

## **Appendix RF test data for BT**

## 1. Bandwidth

### 1.1 Test Result

#### 1.1.1 OBW

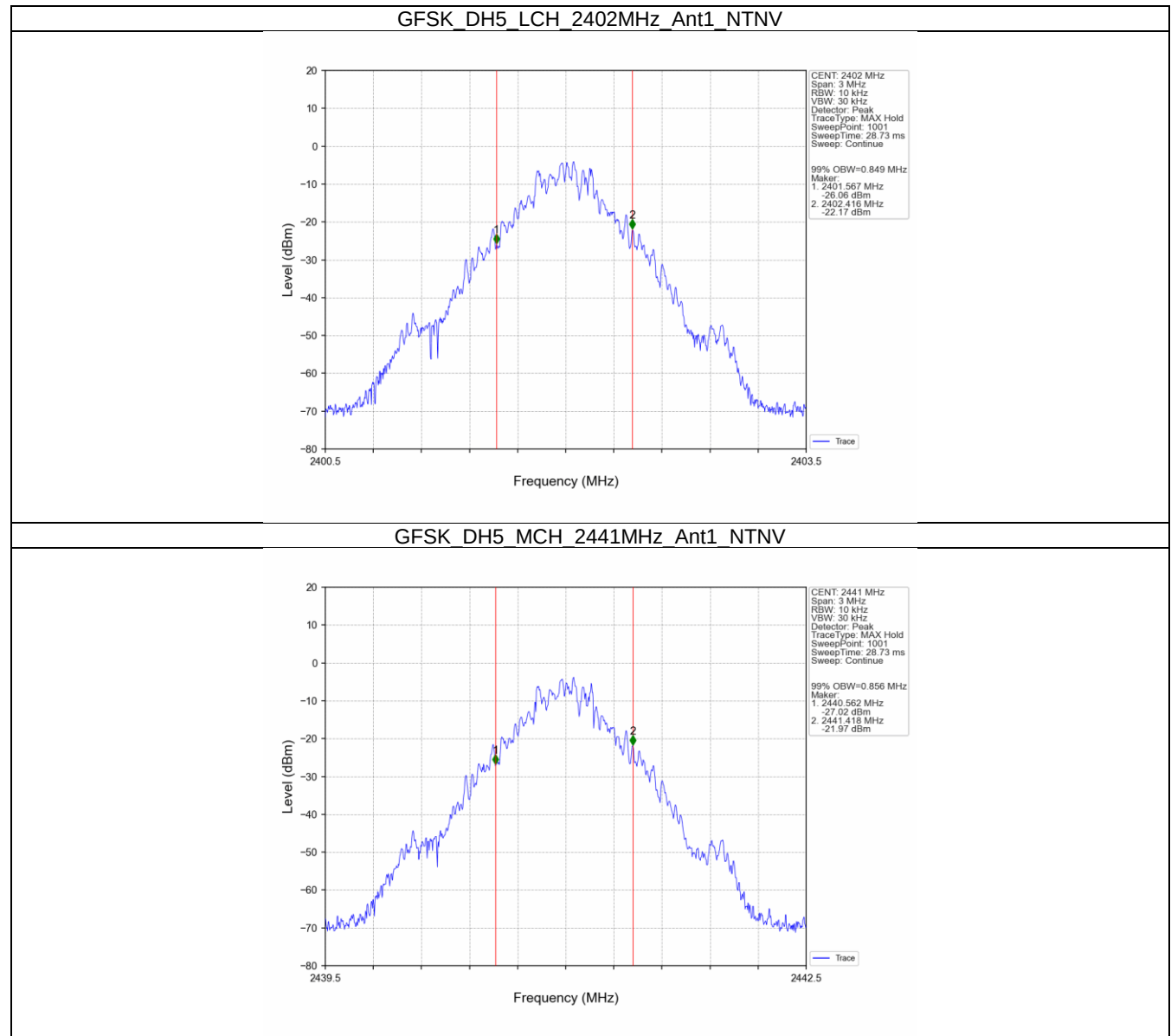
| Mode      | TX Type | Frequency (MHz) | Packet Type | ANT | 99% Occupied Bandwidth (MHz) |       | Verdict |
|-----------|---------|-----------------|-------------|-----|------------------------------|-------|---------|
|           |         |                 |             |     | Result                       | Limit |         |
| GFSK      | SISO    | 2402            | DH5         | 1   | 0.849                        | /     | Pass    |
|           |         | 2441            | DH5         | 1   | 0.856                        | /     | Pass    |
|           |         | 2480            | DH5         | 1   | 0.861                        | /     | Pass    |
| Pi/4DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.184                        | /     | Pass    |
|           |         | 2441            | 2DH5        | 1   | 1.183                        | /     | Pass    |
|           |         | 2480            | 2DH5        | 1   | 1.186                        | /     | Pass    |
| 8DPSK     | SISO    | 2402            | 3DH5        | 1   | 1.194                        | /     | Pass    |
|           |         | 2441            | 3DH5        | 1   | 1.196                        | /     | Pass    |
|           |         | 2480            | 3DH5        | 1   | 1.192                        | /     | Pass    |

#### 1.1.2 20dB BW

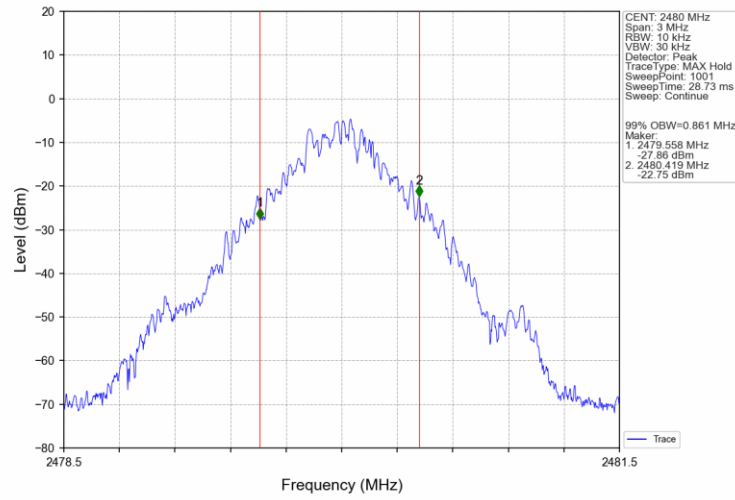
| Mode      | TX Type | Frequency (MHz) | Packet Type | ANT | 20dB Bandwidth (MHz) |       | Verdict |
|-----------|---------|-----------------|-------------|-----|----------------------|-------|---------|
|           |         |                 |             |     | Result               | Limit |         |
| GFSK      | SISO    | 2402            | DH5         | 1   | 0.925                | /     | Pass    |
|           |         | 2441            | DH5         | 1   | 0.928                | /     | Pass    |
|           |         | 2480            | DH5         | 1   | 0.924                | /     | Pass    |
| Pi/4DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.303                | /     | Pass    |
|           |         | 2441            | 2DH5        | 1   | 1.314                | /     | Pass    |
|           |         | 2480            | 2DH5        | 1   | 1.312                | /     | Pass    |
| 8DPSK     | SISO    | 2402            | 3DH5        | 1   | 1.291                | /     | Pass    |
|           |         | 2441            | 3DH5        | 1   | 1.289                | /     | Pass    |
|           |         | 2480            | 3DH5        | 1   | 1.280                | /     | Pass    |

## 1.2 Test Graph

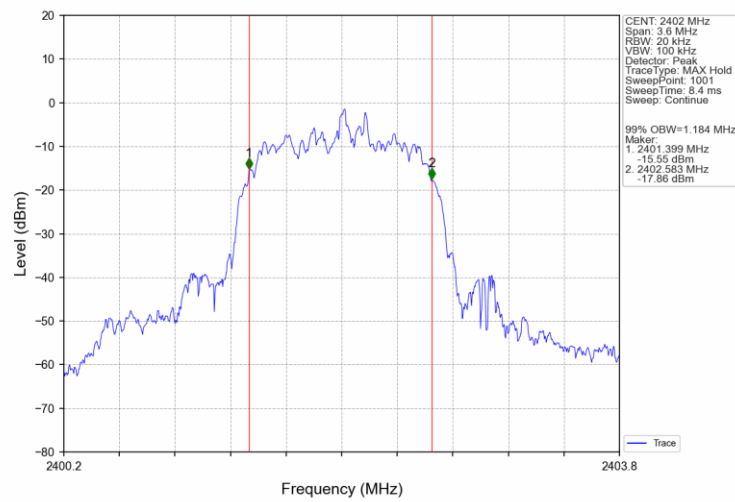
### 1.2.1 OBW



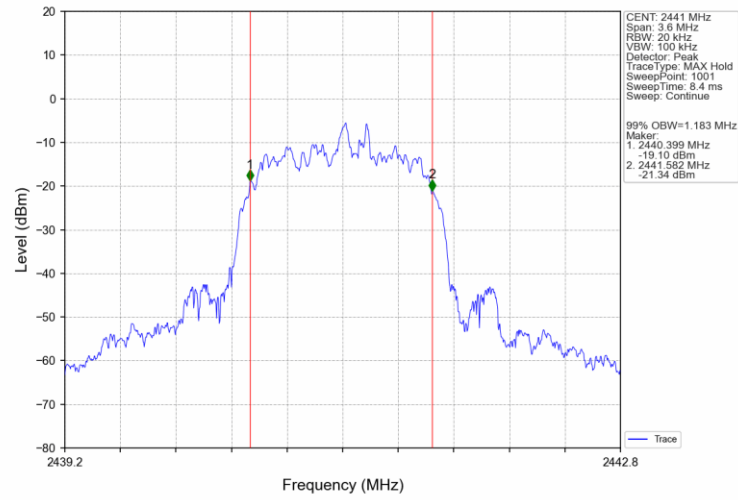
## GFSK\_DH5\_HCH\_2480MHz\_Ant1\_NTNV



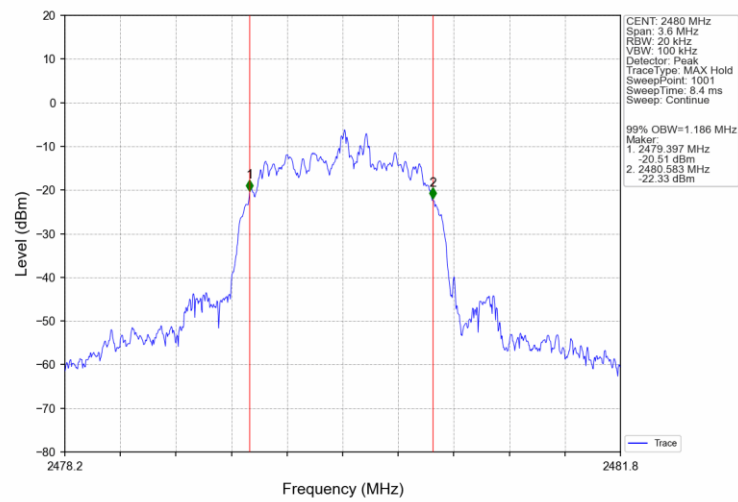
## Pi/4DQPSK\_2DH5\_LCH\_2402MHz\_Ant1\_NTNV



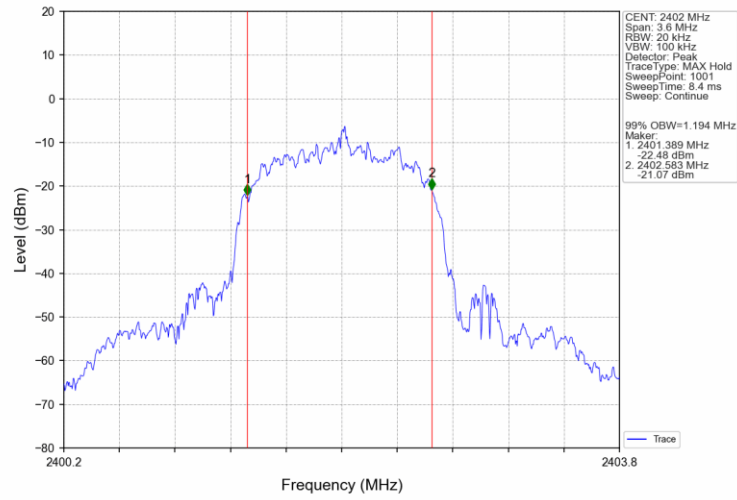
### Pi/4DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV



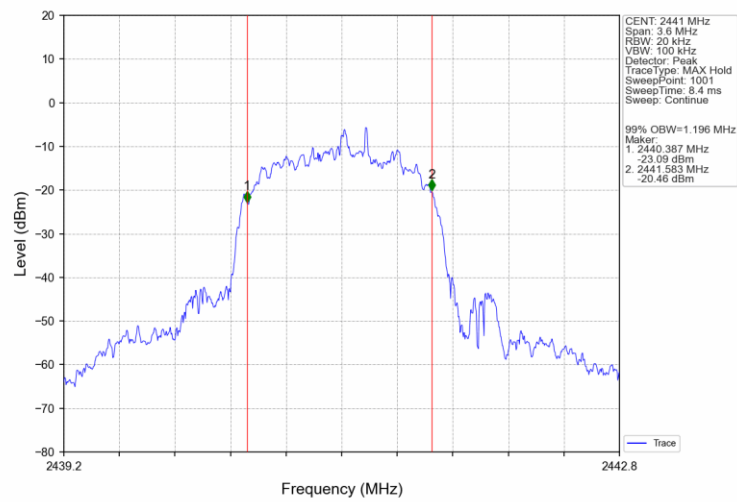
### Pi/4DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV



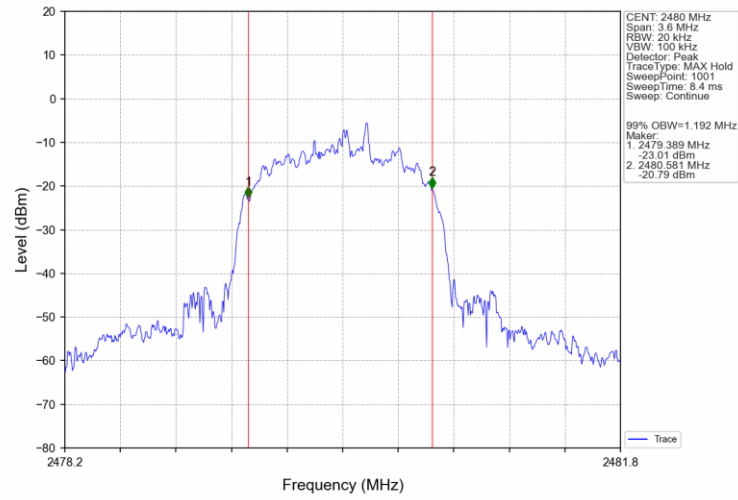
## 8DPSK\_3DH5\_LCH\_2402MHz\_Ant1\_NTNV



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

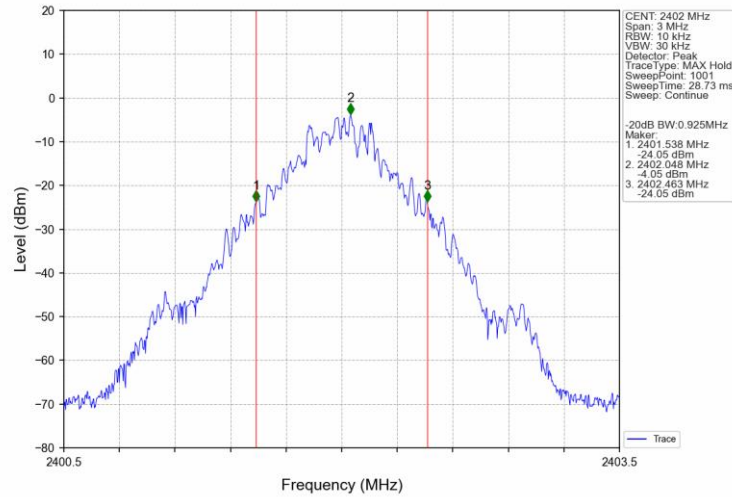


## 8DPSK\_3DH5\_HCH\_2480MHz\_Ant1\_NTNV

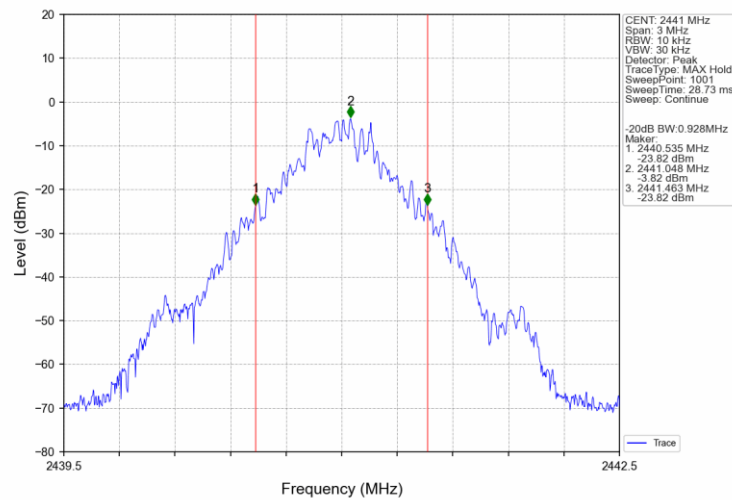


## 1.2.2 20dB BW

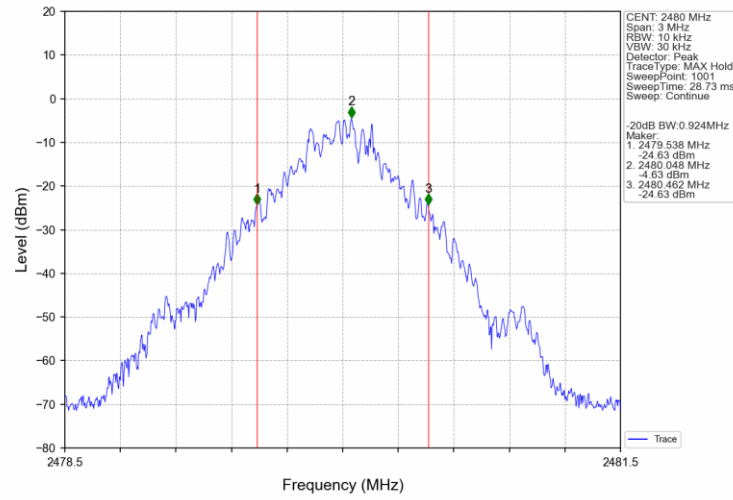
GFSK\_DH5\_LCH\_2402MHz\_Ant1\_NTNV



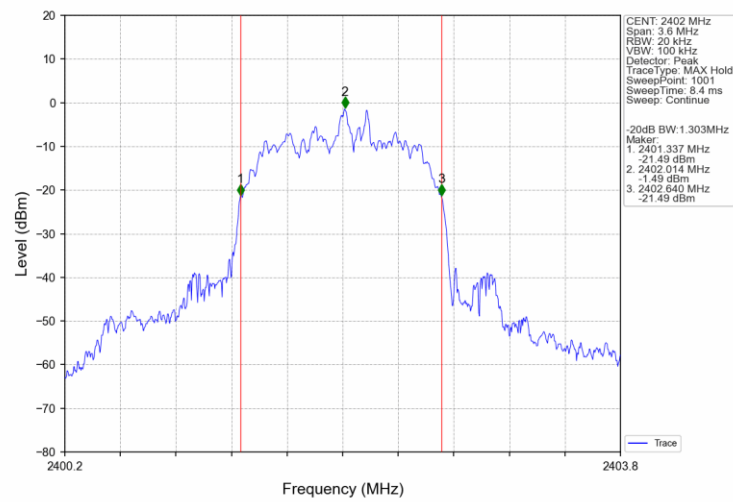
GFSK\_DH5\_MCH\_2441MHz\_Ant1\_NTNV



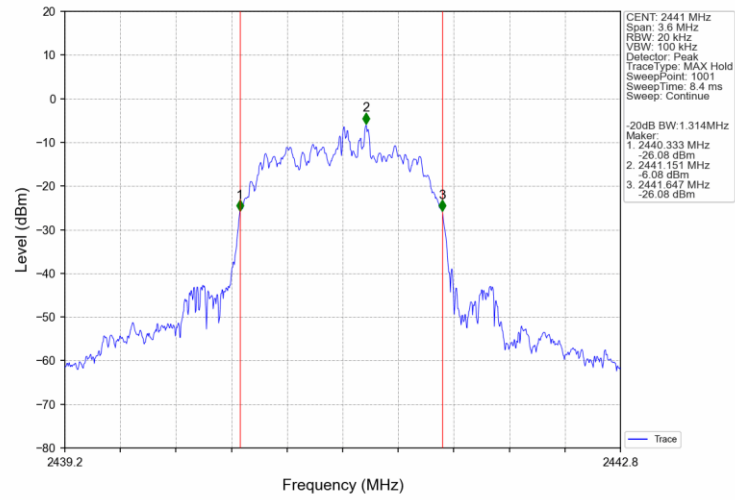
## GFSK\_DH5\_HCH\_2480MHz\_Ant1\_NTNV



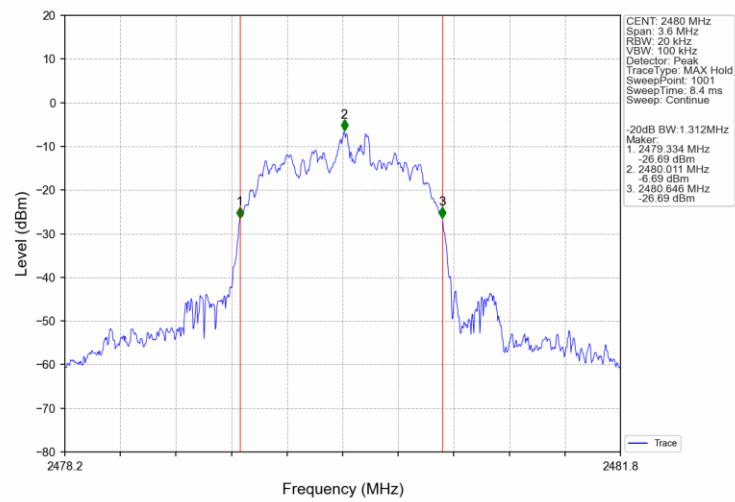
## Pi/4DQPSK\_2DH5\_LCH\_2402MHz\_Ant1\_NTNV



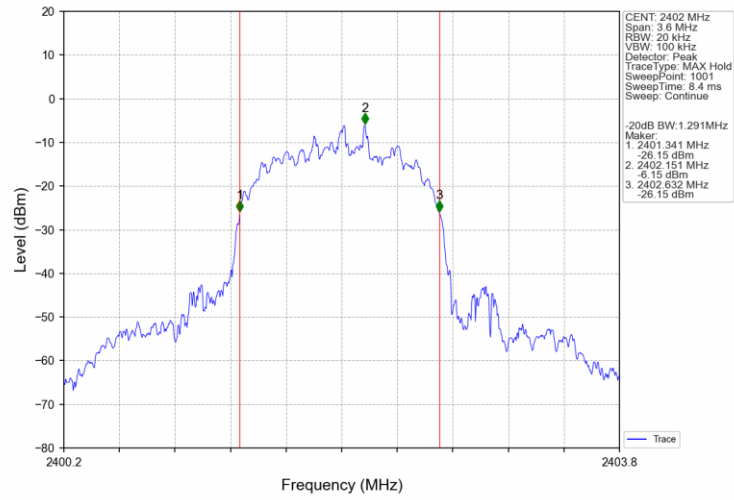
### Pi/4DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV



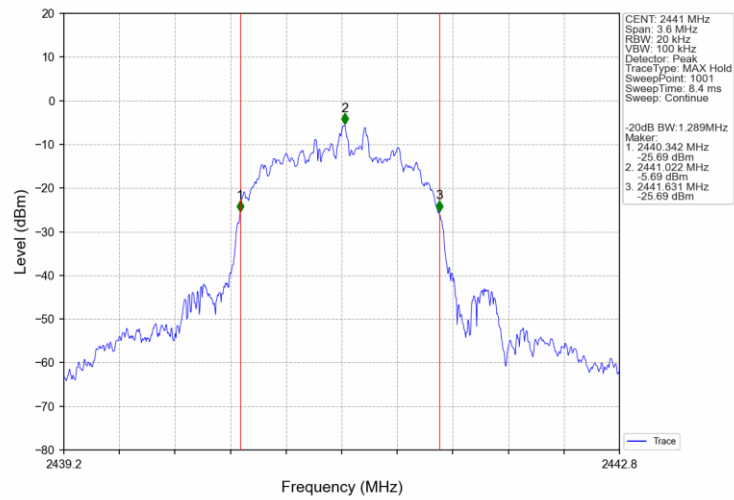
### Pi/4DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV



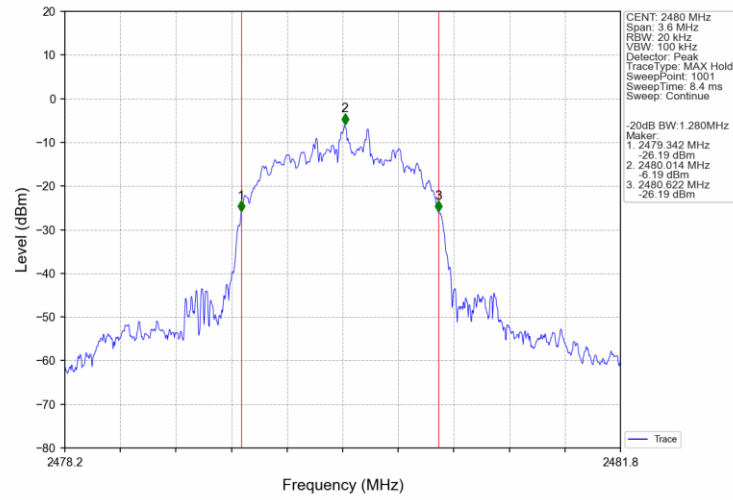
## 8DPSK\_3DH5\_LCH\_2402MHz\_Ant1\_NTNV



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



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



## 2. Maximum Conducted Output Power

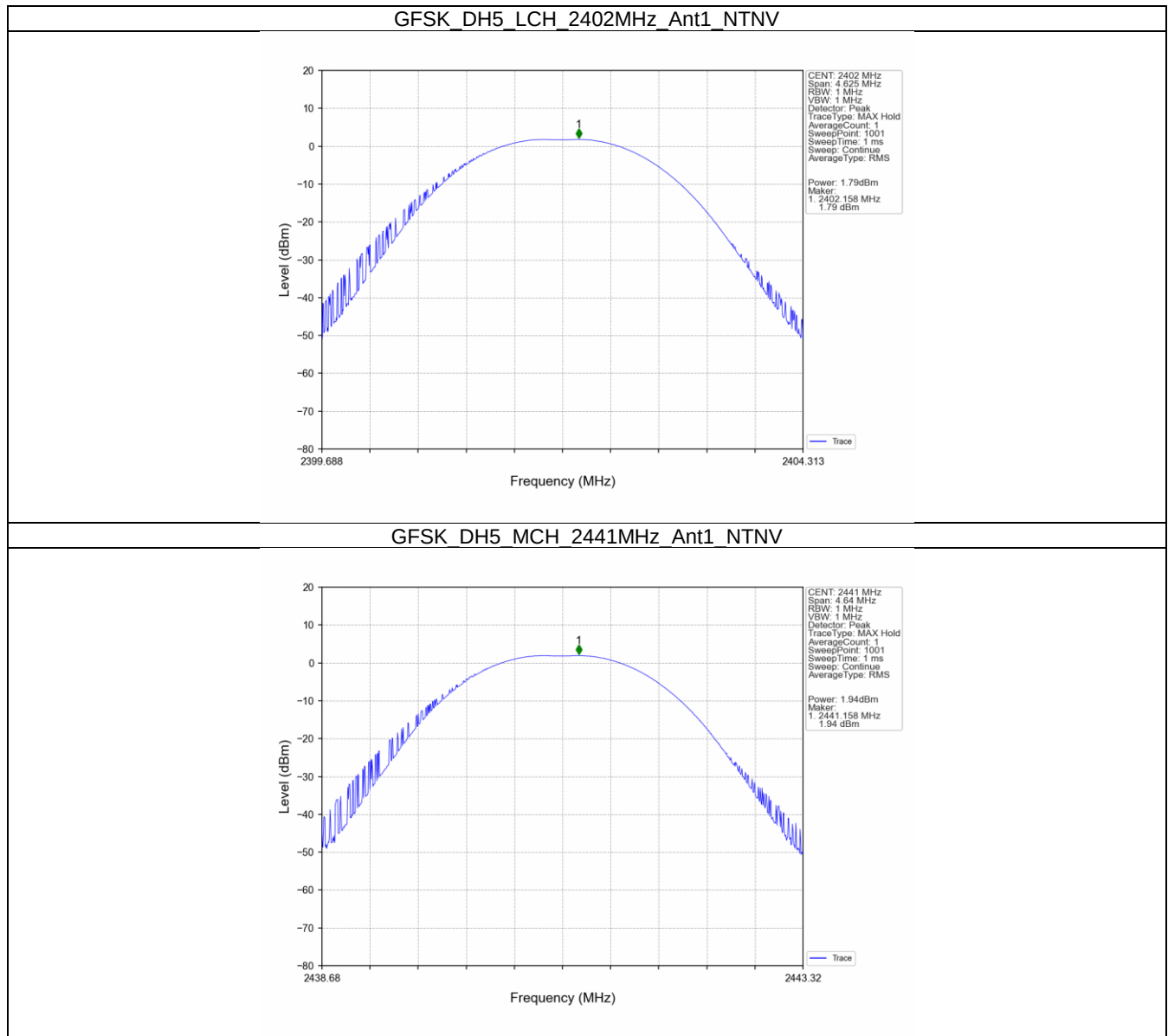
### 2.1 Test Result

#### 2.1.1 Power

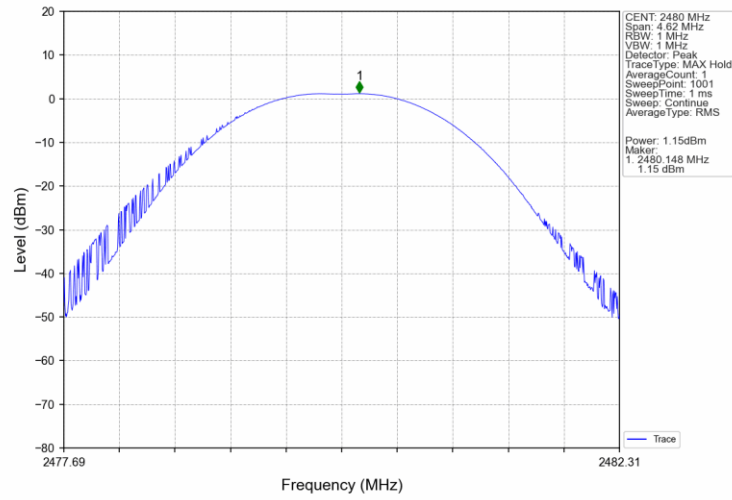
| Mode      | TX Type | Frequency (MHz) | Packet Type | Maximum Peak Conducted Output Power (dBm) |              | Verdict |
|-----------|---------|-----------------|-------------|-------------------------------------------|--------------|---------|
|           |         |                 |             | ANT1                                      | Limit        |         |
| GFSK      | SISO    | 2402            | DH5         | 1.79                                      | $\leq 30$    | Pass    |
|           |         | 2441            | DH5         | 1.94                                      | $\leq 30$    | Pass    |
|           |         | 2480            | DH5         | 1.15                                      | $\leq 30$    | Pass    |
| Pi/4DQPSK | SISO    | 2402            | 2DH5        | -0.59                                     | $\leq 20.97$ | Pass    |
|           |         | 2441            | 2DH5        | -0.01                                     | $\leq 20.97$ | Pass    |
|           |         | 2480            | 2DH5        | -0.86                                     | $\leq 20.97$ | Pass    |
| 8DPSK     | SISO    | 2402            | 3DH5        | 0.42                                      | $\leq 20.97$ | Pass    |
|           |         | 2441            | 3DH5        | 0.30                                      | $\leq 20.97$ | Pass    |
|           |         | 2480            | 3DH5        | -0.62                                     | $\leq 20.97$ | Pass    |

## 2.2 Test Graph

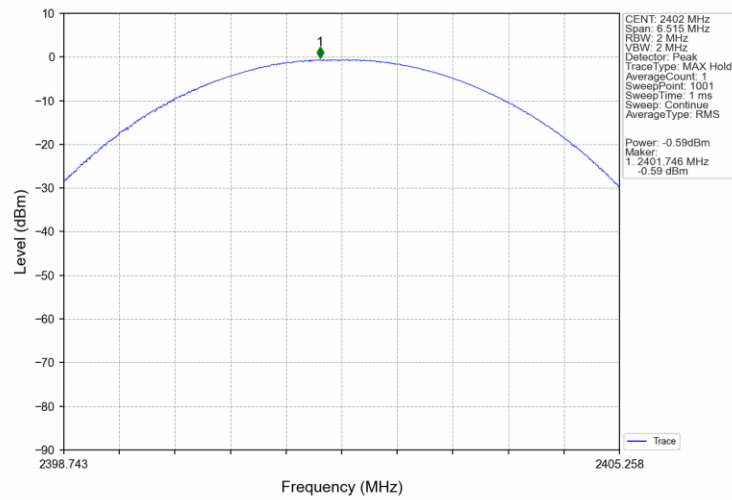
### 2.2.1 Power



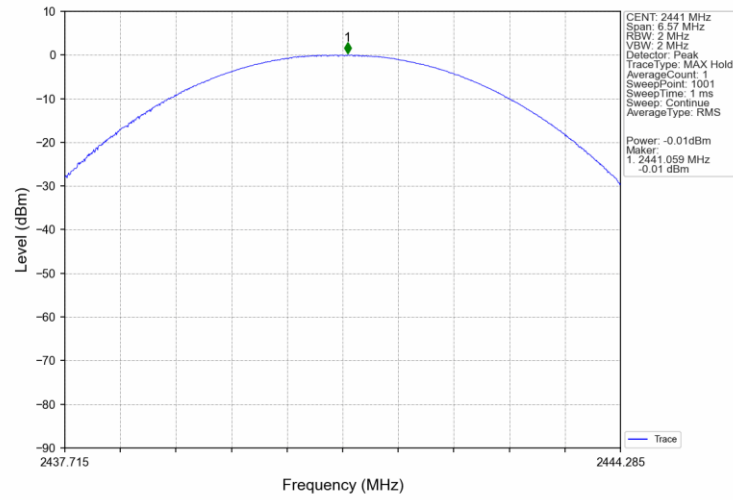
## GFSK\_DH5\_HCH\_2480MHz\_Ant1\_NTNV



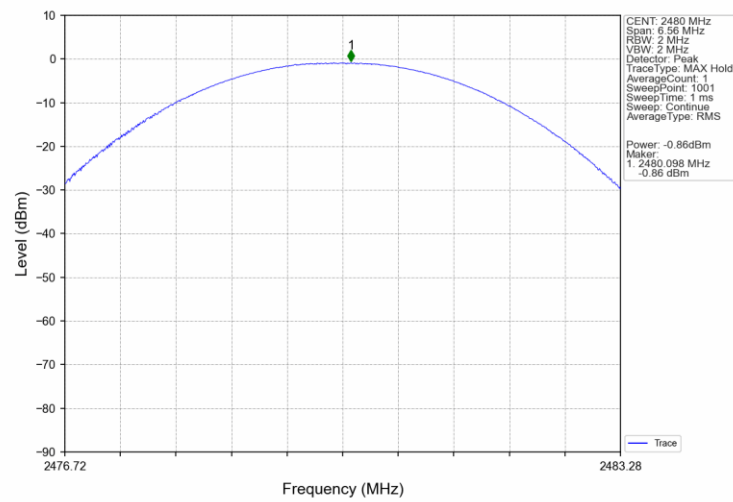
## Pi/4DQPSK\_2DH5\_LCH\_2402MHz\_Ant1\_NTNV



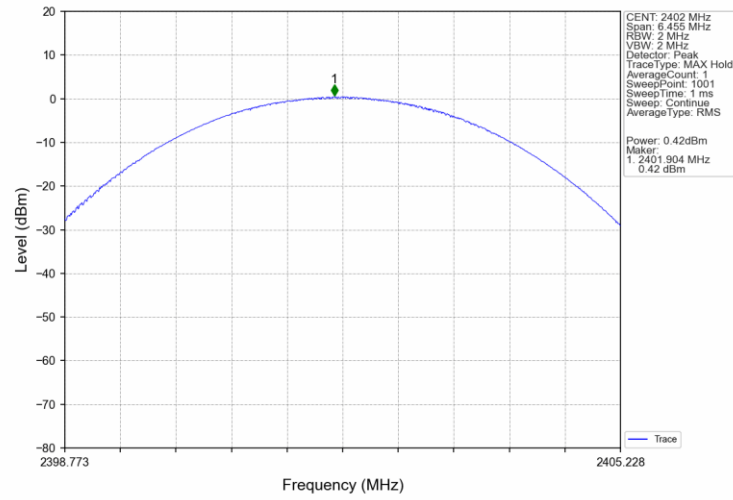
Pi/4DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV



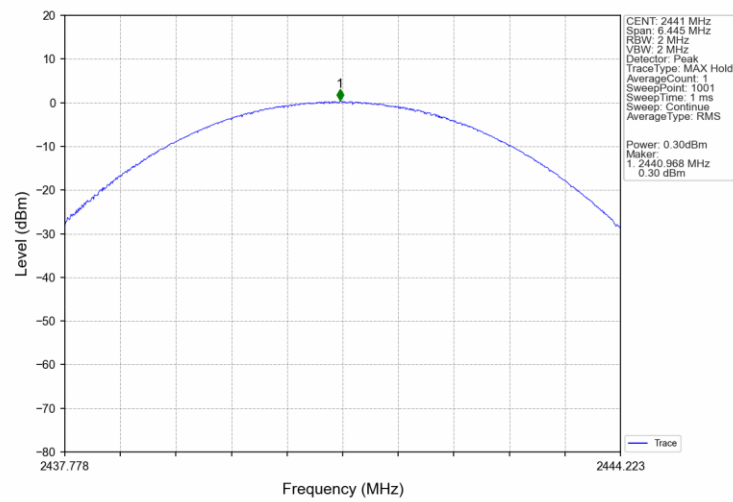
Pi/4DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV



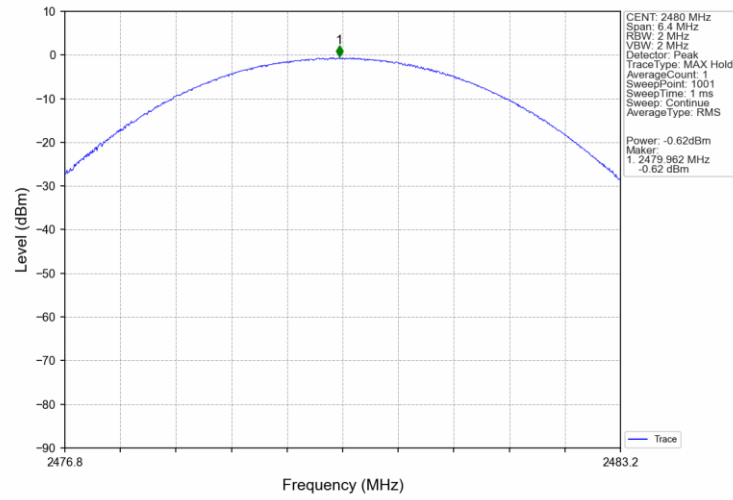
## 8DPSK\_3DH5\_LCH\_2402MHz\_Ant1\_NTNV



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



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



### 3. Carrier Frequency Separation

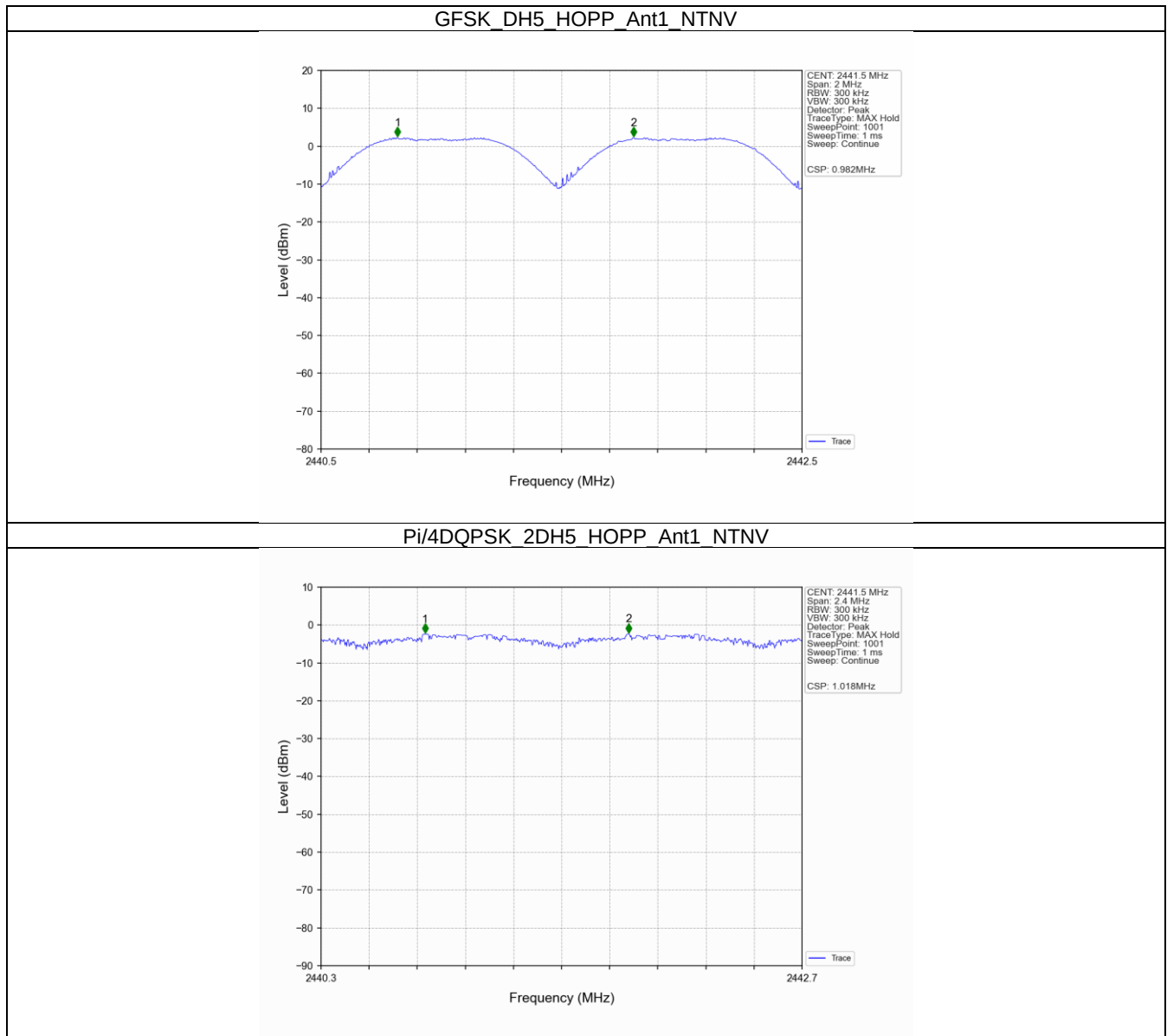
#### 3.1 Test Result

##### 3.1.1 Ant1

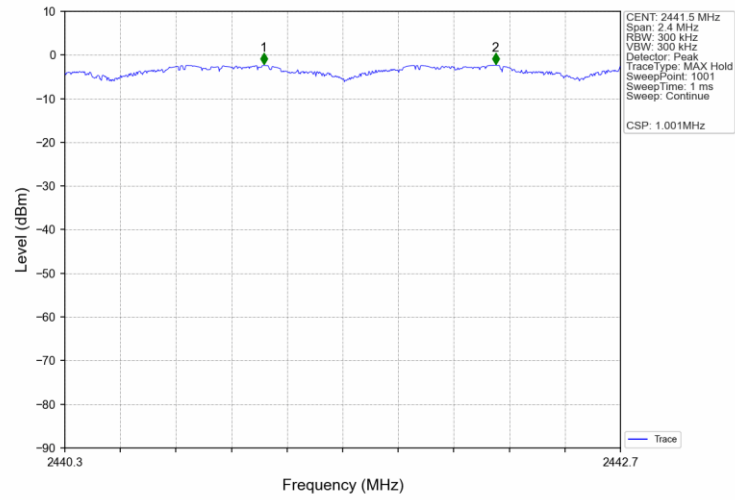
| Ant1      |         |                 |             |                          |                      |              |         |
|-----------|---------|-----------------|-------------|--------------------------|----------------------|--------------|---------|
| Mode      | TX Type | Frequency (MHz) | Packet Type | Channel Separation (MHz) | 20dB Bandwidth (MHz) | Limit (MHz)  | Verdict |
| GFSK      | SISO    | HOPP            | DH5         | 0.982                    | 0.928                | $\geq 0.928$ | Pass    |
| Pi/4DQPSK | SISO    | HOPP            | 2DH5        | 1.018                    | 1.314                | $\geq 0.876$ | Pass    |
| 8DPSK     | SISO    | HOPP            | 3DH5        | 1.001                    | 1.291                | $\geq 0.861$ | Pass    |

## 3.2 Test Graph

### 3.2.1 Ant1



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



## 4. Number of Hopping Frequencies

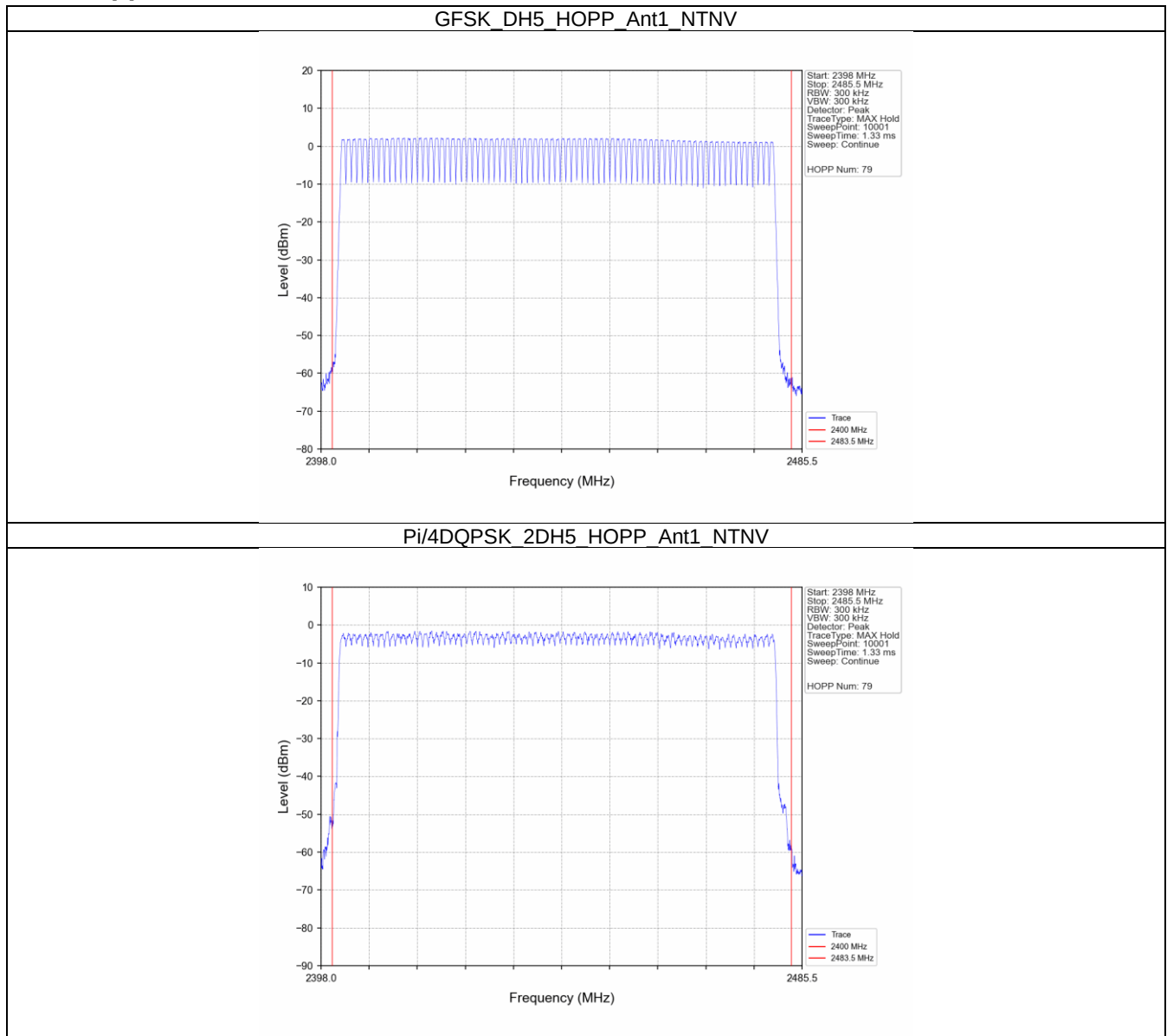
### 4.1 Test Result

#### 4.1.1 HoppNum

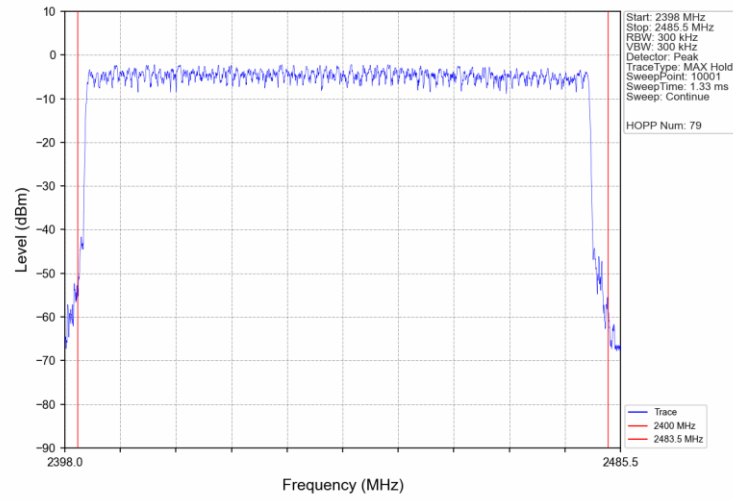
| Mode      | TX Type | Frequency (MHz) | Packet Type | Num of Hopping Frequencies |           | Verdict |
|-----------|---------|-----------------|-------------|----------------------------|-----------|---------|
|           |         |                 |             | ANT1                       | Limit     |         |
| 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)

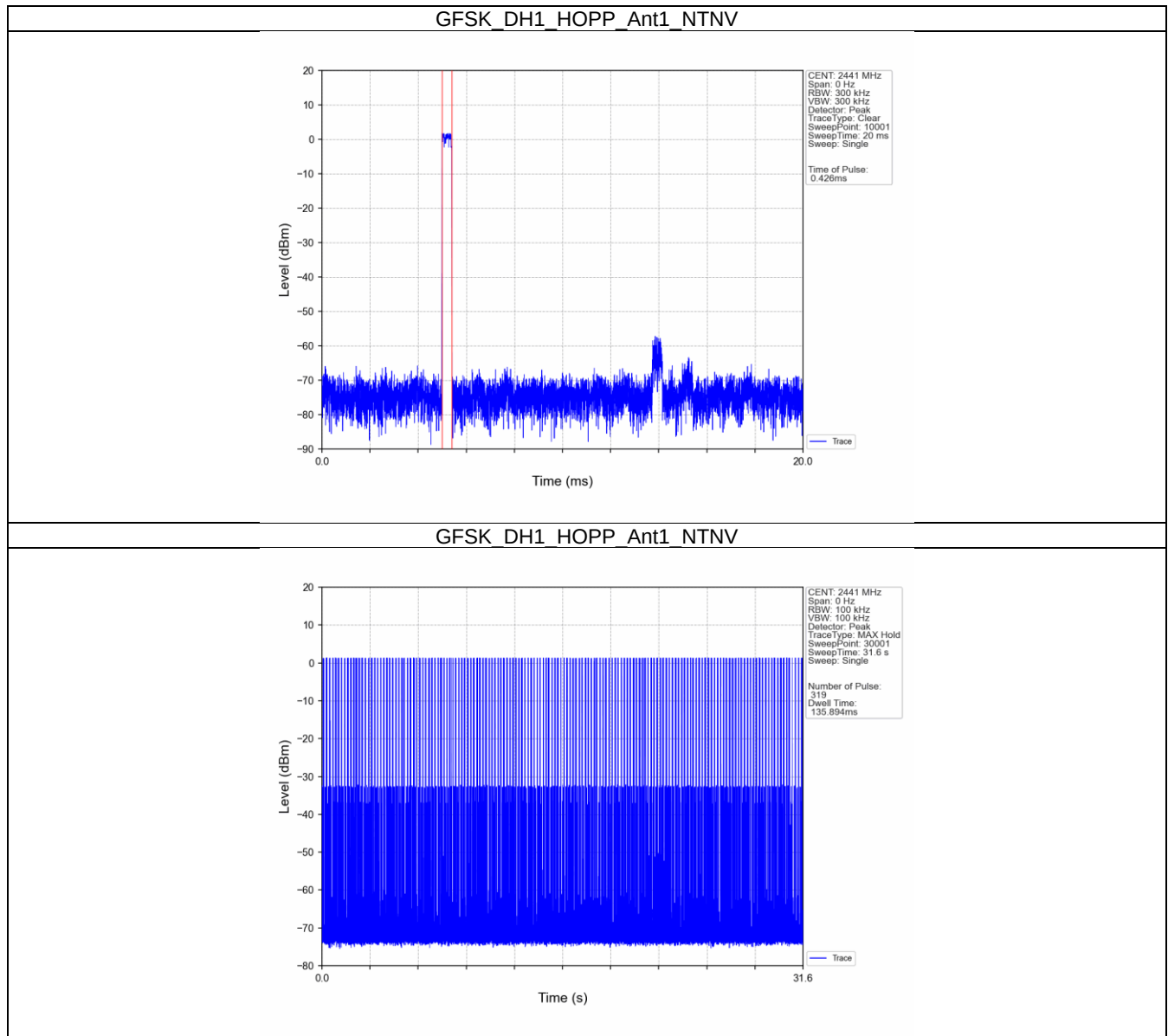
### 5.1 Test Result

#### 5.1.1 Ant1

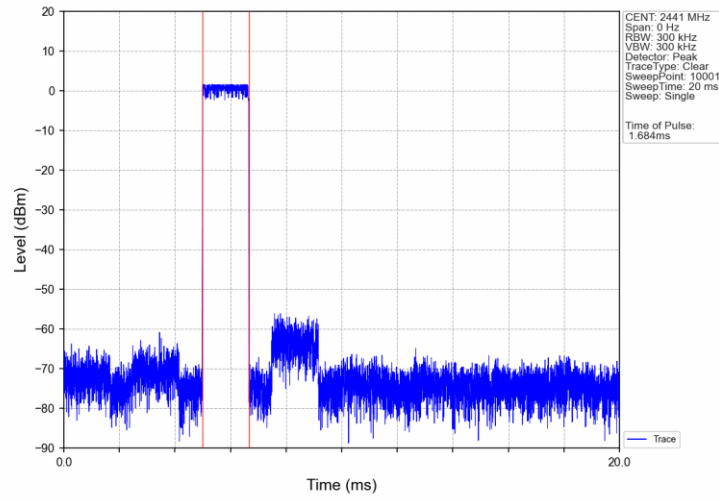
| Ant1      |         |                 |             |                               |                        |                                    |                 |            |         |
|-----------|---------|-----------------|-------------|-------------------------------|------------------------|------------------------------------|-----------------|------------|---------|
| 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         | 0.426                         | 31.600                 | 319                                | 135.894         | <=400      | Pass    |
|           |         |                 | DH3         | 1.684                         | 31.600                 | 155                                | 261.020         | <=400      | Pass    |
|           |         |                 | DH5         | 2.934                         | 31.600                 | 106                                | 311.004         | <=400      | Pass    |
| Pi/4DQPSK | SISO    | HOPP            | 2DH1        | 0.402                         | 31.600                 | 319                                | 128.238         | <=400      | Pass    |
|           |         |                 | 2DH3        | 1.656                         | 31.600                 | 164                                | 271.584         | <=400      | Pass    |
|           |         |                 | 2DH5        | 2.918                         | 31.600                 | 119                                | 347.242         | <=400      | Pass    |
| 8DPSK     | SISO    | HOPP            | 3DH1        | 0.400                         | 31.600                 | 320                                | 128.000         | <=400      | Pass    |
|           |         |                 | 3DH3        | 1.666                         | 31.600                 | 153                                | 254.898         | <=400      | Pass    |
|           |         |                 | 3DH5        | 2.918                         | 31.600                 | 102                                | 297.636         | <=400      | Pass    |

## 5.2 Test Graph

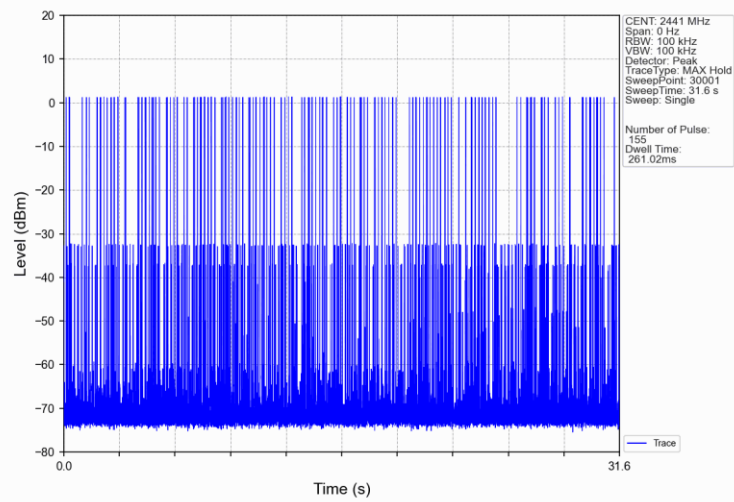
### 5.2.1 Ant1



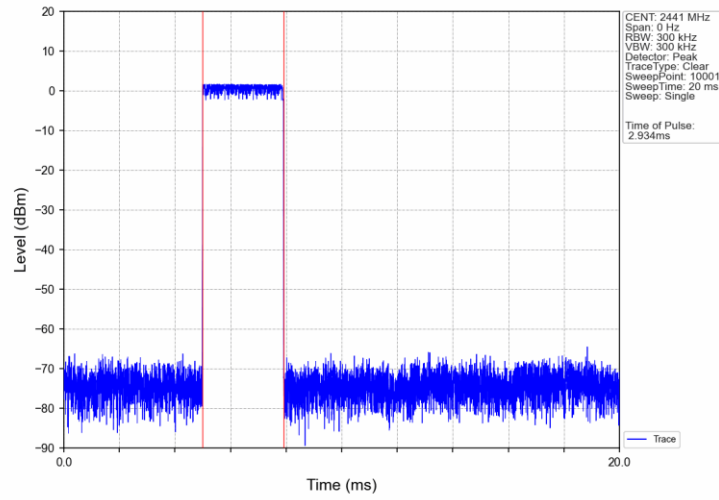
## GFSK\_DH3\_HOPP\_Ant1\_NTNV



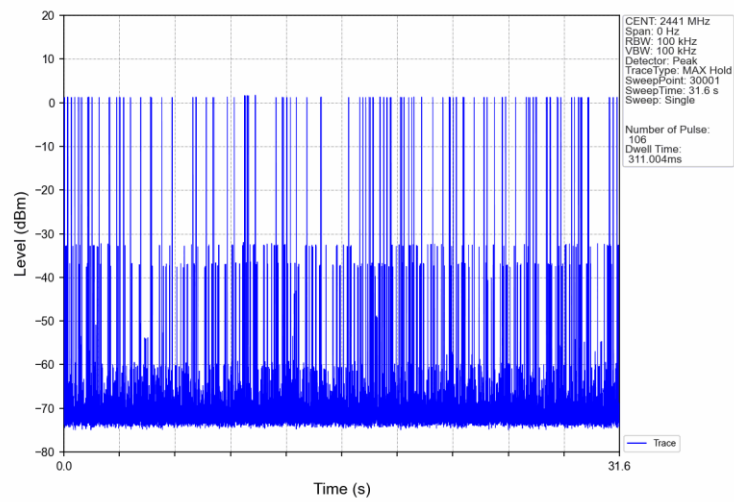
## GFSK\_DH3\_HOPP\_Ant1\_NTNV



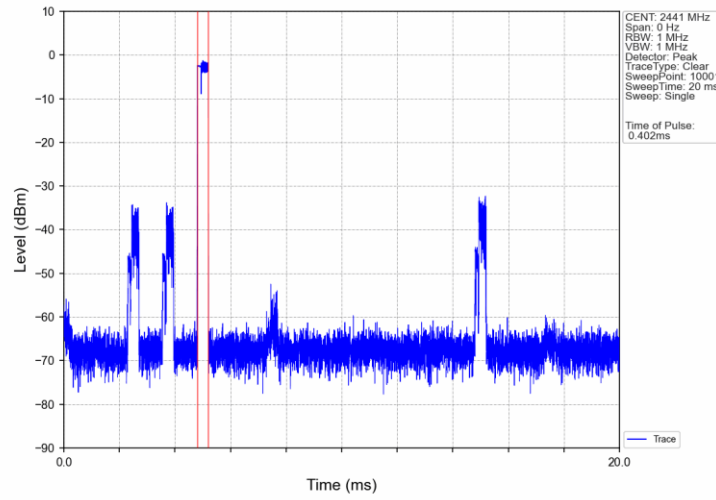
## GFSK\_DH5\_HOPP\_Ant1\_NTNV



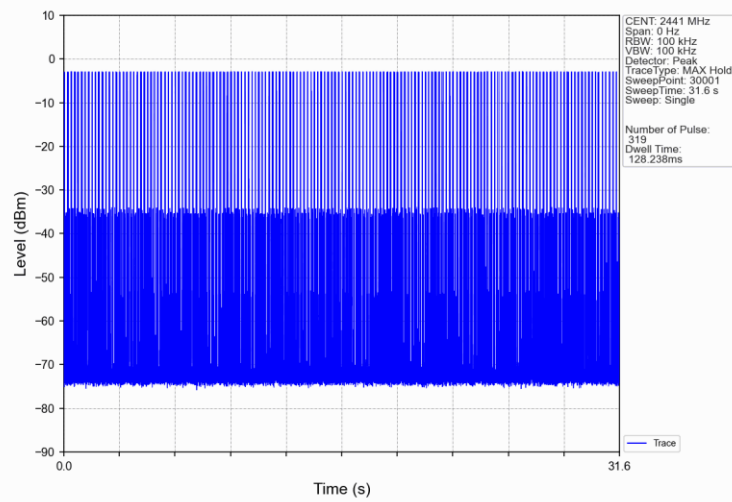
## GFSK\_DH5\_HOPP\_Ant1\_NTNV



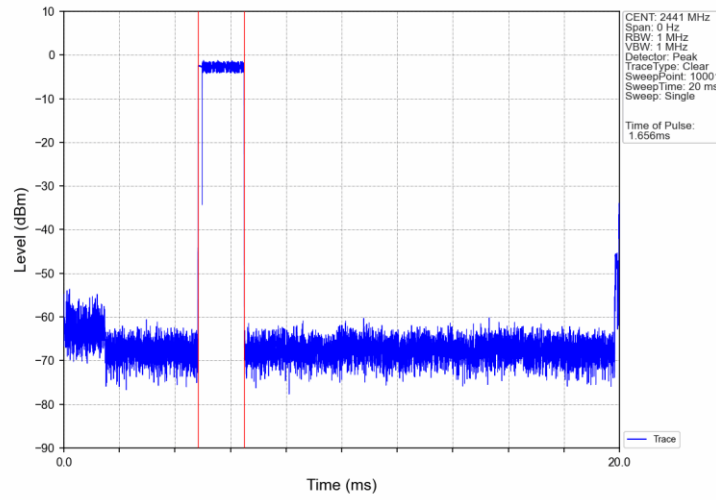
Pi/4DQPSK\_2DH1\_HOPP\_Ant1\_NTNV



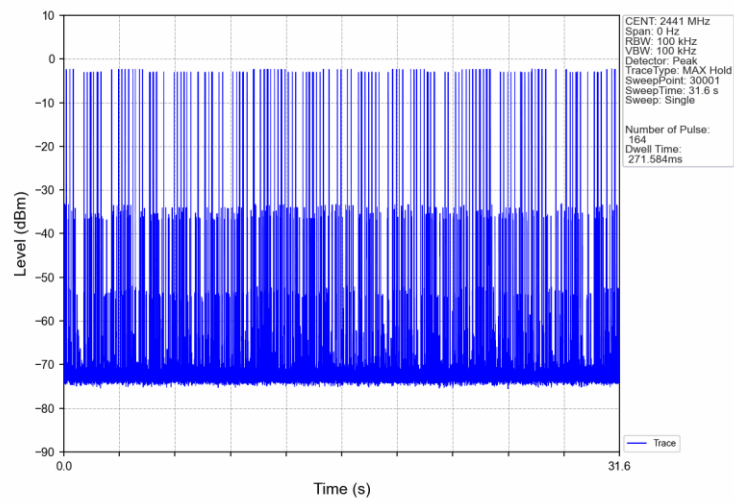
Pi/4DQPSK\_2DH1\_HOPP\_Ant1\_NTNV



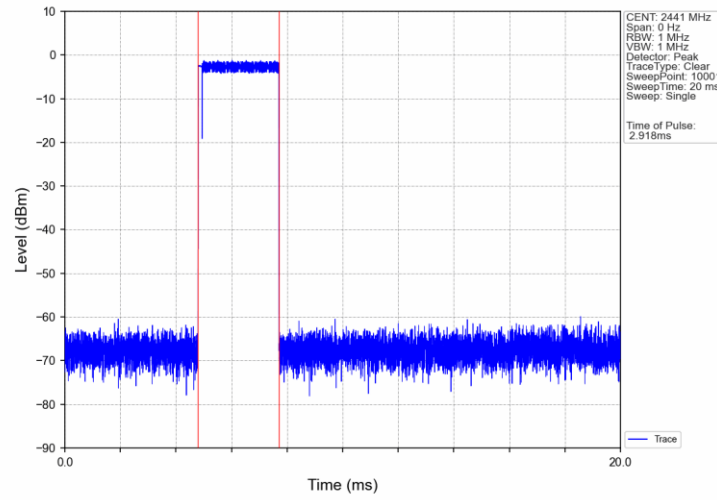
Pi/4DQPSK\_2DH3\_HOPP\_Ant1\_NTNV



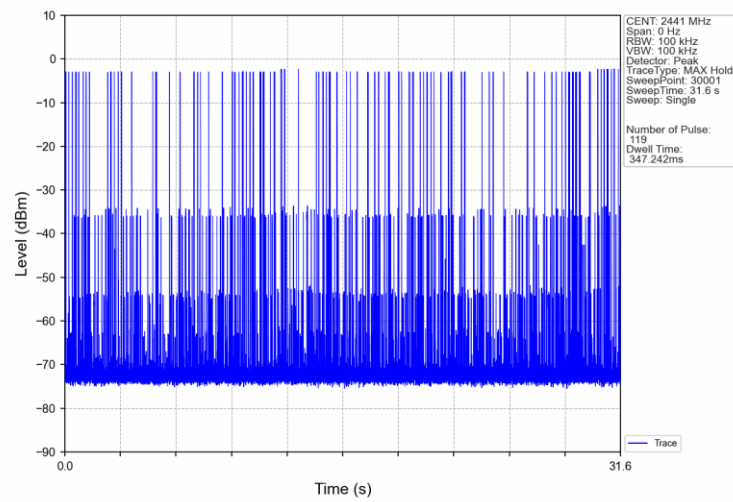
Pi/4DQPSK\_2DH3\_HOPP\_Ant1\_NTNV



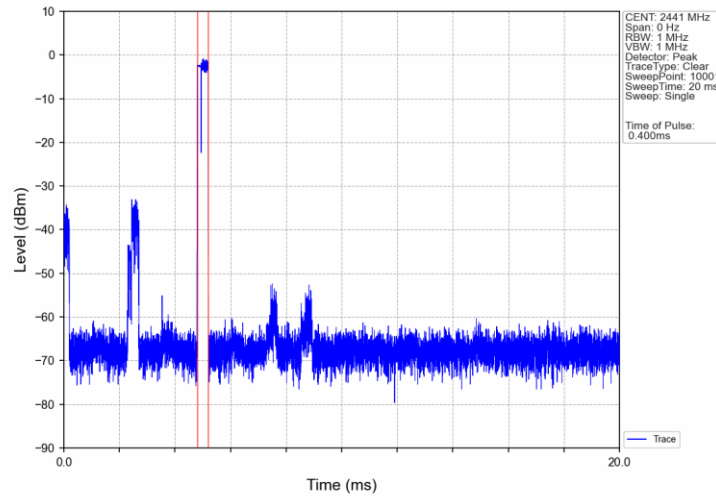
### Pi/4DQPSK\_2DH5\_HOPP\_Ant1\_NTNV



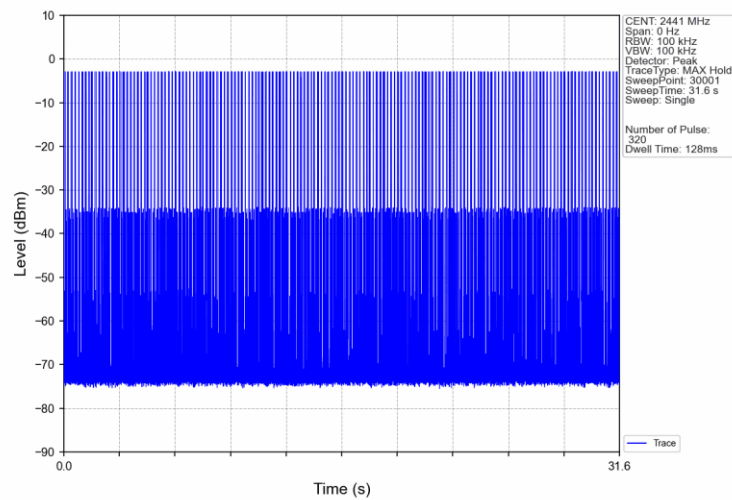
### Pi/4DQPSK\_2DH5\_HOPP\_Ant1\_NTNV



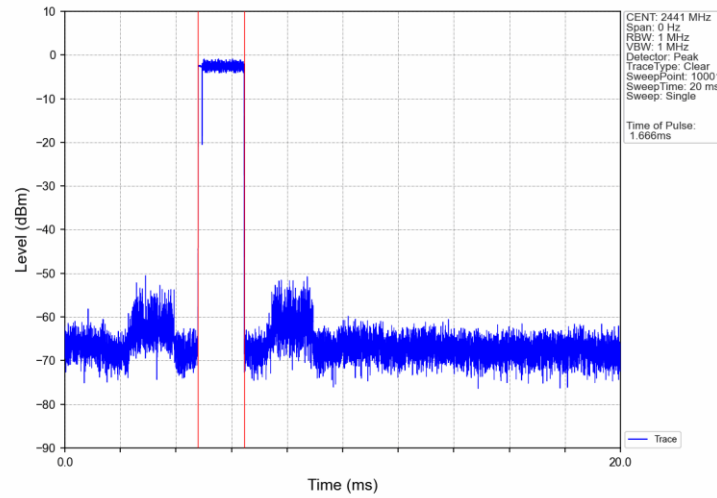
## 8DPSK\_3DH1\_HOPP\_Ant1\_NTNV



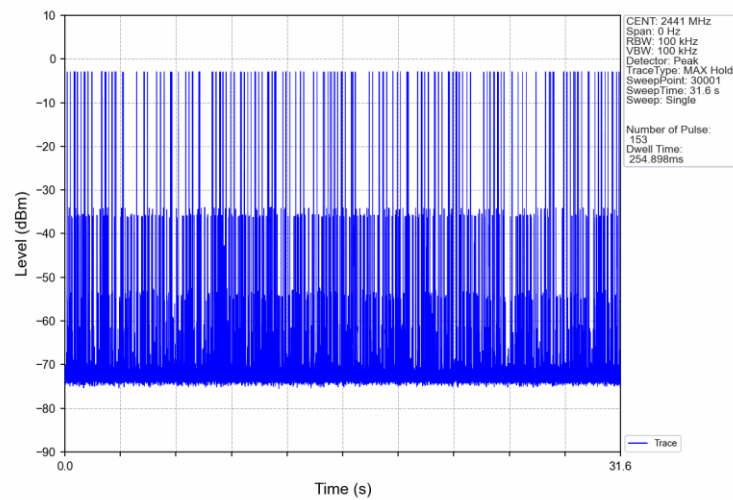
## 8DPSK\_3DH1\_HOPP\_Ant1\_NTNV



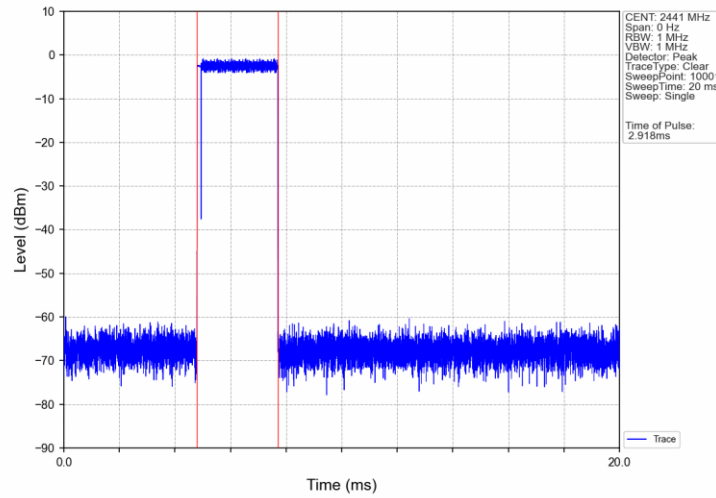
## 8DPSK\_3DH3\_HOPP\_Ant1\_NTNV



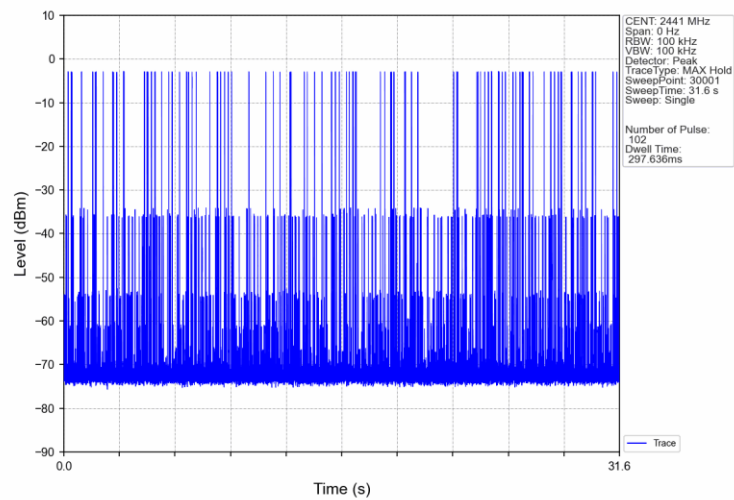
## 8DPSK\_3DH3\_HOPP\_Ant1\_NTNV



## 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

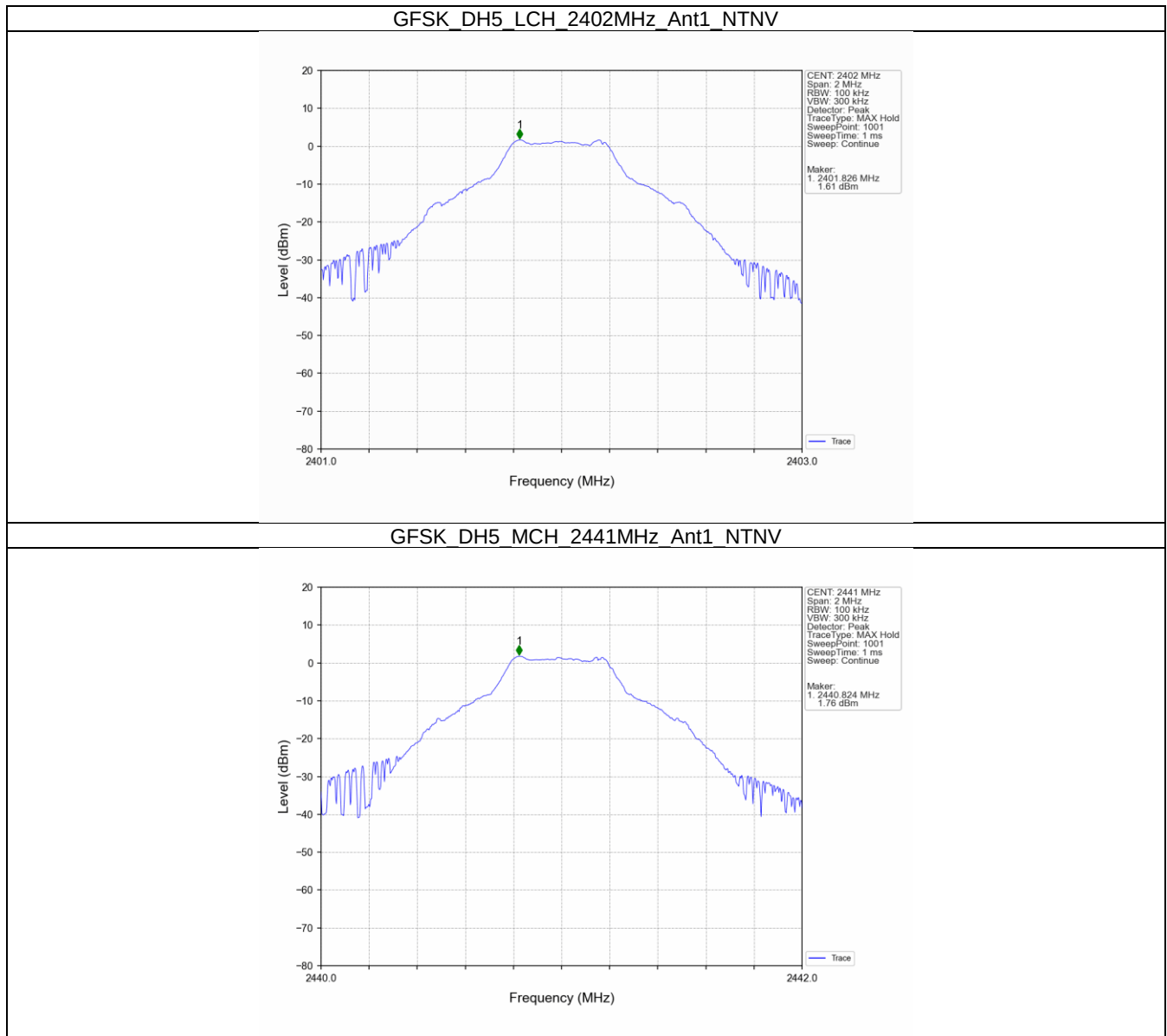
| Mode      | TX Type | Frequency (MHz) | Packet Type | ANT | Level of Reference (dBm) |
|-----------|---------|-----------------|-------------|-----|--------------------------|
| GFSK      | SISO    | 2402            | DH5         | 1   | 1.61                     |
|           |         | 2441            | DH5         | 1   | 1.76                     |
|           |         | 2480            | DH5         | 1   | 0.95                     |
|           |         | HOPP            | DH5         | 1   | 2.16                     |
| Pi/4DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.89                     |
|           |         | 2441            | 2DH5        | 1   | -2.03                    |
|           |         | 2480            | 2DH5        | 1   | -2.69                    |
|           |         | HOPP            | 2DH5        | 1   | -1.97                    |
| 8DPSK     | SISO    | 2402            | 3DH5        | 1   | -2.10                    |
|           |         | 2441            | 3DH5        | 1   | -2.12                    |
|           |         | 2480            | 3DH5        | 1   | -2.57                    |
|           |         | HOPP            | 3DH5        | 1   | -1.79                    |

#### 6.1.2 CSE

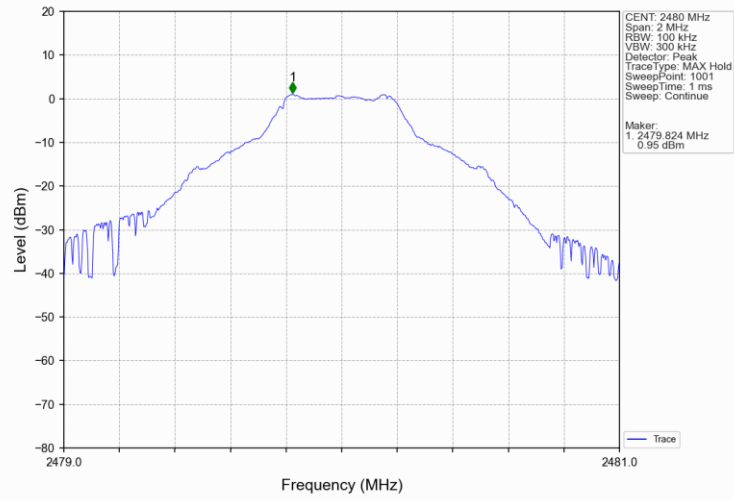
| Mode      | TX Type | Frequency (MHz) | Packet Type | ANT | Level of Reference (dBm) | Limit (dBm) | Verdict |
|-----------|---------|-----------------|-------------|-----|--------------------------|-------------|---------|
| GFSK      | SISO    | 2402            | DH5         | 1   | 1.61                     | -18.39      | Pass    |
|           |         | 2441            | DH5         | 1   | 1.76                     | -18.24      | Pass    |
|           |         | 2480            | DH5         | 1   | 0.95                     | -19.05      | Pass    |
|           |         | HOPP            | DH5         | 1   | 2.16                     | -17.84      | Pass    |
|           |         |                 |             |     | 2.16                     | -17.84      | Pass    |
| Pi/4DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.89                     | -18.11      | Pass    |
|           |         | 2441            | 2DH5        | 1   | -2.03                    | -22.03      | Pass    |
|           |         | 2480            | 2DH5        | 1   | -2.69                    | -22.69      | Pass    |
|           |         | HOPP            | 2DH5        | 1   | -1.97                    | -21.97      | Pass    |
|           |         |                 |             |     | -1.97                    | -21.97      | Pass    |
| 8DPSK     | SISO    | 2402            | 3DH5        | 1   | -2.10                    | -22.10      | Pass    |
|           |         | 2441            | 3DH5        | 1   | -2.12                    | -22.12      | Pass    |
|           |         | 2480            | 3DH5        | 1   | -2.57                    | -22.57      | Pass    |
|           |         | HOPP            | 3DH5        | 1   | -1.79                    | -21.79      | Pass    |
|           |         |                 |             |     | -1.79                    | -21.79      | Pass    |

## 6.2 Test Graph

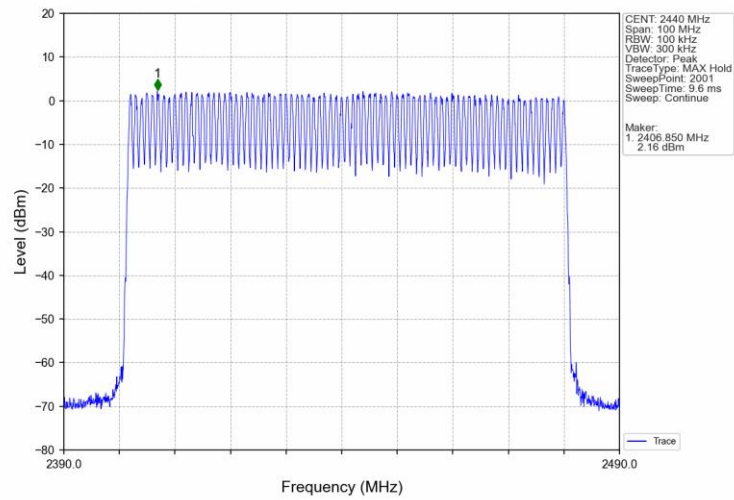
### 6.2.1 Ref



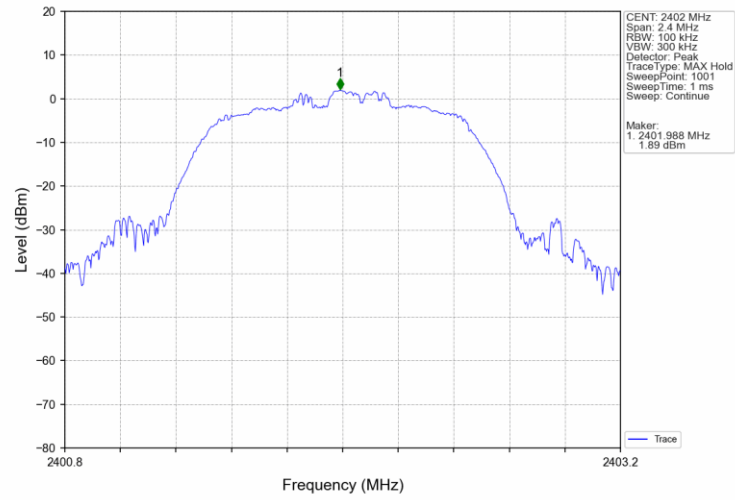
## GFSK\_DH5\_HCH\_2480MHz\_Ant1\_NTNV



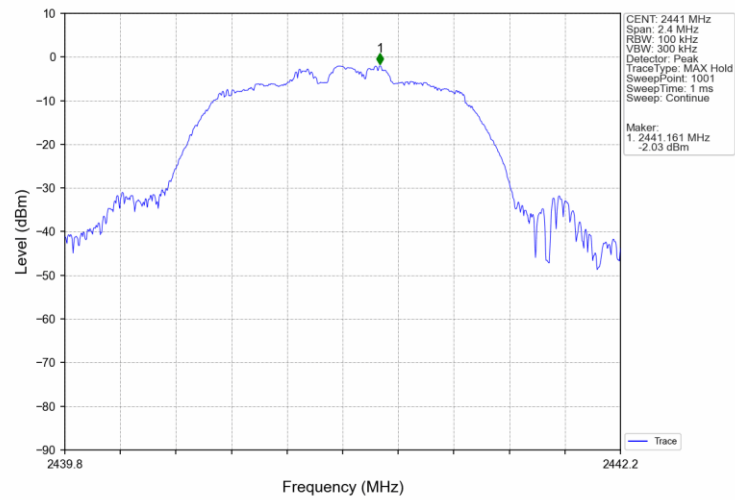
## GFSK\_DH5\_HOPP\_Ant1\_NTNV



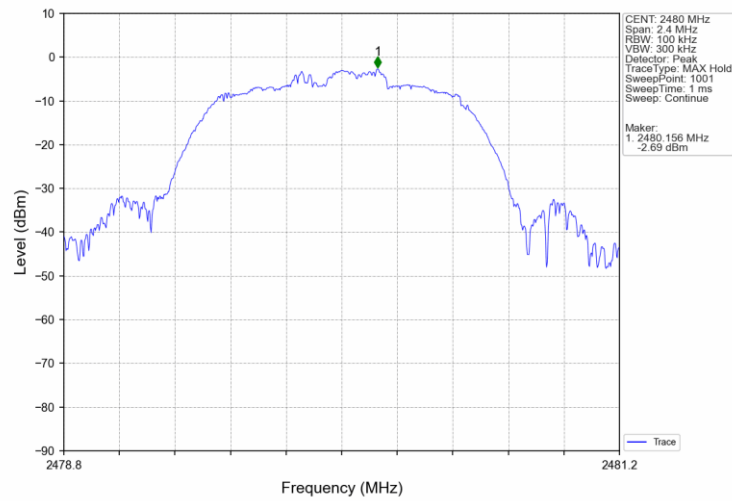
Pi/4DQPSK\_2DH5\_LCH\_2402MHz\_Ant1\_NTNV



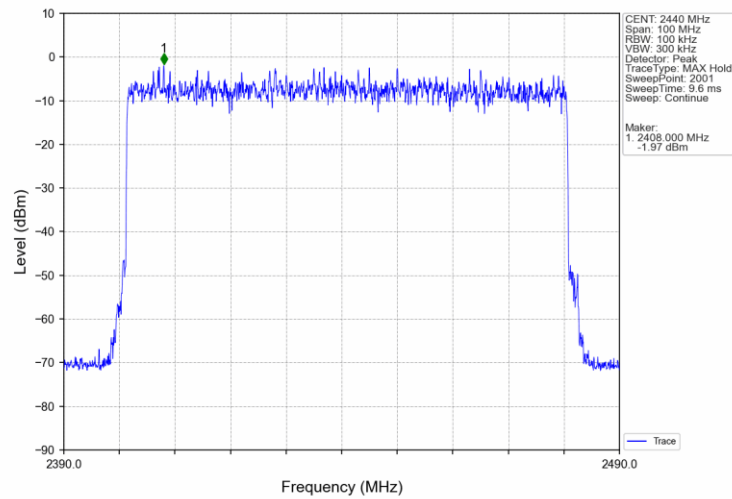
Pi/4DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV



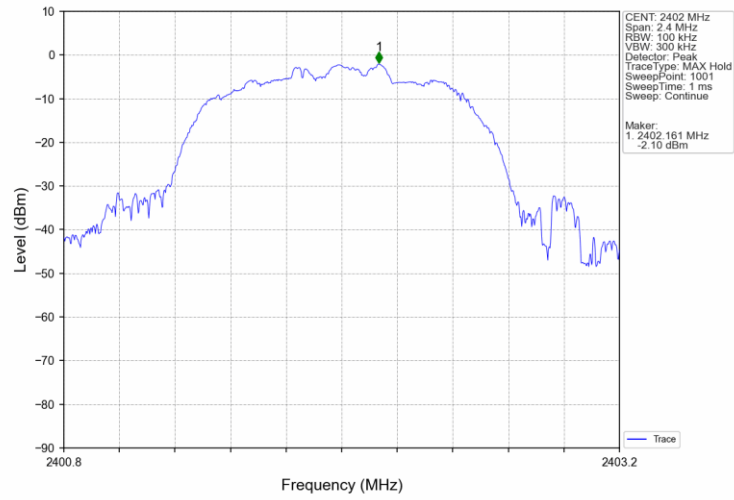
Pi/4DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV



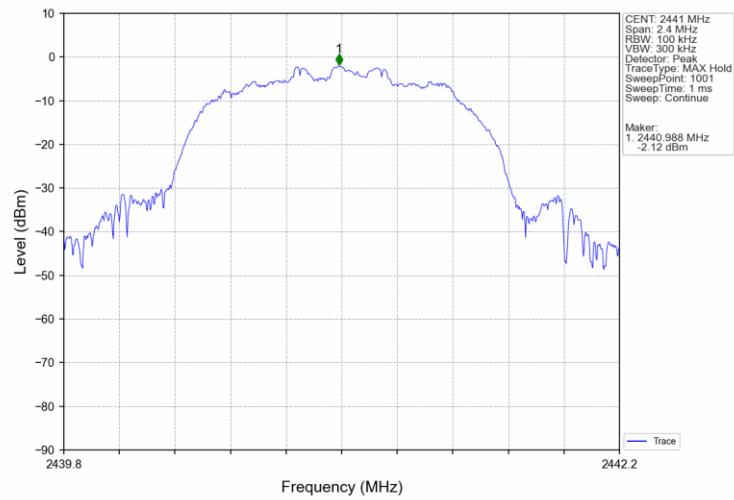
### Pi/4DQPSK\_2DH5\_HOPP\_Ant1\_NTNV



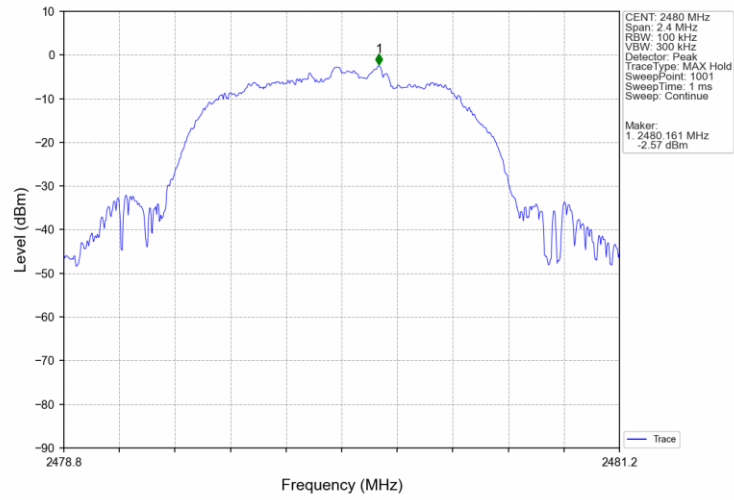
## 8DPSK\_3DH5\_LCH\_2402MHz\_Ant1\_NTNV



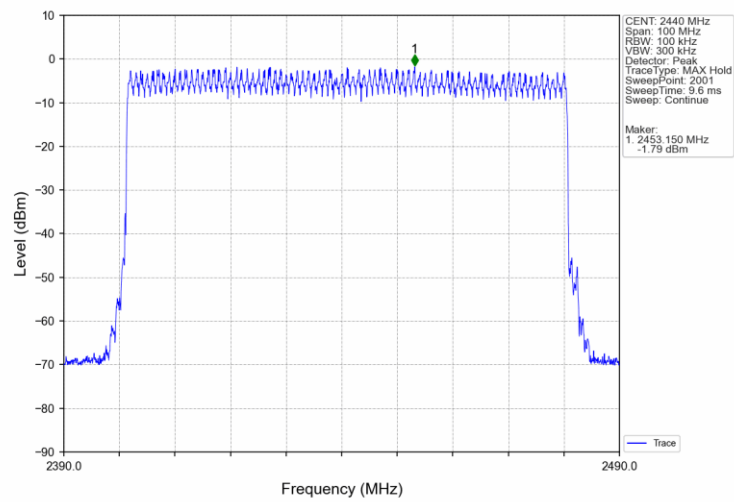
## 8DPSK\_3DH5\_MCH\_2441MHz\_Ant1\_NTNV



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

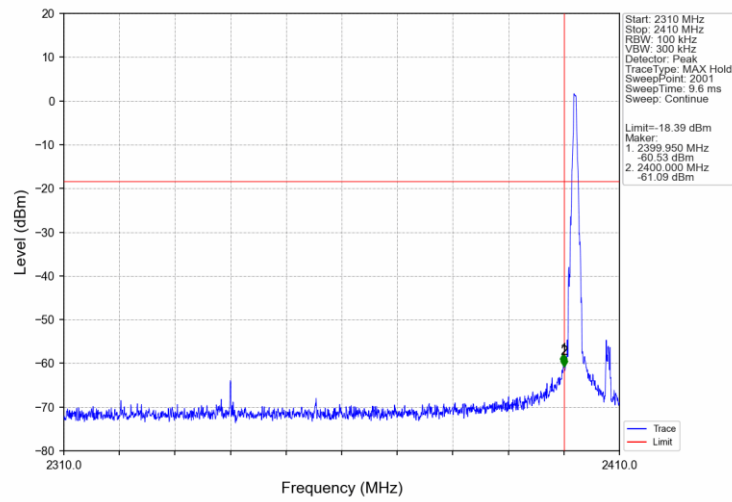


### 8DPSK\_3DH5\_HOPP\_Ant1\_NTNV



## 6.2.2 CSE

GFSK\_DH5\_LCH\_2402MHz\_Ant1\_NTNV



GFSK\_DH5\_LCH\_2402MHz\_Ant1\_NTNV

