

# RF Test Data

## For

|                      |                                  |
|----------------------|----------------------------------|
| Project No.:         | DLE-251013052R                   |
| Client:              | SHENZHEN FCAR TECHNOLOGY CO.,LTD |
| Manufacturer:        | SHENZHEN FCAR TECHNOLOGY CO.,LTD |
| Product Description: | VCI                              |
| Model Number:        | FV400                            |
| Test Engineer:       | Alisa Song                       |
| Test Date:           | 2025-11-11                       |

## Test Summary

| Item                                                 | Result |
|------------------------------------------------------|--------|
| Duty Cycle                                           | Pass   |
| Bandwidth                                            | Pass   |
| Maximum Conducted Output Power                       | Pass   |
| Carrier Frequency Separation                         | Pass   |
| Number of Hopping Frequencies                        | Pass   |
| Time of Occupancy (Dwell Time)                       | Pass   |
| Unwanted Emissions In Non-restricted Frequency Bands | Pass   |
| Frequency Error                                      | Pass   |

# 1. Duty Cycle

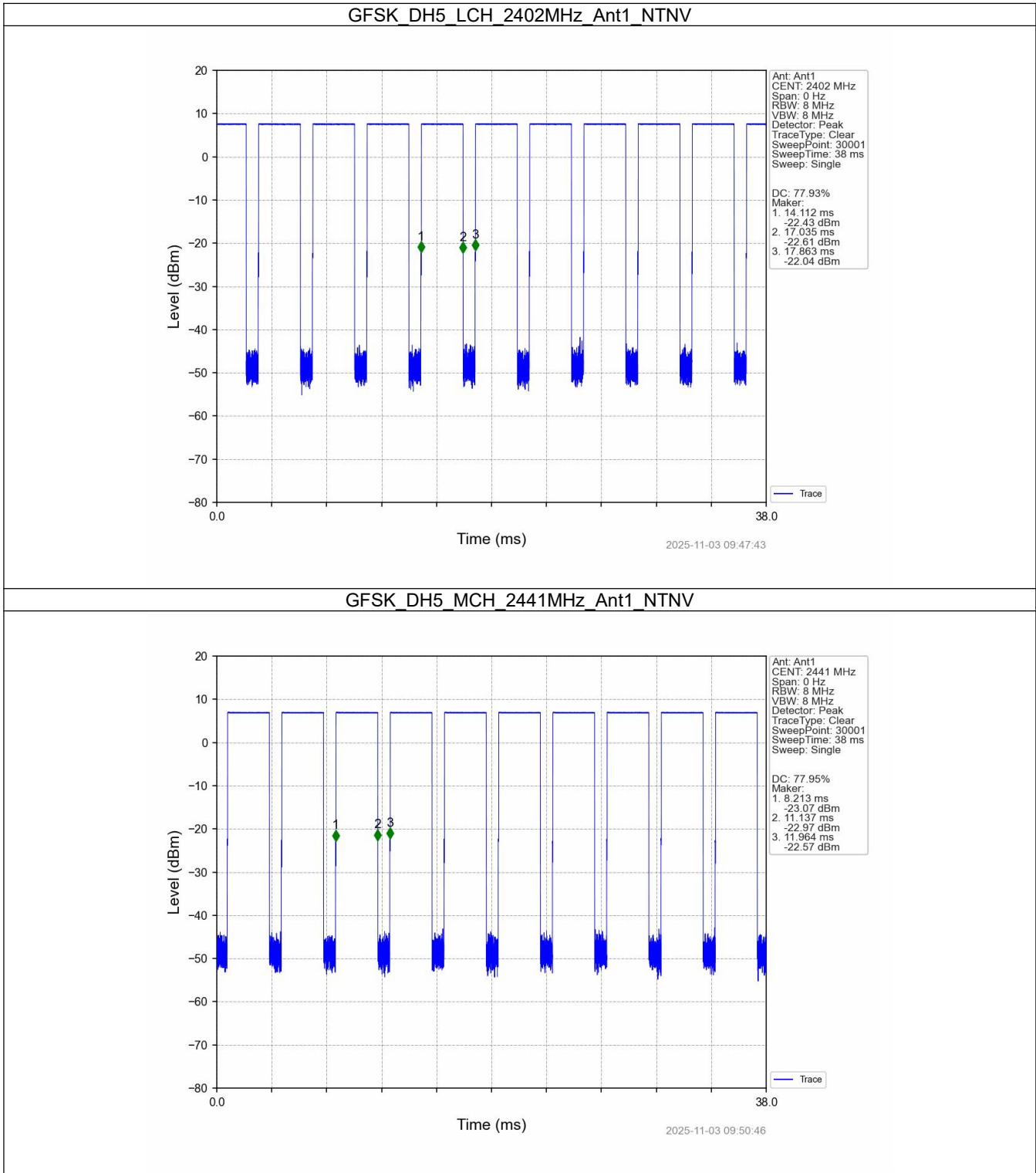
## 1.1 Test Result

### 1.1.1 Ant1

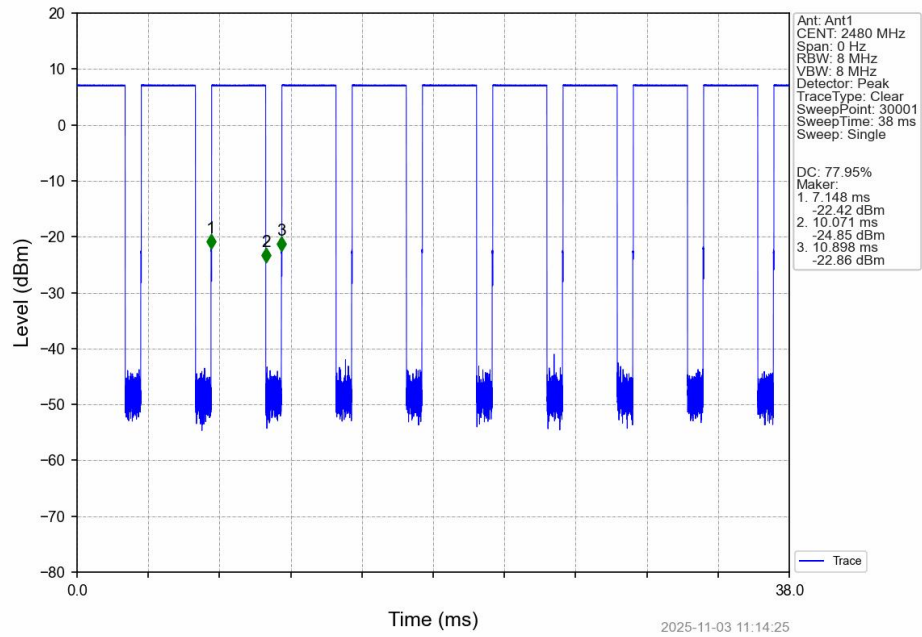
| Ant1      |         |                 |             |           |             |                |                                   |                       |
|-----------|---------|-----------------|-------------|-----------|-------------|----------------|-----------------------------------|-----------------------|
| Mode      | TX Type | Frequency (MHz) | Packet Type | T_on (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle Correction Factor (dB) | Max. DC Variation (%) |
| GFSK      | SISO    | 2402            | DH5         | 2.923     | 3.751       | 77.93          | 1.08                              | 0.03                  |
|           |         | 2441            | DH5         | 2.924     | 3.751       | 77.95          | 1.08                              | 0.03                  |
|           |         | 2480            | DH5         | 2.923     | 3.750       | 77.95          | 1.08                              | 0.03                  |
| Pi/4DQPSK | SISO    | 2402            | 2DH5        | 2.926     | 3.750       | 78.03          | 1.08                              | 0.03                  |
|           |         | 2441            | 2DH5        | 2.926     | 3.751       | 78.01          | 1.08                              | 0.03                  |
|           |         | 2480            | 2DH5        | 2.926     | 3.750       | 78.03          | 1.08                              | 0.01                  |
| 8DPSK     | SISO    | 2402            | 3DH5        | 2.927     | 3.749       | 78.07          | 1.07                              | 0.01                  |
|           |         | 2441            | 3DH5        | 2.927     | 3.750       | 78.05          | 1.08                              | 0.01                  |
|           |         | 2480            | 3DH5        | 2.927     | 3.749       | 78.07          | 1.07                              | 0.01                  |

# 1.2 Test Graph

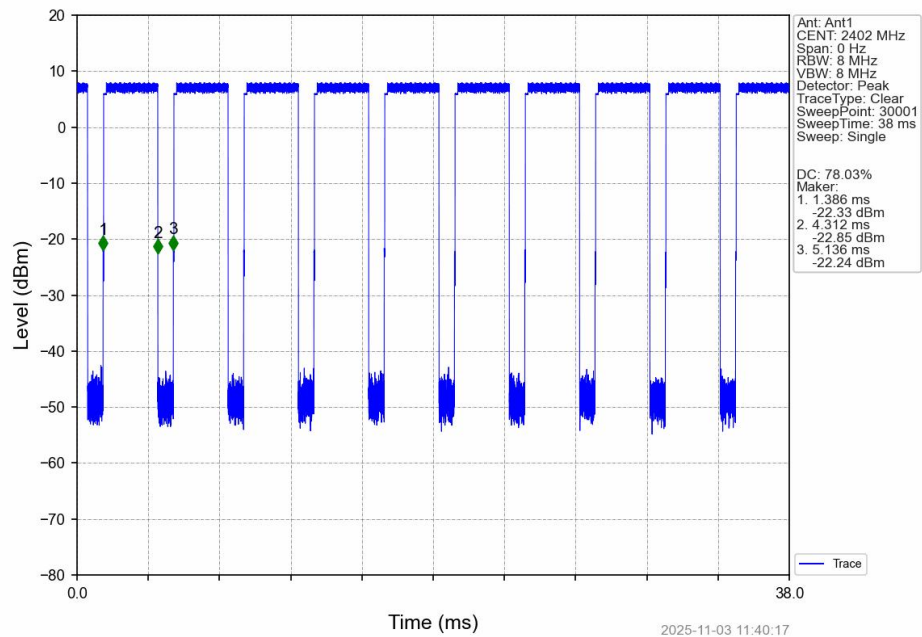
## 1.2.1 Ant1



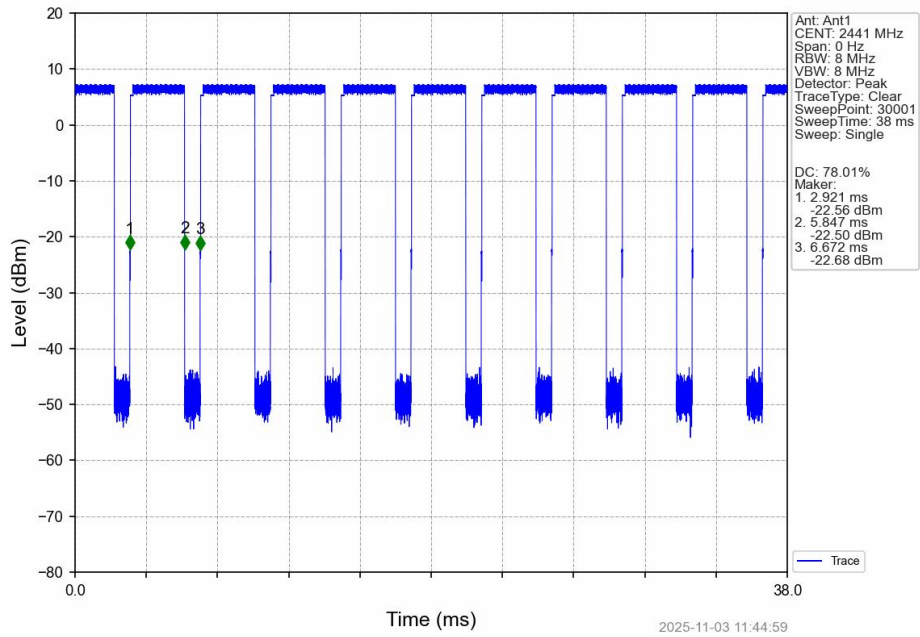
# GFSK DH5\_HCH\_2480MHz\_Ant1\_NTNV



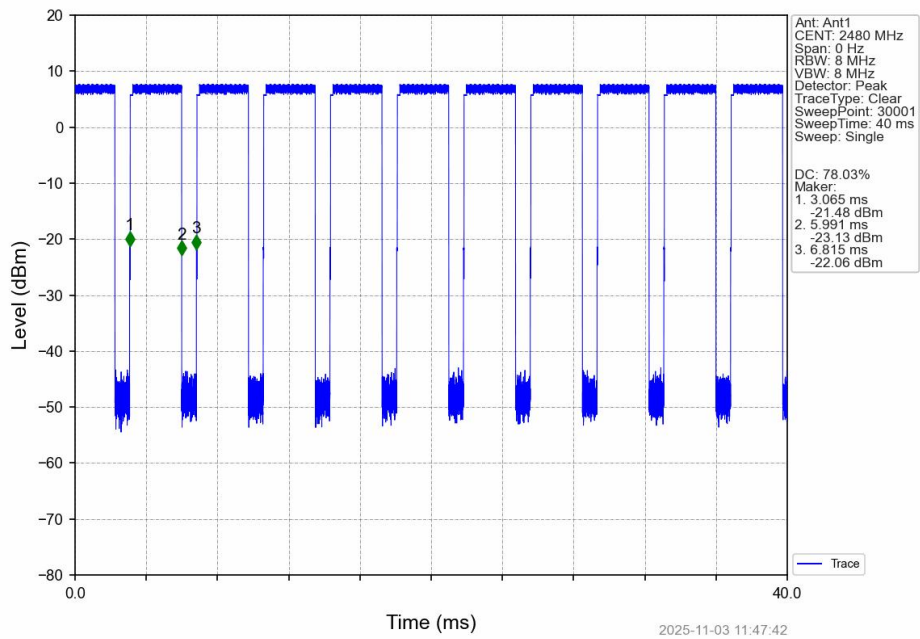
# Pi/4DQPSK\_2DH5\_LCH\_2402MHz\_Ant1\_NTNV



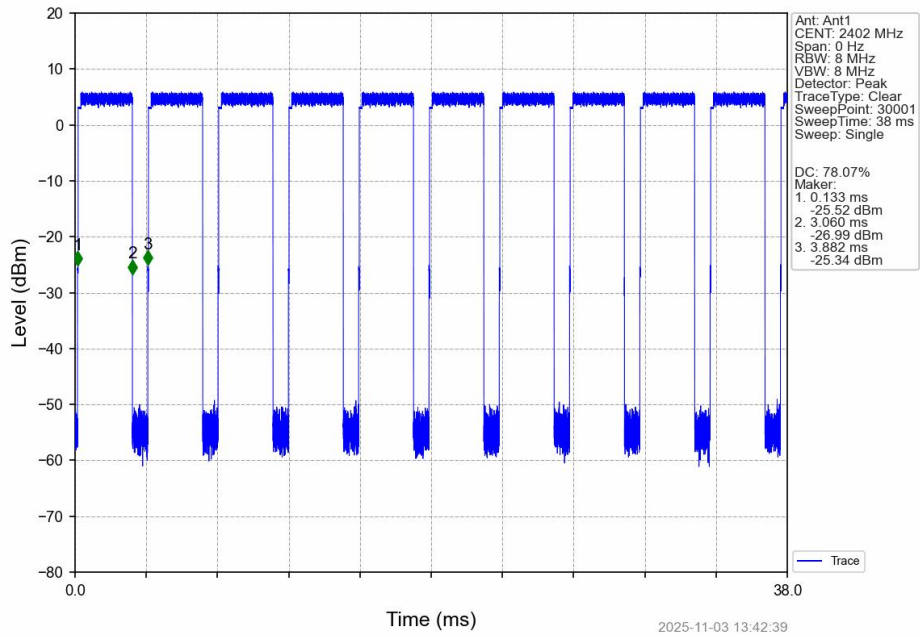
# Pi/4DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV



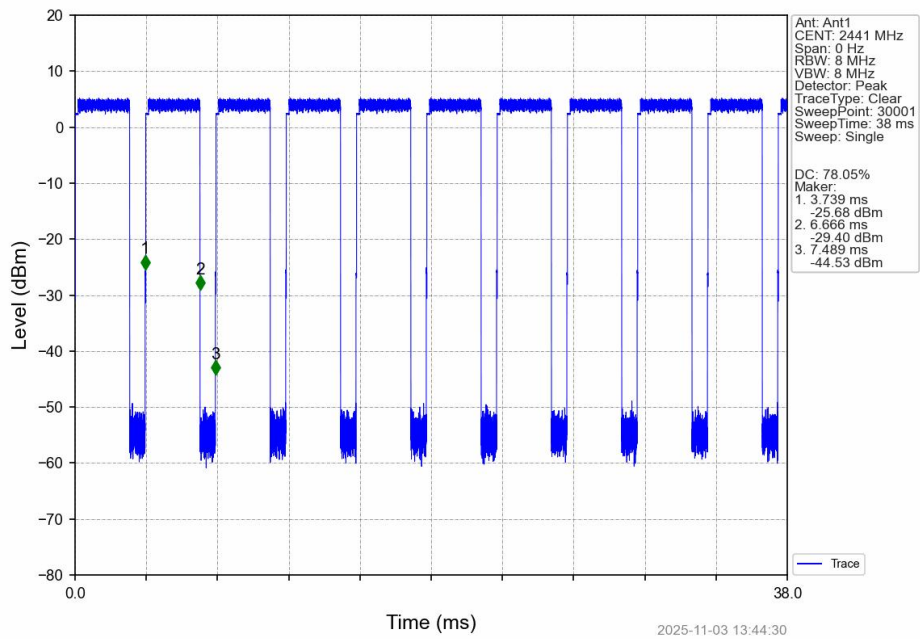
# Pi/4DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV



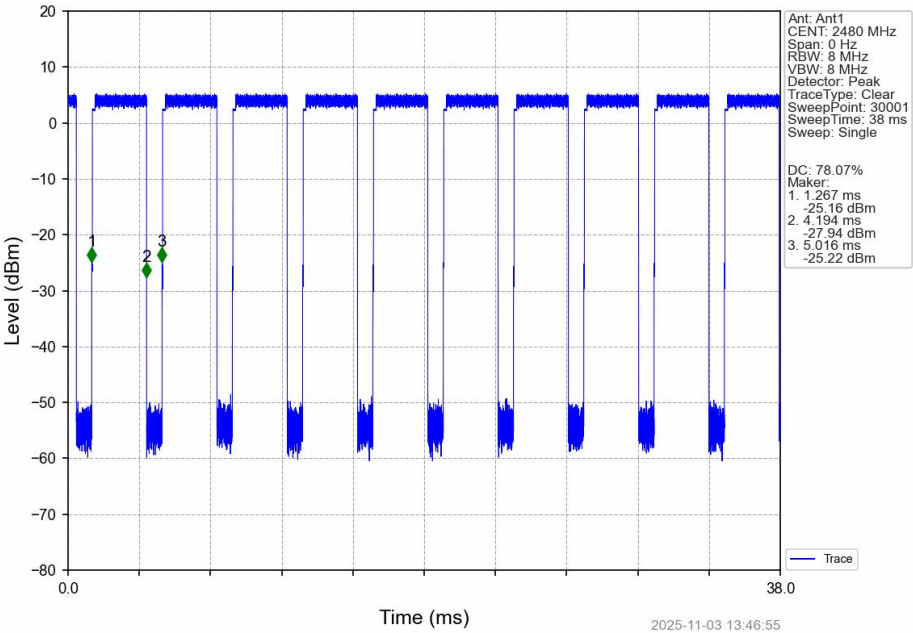
# 8DPSK\_3DH5\_LCH\_2402MHz\_Ant1\_NTNV



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



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



## 2. Bandwidth

### 2.1 Test Result

#### 2.1.1 OBW

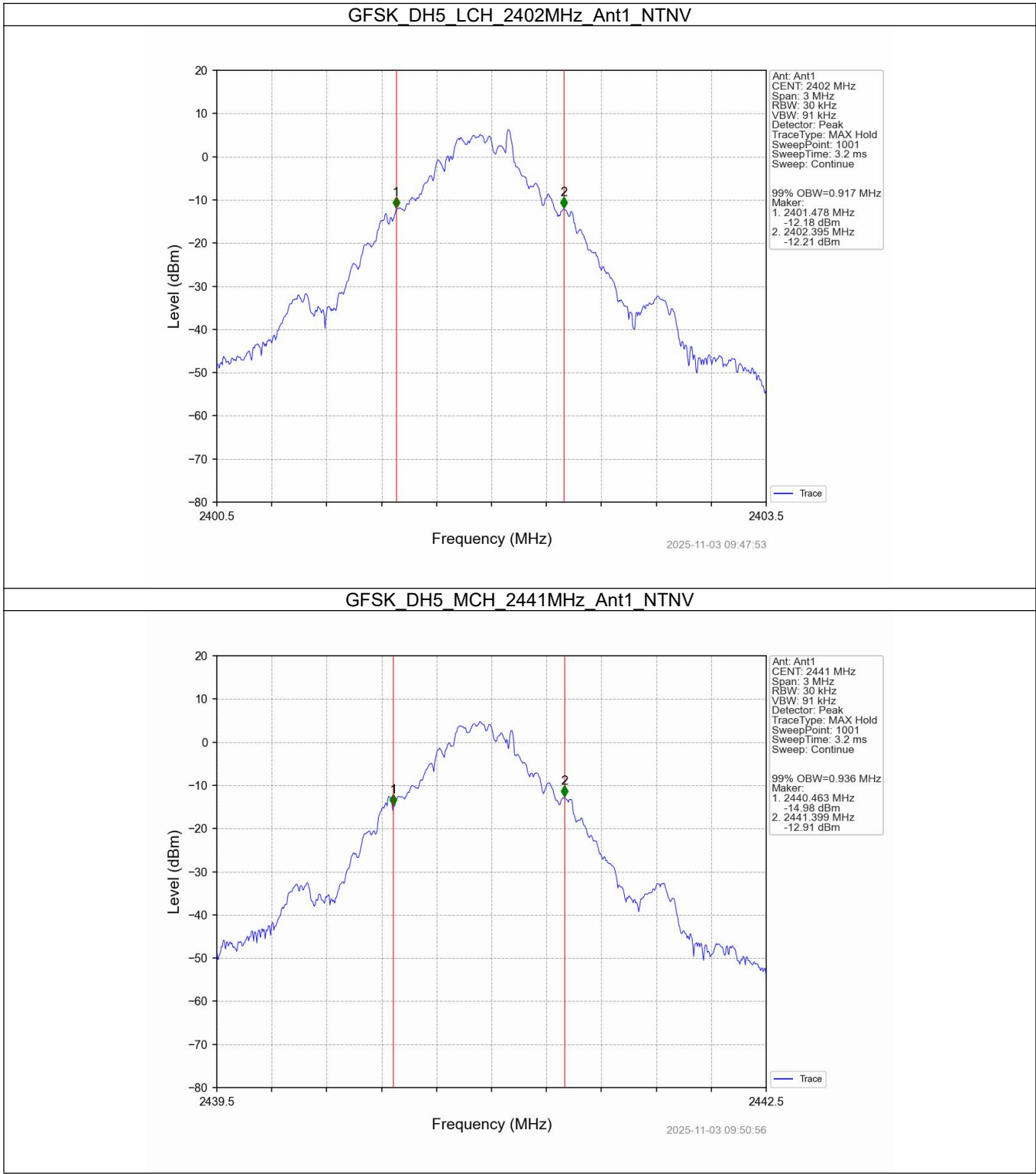
| Mode      | TX Type | Frequency (MHz) | Packet Type | ANT | 99% Occupied Bandwidth (MHz) |       | Verdict |
|-----------|---------|-----------------|-------------|-----|------------------------------|-------|---------|
|           |         |                 |             |     | Result                       | Limit |         |
| GFSK      | SISO    | 2402            | DH5         | 1   | 0.917                        | /     | Pass    |
|           |         | 2441            | DH5         | 1   | 0.936                        | /     | Pass    |
|           |         | 2480            | DH5         | 1   | 0.923                        | /     | Pass    |
| Pi/4DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.235                        | /     | Pass    |
|           |         | 2441            | 2DH5        | 1   | 1.240                        | /     | Pass    |
|           |         | 2480            | 2DH5        | 1   | 1.238                        | /     | Pass    |
| 8DPSK     | SISO    | 2402            | 3DH5        | 1   | 1.207                        | /     | Pass    |
|           |         | 2441            | 3DH5        | 1   | 1.216                        | /     | Pass    |
|           |         | 2480            | 3DH5        | 1   | 1.212                        | /     | Pass    |

#### 2.1.2 20dB BW

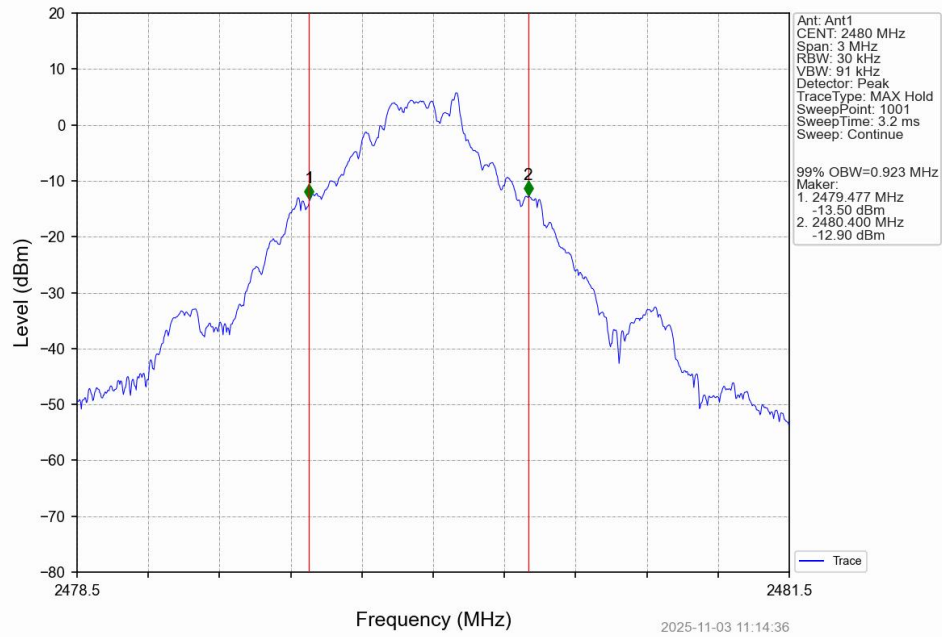
| Mode      | TX Type | Frequency (MHz) | Packet Type | ANT | 20dB Bandwidth (MHz) |       | Verdict |
|-----------|---------|-----------------|-------------|-----|----------------------|-------|---------|
|           |         |                 |             |     | Result               | Limit |         |
| GFSK      | SISO    | 2402            | DH5         | 1   | 1.032                | /     | Pass    |
|           |         | 2441            | DH5         | 1   | 1.022                | /     | Pass    |
|           |         | 2480            | DH5         | 1   | 1.029                | /     | Pass    |
| Pi/4DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.375                | /     | Pass    |
|           |         | 2441            | 2DH5        | 1   | 1.364                | /     | Pass    |
|           |         | 2480            | 2DH5        | 1   | 1.366                | /     | Pass    |
| 8DPSK     | SISO    | 2402            | 3DH5        | 1   | 1.320                | /     | Pass    |
|           |         | 2441            | 3DH5        | 1   | 1.319                | /     | Pass    |
|           |         | 2480            | 3DH5        | 1   | 1.327                | /     | Pass    |

# 2.2 Test Graph

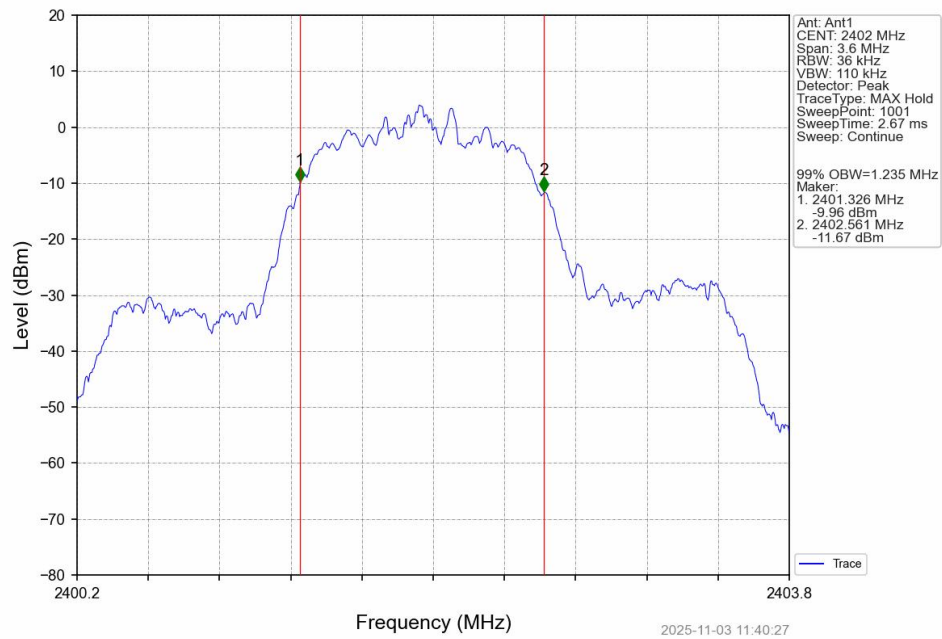
## 2.2.1 OBW



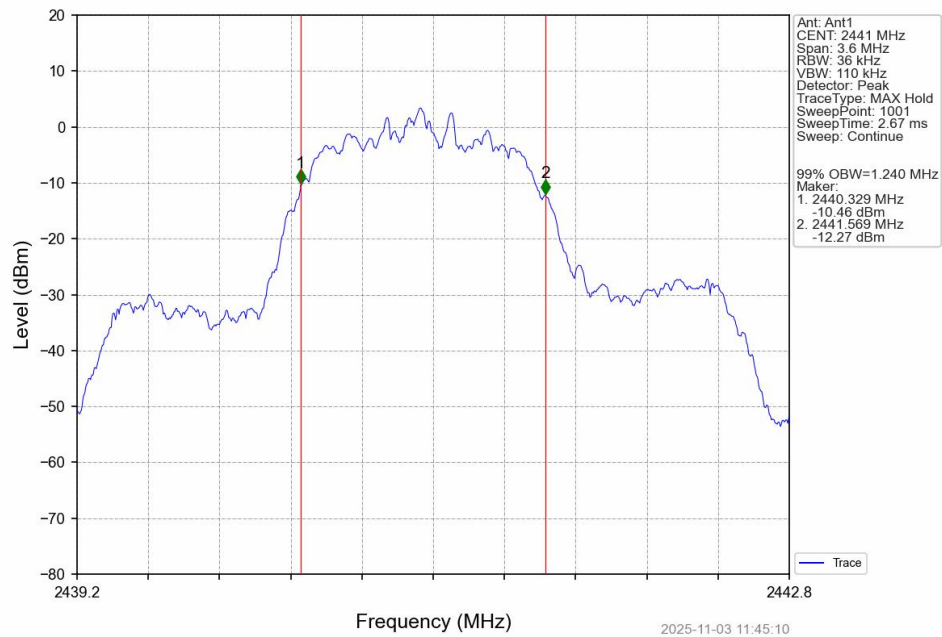
# GFSK DH5 HCH 2480MHz Ant1 NTN



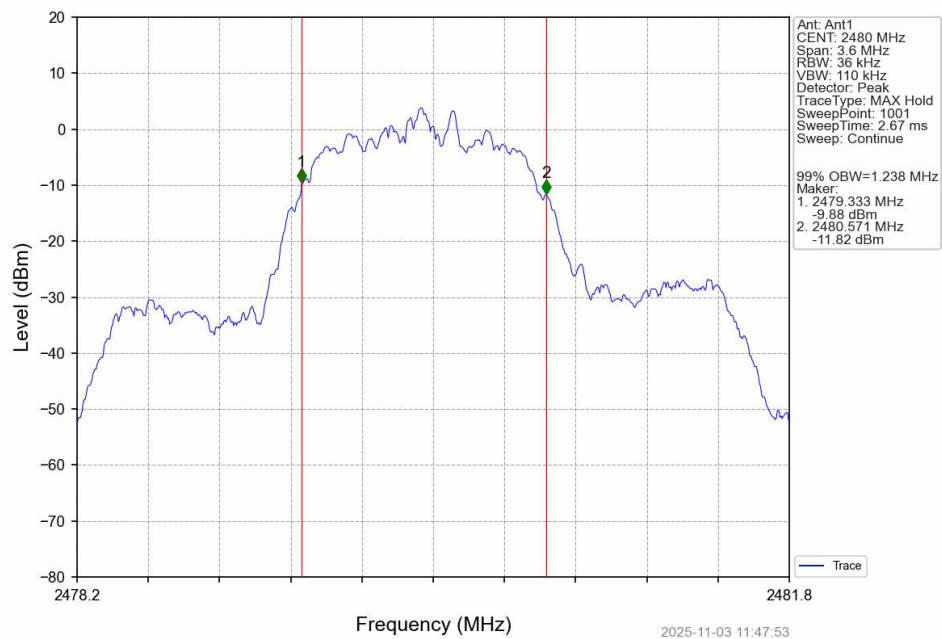
# Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTN



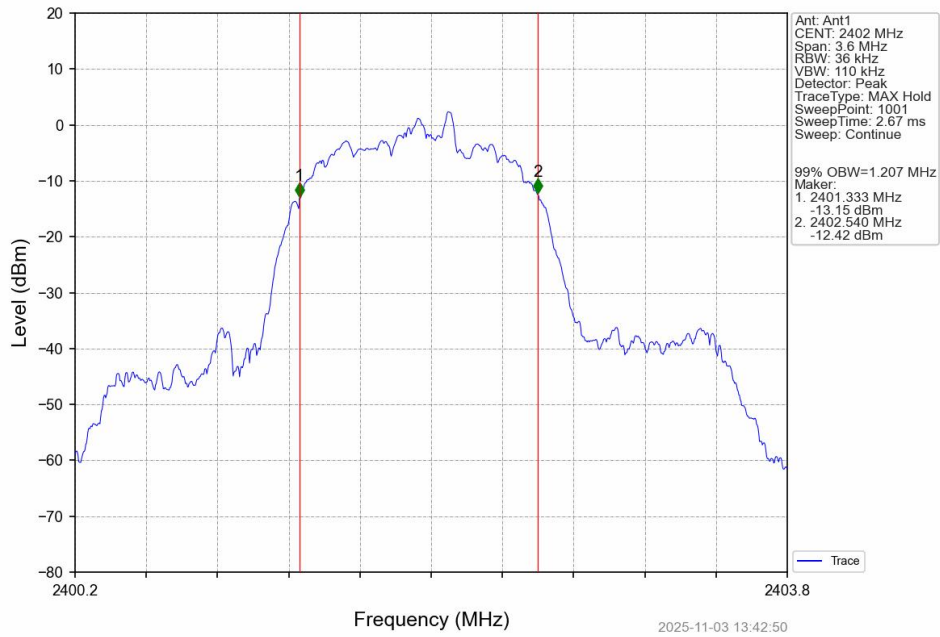
# Pi/4DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV



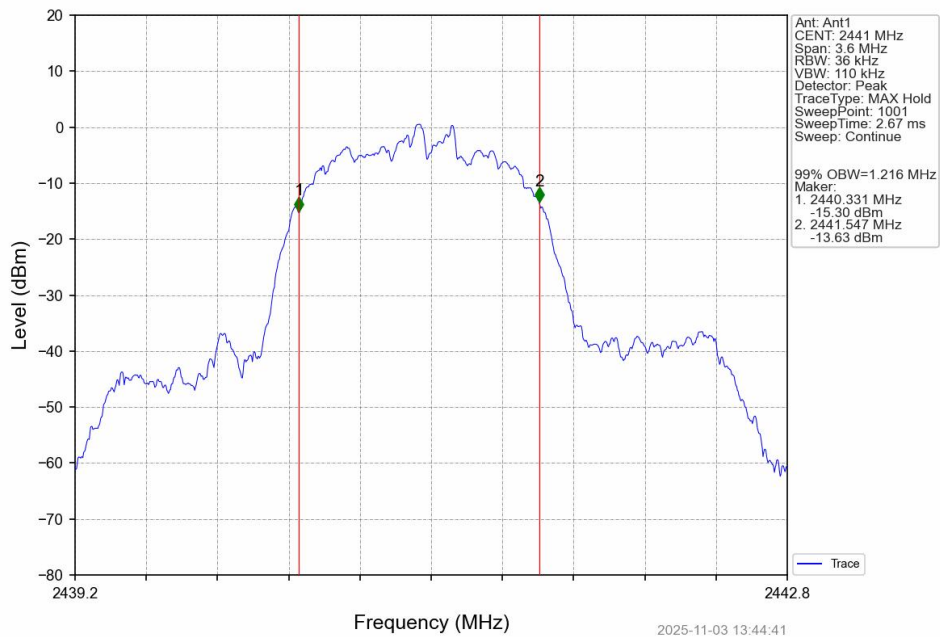
# Pi/4DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV



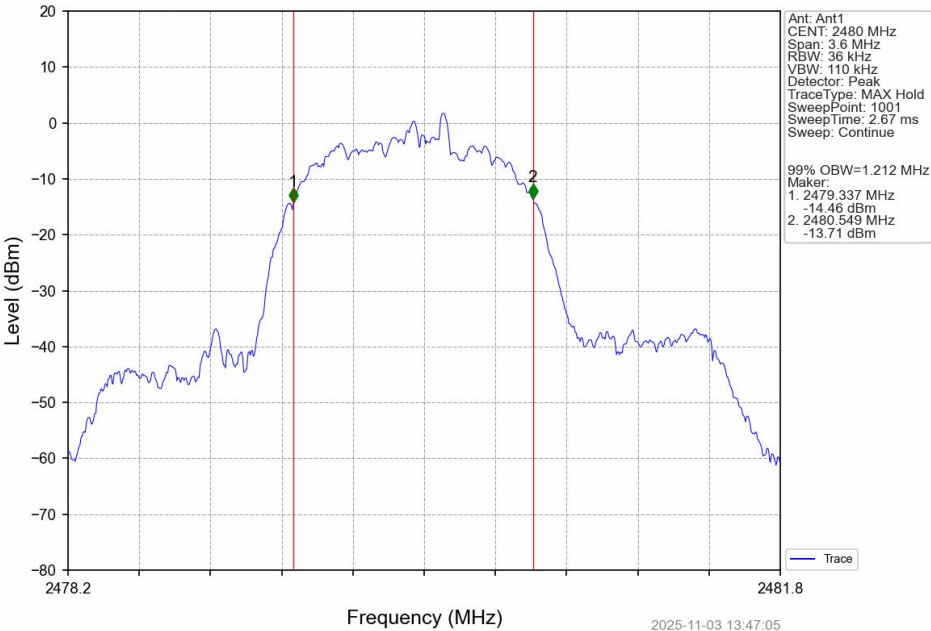
# 8DPSK\_3DH5\_LCH\_2402MHz\_Ant1\_NTNV



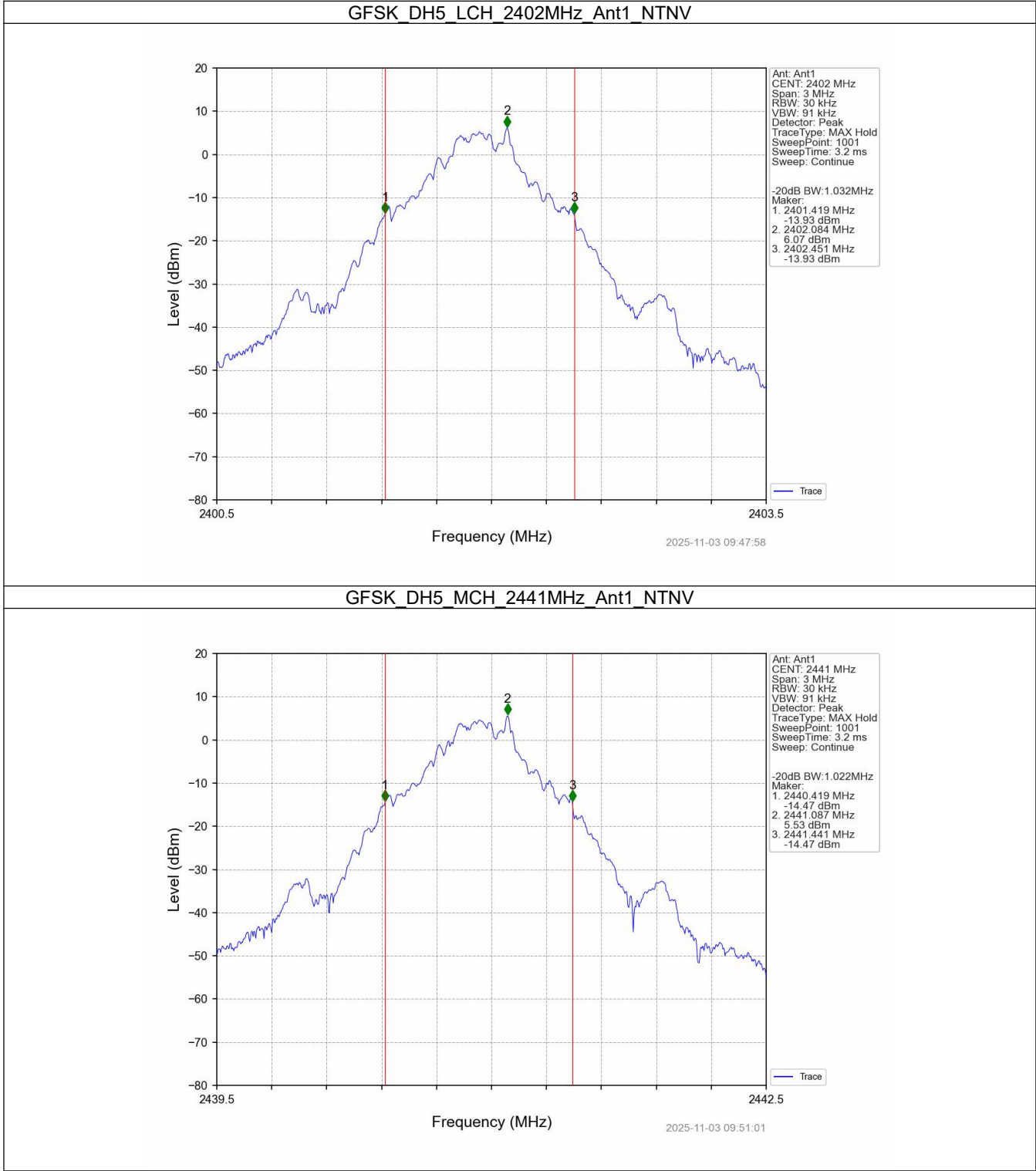
# 8DPSK\_3DH5\_MCH\_2441MHz\_Ant1\_NTNV



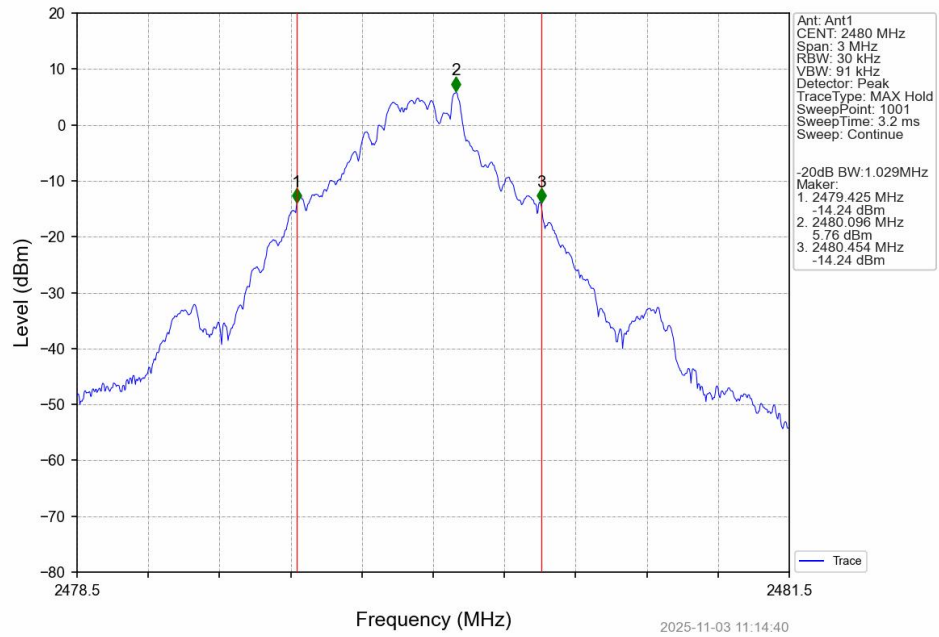
8DPSK\_3DH5\_HCH\_2480MHz\_Ant1\_NTNV



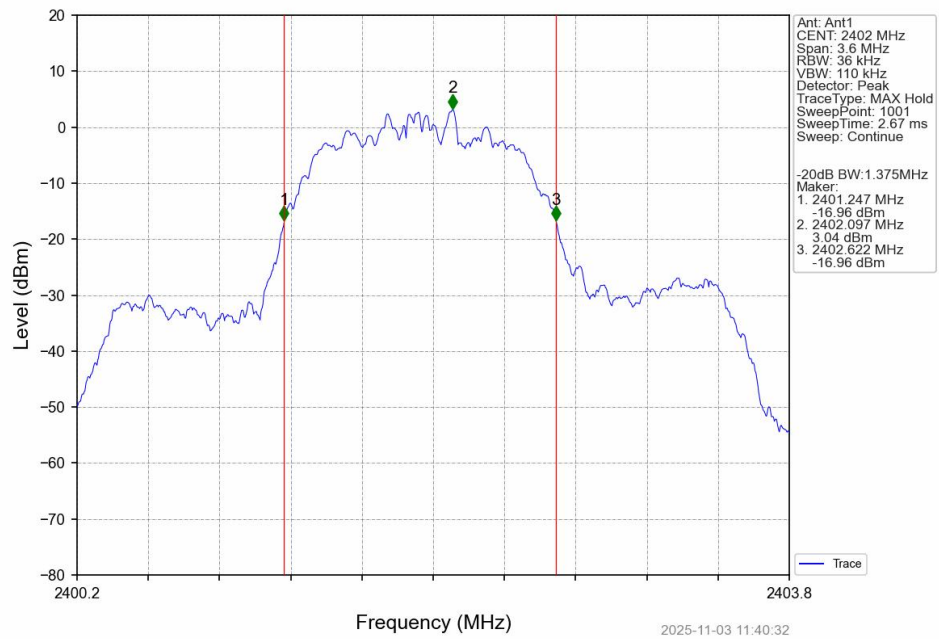
2.2.2 20dB BW



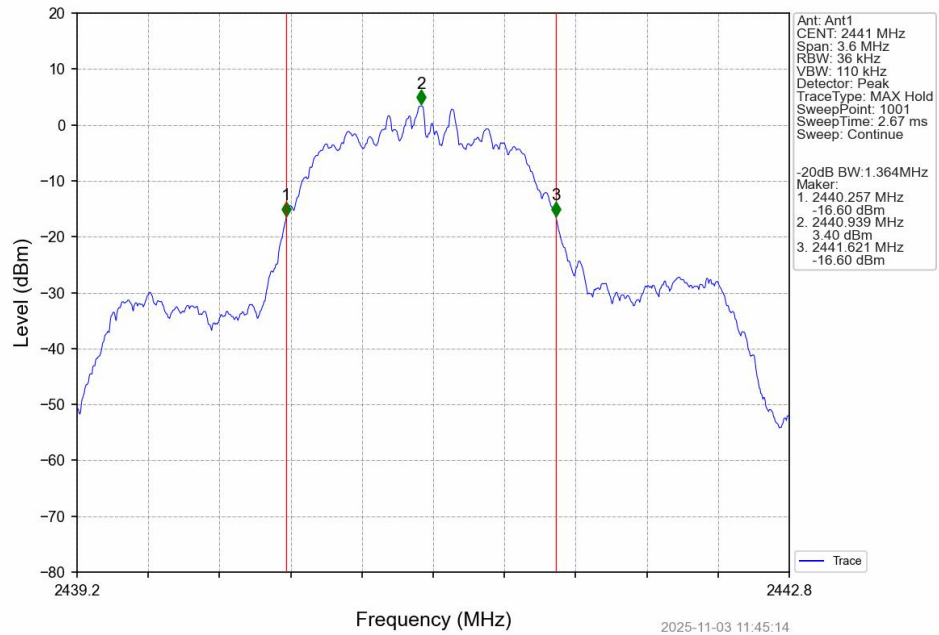
# GFSK DH5 HCH 2480MHz Ant1 NTN



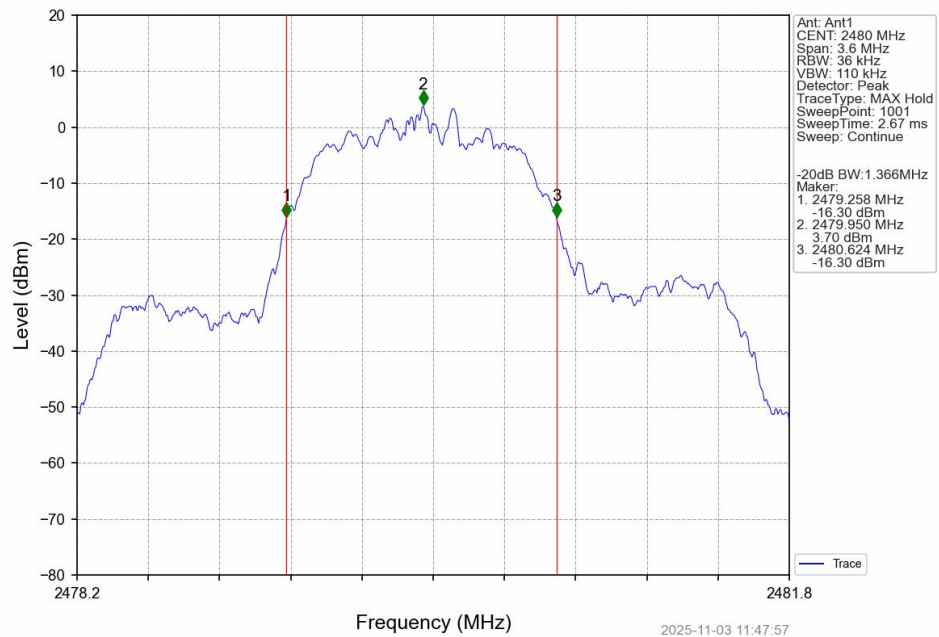
# Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTN



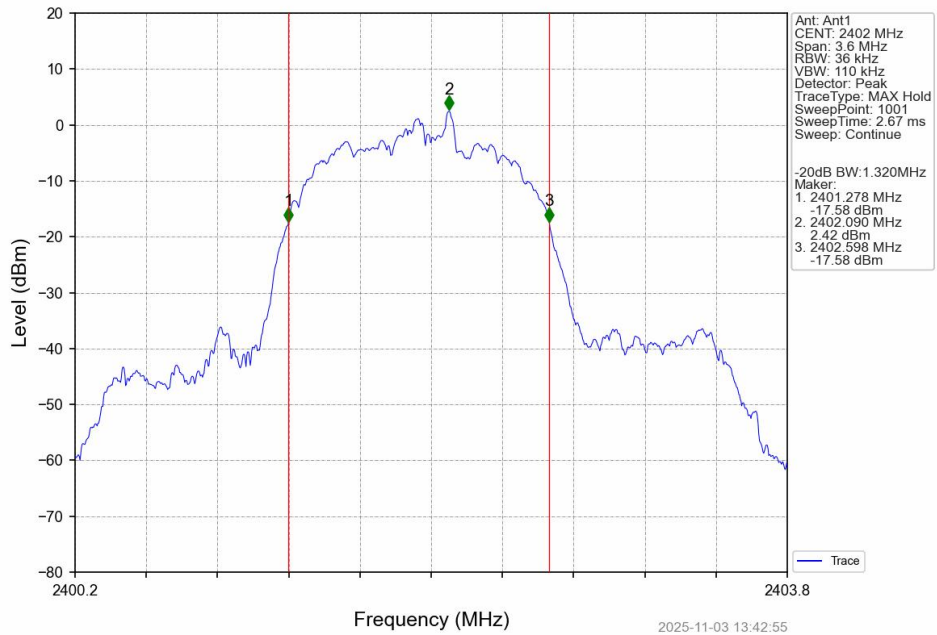
# Pi/4DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV



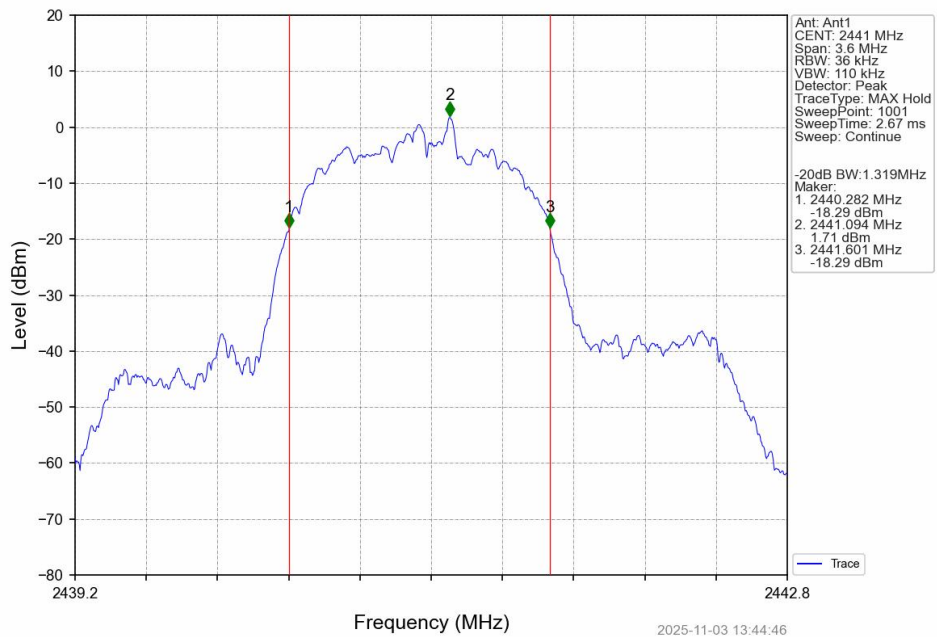
# Pi/4DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV



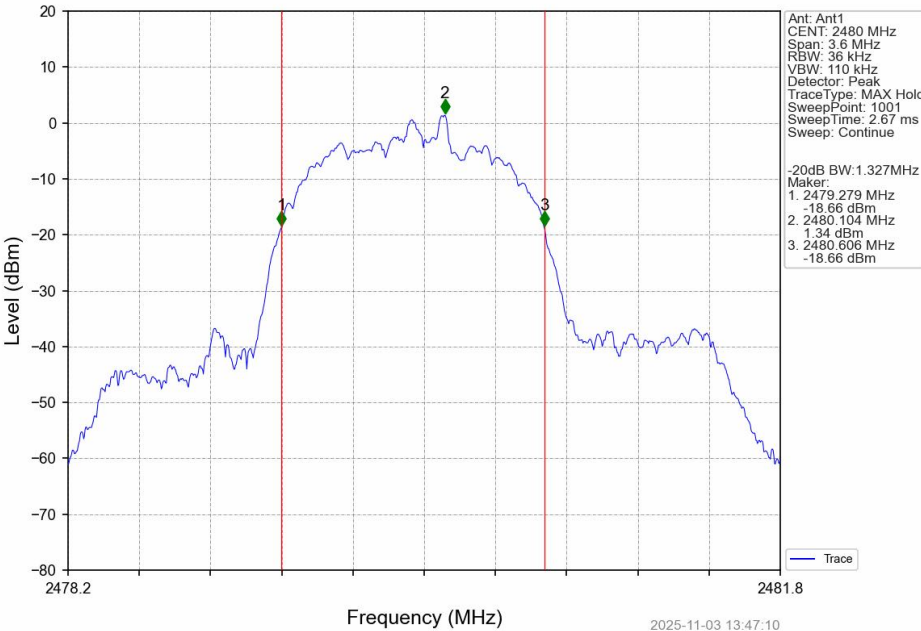
# 8DPSK\_3DH5\_LCH\_2402MHz\_Ant1\_NTNV



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



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



### 3. Maximum Conducted Output Power

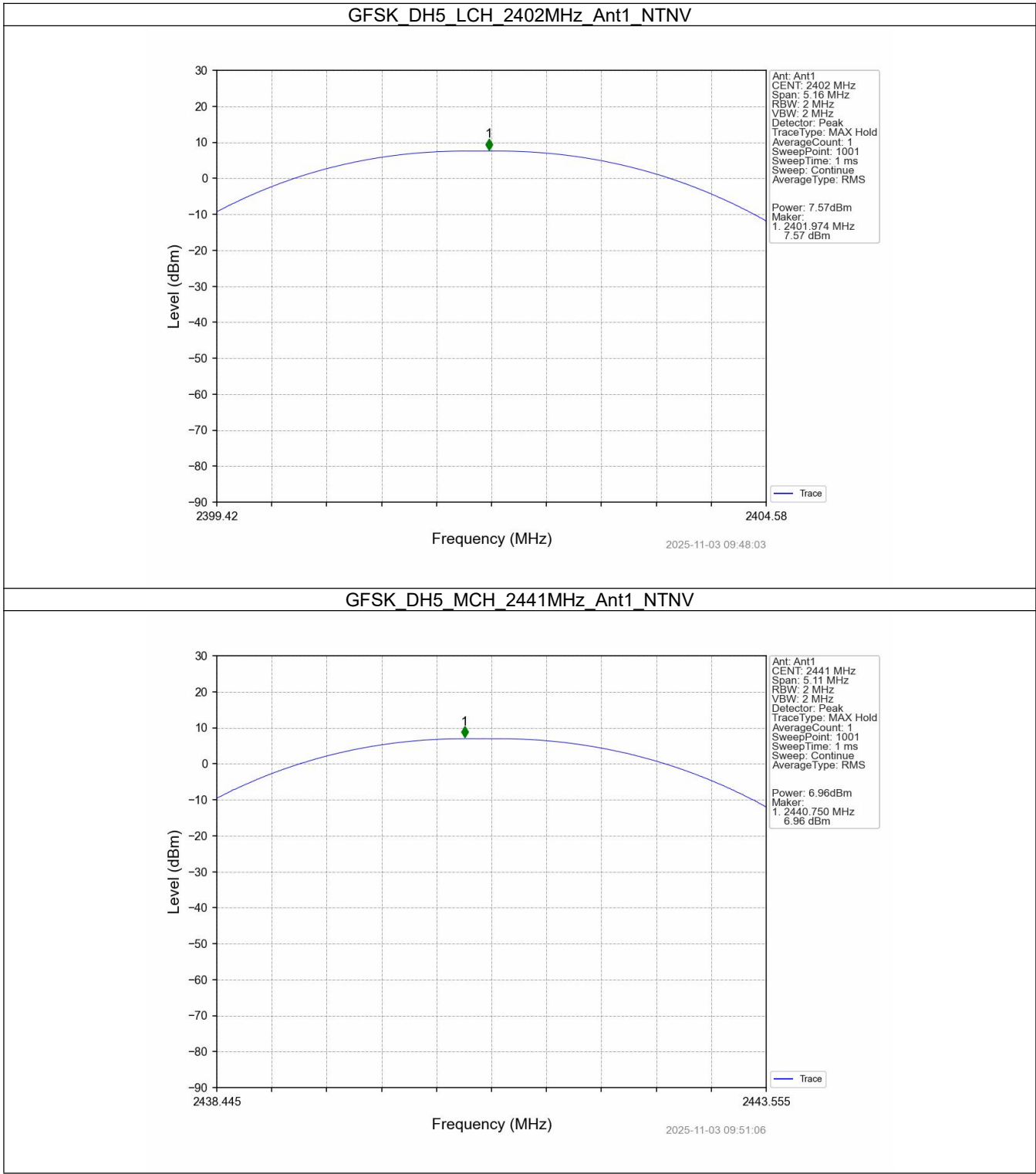
#### 3.1 Test Result

##### 3.1.1 Power

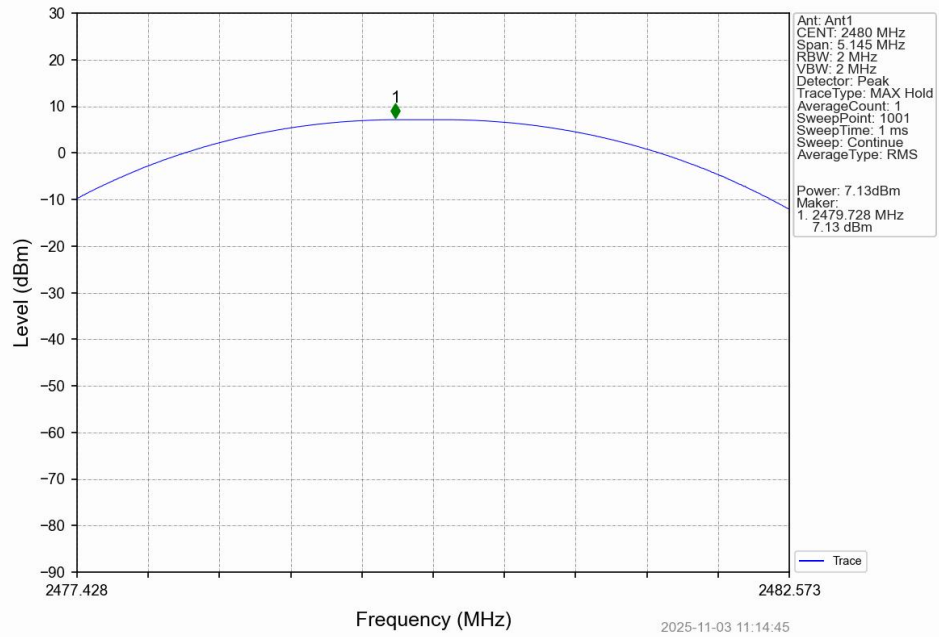
| Mode                                | TX Type | Frequency (MHz) | Packet Type | Maximum Peak Conducted Output Power (dBm) |         | Verdict |
|-------------------------------------|---------|-----------------|-------------|-------------------------------------------|---------|---------|
|                                     |         |                 |             | ANT1                                      | Limit   |         |
| GFSK                                | SISO    | 2402            | DH5         | 7.57                                      | <=20.97 | Pass    |
|                                     |         | 2441            | DH5         | 6.96                                      | <=20.97 | Pass    |
|                                     |         | 2480            | DH5         | 7.13                                      | <=20.97 | Pass    |
| Pi/4DQPSK                           | SISO    | 2402            | 2DH5        | 7.72                                      | <=20.97 | Pass    |
|                                     |         | 2441            | 2DH5        | 7.05                                      | <=20.97 | Pass    |
|                                     |         | 2480            | 2DH5        | 7.48                                      | <=20.97 | Pass    |
| 8DPSK                               | SISO    | 2402            | 3DH5        | 5.81                                      | <=20.97 | Pass    |
|                                     |         | 2441            | 3DH5        | 5.11                                      | <=20.97 | Pass    |
|                                     |         | 2480            | 3DH5        | 5.13                                      | <=20.97 | Pass    |
| Note1: Antenna Gain: Ant1: 2.18dBi; |         |                 |             |                                           |         |         |

3.2 Test Graph

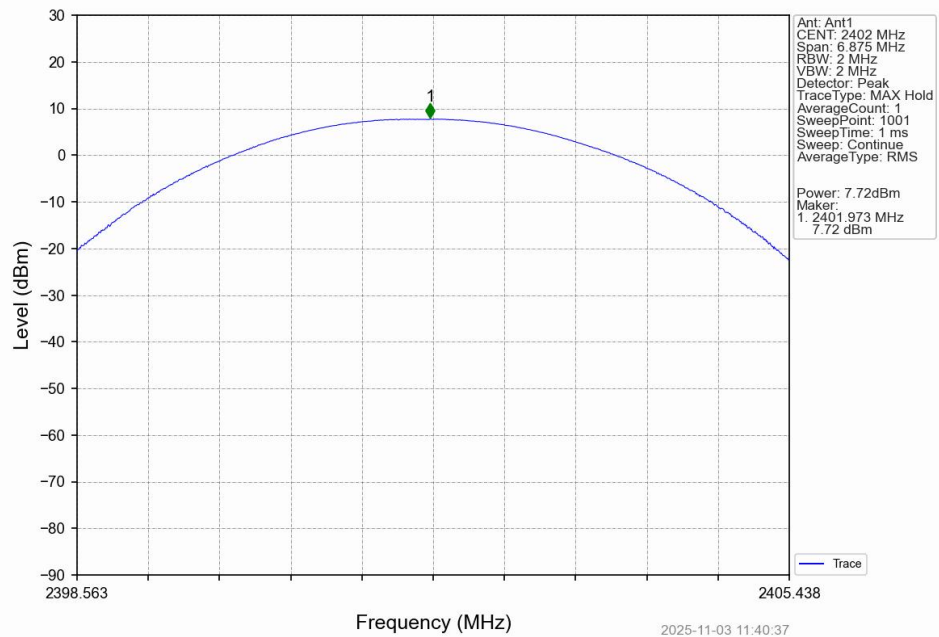
3.2.1 Power



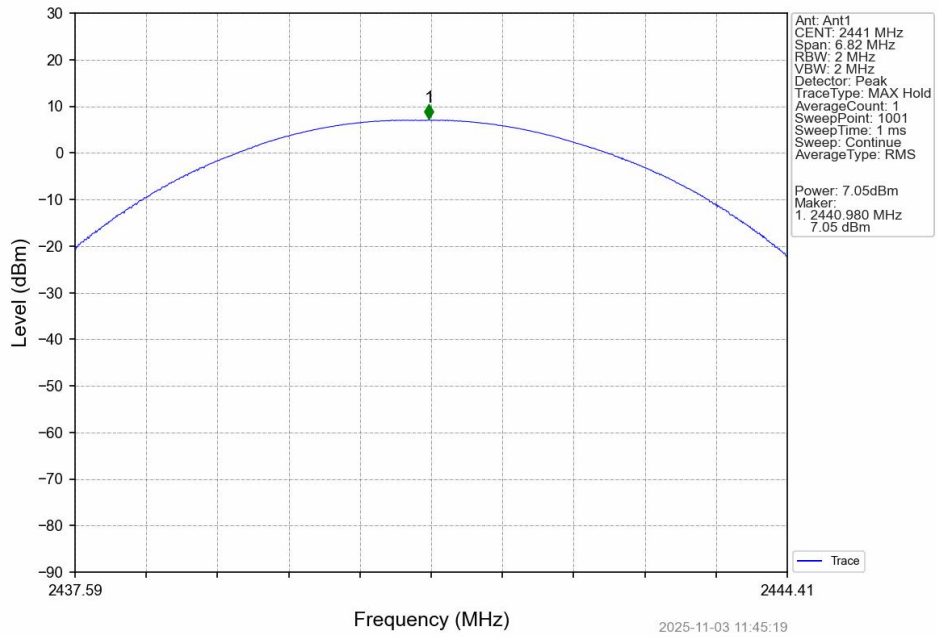
# GFSK DH5 HCH 2480MHz Ant1 NTN



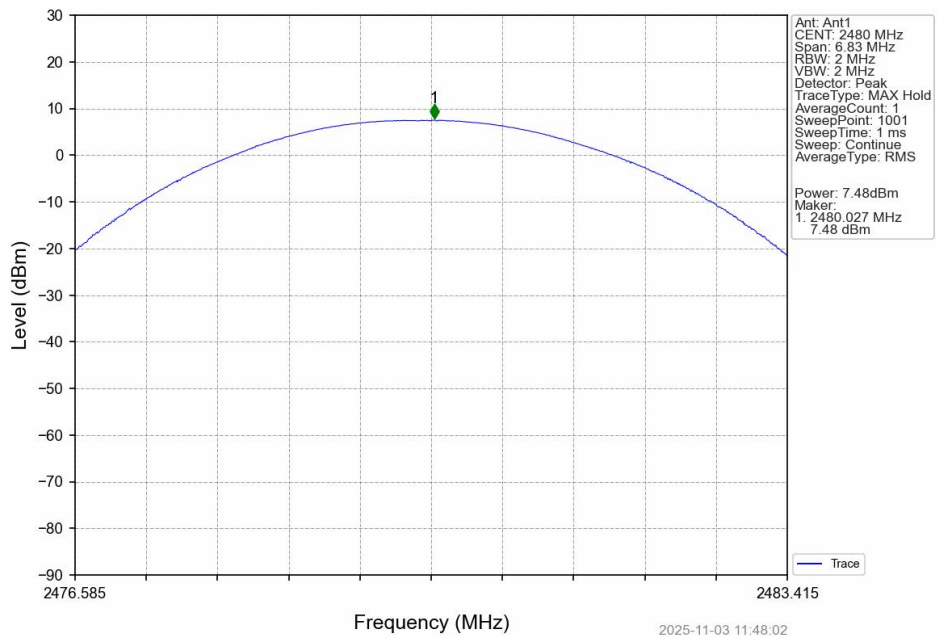
# Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTN



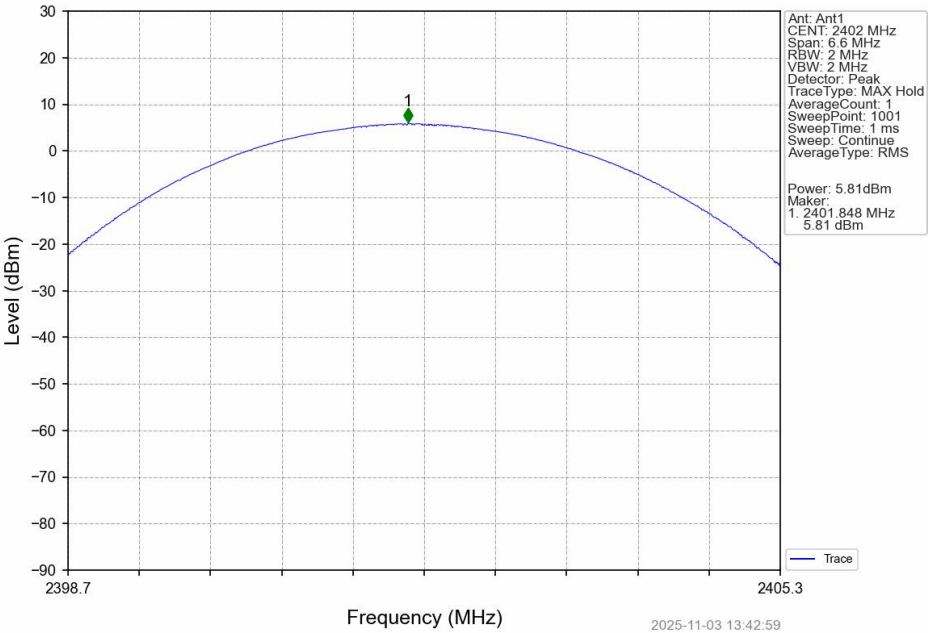
# Pi/4DQPSK\_2DH5\_MCH\_2441MHz\_Ant1\_NTNV



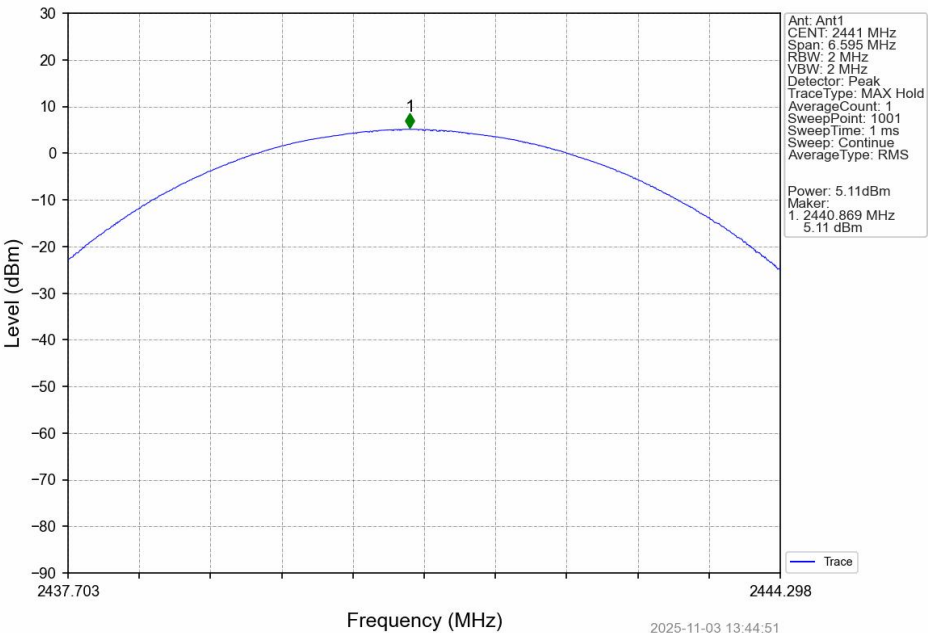
# Pi/4DQPSK\_2DH5\_HCH\_2480MHz\_Ant1\_NTNV



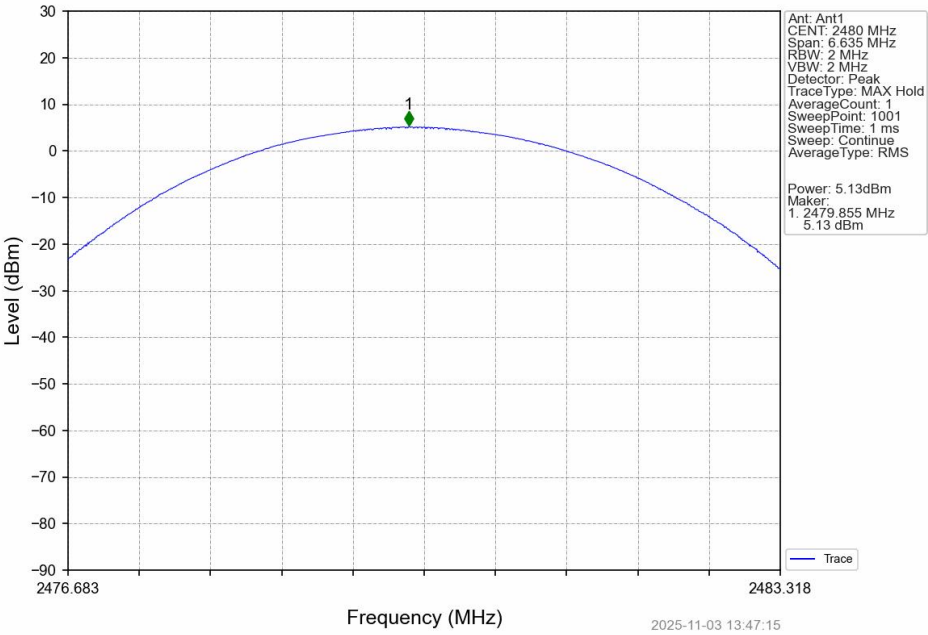
8DPSK\_3DH5\_LCH\_2402MHz\_Ant1\_NTNV



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



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



## 4. Carrier Frequency Separation

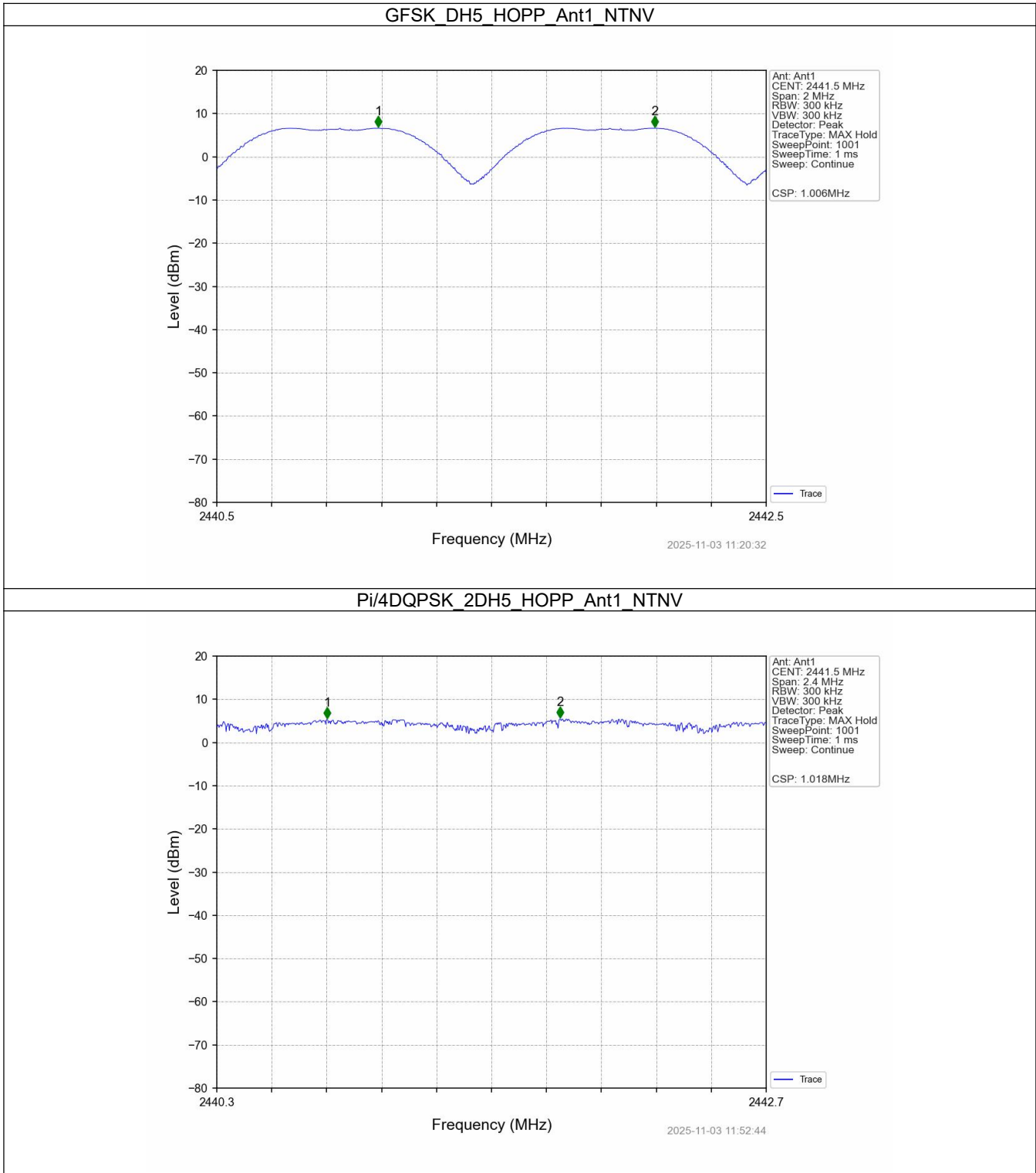
### 4.1 Test Result

#### 4.1.1 Ant1

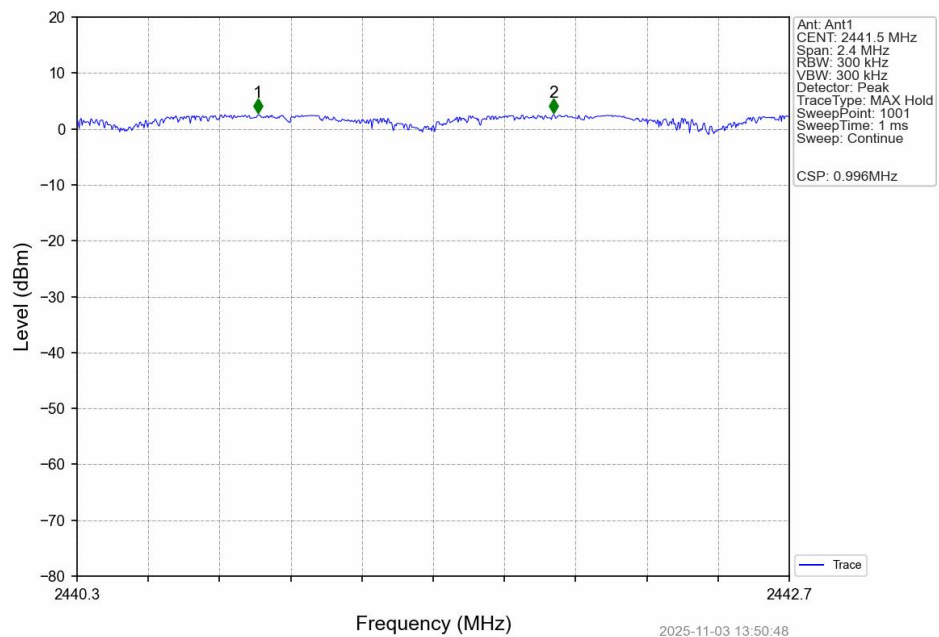
| Ant1      |         |                 |             |                          |                      |              |         |
|-----------|---------|-----------------|-------------|--------------------------|----------------------|--------------|---------|
| Mode      | TX Type | Frequency (MHz) | Packet Type | Channel Separation (MHz) | 20dB Bandwidth (MHz) | Limit (MHz)  | Verdict |
| GFSK      | SISO    | HOPP            | DH5         | 1.006                    | 1.032                | $\geq 0.688$ | Pass    |
| PI/4DQPSK | SISO    | HOPP            | 2DH5        | 1.018                    | 1.375                | $\geq 0.917$ | Pass    |
| 8DPSK     | SISO    | HOPP            | 3DH5        | 0.996                    | 1.327                | $\geq 0.885$ | Pass    |

## 4.2 Test Graph

### 4.2.1 Ant1



8DPSK\_3DH5\_HOPP\_Ant1\_NTNV



## 5. Number of Hopping Frequencies

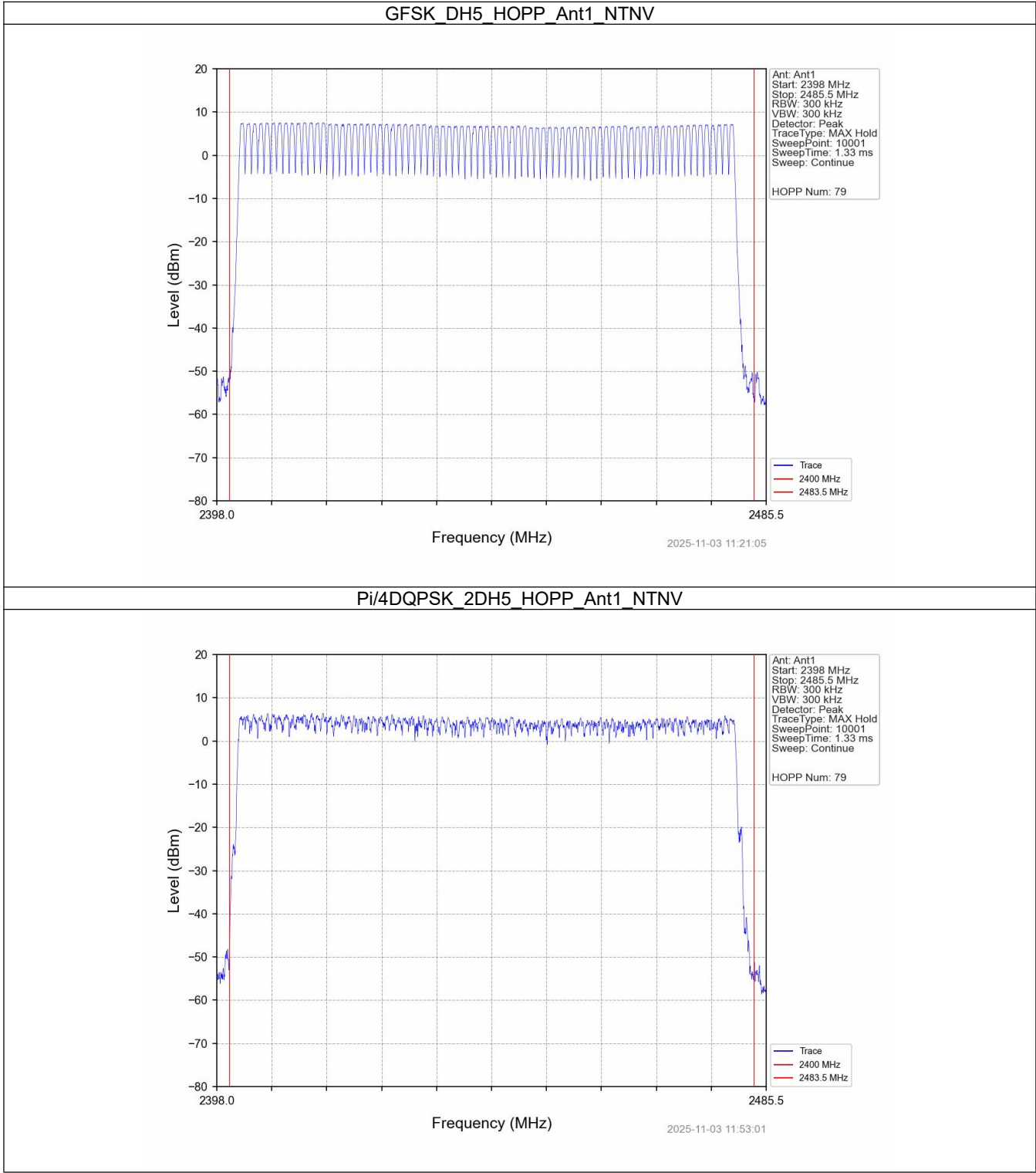
### 5.1 Test Result

#### 5.1.1 HoppNum

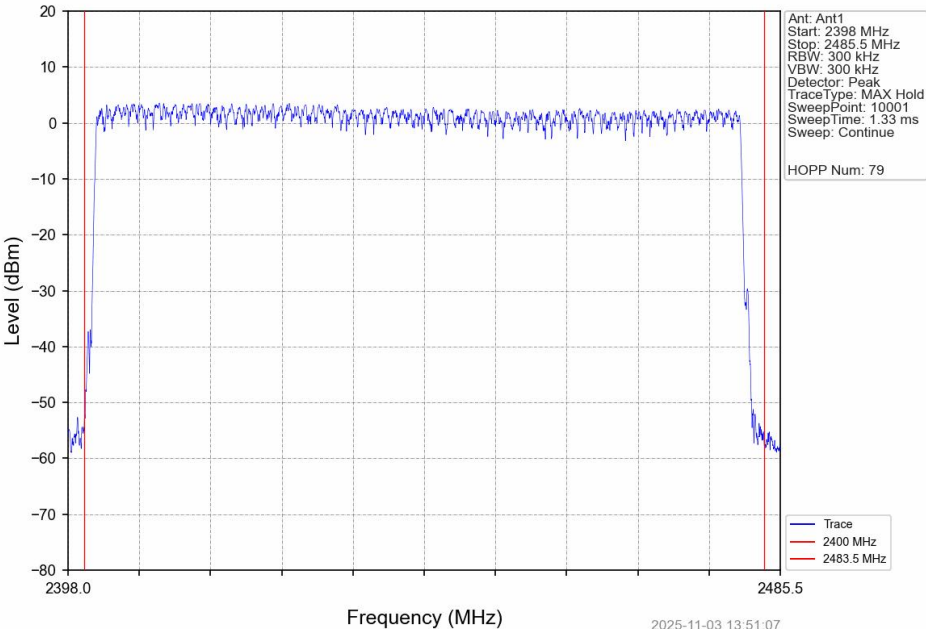
| Mode      | TX Type | Frequency (MHz) | Packet Type | Num of Hopping Frequencies |       | Verdict |
|-----------|---------|-----------------|-------------|----------------------------|-------|---------|
|           |         |                 |             | ANT1                       | Limit |  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

# 5.2 Test Graph

## 5.2.1 HoppNum



8DPSK\_3DH5\_HOPP\_Ant1\_NTNV



## 6. Time of Occupancy (Dwell Time)

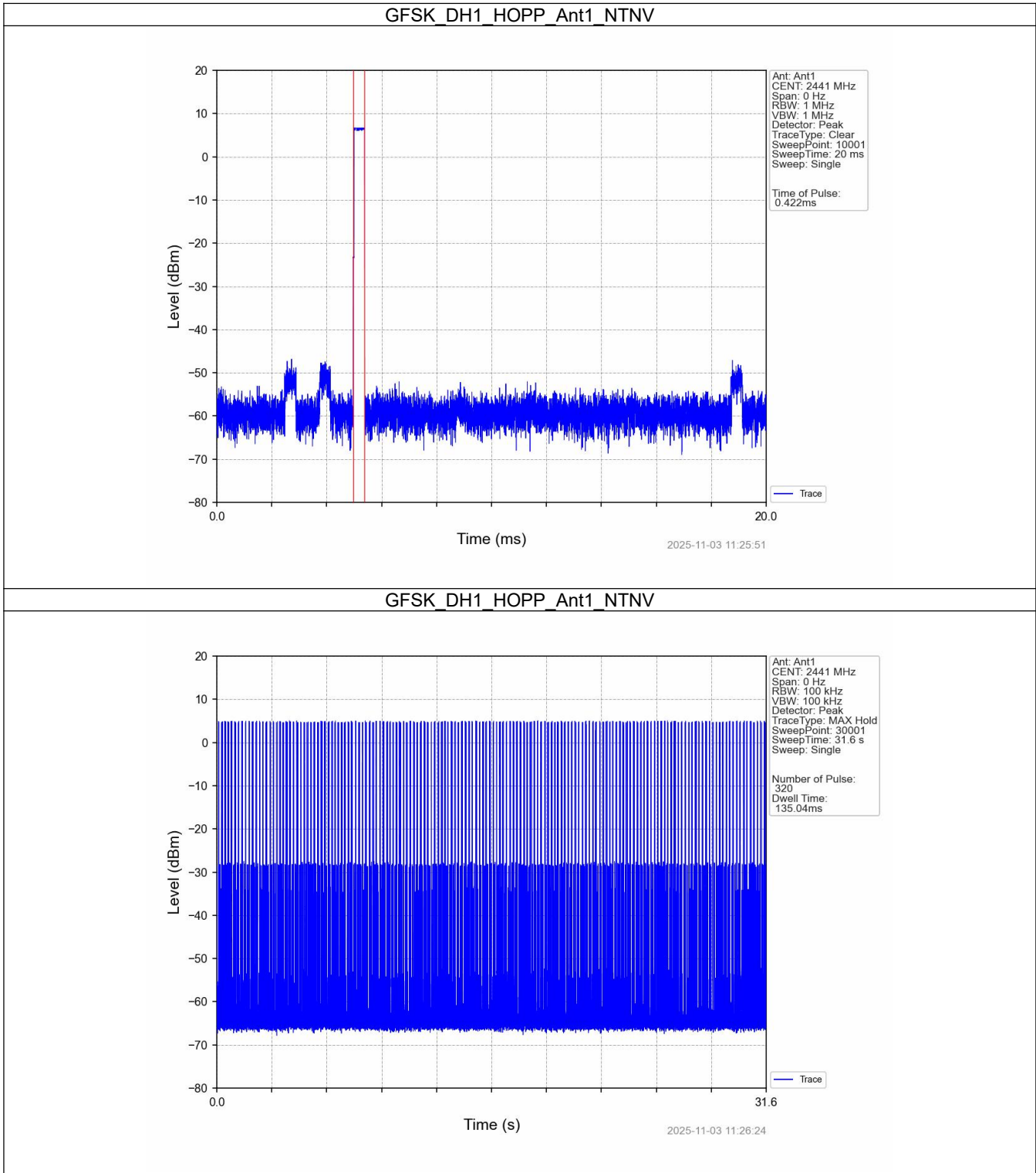
### 6.1 Test Result

#### 6.1.1 Ant1

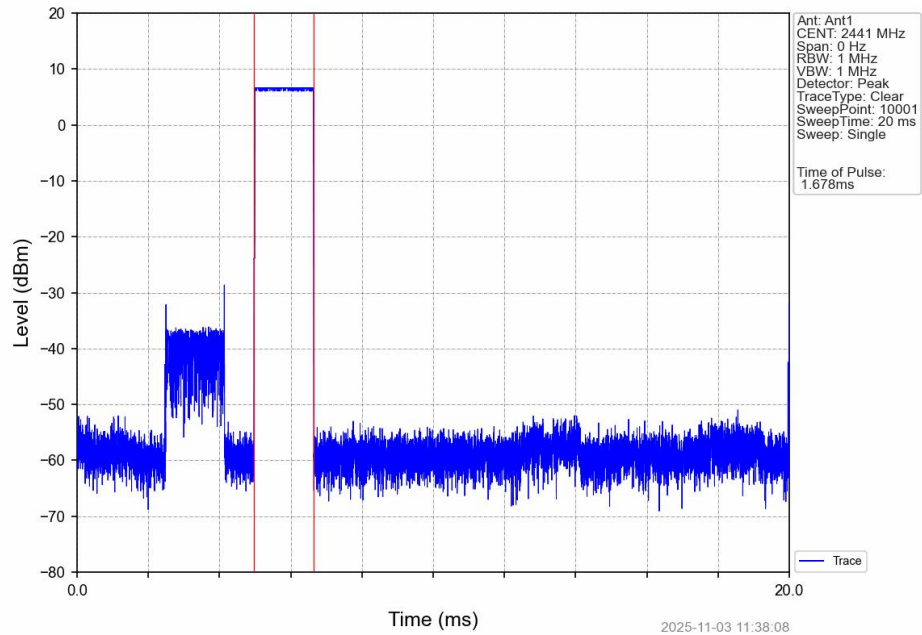
| Ant1      |         |                 |             |                               |                        |                                    |                 |            |         |
|-----------|---------|-----------------|-------------|-------------------------------|------------------------|------------------------------------|-----------------|------------|---------|
| 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         | 0.422                         | 31.600                 | 320                                | 135.040         | <=400      | Pass    |
|           |         |                 | DH3         | 1.678                         | 31.600                 | 161                                | 270.158         | <=400      | Pass    |
|           |         |                 | DH5         | 2.928                         | 31.600                 | 116                                | 339.648         | <=400      | Pass    |
| Pi/4DQPSK | SISO    | HOPP            | 2DH1        | 0.428                         | 31.600                 | 320                                | 136.960         | <=400      | Pass    |
|           |         |                 | 2DH3        | 1.646                         | 31.600                 | 168                                | 276.528         | <=400      | Pass    |
|           |         |                 | 2DH5        | 2.928                         | 31.600                 | 104                                | 304.512         | <=400      | Pass    |
| 8DPSK     | SISO    | HOPP            | 3DH1        | 0.426                         | 31.600                 | 320                                | 136.320         | <=400      | Pass    |
|           |         |                 | 3DH3        | 1.680                         | 31.600                 | 160                                | 268.800         | <=400      | Pass    |
|           |         |                 | 3DH5        | 2.932                         | 31.600                 | 105                                | 307.860         | <=400      | Pass    |

6.2 Test Graph

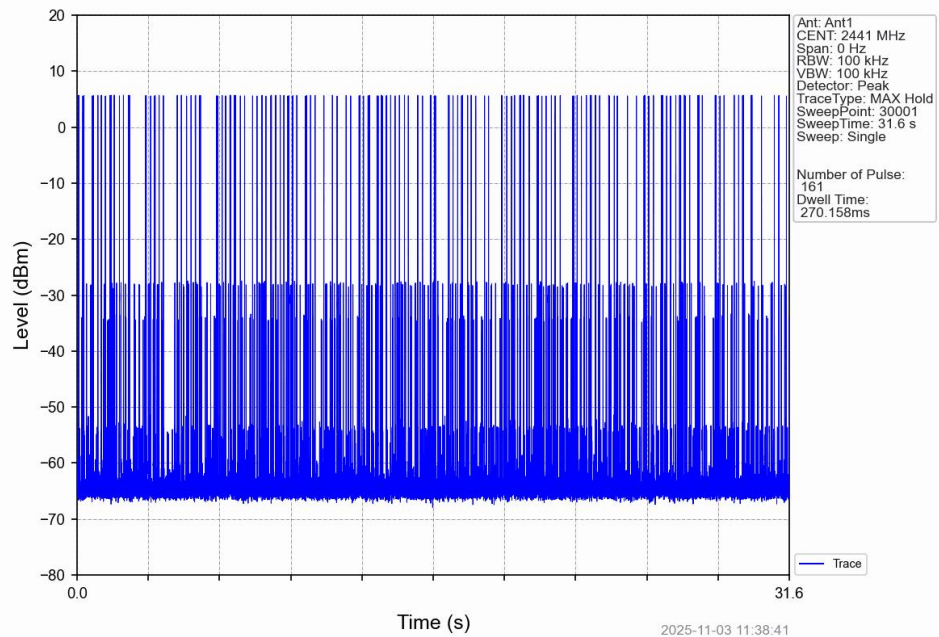
6.2.1 Ant1



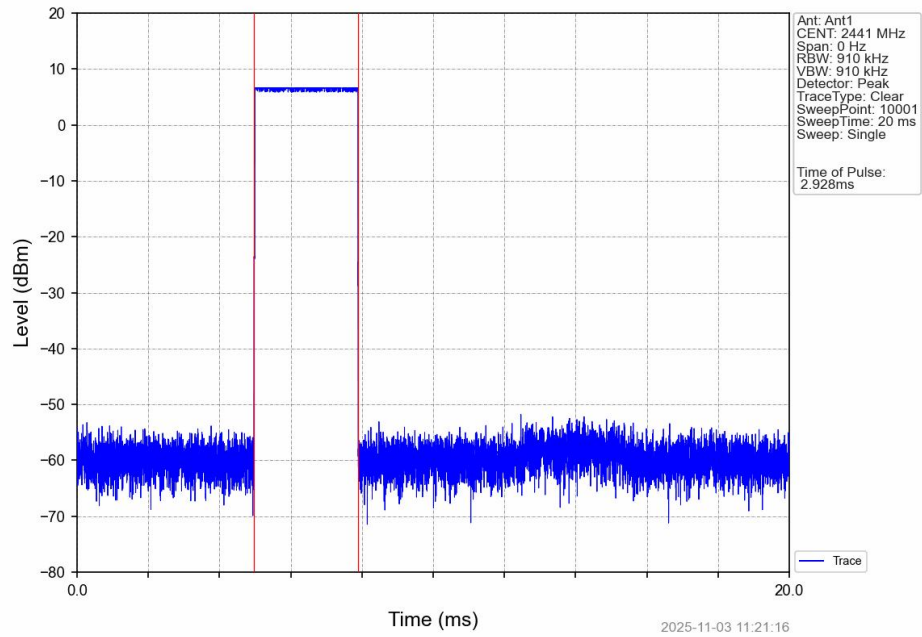
# GFSK\_DH3\_HOPP\_Ant1\_NTNV



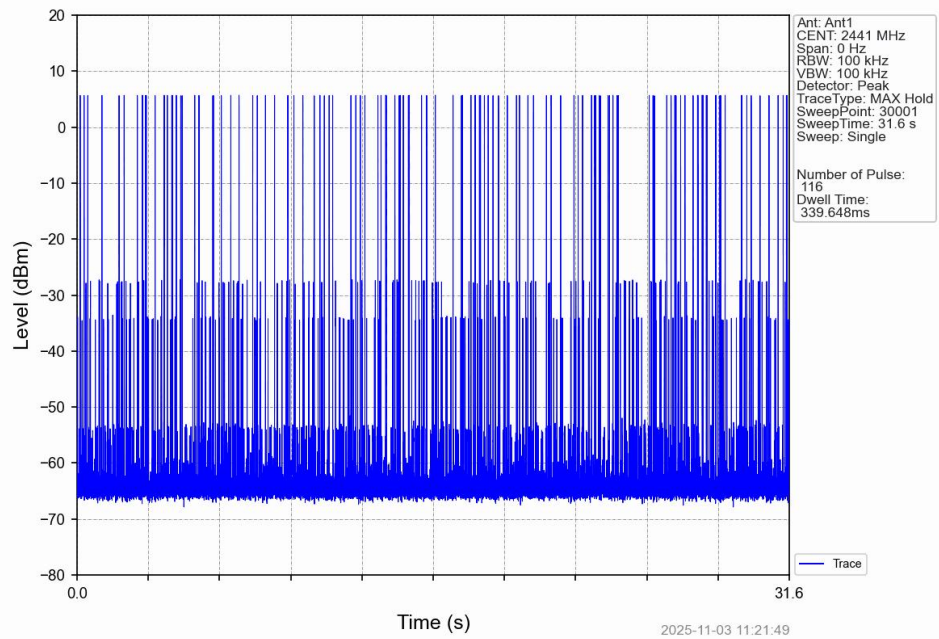
# GFSK\_DH3\_HOPP\_Ant1\_NTNV



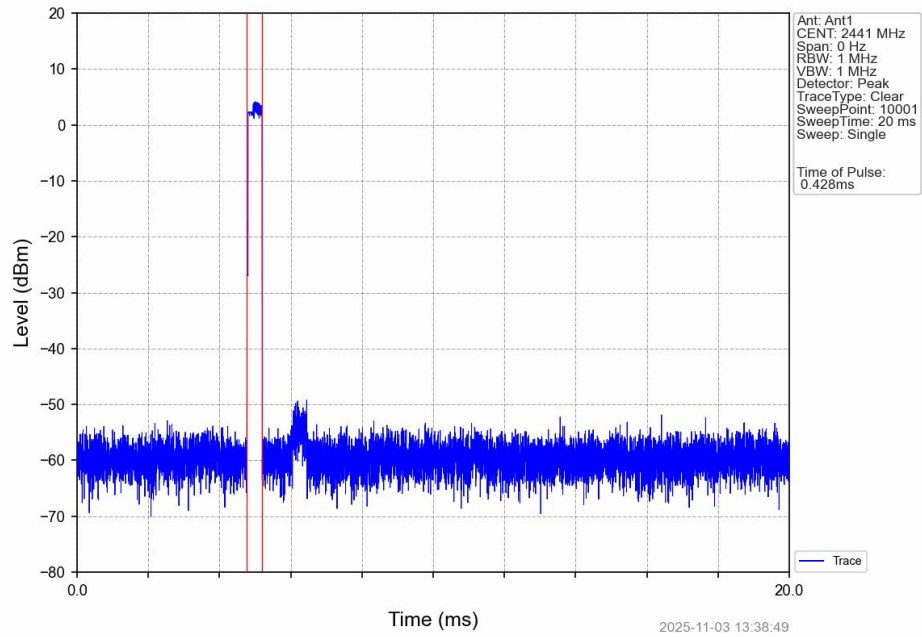
# GFSK\_DH5\_HOPP\_Ant1\_NTNV



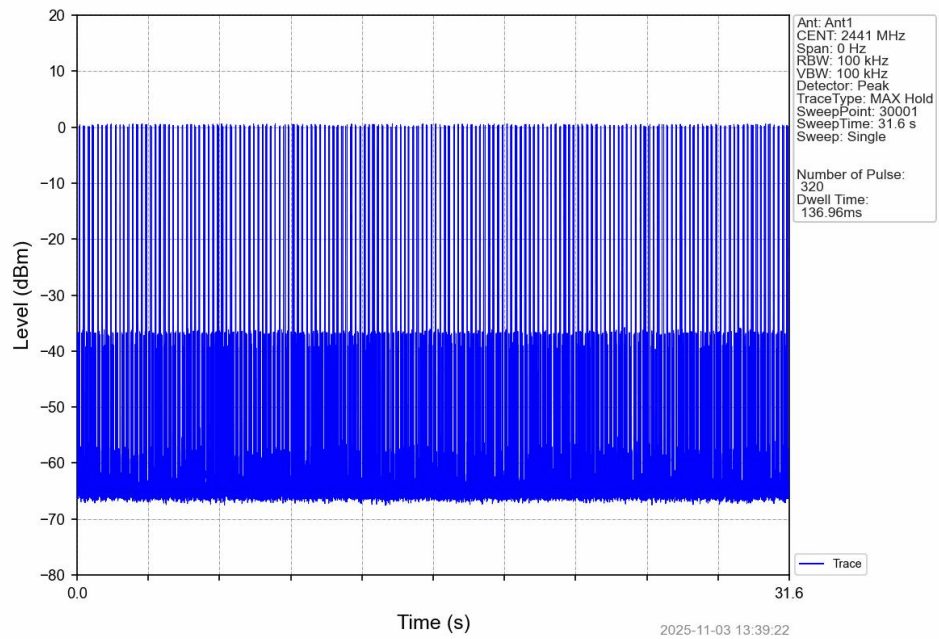
# GFSK\_DH5\_HOPP\_Ant1\_NTNV



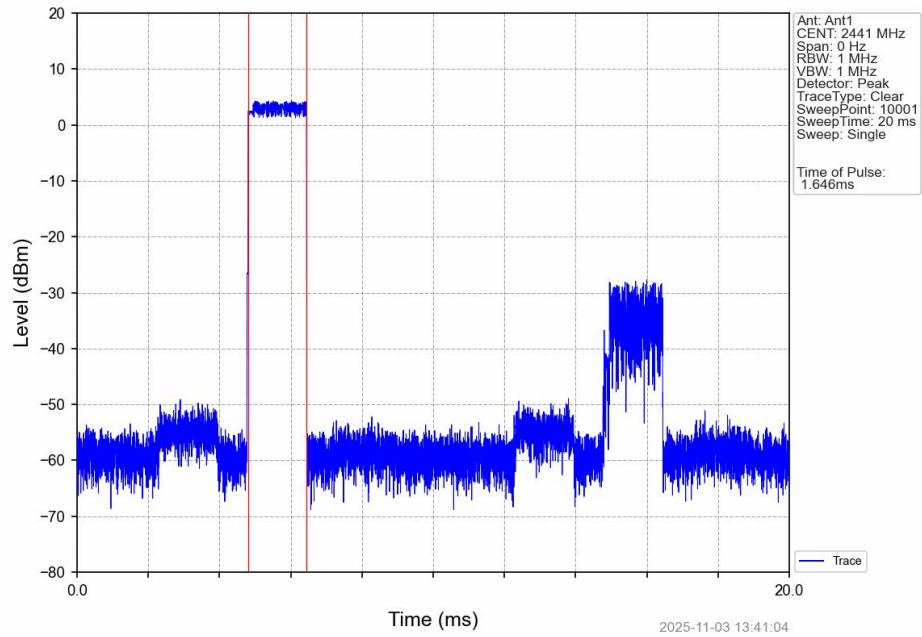
# Pi/4DQPSK\_2DH1\_HOPP\_Ant1\_NTNV



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



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



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

