

## Appendix - BT\_L

### 1. Bandwidth

#### 1.1 Test Result

##### 1.1.1 OBW

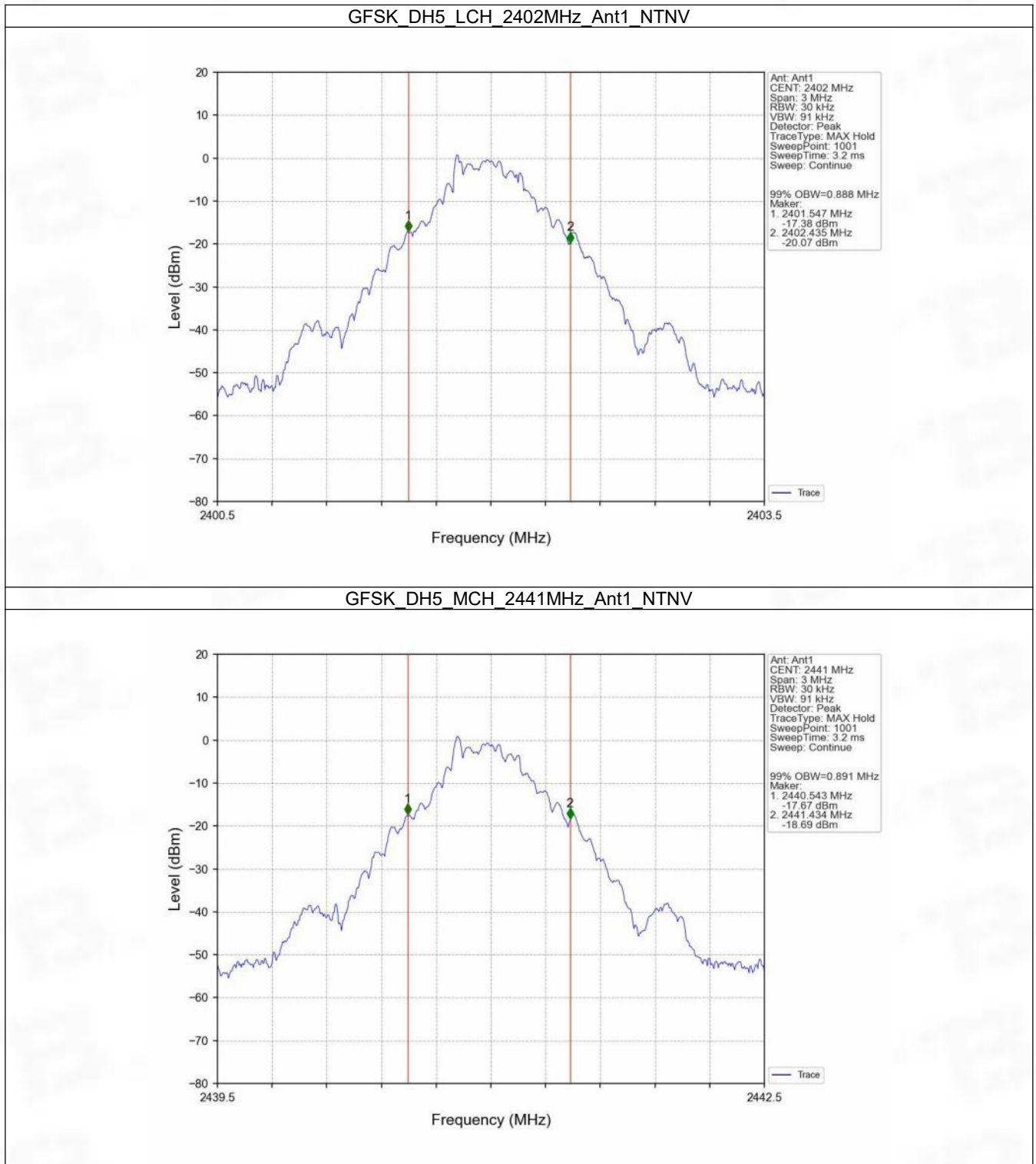
| Mode      | TX Type | Frequency (MHz) | Packet Type | ANT | 99% Occupied Bandwidth (MHz) |       | Verdict |
|-----------|---------|-----------------|-------------|-----|------------------------------|-------|---------|
|           |         |                 |             |     | Result                       | Limit |         |
| GFSK      | SISO    | 2402            | DH5         | 1   | 0.888                        | /     | Pass    |
|           |         | 2441            | DH5         | 1   | 0.891                        | /     | Pass    |
|           |         | 2480            | DH5         | 1   | 0.895                        | /     | Pass    |
| Pi/4DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.150                        | /     | Pass    |
|           |         | 2441            | 2DH5        | 1   | 1.148                        | /     | Pass    |
|           |         | 2480            | 2DH5        | 1   | 1.155                        | /     | Pass    |
| 8DPSK     | SISO    | 2402            | 3DH5        | 1   | 1.142                        | /     | Pass    |
|           |         | 2441            | 3DH5        | 1   | 1.146                        | /     | Pass    |
|           |         | 2480            | 3DH5        | 1   | 1.143                        | /     | Pass    |

##### 1.1.2 20dB BW

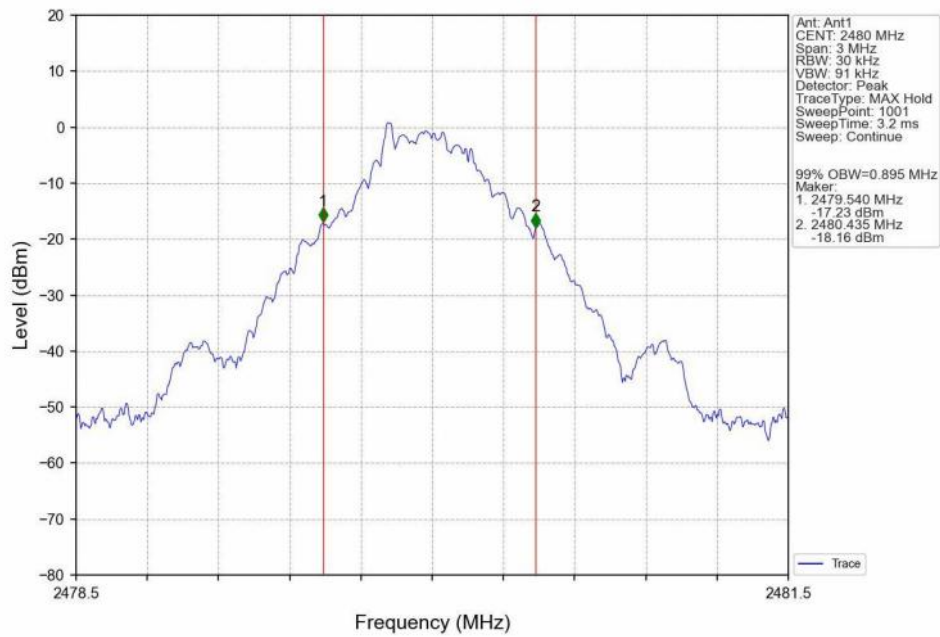
| Mode      | TX Type | Frequency (MHz) | Packet Type | ANT | 20dB Bandwidth (MHz) |       | Verdict |
|-----------|---------|-----------------|-------------|-----|----------------------|-------|---------|
|           |         |                 |             |     | Result               | Limit |         |
| GFSK      | SISO    | 2402            | DH5         | 1   | 0.950                | /     | Pass    |
|           |         | 2441            | DH5         | 1   | 0.951                | /     | Pass    |
|           |         | 2480            | DH5         | 1   | 0.950                | /     | Pass    |
| Pi/4DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.269                | /     | Pass    |
|           |         | 2441            | 2DH5        | 1   | 1.272                | /     | Pass    |
|           |         | 2480            | 2DH5        | 1   | 1.268                | /     | Pass    |
| 8DPSK     | SISO    | 2402            | 3DH5        | 1   | 1.219                | /     | Pass    |
|           |         | 2441            | 3DH5        | 1   | 1.210                | /     | Pass    |
|           |         | 2480            | 3DH5        | 1   | 1.219                | /     | Pass    |

## 1.2 Test Graph

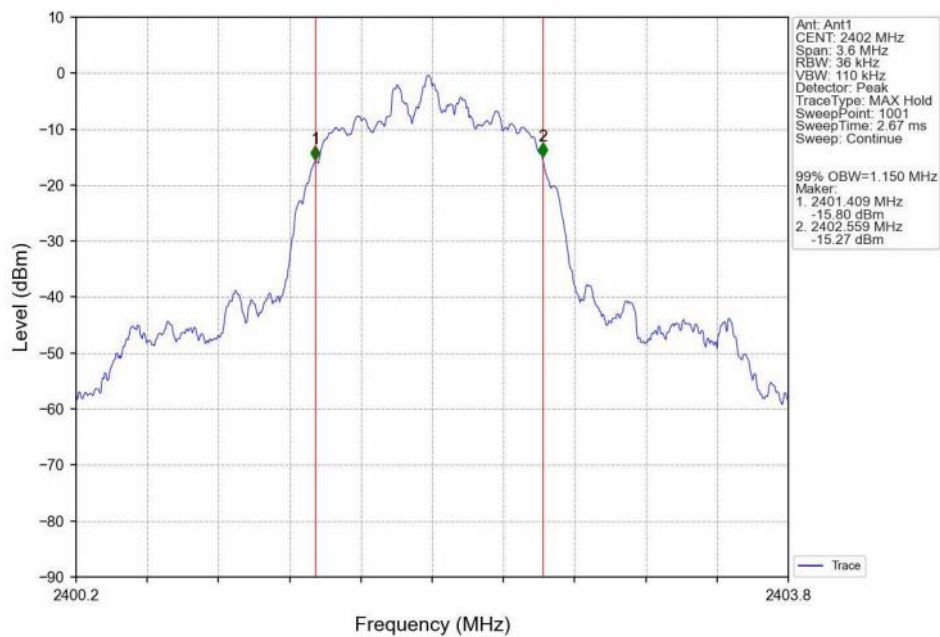
### 1.2.1 OBW



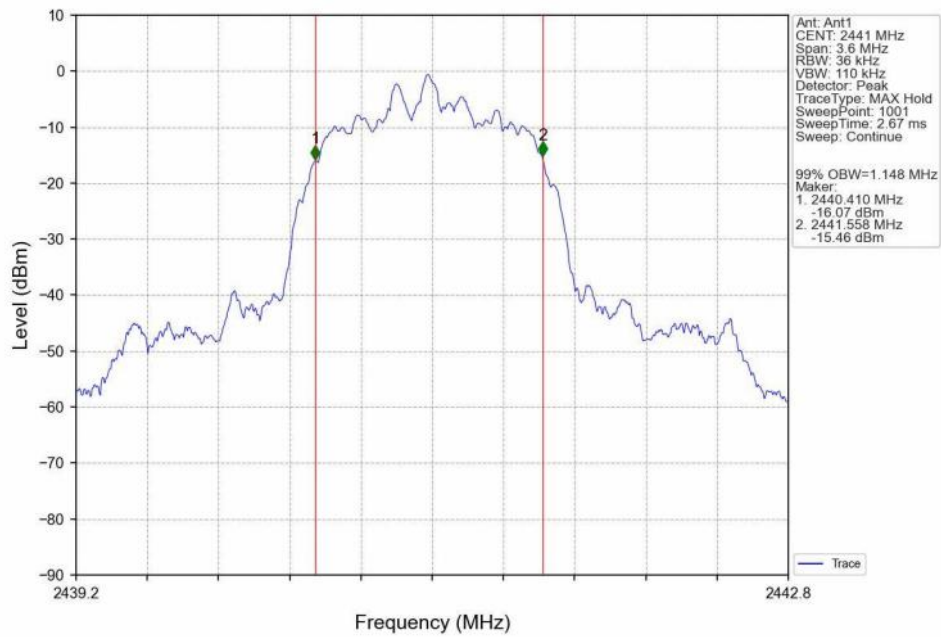
GFSK\_DH5\_HCH\_2480MHz\_Ant1\_NTNV



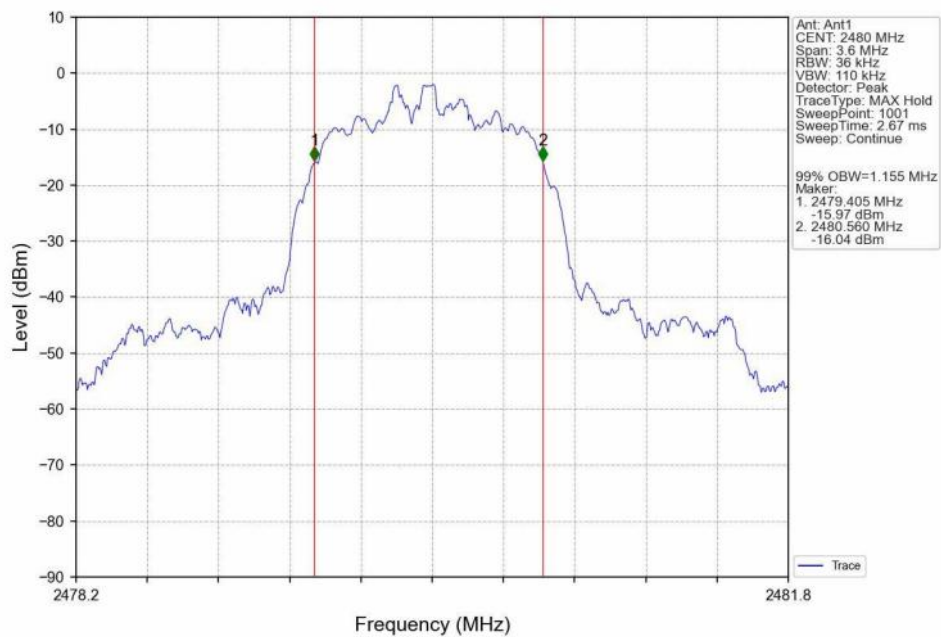
Pi/4DQPSK\_2DH5\_LCH\_2402MHz\_Ant1\_NTNV



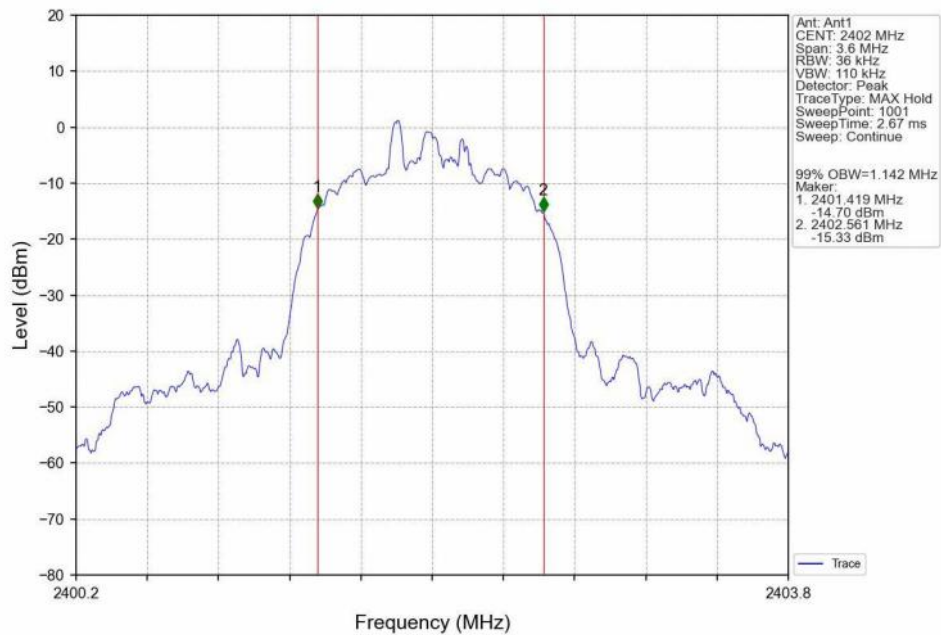
Pi/4DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV



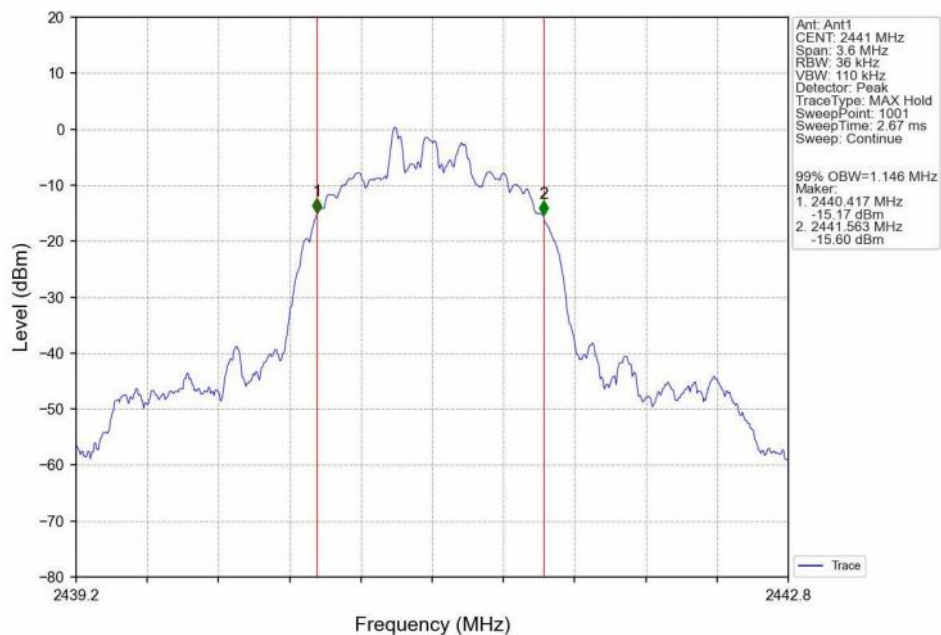
Pi/4DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV

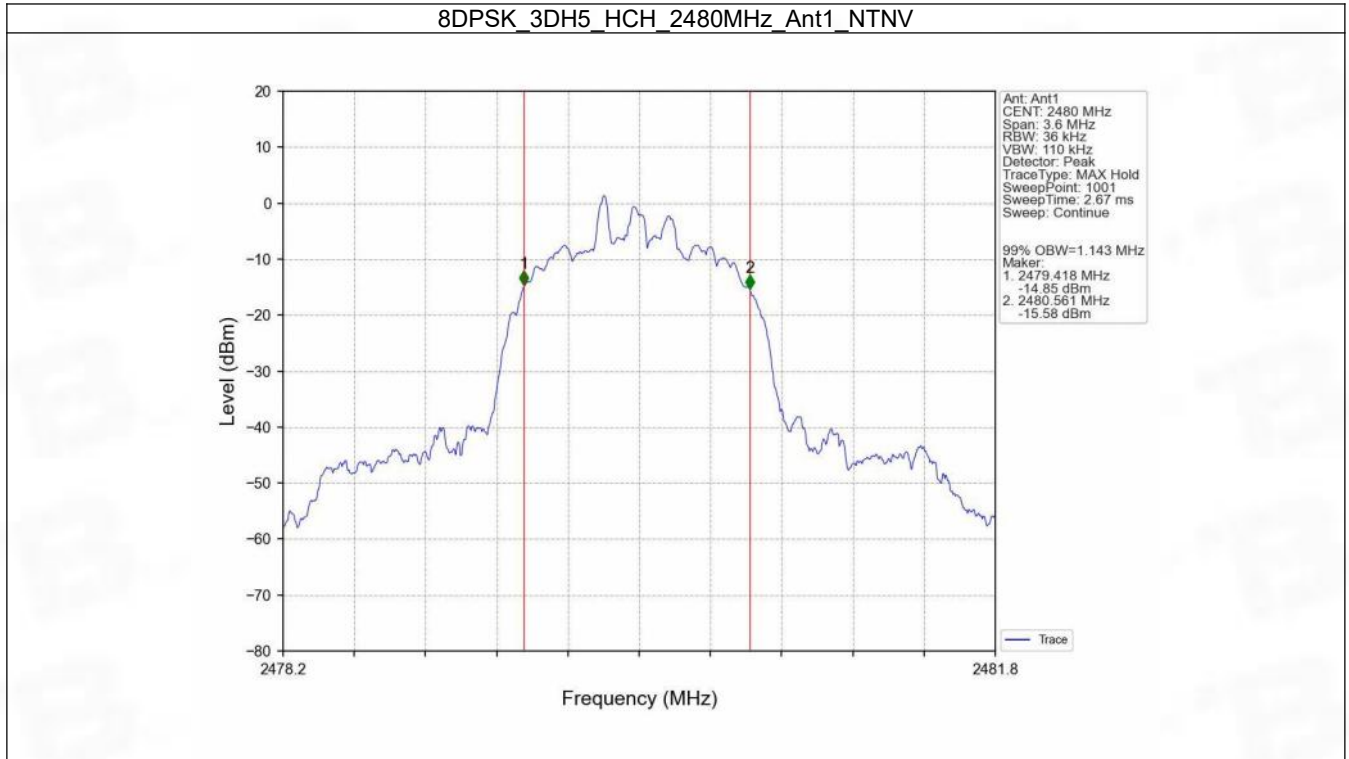


8DPSK\_3DH5\_LCH\_2402MHz\_Ant1\_NTNV

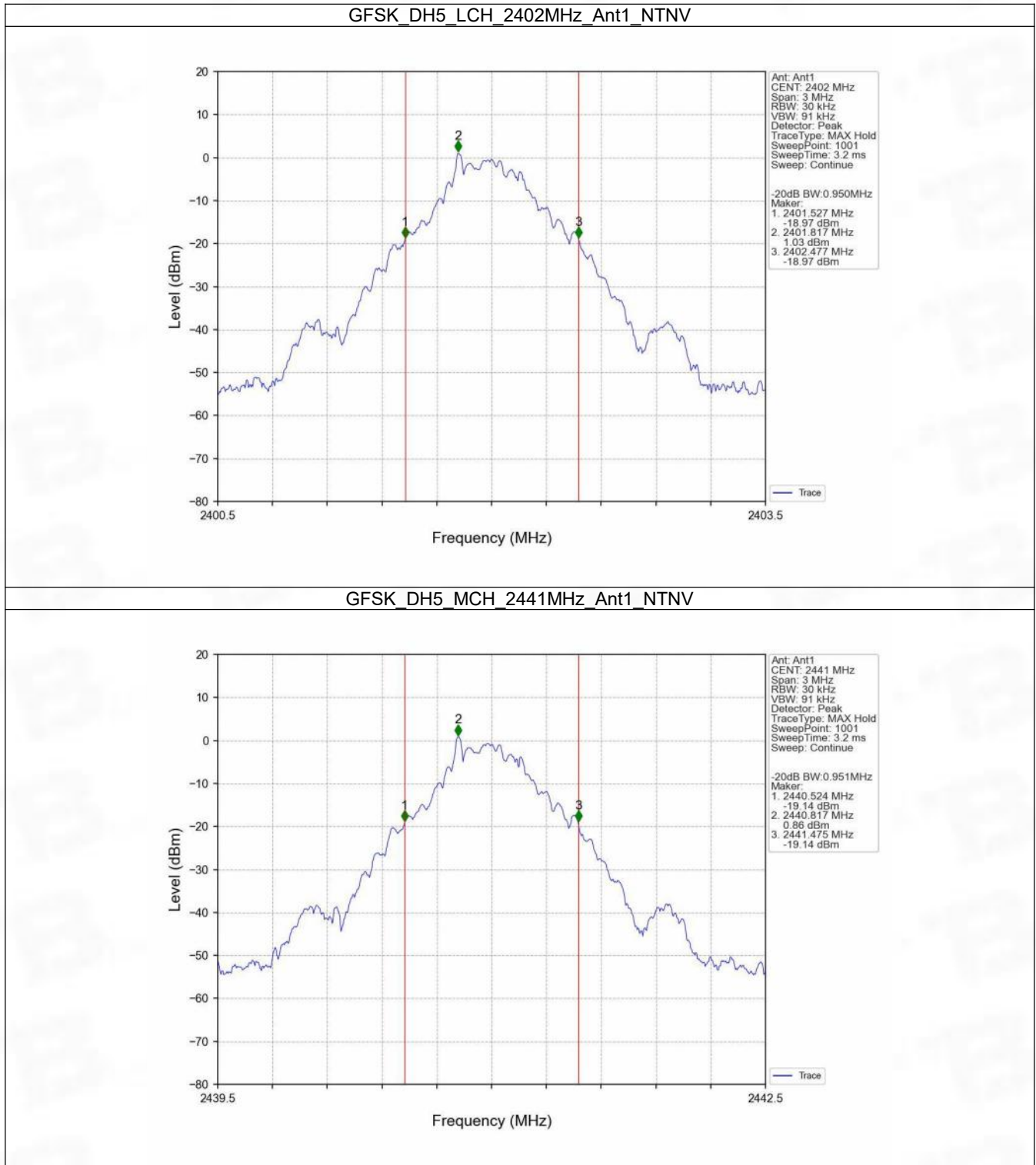


8DPSK\_3DH5\_MCH\_2441MHz\_Ant1\_NTNV

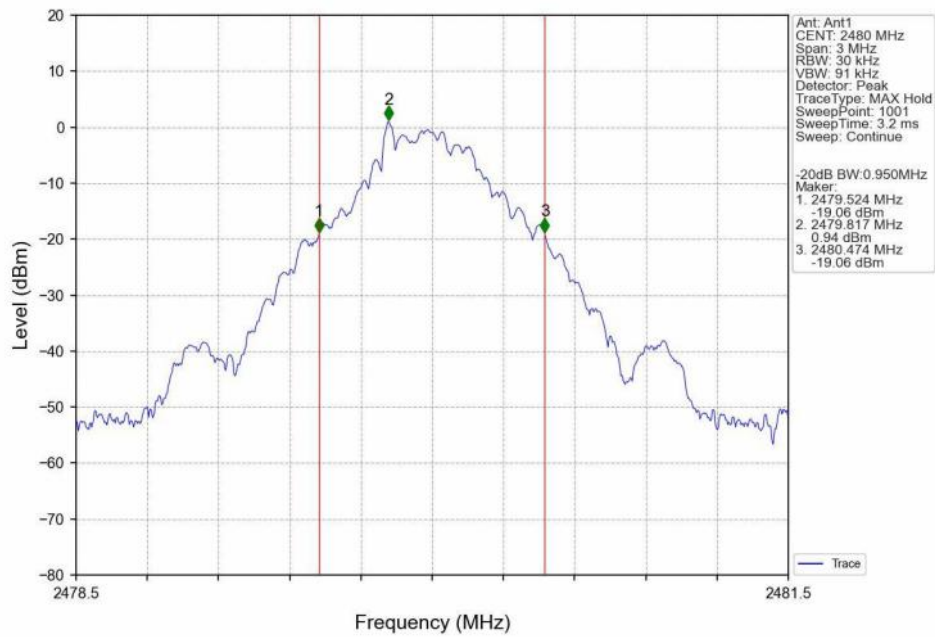




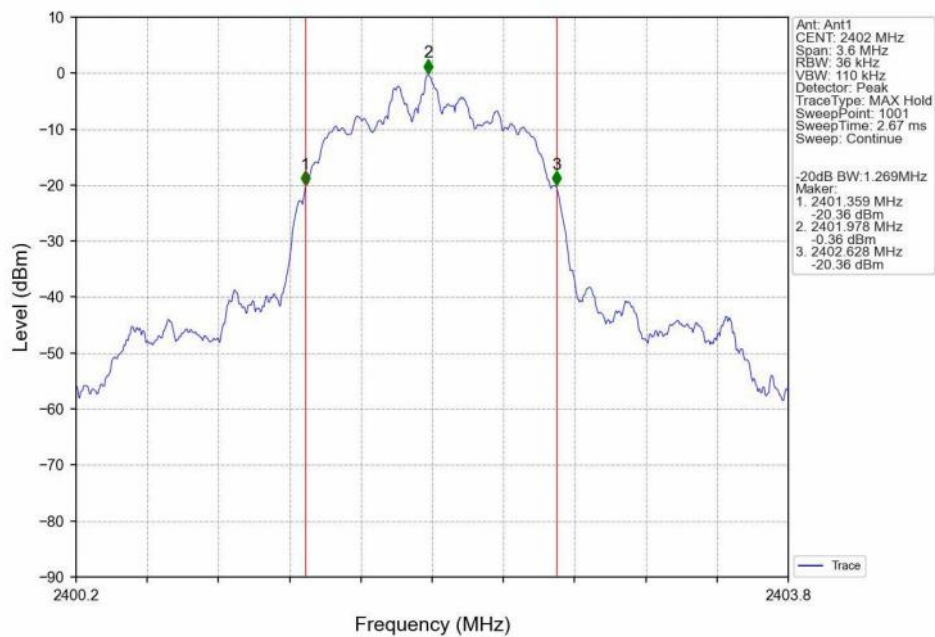
### 1.2.2 20dB BW



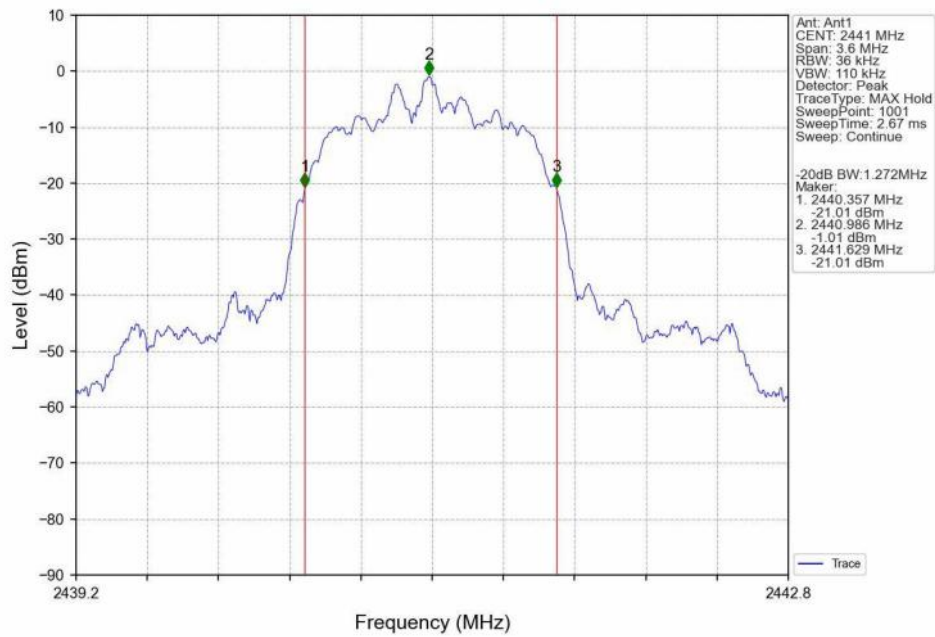
GFSK\_DH5\_HCH\_2480MHz\_Ant1\_NTNV



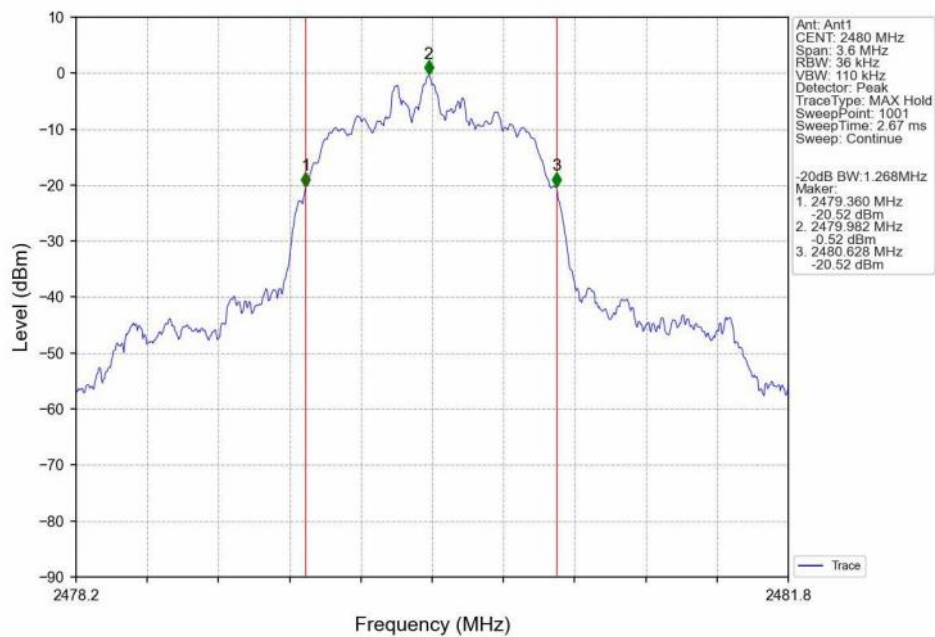
Pi/4DQPSK\_2DH5\_LCH\_2402MHz\_Ant1\_NTNV



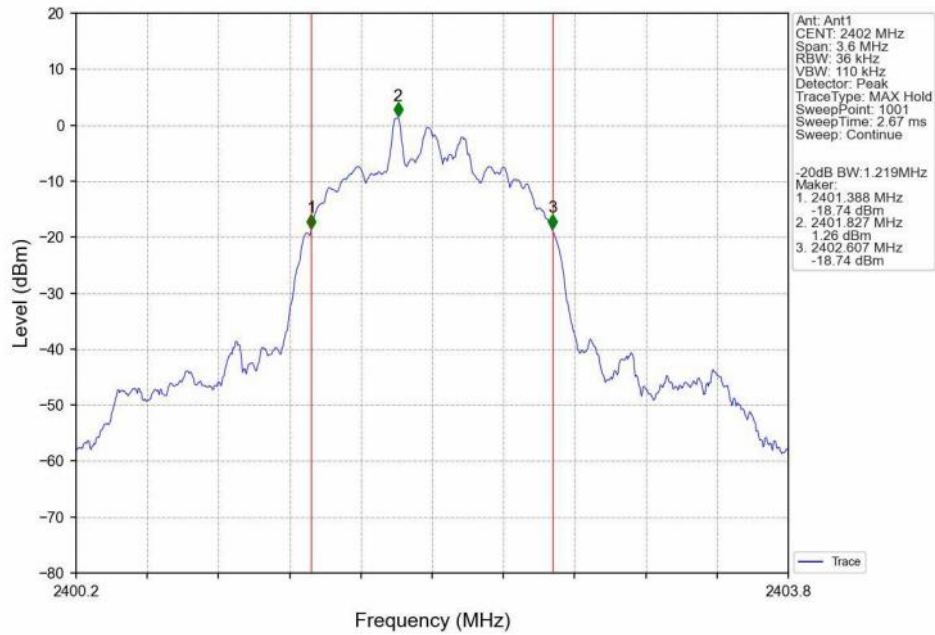
Pi/4DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV



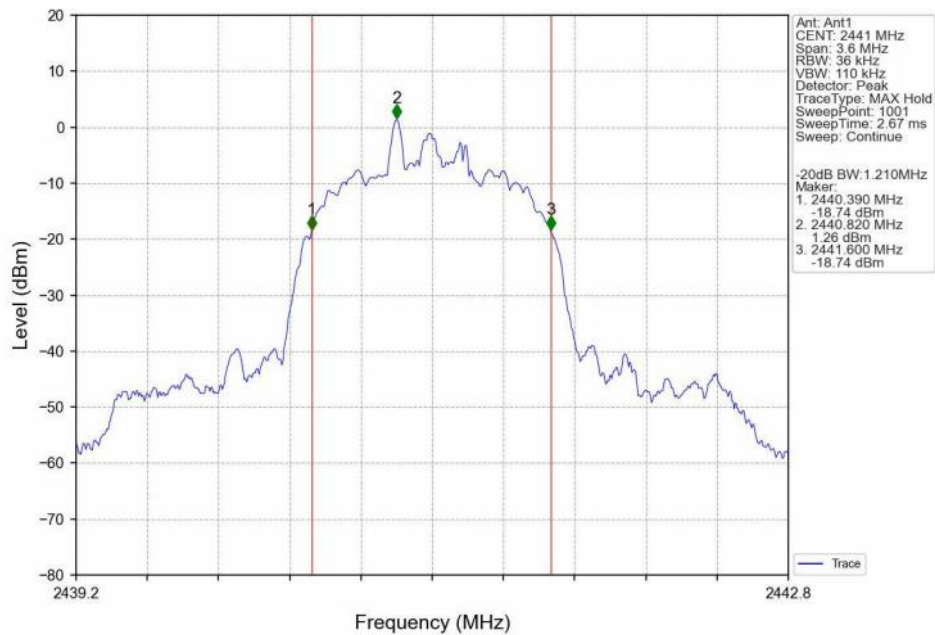
Pi/4DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV

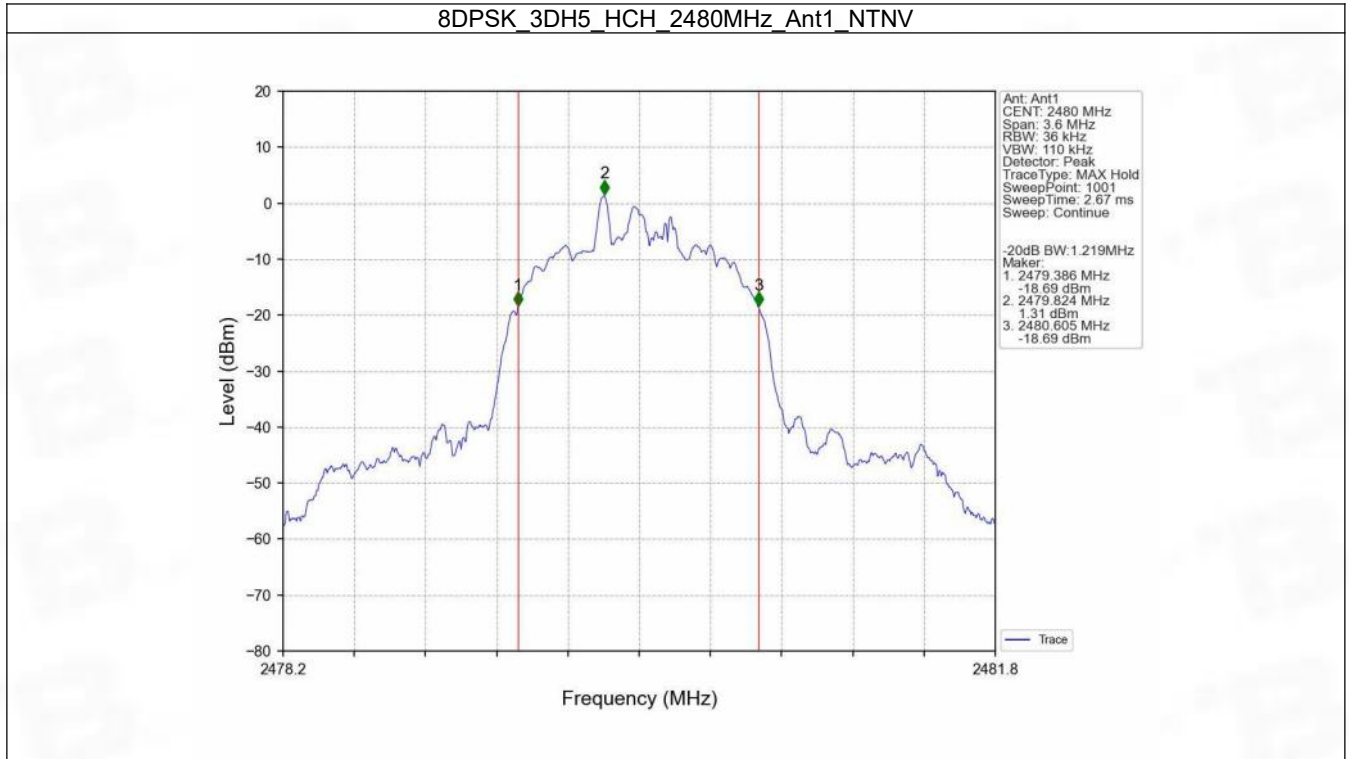


8DPSK\_3DH5\_LCH\_2402MHz\_Ant1\_NTNV



8DPSK\_3DH5\_MCH\_2441MHz\_Ant1\_NTNV





## 2. Maximum Conducted Output Power

### 2.1 Test Result

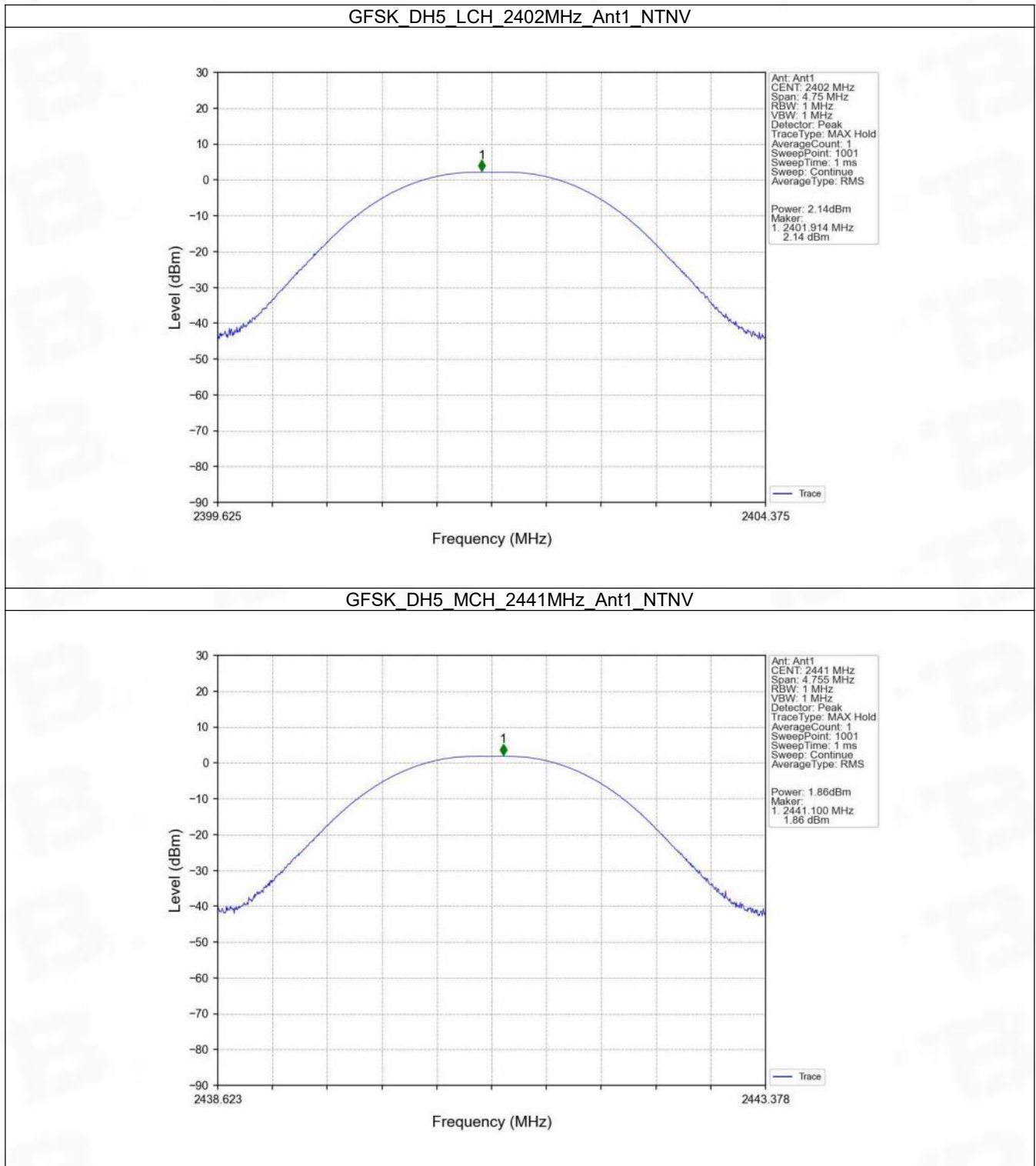
#### 2.1.1 Power

| Mode      | TX Type | Frequency (MHz) | Packet Type | Maximum Peak Conducted Output Power (dBm) |         | Verdict |
|-----------|---------|-----------------|-------------|-------------------------------------------|---------|---------|
|           |         |                 |             | ANT1                                      | Limit   |         |
| GFSK      | SISO    | 2402            | DH5         | 2.14                                      | <=30    | Pass    |
|           |         | 2441            | DH5         | 1.86                                      | <=30    | Pass    |
|           |         | 2480            | DH5         | 2.04                                      | <=30    | Pass    |
| Pi/4DQPSK | SISO    | 2402            | 2DH5        | 2.17                                      | <=20.97 | Pass    |
|           |         | 2441            | 2DH5        | 1.90                                      | <=20.97 | Pass    |
|           |         | 2480            | 2DH5        | 2.09                                      | <=20.97 | Pass    |
| 8DPSK     | SISO    | 2402            | 3DH5        | 2.34                                      | <=20.97 | Pass    |
|           |         | 2441            | 3DH5        | 2.08                                      | <=20.97 | Pass    |
|           |         | 2480            | 3DH5        | 2.26                                      | <=20.97 | Pass    |

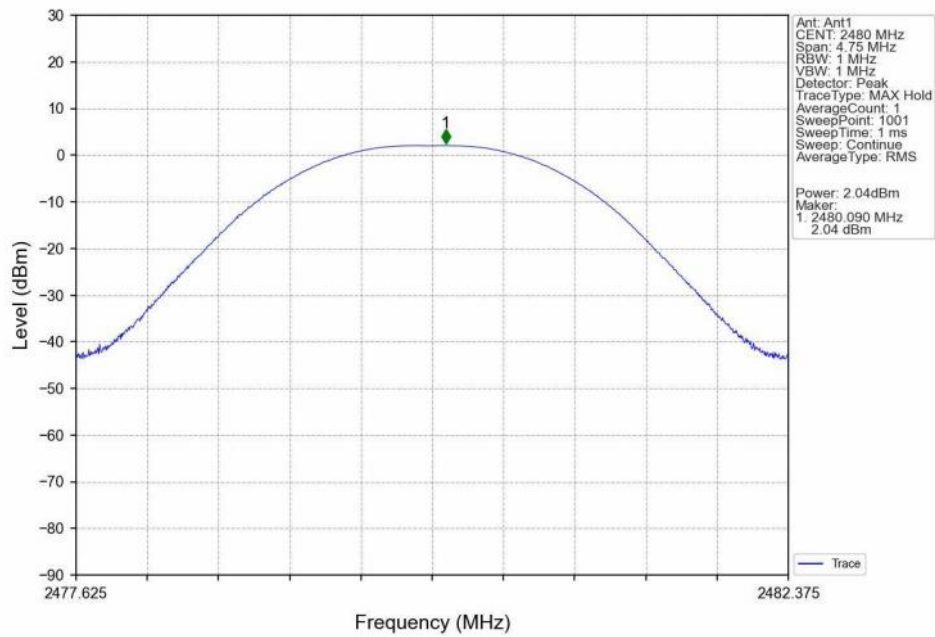
Note1: Antenna Gain: Ant1: 1.90dBi;

## 2.2 Test Graph

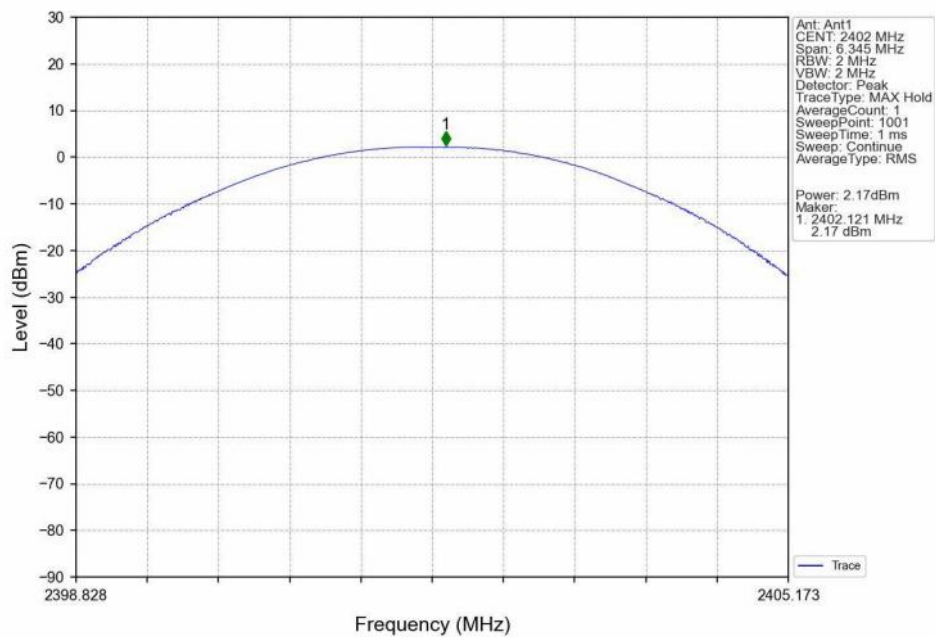
### 2.2.1 Power



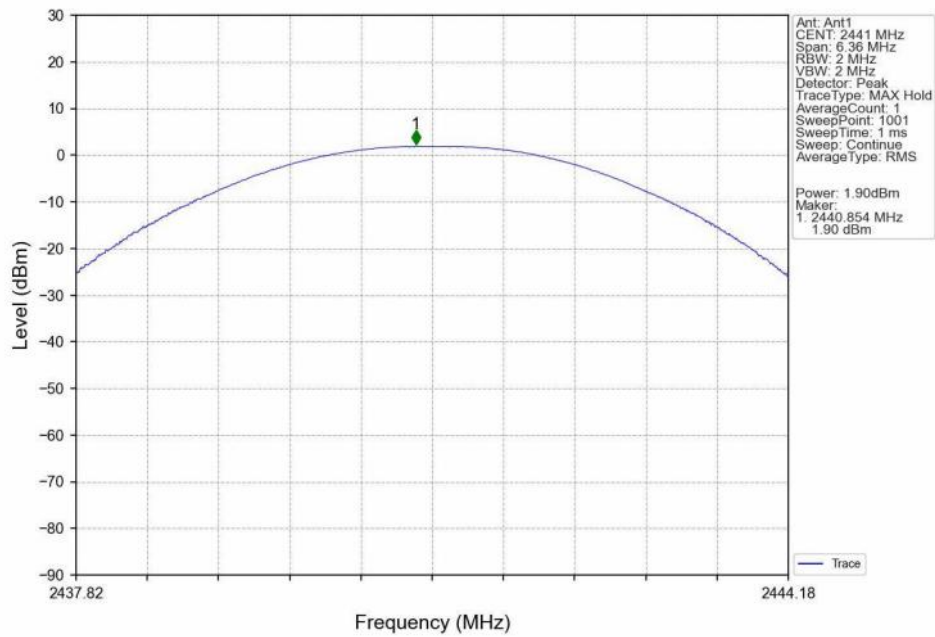
GFSK\_DH5\_HCH\_2480MHz\_Ant1\_NTNV



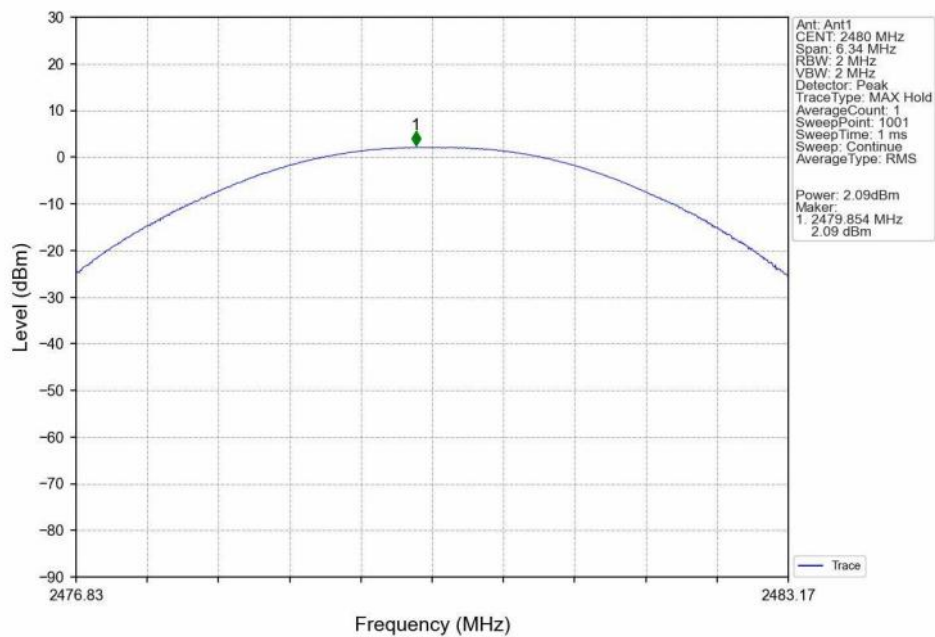
Pi/4DQPSK\_2DH5\_LCH\_2402MHz\_Ant1\_NTNV



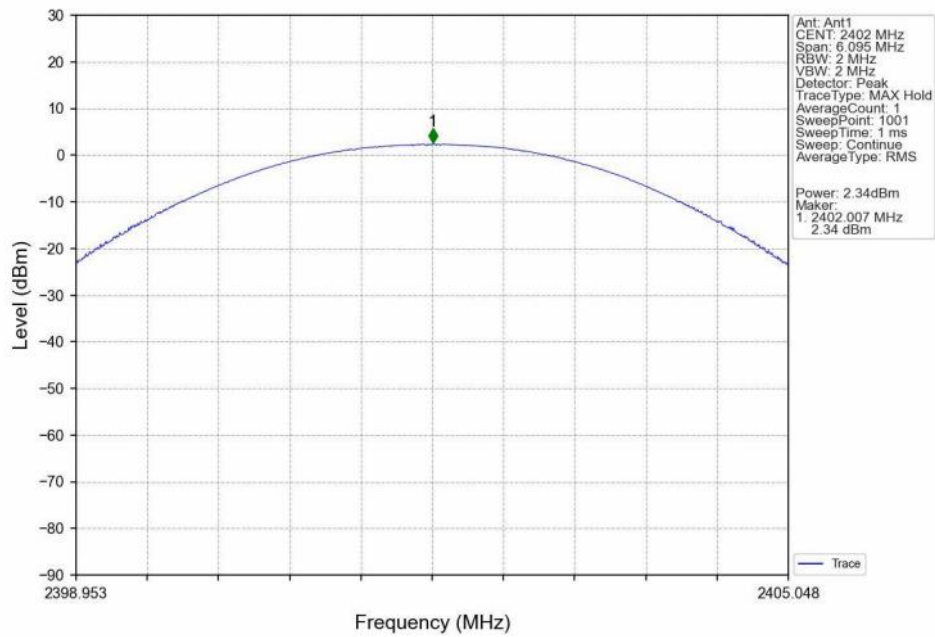
Pi/4DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV



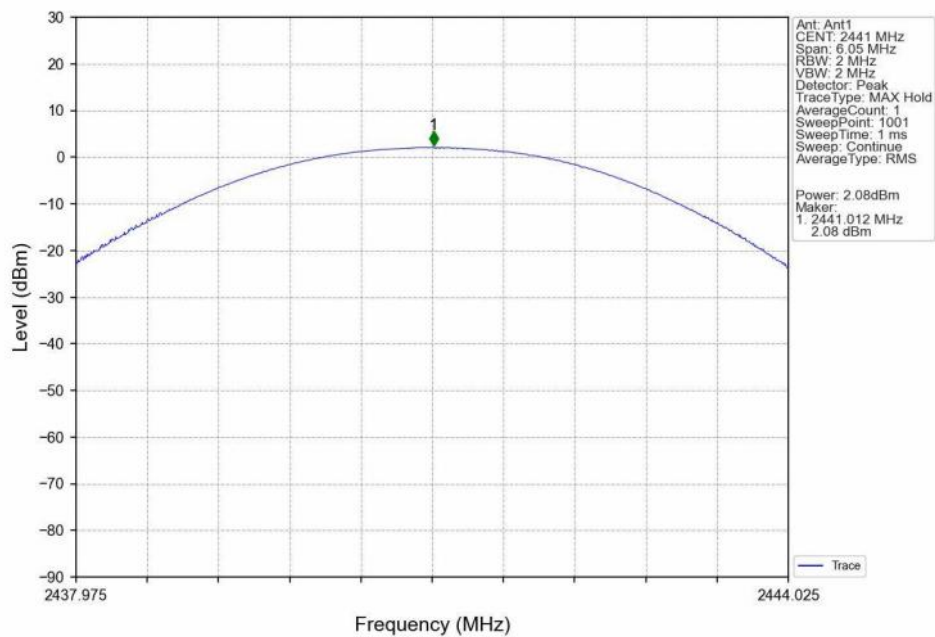
Pi/4DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV

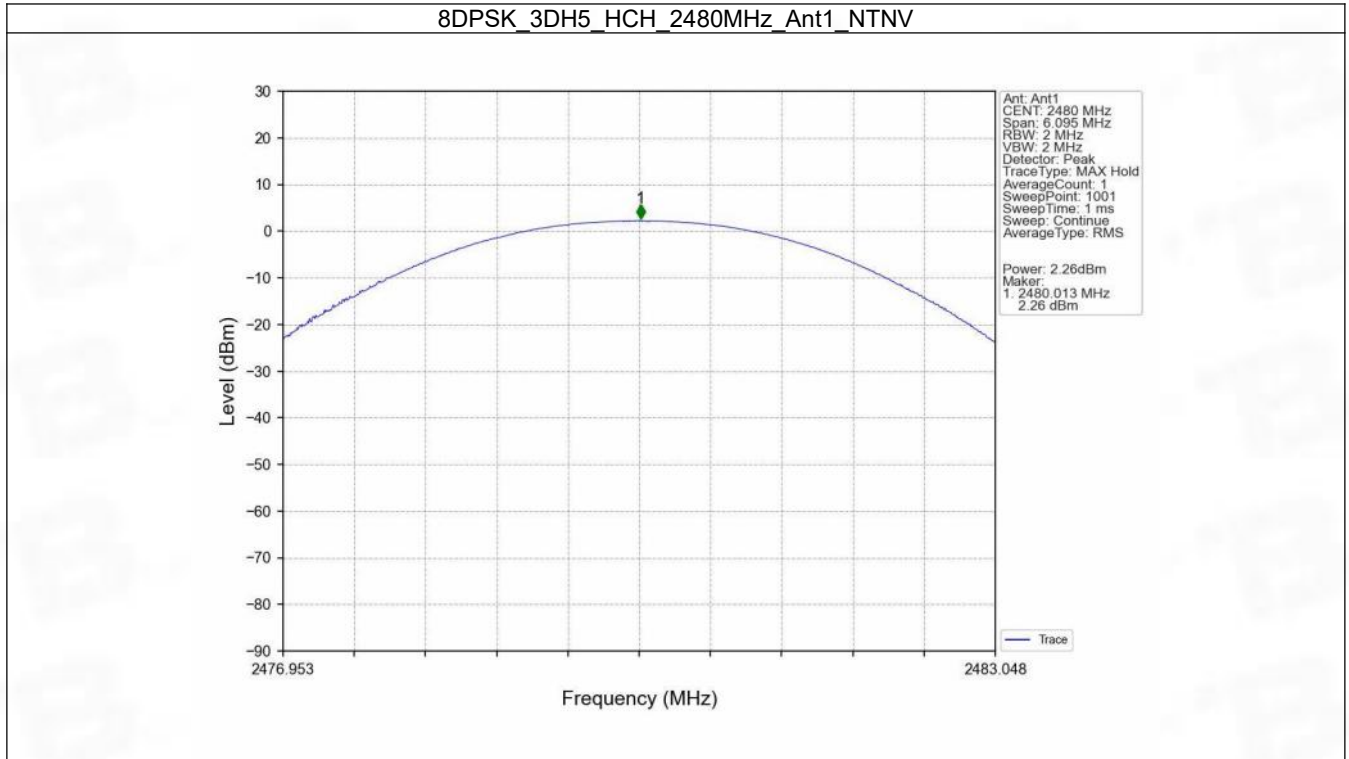


8DPSK\_3DH5\_LCH\_2402MHz\_Ant1\_NTNV



8DPSK\_3DH5\_MCH\_2441MHz\_Ant1\_NTNV





### 3. Carrier Frequency Separation

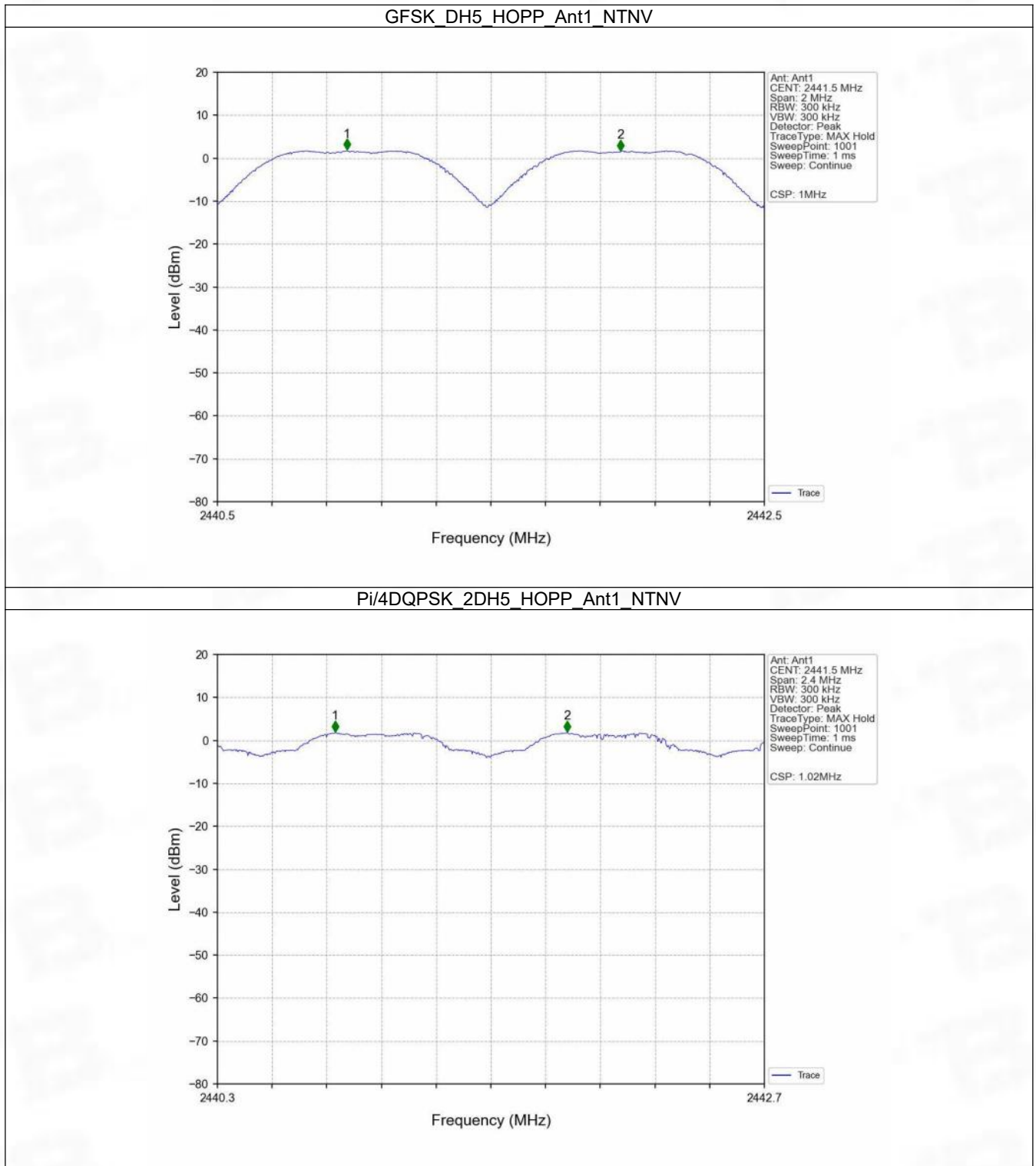
#### 3.1 Test Result

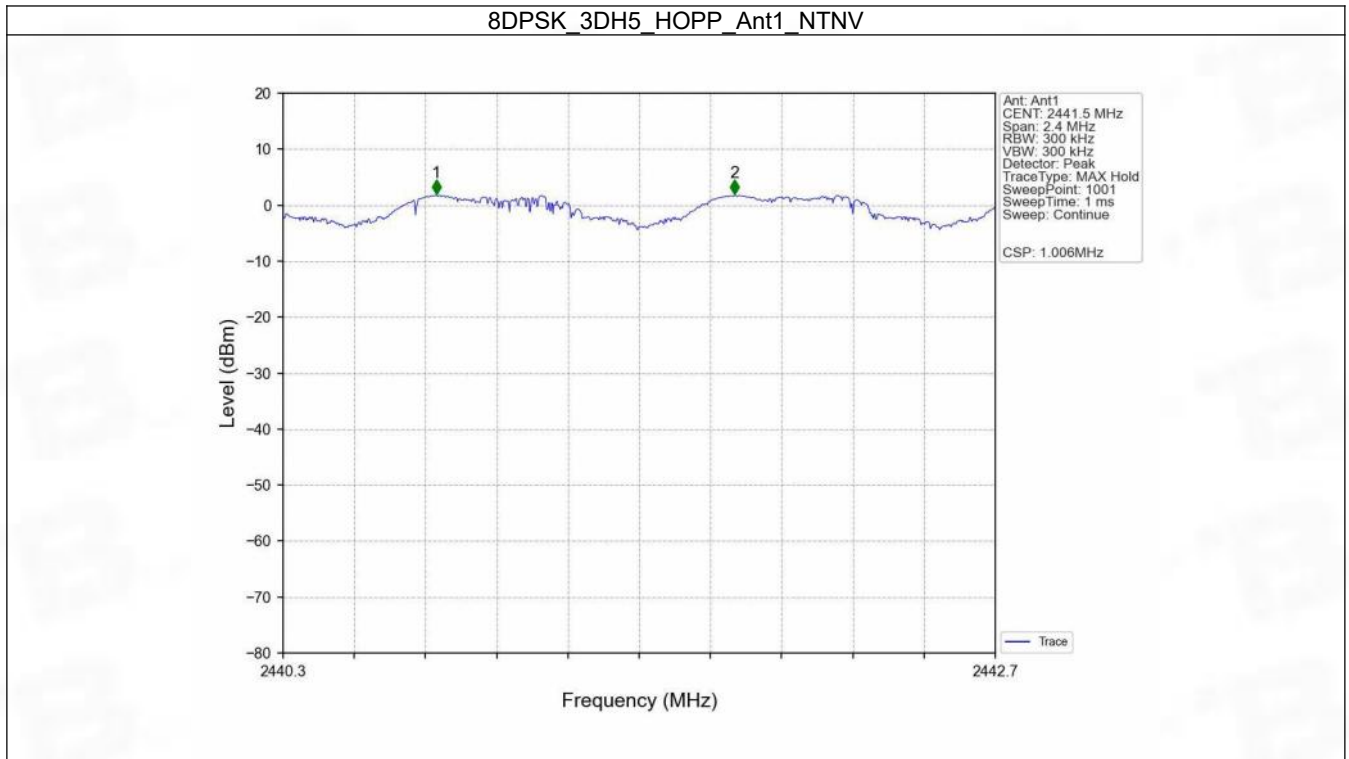
##### 3.1.1 Ant1

| Ant1      |         |                 |             |                          |                      |              |         |
|-----------|---------|-----------------|-------------|--------------------------|----------------------|--------------|---------|
| Mode      | TX Type | Frequency (MHz) | Packet Type | Channel Separation (MHz) | 20dB Bandwidth (MHz) | Limit (MHz)  | Verdict |
| GFSK      | SISO    | HOPP            | DH5         | 1.000                    | 0.951                | $\geq 0.951$ | Pass    |
| Pi/4DQPSK | SISO    | HOPP            | 2DH5        | 1.020                    | 1.272                | $\geq 0.848$ | Pass    |
| 8DPSK     | SISO    | HOPP            | 3DH5        | 1.006                    | 1.219                | $\geq 0.813$ | Pass    |

## 3.2 Test Graph

### 3.2.1 Ant1





## 4. Number of Hopping Frequencies

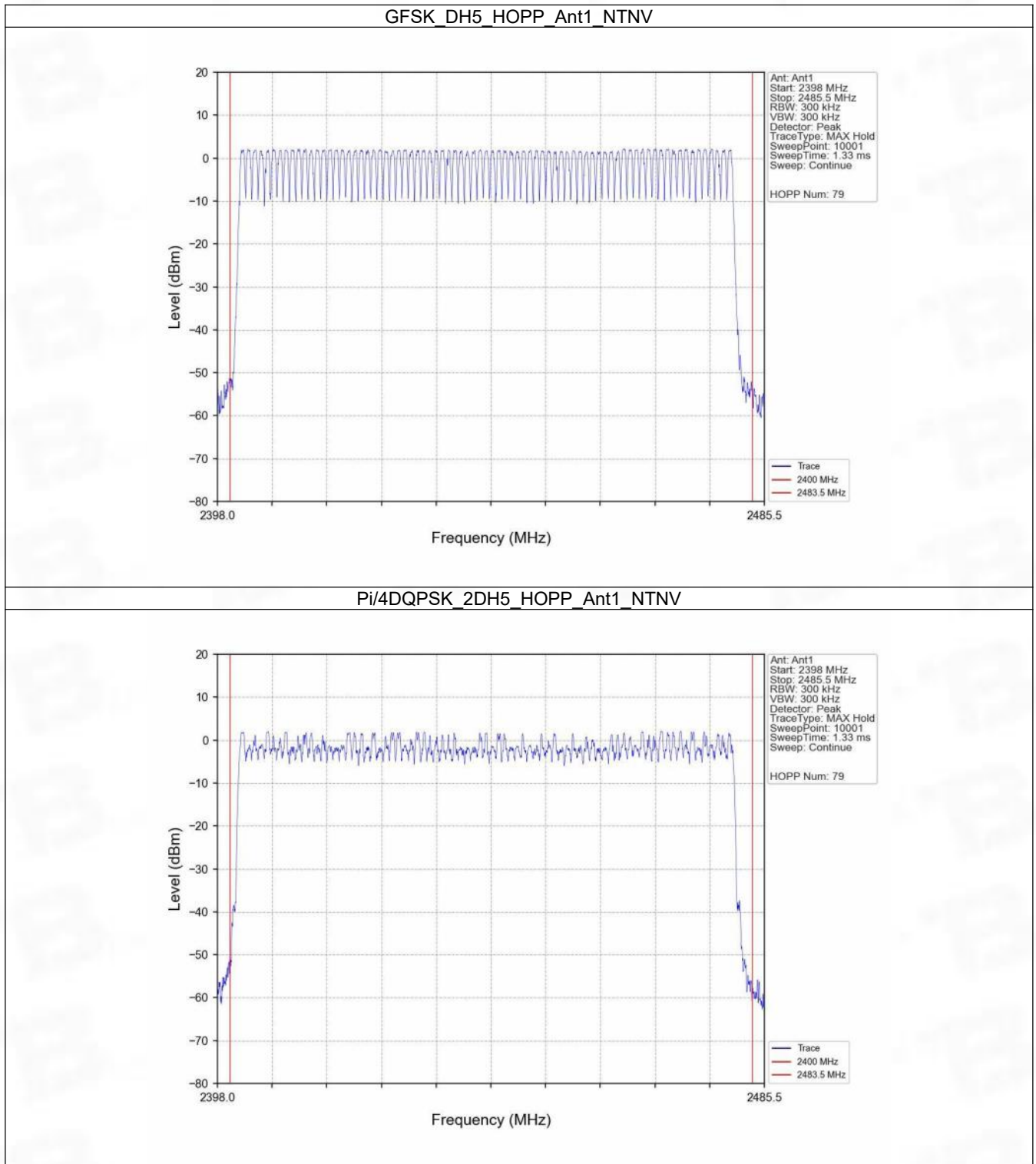
### 4.1 Test Result

#### 4.1.1 HoppNum

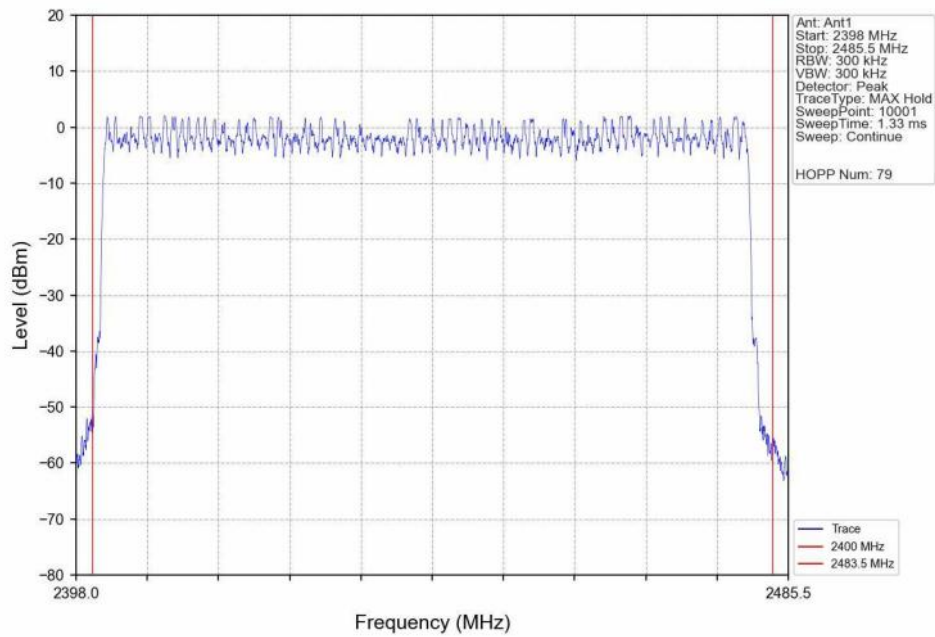
| Mode      | TX Type | Frequency (MHz) | Packet Type | Num of Hopping Frequencies |           | Verdict |
|-----------|---------|-----------------|-------------|----------------------------|-----------|---------|
|           |         |                 |             | ANT1                       | Limit     |         |
| GFSK      | SISO    | HOPP            | DH5         | 79                         | $\geq 15$ | Pass    |
| Pi/4DQPSK | SISO    | HOPP            | 2DH5        | 79                         | $\geq 15$ | Pass    |
| 8DPSK     | SISO    | HOPP            | 3DH5        | 79                         | $\geq 15$ | Pass    |

## 4.2 Test Graph

### 4.2.1 HoppNum



## 8DPSK\_3DH5\_HOPP\_Ant1\_NTNV



## 5. Time of Occupancy (Dwell Time)

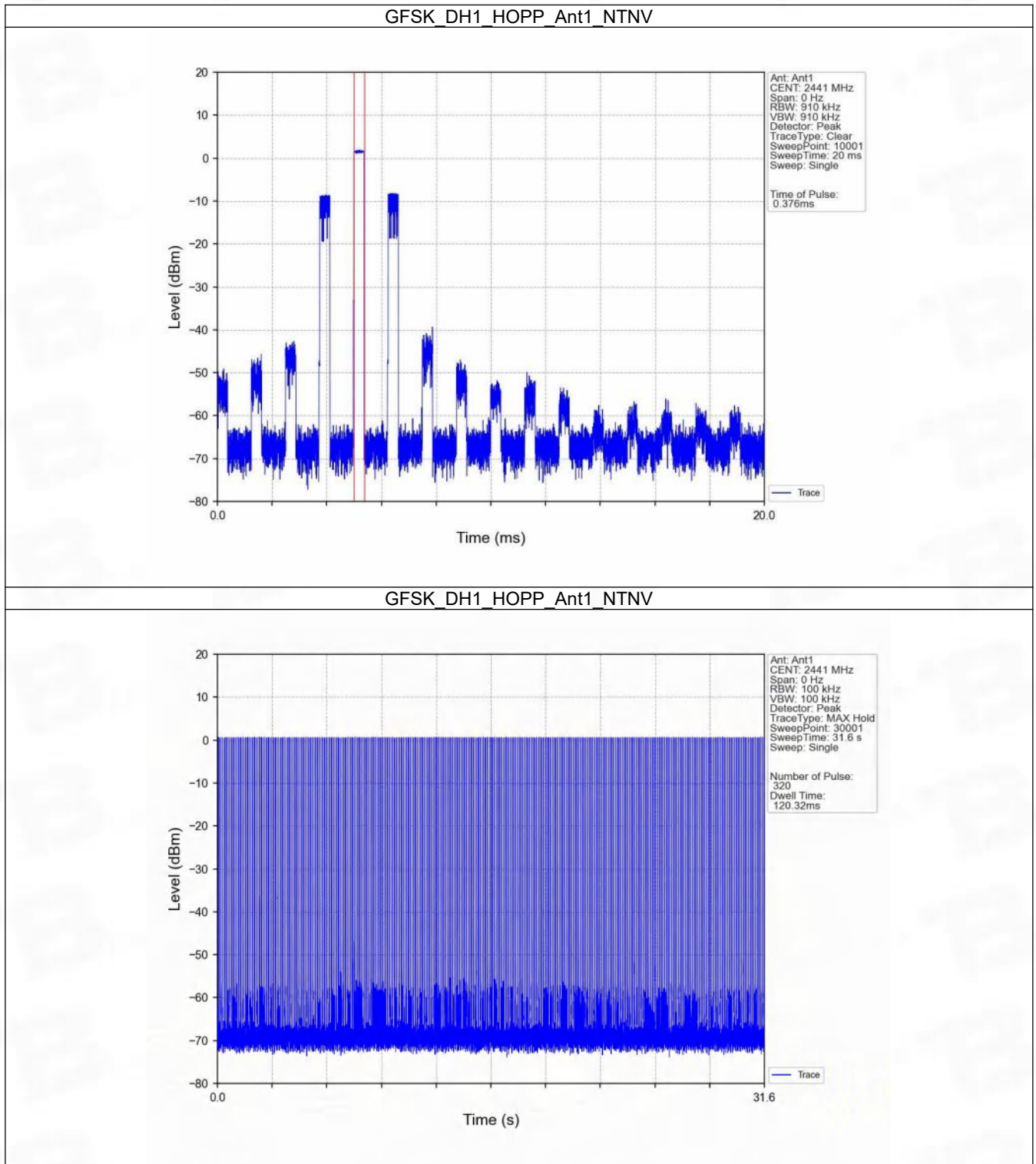
### 5.1 Test Result

#### 5.1.1 Ant1

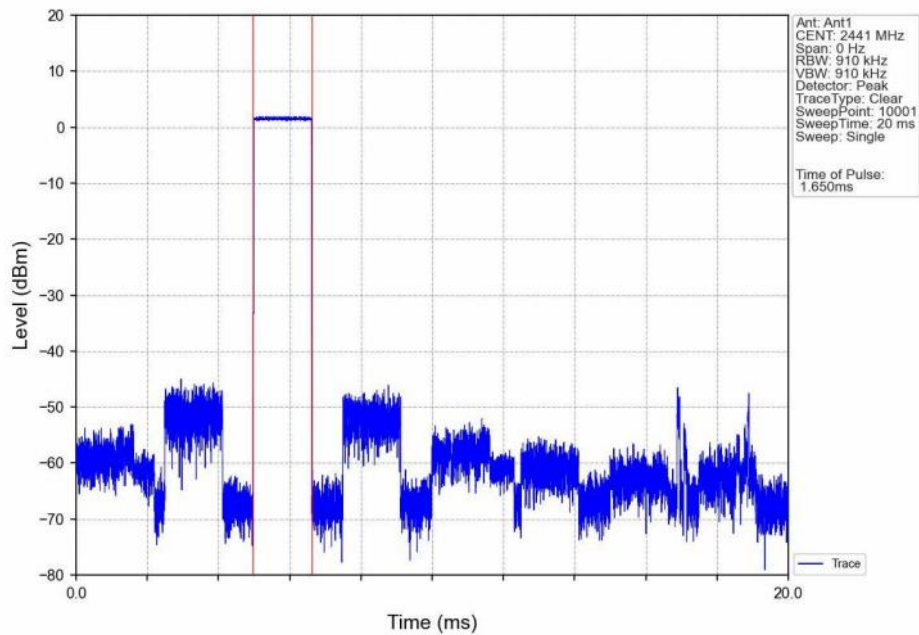
| Ant1      |         |                 |             |                               |                        |                                    |                 |            |         |
|-----------|---------|-----------------|-------------|-------------------------------|------------------------|------------------------------------|-----------------|------------|---------|
| Mode      | TX Type | Frequency (MHz) | Packet Type | Duration of Single Pulse (ms) | Observation Period (s) | Num of Pulse in Observation Period | Dwell Time (ms) | Limit (ms) | Verdict |
| GFSK      | SISO    | HOPP            | DH1         | 0.376                         | 31.600                 | 320                                | 120.320         | <=400      | Pass    |
|           |         |                 | DH3         | 1.650                         | 31.600                 | 160                                | 264.000         | <=400      | Pass    |
|           |         |                 | DH5         | 2.898                         | 31.600                 | 106                                | 307.188         | <=400      | Pass    |
| Pi/4DQPSK | SISO    | HOPP            | 2DH1        | 0.382                         | 31.600                 | 320                                | 122.240         | <=400      | Pass    |
|           |         |                 | 2DH3        | 1.662                         | 31.600                 | 160                                | 265.920         | <=400      | Pass    |
|           |         |                 | 2DH5        | 2.910                         | 31.600                 | 107                                | 311.370         | <=400      | Pass    |
| 8DPSK     | SISO    | HOPP            | 3DH1        | 0.382                         | 31.600                 | 320                                | 122.240         | <=400      | Pass    |
|           |         |                 | 3DH3        | 1.660                         | 31.600                 | 160                                | 265.600         | <=400      | Pass    |
|           |         |                 | 3DH5        | 2.910                         | 31.600                 | 106                                | 308.460         | <=400      | Pass    |

## 5.2 Test Graph

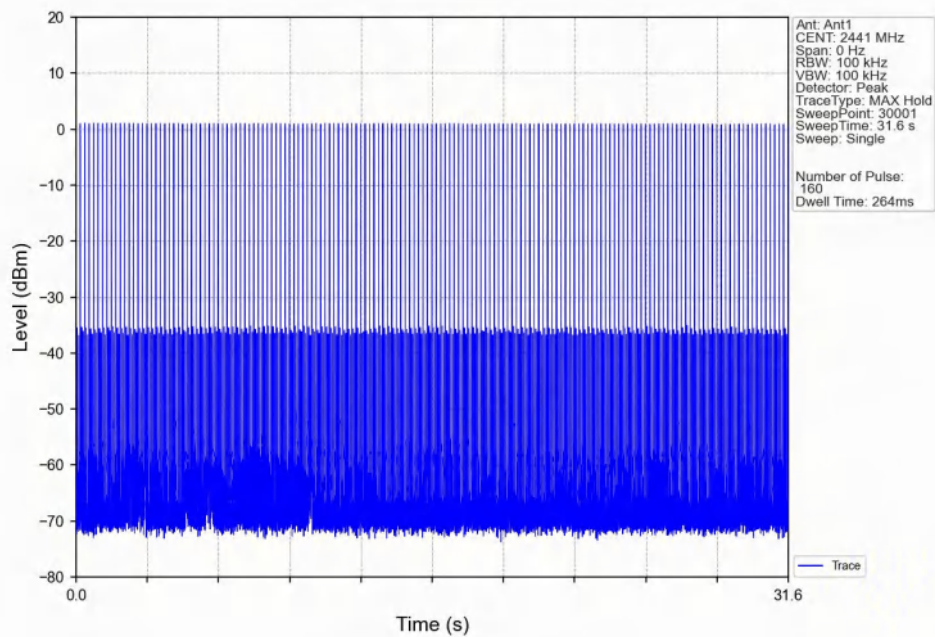
### 5.2.1 Ant1



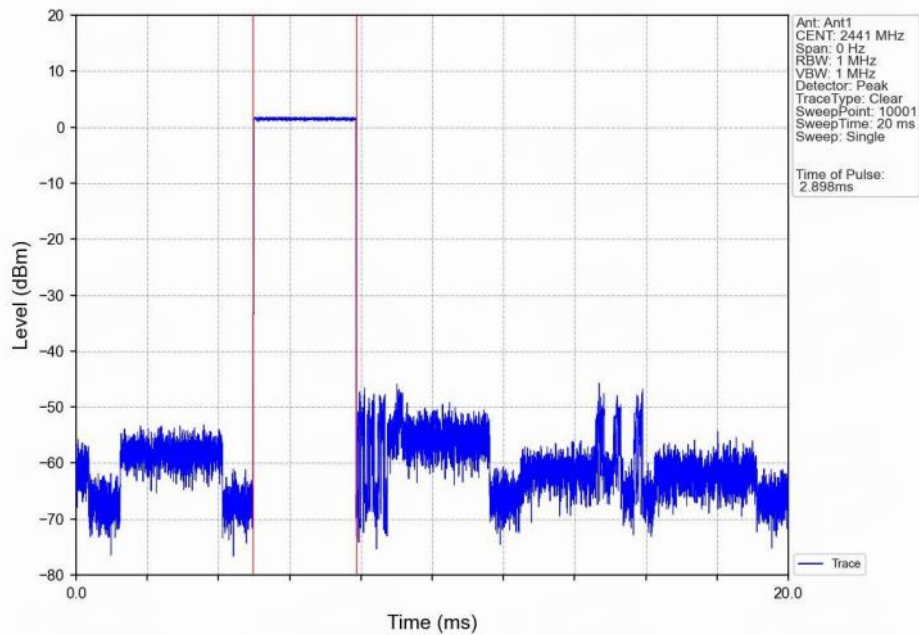
GFSK\_DH3\_HOPP\_Ant1\_NTNV



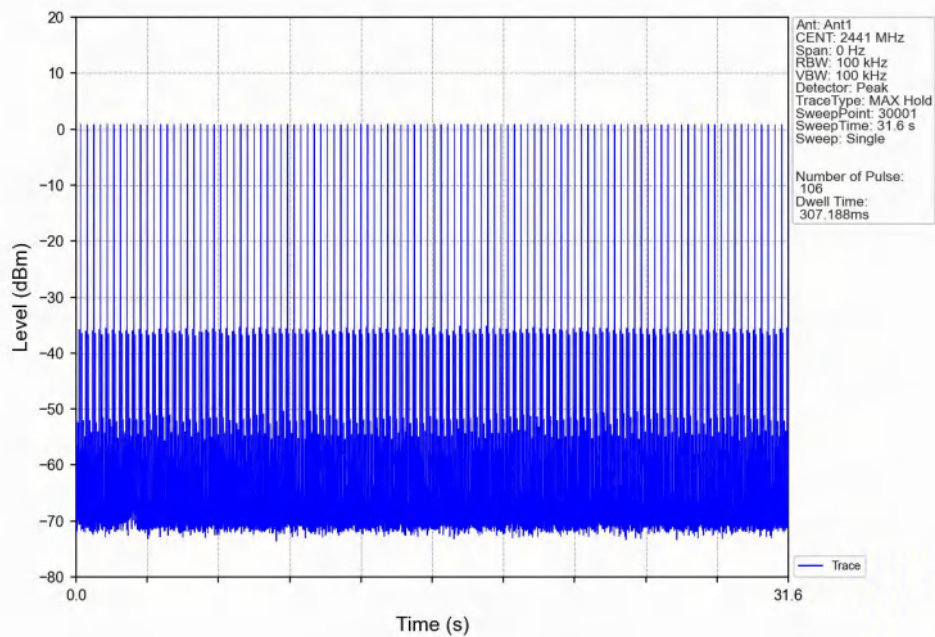
GFSK\_DH3\_HOPP\_Ant1\_NTNV



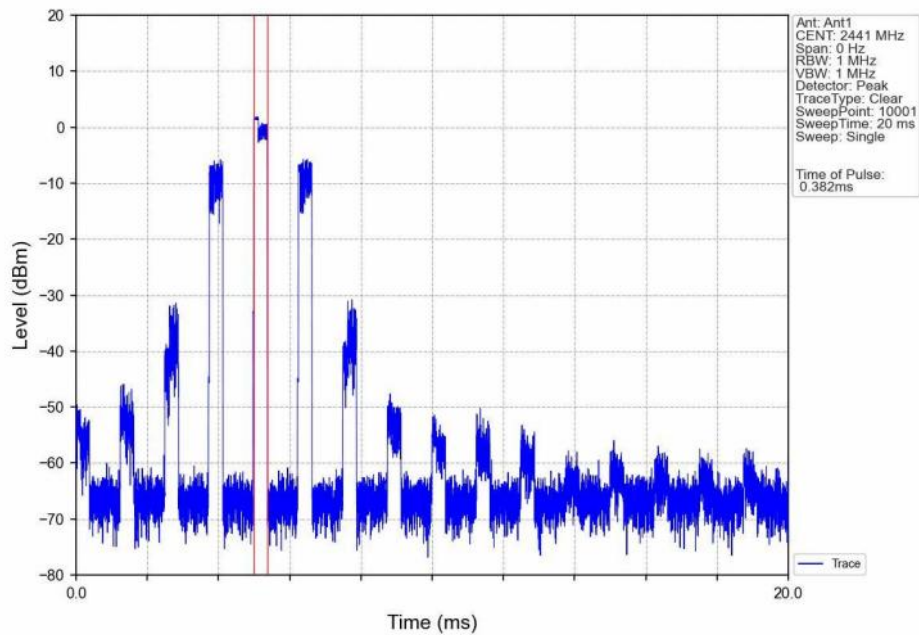
GFSK\_DH5\_HOPP\_Ant1\_NTNV



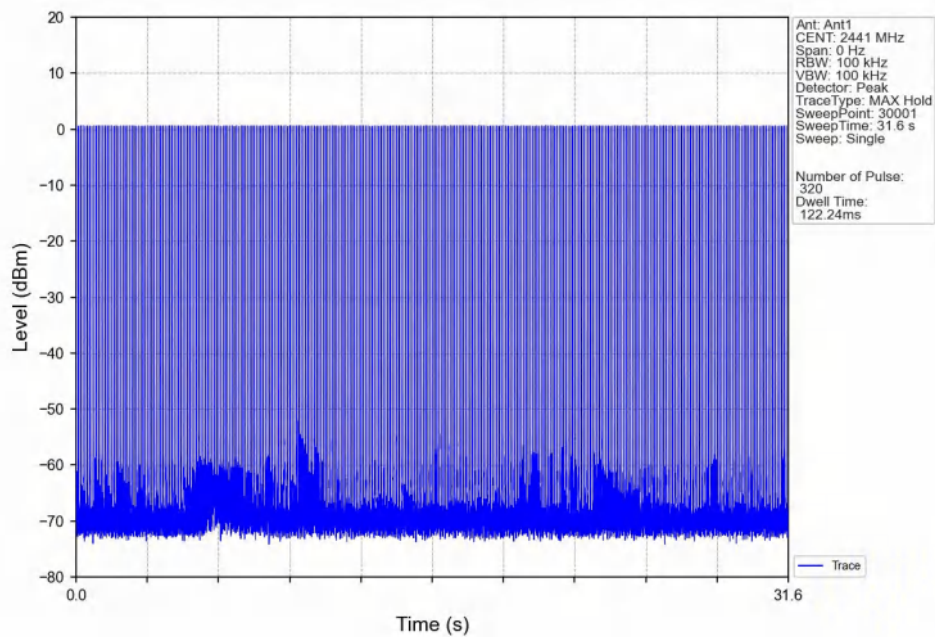
GFSK\_DH5\_HOPP\_Ant1\_NTNV



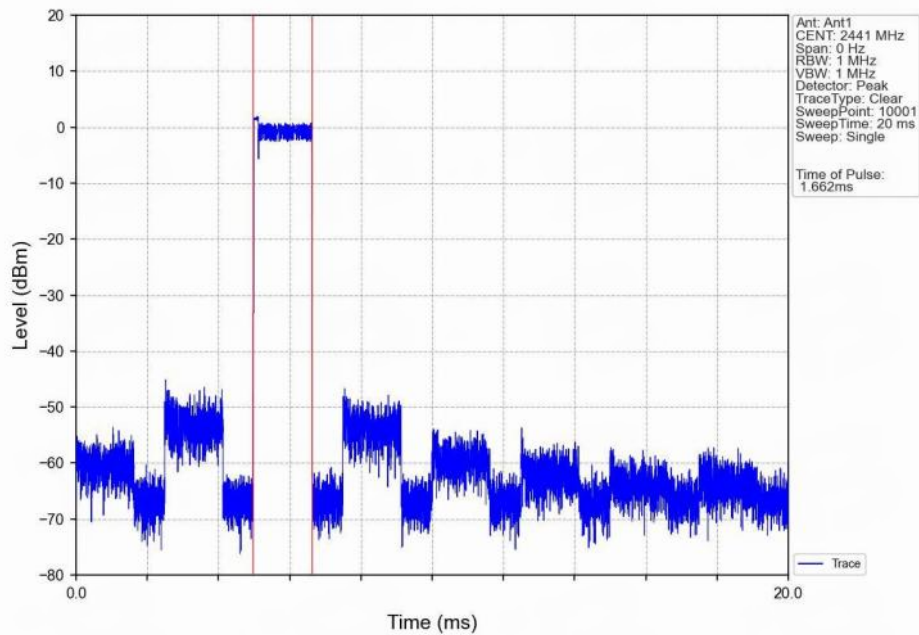
Pi/4DQPSK\_2DH1\_HOPP\_Ant1\_NTNV



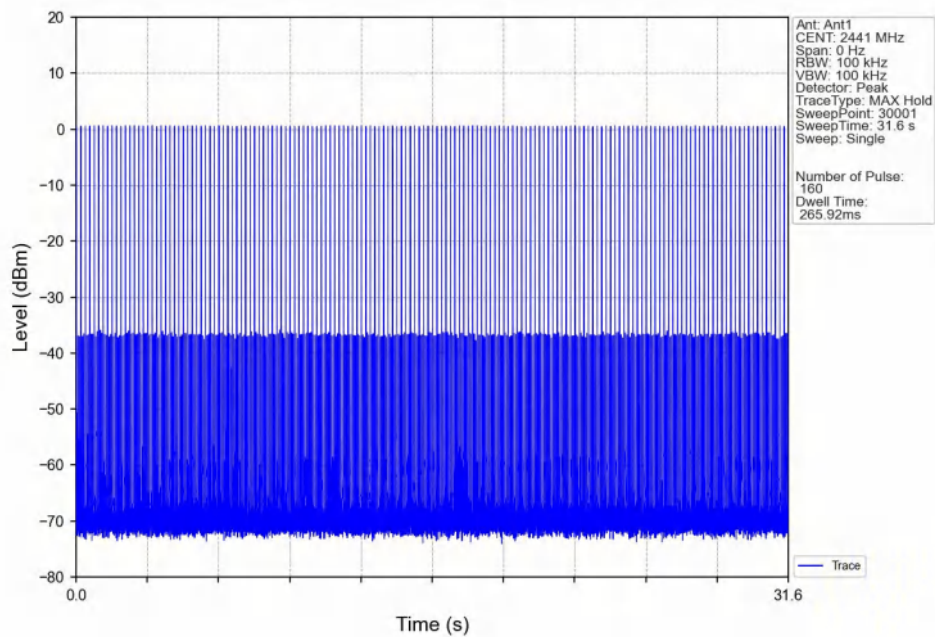
Pi/4DQPSK\_2DH1\_HOPP\_Ant1\_NTNV



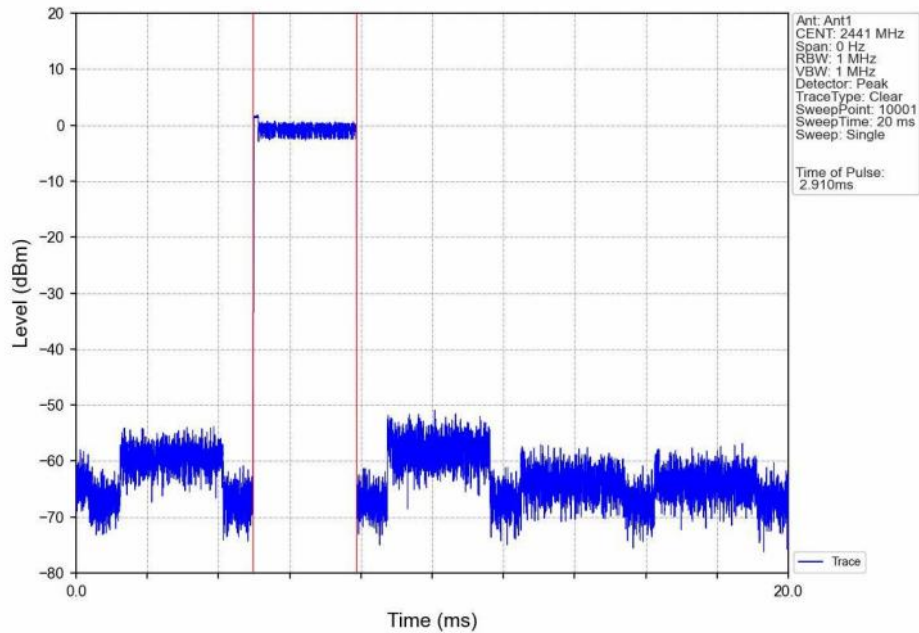
Pi/4DQPSK\_2DH3\_HOPP\_Ant1\_NTNV



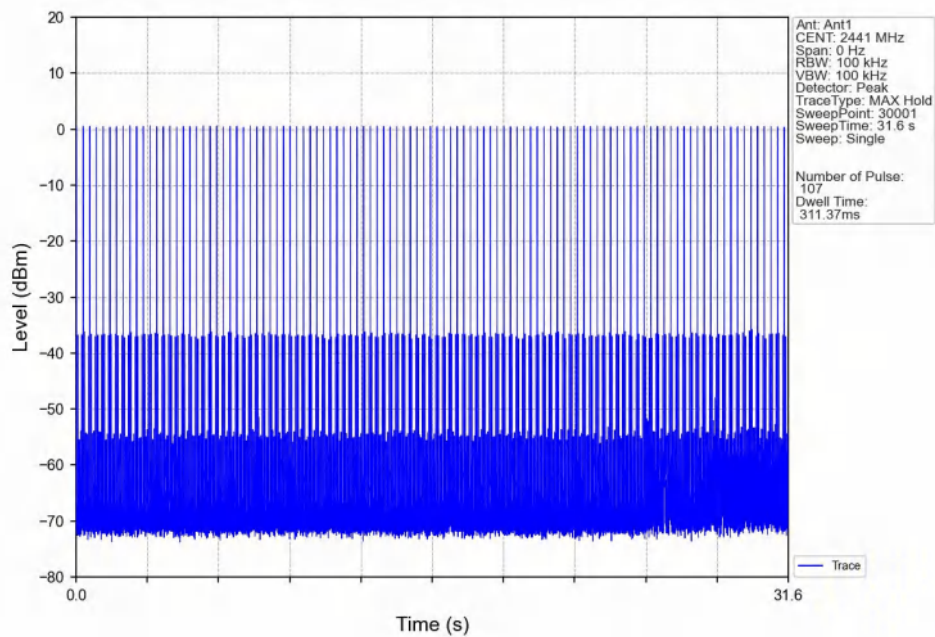
Pi/4DQPSK\_2DH3\_HOPP\_Ant1\_NTNV



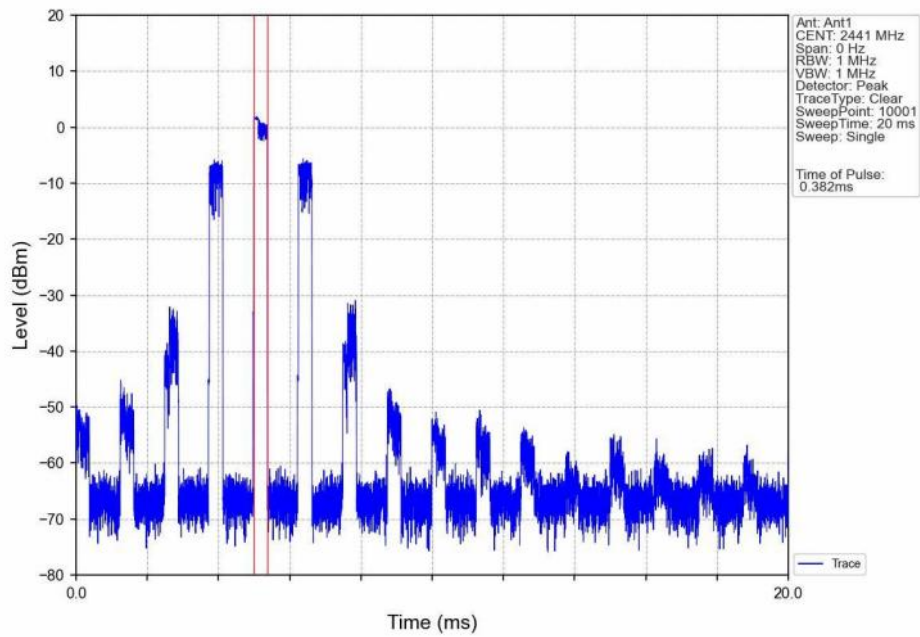
Pi/4DQPSK\_2DH5\_HOPP\_Ant1\_NTNV



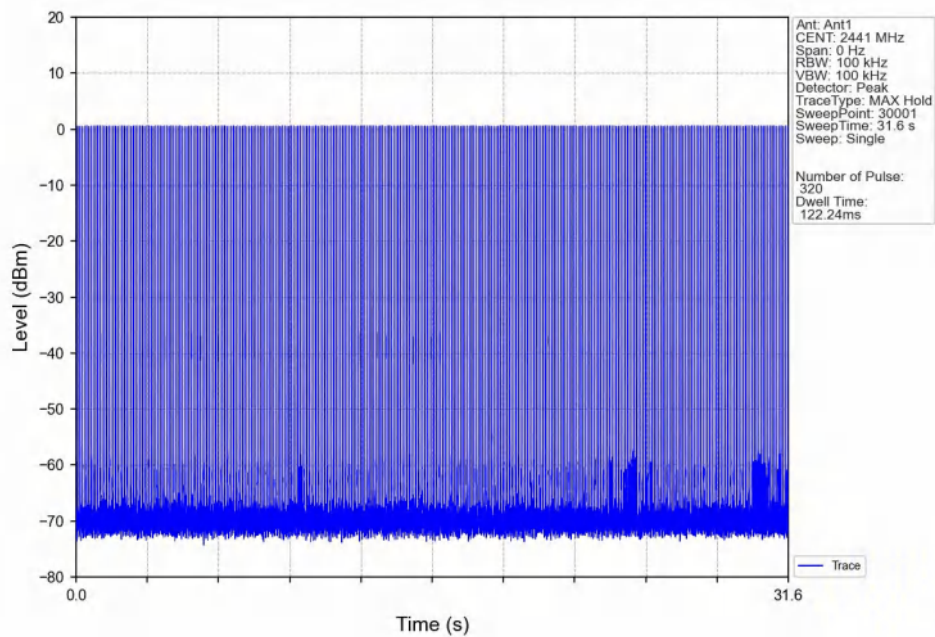
Pi/4DQPSK\_2DH5\_HOPP\_Ant1\_NTNV



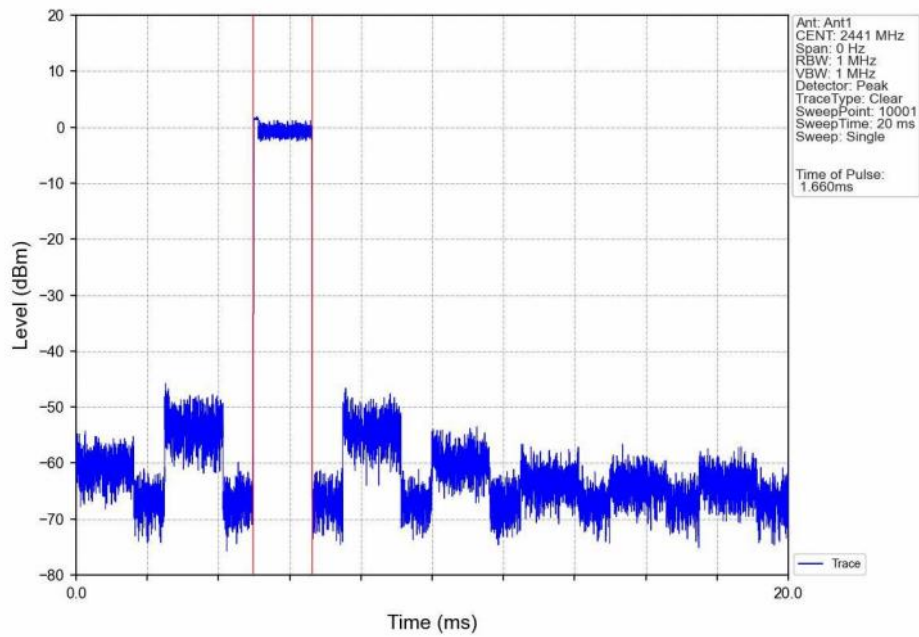
8DPSK\_3DH1\_HOPP\_Ant1\_NTNV



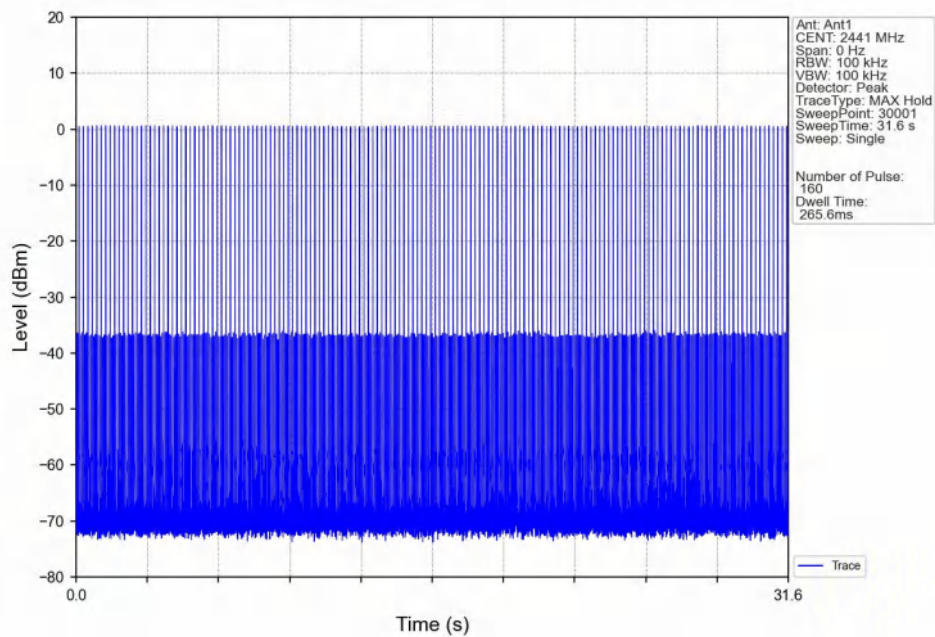
8DPSK\_3DH1\_HOPP\_Ant1\_NTNV



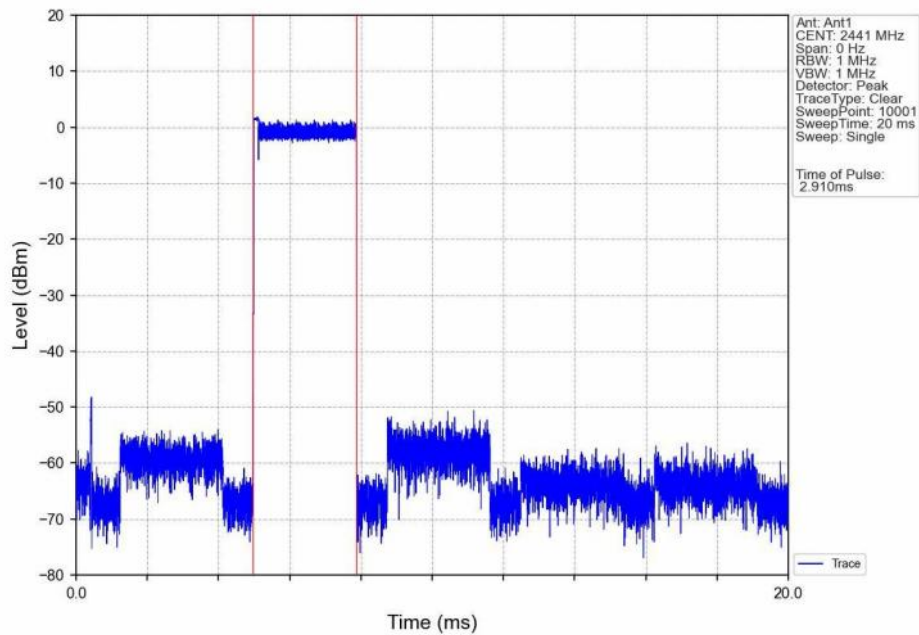
8DPSK\_3DH3\_HOPP\_Ant1\_NTNV



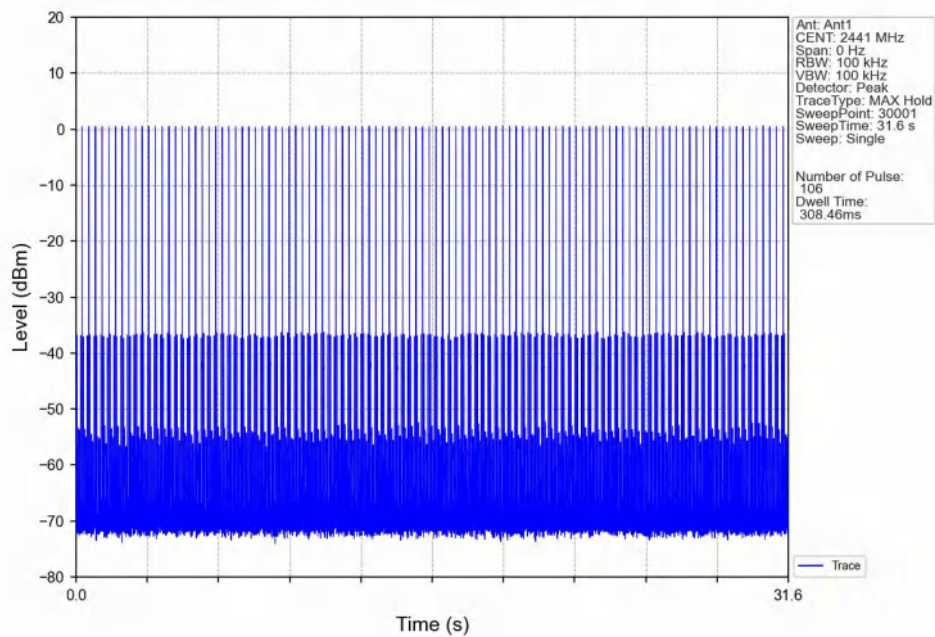
8DPSK\_3DH3\_HOPP\_Ant1\_NTNV



8DPSK\_3DH5\_HOPP\_Ant1\_NTNV



8DPSK\_3DH5\_HOPP\_Ant1\_NTNV



## 6. Unwanted Emissions In Non-restricted Frequency Bands

### 6.1 Test Result

#### 6.1.1 Ref

| Mode      | TX Type | Frequency (MHz) | Packet Type | ANT | Level of Reference (dBm) |
|-----------|---------|-----------------|-------------|-----|--------------------------|
| GFSK      | SISO    | 2402            | DH5         | 1   | 1.91                     |
|           |         | 2441            | DH5         | 1   | 1.62                     |
|           |         | 2480            | DH5         | 1   | 1.79                     |
|           |         | HOPP            | DH5         | 1   | 1.91                     |
|           |         |                 |             |     | 1.91                     |
| Pi/4DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.62                     |
|           |         | 2441            | 2DH5        | 1   | 1.47                     |
|           |         | 2480            | 2DH5        | 1   | 1.62                     |
|           |         | HOPP            | 2DH5        | 1   | 1.85                     |
|           |         |                 |             |     | 1.85                     |
| 8DPSK     | SISO    | 2402            | 3DH5        | 1   | 1.92                     |
|           |         | 2441            | 3DH5        | 1   | 1.64                     |
|           |         | 2480            | 3DH5        | 1   | 1.81                     |
|           |         | HOPP            | 3DH5        | 1   | 1.94                     |
|           |         |                 |             |     | 1.94                     |

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

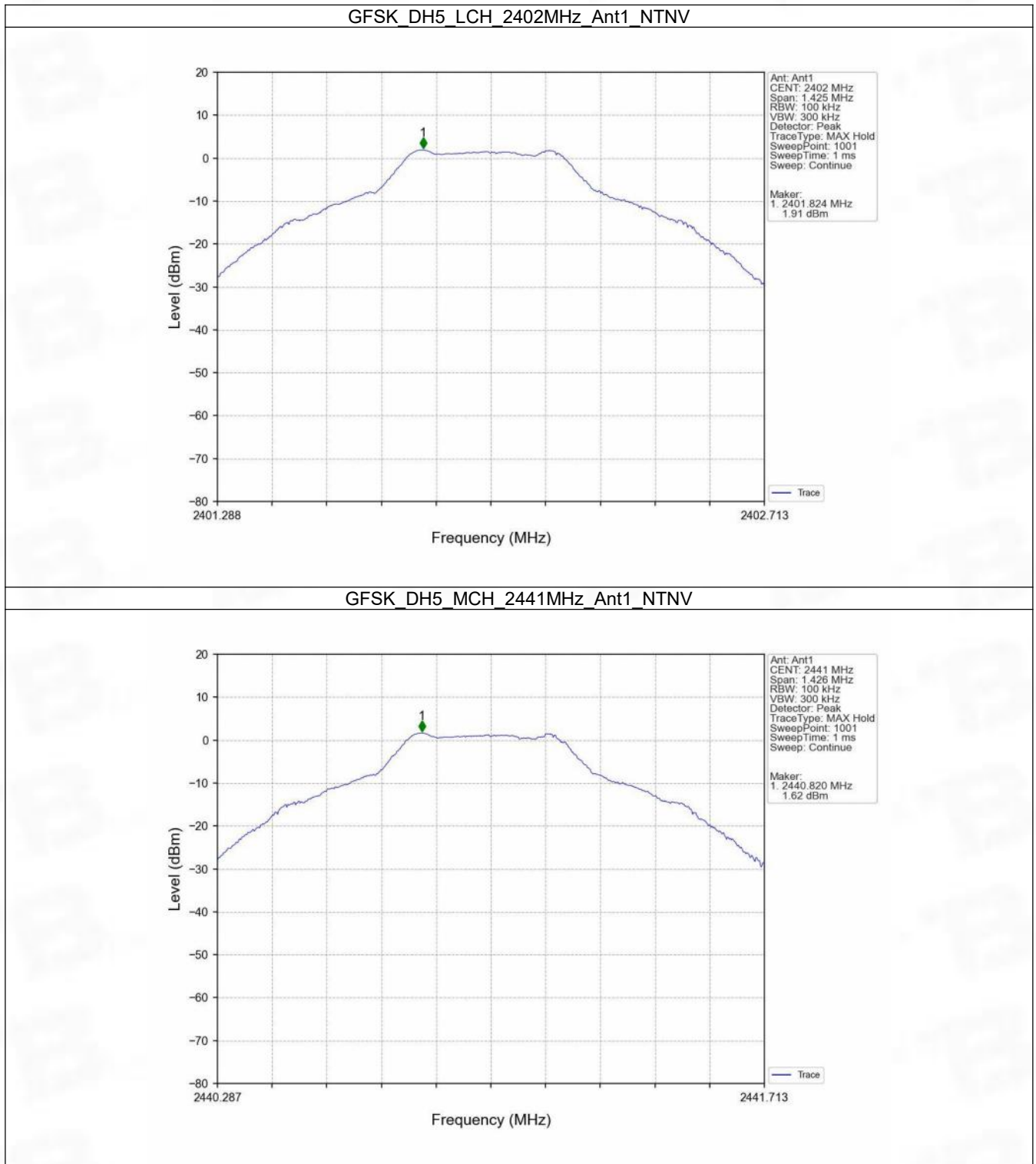
#### 6.1.2 CSE

| Mode      | TX Type | Frequency (MHz) | Packet Type | ANT | Level of Reference (dBm) | Limit (dBm) | Verdict |
|-----------|---------|-----------------|-------------|-----|--------------------------|-------------|---------|
| GFSK      | SISO    | 2402            | DH5         | 1   | 1.91                     | -18.09      | Pass    |
|           |         | 2441            | DH5         | 1   | 1.62                     | -18.38      | Pass    |
|           |         | 2480            | DH5         | 1   | 1.79                     | -18.21      | Pass    |
|           |         | HOPP            | DH5         | 1   | 1.91                     | -18.09      | Pass    |
|           |         |                 |             |     | 1.91                     | -18.09      | Pass    |
| Pi/4DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.62                     | -18.38      | Pass    |
|           |         | 2441            | 2DH5        | 1   | 1.47                     | -18.53      | Pass    |
|           |         | 2480            | 2DH5        | 1   | 1.62                     | -18.38      | Pass    |
|           |         | HOPP            | 2DH5        | 1   | 1.85                     | -18.15      | Pass    |
|           |         |                 |             |     | 1.85                     | -18.15      | Pass    |
| 8DPSK     | SISO    | 2402            | 3DH5        | 1   | 1.92                     | -18.08      | Pass    |
|           |         | 2441            | 3DH5        | 1   | 1.64                     | -18.36      | Pass    |
|           |         | 2480            | 3DH5        | 1   | 1.81                     | -18.19      | Pass    |
|           |         | HOPP            | 3DH5        | 1   | 1.94                     | -18.06      | Pass    |
|           |         |                 |             |     | 1.94                     | -18.06      | Pass    |

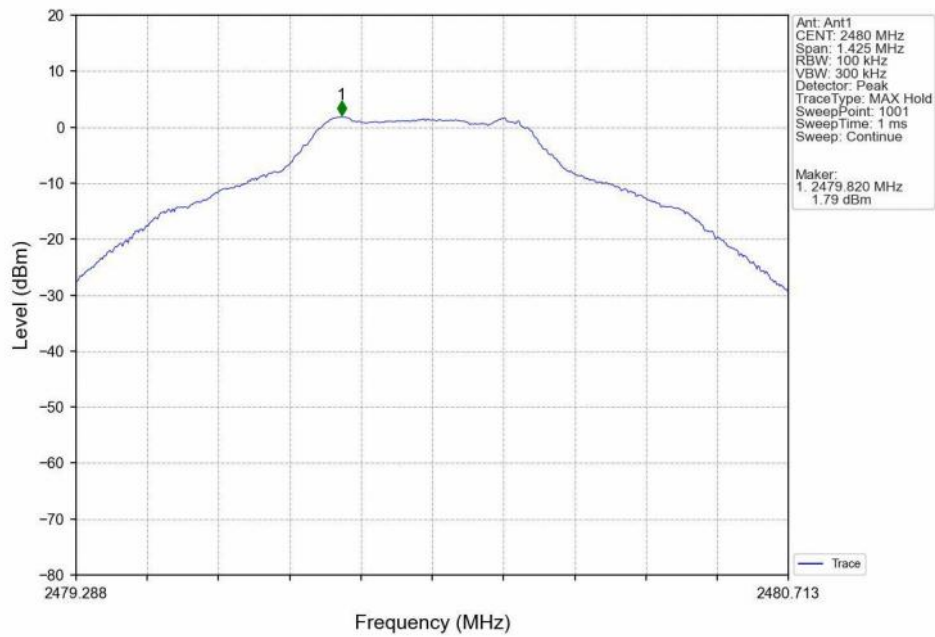
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

## 6.2 Test Graph

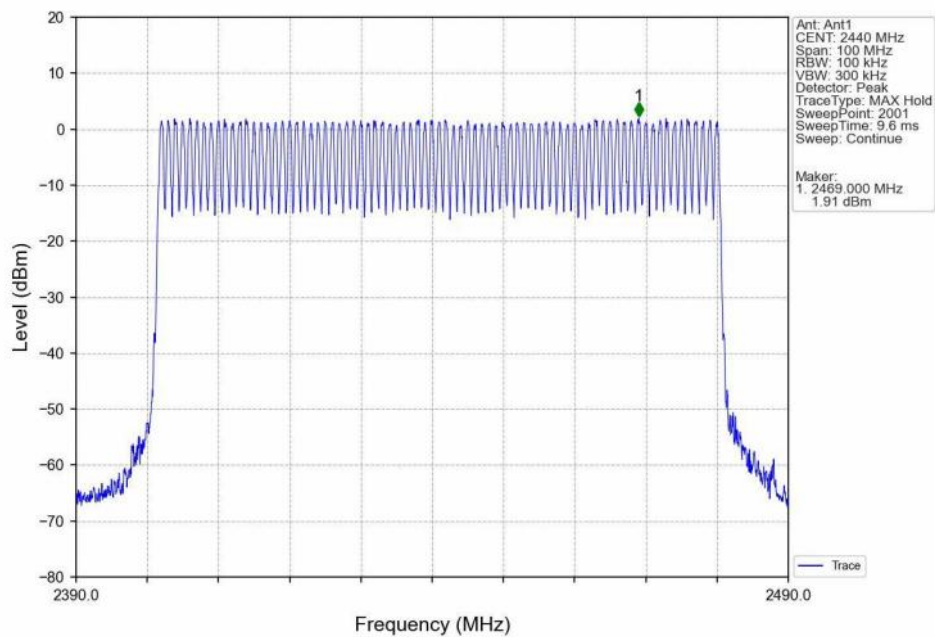
### 6.2.1 Ref



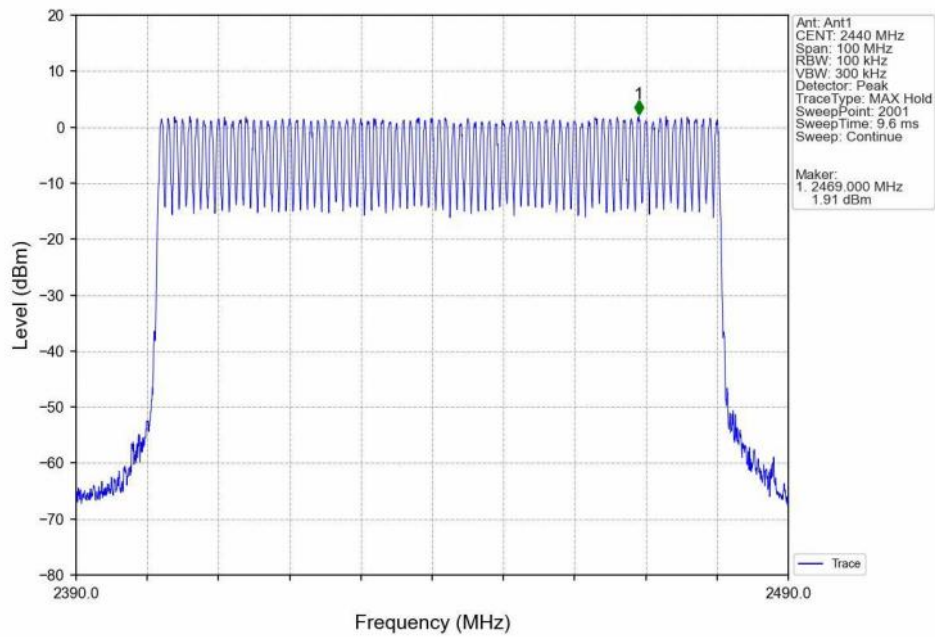
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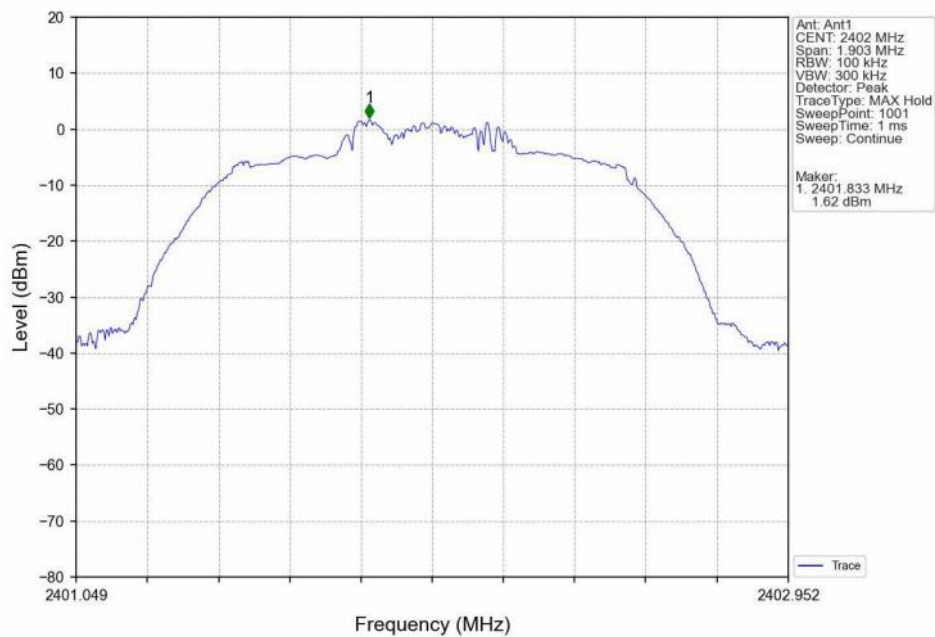
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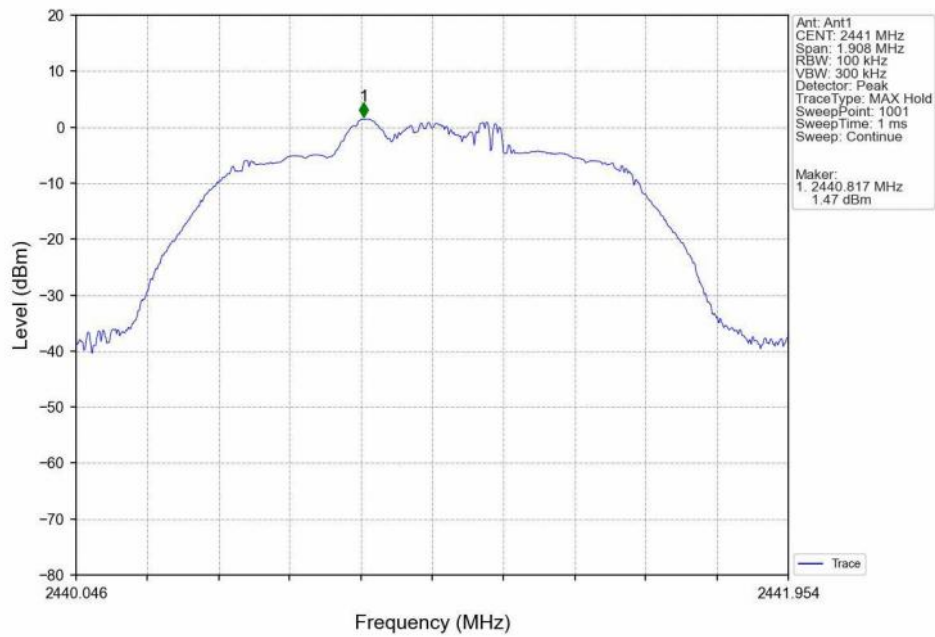
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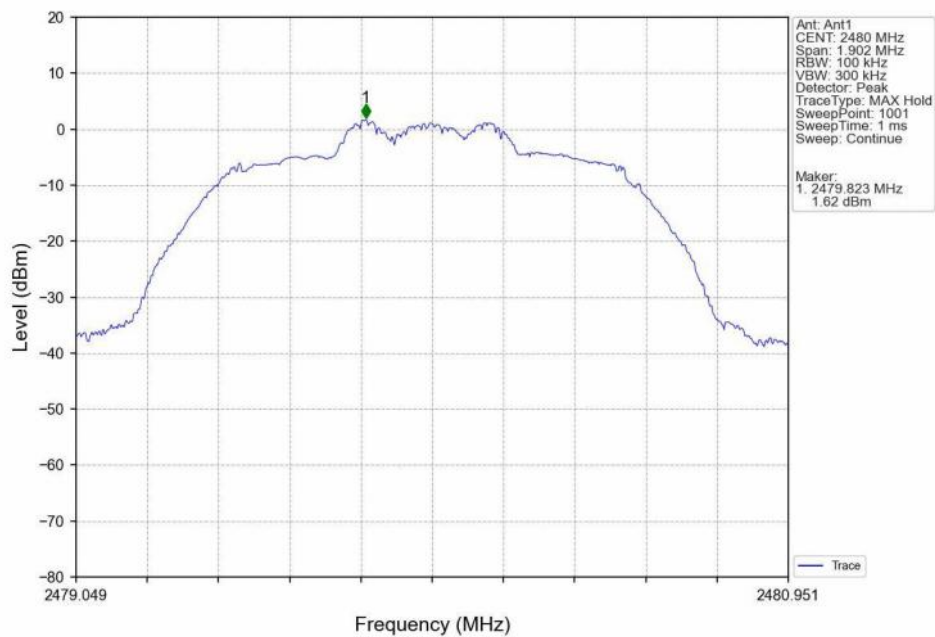
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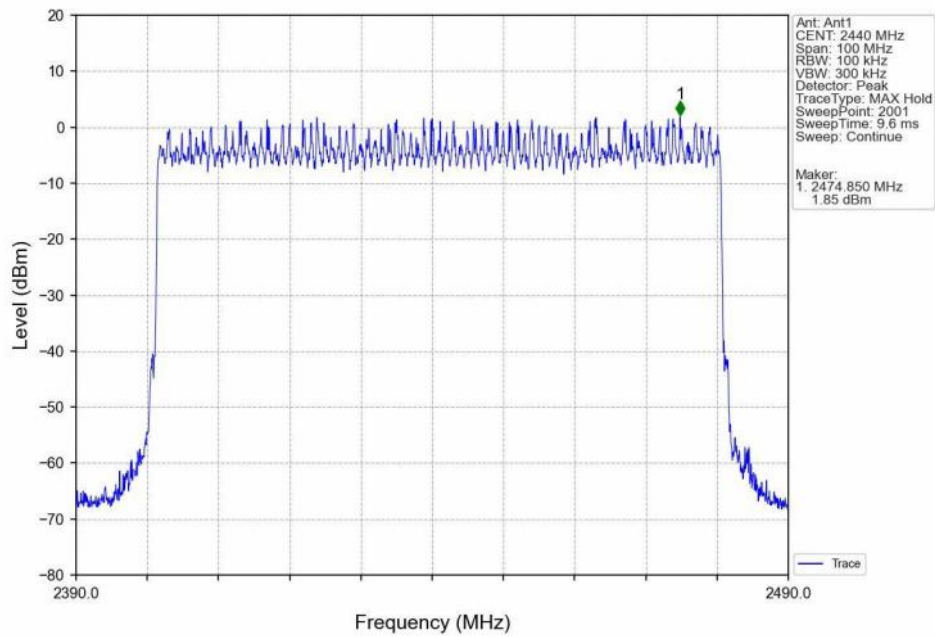
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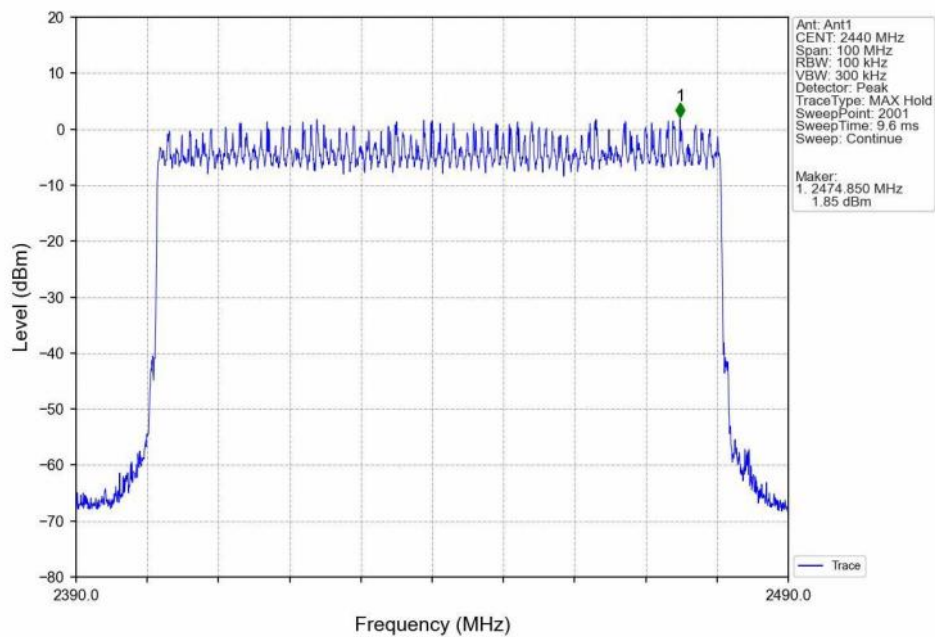
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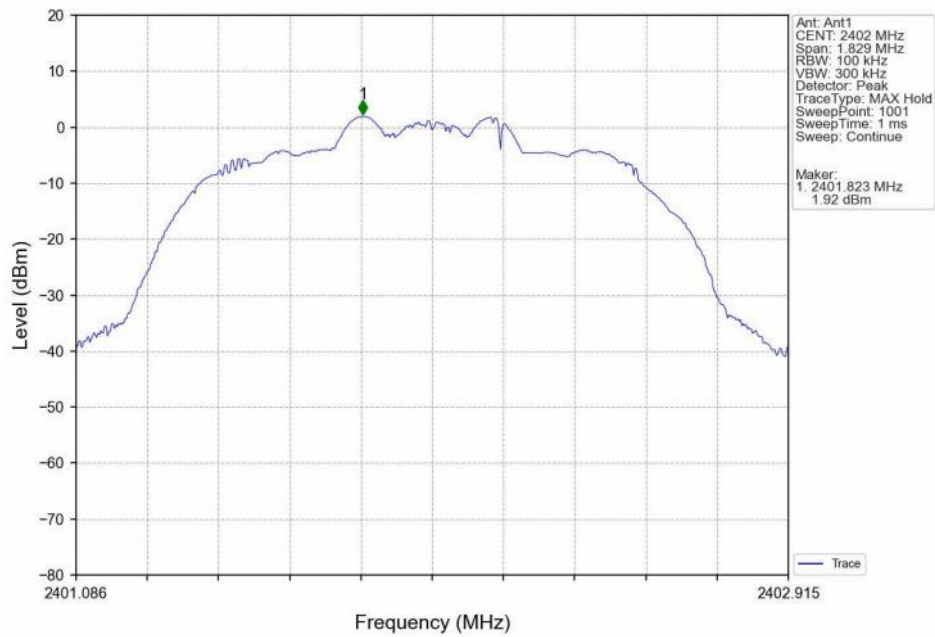
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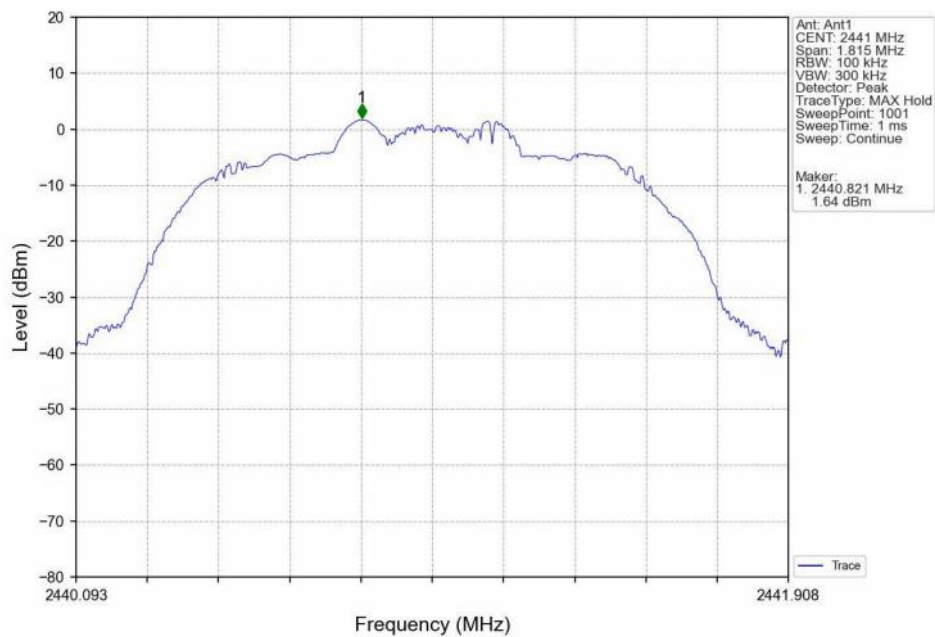
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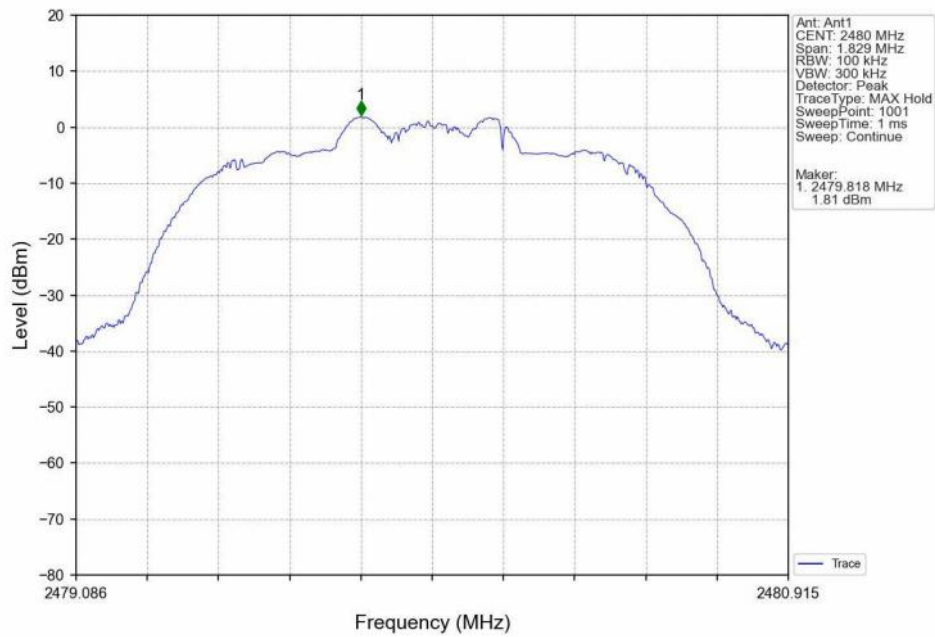
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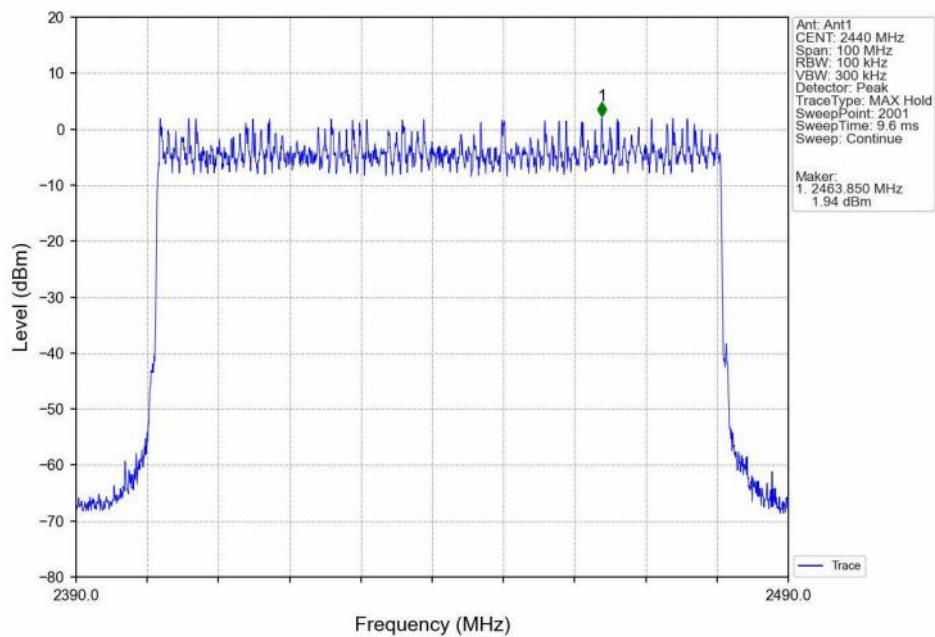
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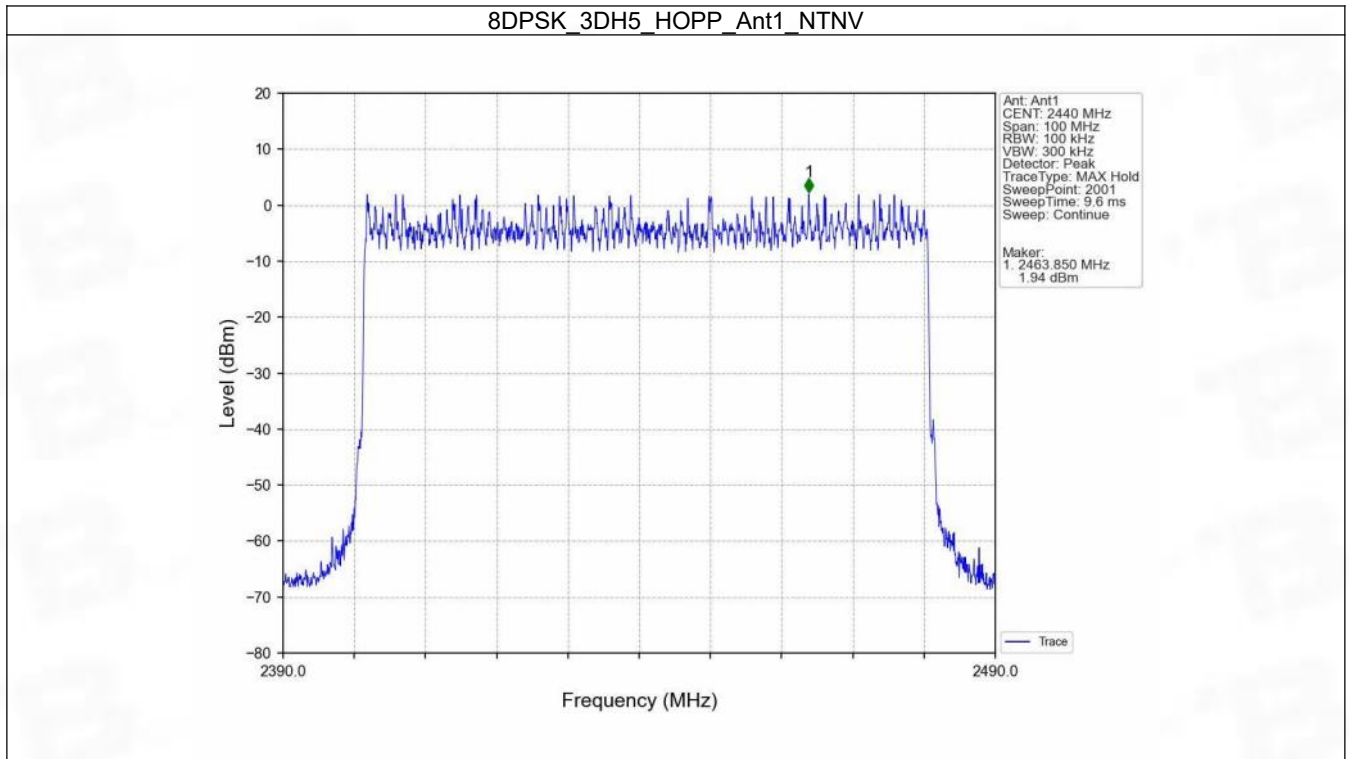


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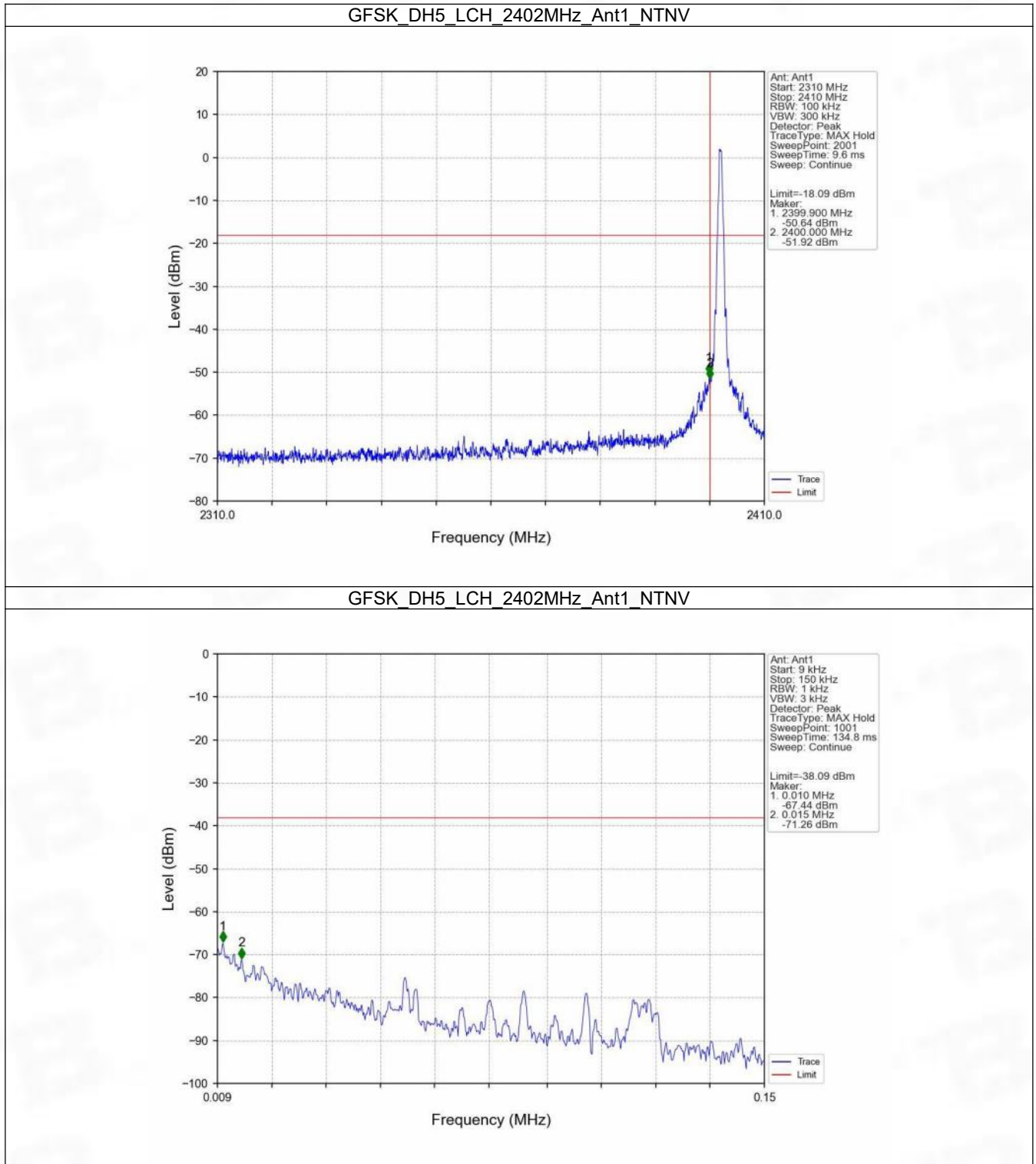


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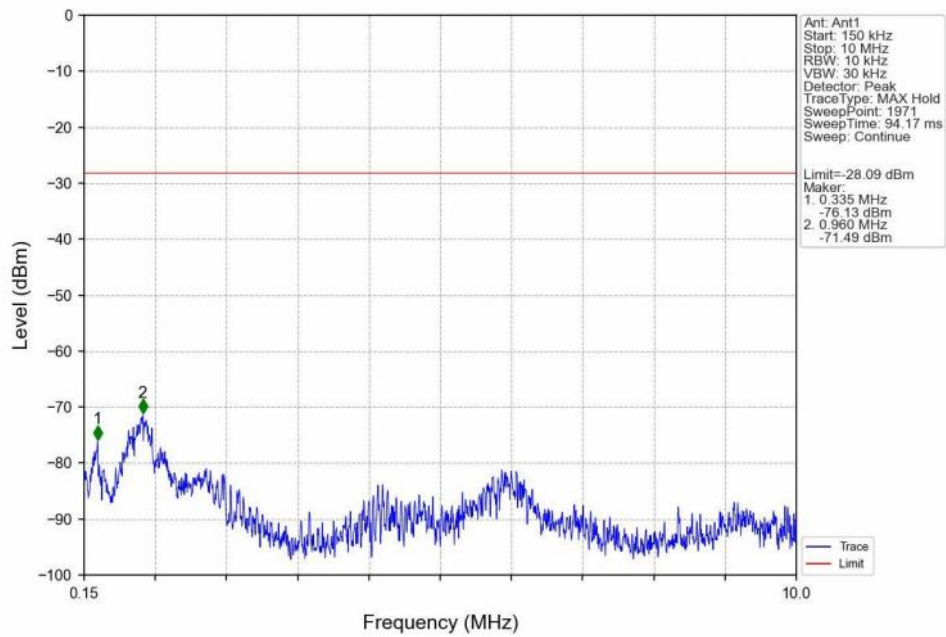




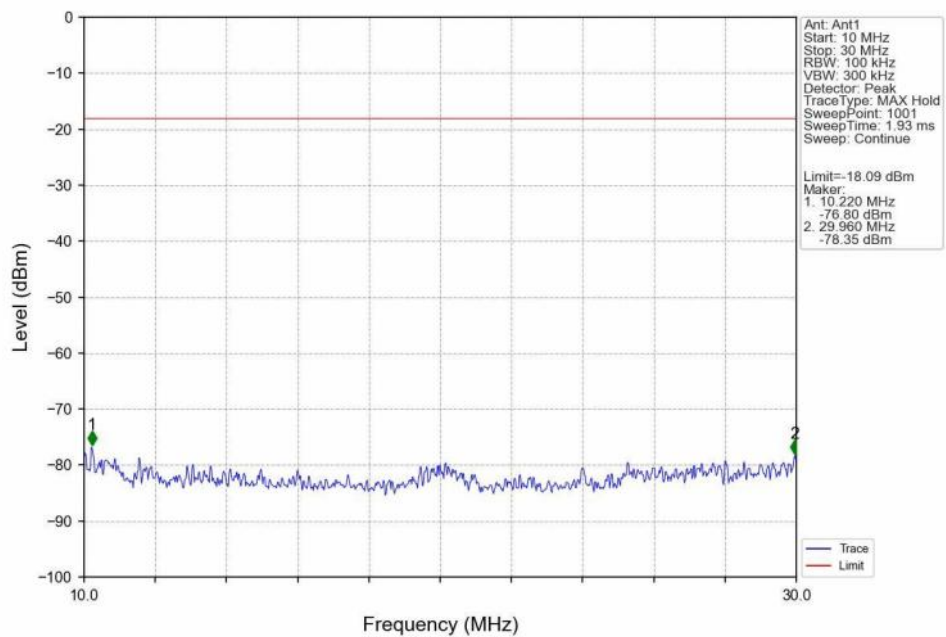
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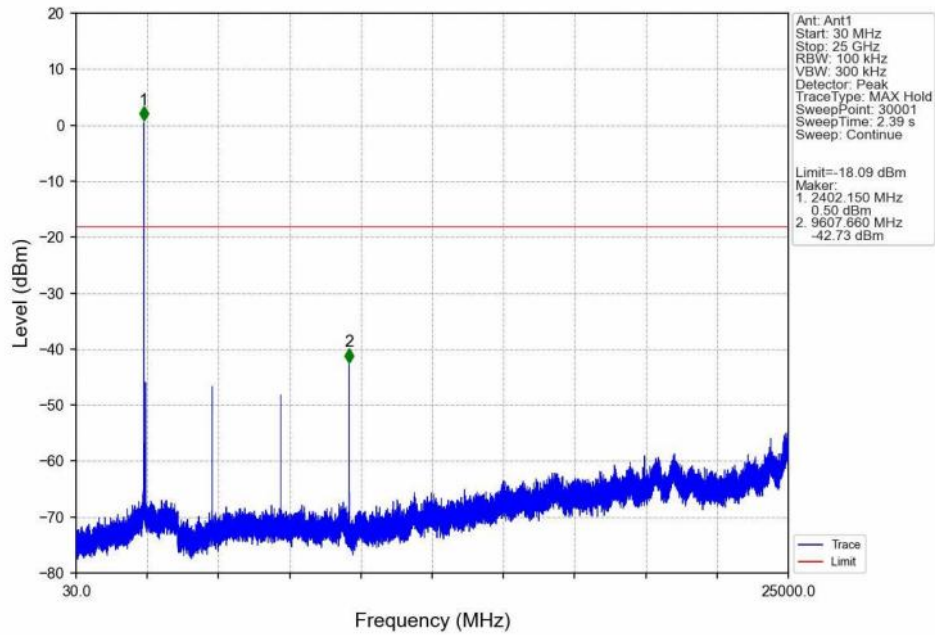
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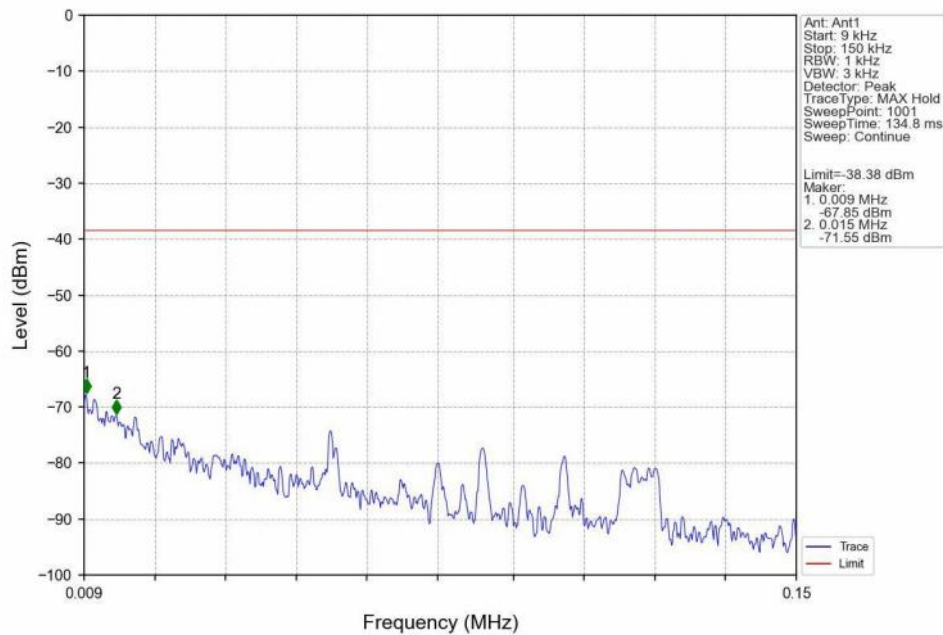
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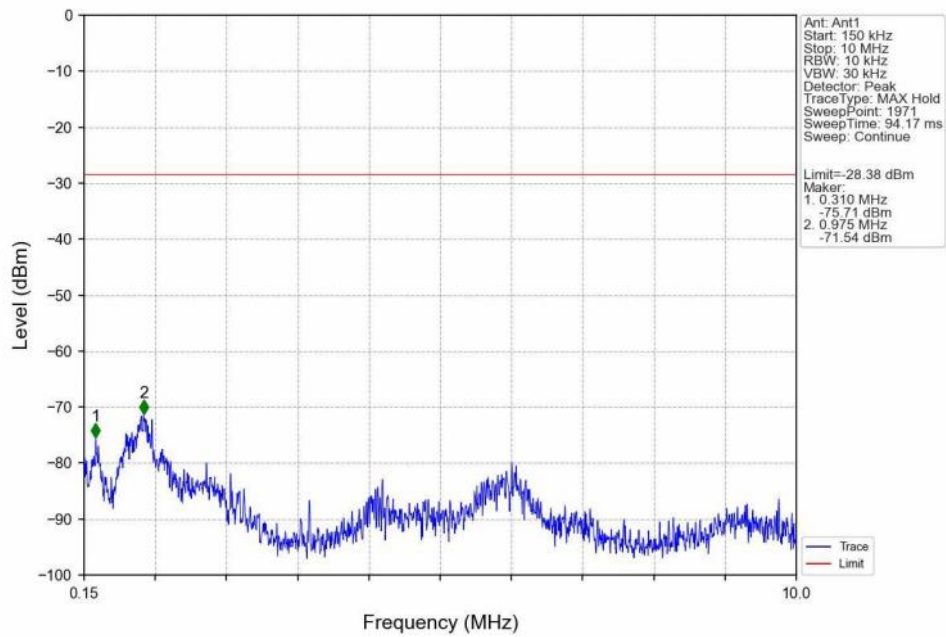
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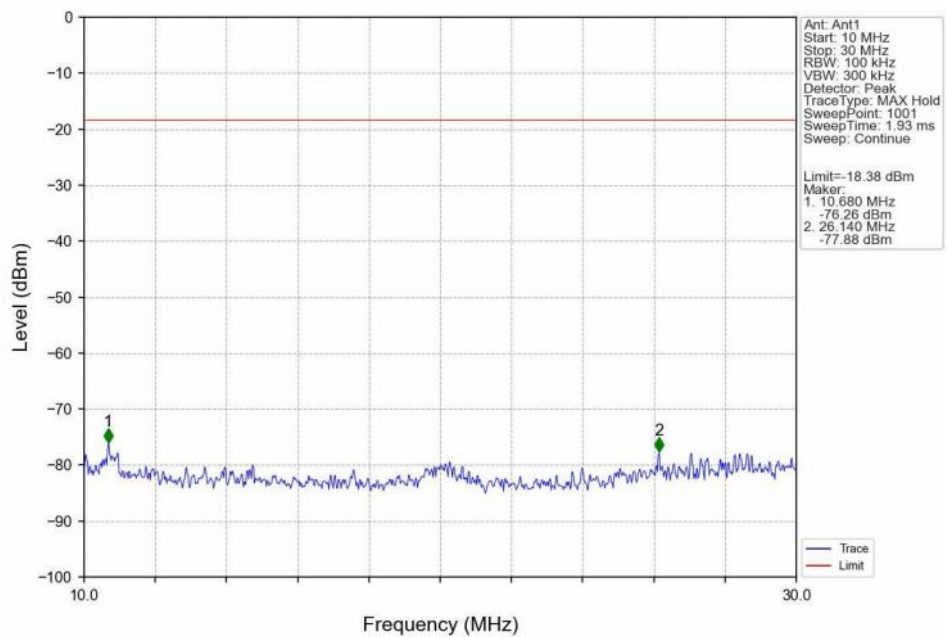
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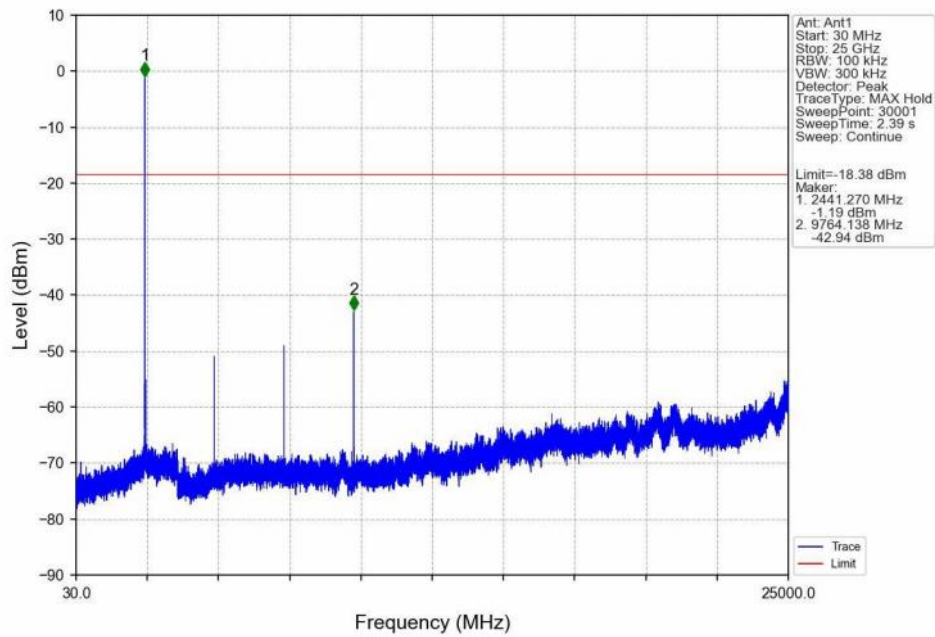
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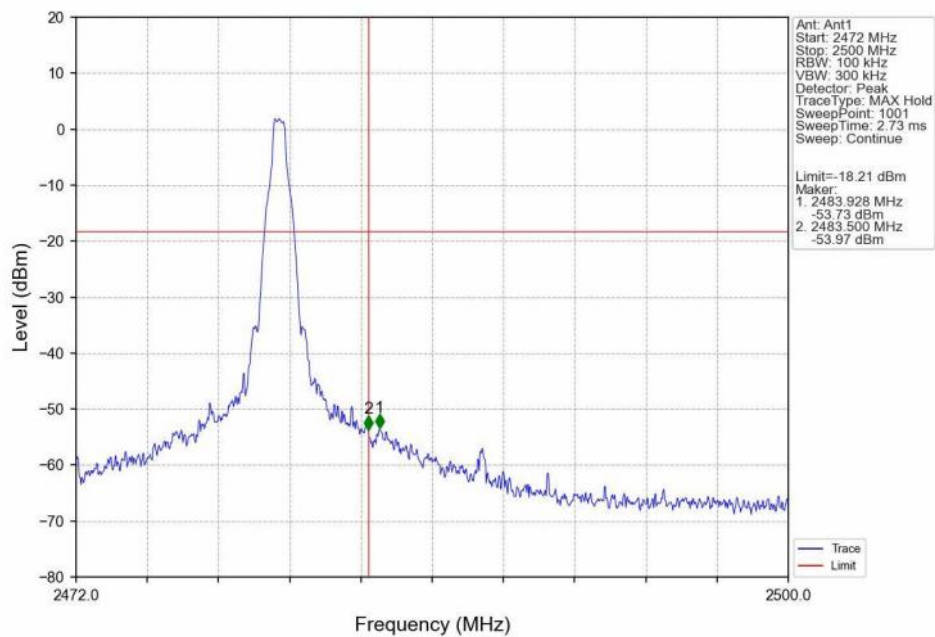
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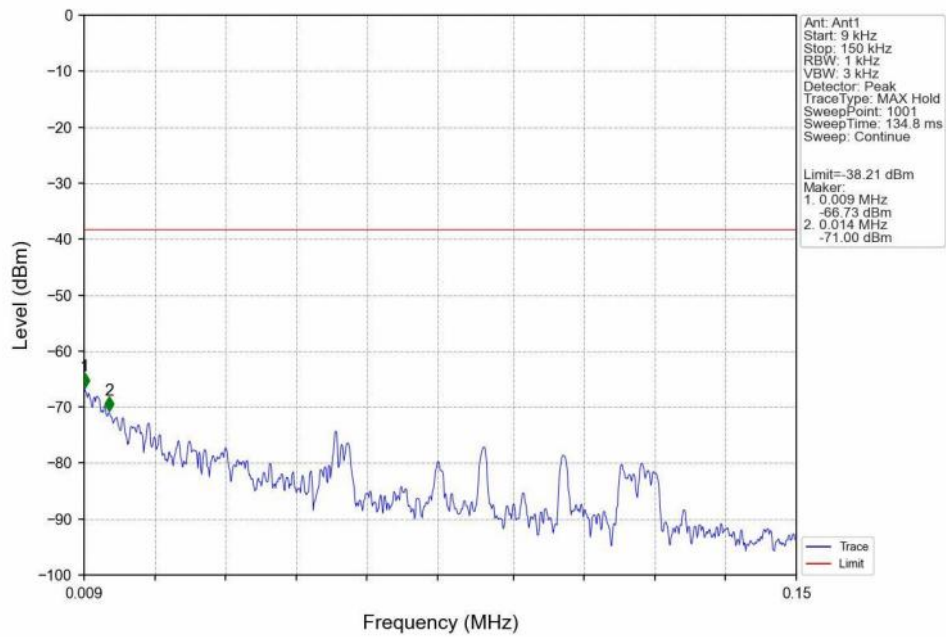
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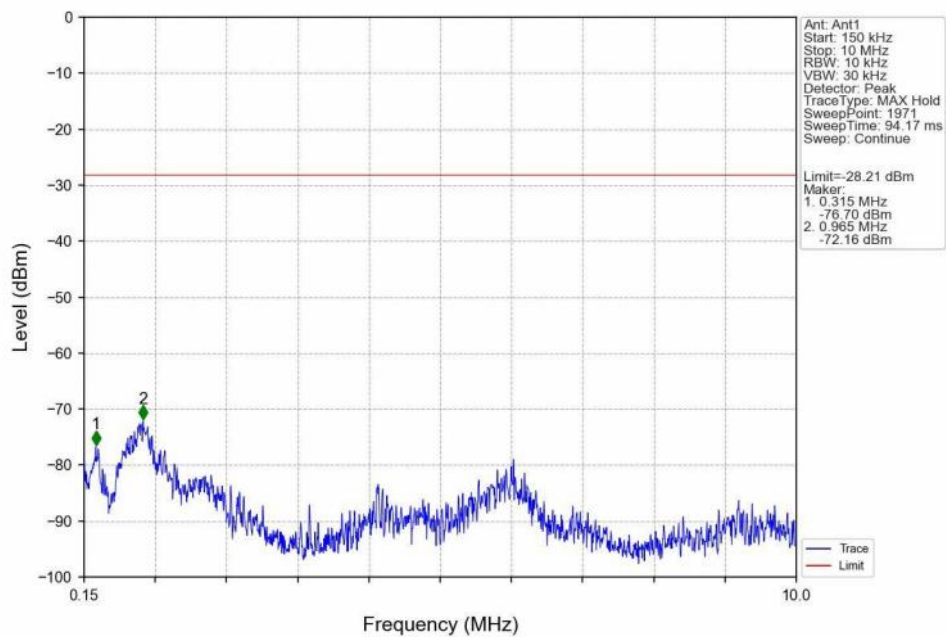
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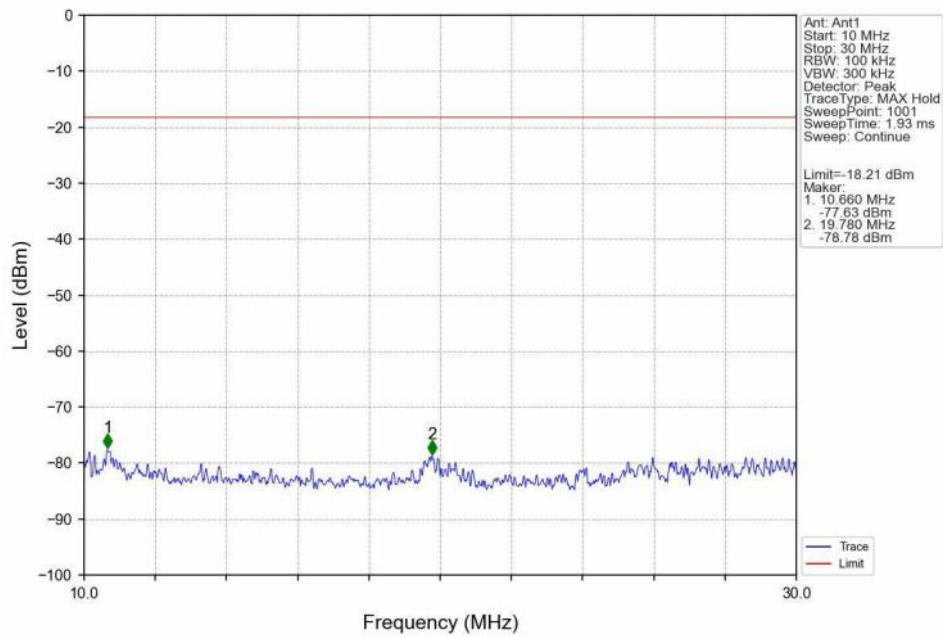
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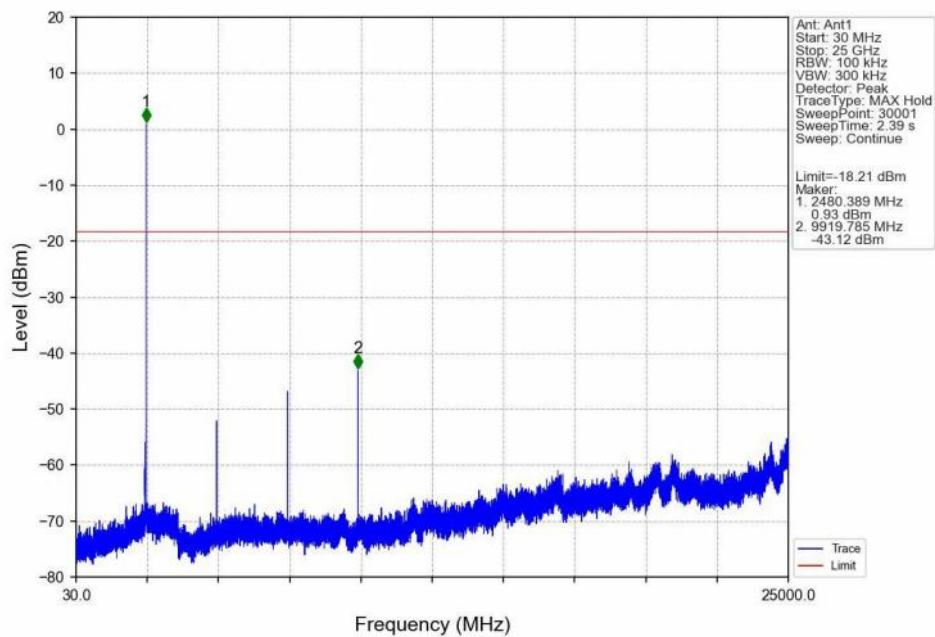
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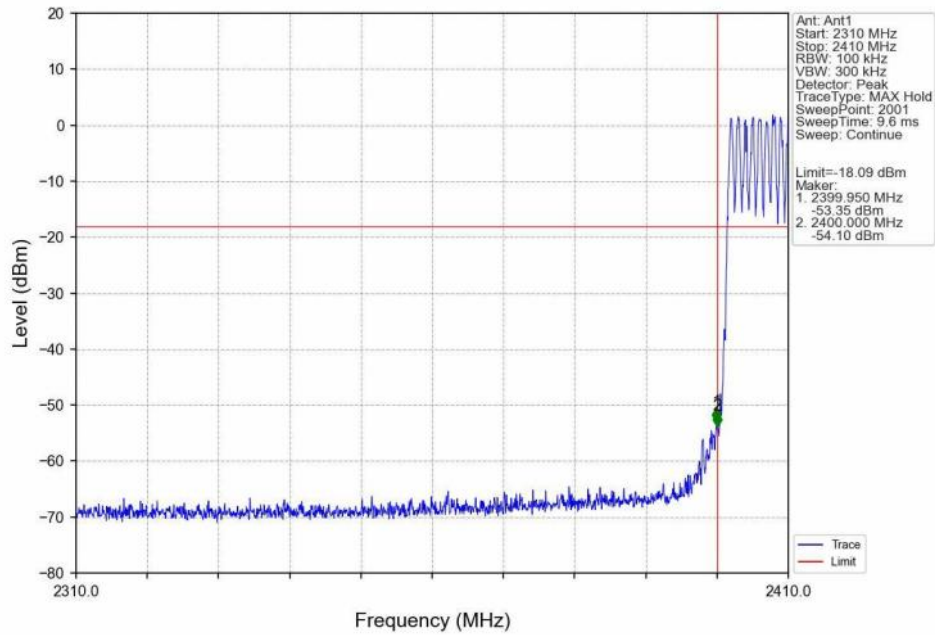
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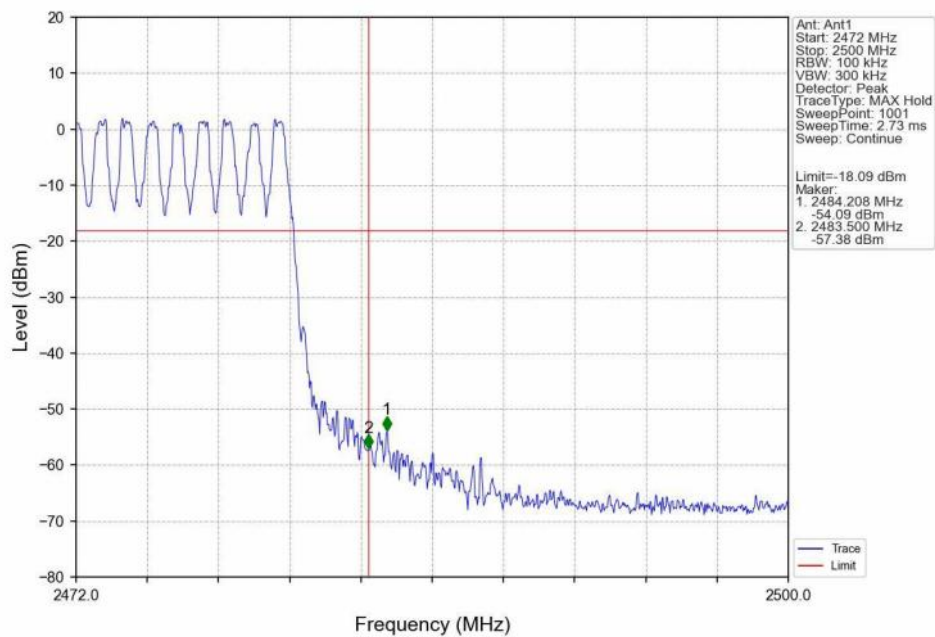
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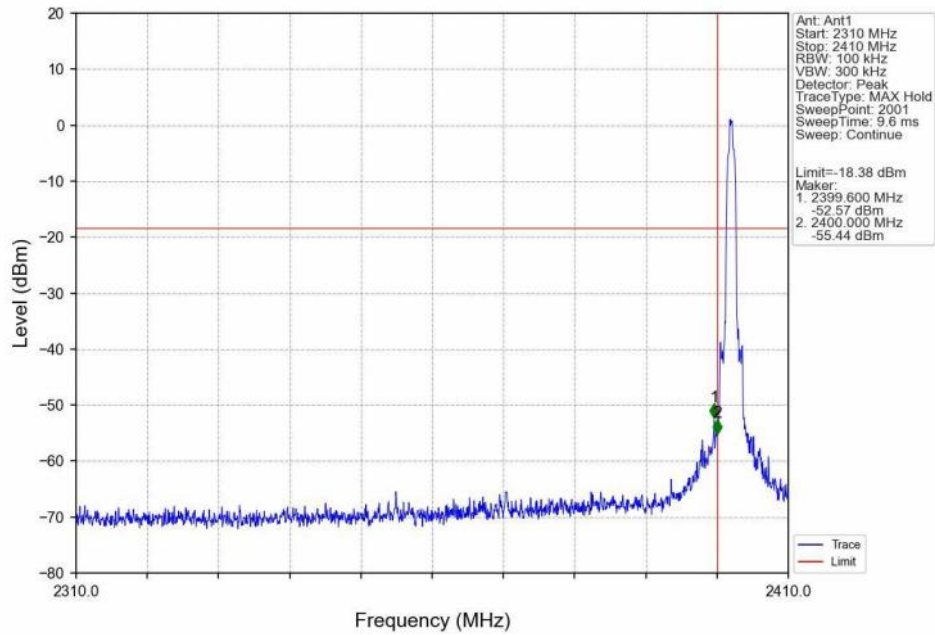
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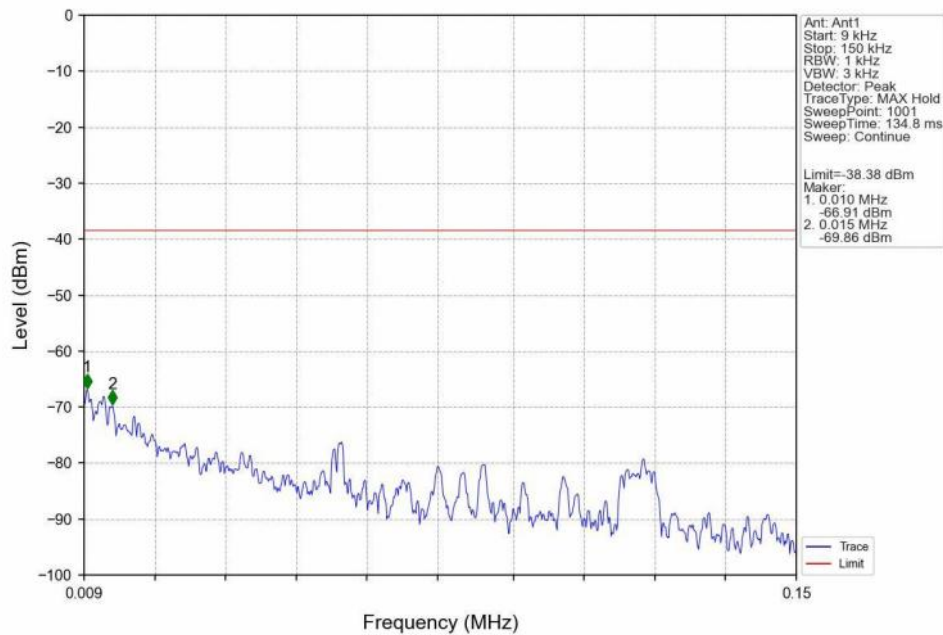
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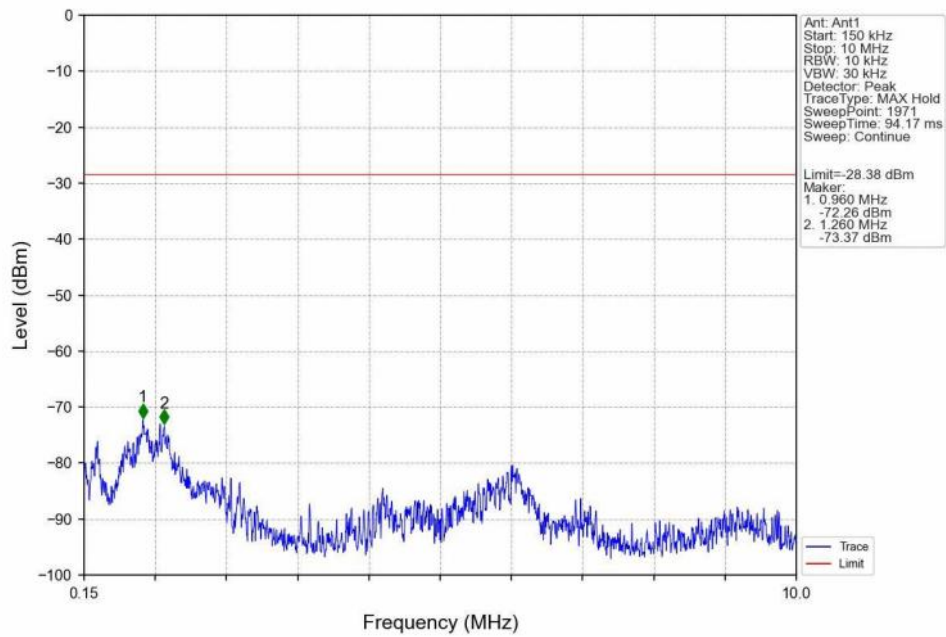
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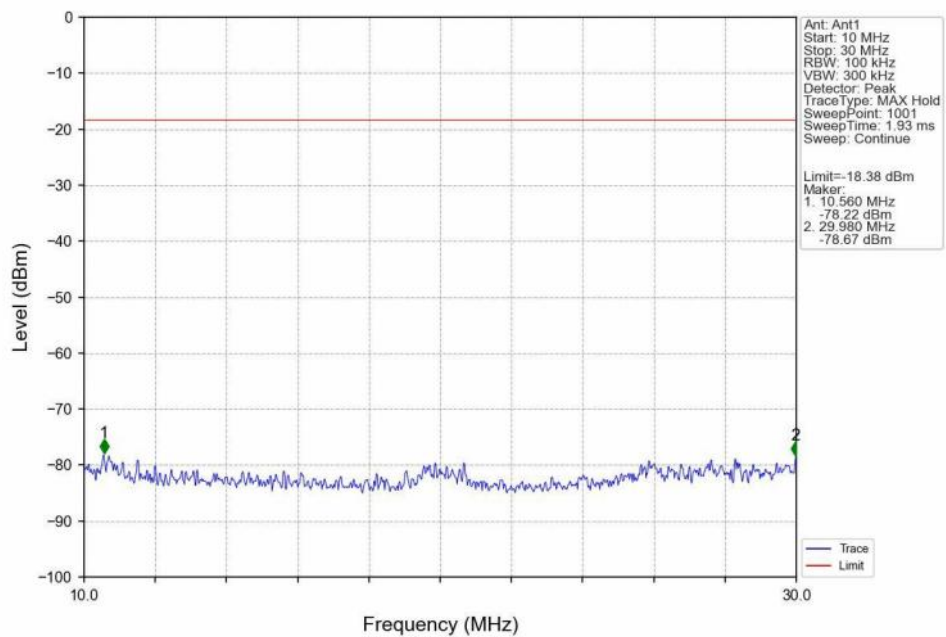
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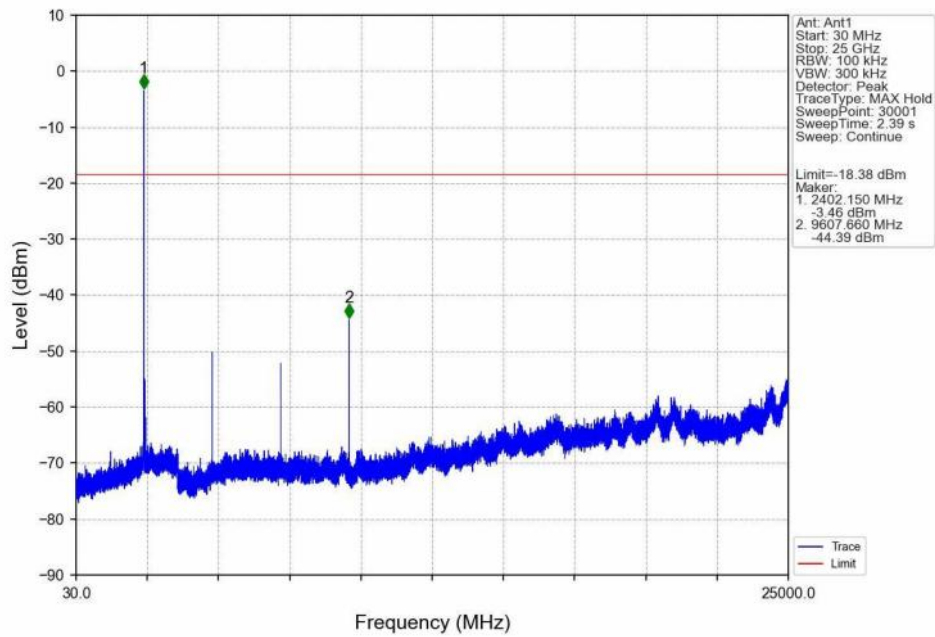
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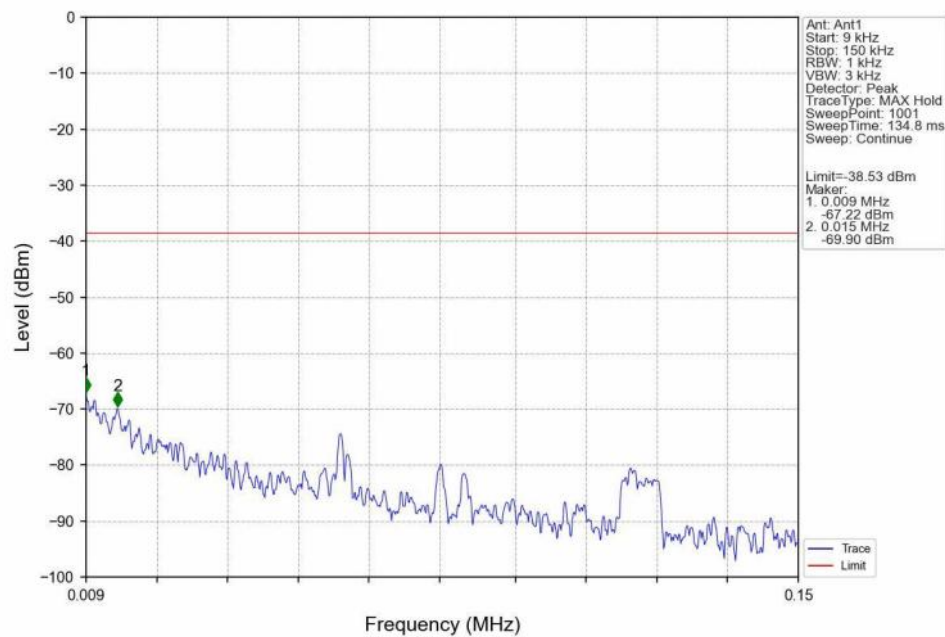
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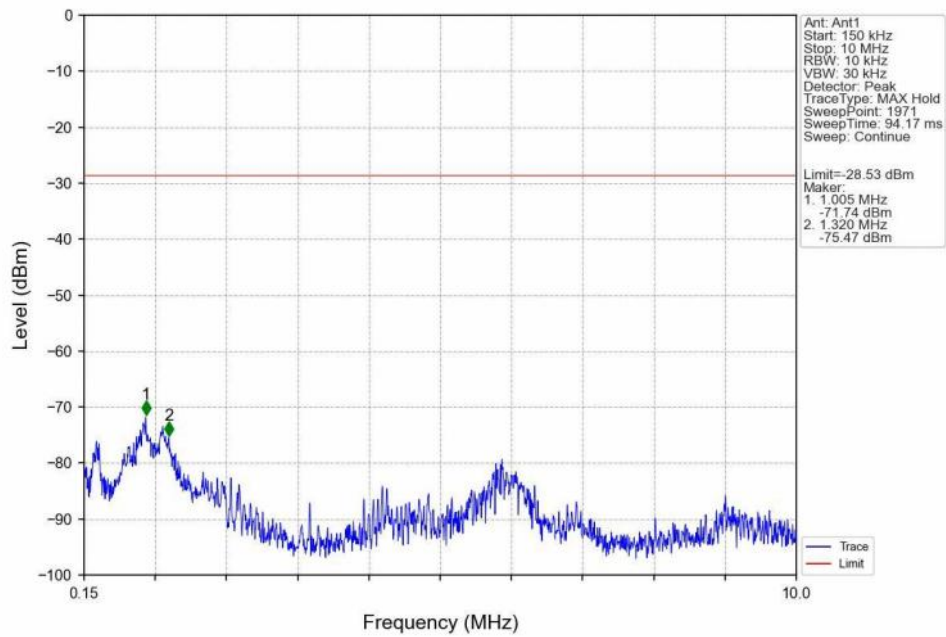
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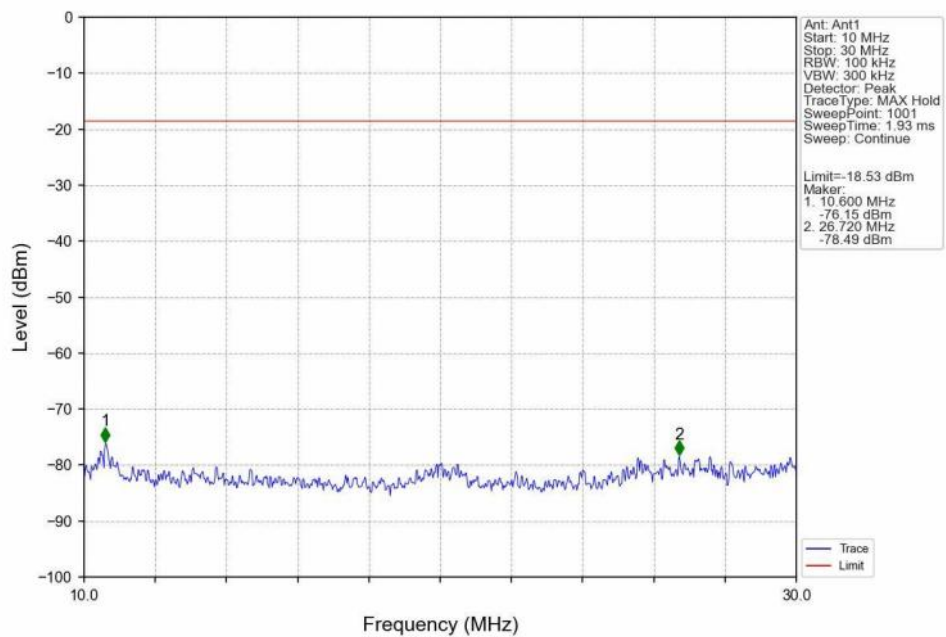
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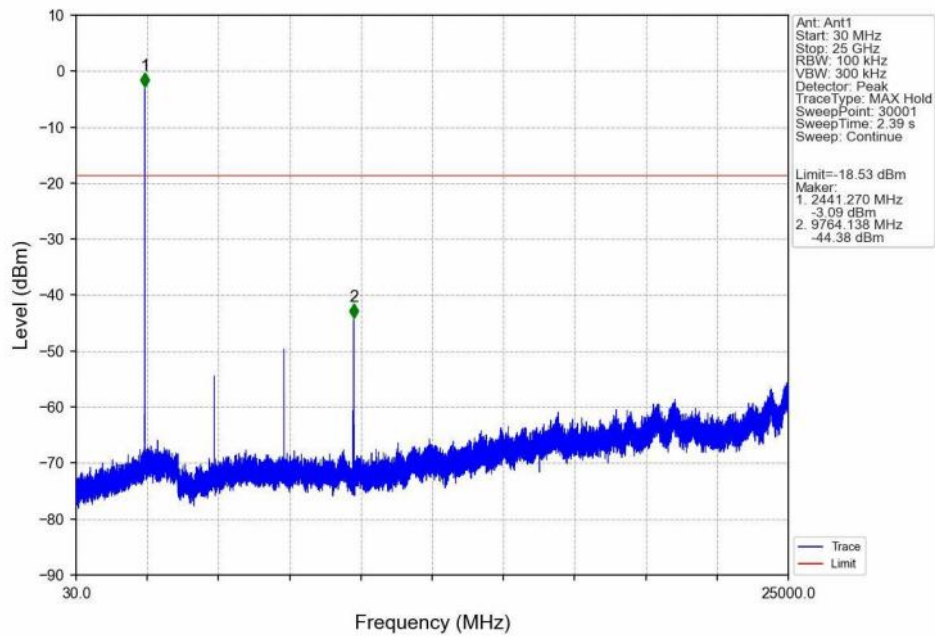
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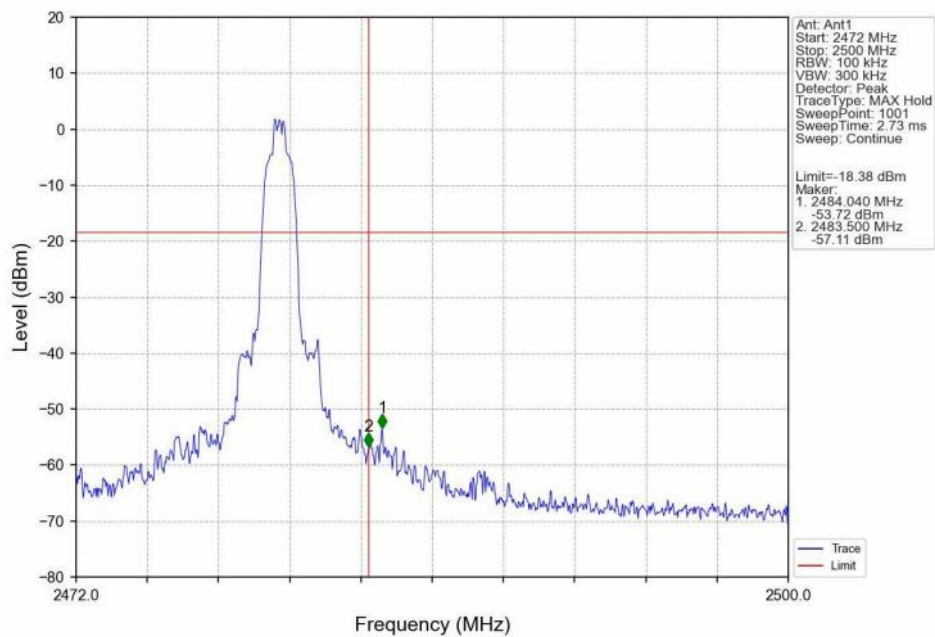
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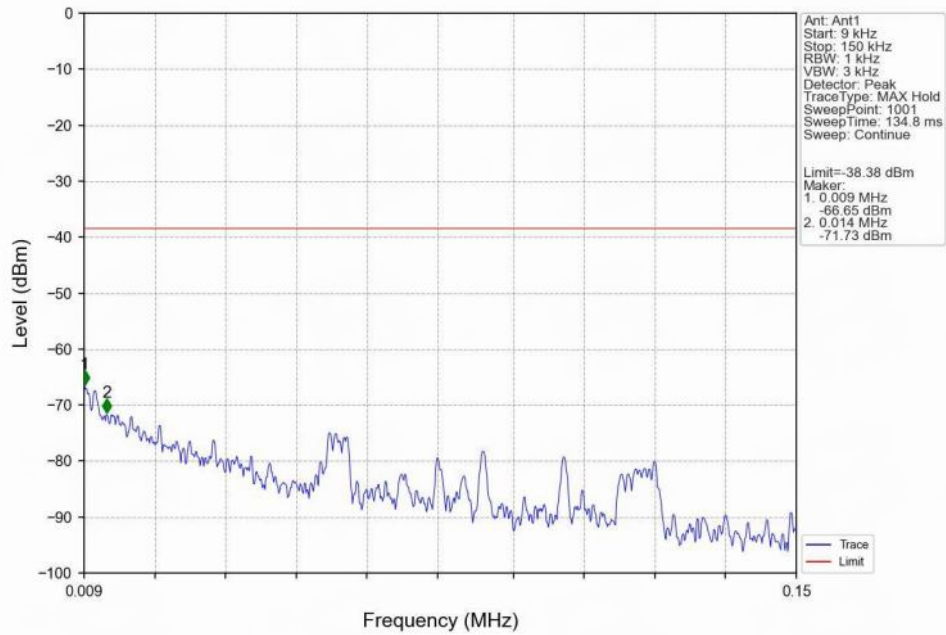
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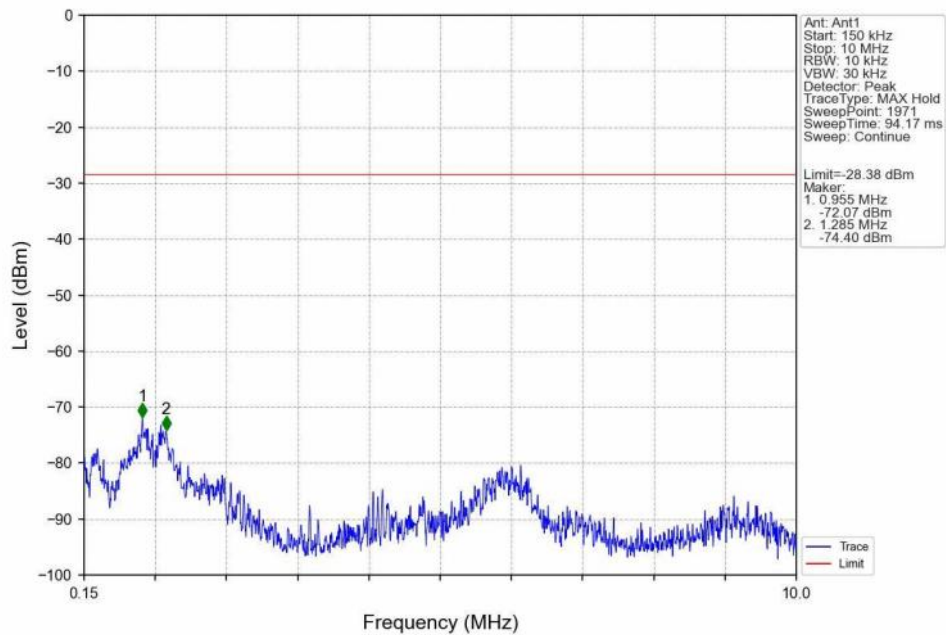
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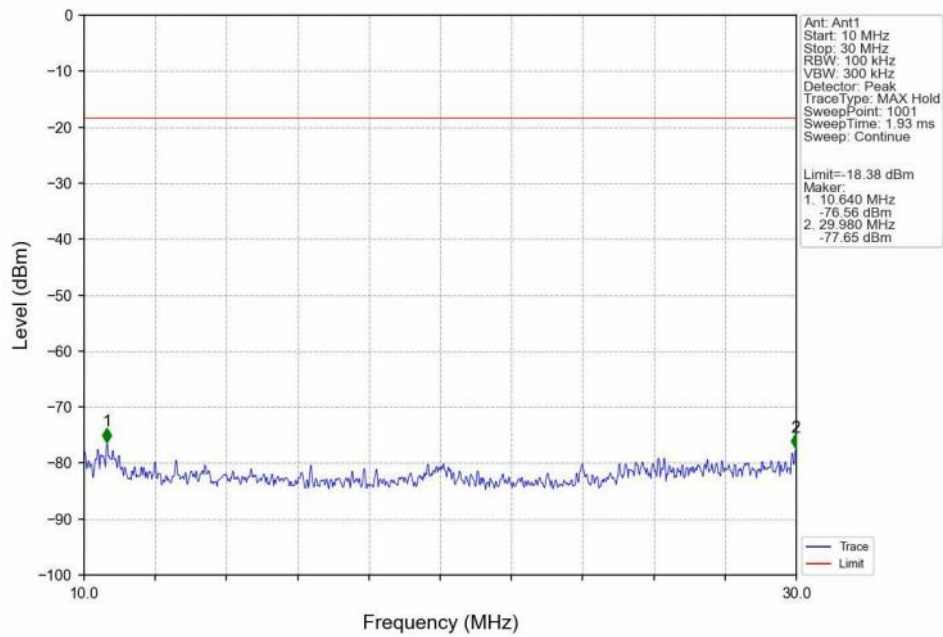
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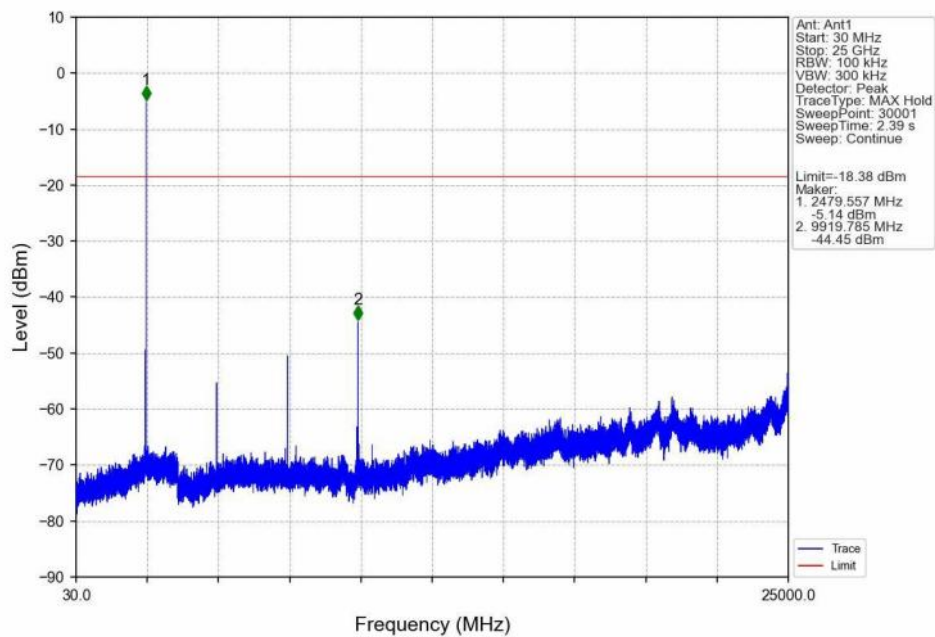
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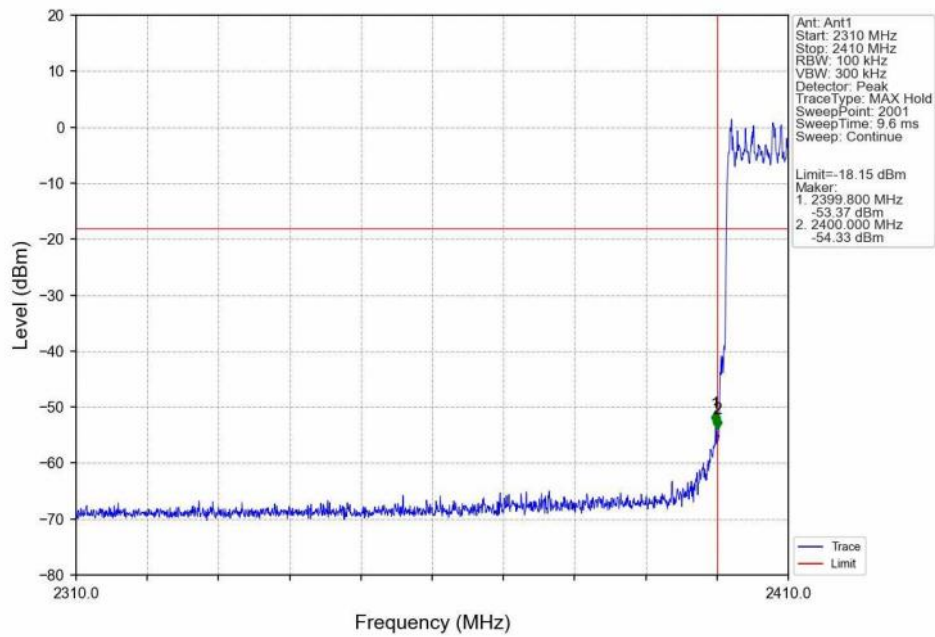
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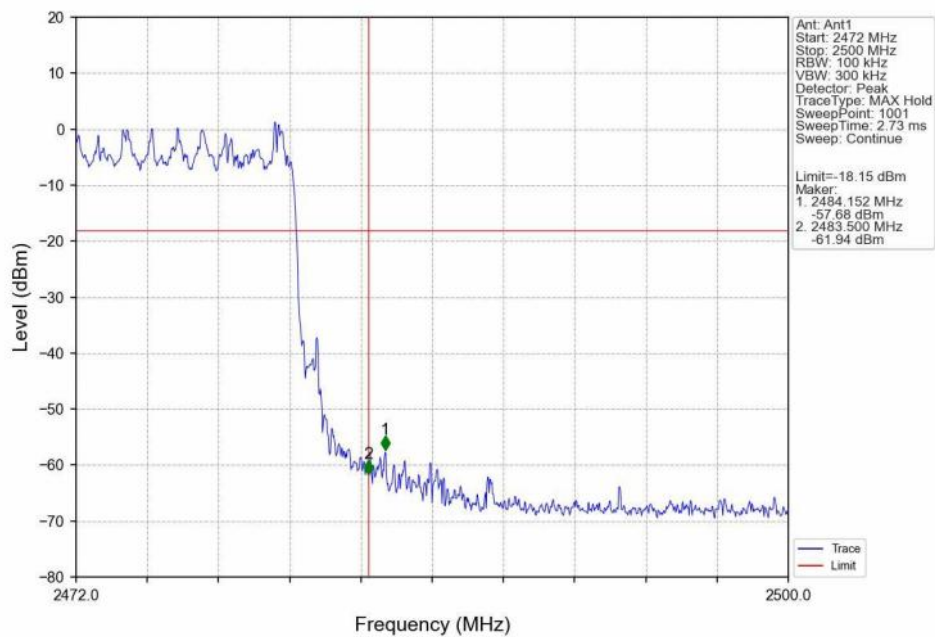
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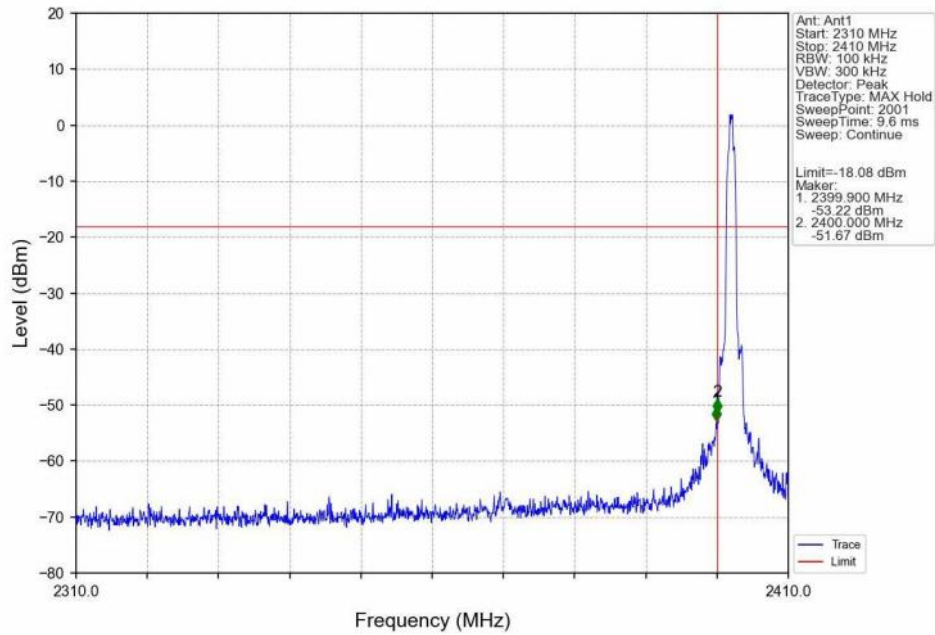
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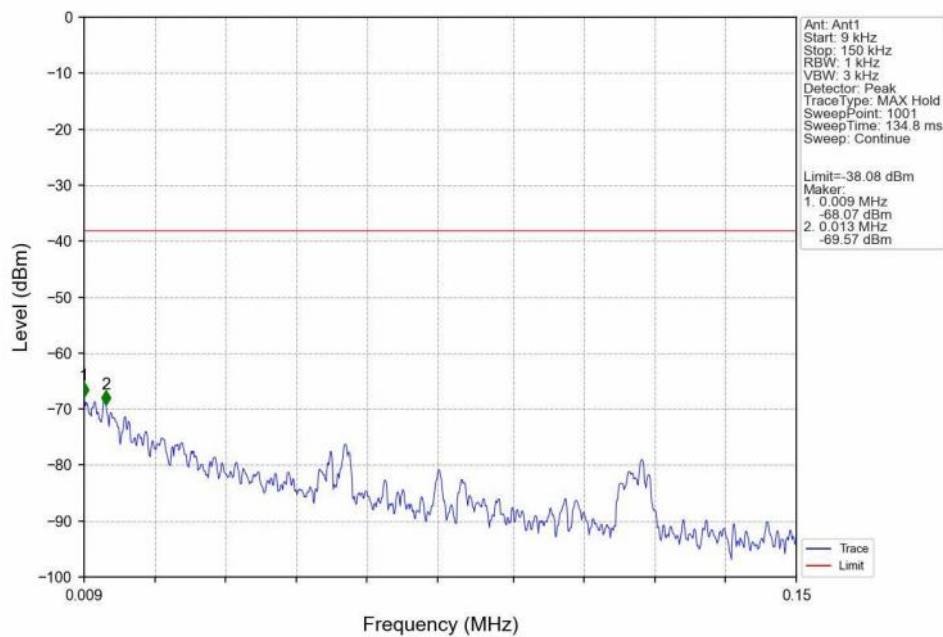
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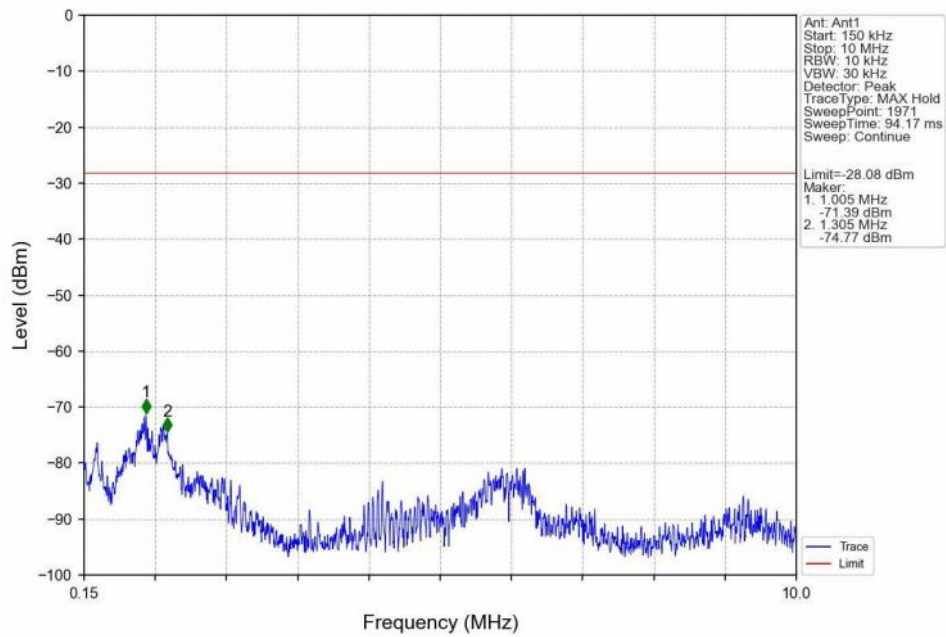
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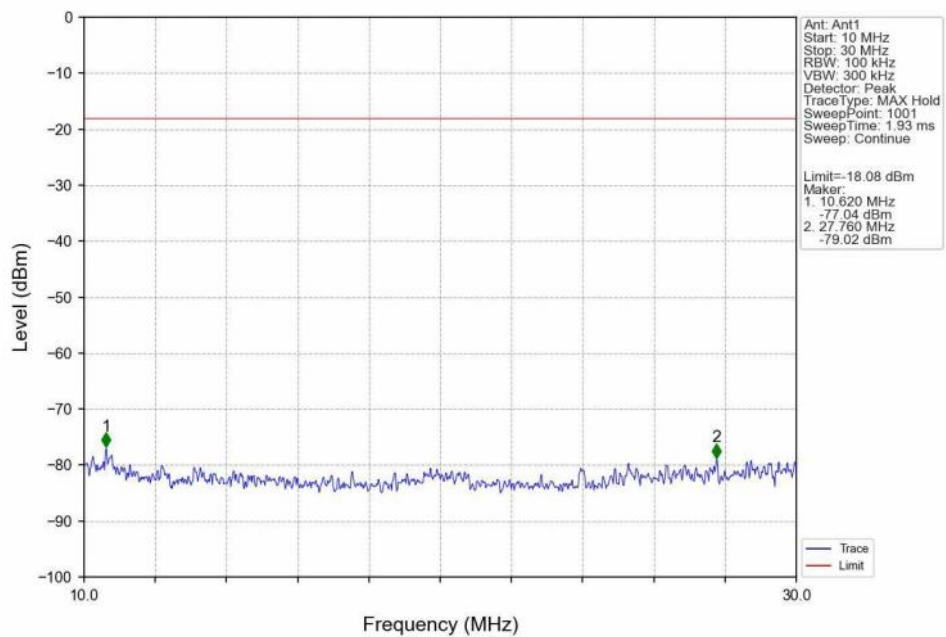
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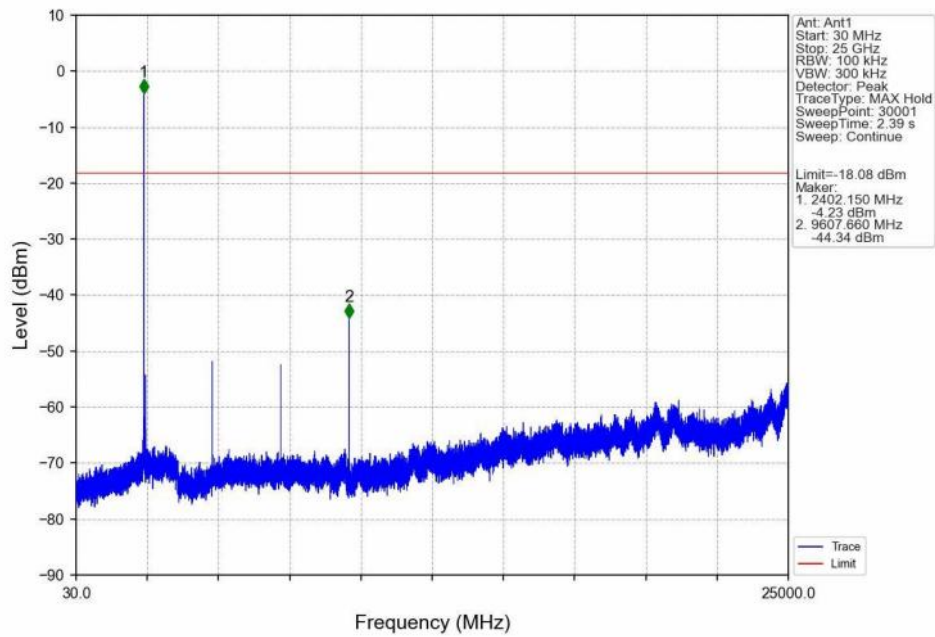
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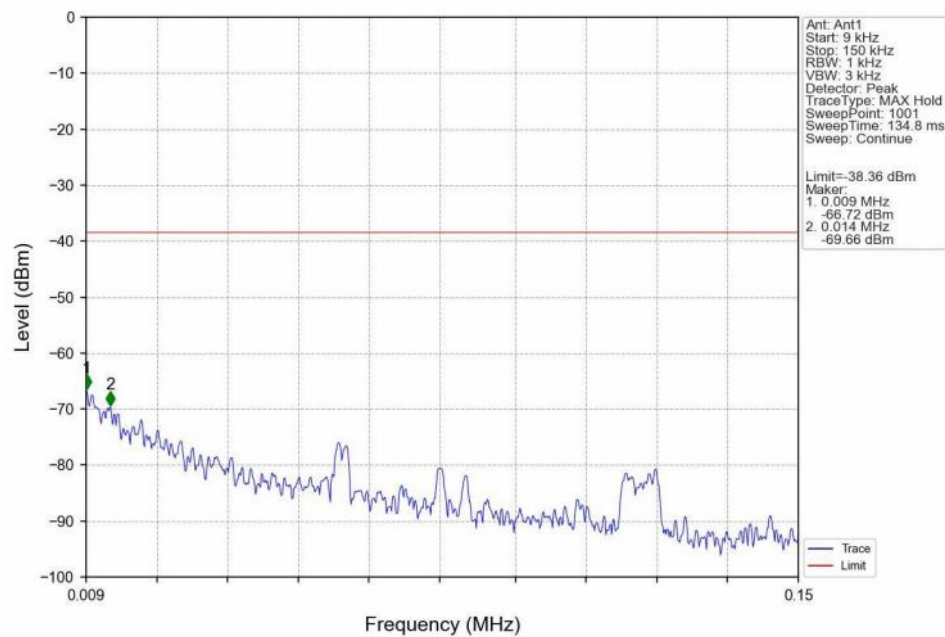
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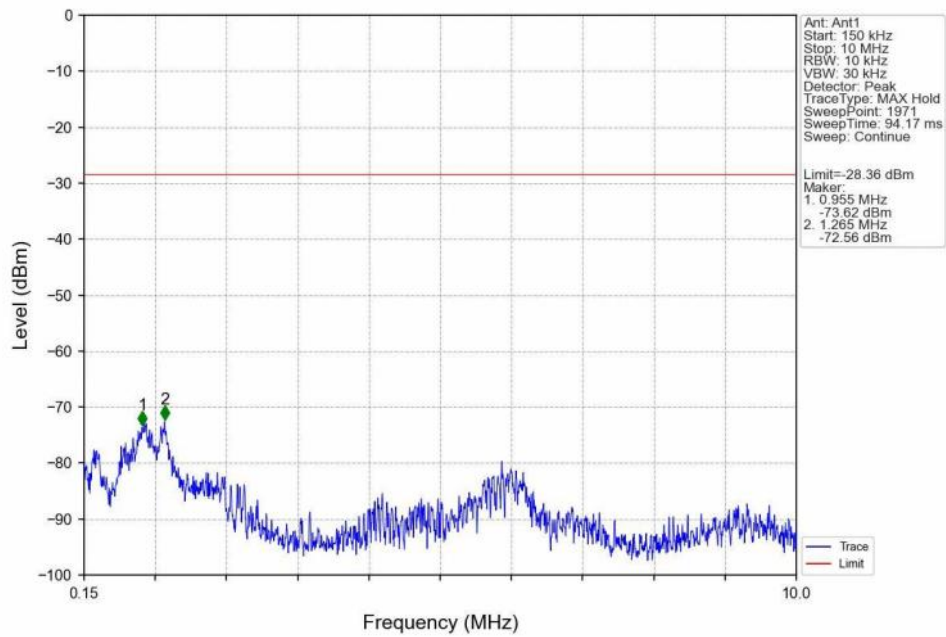
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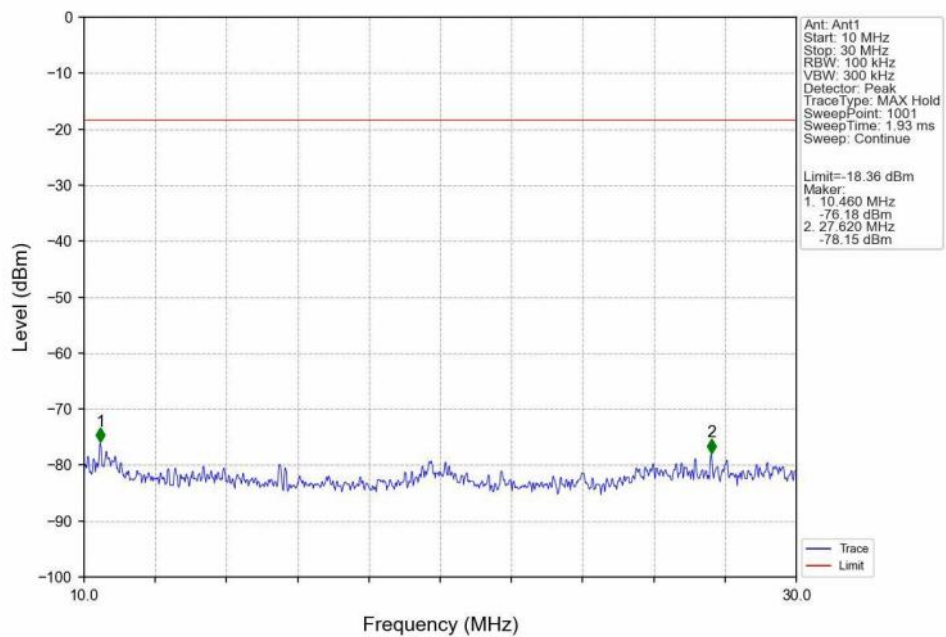
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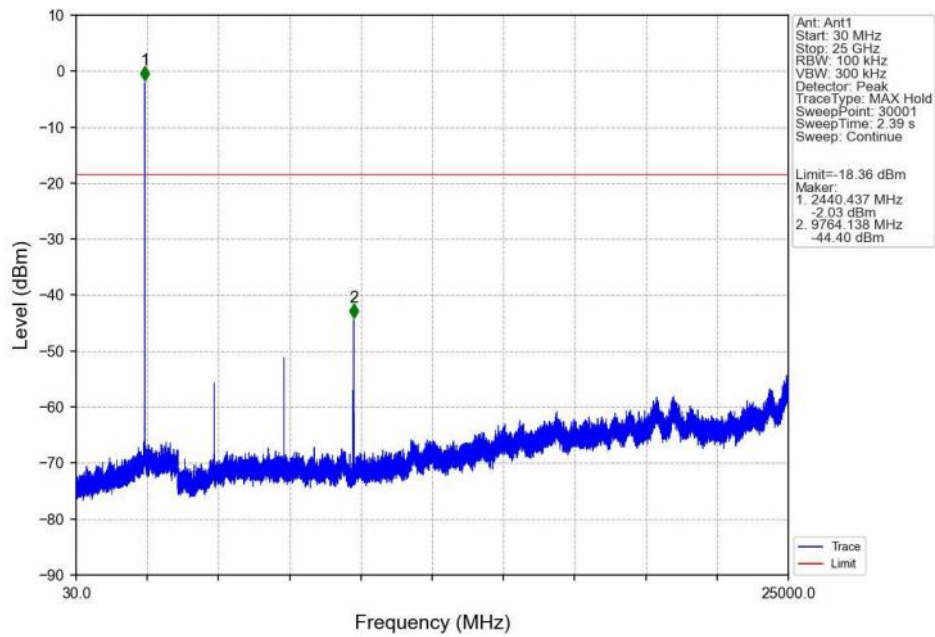
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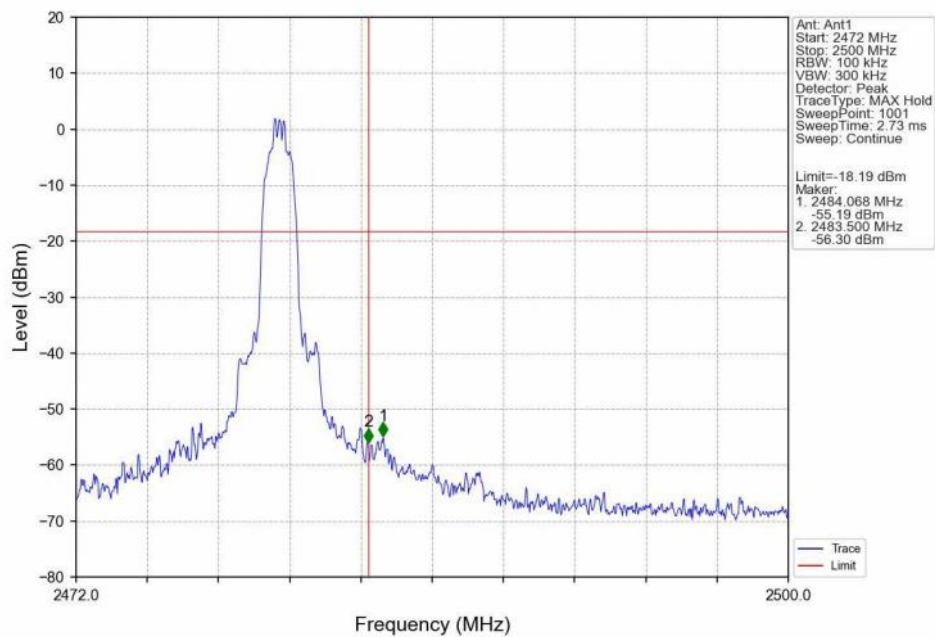
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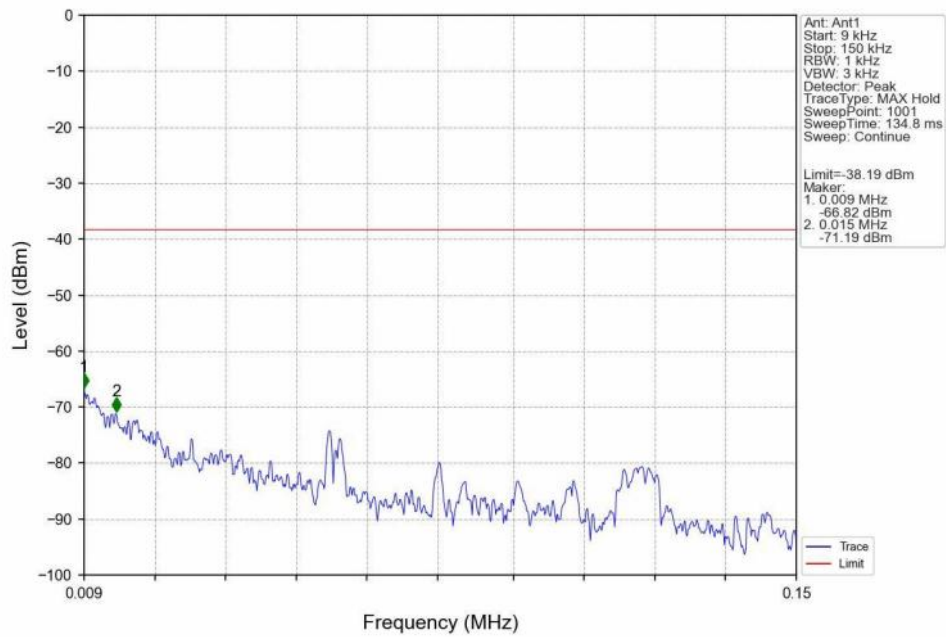
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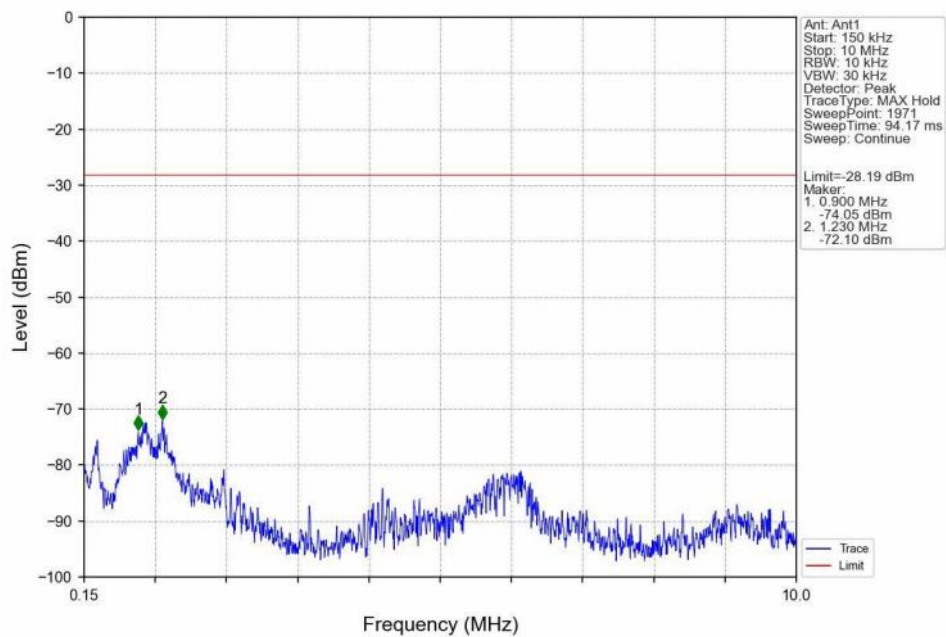
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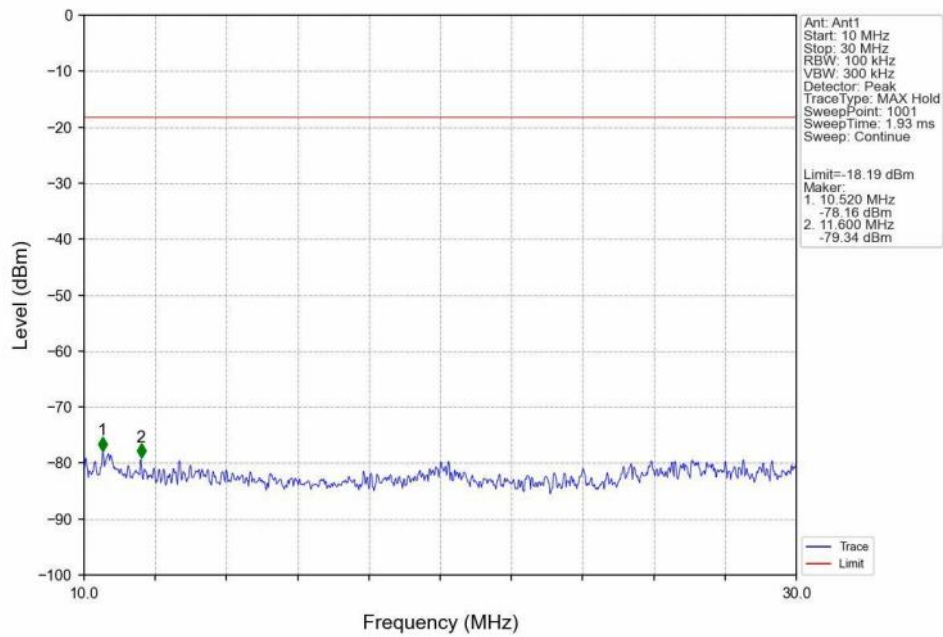
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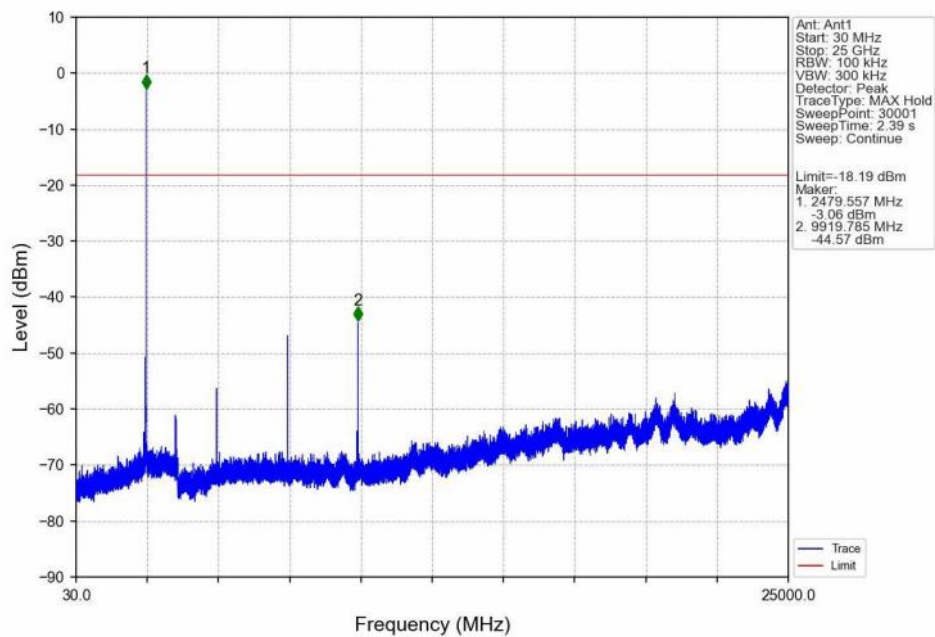
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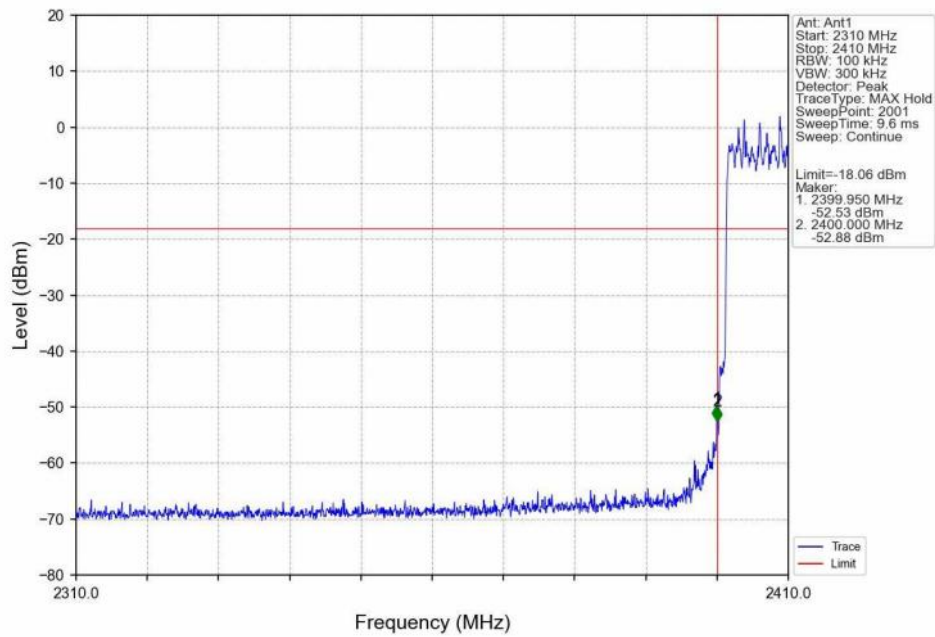
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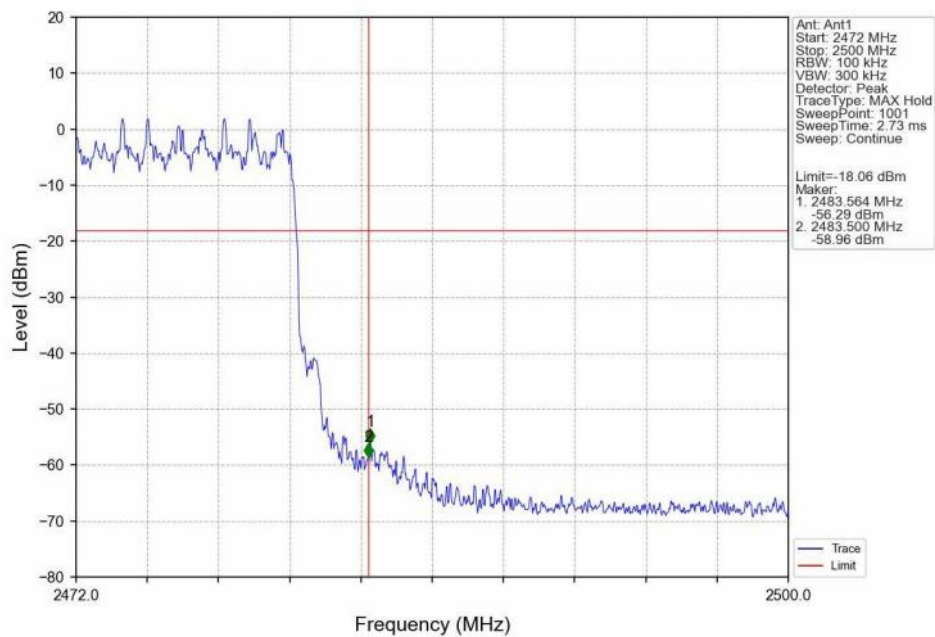
8DPSK\_3DH5\_HCH\_2480MHz\_Ant1\_NTNV



8DPSK\_3DH5\_HOPP\_Ant1\_NTNV



8DPSK\_3DH5\_HOPP\_Ant1\_NTNV



## 7. Form731

### 7.1 Test Result

#### 7.1.1 Form731

| Lower Freq (MHz) | High Freq (MHz) | MAX Power (W) | MAX Power (dBm) |
|------------------|-----------------|---------------|-----------------|
| 2402             | 2480            | 0.0017        | 2.34            |