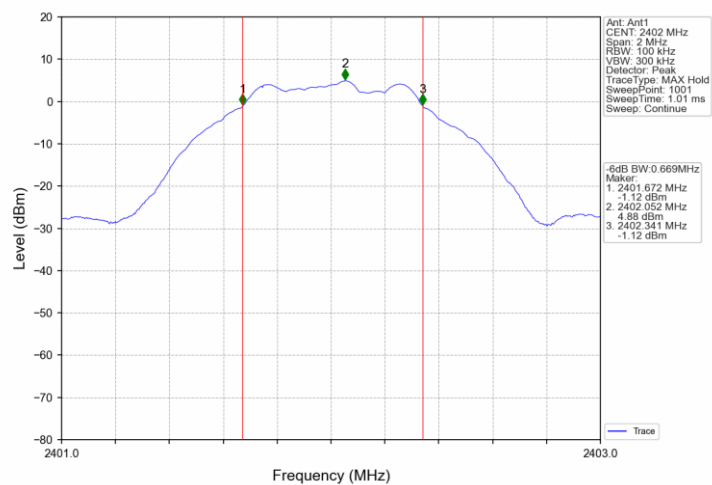


### 2M\_HCH\_2480MHz\_Ant1\_NTNV

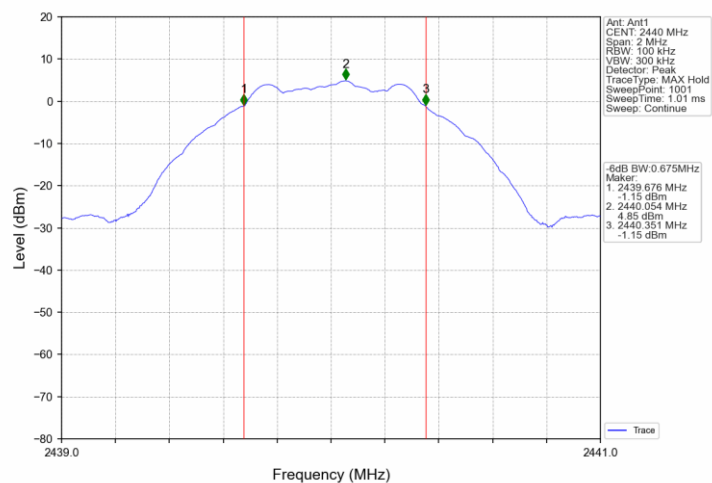




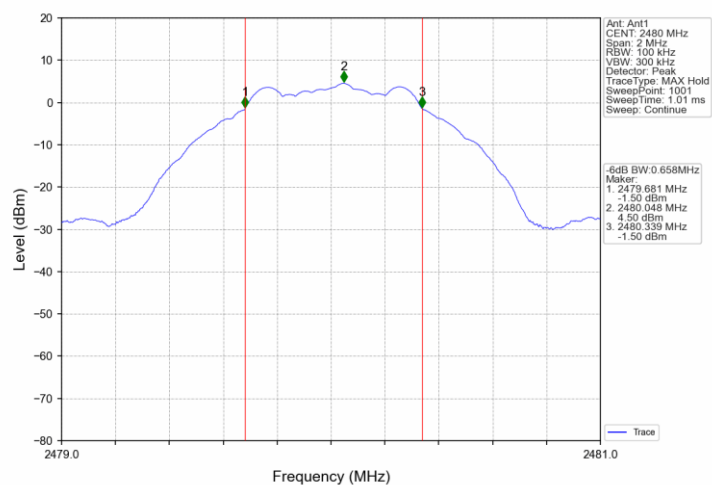
## 1M\_LCH\_2402MHz\_Ant2\_NTNV



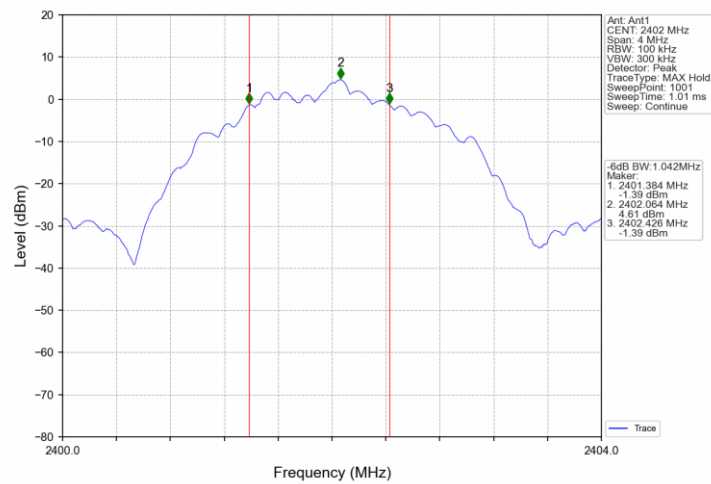
## 1M\_MCH\_2440MHz\_Ant2\_NTNV



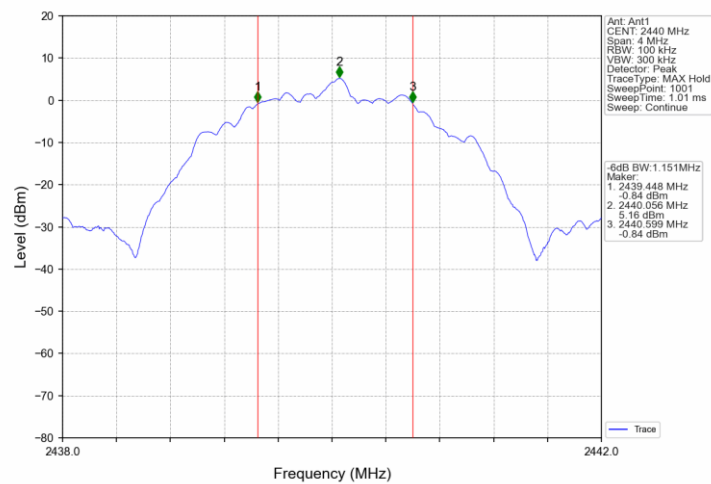
## 1M\_HCH\_2480MHz\_Ant2\_NTNV



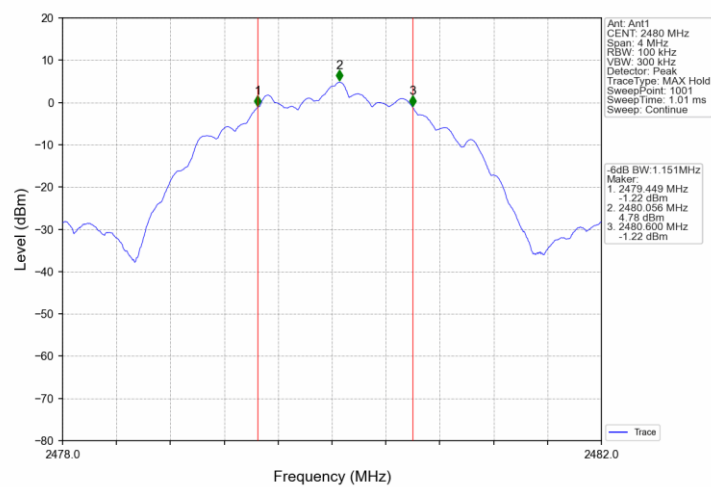
## 2M\_LCH\_2402MHz\_Ant2\_NTNV



## 2M\_MCH\_2440MHz\_Ant2\_NTNV



## 2M\_HCH\_2480MHz\_Ant2\_NTNV



## 9.5 Spurious RF Conducted Emissions

### Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:  
Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10<sup>th</sup> harmonic. Typically, several plots are required to cover this entire span.  
RBW = 100 kHz, VBW $\geq$ 3RBW, Sweep = auto, Detector function = peak, Trace = max hold
4. Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded.
5. The level displayed must comply with the limit specified in this Section. Submit these plots.
6. Repeat above procedures until all frequencies measured were complete.

### Limit

| Frequency Range<br>MHz | Limit (dBc) |
|------------------------|-------------|
| 30-25000               | -20         |

## Spurious RF conducted emissions

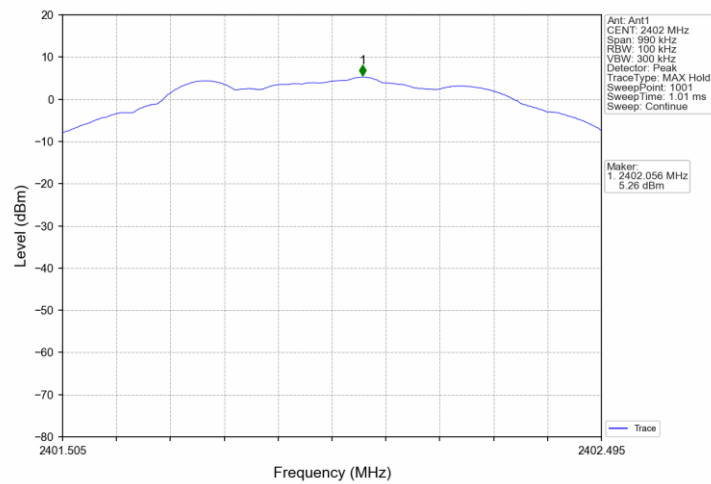
| Mode | TX Type | Frequency (MHz) | ANT | Level of Reference (dBm) | Limit (dBm) | Verdict |
|------|---------|-----------------|-----|--------------------------|-------------|---------|
| 1M   | SISO    | 2402            | 1   | 5.26                     | -14.74      | Pass    |
|      |         | 2440            | 1   | 5.06                     | -14.94      | Pass    |
|      |         | 2480            | 1   | 4.61                     | -15.39      | Pass    |
| 2M   | SISO    | 2402            | 1   | 4.90                     | -15.10      | Pass    |
|      |         | 2440            | 1   | 4.97                     | -15.03      | Pass    |
|      |         | 2480            | 1   | 4.54                     | -15.46      | Pass    |

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

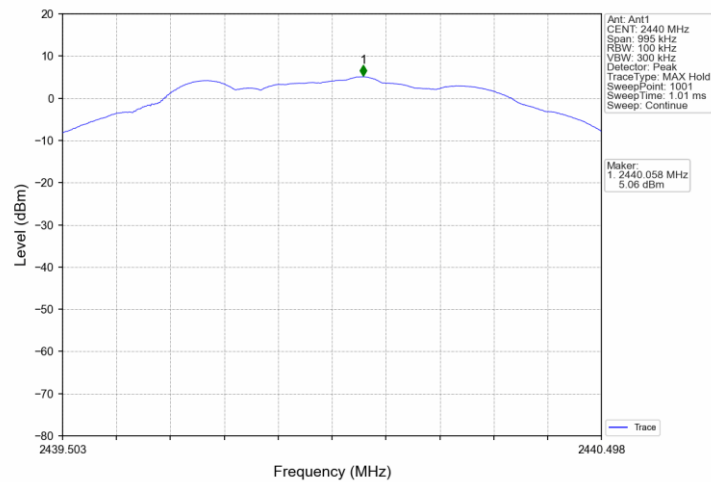
| Mode | TX Type | Frequency (MHz) | ANT | Level of Reference (dBm) | Limit (dBm) | Verdict |
|------|---------|-----------------|-----|--------------------------|-------------|---------|
| 1M   | SISO    | 2402            | 2   | 4.88                     | -15.12      | Pass    |
|      |         | 2440            | 2   | 4.84                     | -15.16      | Pass    |
|      |         | 2480            | 2   | 4.51                     | -15.49      | Pass    |
| 2M   | SISO    | 2402            | 2   | 4.56                     | -15.44      | Pass    |
|      |         | 2440            | 2   | 5.11                     | -14.89      | Pass    |
|      |         | 2480            | 2   | 4.75                     | -15.25      | Pass    |

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

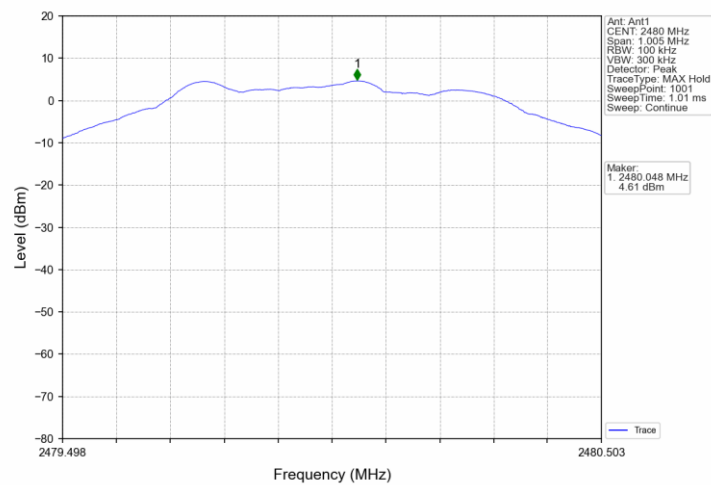
## 1M\_LCH\_2402MHz\_Ant1\_NTNV



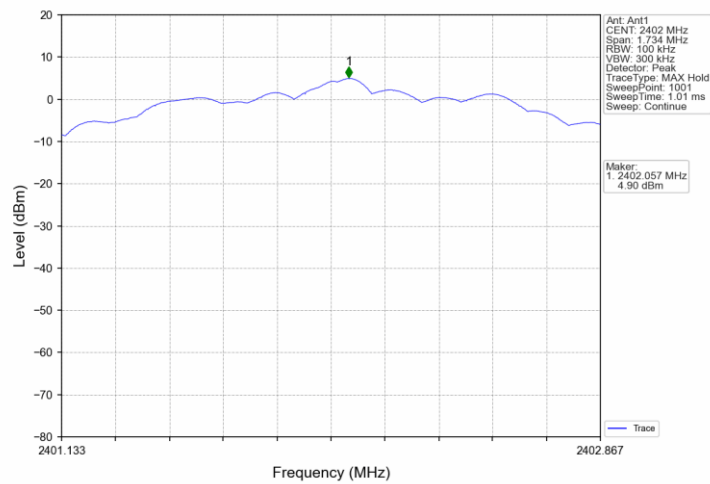
## 1M\_MCH\_2440MHz\_Ant1\_NTNV



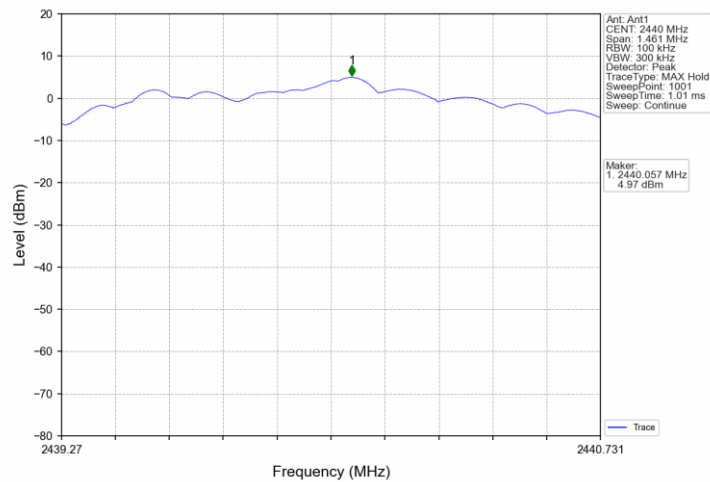
## 1M\_HCH\_2480MHz\_Ant1\_NTNV



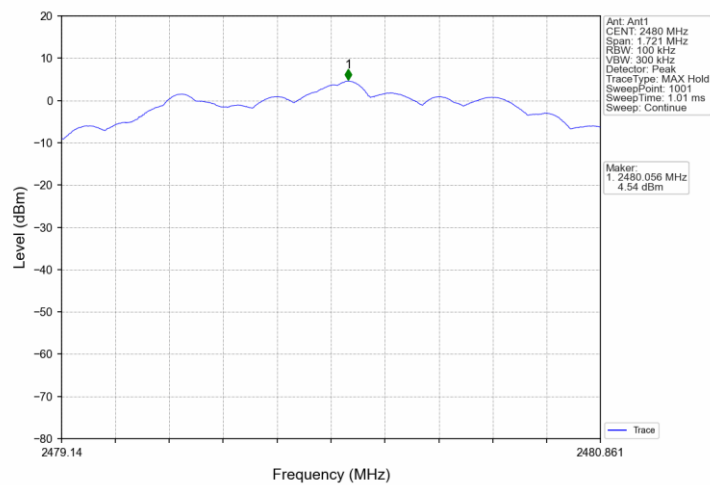
## 2M\_LCH\_2402MHz\_Ant1\_NTNV



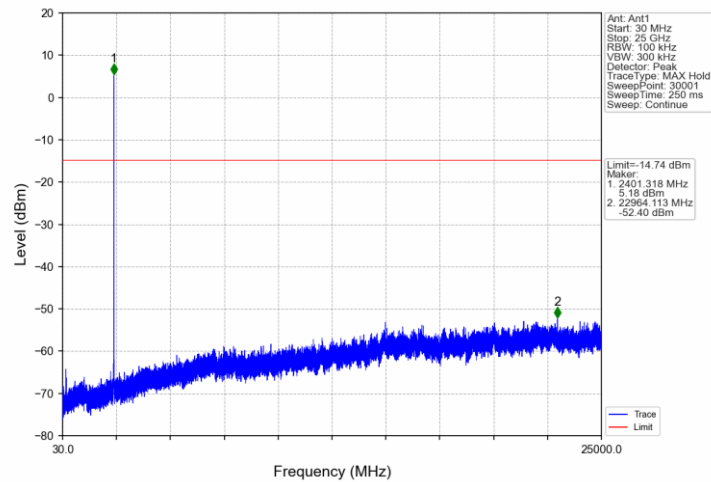
## 2M\_MCH\_2440MHz\_Ant1\_NTNV



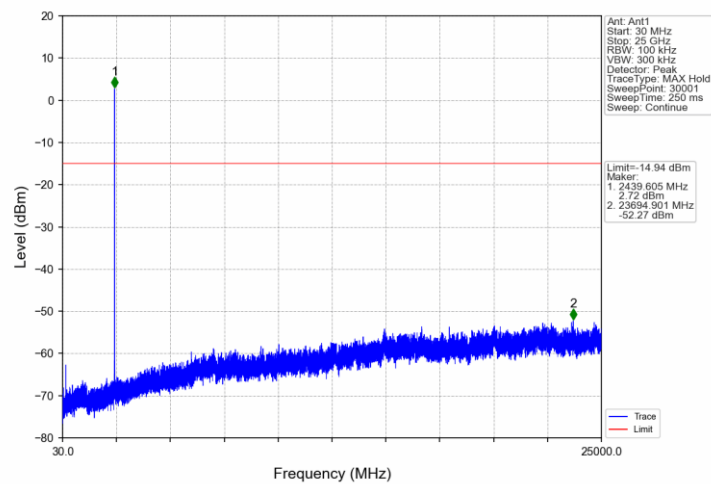
## 2M\_HCH\_2480MHz\_Ant1\_NTNV



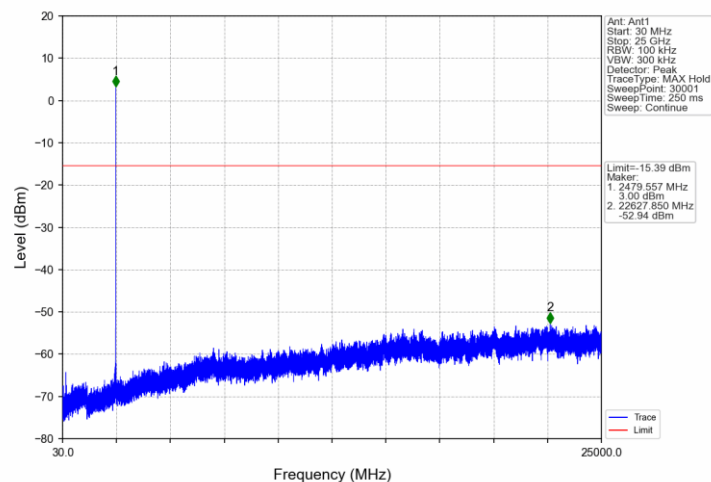
## 1M\_LCH\_2402MHz\_Ant1\_NTNV



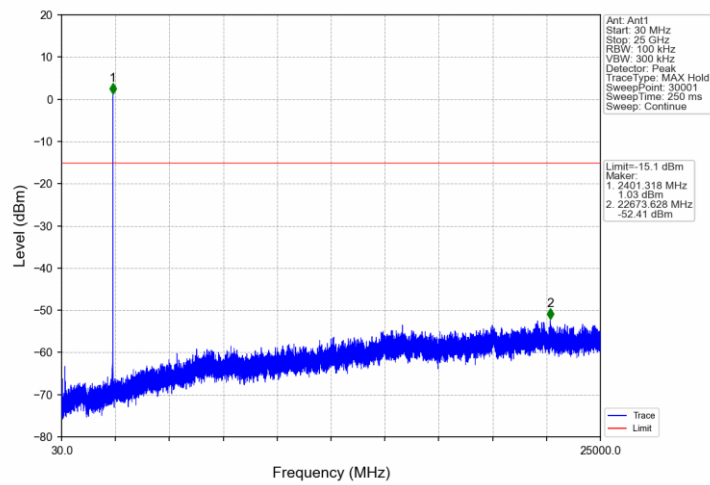
## 1M\_MCH\_2440MHz\_Ant1\_NTNV



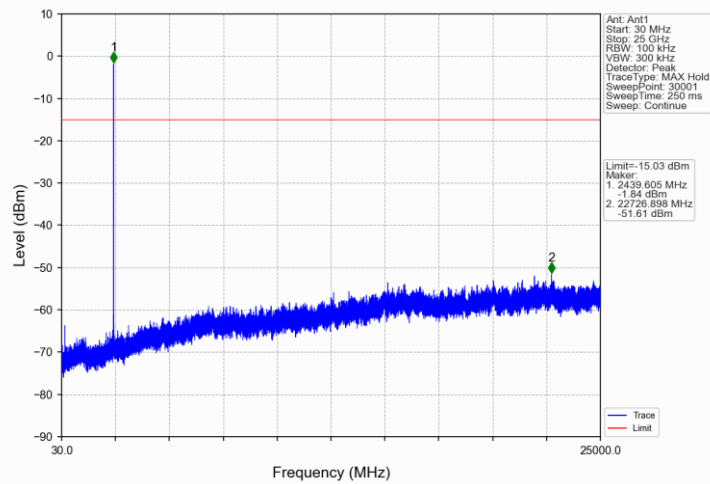
## 1M\_HCH\_2480MHz\_Ant1\_NTNV



## 2M\_LCH\_2402MHz\_Ant1\_NTNV



## 2M\_MCH\_2440MHz\_Ant1\_NTNV



## 2M\_HCH\_2480MHz\_Ant1\_NTNV

