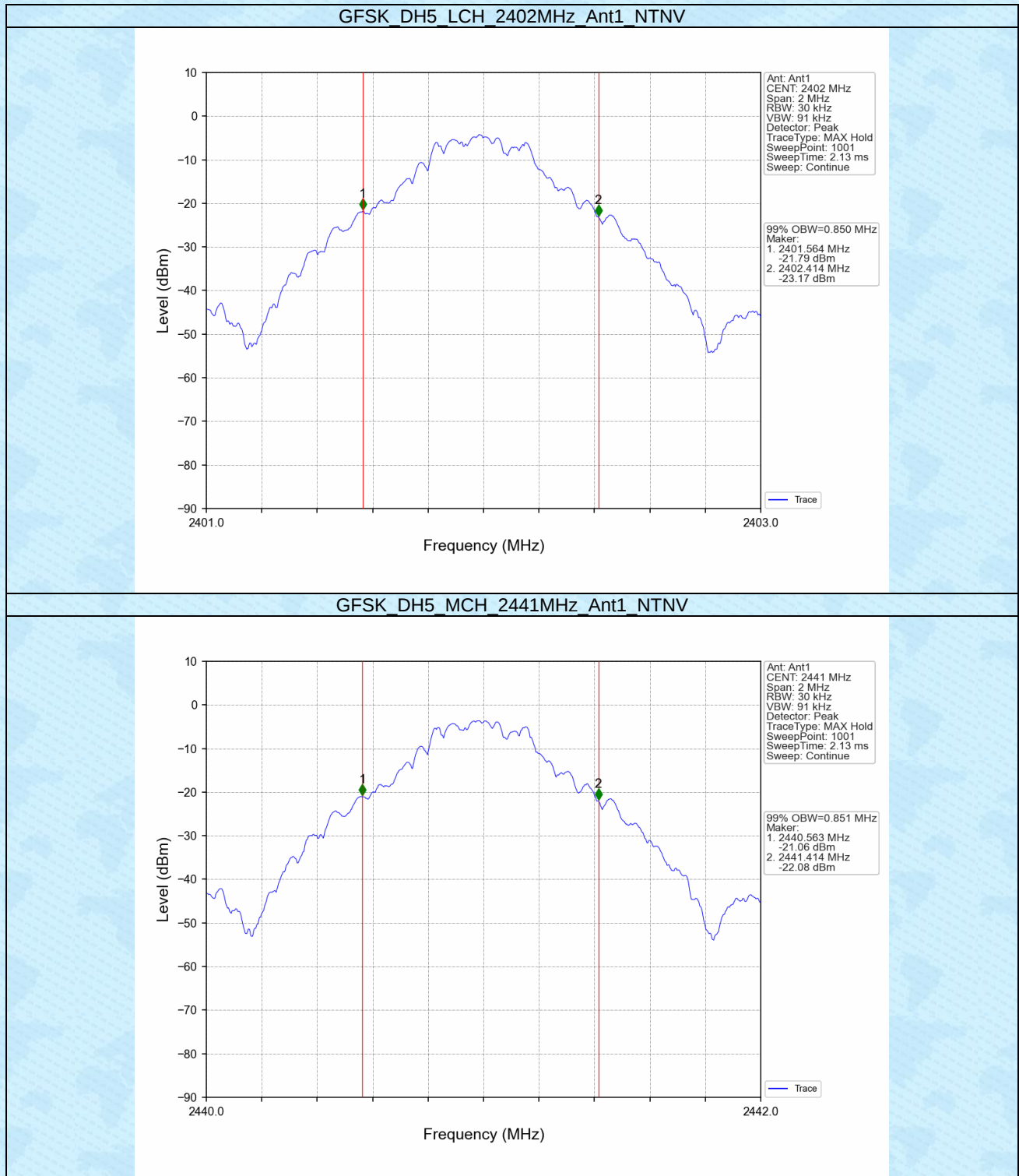


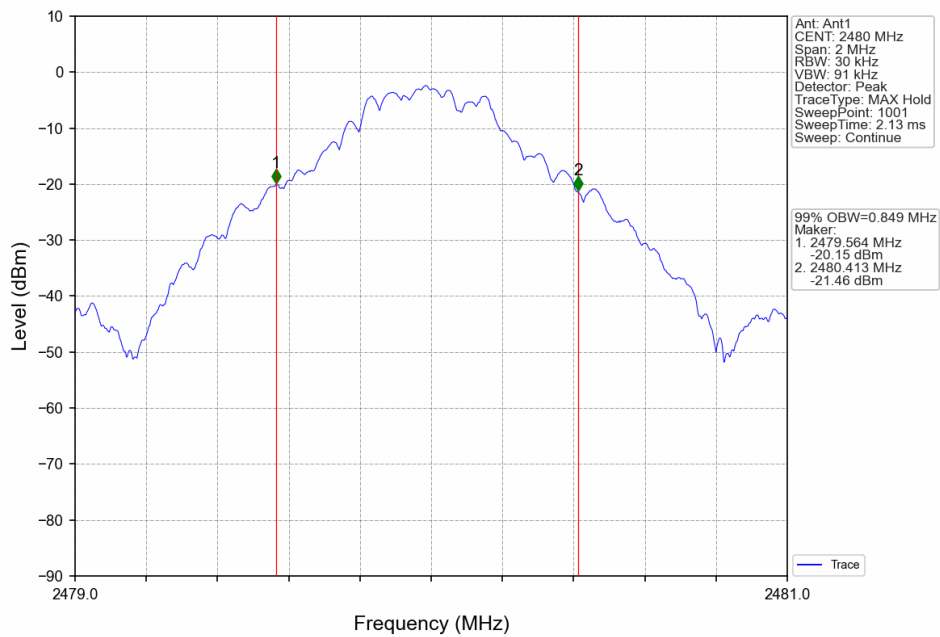
**Appendix for 15.247****1. Bandwidth****1.1 OBW****1.1.1 Test Result**

| Mode           | TX Type | Frequency (MHz) | Packet Type | ANT | 99% Occupied Bandwidth (MHz) | Verdict |
|----------------|---------|-----------------|-------------|-----|------------------------------|---------|
|                |         |                 |             |     | Result                       |         |
| GFSK           | SISO    | 2402            | DH5         | 1   | 0.850                        | Pass    |
|                |         | 2441            | DH5         | 1   | 0.851                        | Pass    |
|                |         | 2480            | DH5         | 1   | 0.849                        | Pass    |
| $\pi/4$ -DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.169                        | Pass    |
|                |         | 2441            | 2DH5        | 1   | 1.177                        | Pass    |
|                |         | 2480            | 2DH5        | 1   | 1.188                        | Pass    |
| 8-DPSK         | SISO    | 2402            | 3DH5        | 1   | 1.166                        | Pass    |
|                |         | 2441            | 3DH5        | 1   | 1.174                        | Pass    |
|                |         | 2480            | 3DH5        | 1   | 1.187                        | Pass    |

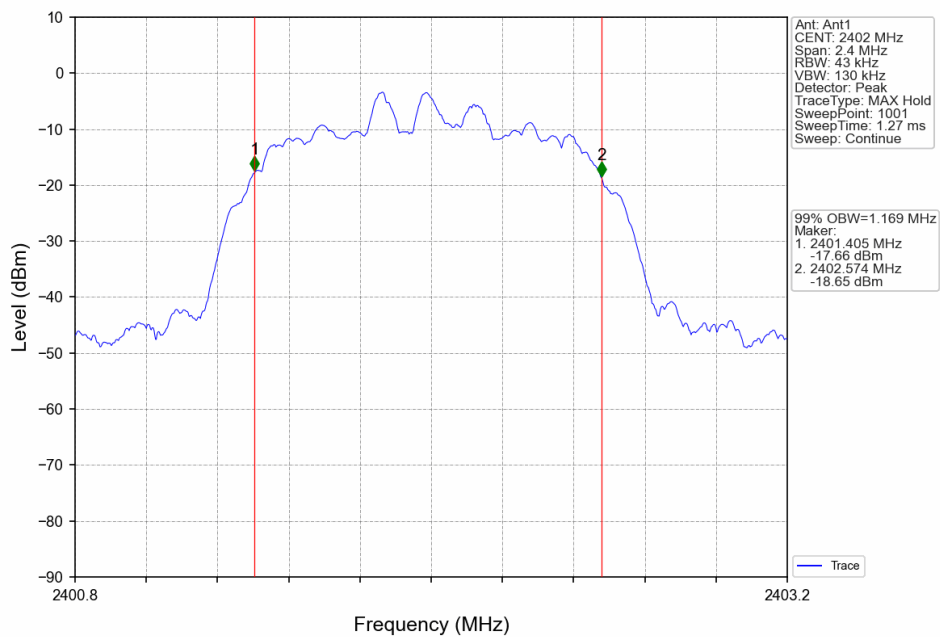
## 1.1.2 Test Graph



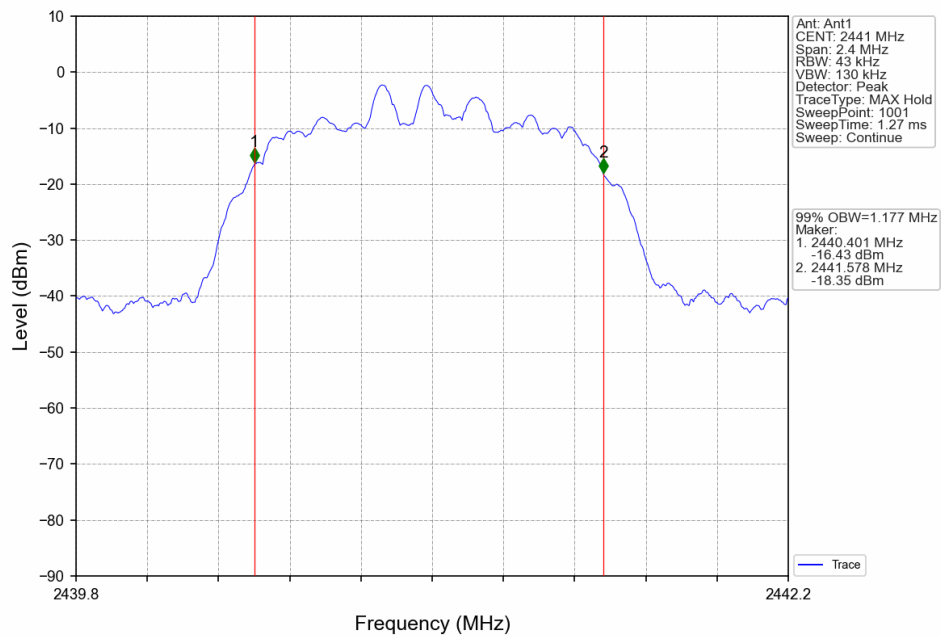
GFSK\_DH5\_HCH\_2480MHz\_Ant1\_NTNV



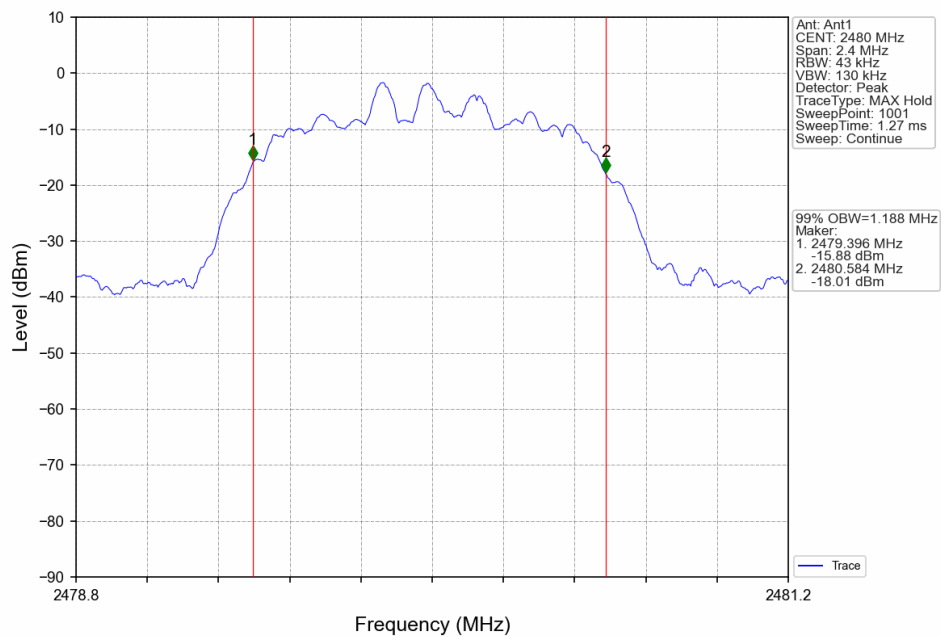
$\pi/4$ -DQPSK\_2DH5\_LCH\_2402MHz\_Ant1\_NTNV



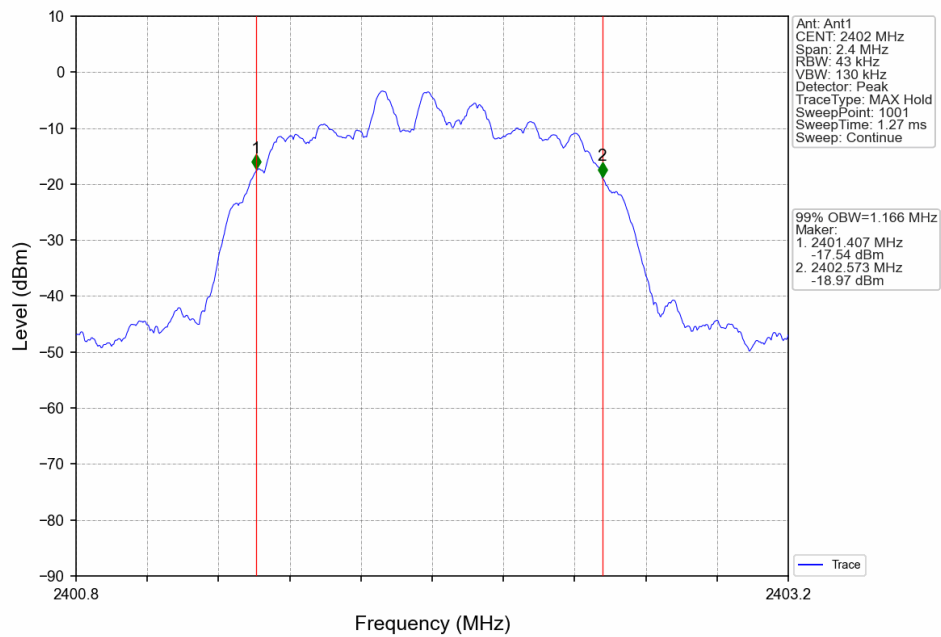
$\pi/4$ -DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV



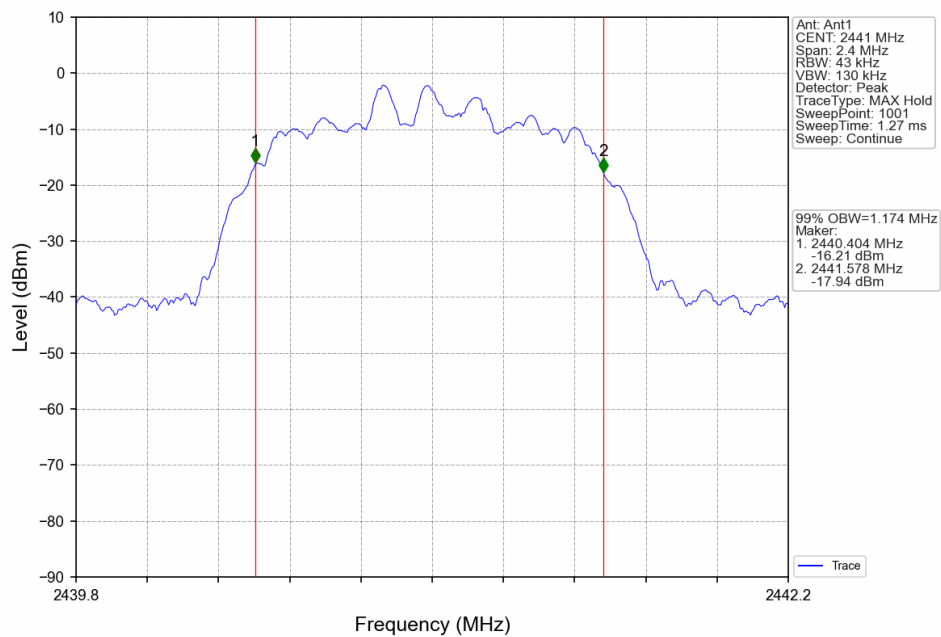
$\pi/4$ -DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV

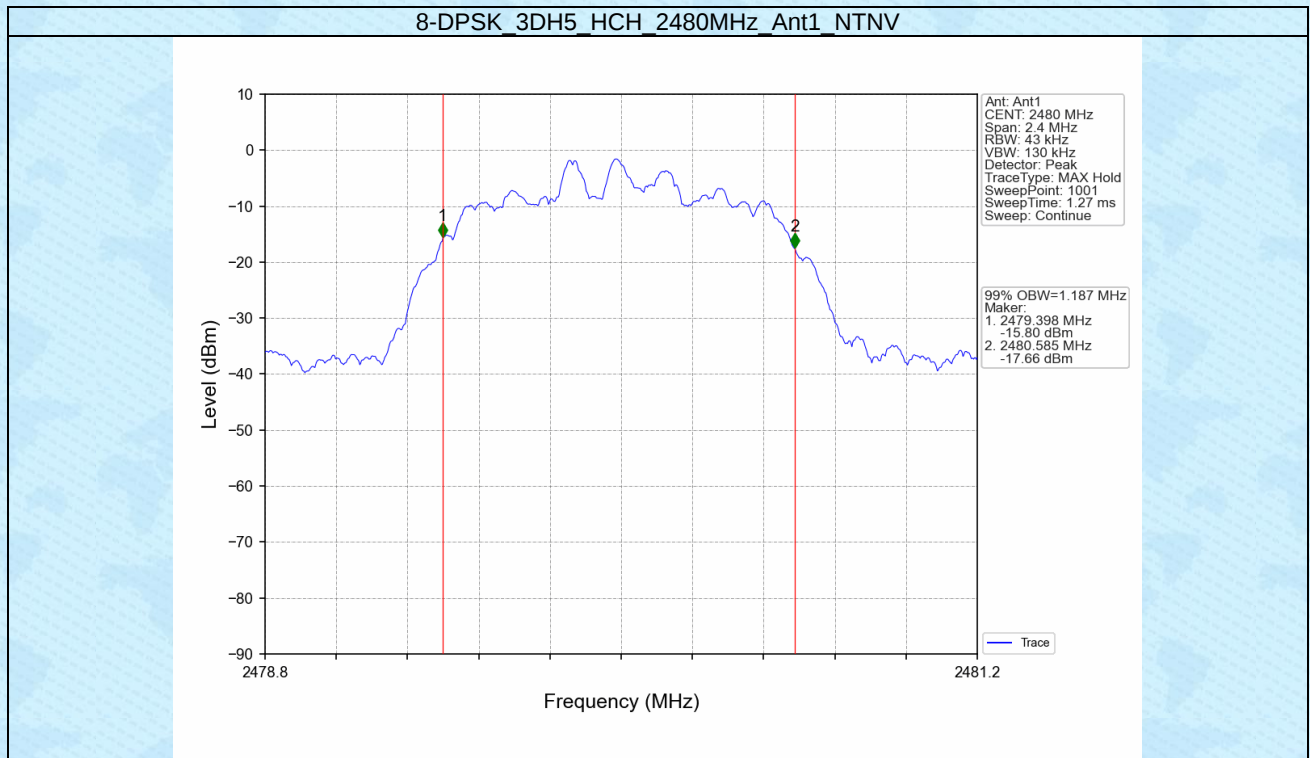


8-DPSK 3DH5 LCH 2402MHz\_Ant1\_NTNV



8-DPSK 3DH5 MCH 2441MHz\_Ant1\_NTNV



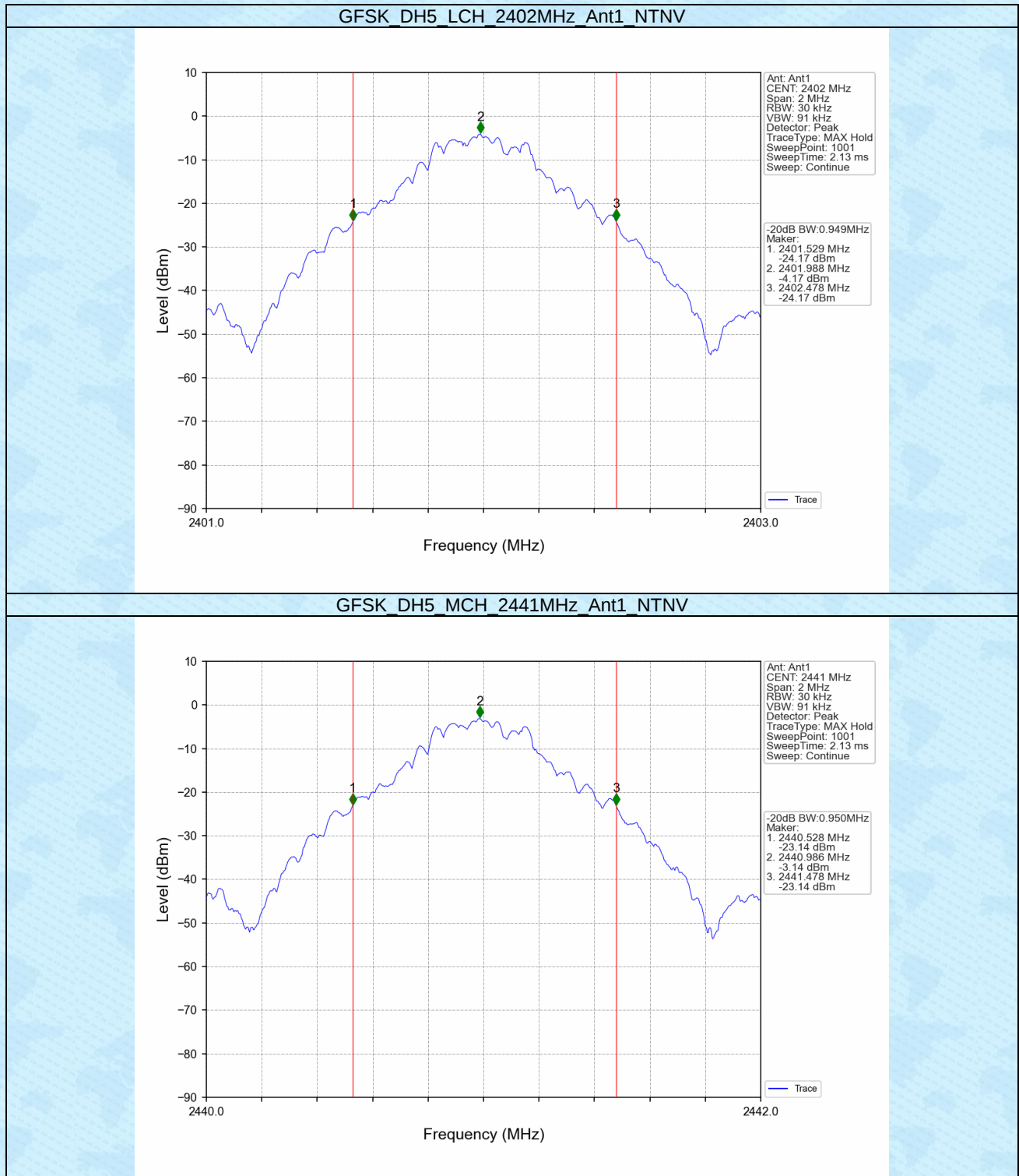


## 1.2 20dB BW

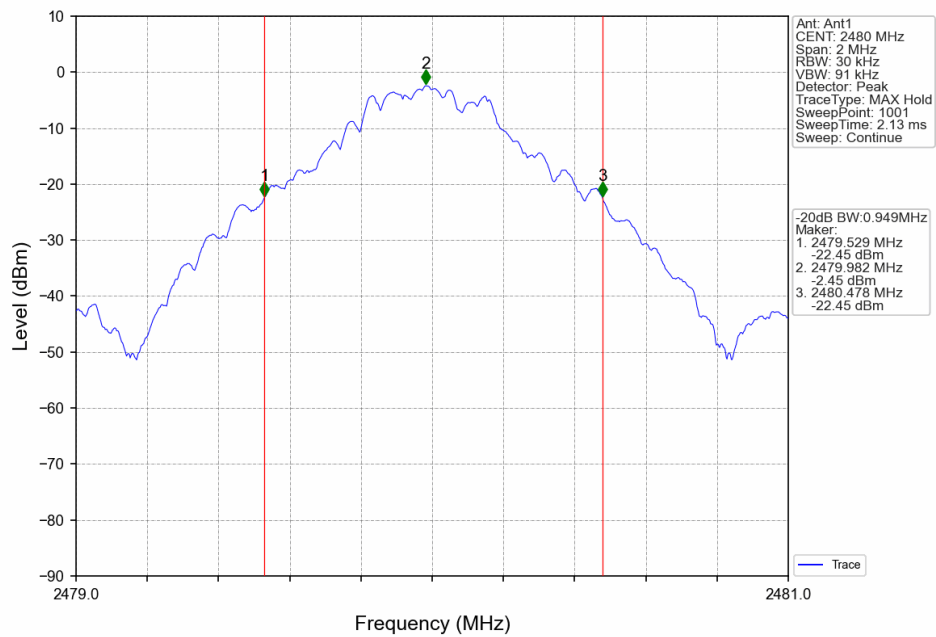
## 1.2.1 Test Result

| Mode           | TX Type | Frequency (MHz) | Packet Type | ANT | 20dB Bandwidth (MHz) | Verdict |
|----------------|---------|-----------------|-------------|-----|----------------------|---------|
|                |         |                 |             |     | Result               |         |
| GFSK           | SISO    | 2402            | DH5         | 1   | 0.949                | Pass    |
|                |         | 2441            | DH5         | 1   | 0.950                | Pass    |
|                |         | 2480            | DH5         | 1   | 0.949                | Pass    |
| $\pi/4$ -DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.299                | Pass    |
|                |         | 2441            | 2DH5        | 1   | 1.319                | Pass    |
|                |         | 2480            | 2DH5        | 1   | 1.328                | Pass    |
| 8-DPSK         | SISO    | 2402            | 3DH5        | 1   | 1.294                | Pass    |
|                |         | 2441            | 3DH5        | 1   | 1.315                | Pass    |
|                |         | 2480            | 3DH5        | 1   | 1.328                | Pass    |

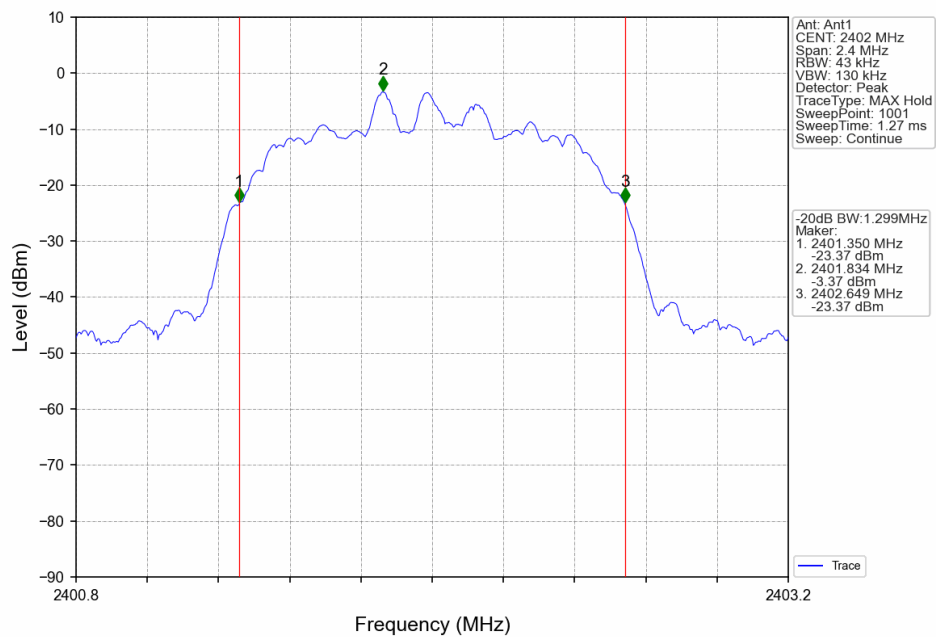
## 1.2.2 Test Graph



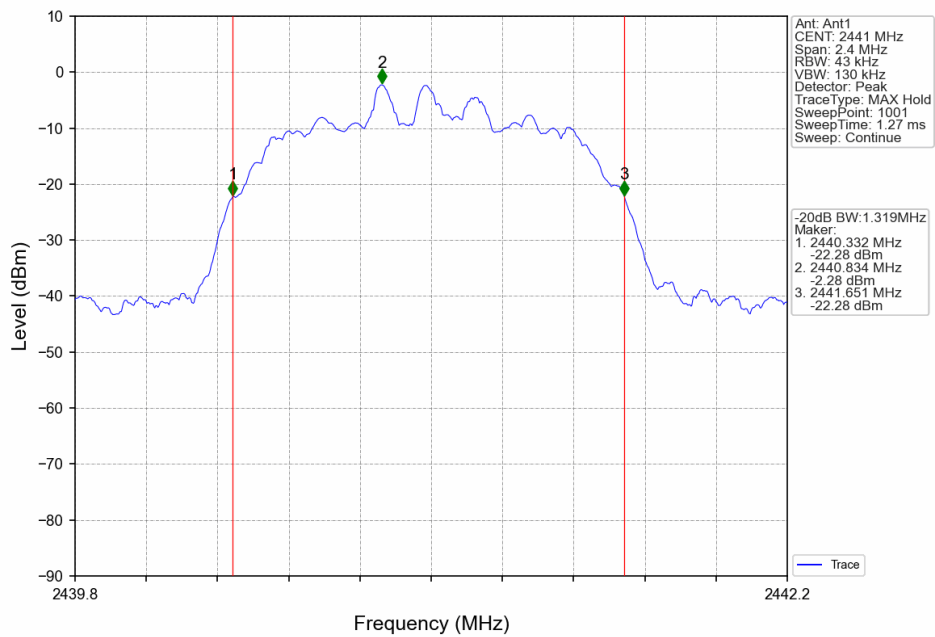
GFSK\_DH5\_HCH\_2480MHz\_Ant1\_NTNV



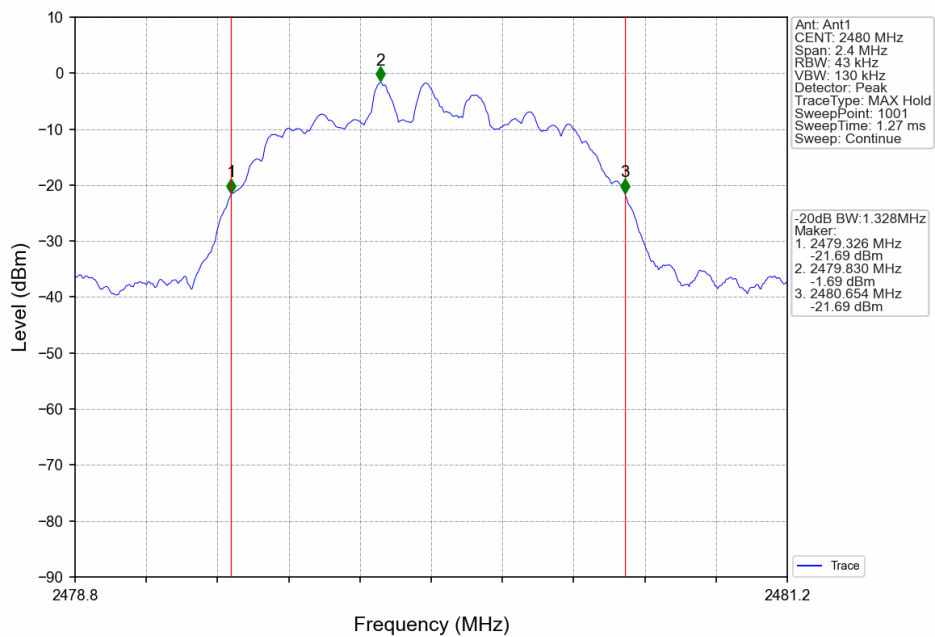
$\pi/4$ -DQPSK\_2DH5\_LCH\_2402MHz\_Ant1\_NTNV



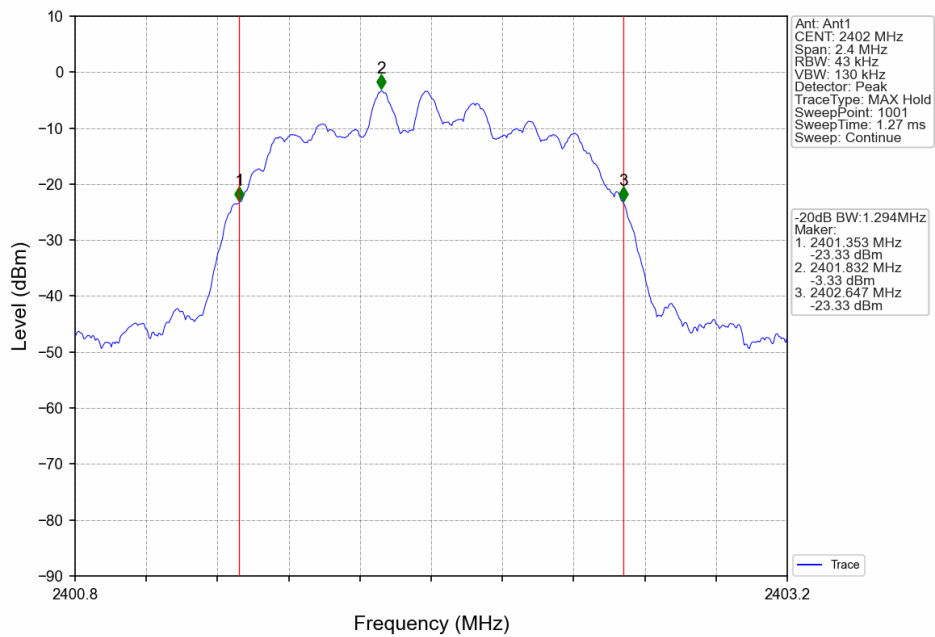
$\pi/4$ -DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV



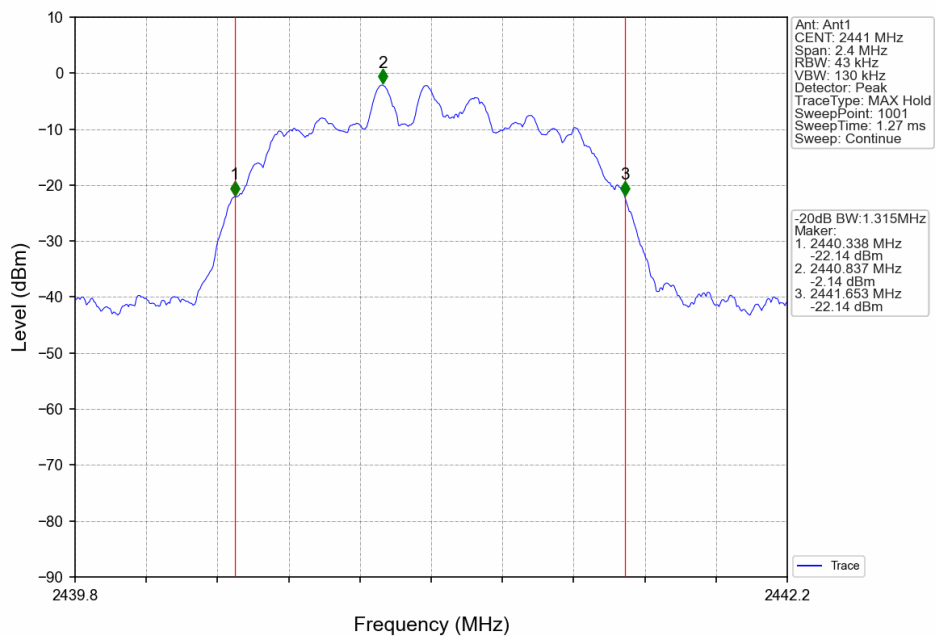
$\pi/4$ -DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV

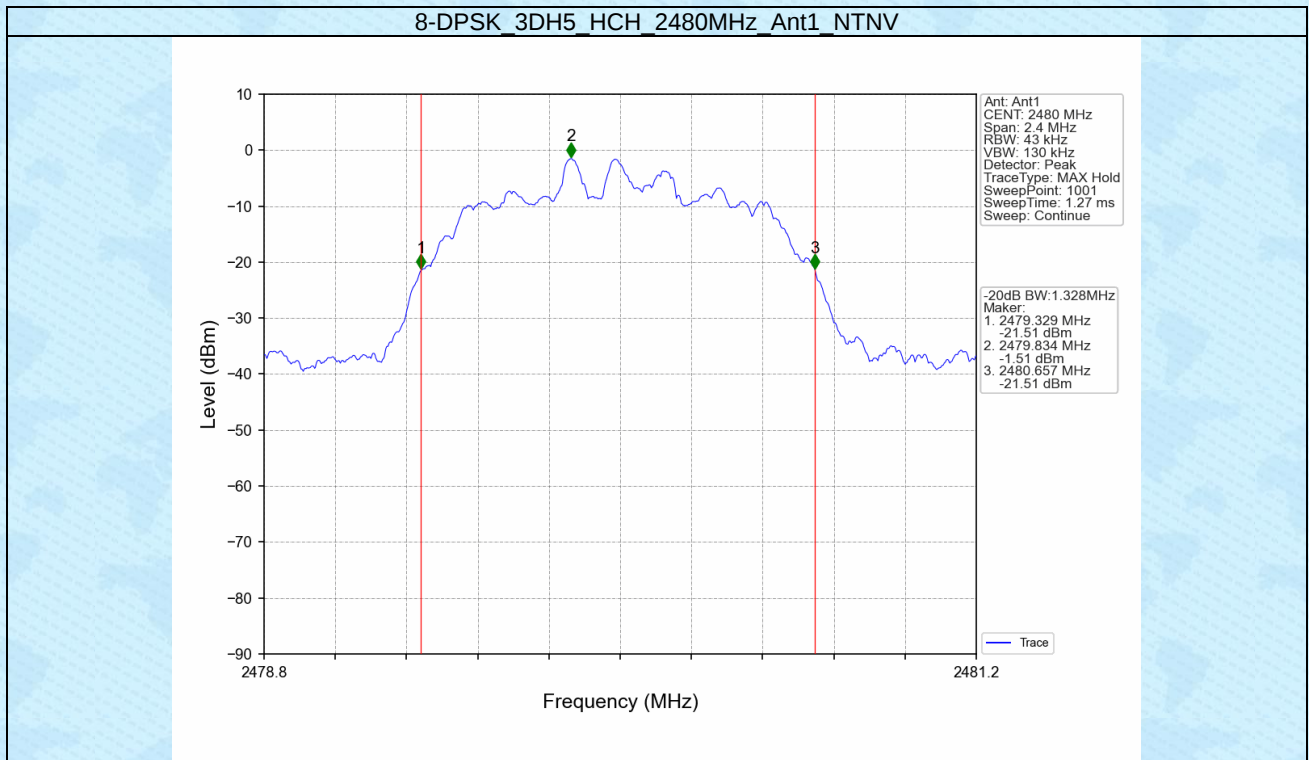


8-DPSK 3DH5 LCH 2402MHz\_Ant1\_NTNV



8-DPSK 3DH5 MCH 2441MHz\_Ant1\_NTNV



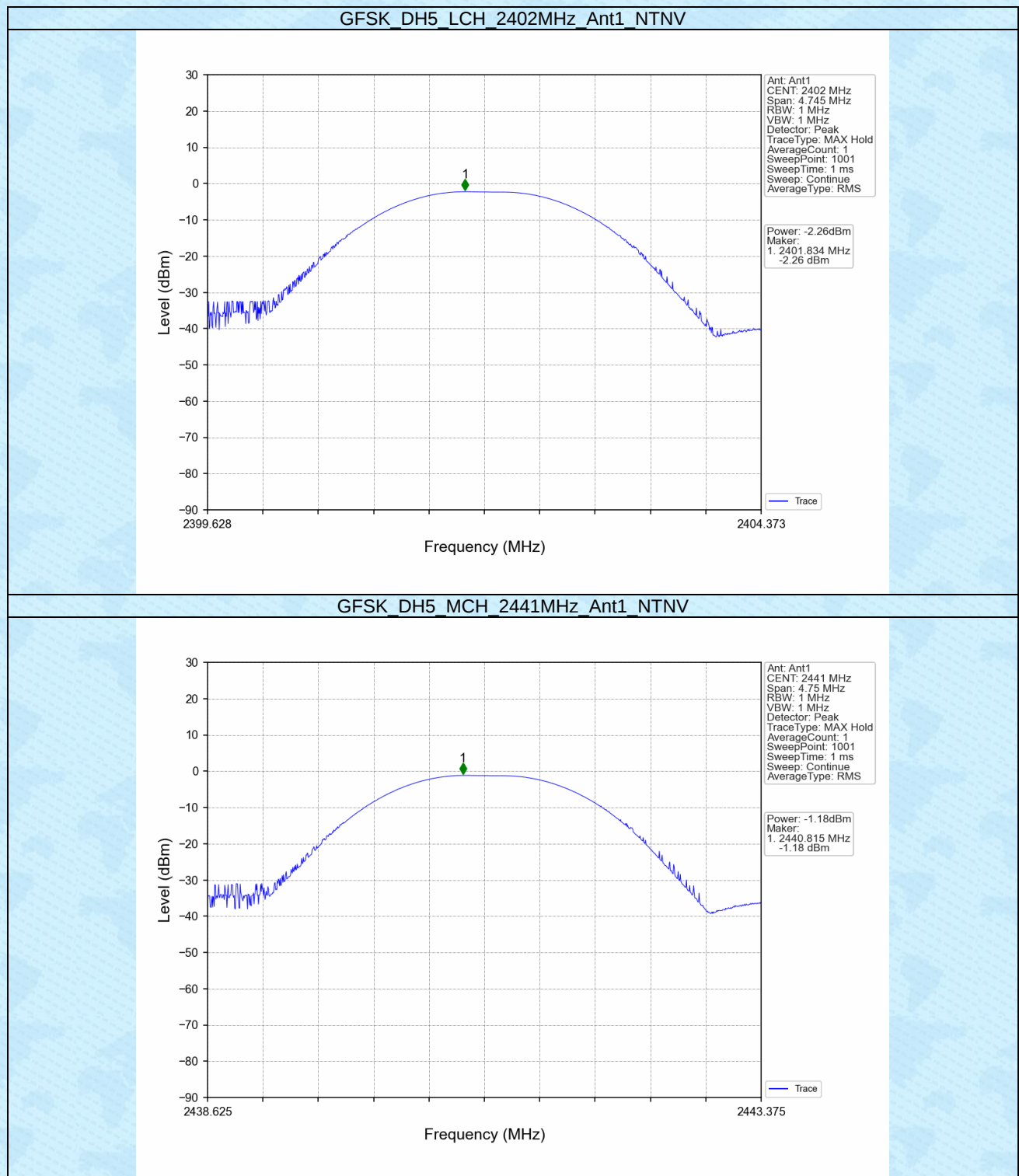


## 2. Maximum Conducted Output Power

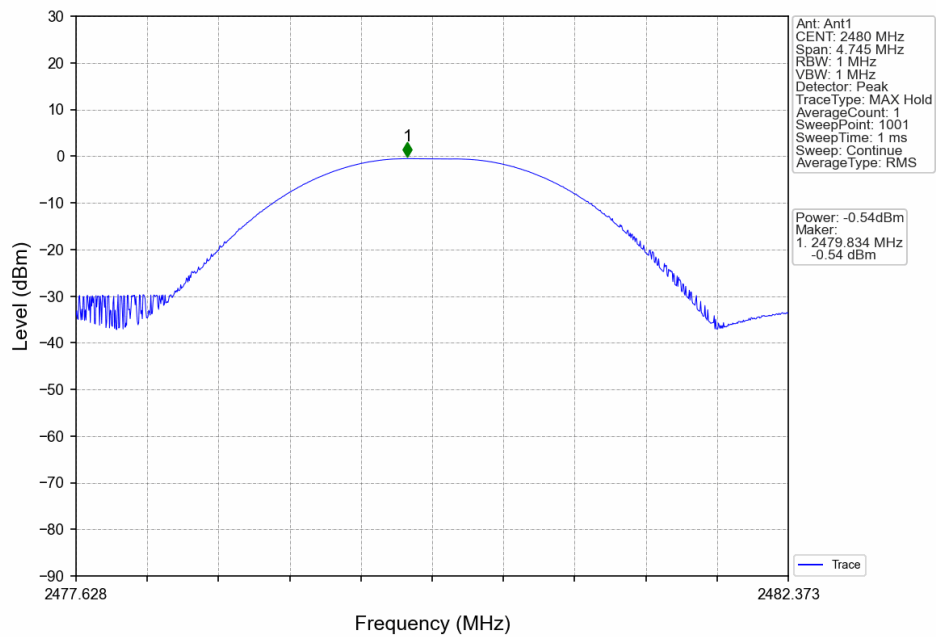
### 2.1 Test Result

| Mode           | TX Type | Frequency (MHz) | Packet Type | Maximum Peak Conducted Output Power (dBm) |         | Verdict |
|----------------|---------|-----------------|-------------|-------------------------------------------|---------|---------|
|                |         |                 |             | ANT1                                      | Limit   |         |
| GFSK           | SISO    | 2402            | DH5         | -2.26                                     | <=30    | Pass    |
|                |         | 2441            | DH5         | -1.18                                     | <=30    | Pass    |
|                |         | 2480            | DH5         | -0.54                                     | <=30    | Pass    |
| $\pi/4$ -DQPSK | SISO    | 2402            | 2DH5        | -1.51                                     | <=20.97 | Pass    |
|                |         | 2441            | 2DH5        | -0.57                                     | <=20.97 | Pass    |
|                |         | 2480            | 2DH5        | -0.10                                     | <=20.97 | Pass    |
| 8-DPSK         | SISO    | 2402            | 3DH5        | -1.45                                     | <=20.97 | Pass    |
|                |         | 2441            | 3DH5        | -0.46                                     | <=20.97 | Pass    |
|                |         | 2480            | 3DH5        | 0.03                                      | <=20.97 | Pass    |

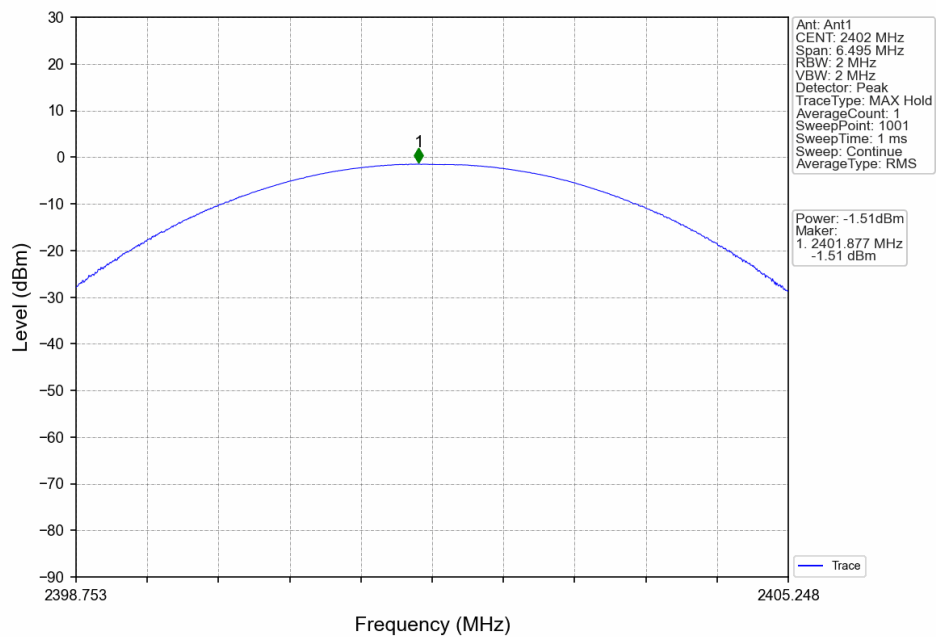
## 2.2 Test Graph



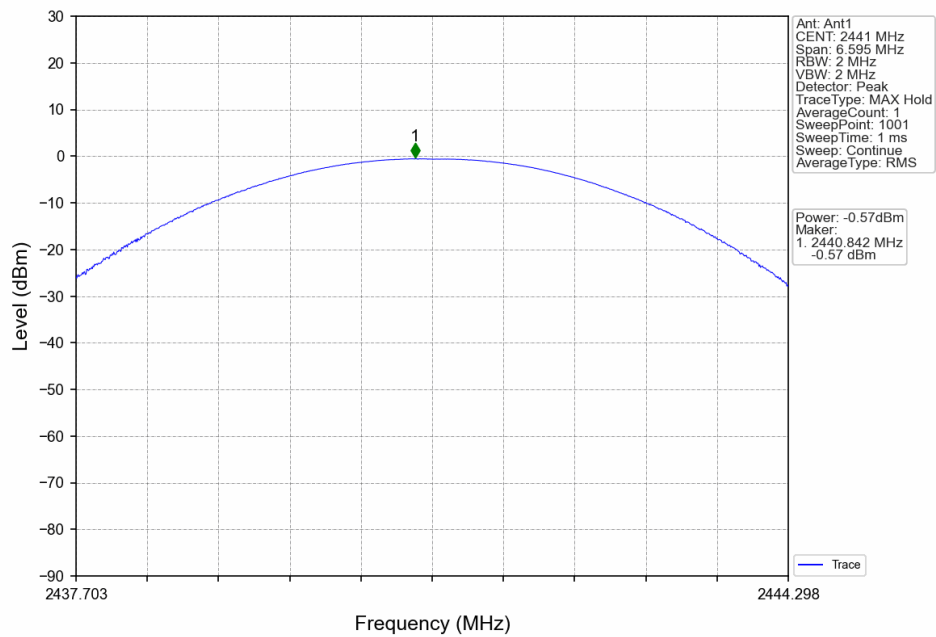
GFSK\_DH5\_HCH\_2480MHz\_Ant1\_NTNV



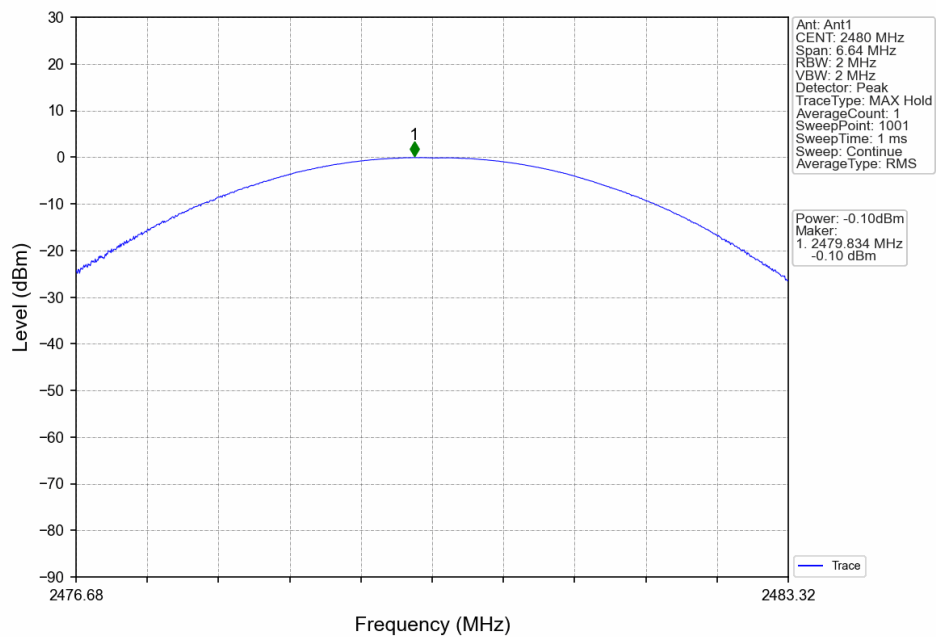
$\pi/4$ -DQPSK\_2DH5\_LCH\_2402MHz\_Ant1\_NTNV



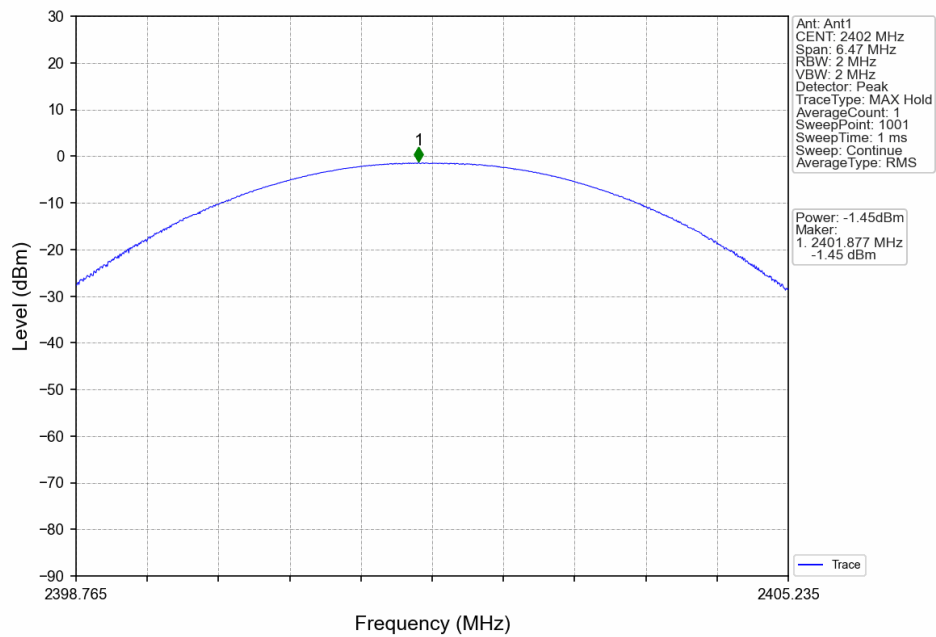
$\pi/4$ -DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV



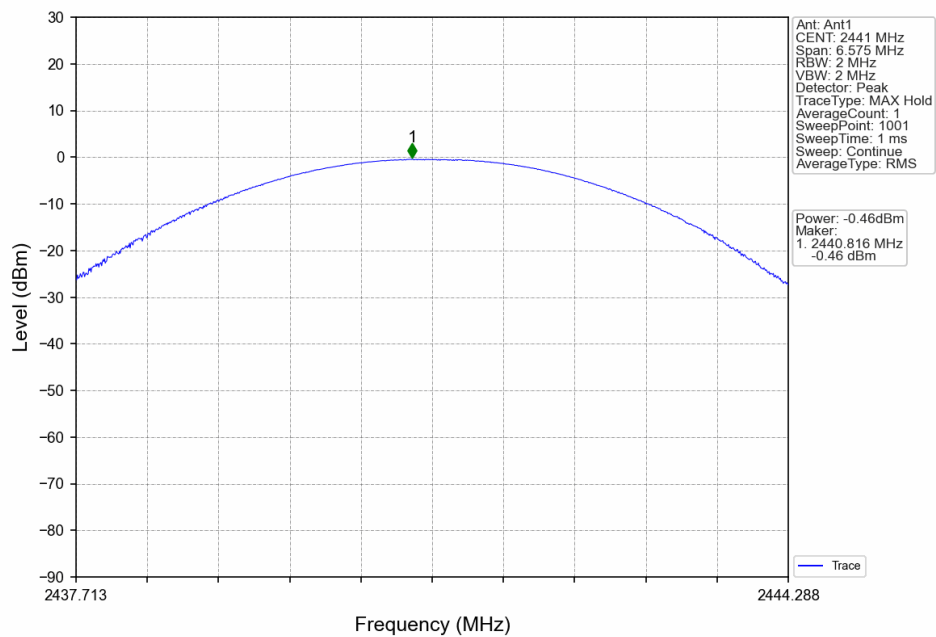
$\pi/4$ -DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV



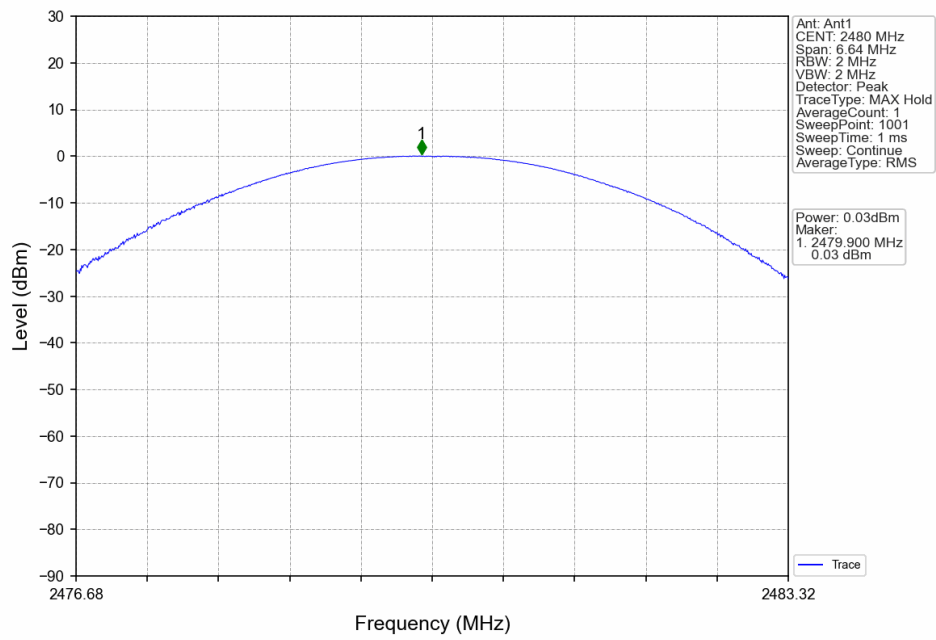
8-DPSK 3DH5 LCH 2402MHz Ant1 NTN



8-DPSK 3DH5 MCH 2441MHz Ant1 NTN



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

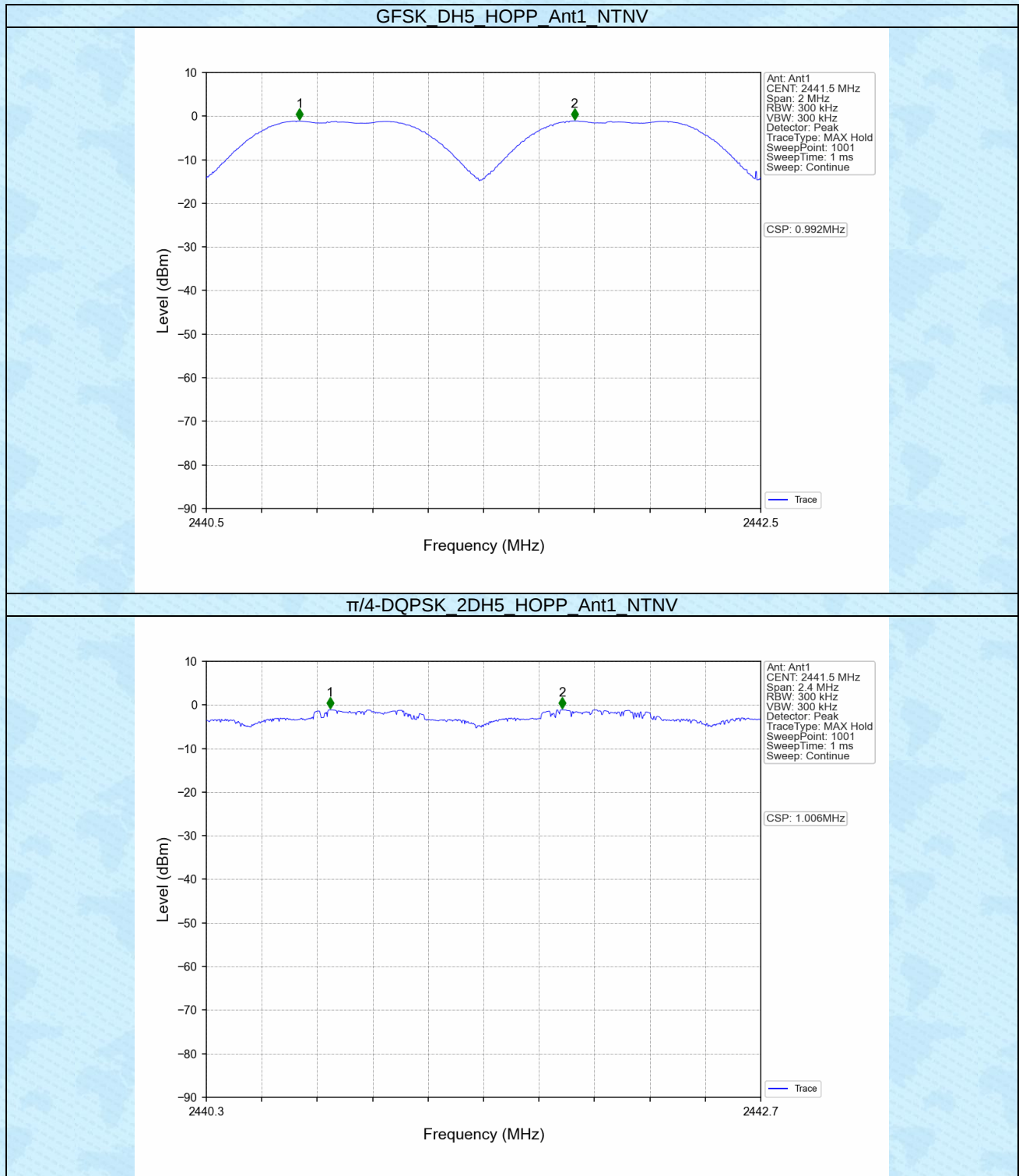


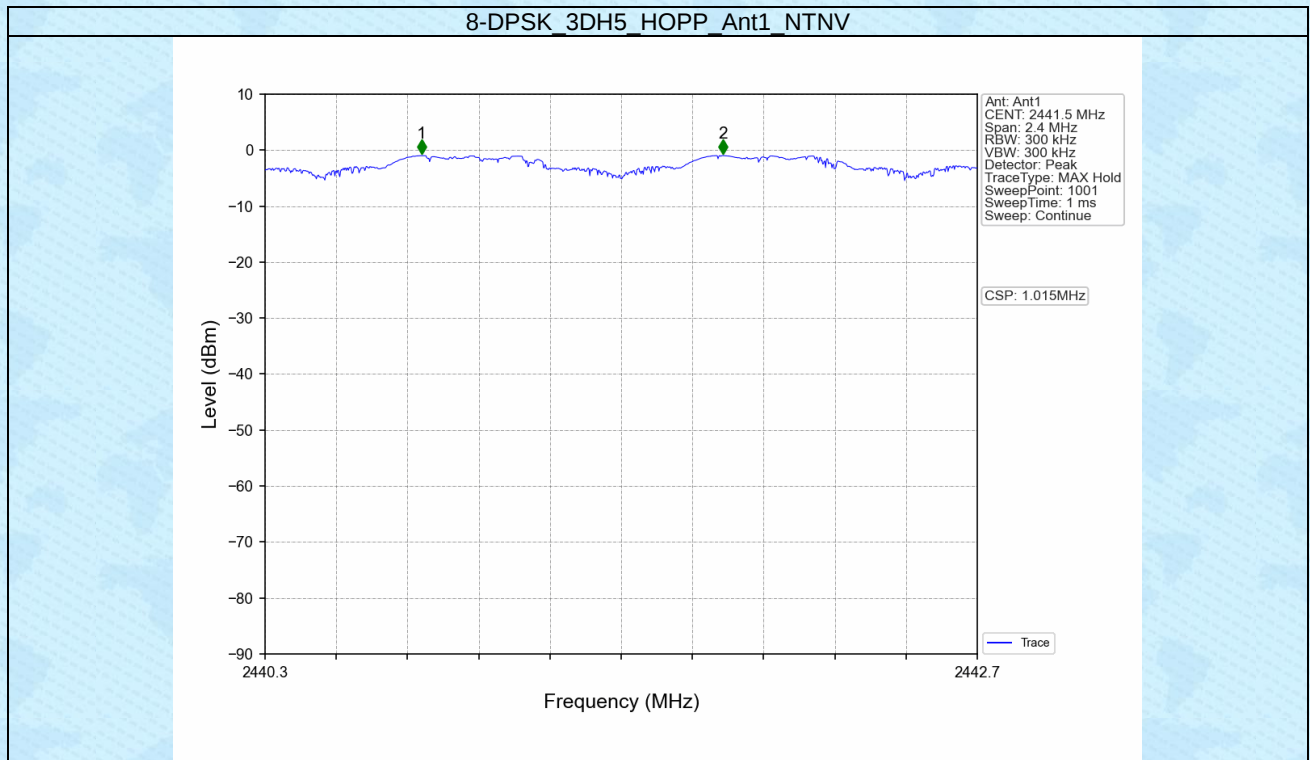
### 3. Carrier Frequency Separation

#### 3.1 Test Result

| Ant1           |         |                 |             |                          |                      |              |         |
|----------------|---------|-----------------|-------------|--------------------------|----------------------|--------------|---------|
| Mode           | TX Type | Frequency (MHz) | Packet Type | Channel Separation (MHz) | 20dB Bandwidth (MHz) | Limit (MHz)  | Verdict |
| GFSK           | SISO    | HOPP            | DH5         | 0.992                    | 0.950                | $\geq 0.95$  | Pass    |
| $\pi/4$ -DQPSK | SISO    | HOPP            | 2DH5        | 1.006                    | 1.328                | $\geq 0.885$ | Pass    |
| 8-DPSK         | SISO    | HOPP            | 3DH5        | 1.015                    | 1.328                | $\geq 0.885$ | Pass    |

## 3.2 Test Graph



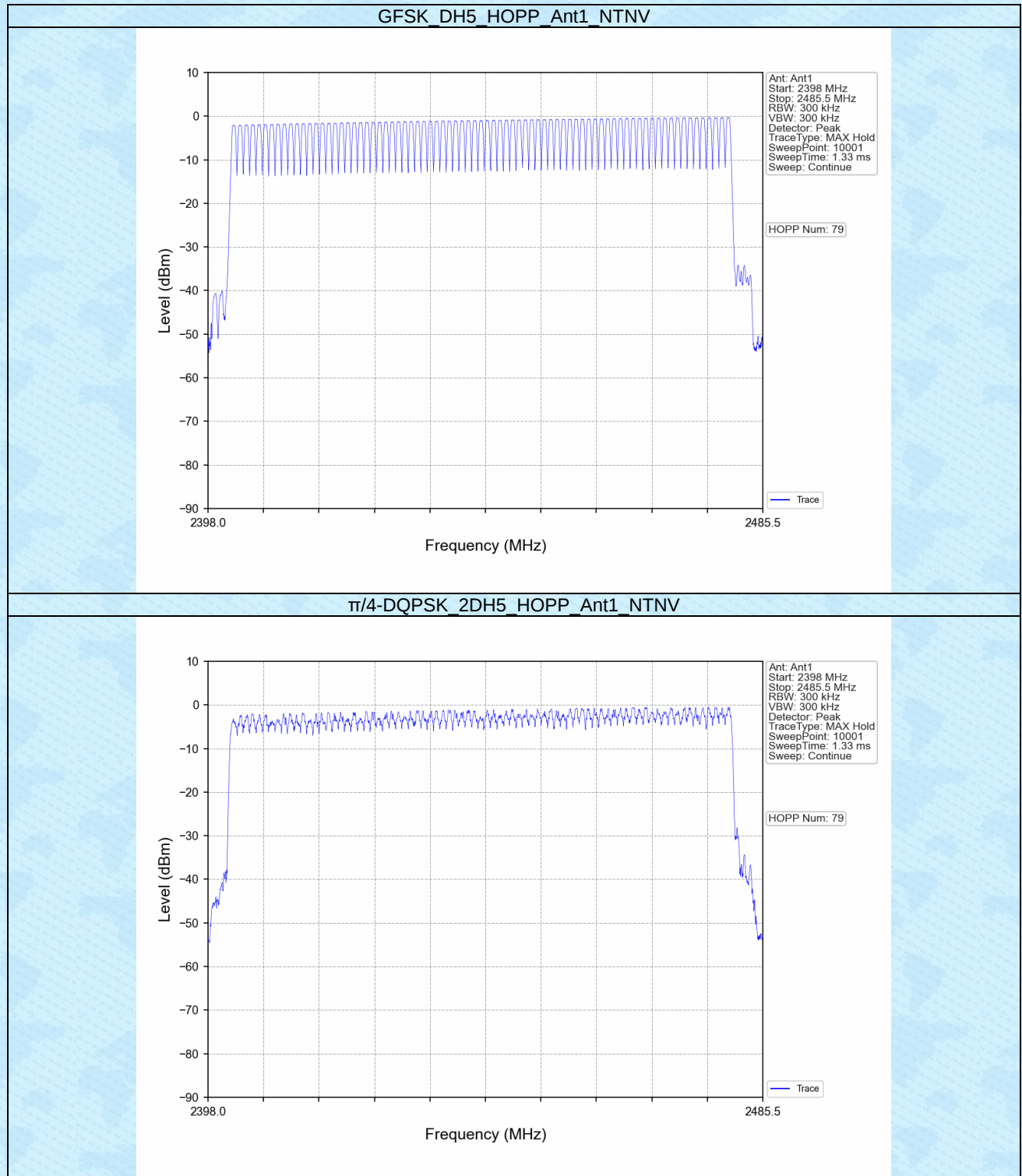


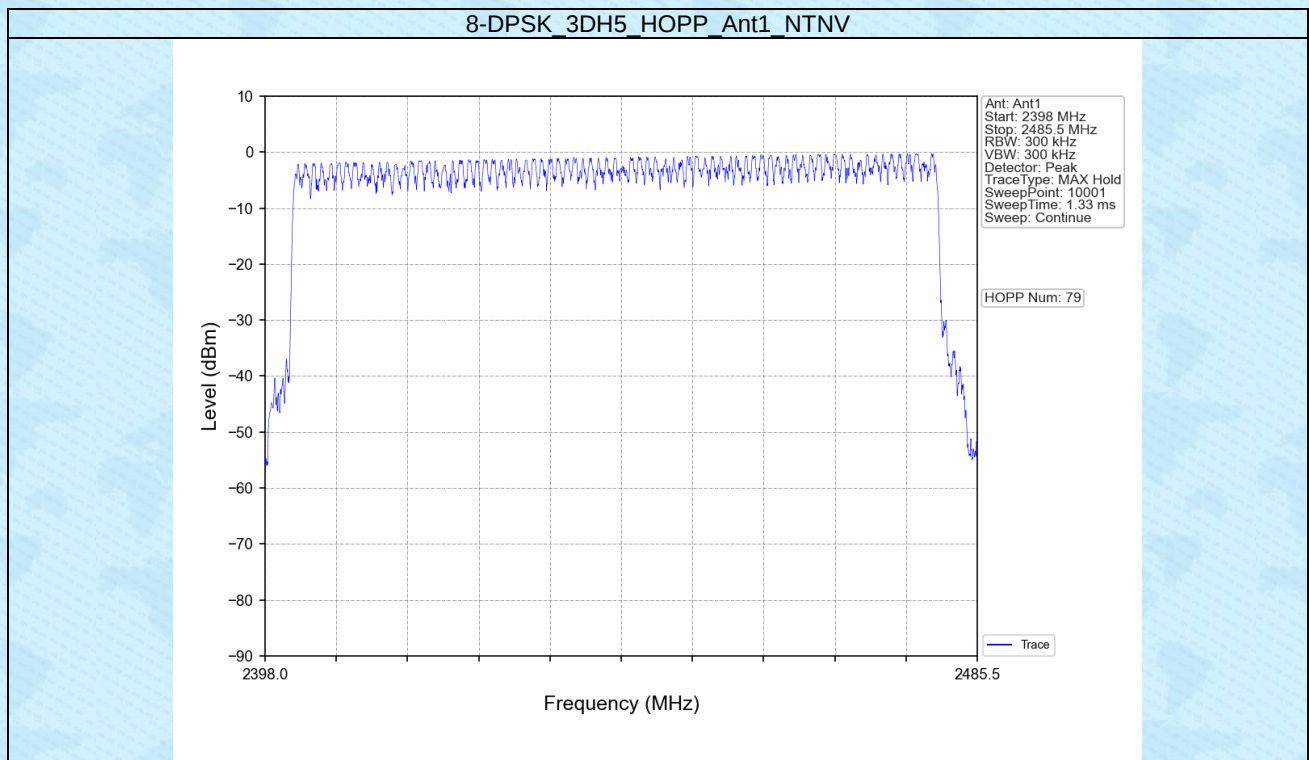
## 4. Number of Hopping Frequencies

### 4.1 Test Result

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

## 4.2 Test Graph



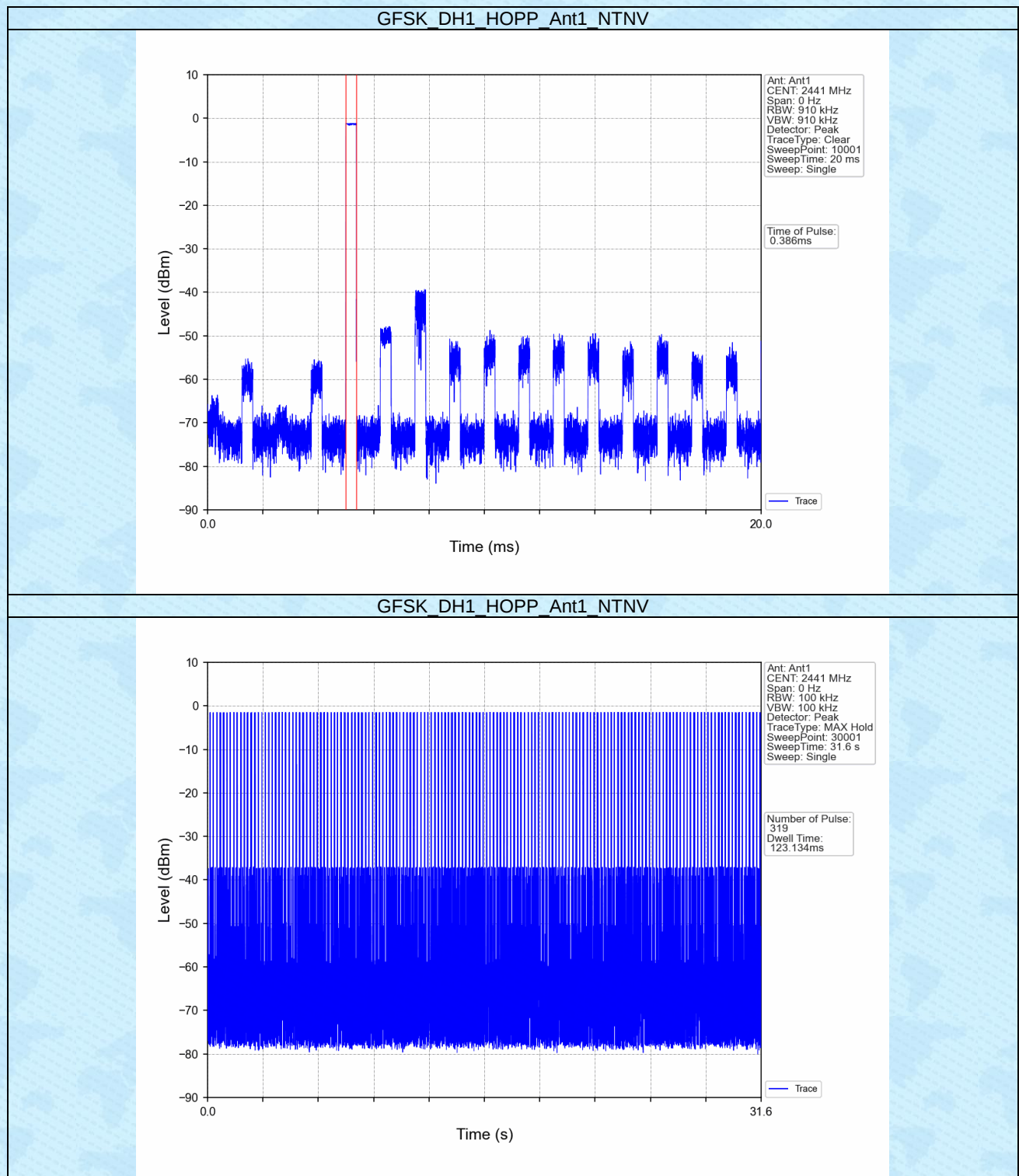


## 5. Time of Occupancy (Dwell Time)

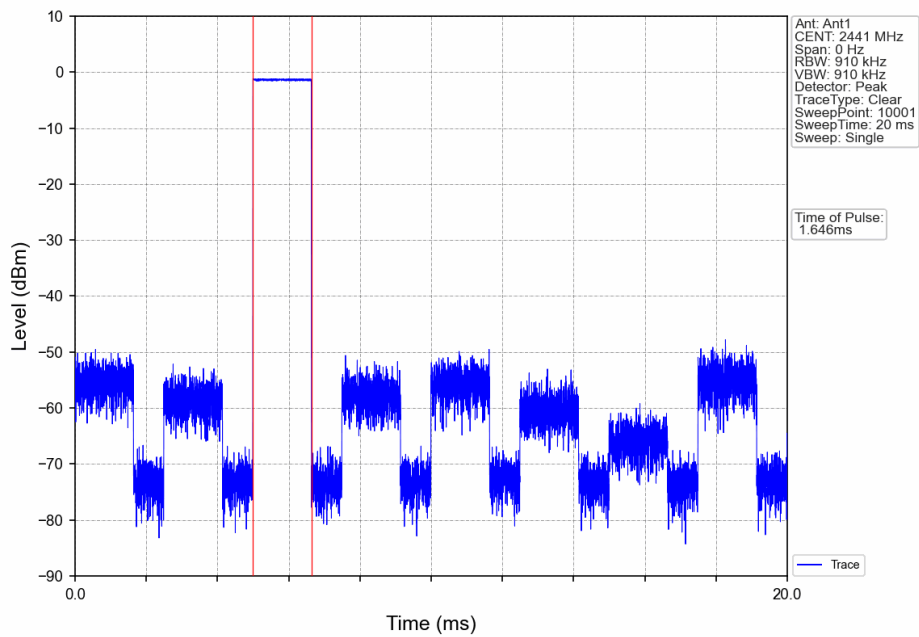
### 5.1 Test Result

| 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         | 0.386                         | 31.600                 | 319                                | 123.134         | <=400      | Pass    |
|                |         |                 | DH3         | 1.646                         | 31.600                 | 163                                | 268.298         | <=400      | Pass    |
|                |         |                 | DH5         | 2.890                         | 31.600                 | 109                                | 315.010         | <=400      | Pass    |
| $\pi/4$ -DQPSK | SISO    | HOPP            | 2DH1        | 0.396                         | 31.600                 | 318                                | 125.928         | <=400      | Pass    |
|                |         |                 | 2DH3        | 1.648                         | 31.600                 | 171                                | 281.808         | <=400      | Pass    |
|                |         |                 | 2DH5        | 2.896                         | 31.600                 | 97                                 | 280.912         | <=400      | Pass    |
| 8-DPSK         | SISO    | HOPP            | 3DH1        | 6.678                         | 31.600                 | 52                                 | 347.256         | <=400      | Pass    |
|                |         |                 | 3DH3        | 0.654                         | 31.600                 | 162                                | 105.948         | <=400      | Pass    |
|                |         |                 | 3DH5        | 6.674                         | 31.600                 | 52                                 | 347.048         | <=400      | Pass    |

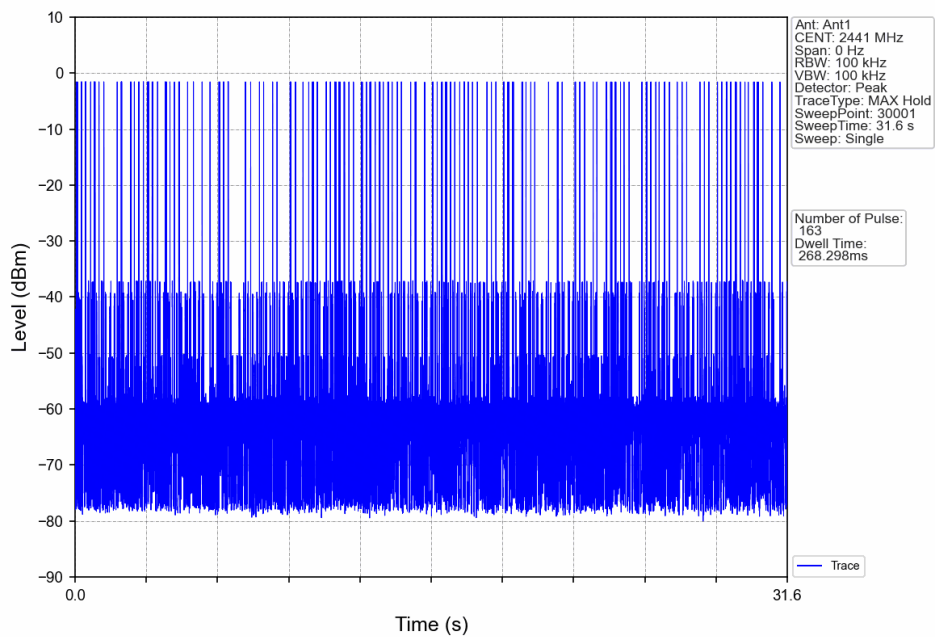
## 5.2 Test Graph



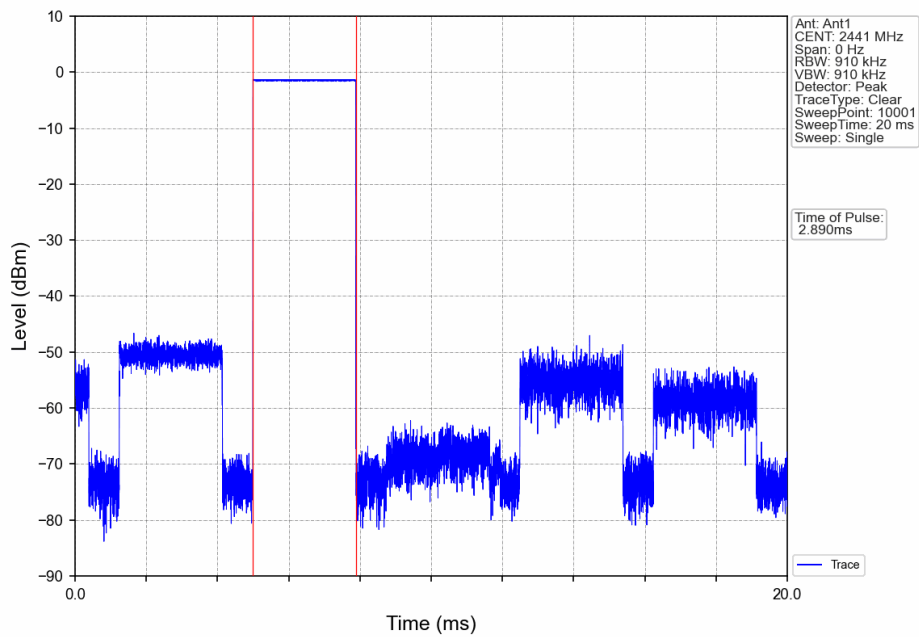
GFSK DH3\_HOPP\_Ant1\_NTNV



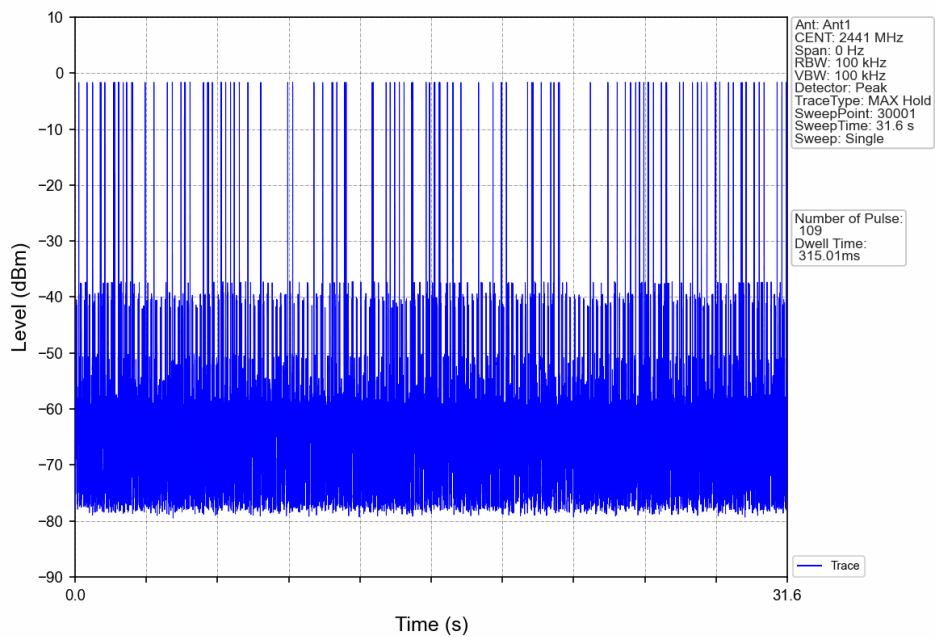
GFSK DH3\_HOPP\_Ant1\_NTNV

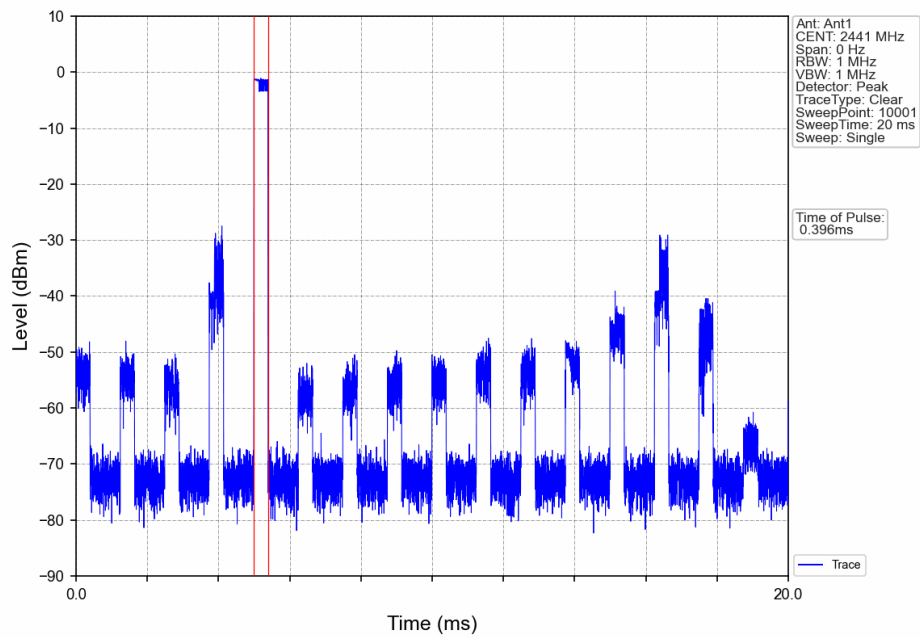
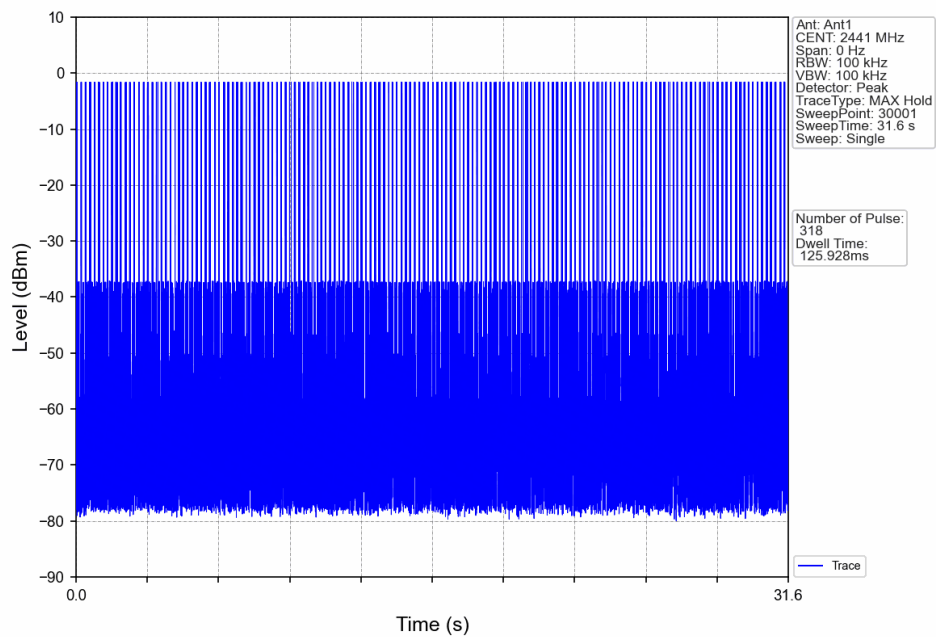


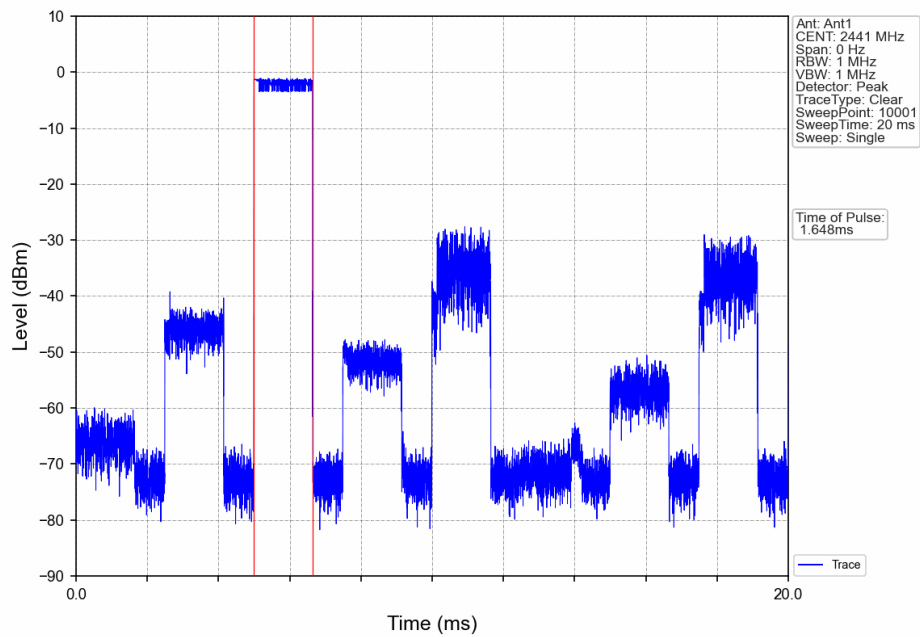
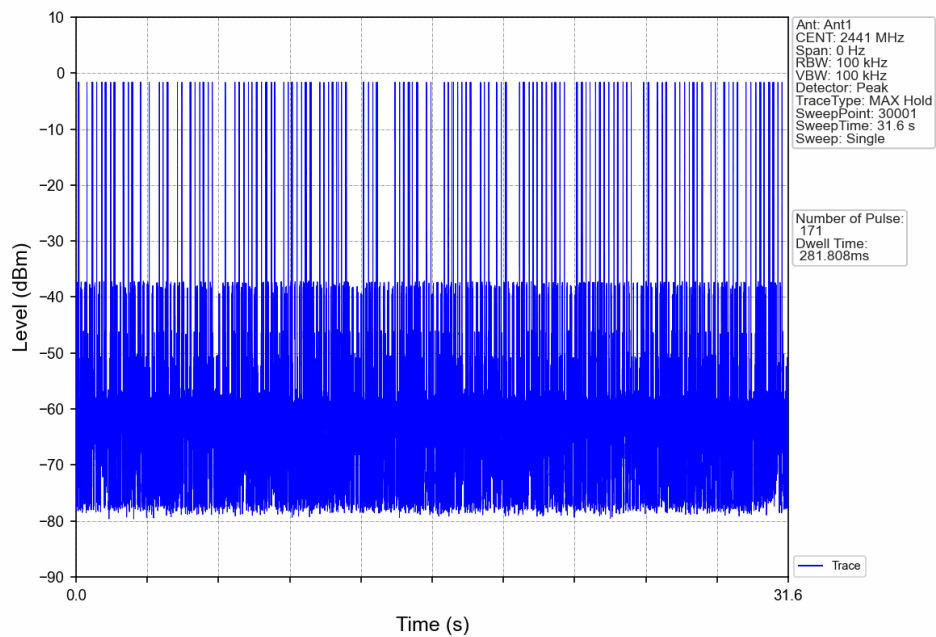
GFSK DH5\_HOPP\_Ant1\_NTNV

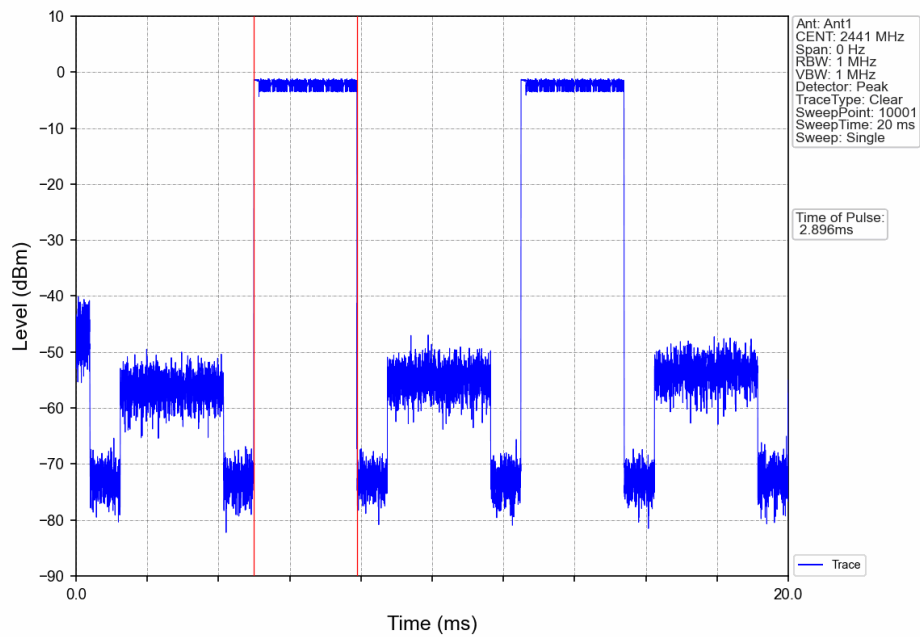
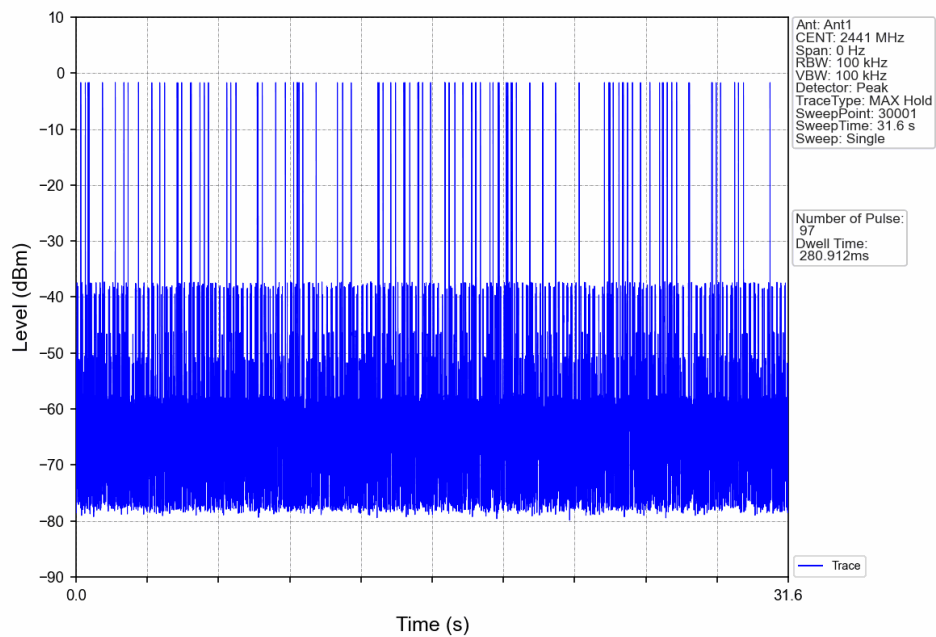


GFSK DH5\_HOPP\_Ant1\_NTNV

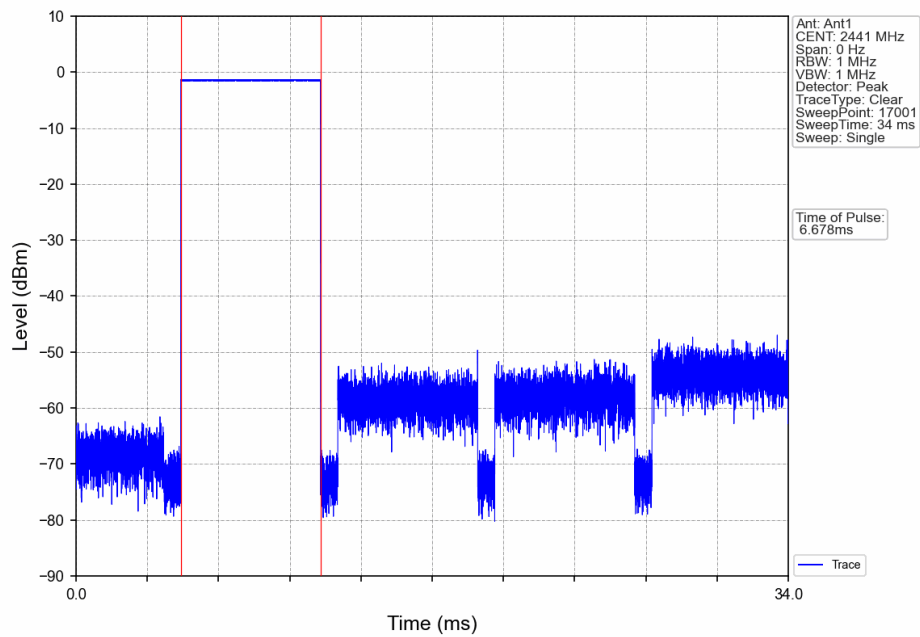


$\pi/4$ -DQPSK\_2DH1\_HOPP\_Ant1\_NTNV $\pi/4$ -DQPSK\_2DH1\_HOPP\_Ant1\_NTNV

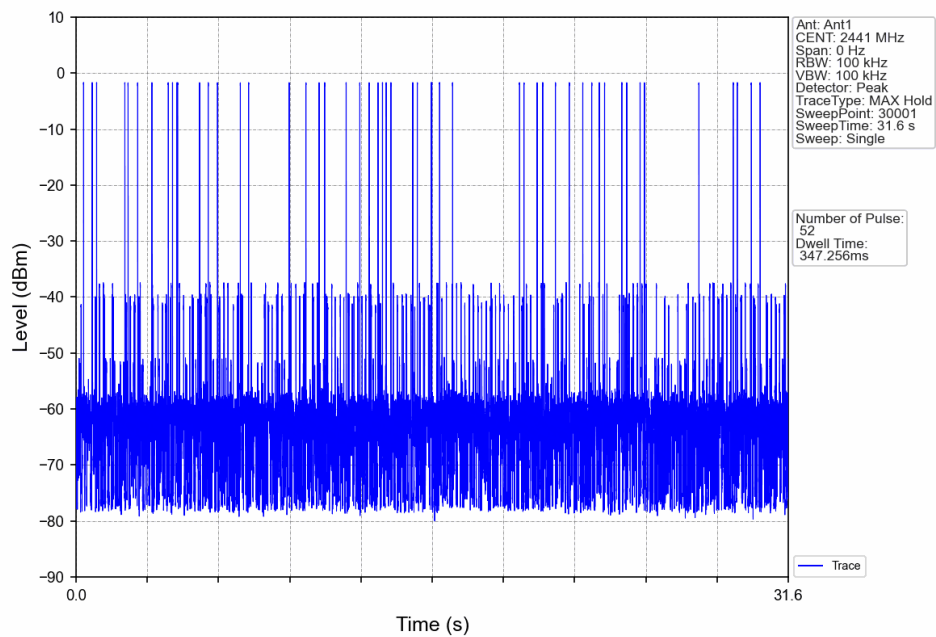
$\pi/4$ -DQPSK\_2DH3\_HOPP\_Ant1\_NTNV $\pi/4$ -DQPSK\_2DH3\_HOPP\_Ant1\_NTNV

$\pi/4$ -DQPSK\_2DH5\_HOPP\_Ant1\_NTNV $\pi/4$ -DQPSK\_2DH5\_HOPP\_Ant1\_NTNV

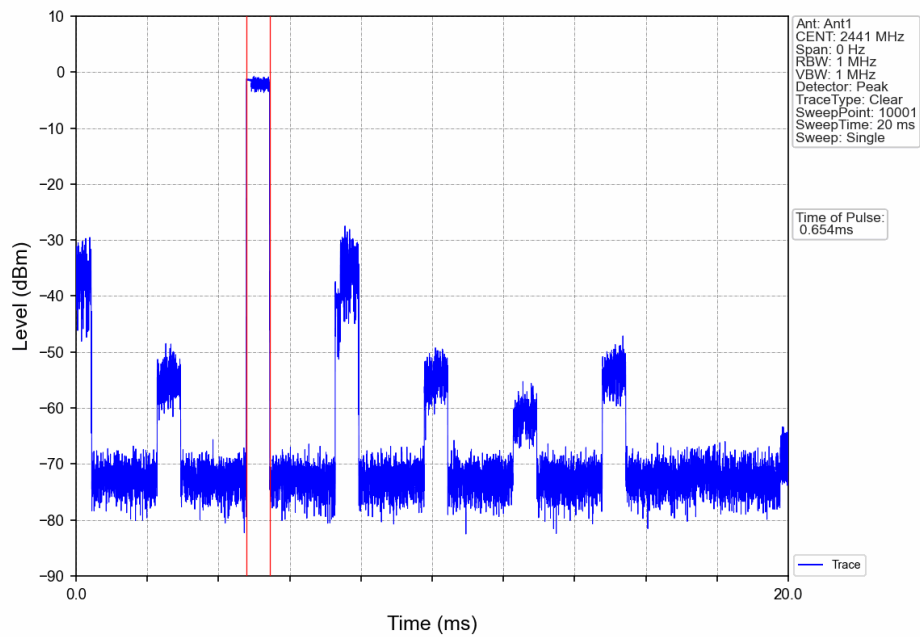
8-DPSK 3DH1\_HOPP\_Ant1\_NTNV



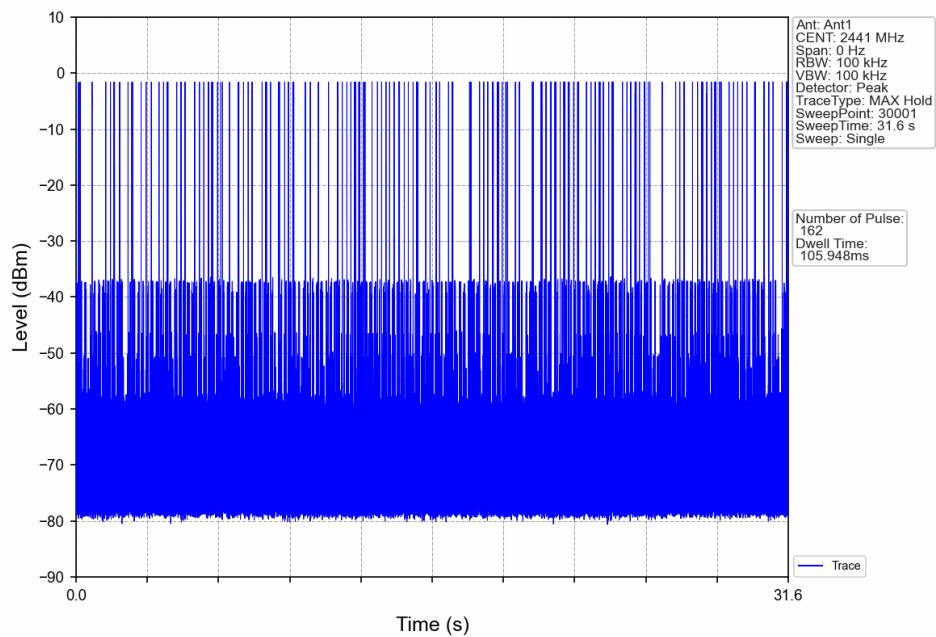
8-DPSK 3DH1\_HOPP\_Ant1\_NTNV



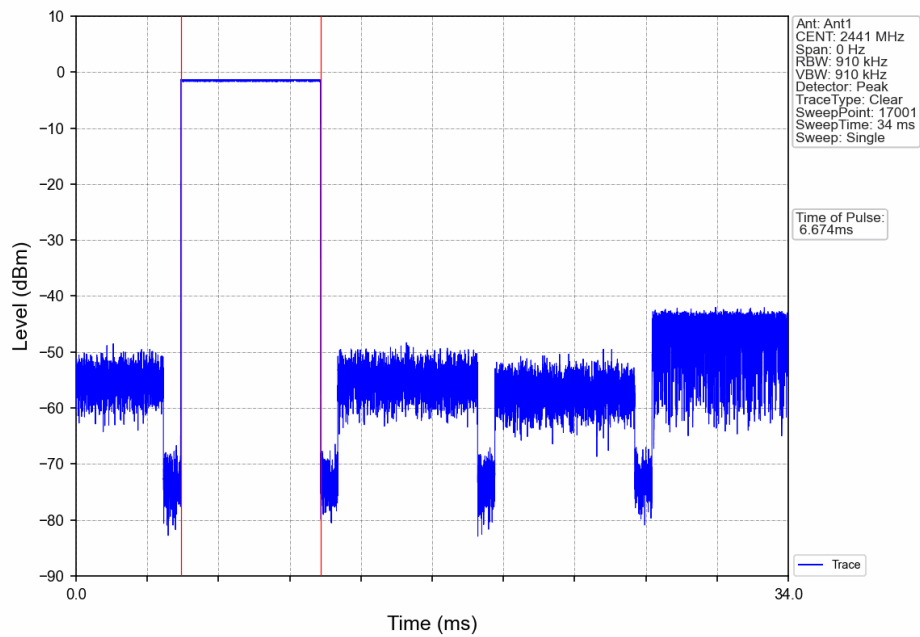
8-DPSK 3DH3\_HOPP\_Ant1\_NTNV



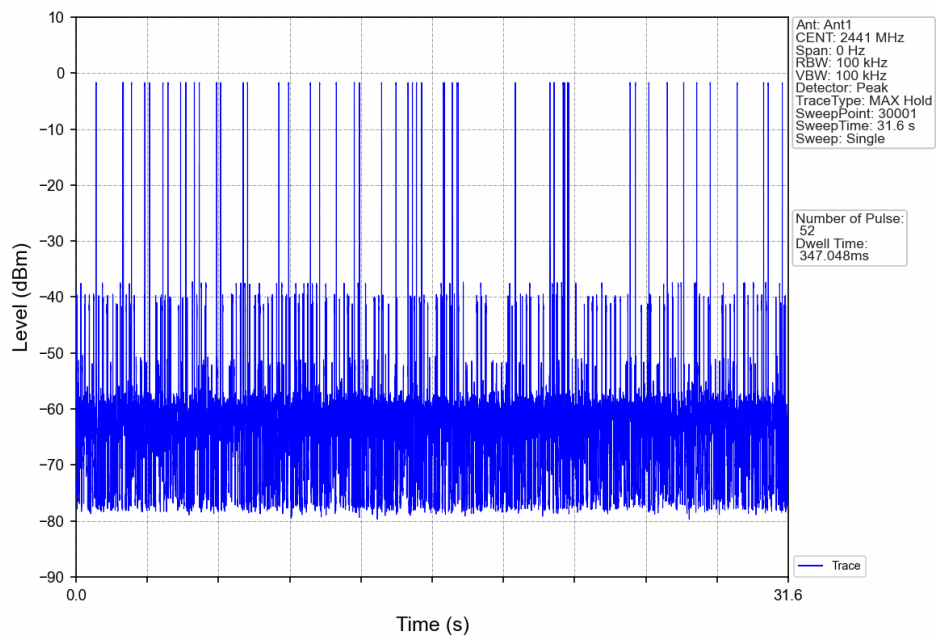
8-DPSK 3DH3\_HOPP\_Ant1\_NTNV



8-DPSK\_3DH5\_HOPP\_Ant1\_NTNV



8-DPSK\_3DH5\_HOPP\_Ant1\_NTNV



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

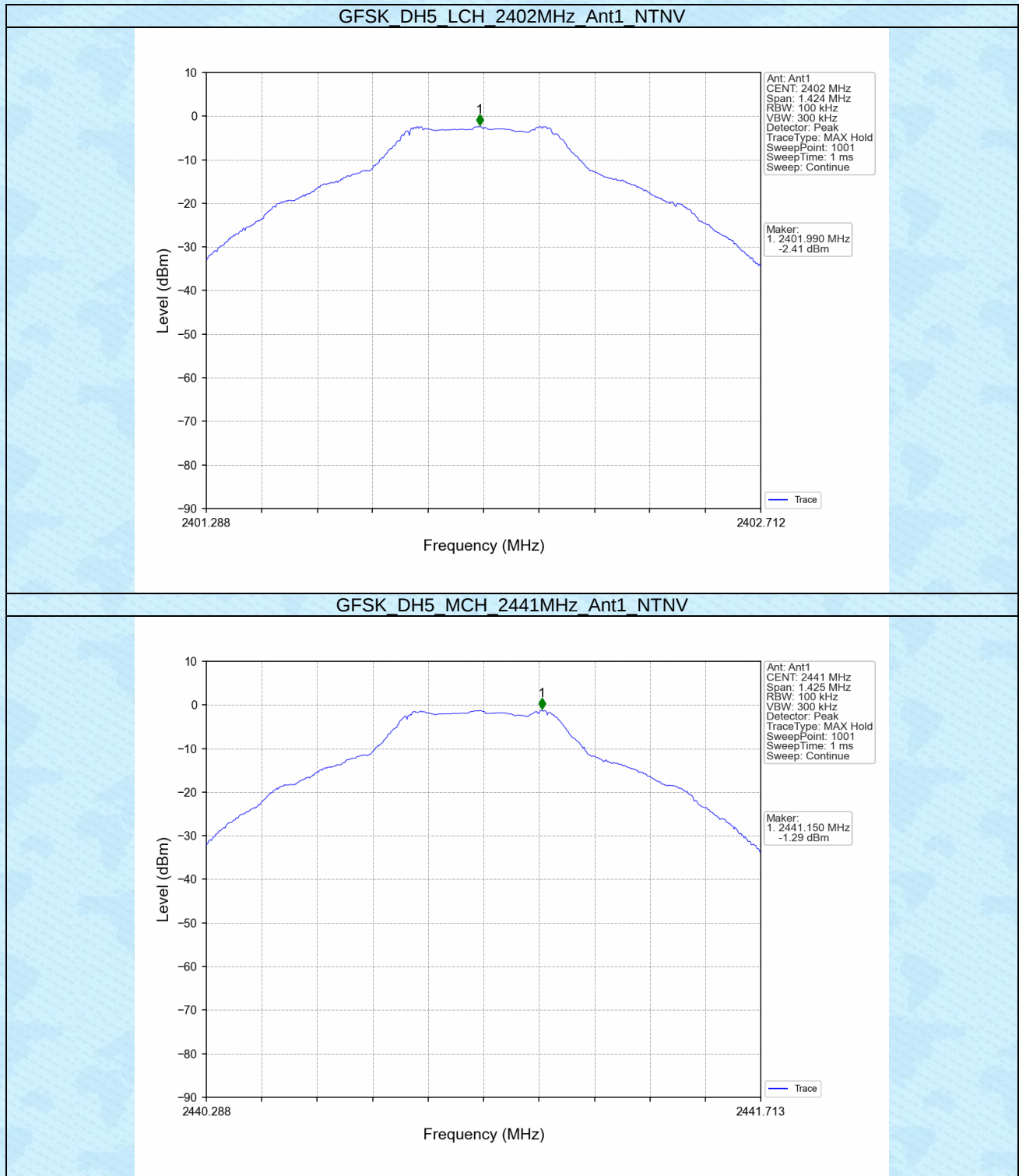
### 6.1 Ref

#### 6.1.1 Test Result

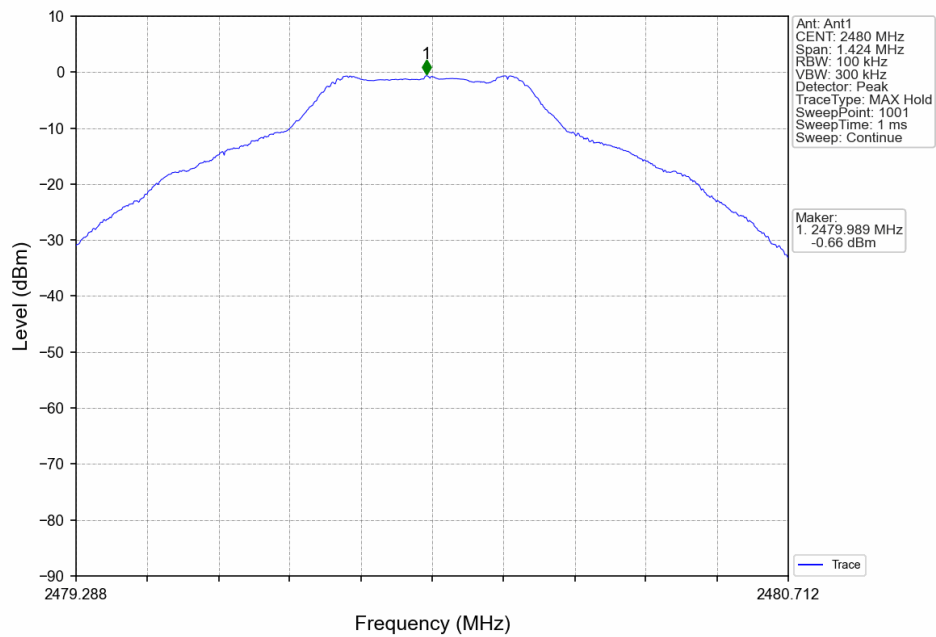
| Mode           | TX Type | Frequency (MHz) | Packet Type | ANT | Level of Reference (dBm) |
|----------------|---------|-----------------|-------------|-----|--------------------------|
| GFSK           | SISO    | 2402            | DH5         | 1   | -2.41                    |
|                |         | 2441            | DH5         | 1   | -1.29                    |
|                |         | 2480            | DH5         | 1   | -0.66                    |
| $\pi/4$ -DQPSK | SISO    | 2402            | 2DH5        | 1   | -2.37                    |
|                |         | 2441            | 2DH5        | 1   | -1.24                    |
|                |         | 2480            | 2DH5        | 1   | -0.63                    |
| 8-DPSK         | SISO    | 2402            | 3DH5        | 1   | -2.25                    |
|                |         | 2441            | 3DH5        | 1   | -1.22                    |
|                |         | 2480            | 3DH5        | 1   | -0.45                    |

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.

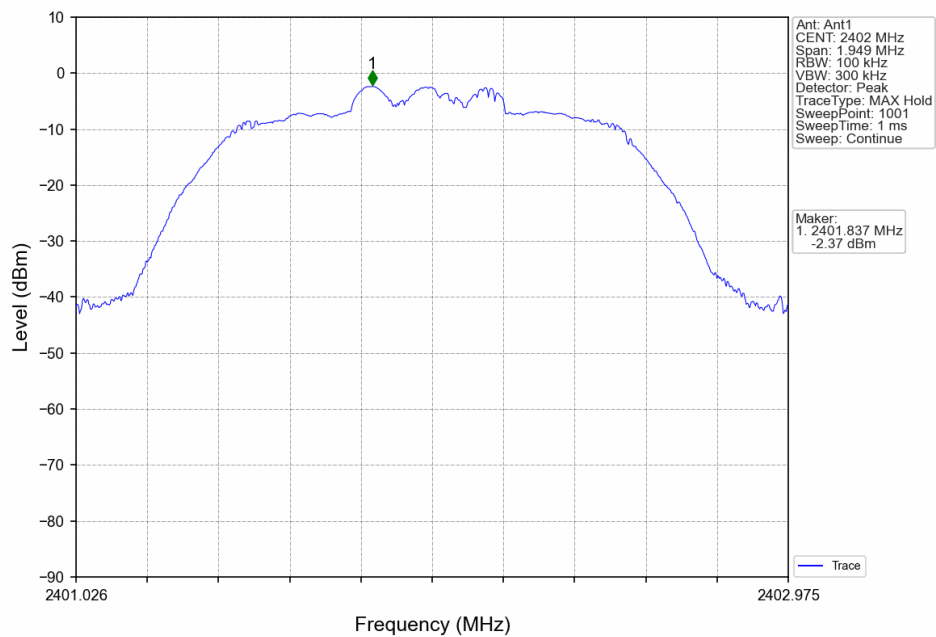
## 6.1.2 Test Graph

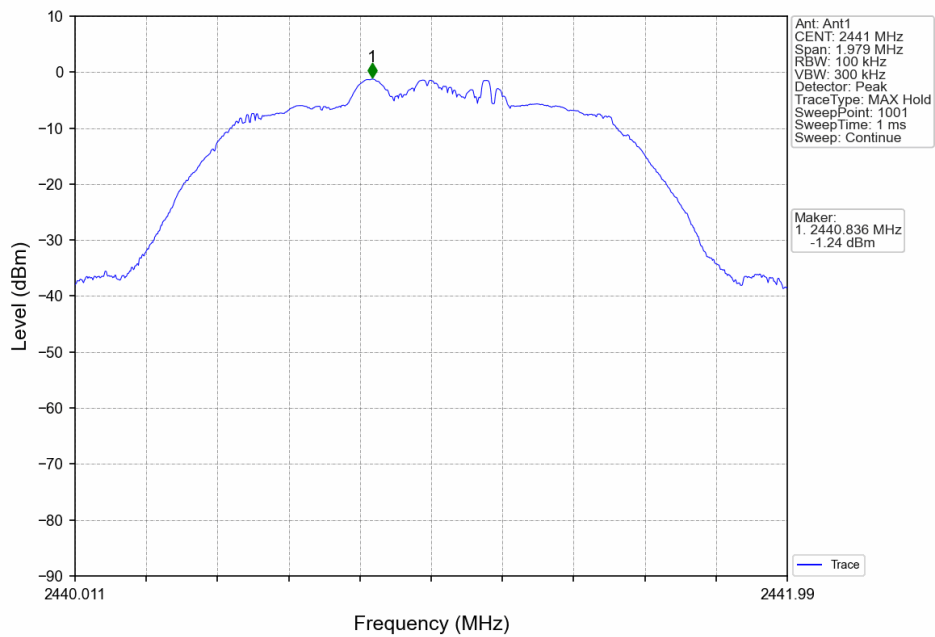
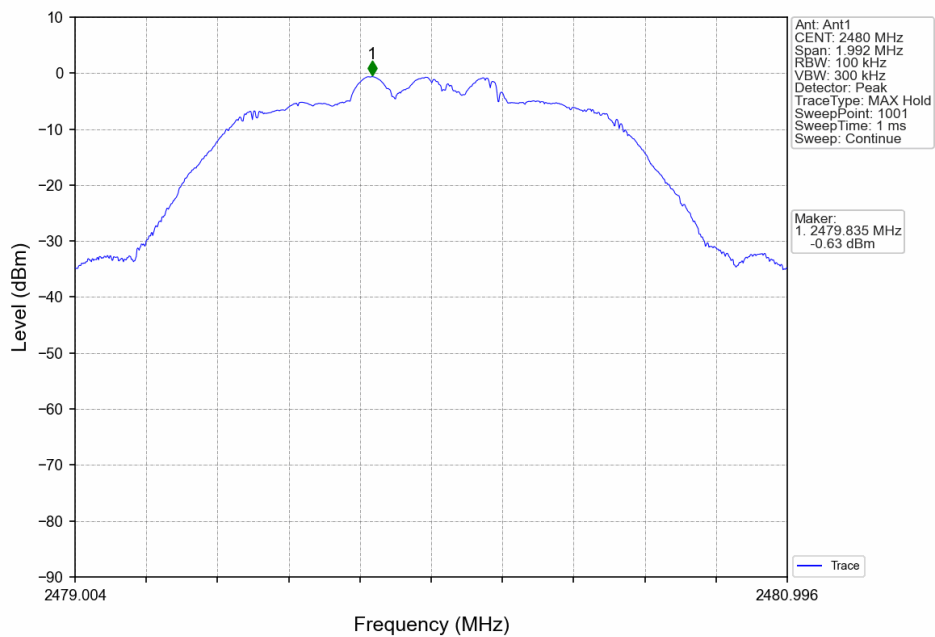


GFSK\_DH5\_HCH\_2480MHz\_Ant1\_NTNV

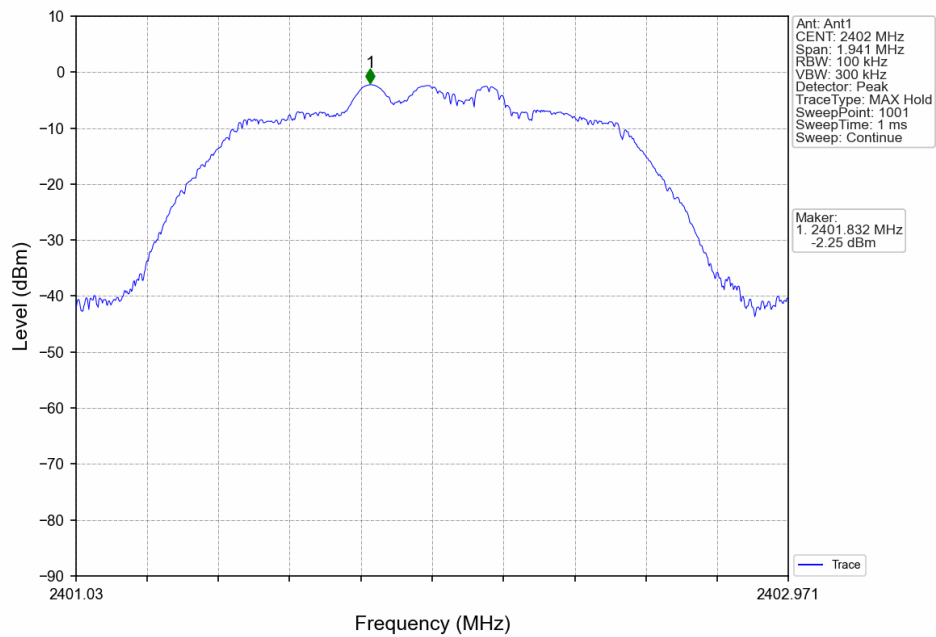


$\pi/4$ -DQPSK\_2DH5\_LCH\_2402MHz\_Ant1\_NTNV

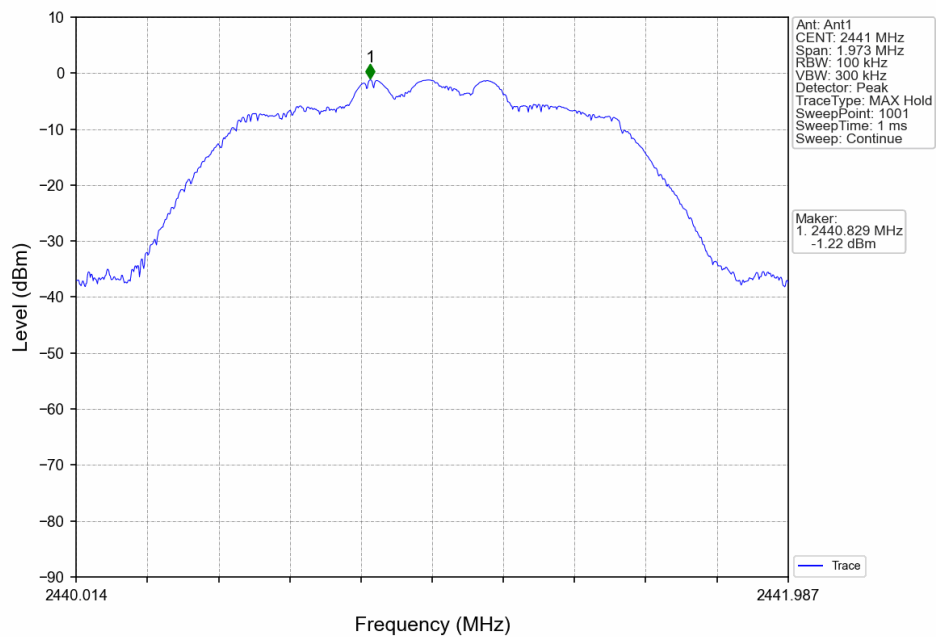


$\pi/4$ -DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV $\pi/4$ -DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV

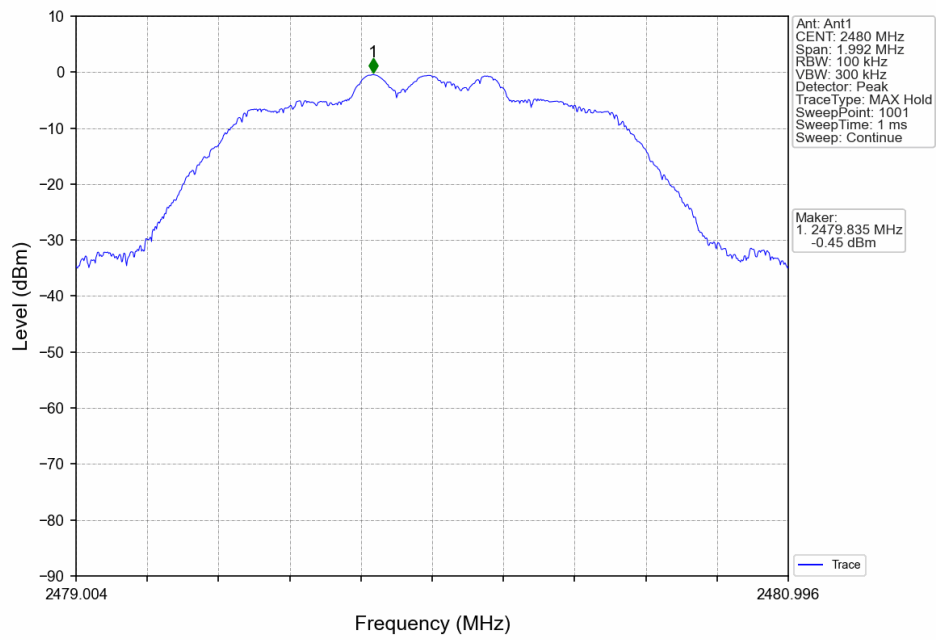
8-DPSK 3DH5 LCH 2402MHz\_Ant1\_NTNV



8-DPSK 3DH5 MCH 2441MHz\_Ant1\_NTNV



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



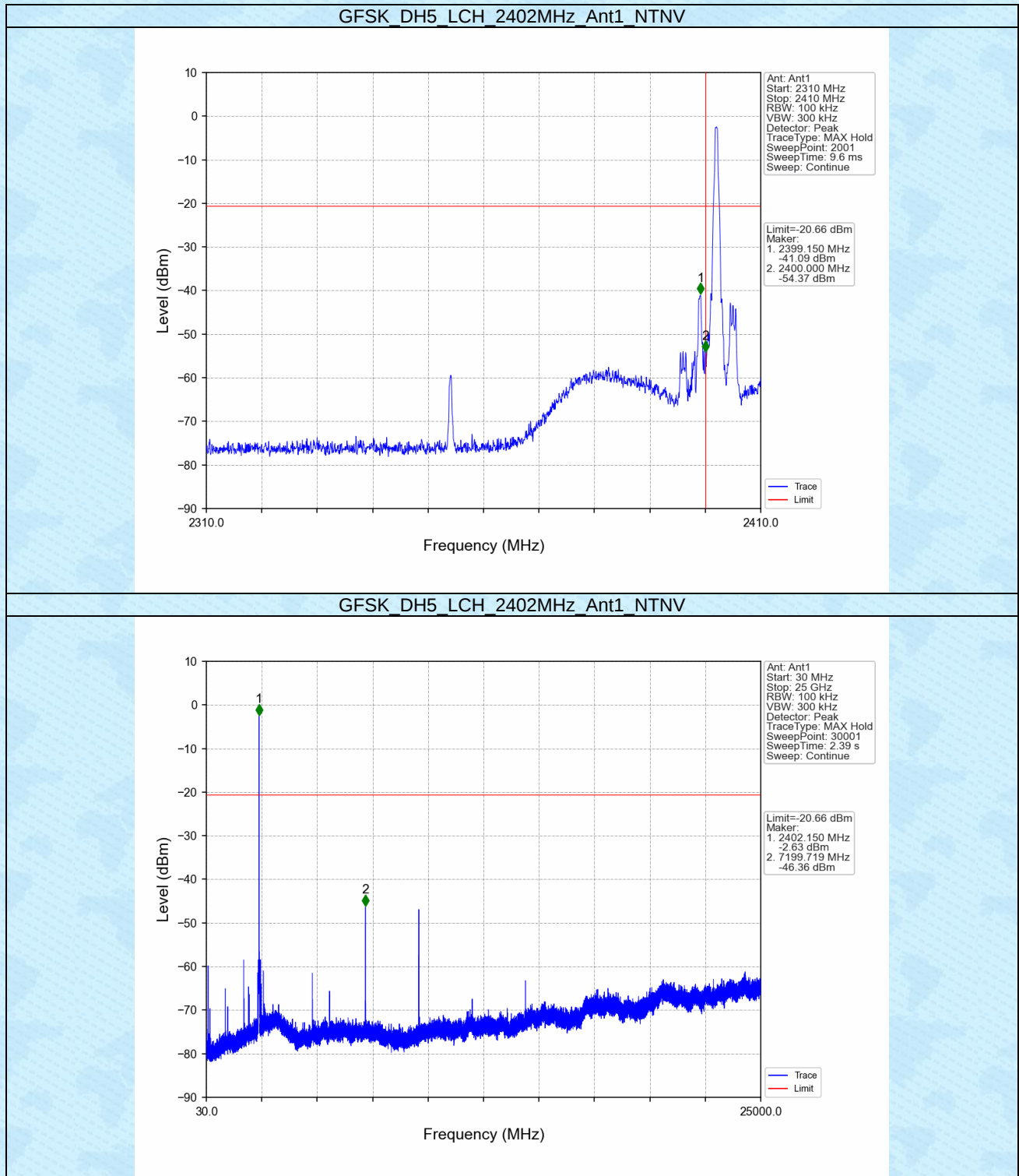
## 6.2 CSE

### 6.2.1 Test Result

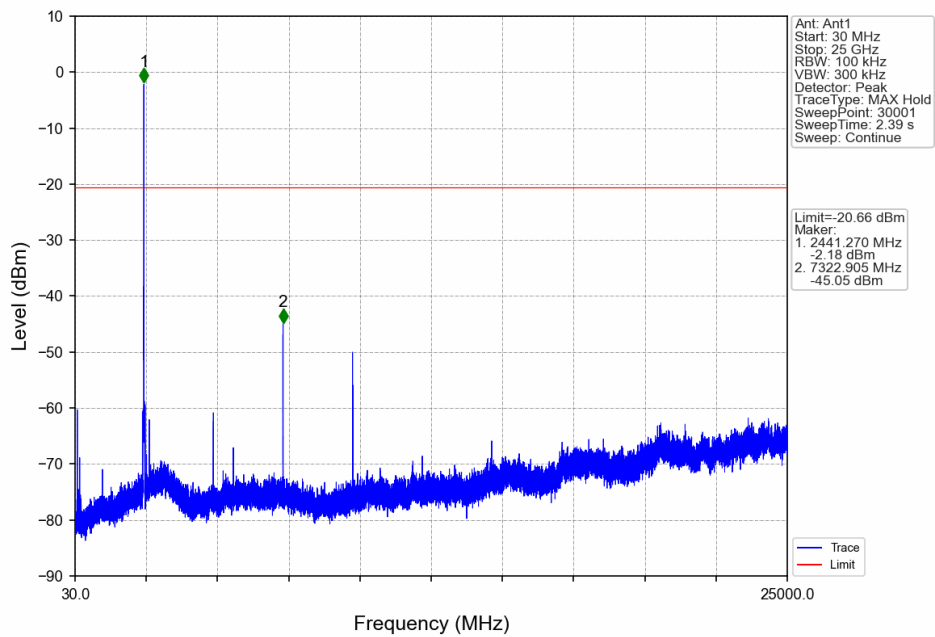
| Mode           | TX Type | Frequency (MHz) | Packet Type | ANT | Level of Reference (dBm) | Limit (dBm) | Verdict |
|----------------|---------|-----------------|-------------|-----|--------------------------|-------------|---------|
| GFSK           | SISO    | 2402            | DH5         | 1   | -0.66                    | -20.66      | Pass    |
|                |         | 2441            | DH5         | 1   | -0.66                    | -20.66      | Pass    |
|                |         | 2480            | DH5         | 1   | -0.66                    | -20.66      | Pass    |
|                |         | HOPP            | DH5         | 1   | -0.66                    | -20.66      | Pass    |
| $\pi/4$ -DQPSK | SISO    | 2402            | 2DH5        | 1   | -0.63                    | -20.63      | Pass    |
|                |         | 2441            | 2DH5        | 1   | -0.63                    | -20.63      | Pass    |
|                |         | 2480            | 2DH5        | 1   | -0.63                    | -20.63      | Pass    |
|                |         | HOPP            | 2DH5        | 1   | -0.63                    | -20.63      | Pass    |
| 8-DPSK         | SISO    | 2402            | 3DH5        | 1   | -0.45                    | -20.45      | Pass    |
|                |         | 2441            | 3DH5        | 1   | -0.45                    | -20.45      | Pass    |
|                |         | 2480            | 3DH5        | 1   | -0.45                    | -20.45      | Pass    |
|                |         | HOPP            | 3DH5        | 1   | -0.45                    | -20.45      | 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.

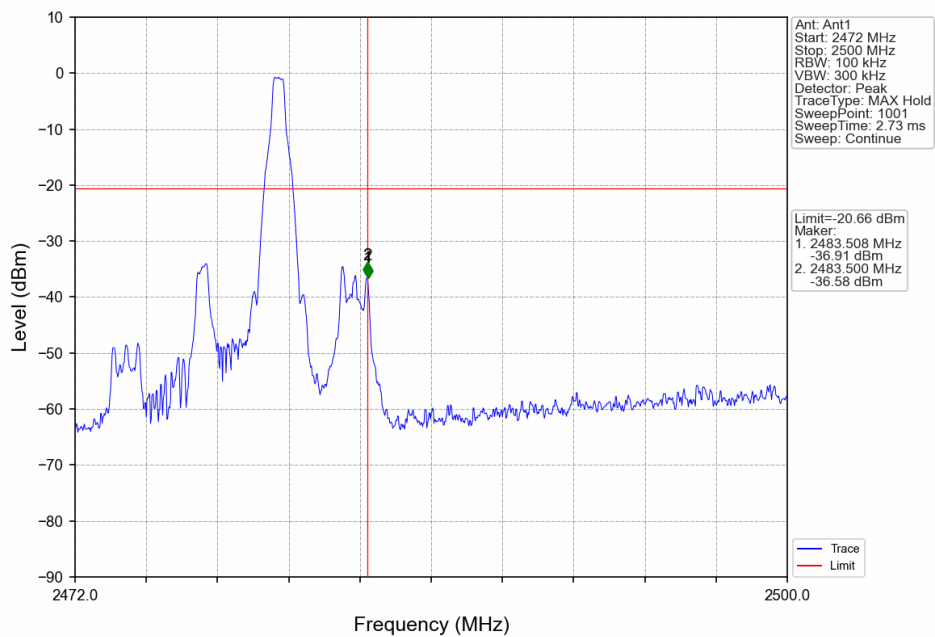
## 6.2.2 Test Graph



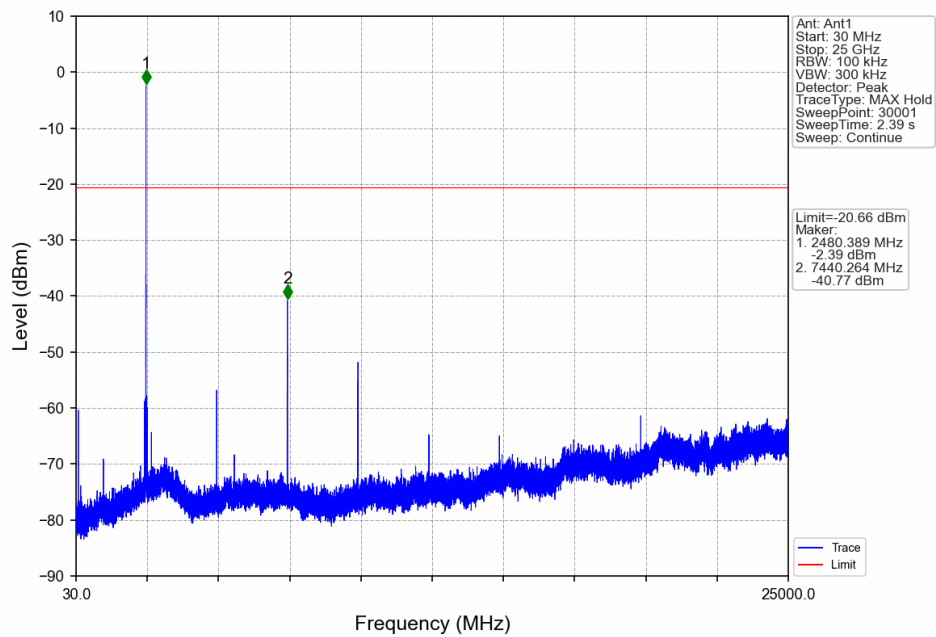
GFSK\_DH5\_MCH\_2441MHz\_Ant1\_NTNV



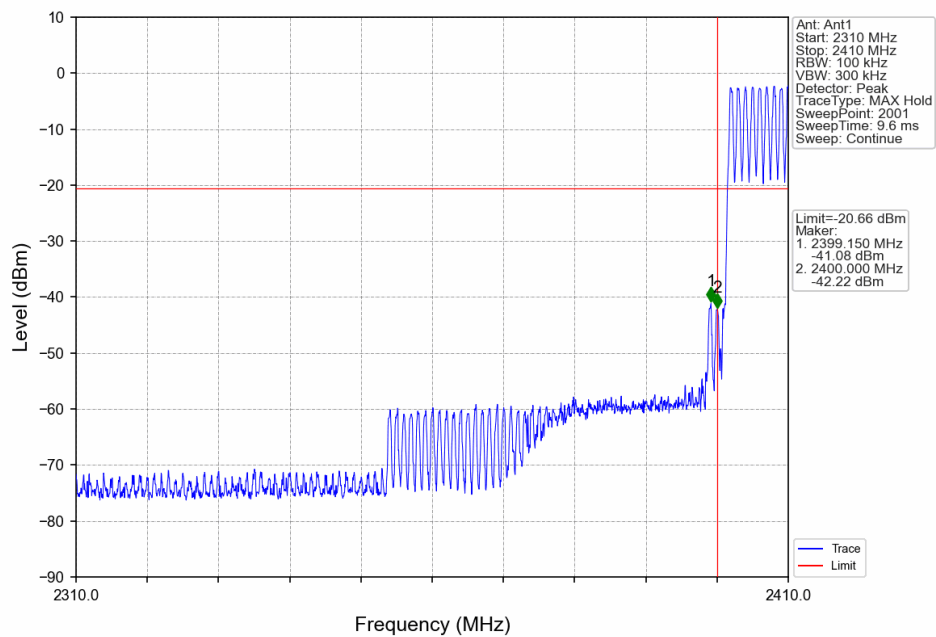
GFSK\_DH5\_HCH\_2480MHz\_Ant1\_NTNV



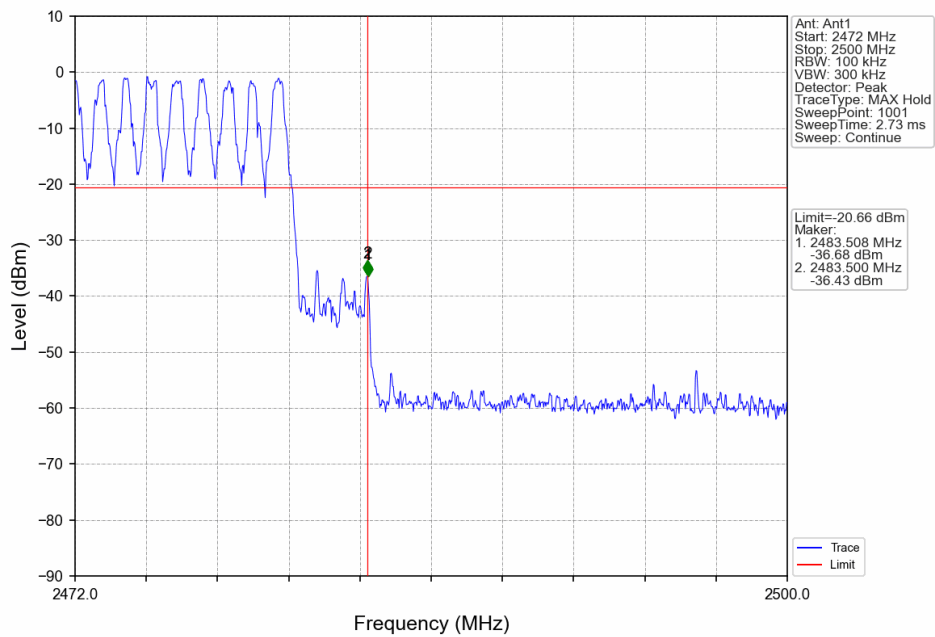
GFSK DH5 HCH 2480MHz Ant1 NTN



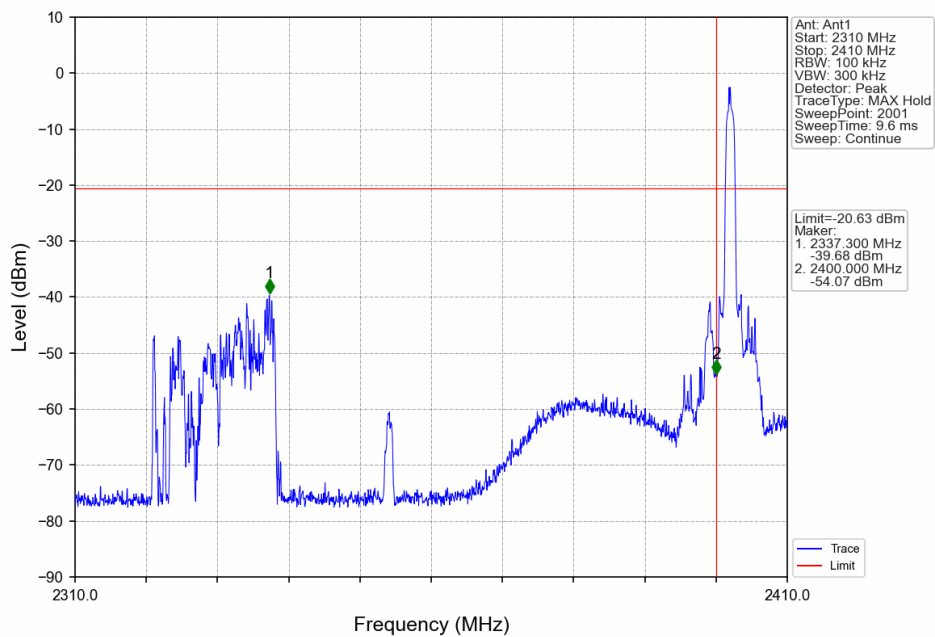
GFSK DH5 HOPP Ant1 NTN



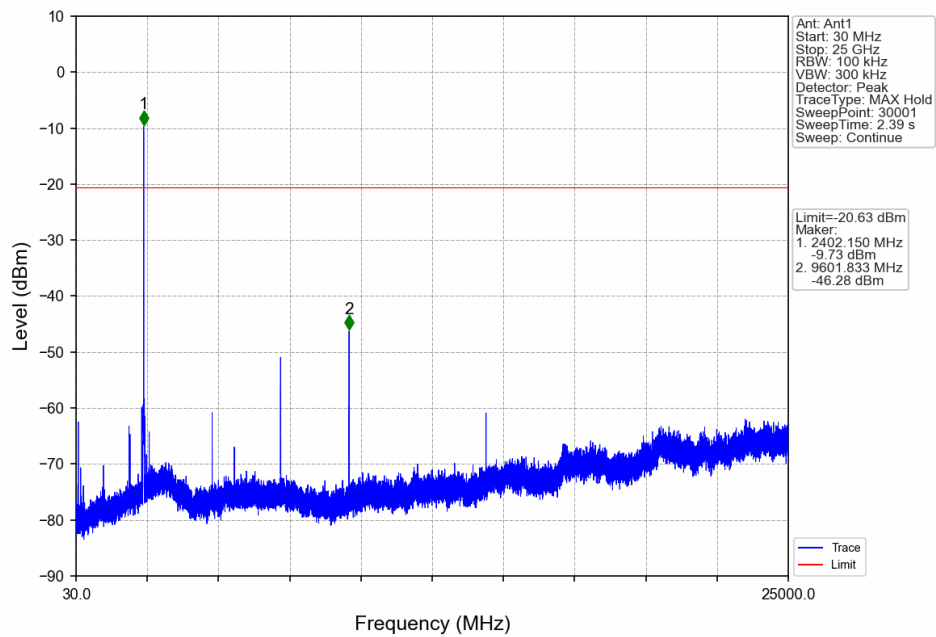
GFSK DH5\_HOPP\_Ant1\_NTNV



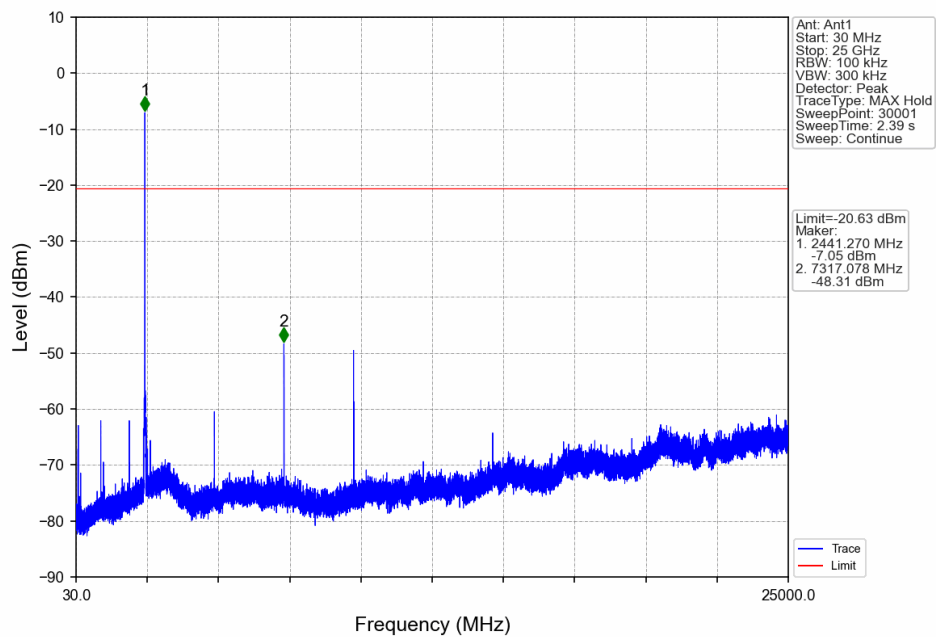
$\pi/4$ -DQPSK\_2DH5\_LCH\_2402MHz\_Ant1\_NTNV



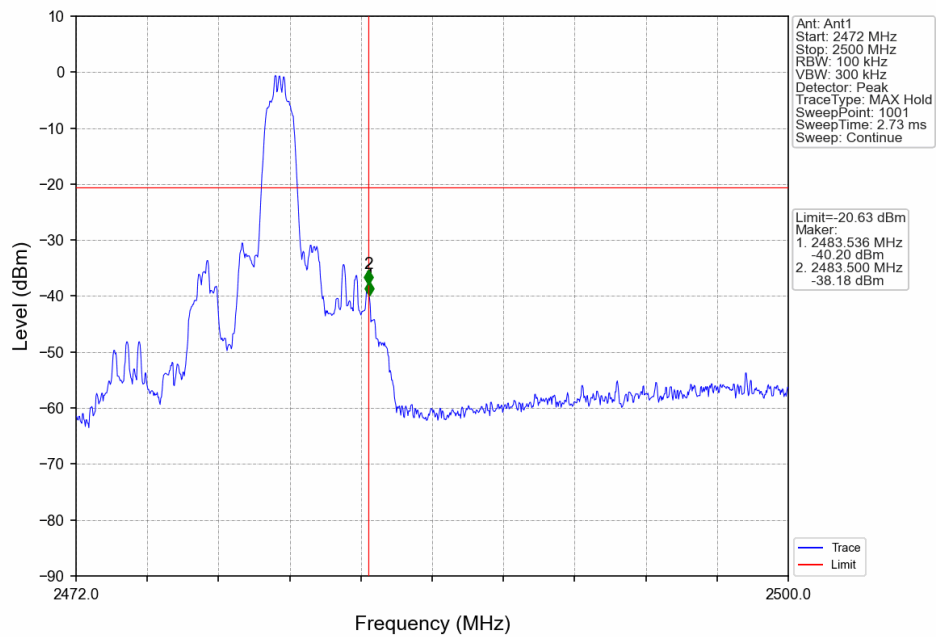
$\pi/4$ -DQPSK\_2DH5\_LCH\_2402MHz\_Ant1\_NTNV



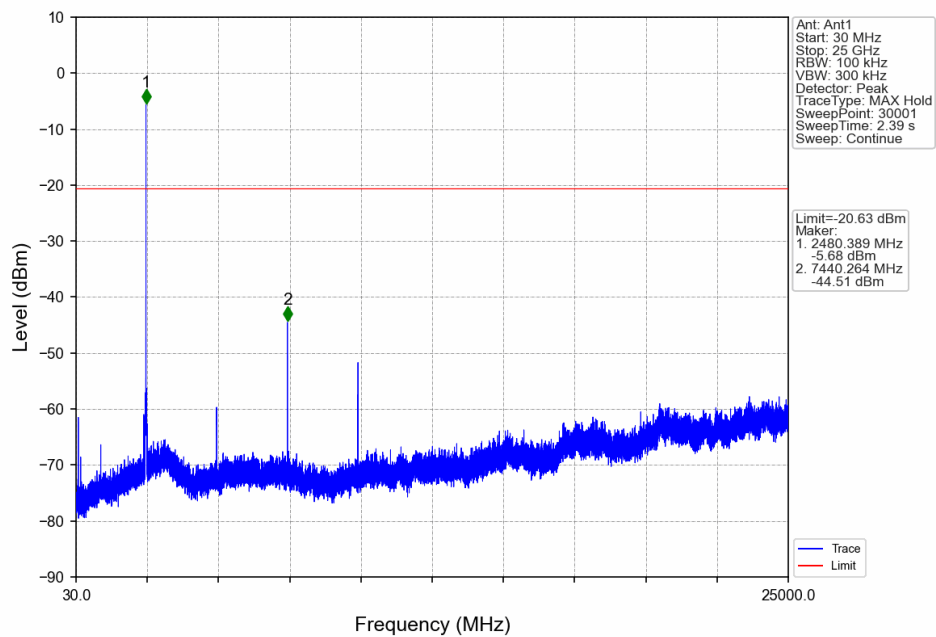
$\pi/4$ -DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV



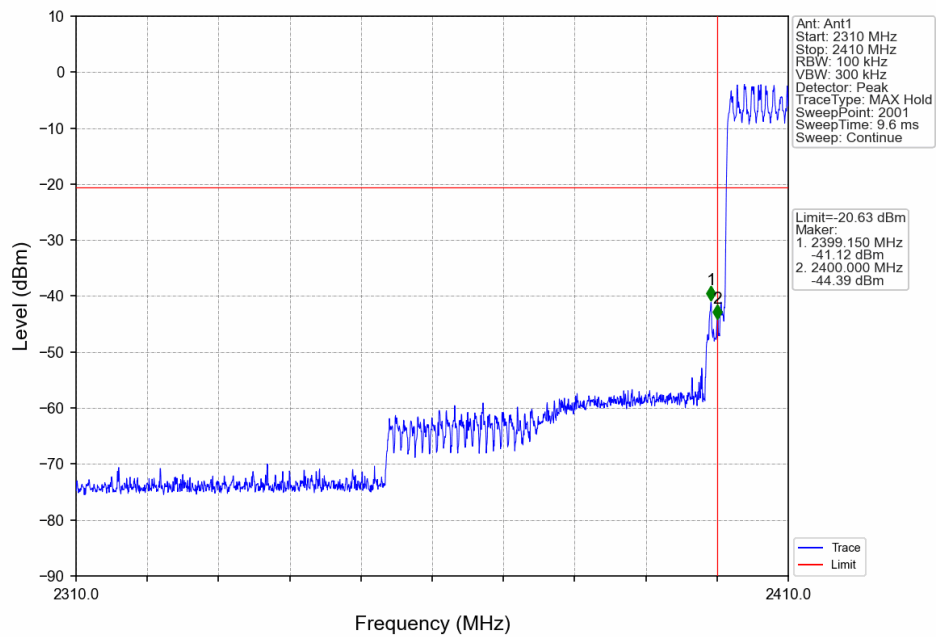
$\pi/4$ -DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV



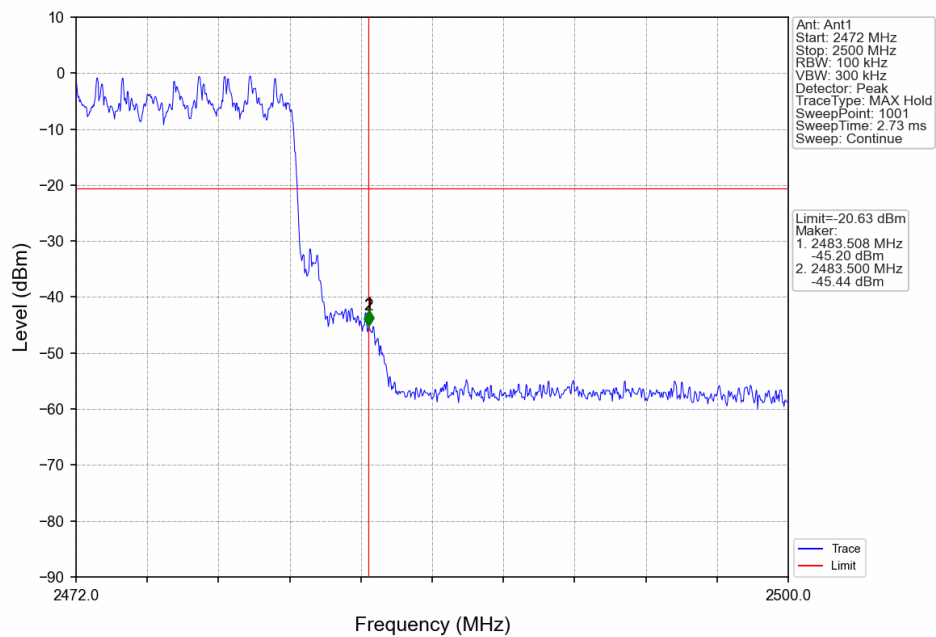
$\pi/4$ -DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV



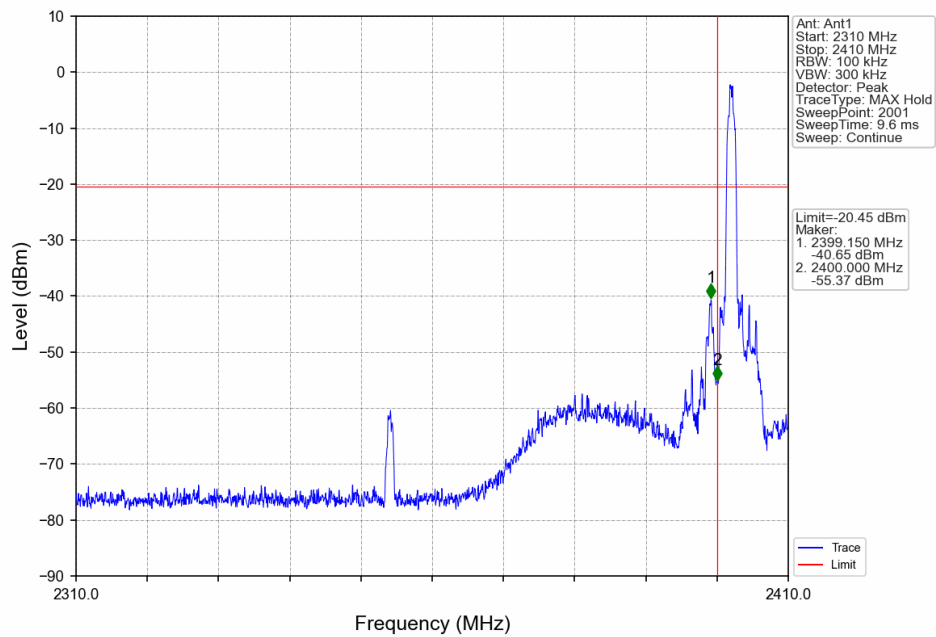
$\pi/4$ -DQPSK\_2DH5\_HOPP\_Ant1\_NTNV



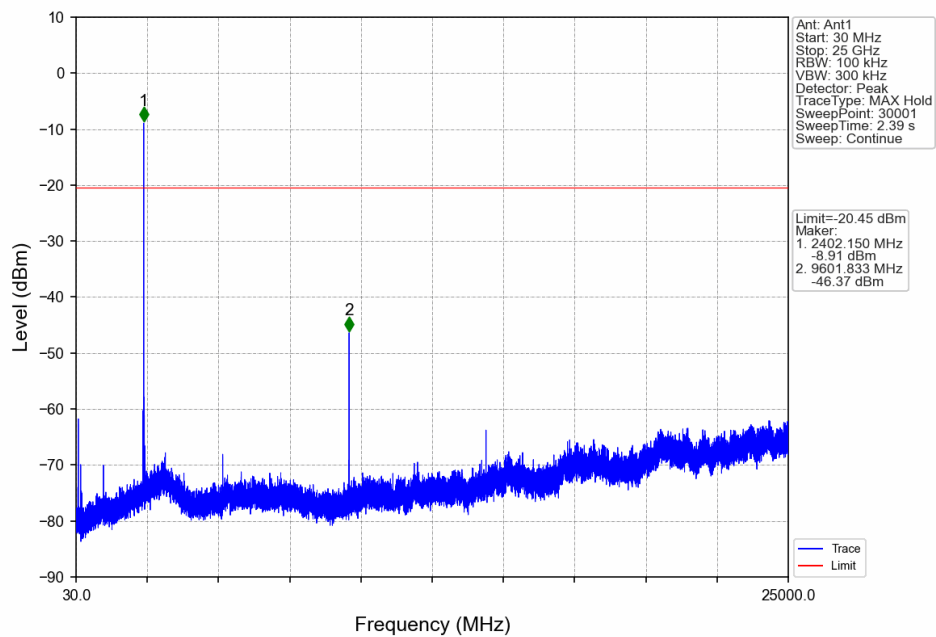
$\pi/4$ -DQPSK\_2DH5\_HOPP\_Ant1\_NTNV



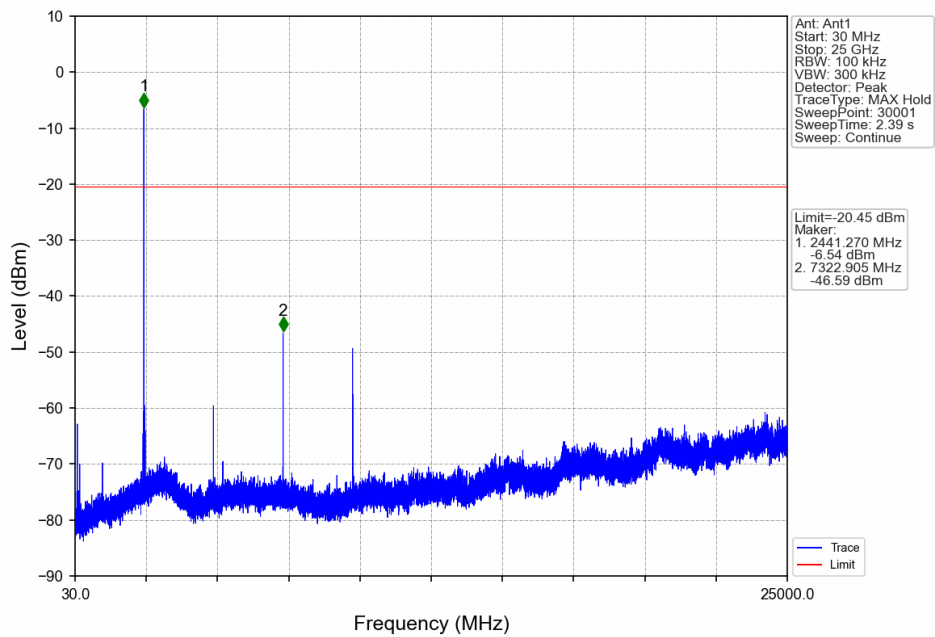
8-DPSK\_3DH5\_LCH\_2402MHz\_Ant1\_NTNV



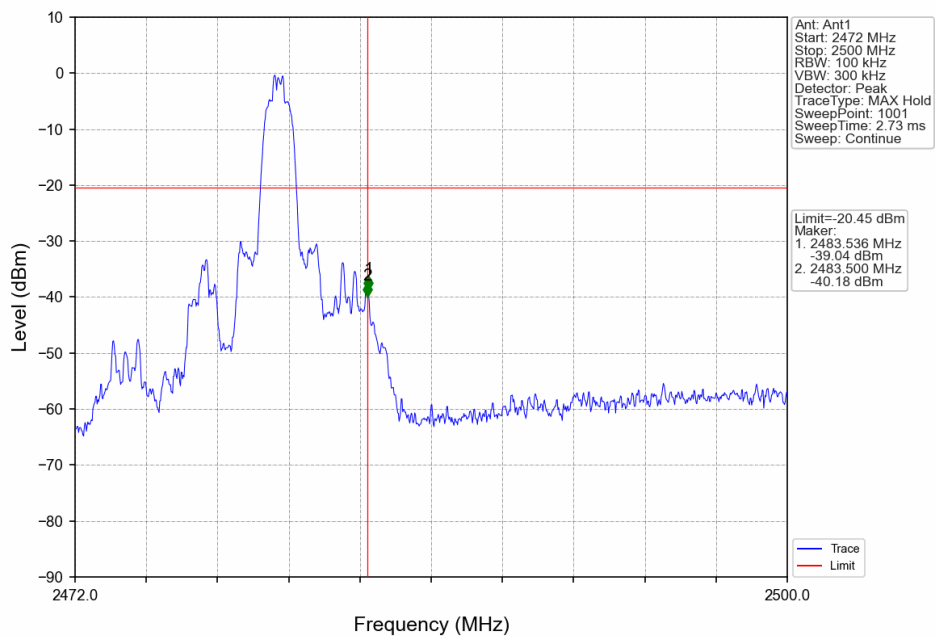
8-DPSK\_3DH5\_LCH\_2402MHz\_Ant1\_NTNV



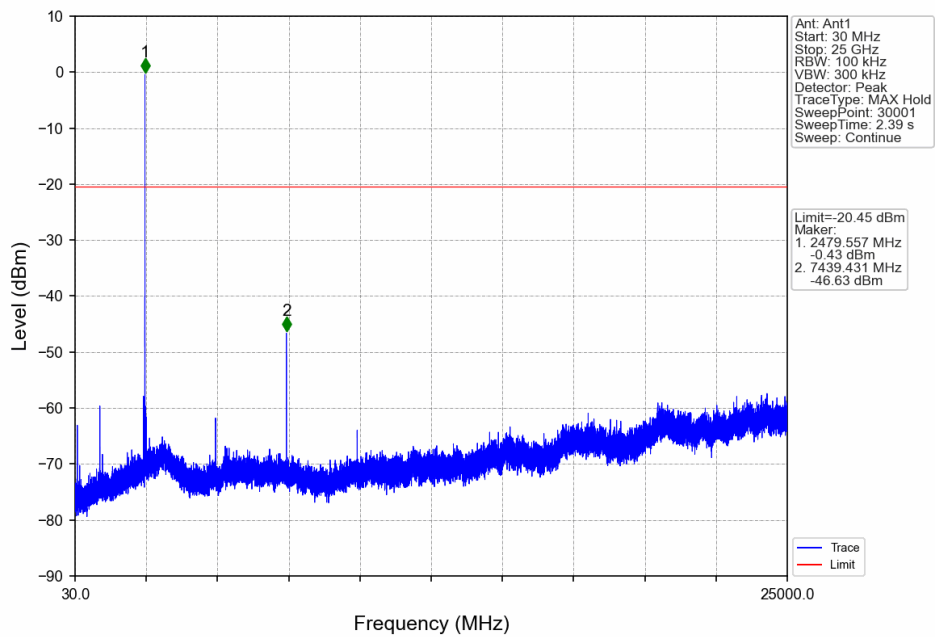
8-DPSK 3DH5 MCH 2441MHz\_Ant1\_NTNV



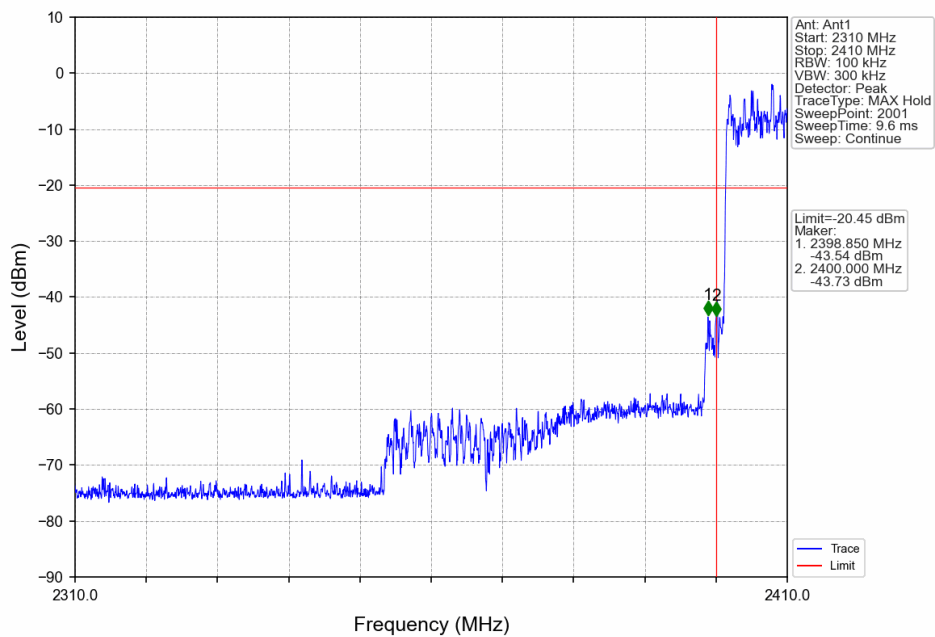
8-DPSK 3DH5 HCH 2480MHz\_Ant1\_NTNV

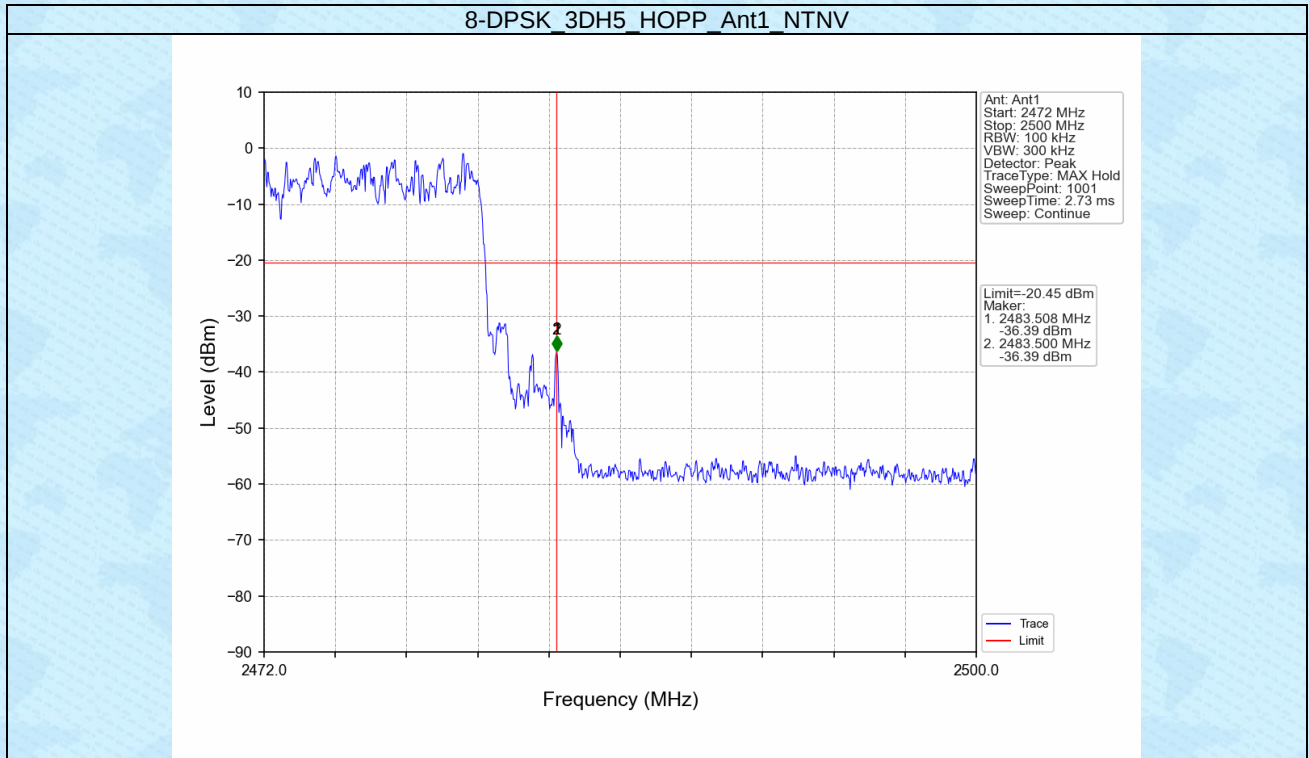


8-DPSK\_3DH5\_HCH\_2480MHz\_Ant1\_NTNV



8-DPSK\_3DH5\_HOPP\_Ant1\_NTNV





-----End-----