

## ANNEX D TEST DATA

For

|                      |                                            |
|----------------------|--------------------------------------------|
| Project No.:         | 8134EU011503W                              |
| Client:              | Guangzhou Zaozhongwan E-Commerce Co., Ltd. |
| Product Description: | Soundbar                                   |
| Model No.:           | KM-Midnight60                              |
| FCC ID:              | 2BDKK-KM-LAV0X                             |
| Technology:          | Bluetooth BDR&EDR                          |
| Test Engineer:       | <i>Mikoy zhu</i>                           |
| Test Date:           | 2023-12-05                                 |

### 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   |

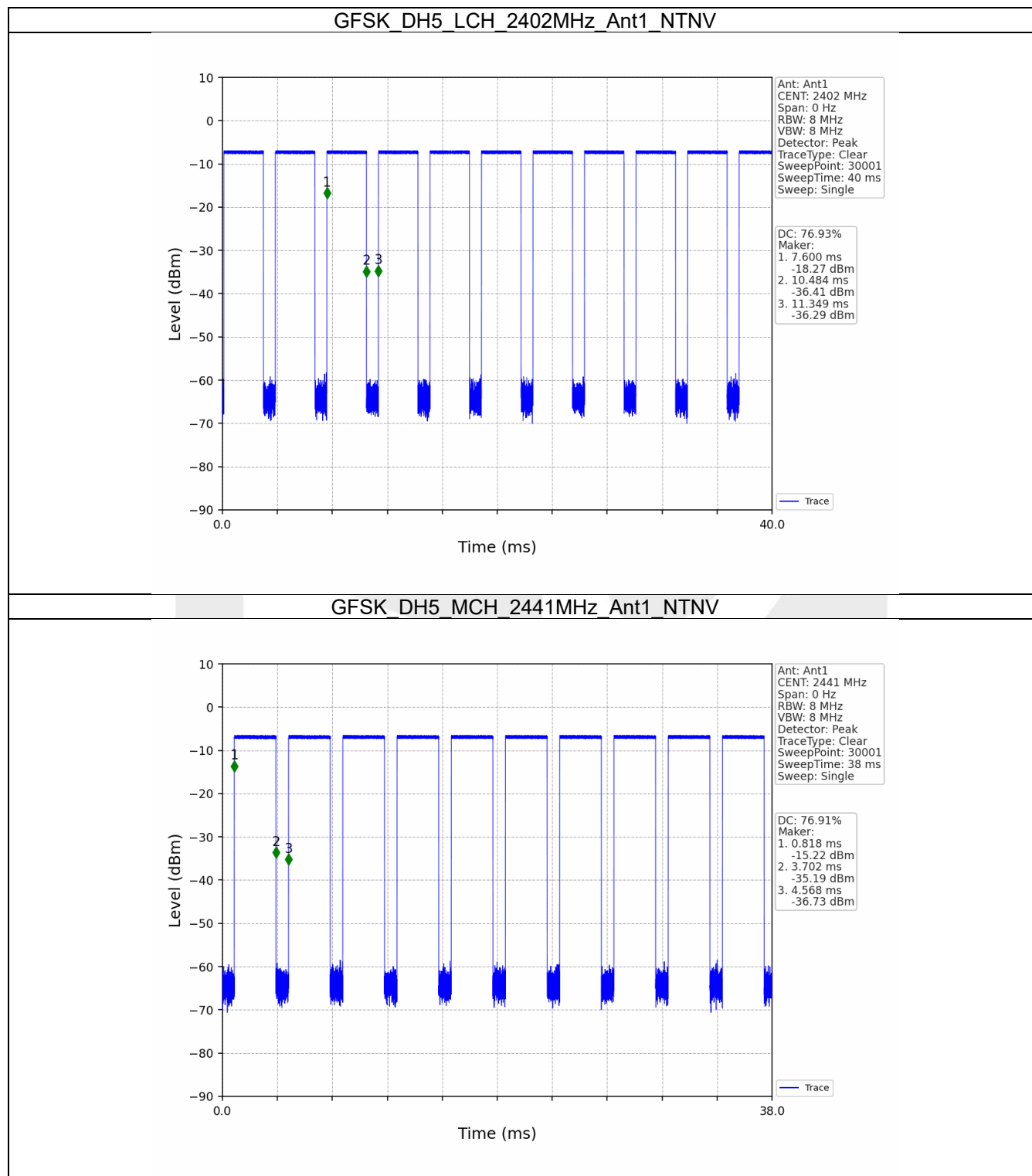
## 1. Duty Cycle

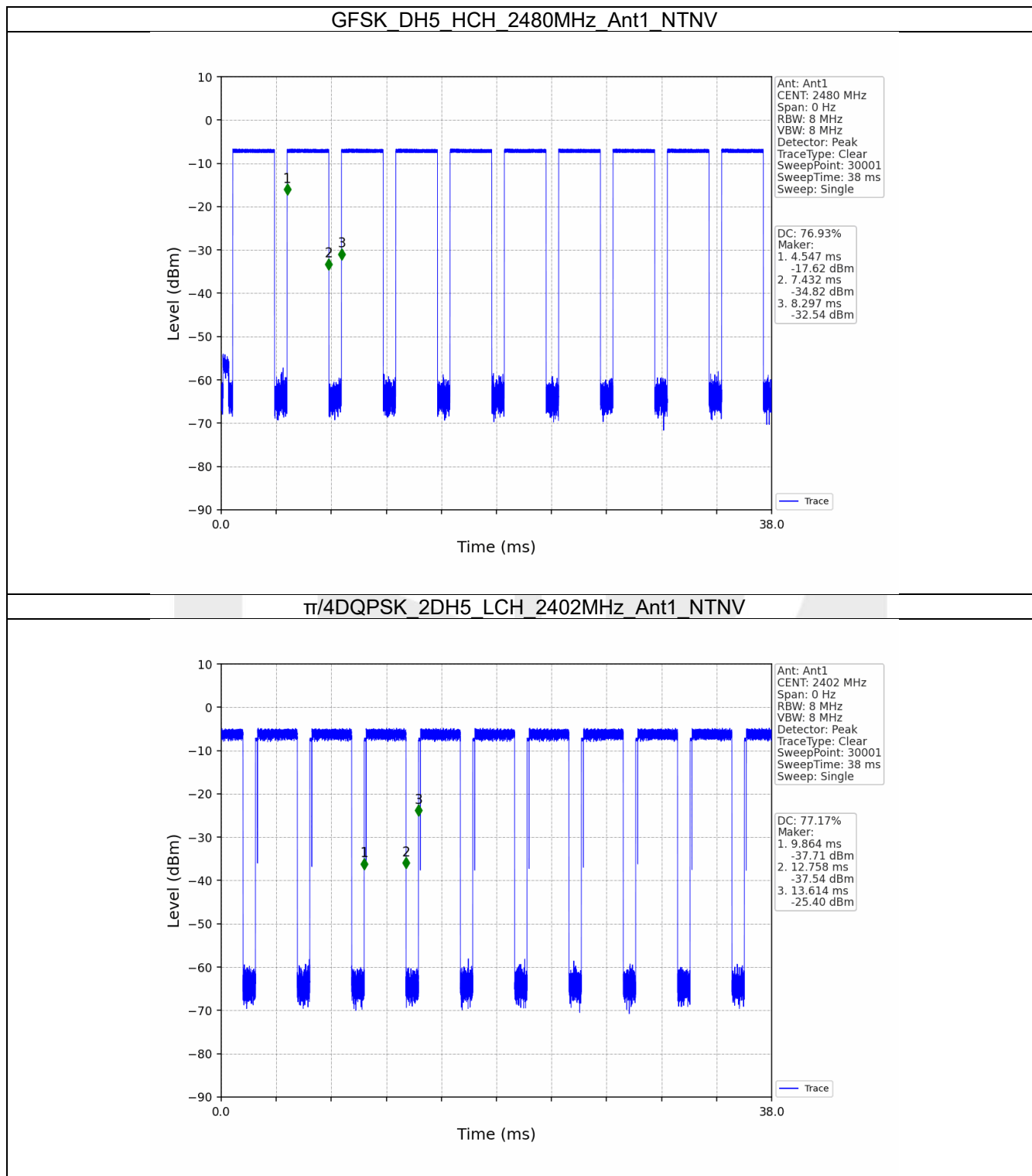
### 1.1 Ant1

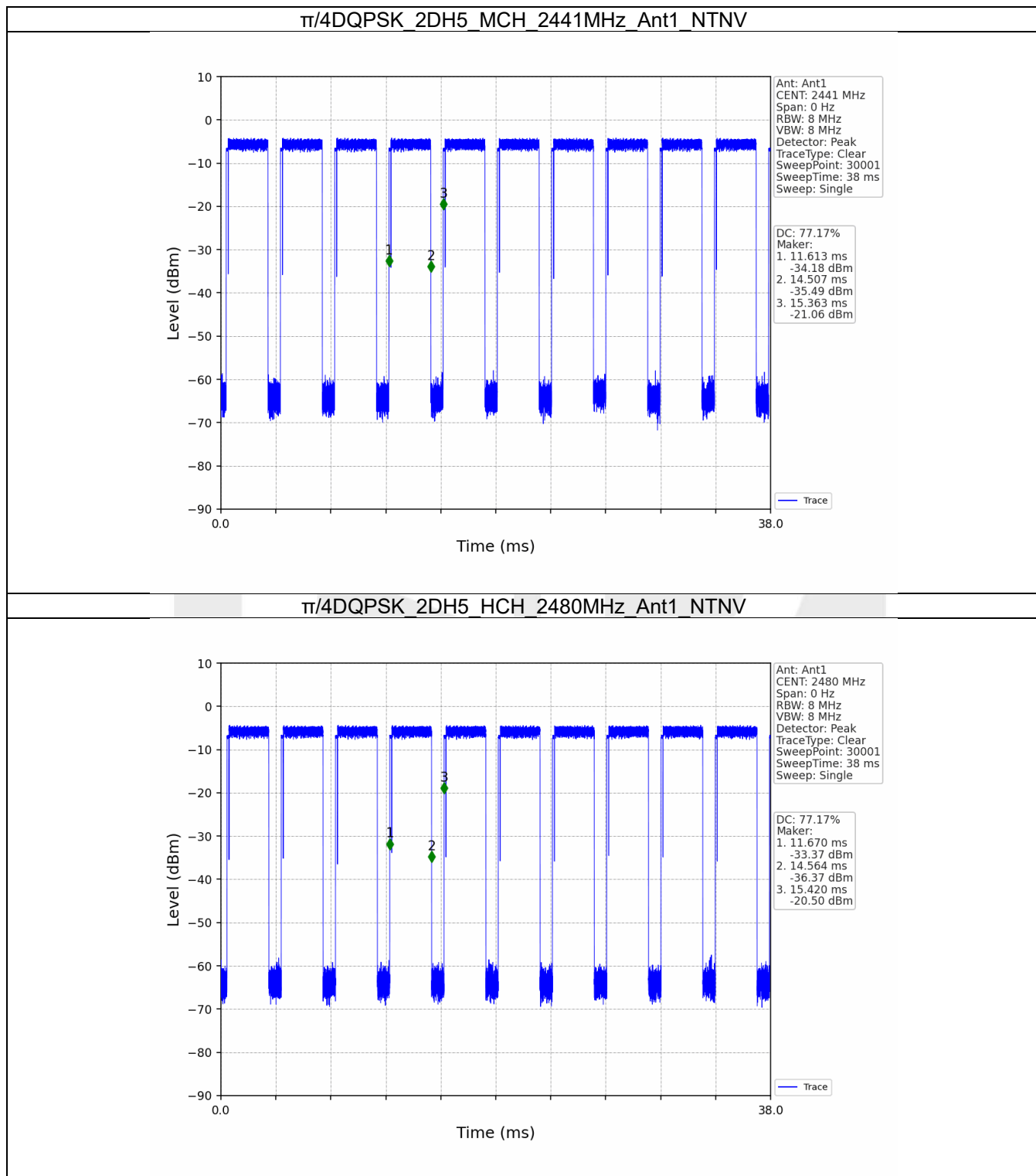
#### 1.1.1 Test Result

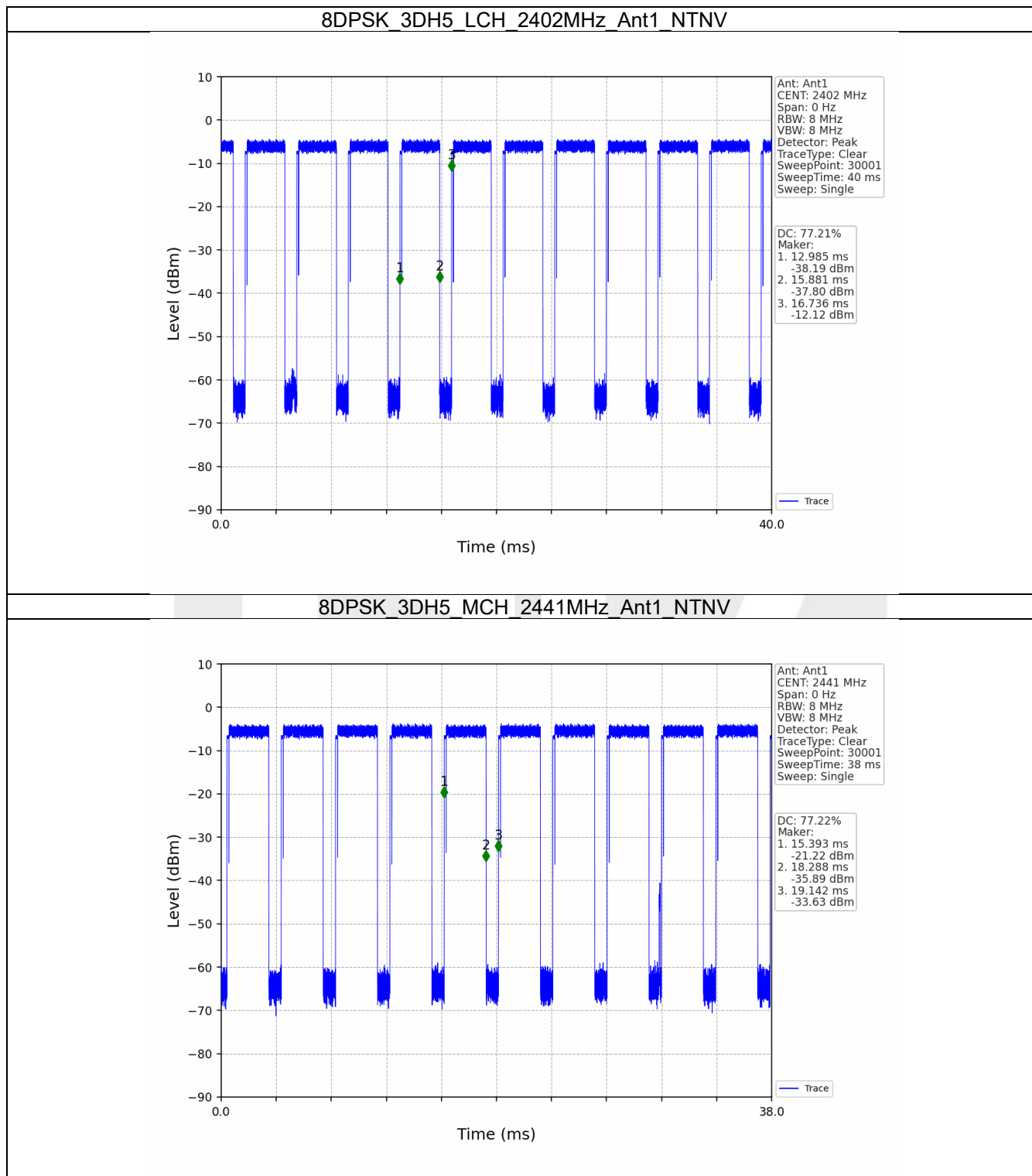
| Ant1          |         |                 |             |           |             |                |                                   |                       |
|---------------|---------|-----------------|-------------|-----------|-------------|----------------|-----------------------------------|-----------------------|
| 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         | 2.884     | 3.749       | 76.93          | 1.14                              | 0.04                  |
|               |         | 2441            | DH5         | 2.884     | 3.750       | 76.91          | 1.14                              | 0.03                  |
|               |         | 2480            | DH5         | 2.885     | 3.750       | 76.93          | 1.14                              | 0.01                  |
| $\pi/4$ DQPSK | SISO    | 2402            | 2DH5        | 2.894     | 3.750       | 77.17          | 1.13                              | 0.03                  |
|               |         | 2441            | 2DH5        | 2.894     | 3.750       | 77.17          | 1.13                              | 0.03                  |
|               |         | 2480            | 2DH5        | 2.894     | 3.750       | 77.17          | 1.13                              | 0.03                  |
| 8DPSK         | SISO    | 2402            | 3DH5        | 2.896     | 3.751       | 77.21          | 1.12                              | 0.04                  |
|               |         | 2441            | 3DH5        | 2.895     | 3.749       | 77.22          | 1.12                              | 0.03                  |
|               |         | 2480            | 3DH5        | 2.895     | 3.749       | 77.22          | 1.12                              | 0.03                  |

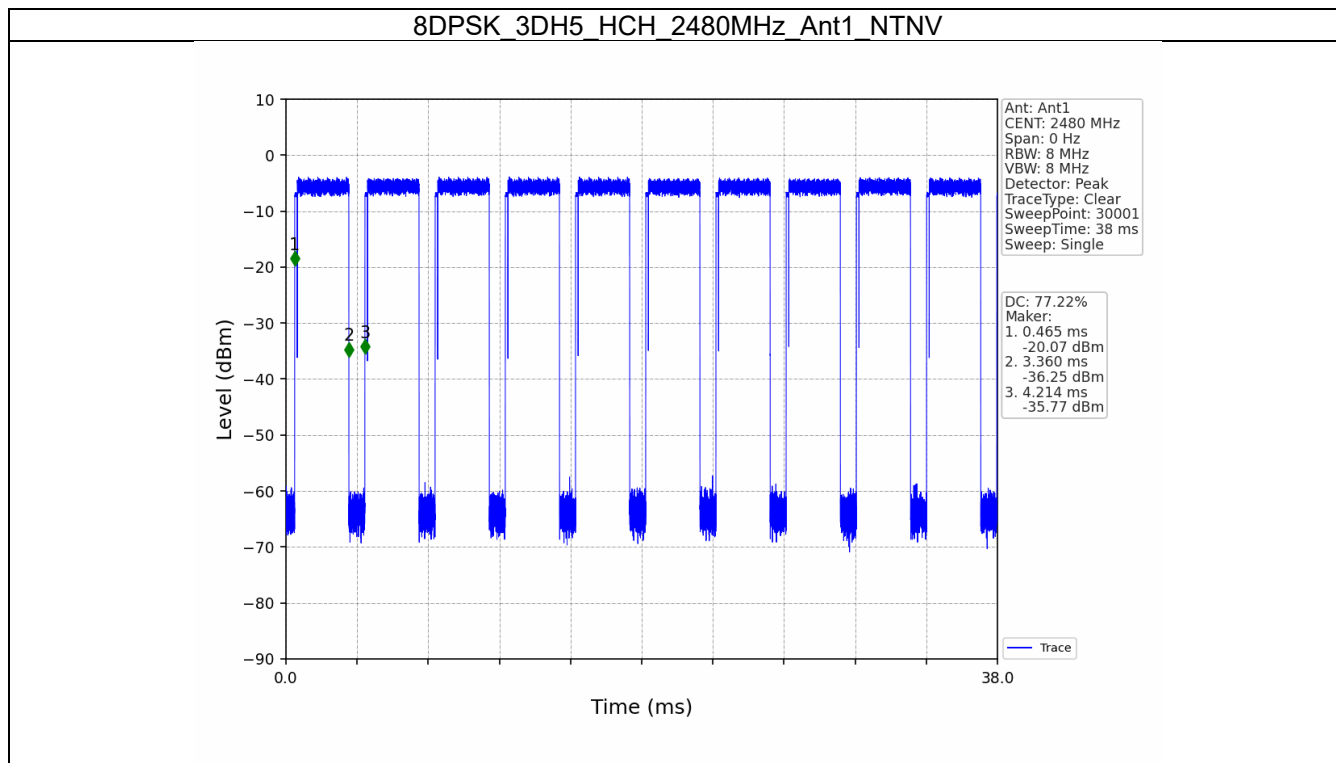
### 1.1.2 Test Graph











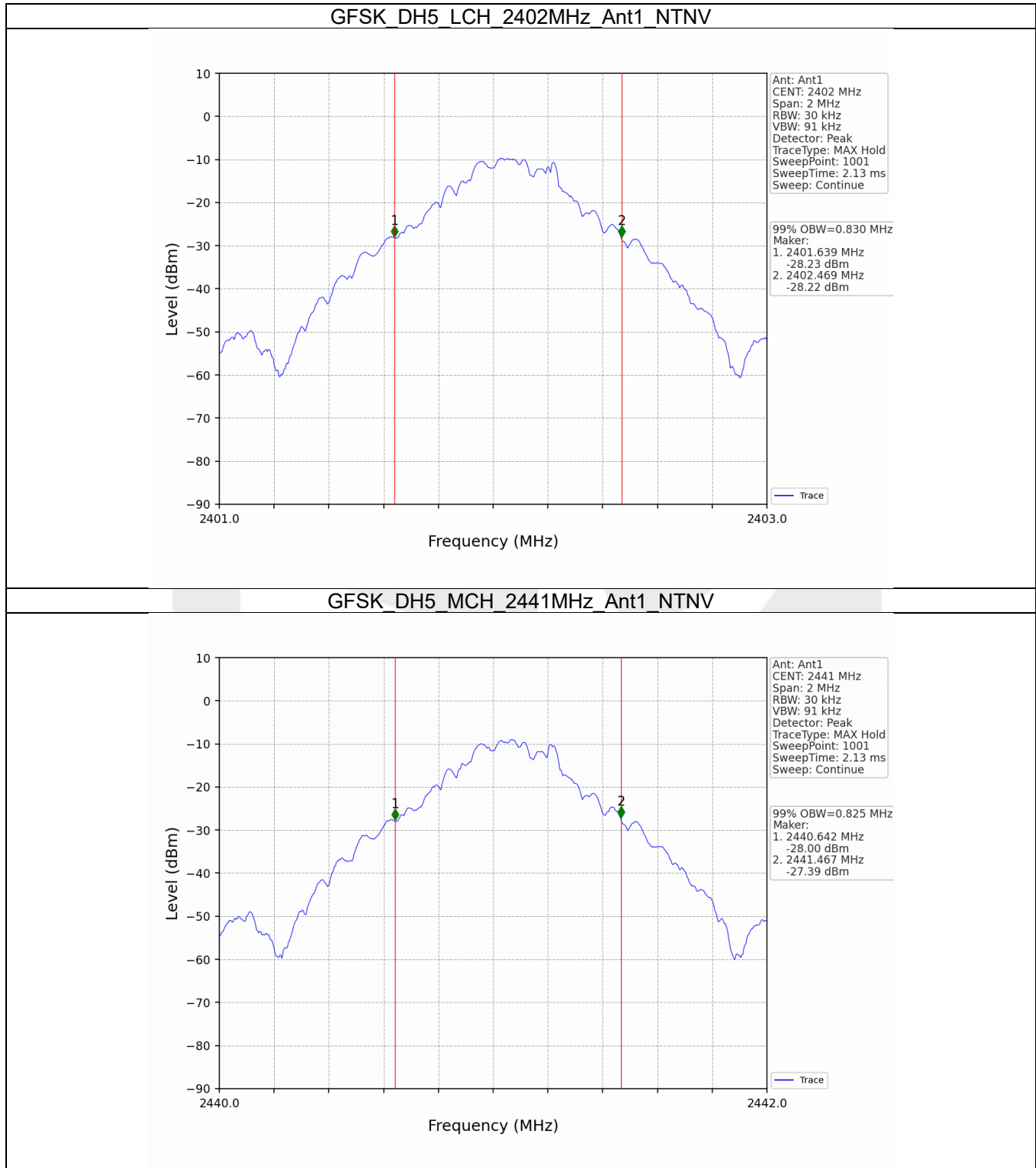
## 2. Bandwidth

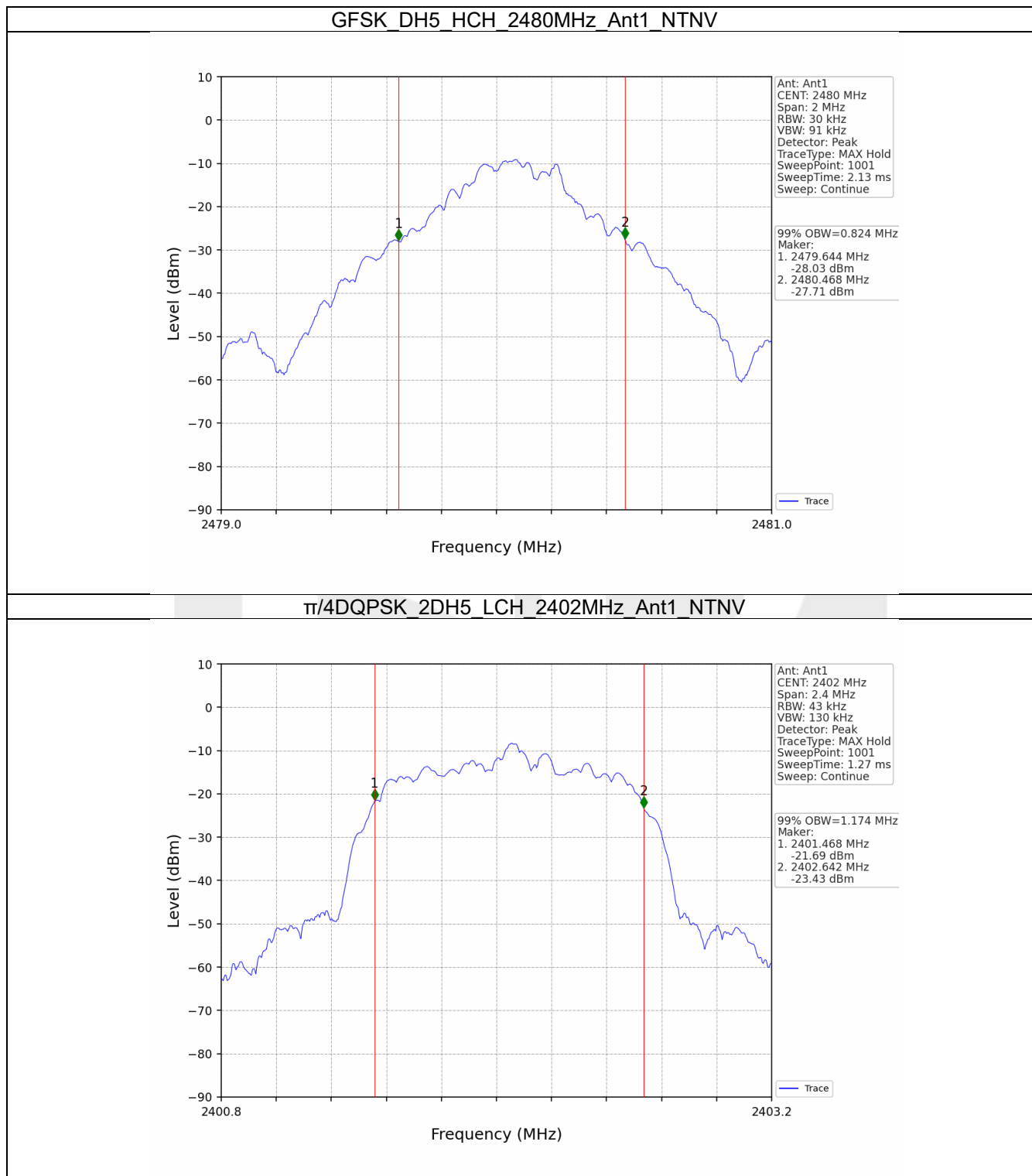
### 2.1 OBW

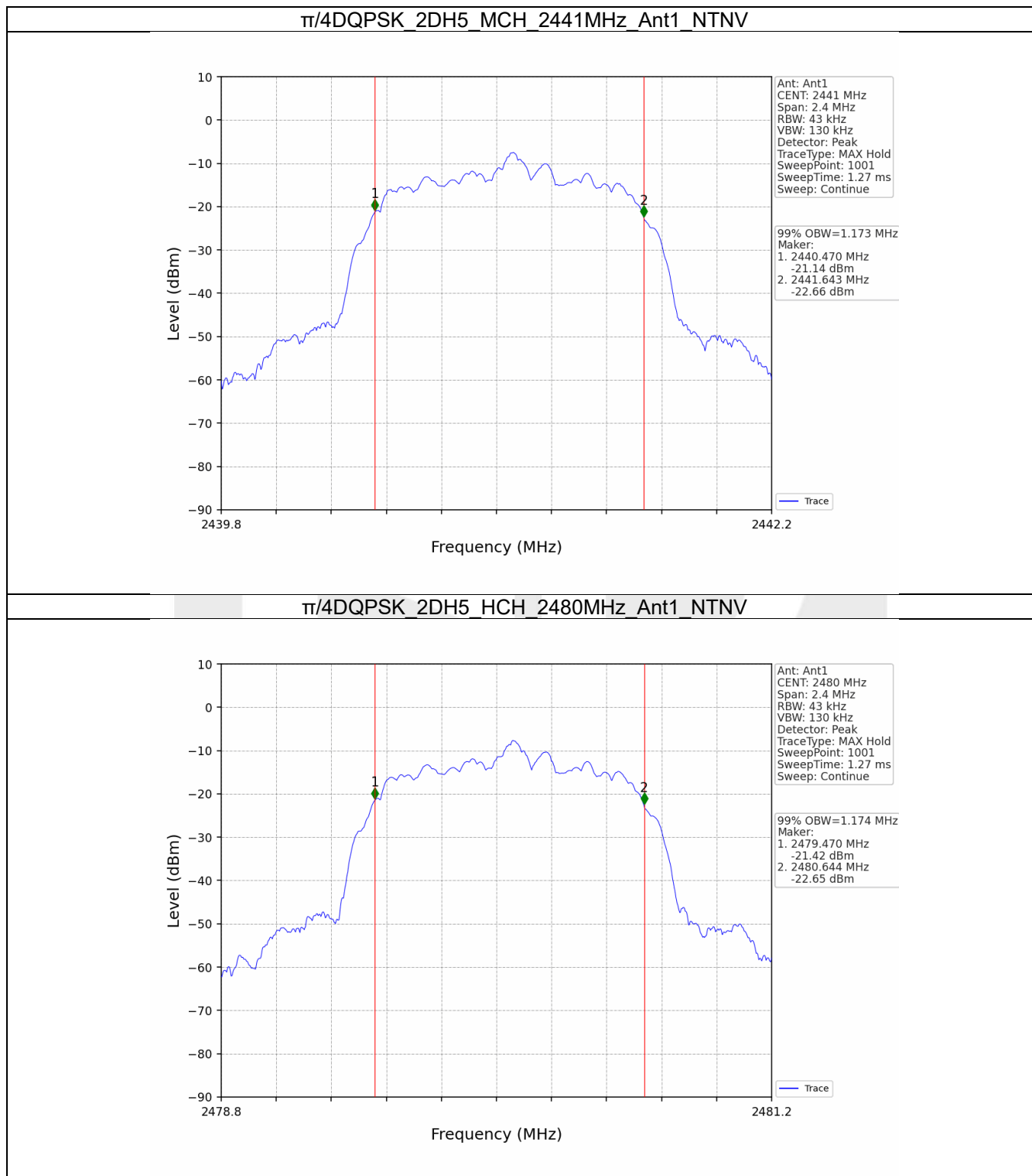
#### 2.1.1 Test Result

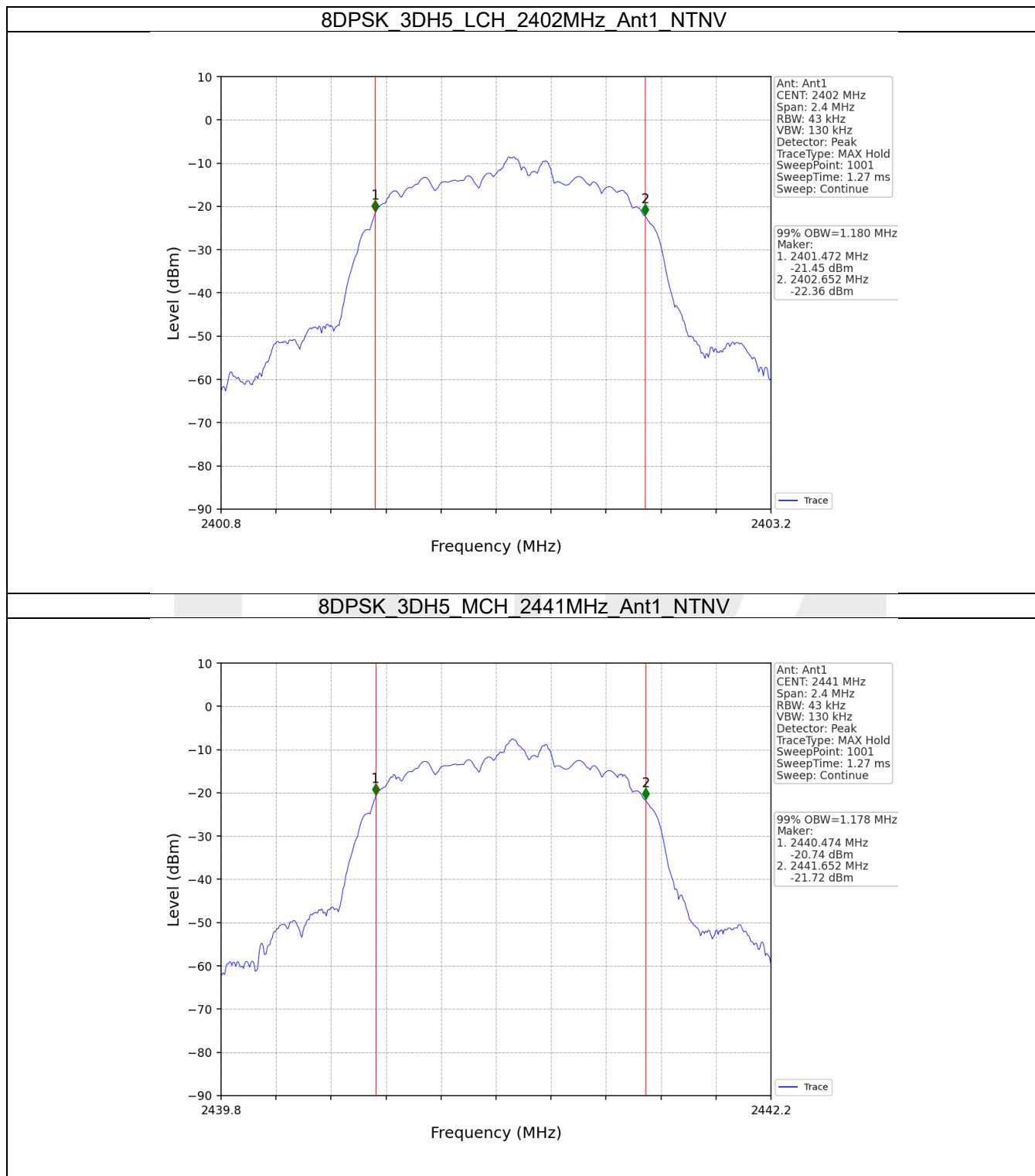
| Mode          | TX Type | Frequency (MHz) | Packet Type | ANT | 99% Occupied Bandwidth (MHz) | Verdict |
|---------------|---------|-----------------|-------------|-----|------------------------------|---------|
|               |         |                 |             |     | Result                       |         |
| GFSK          | SISO    | 2402            | DH5         | 1   | 0.830                        | Pass    |
|               |         | 2441            | DH5         | 1   | 0.825                        | Pass    |
|               |         | 2480            | DH5         | 1   | 0.824                        | Pass    |
| $\pi/4$ DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.174                        | Pass    |
|               |         | 2441            | 2DH5        | 1   | 1.173                        | Pass    |
|               |         | 2480            | 2DH5        | 1   | 1.174                        | Pass    |
| 8DPSK         | SISO    | 2402            | 3DH5        | 1   | 1.180                        | Pass    |
|               |         | 2441            | 3DH5        | 1   | 1.178                        | Pass    |
|               |         | 2480            | 3DH5        | 1   | 1.180                        | Pass    |

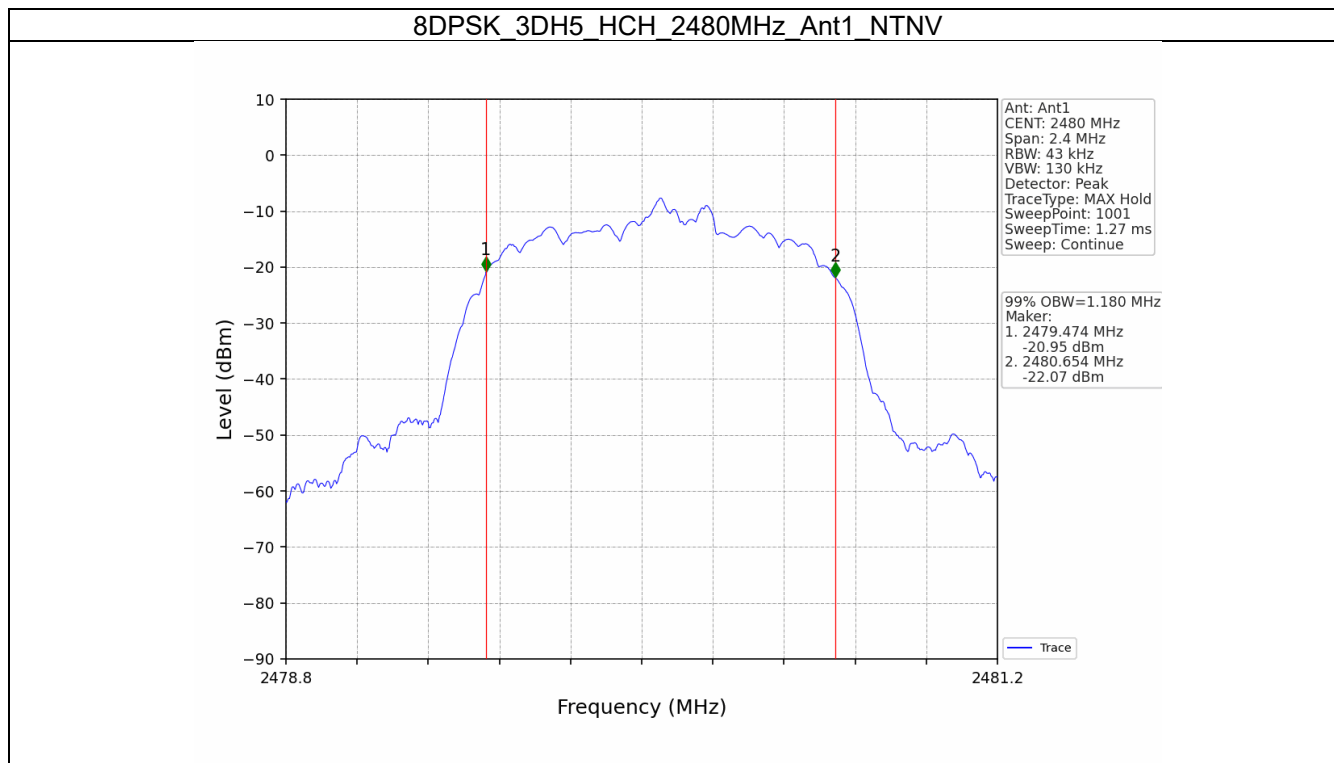
## 2.1.2 Test Graph









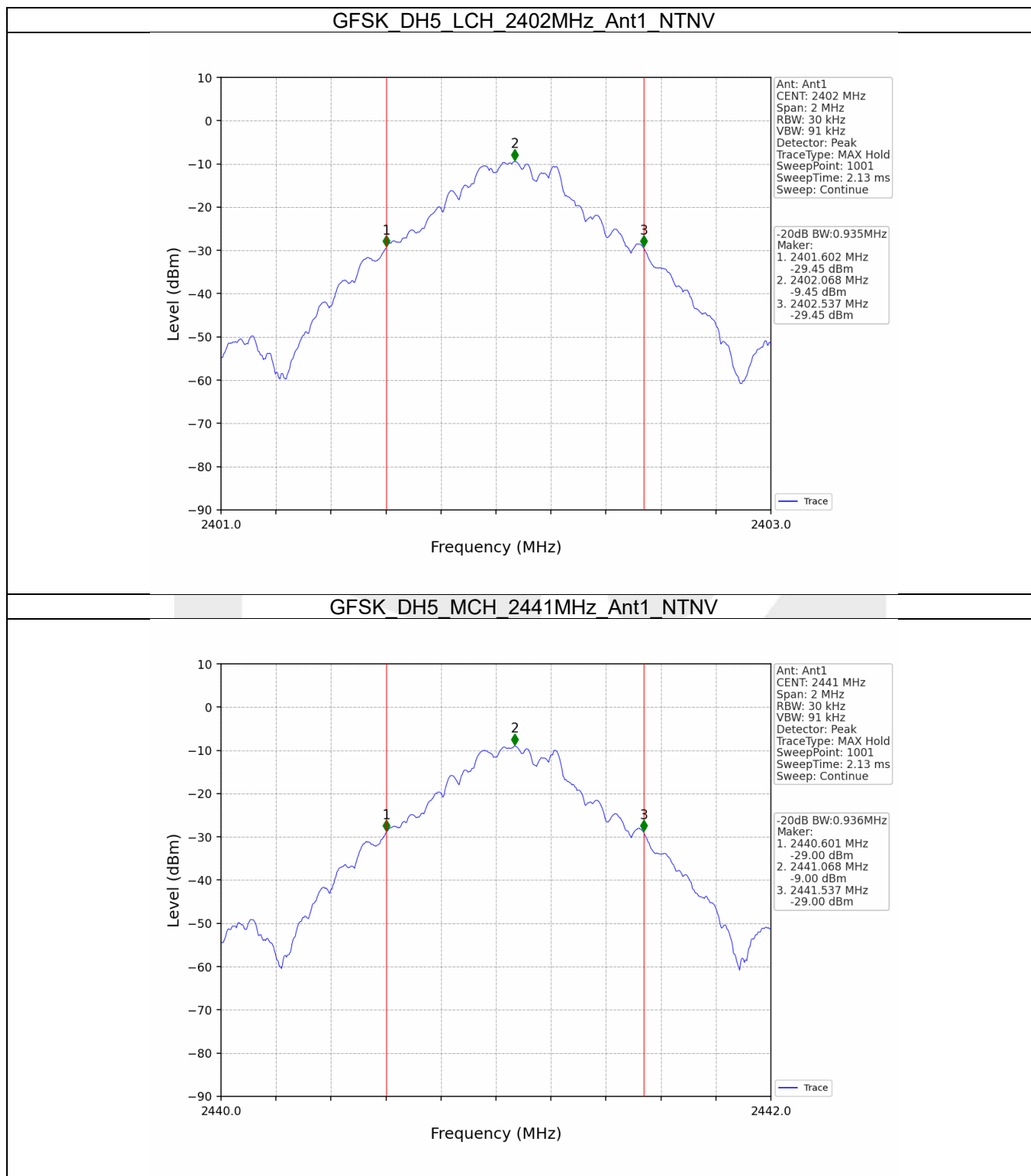


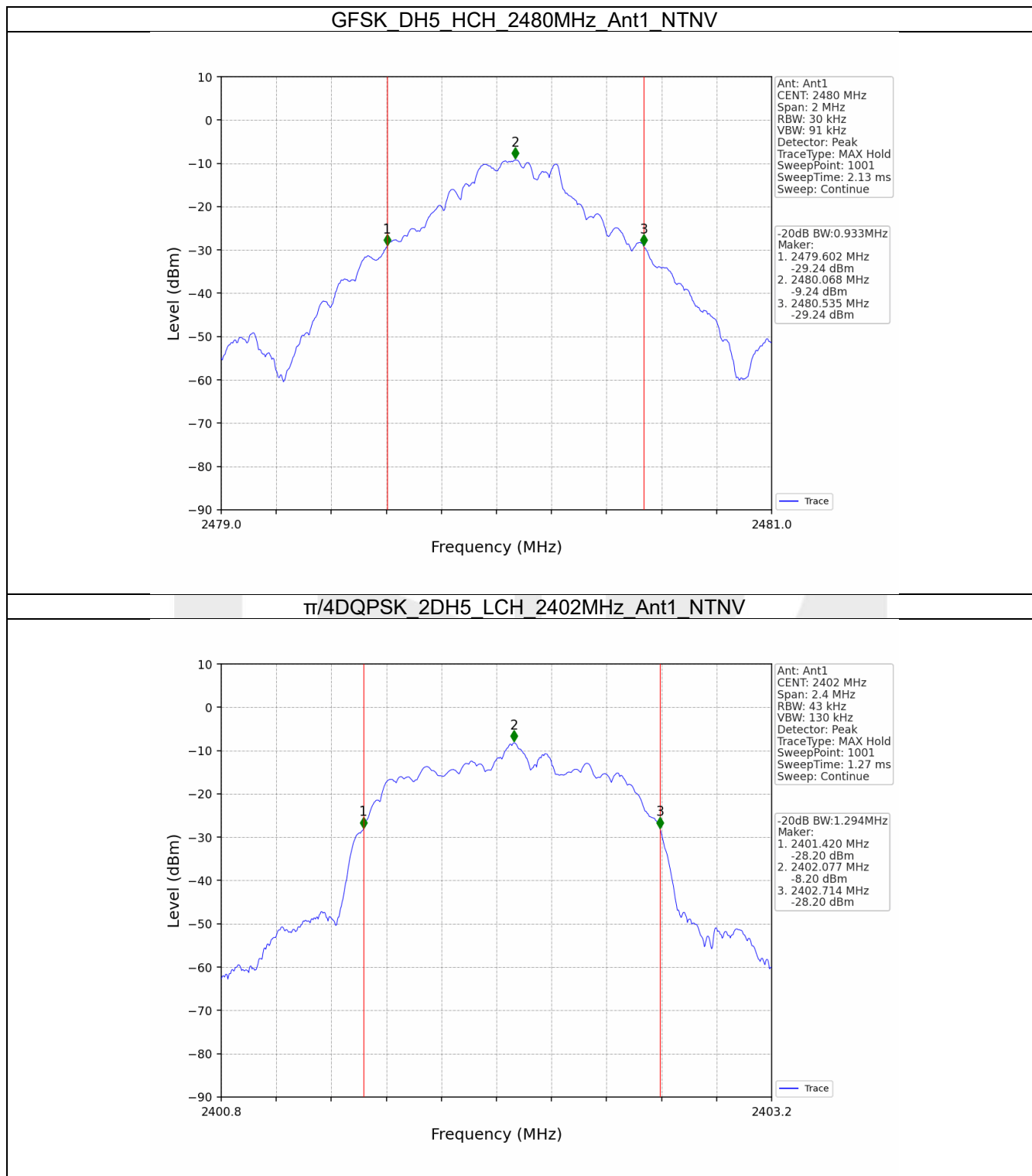
## 2.2 20dB BW

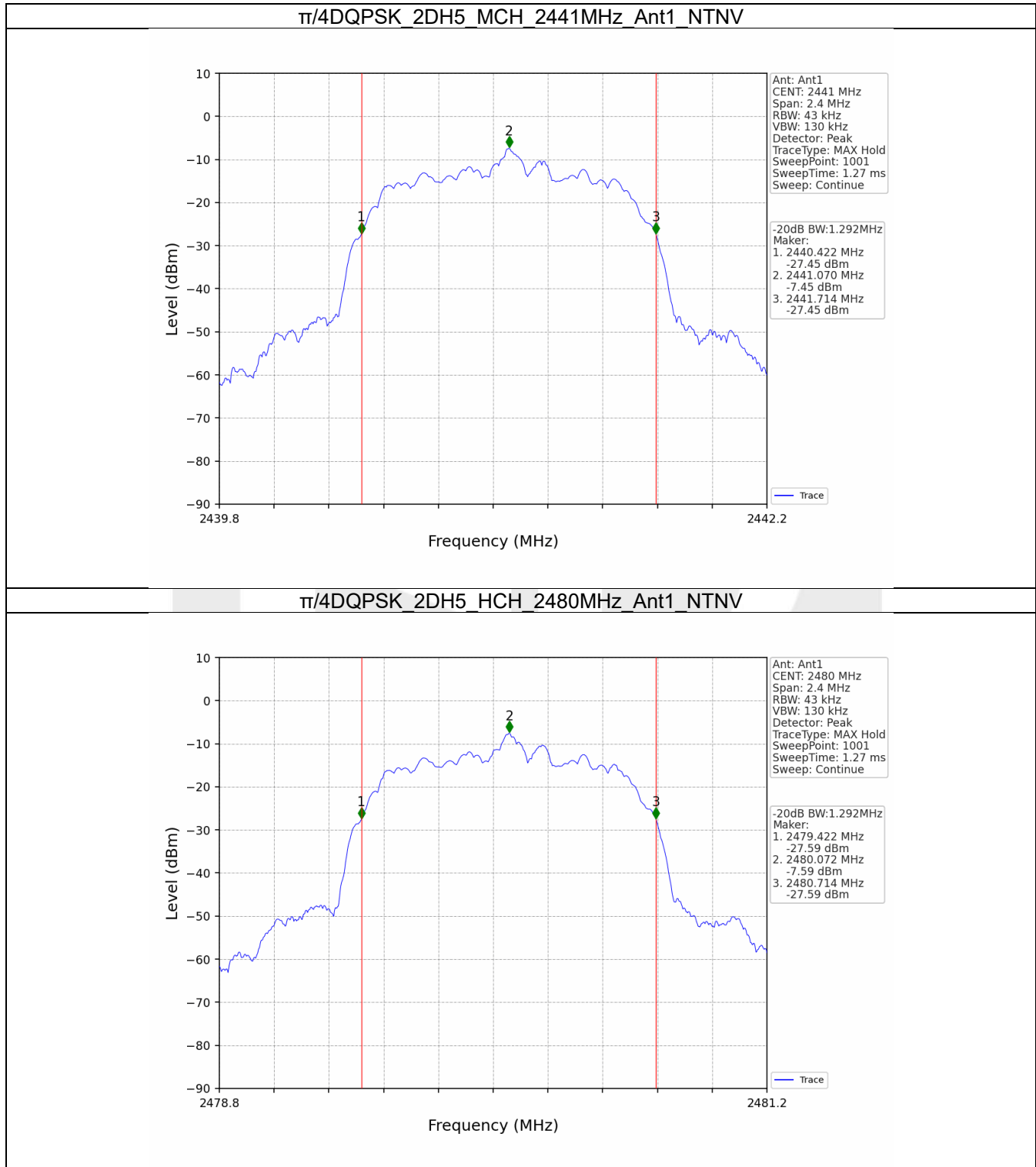
### 2.2.1 Test Result

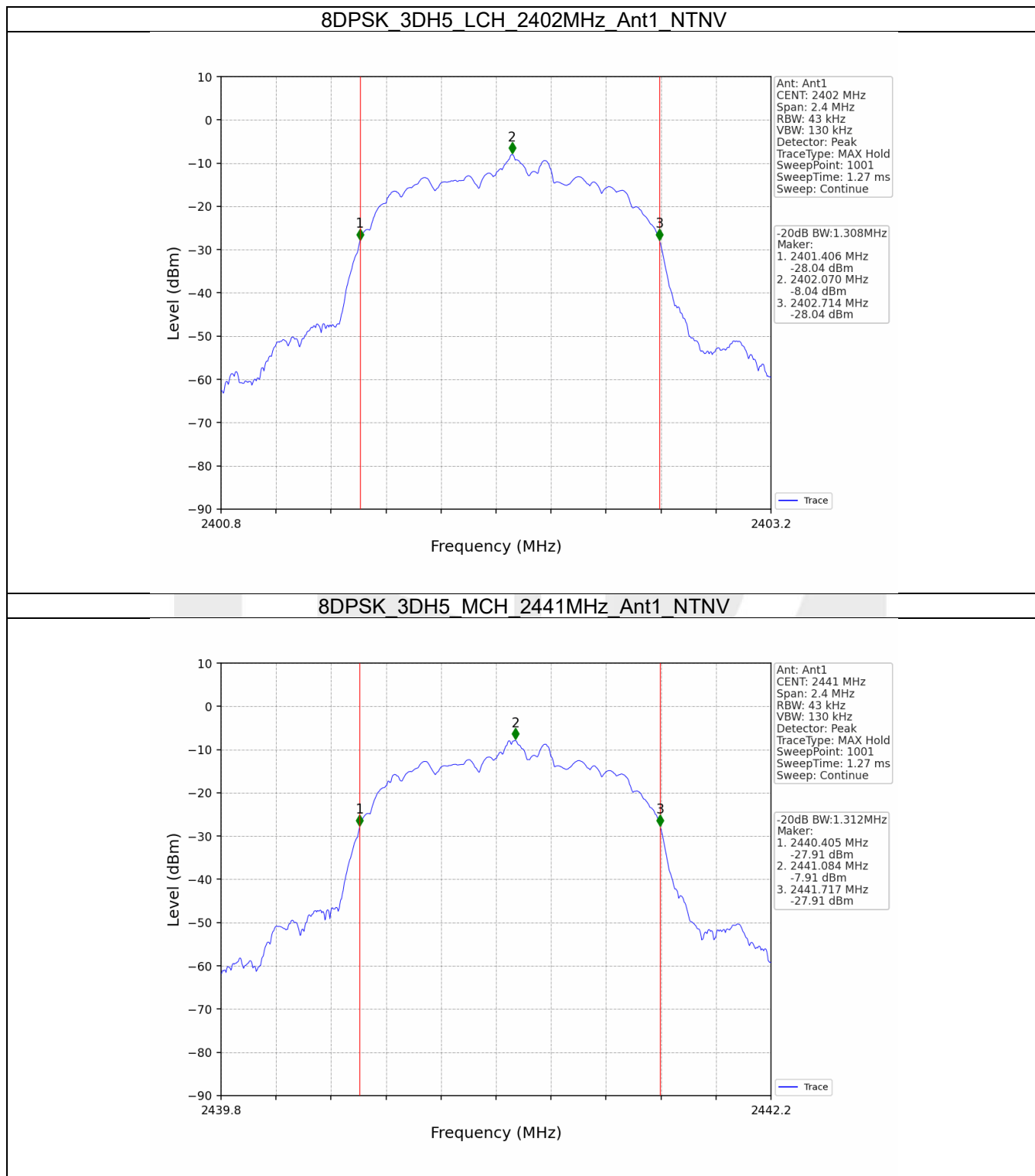
| Mode          | TX Type | Frequency (MHz) | Packet Type | ANT | 20dB Bandwidth (MHz) | Verdict |
|---------------|---------|-----------------|-------------|-----|----------------------|---------|
|               |         |                 |             |     | Result               |         |
| GFSK          | SISO    | 2402            | DH5         | 1   | 0.935                | Pass    |
|               |         | 2441            | DH5         | 1   | 0.936                | Pass    |
|               |         | 2480            | DH5         | 1   | 0.933                | Pass    |
| $\pi/4$ DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.294                | Pass    |
|               |         | 2441            | 2DH5        | 1   | 1.292                | Pass    |
|               |         | 2480            | 2DH5        | 1   | 1.292                | Pass    |
| 8DPSK         | SISO    | 2402            | 3DH5        | 1   | 1.308                | Pass    |
|               |         | 2441            | 3DH5        | 1   | 1.312                | Pass    |
|               |         | 2480            | 3DH5        | 1   | 1.313                | Pass    |

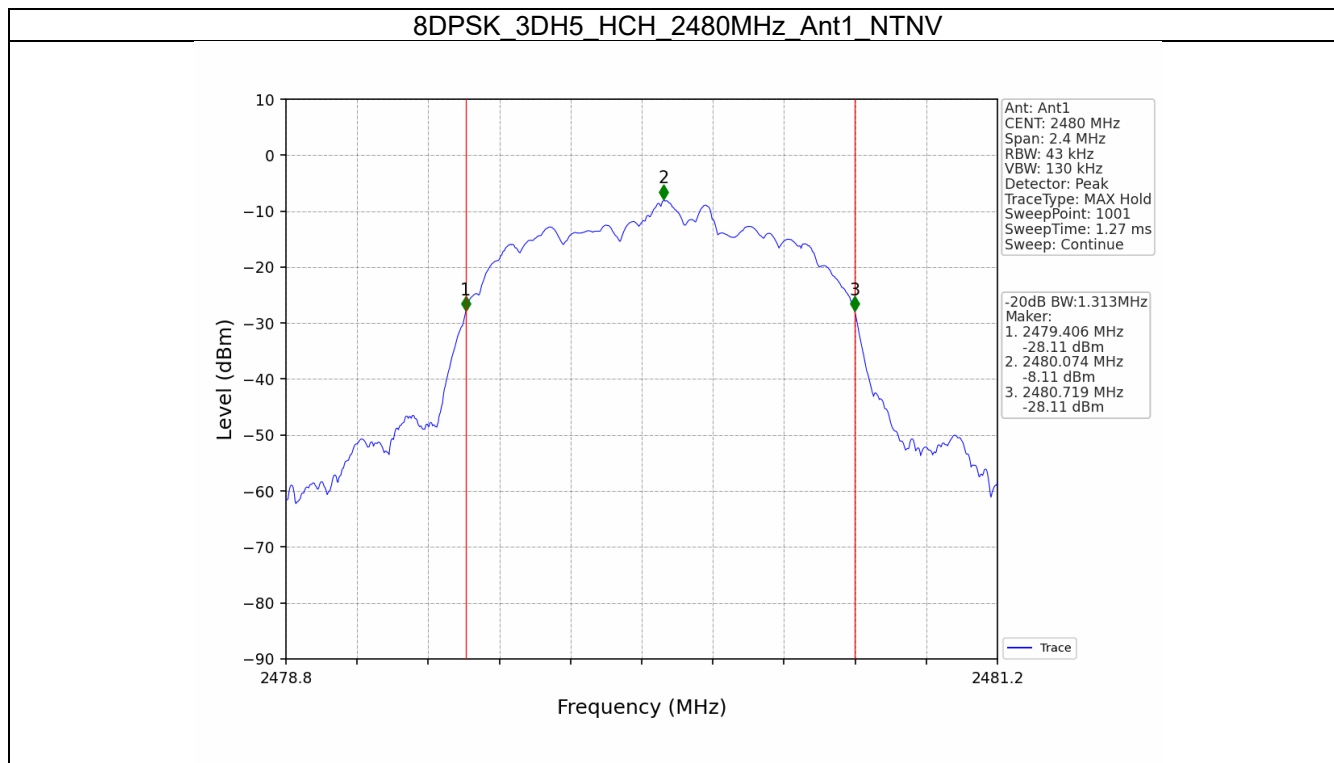
## 2.2.2 Test Graph











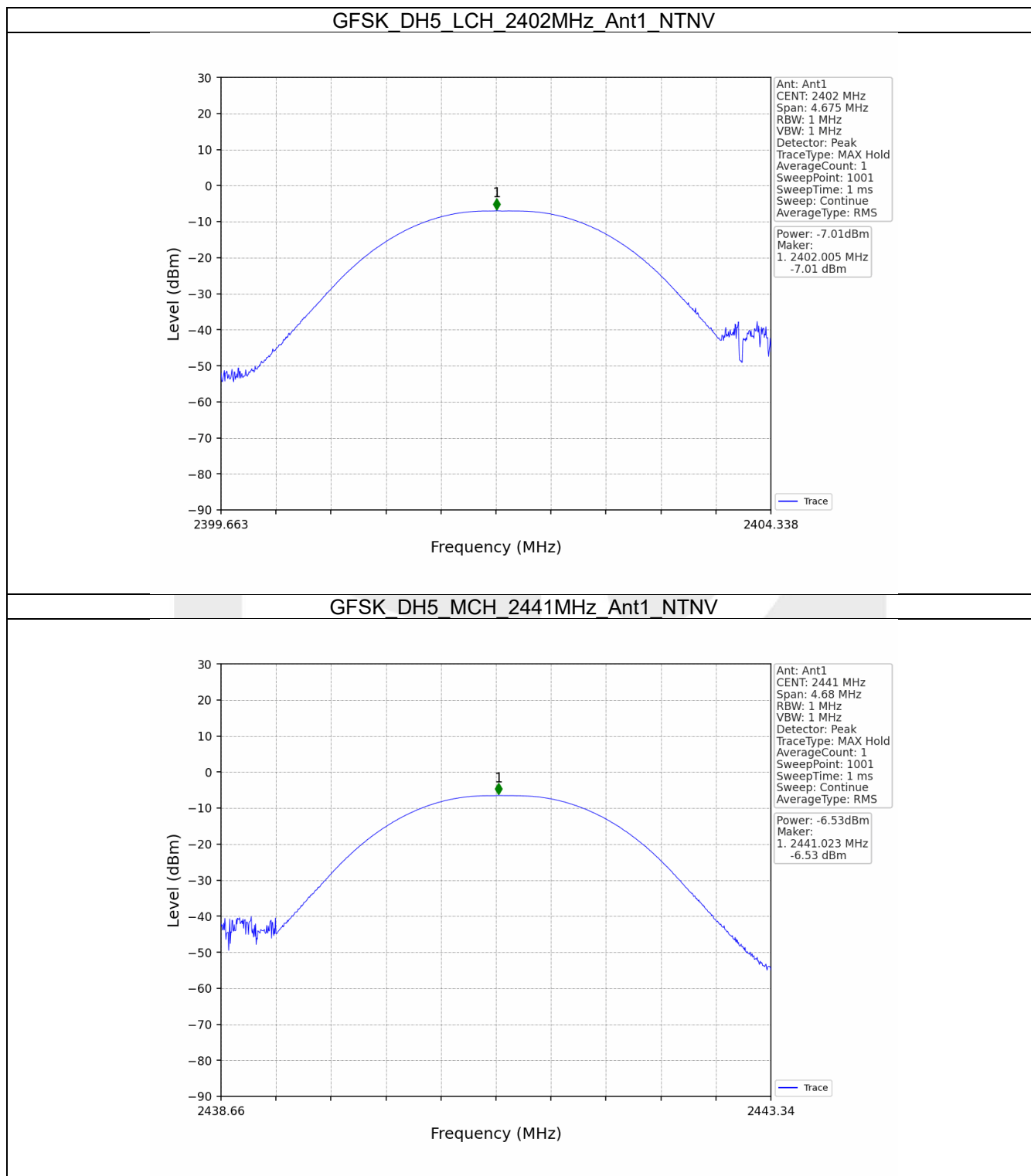
### 3. Maximum Conducted Output Power

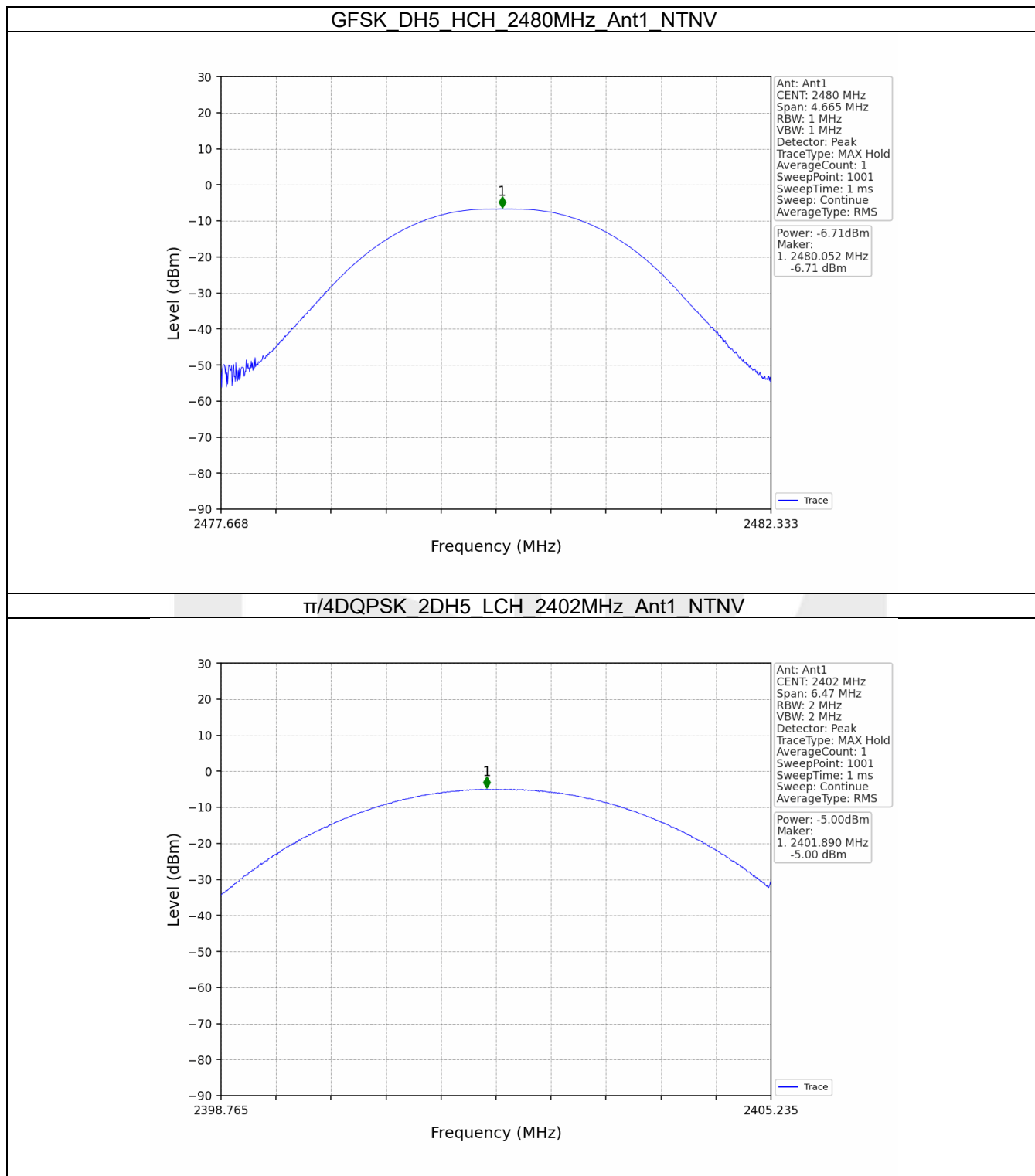
#### 3.1 Power

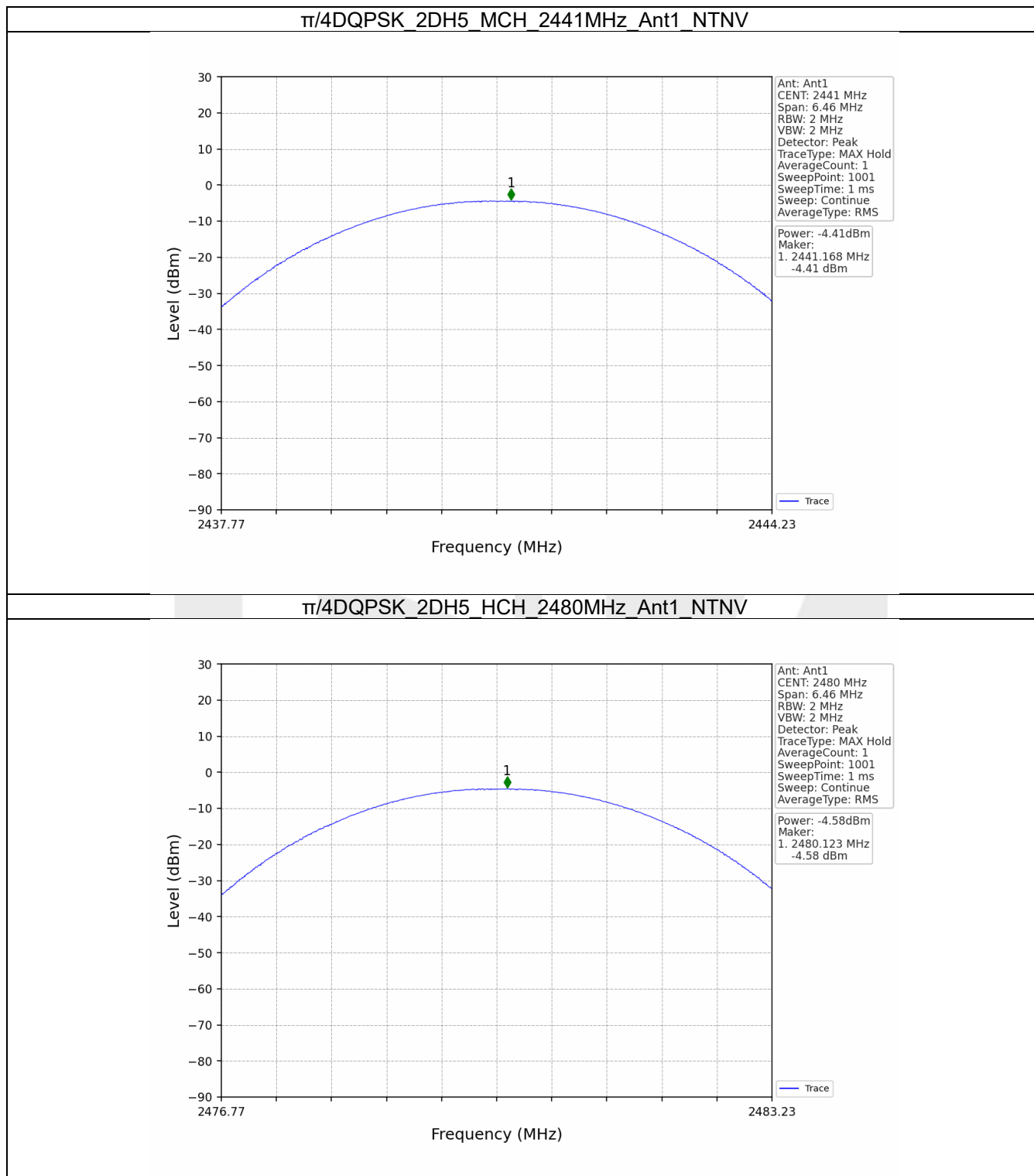
##### 3.1.1 Test Result

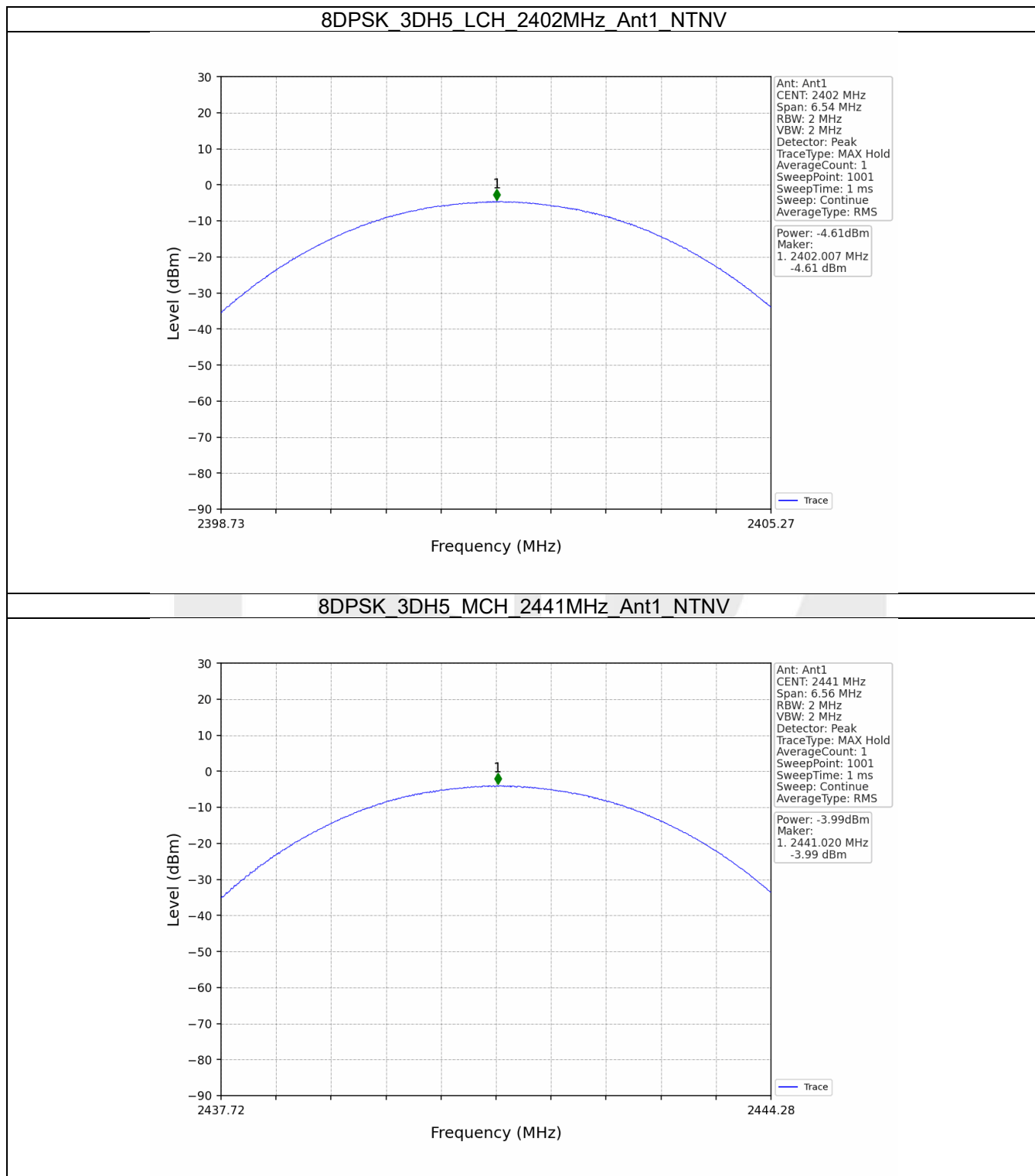
| Mode          | TX Type | Frequency (MHz) | Packet Type | Maximum Peak Conducted Output Power (dBm) |              | Verdict |
|---------------|---------|-----------------|-------------|-------------------------------------------|--------------|---------|
|               |         |                 |             | ANT1                                      | Limit        |         |
| GFSK          | SISO    | 2402            | DH5         | -7.01                                     | $\leq 30$    | Pass    |
|               |         | 2441            | DH5         | -6.53                                     | $\leq 30$    | Pass    |
|               |         | 2480            | DH5         | -6.71                                     | $\leq 30$    | Pass    |
| $\pi/4$ DQPSK | SISO    | 2402            | 2DH5        | -5.00                                     | $\leq 20.97$ | Pass    |
|               |         | 2441            | 2DH5        | -4.41                                     | $\leq 20.97$ | Pass    |
|               |         | 2480            | 2DH5        | -4.58                                     | $\leq 20.97$ | Pass    |
| 8DPSK         | SISO    | 2402            | 3DH5        | -4.61                                     | $\leq 20.97$ | Pass    |
|               |         | 2441            | 3DH5        | -3.99                                     | $\leq 20.97$ | Pass    |
|               |         | 2480            | 3DH5        | -4.09                                     | $\leq 20.97$ | Pass    |

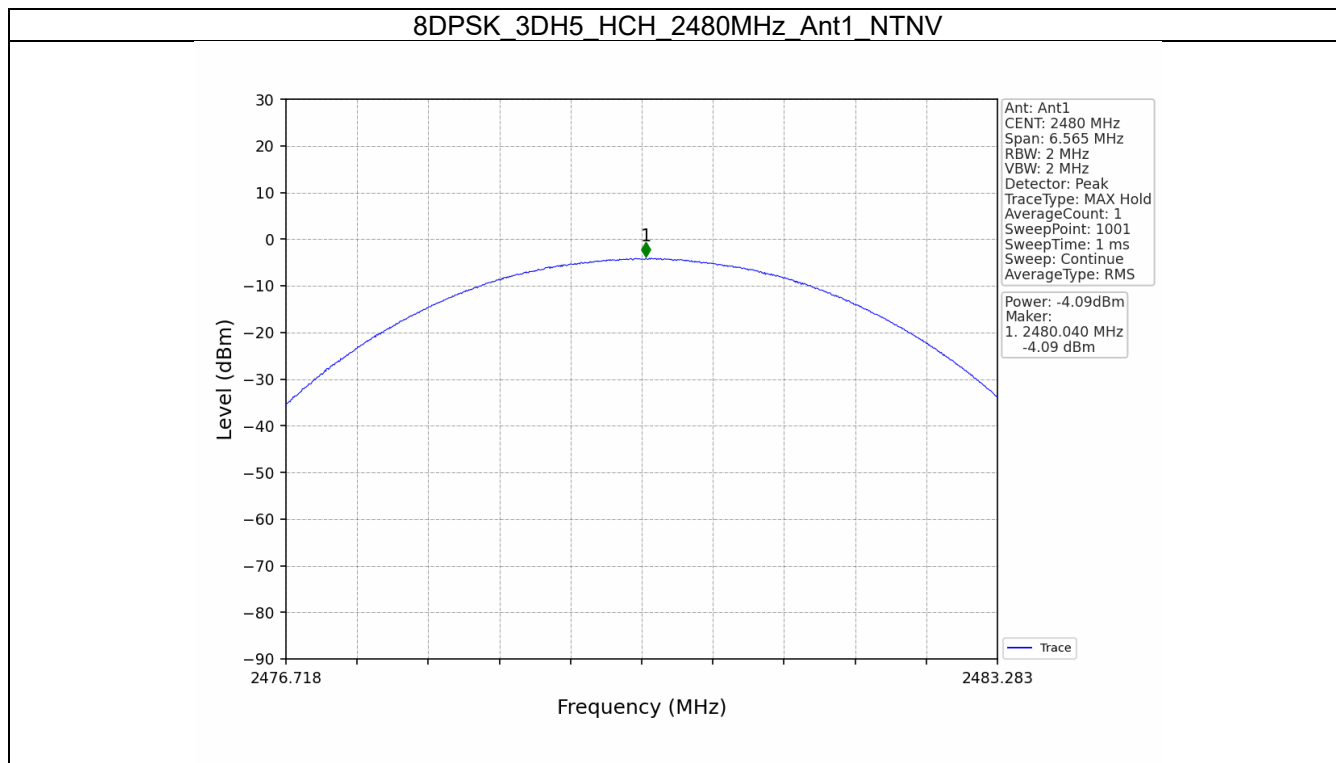
### 3.1.2 Test Graph











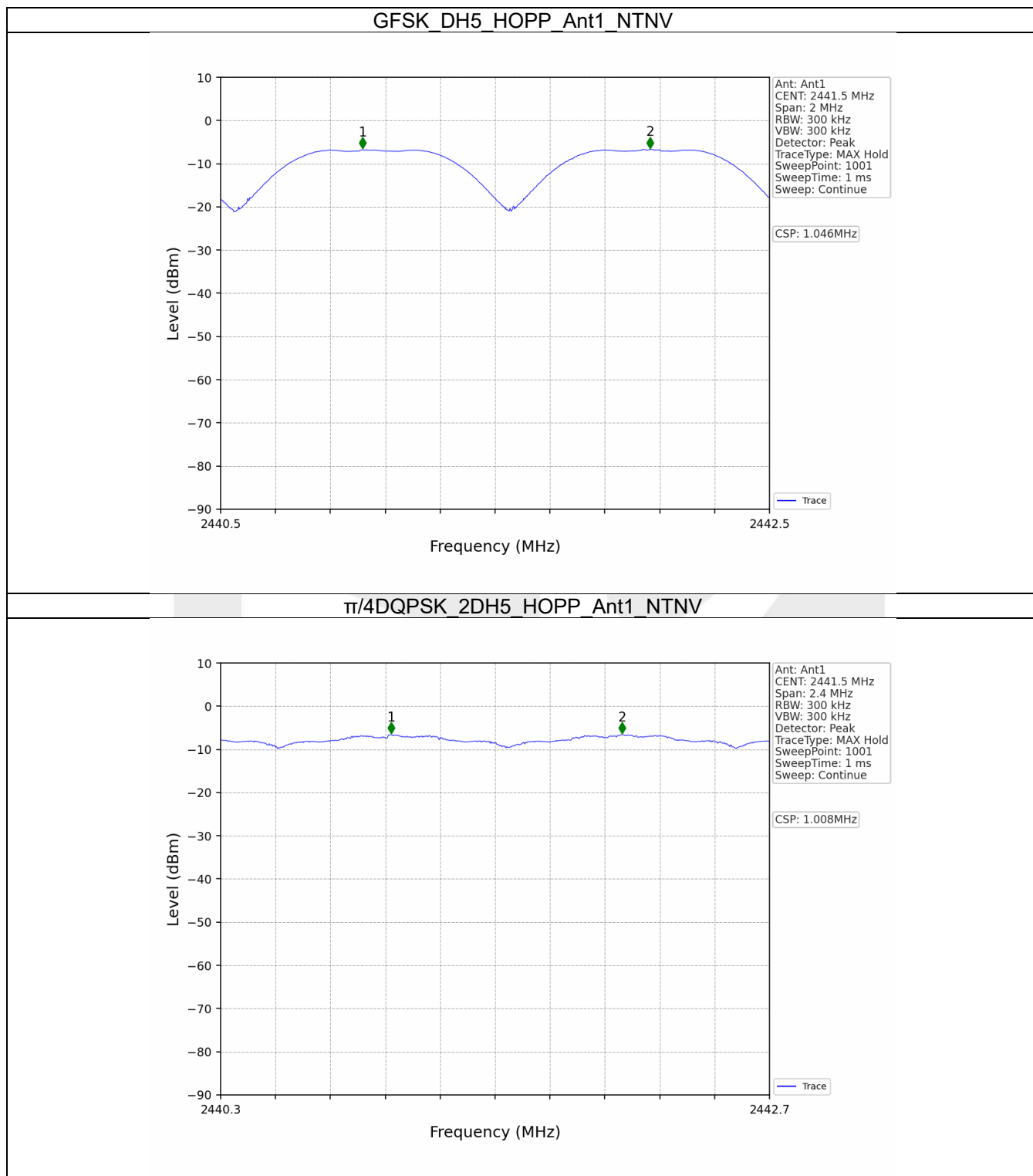
#### 4. Carrier Frequency Separation

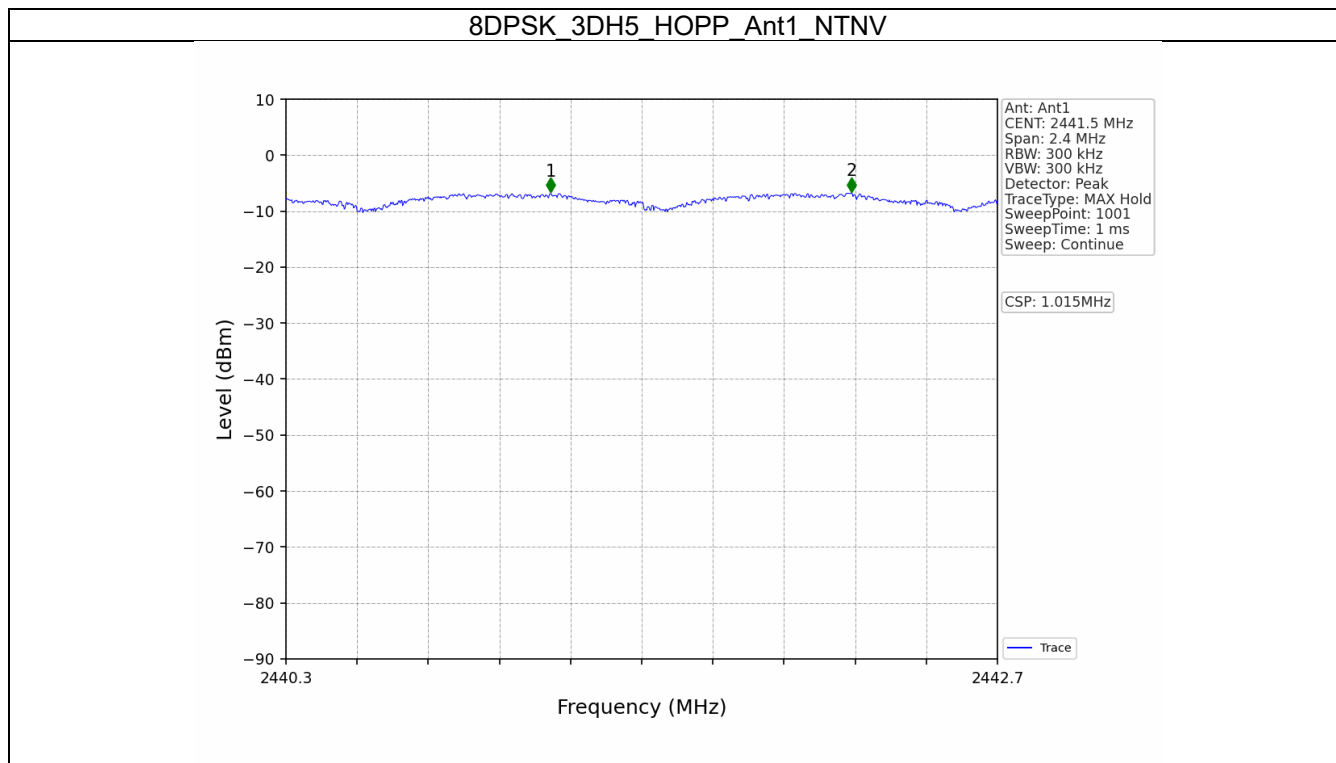
##### 4.1 Ant1

##### 4.1.1 Test Result

| Ant1          |         |                 |             |                          |                      |              |         |
|---------------|---------|-----------------|-------------|--------------------------|----------------------|--------------|---------|
| Mode          | TX Type | Frequency (MHz) | Packet Type | Channel Separation (MHz) | 20dB Bandwidth (MHz) | Limit (MHz)  | Verdict |
| GFSK          | SISO    | HOPP            | DH5         | 1.046                    | 0.936                | $\geq 0.936$ | Pass    |
| $\pi/4$ DQPSK | SISO    | HOPP            | 2DH5        | 1.008                    | 1.294                | $\geq 0.863$ | Pass    |
| 8DPSK         | SISO    | HOPP            | 3DH5        | 1.015                    | 1.313                | $\geq 0.875$ | Pass    |

#### 4.1.2 Test Graph





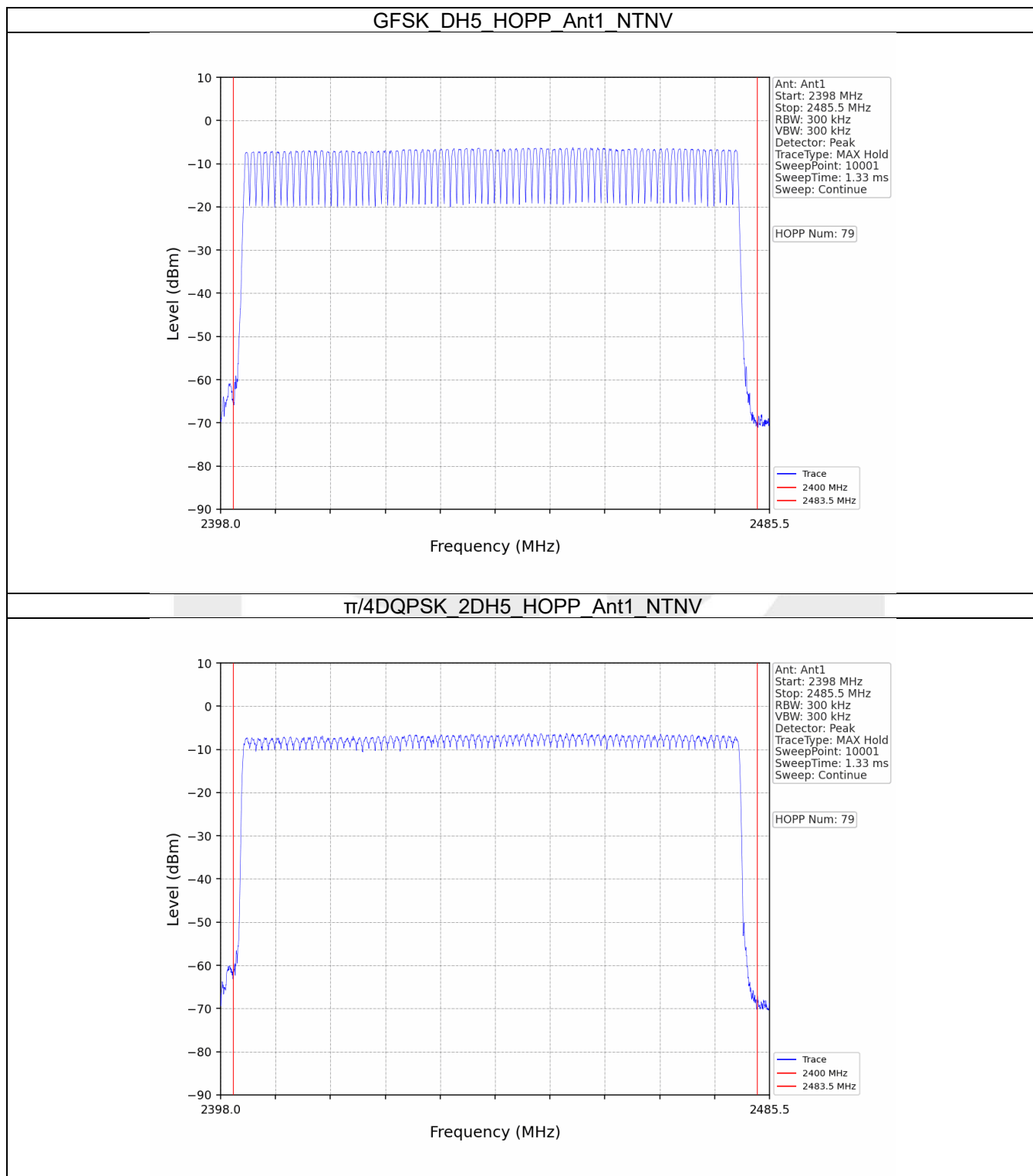
## 5. Number of Hopping Frequencies

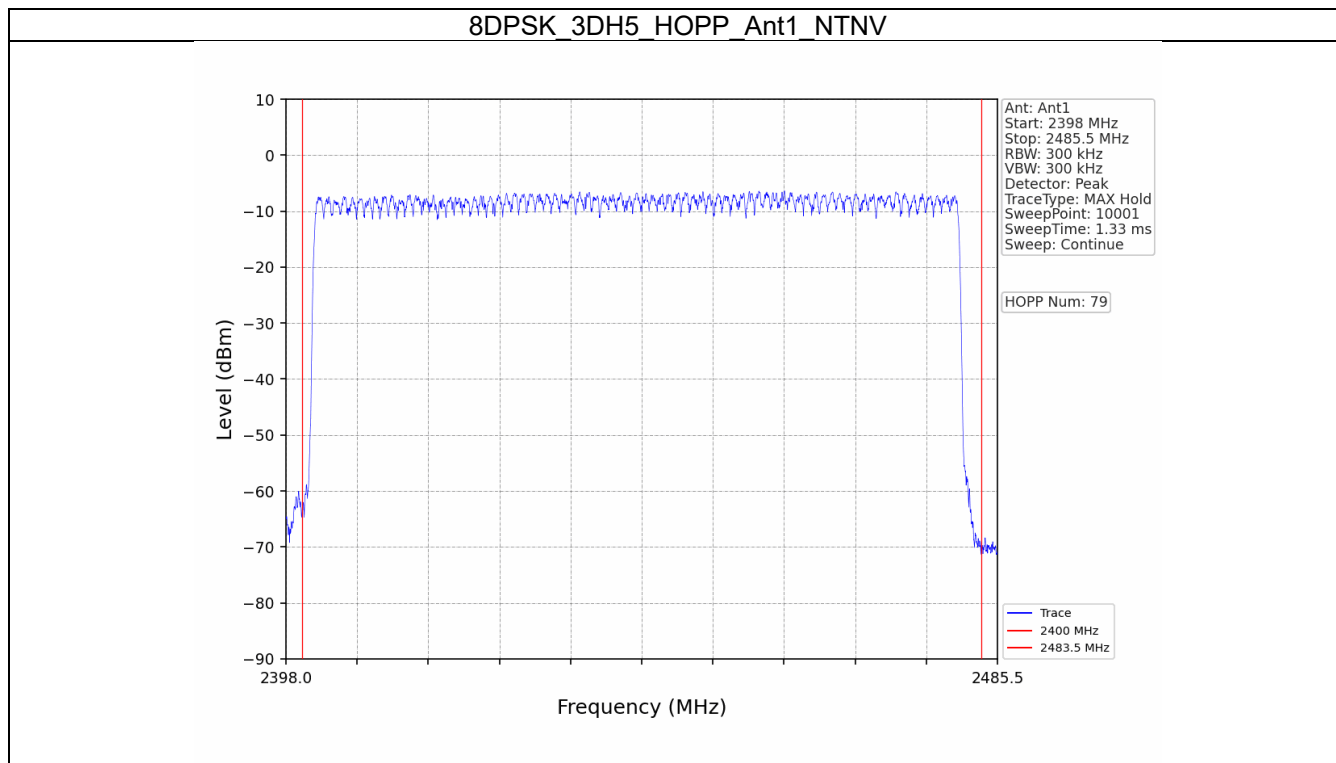
### 5.1 HoppNum

#### 5.1.1 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    |
| 8DPSK         | SISO    | HOPP            | 3DH5        | 79                         | $\geq 15$ | Pass    |

### 5.1.2 Test Graph





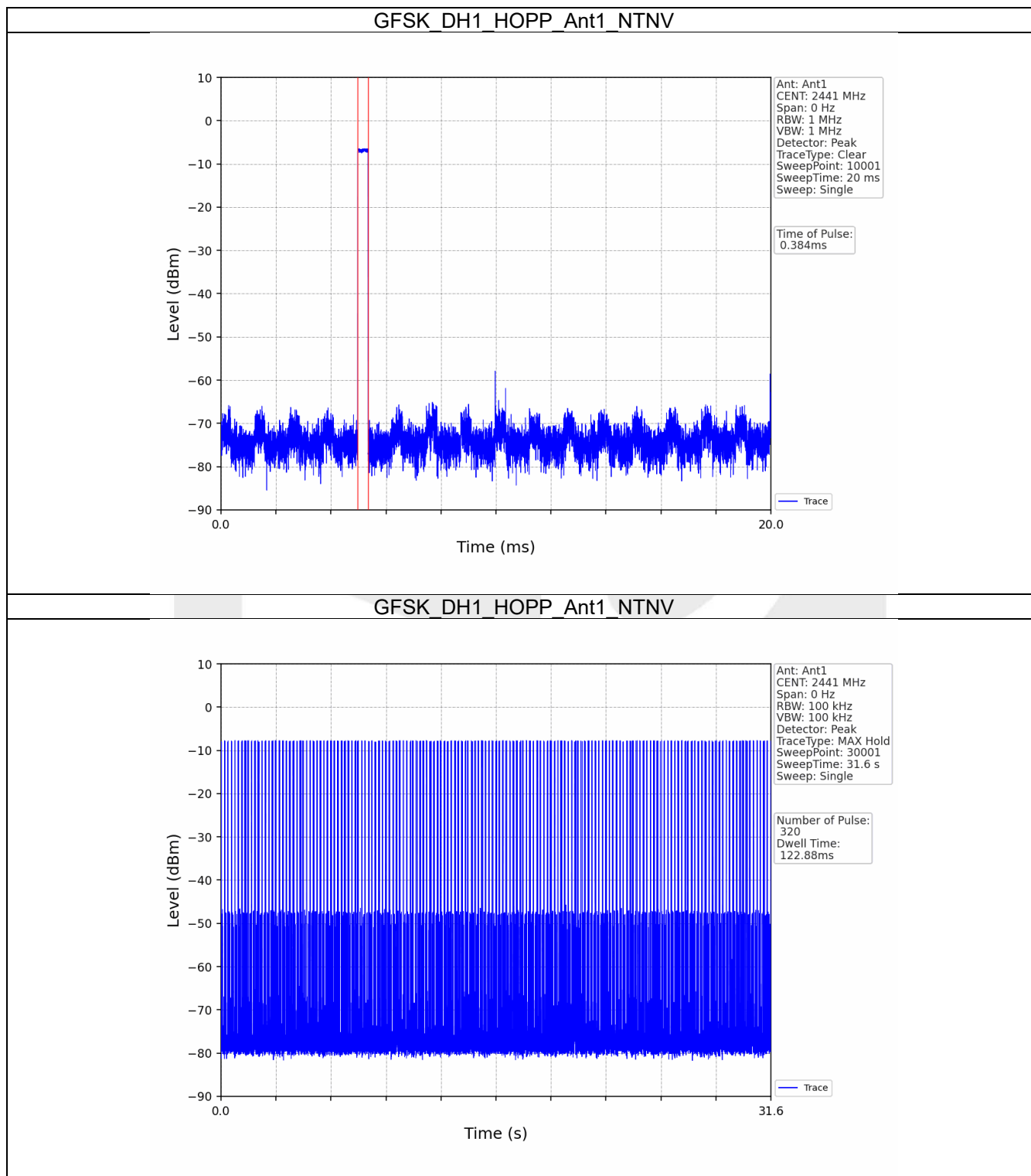
## 6. Time of Occupancy (Dwell Time)

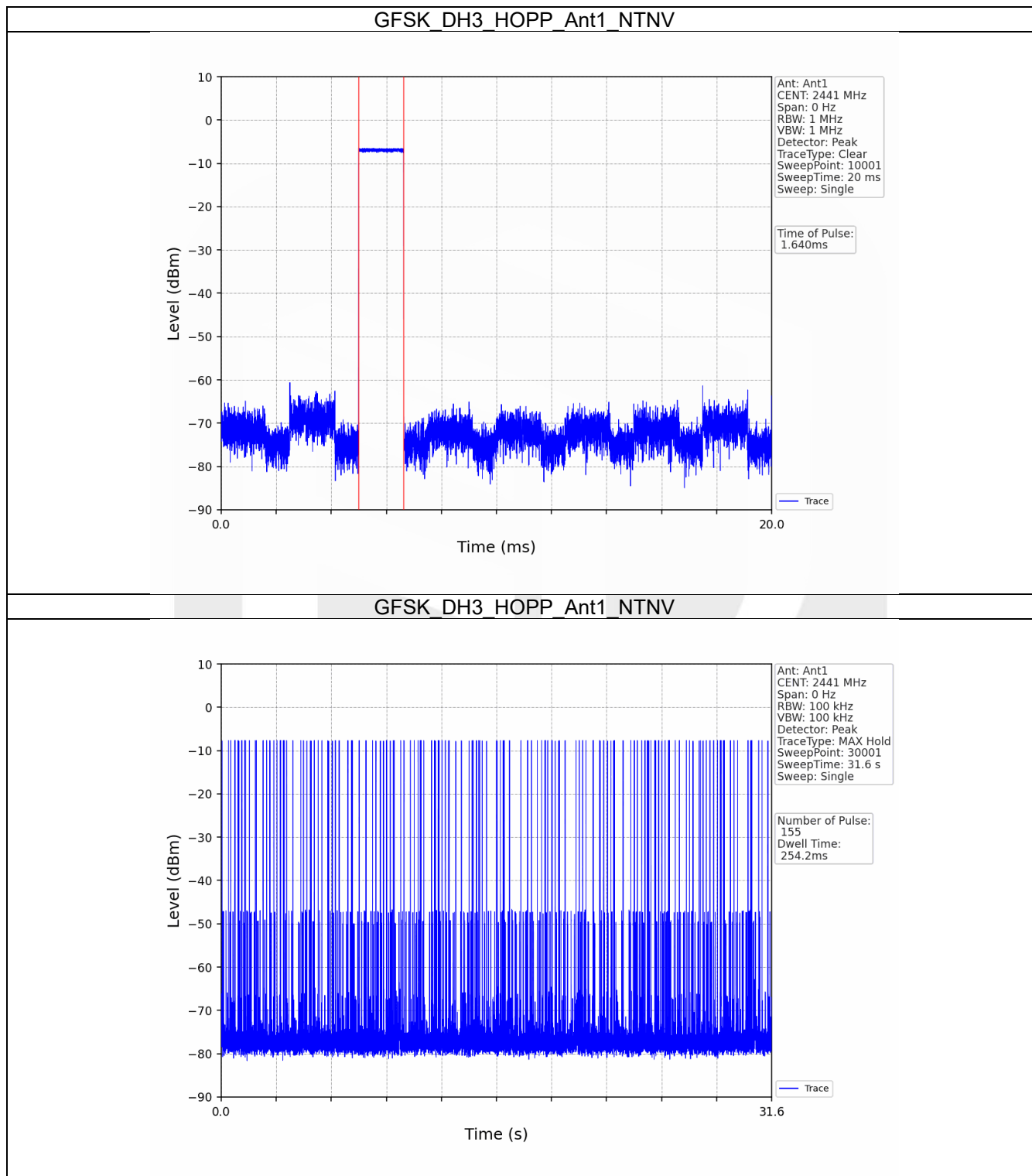
### 6.1 Ant1

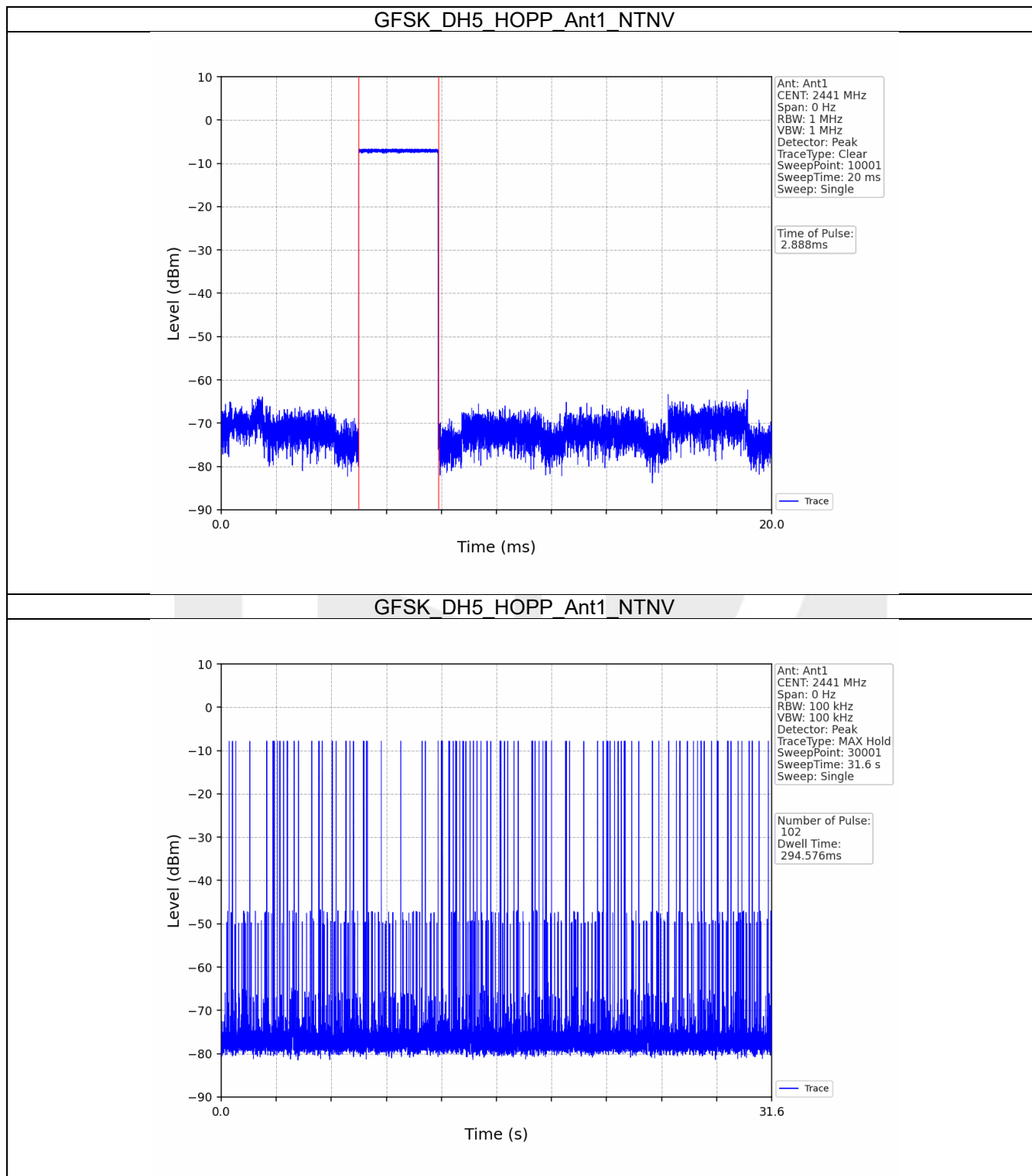
#### 6.1.1 Test Result

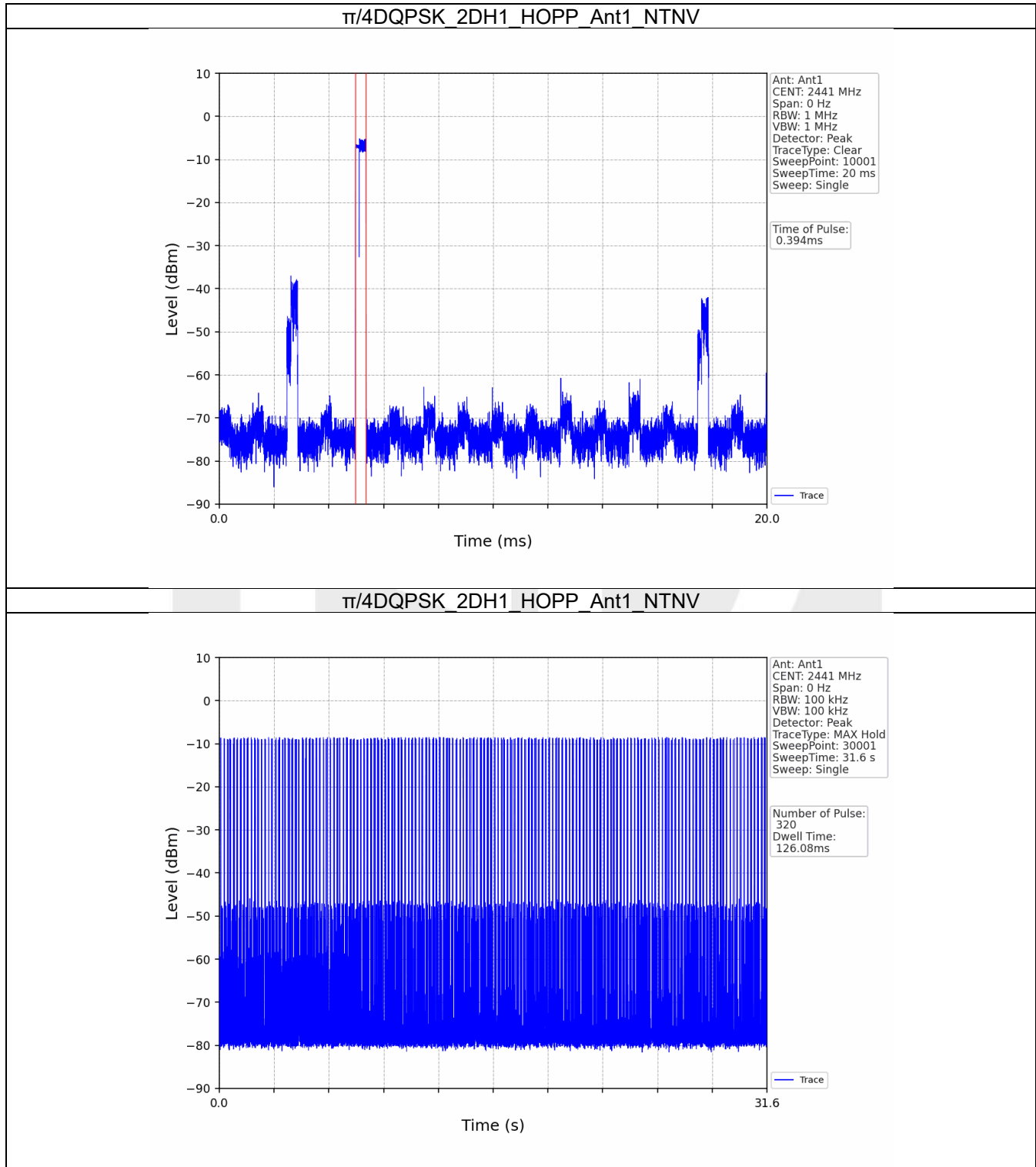
| Ant1          |         |                 |             |                               |                        |                                    |                 |            |         |
|---------------|---------|-----------------|-------------|-------------------------------|------------------------|------------------------------------|-----------------|------------|---------|
| 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         | 0.384                         | 31.600                 | 320                                | 122.880         | <=400      | Pass    |
|               |         |                 | DH3         | 1.640                         | 31.600                 | 155                                | 254.200         | <=400      | Pass    |
|               |         |                 | DH5         | 2.888                         | 31.600                 | 102                                | 294.576         | <=400      | Pass    |
| $\pi/4$ DQPSK | SISO    | HOPP            | 2DH1        | 0.394                         | 31.600                 | 320                                | 126.080         | <=400      | Pass    |
|               |         |                 | 2DH3        | 1.650                         | 31.600                 | 167                                | 275.550         | <=400      | Pass    |
|               |         |                 | 2DH5        | 2.898                         | 31.600                 | 106                                | 307.188         | <=400      | Pass    |
| 8DPSK         | SISO    | HOPP            | 3DH1        | 0.396                         | 31.600                 | 319                                | 126.324         | <=400      | Pass    |
|               |         |                 | 3DH3        | 1.648                         | 31.600                 | 165                                | 271.920         | <=400      | Pass    |
|               |         |                 | 3DH5        | 2.900                         | 31.600                 | 102                                | 295.800         | <=400      | Pass    |

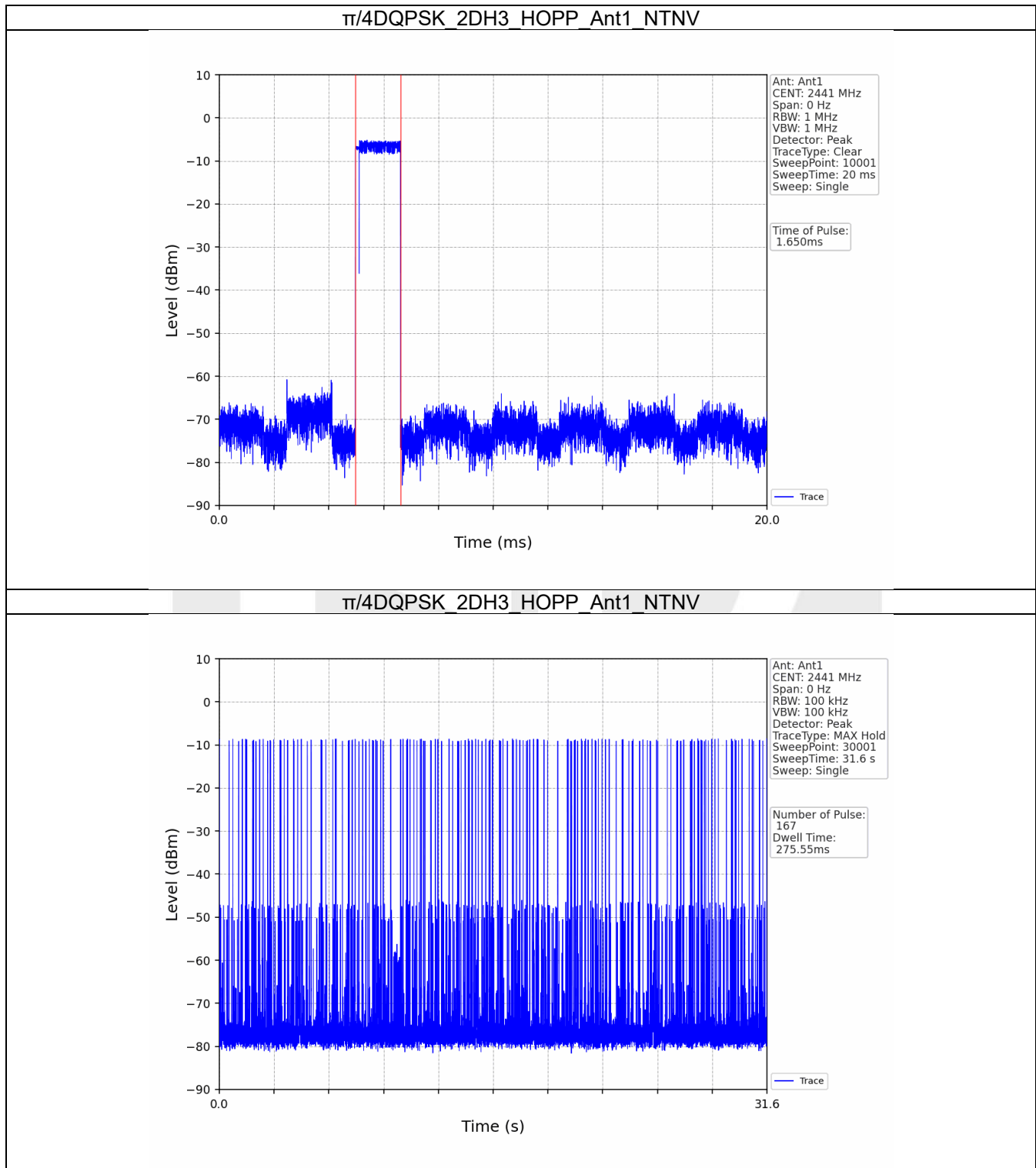
### 6.1.2 Test Graph

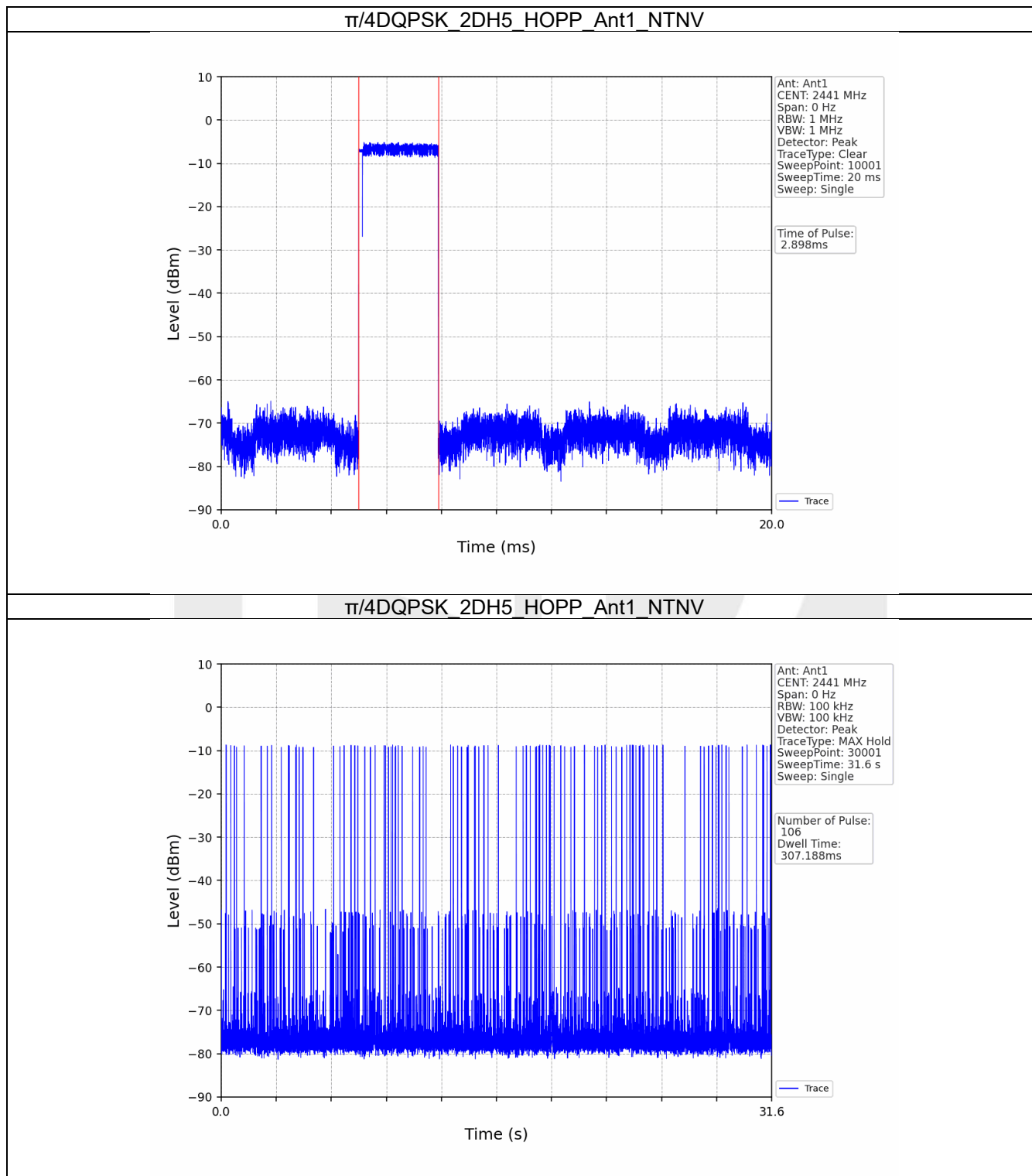


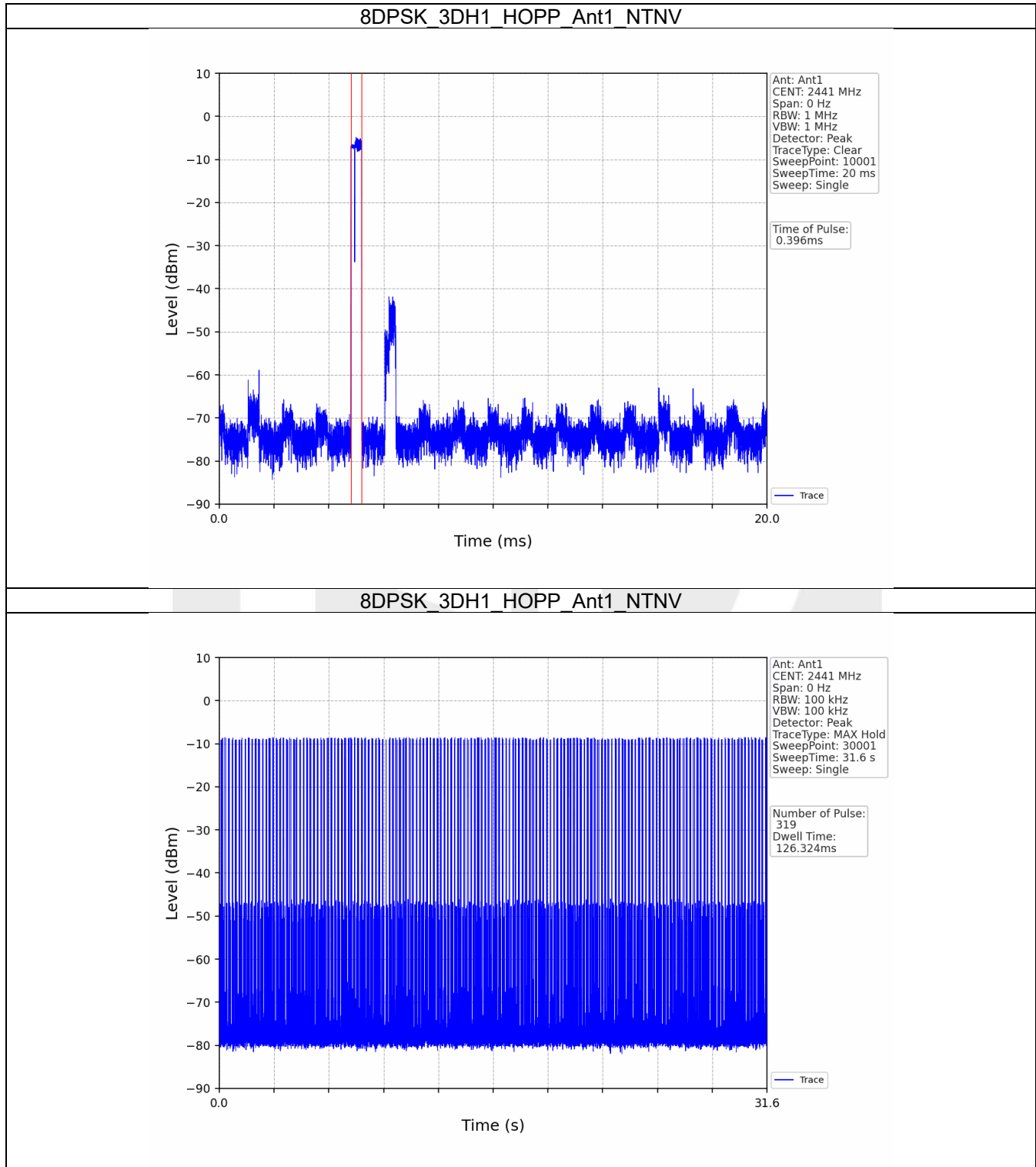


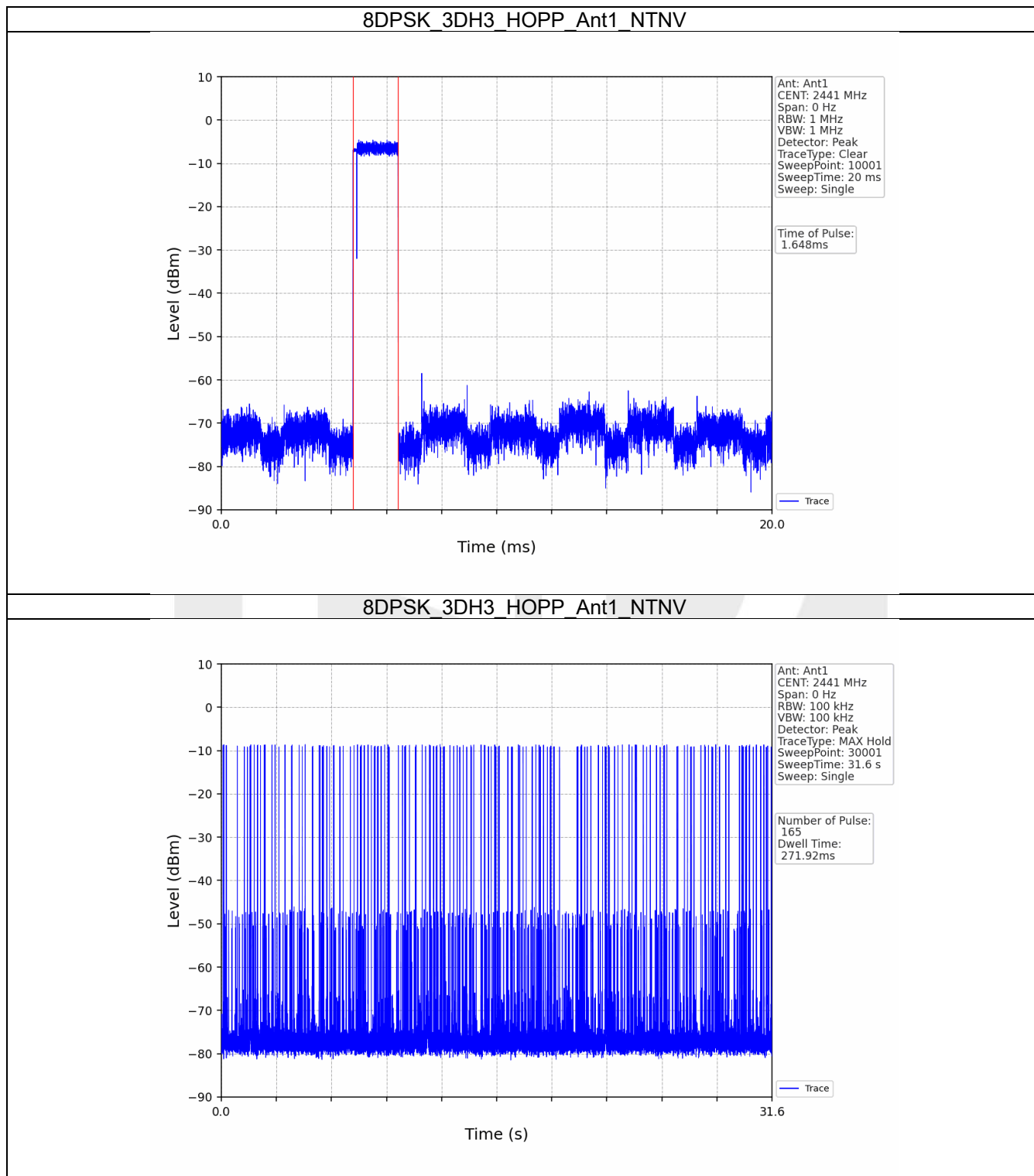


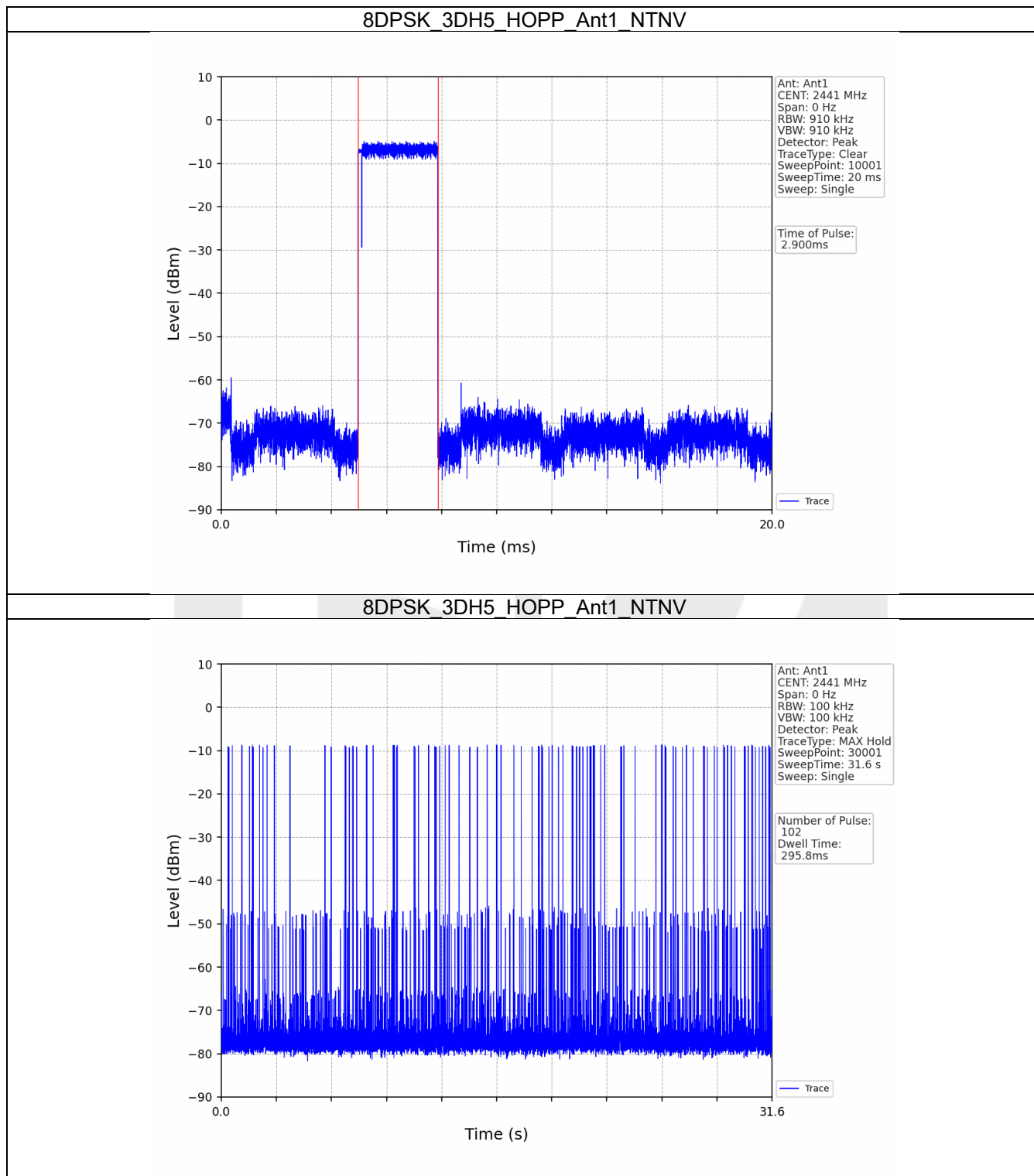












## 7. Unwanted Emissions In Non-restricted Frequency Bands

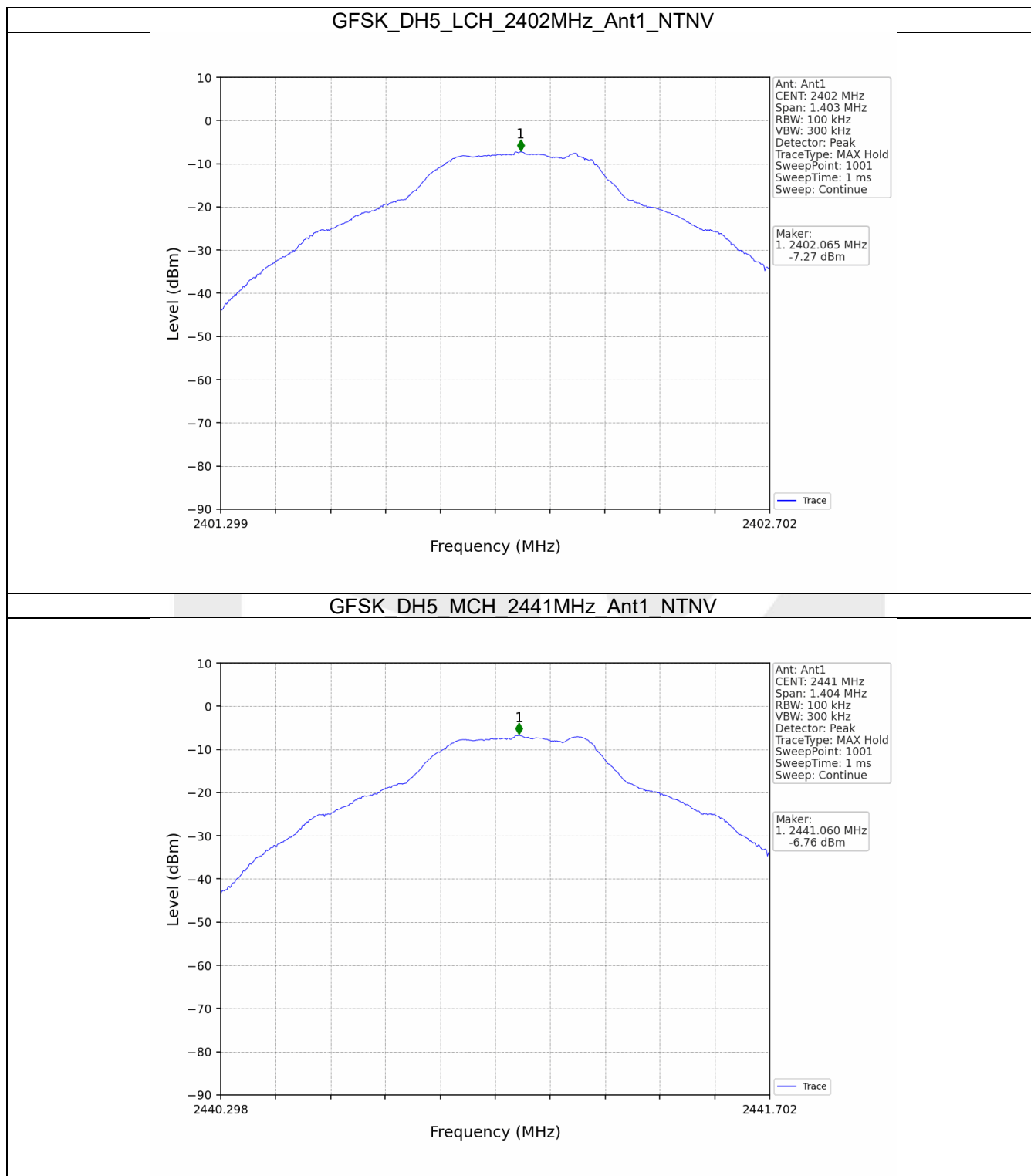
### 7.1 Ref

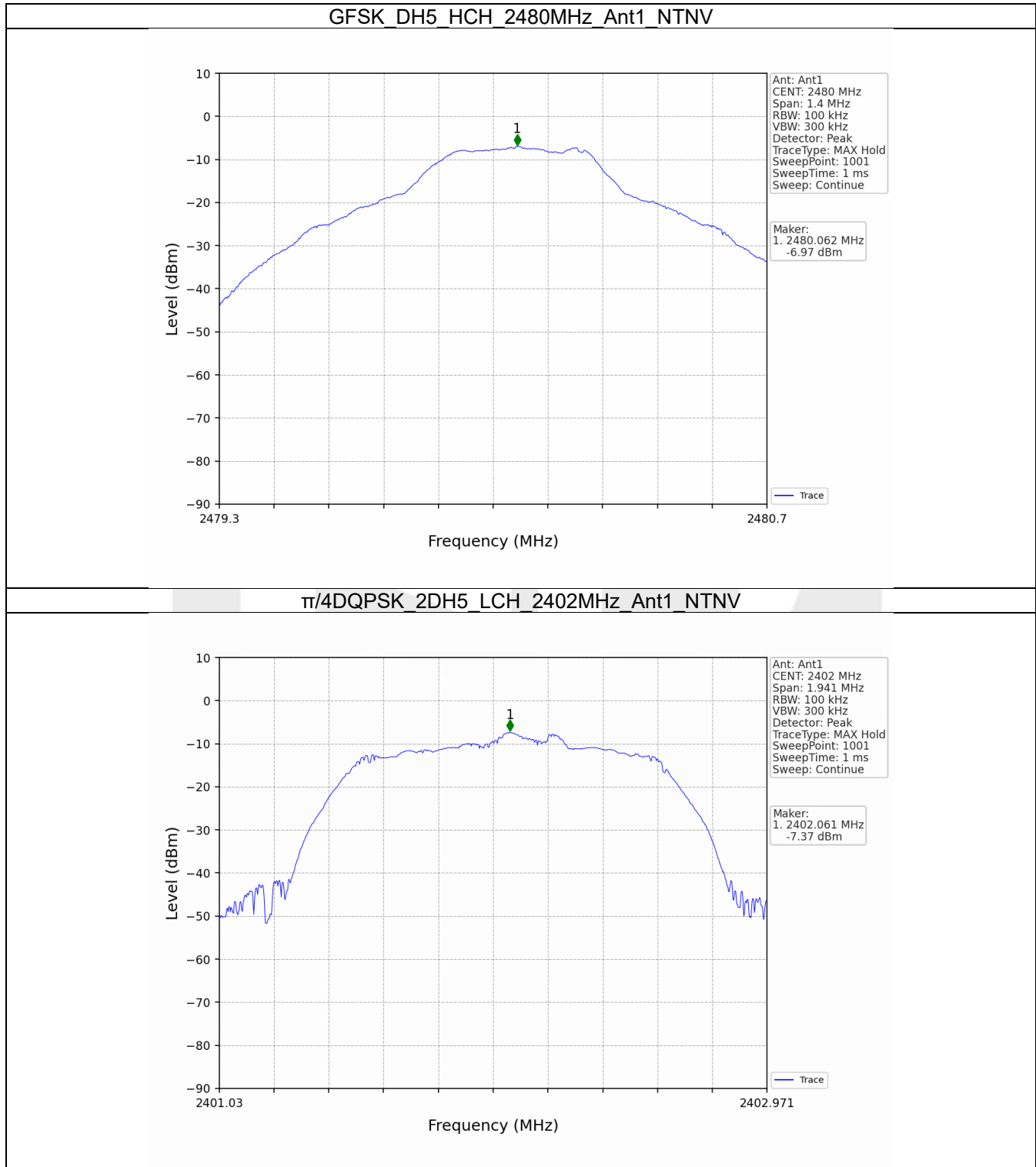
#### 7.1.1 Test Result

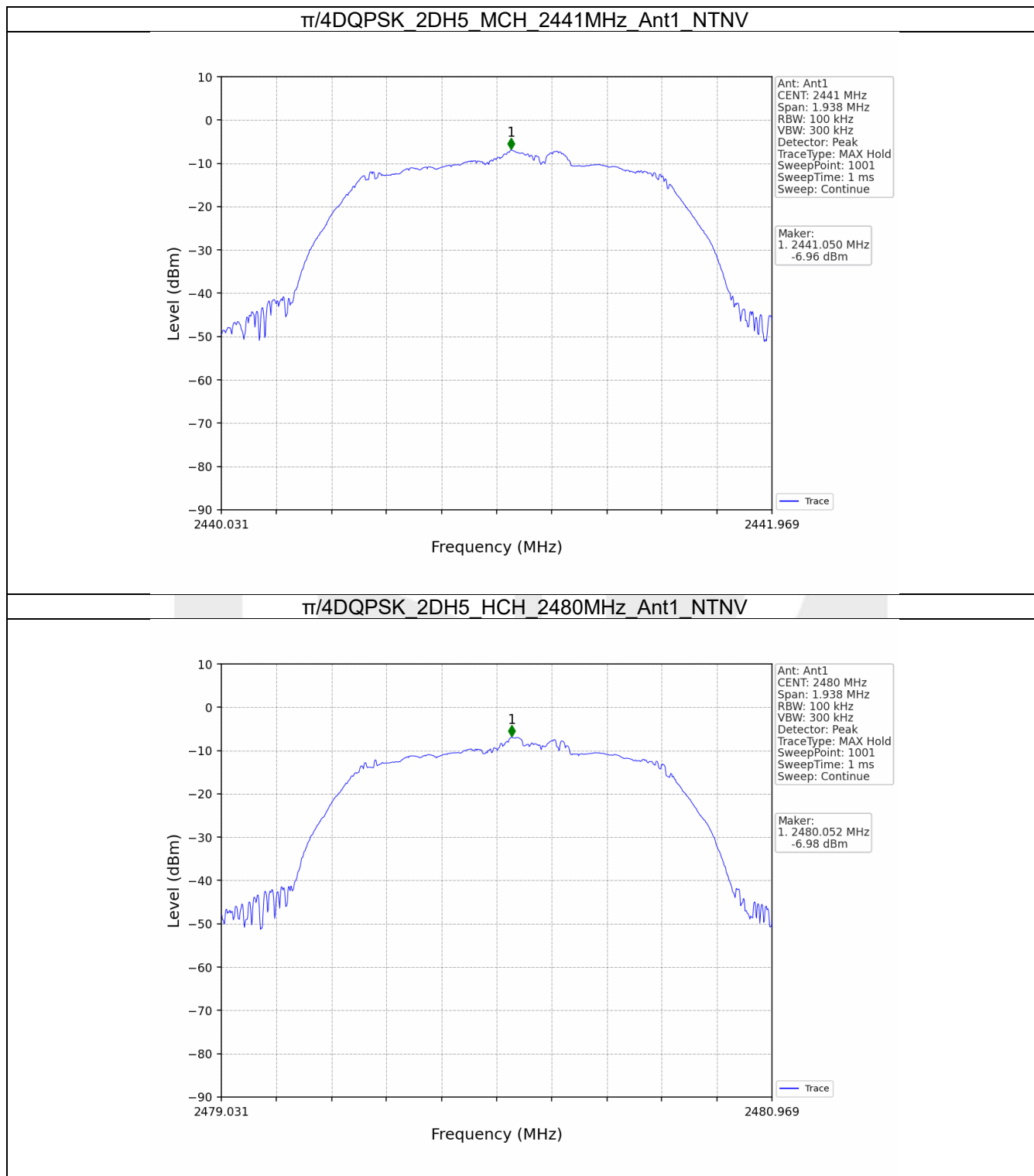
| Mode          | TX Type | Frequency (MHz) | Packet Type | ANT | Level of Reference (dBm) |
|---------------|---------|-----------------|-------------|-----|--------------------------|
| GFSK          | SISO    | 2402            | DH5         | 1   | -7.27                    |
|               |         | 2441            | DH5         | 1   | -6.76                    |
|               |         | 2480            | DH5         | 1   | -6.97                    |
| $\pi/4$ DQPSK | SISO    | 2402            | 2DH5        | 1   | -7.37                    |
|               |         | 2441            | 2DH5        | 1   | -6.96                    |
|               |         | 2480            | 2DH5        | 1   | -6.98                    |
| 8DPSK         | SISO    | 2402            | 3DH5        | 1   | -7.38                    |
|               |         | 2441            | 3DH5        | 1   | -6.99                    |
|               |         | 2480            | 3DH5        | 1   | -7.07                    |

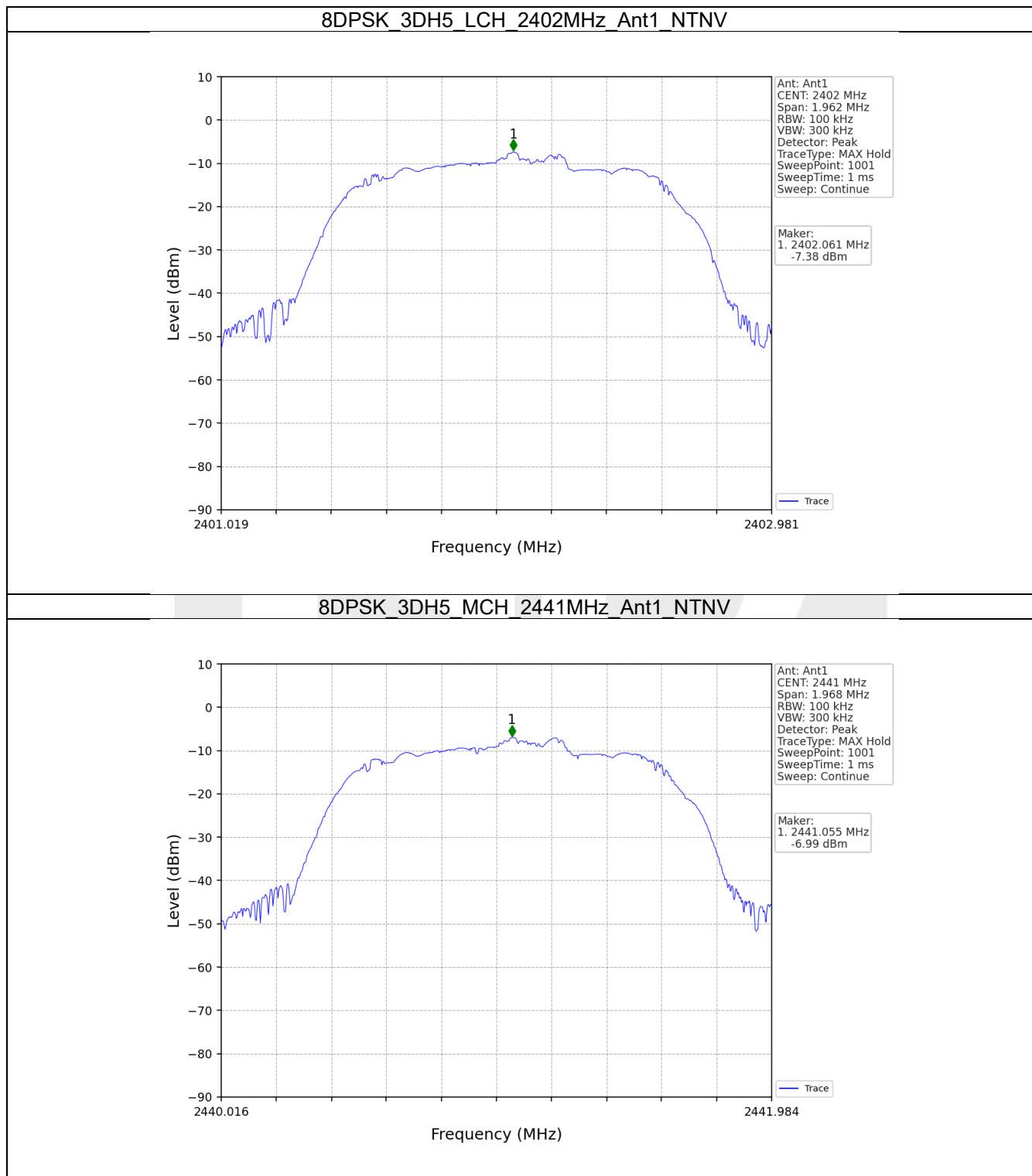
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

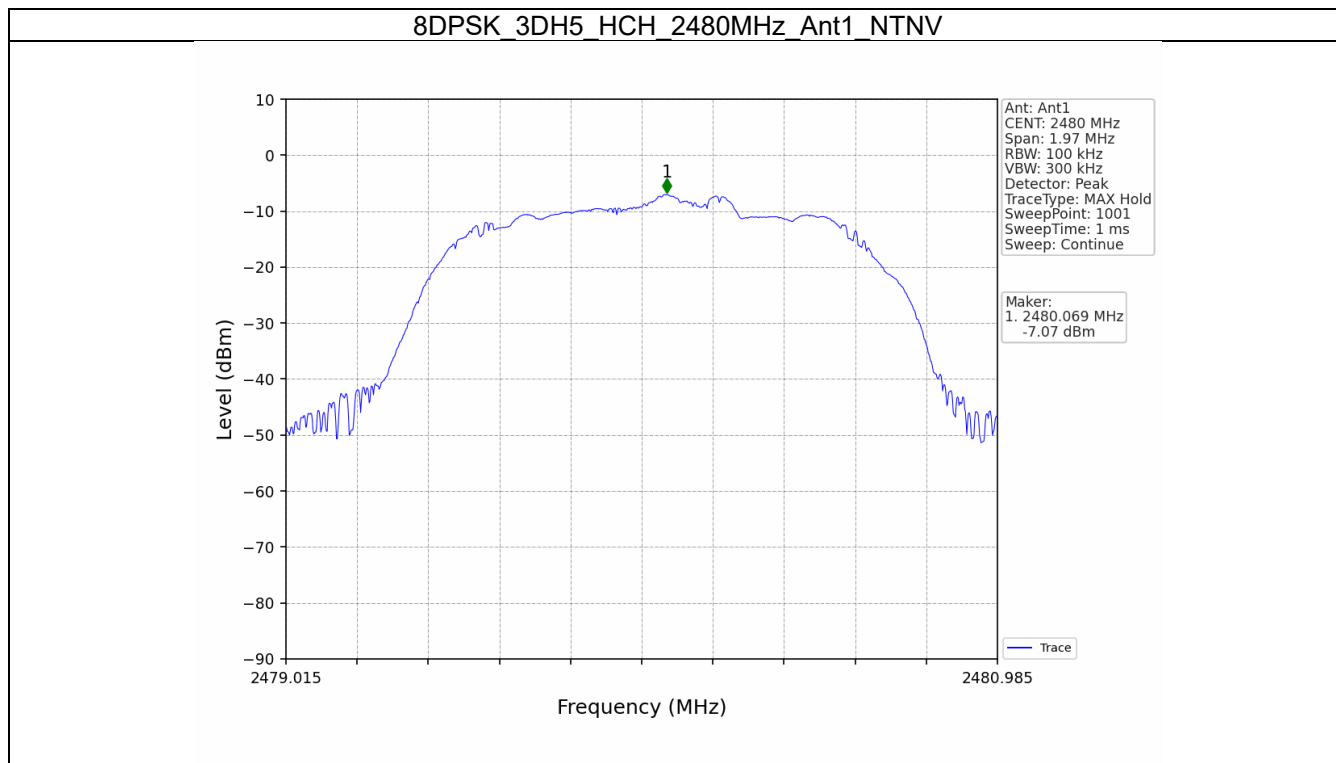
### 7.1.2 Test Graph











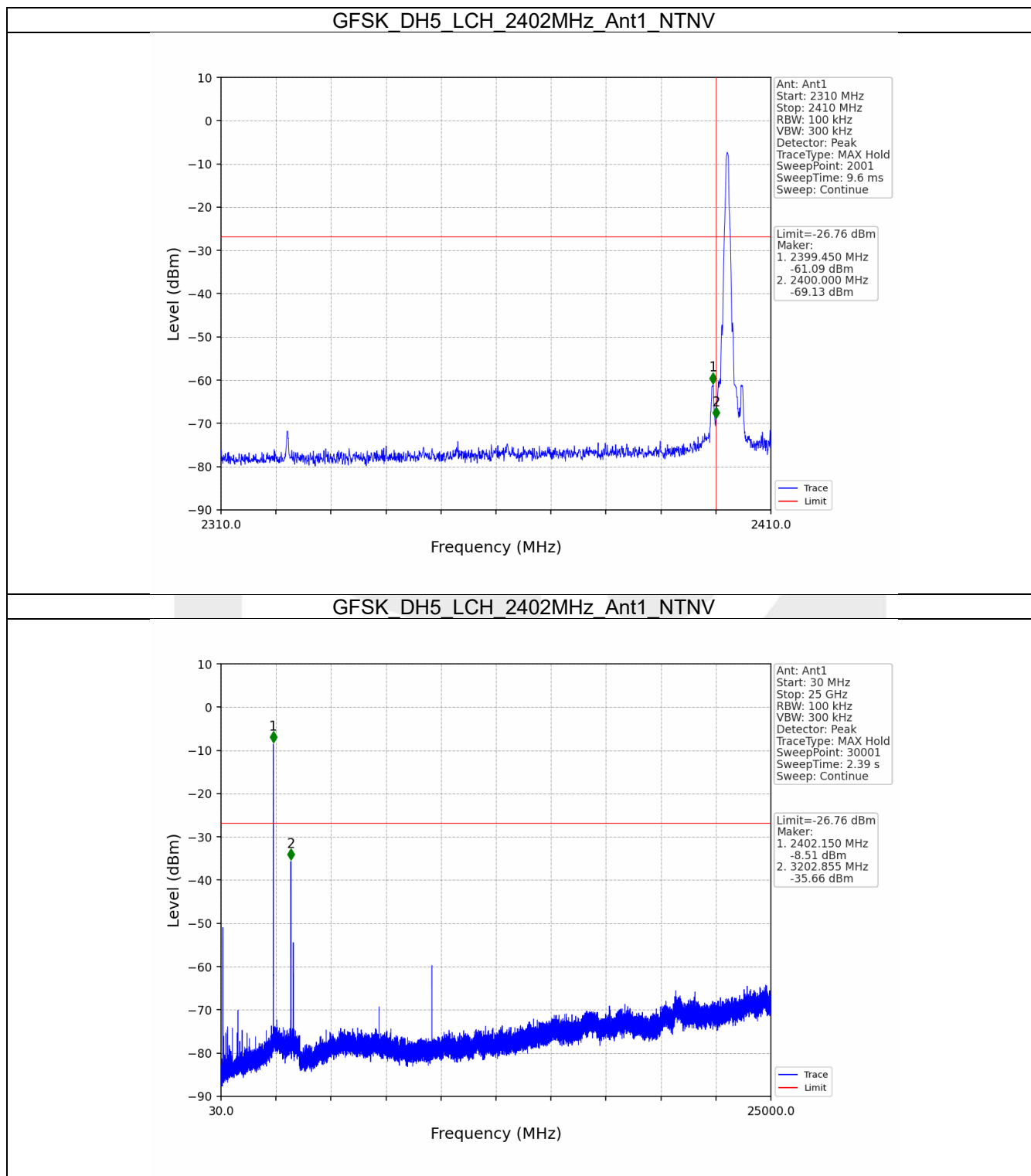
## 7.2 CSE

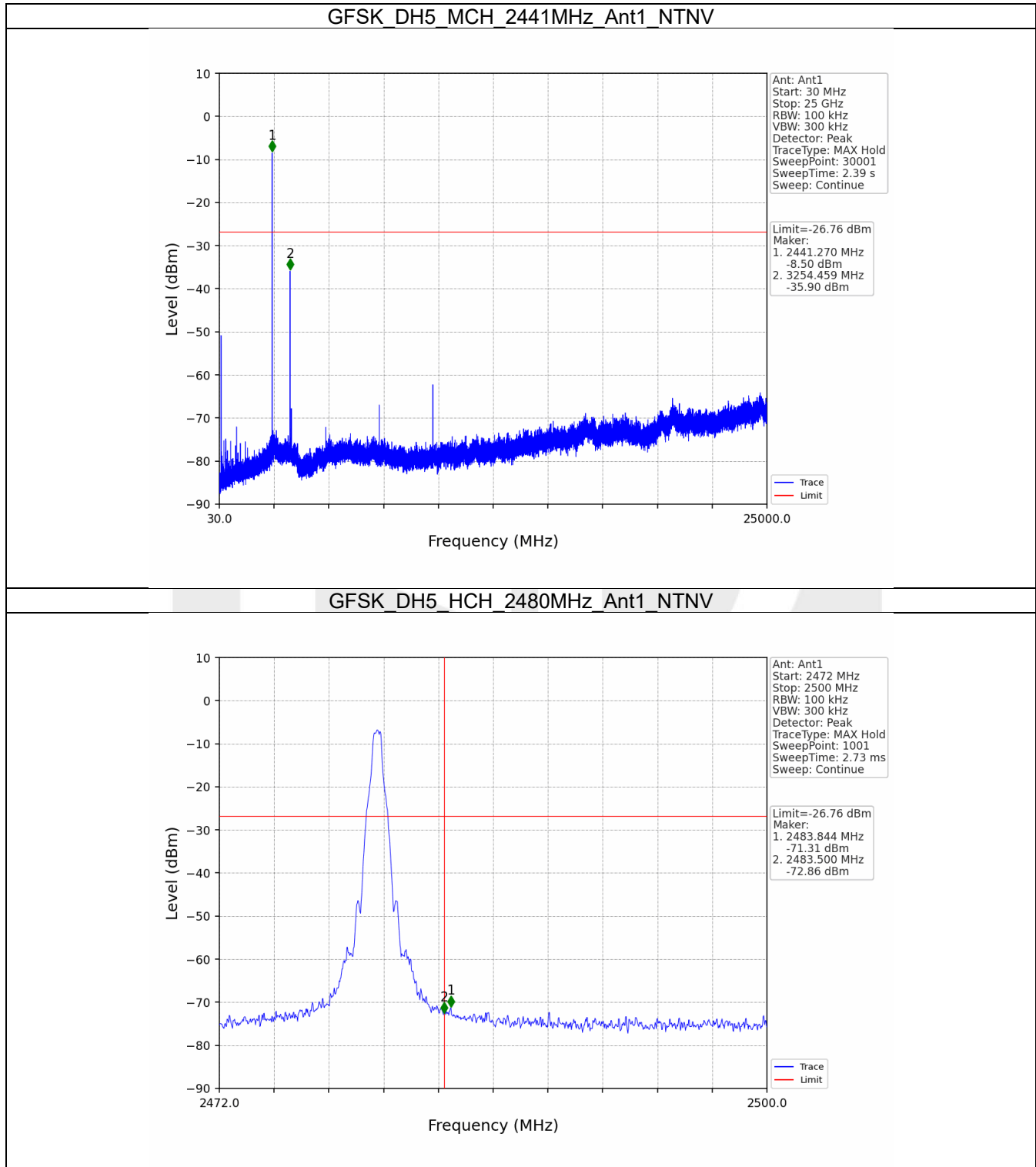
### 7.2.1 Test Result

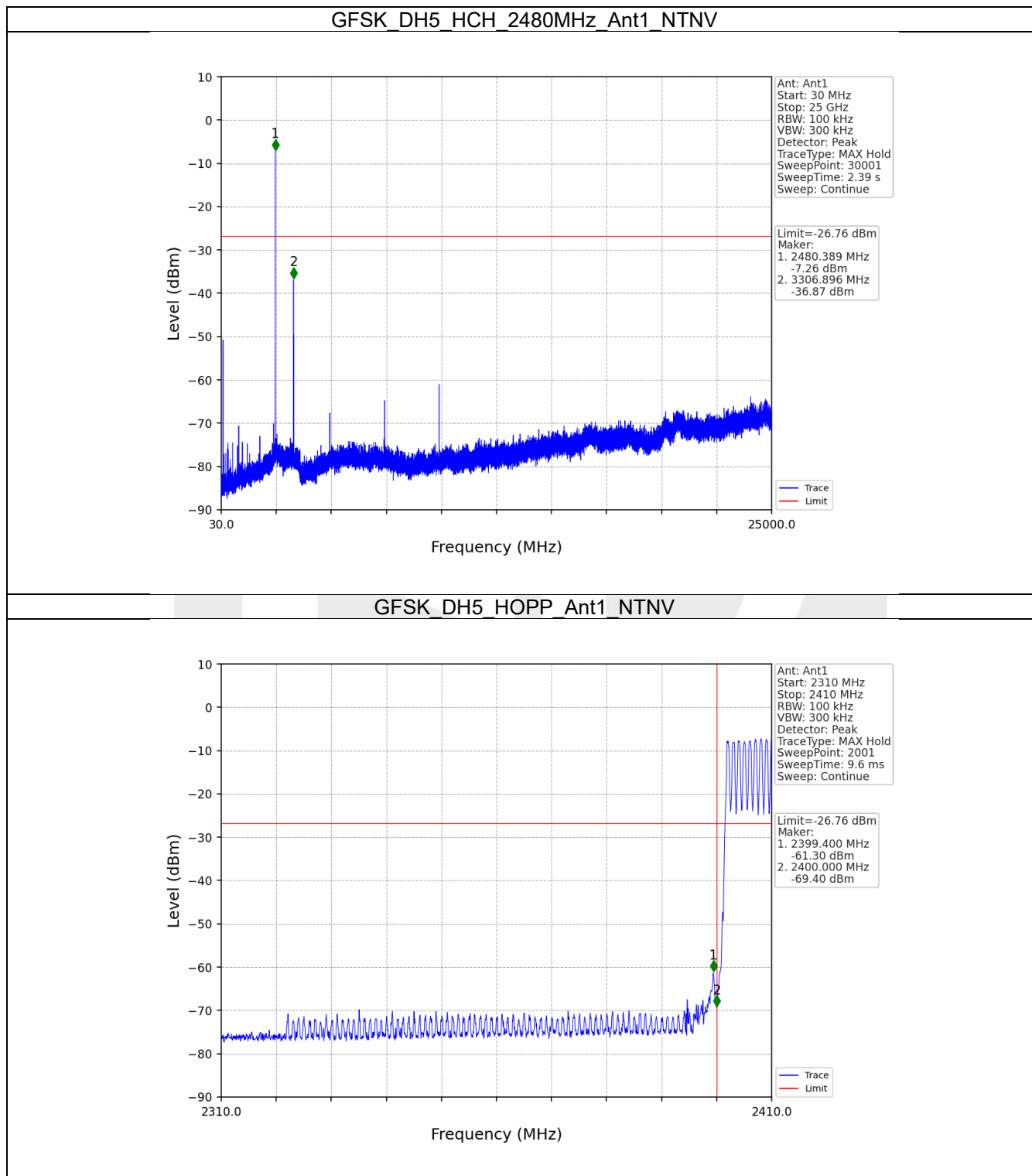
| Mode          | TX Type | Frequency (MHz) | Packet Type | ANT | Level of Reference (dBm) | Limit (dBm) | Verdict |
|---------------|---------|-----------------|-------------|-----|--------------------------|-------------|---------|
| GFSK          | SISO    | 2402            | DH5         | 1   | -6.76                    | -26.76      | Pass    |
|               |         | 2441            | DH5         | 1   | -6.76                    | -26.76      | Pass    |
|               |         | 2480            | DH5         | 1   | -6.76                    | -26.76      | Pass    |
|               |         | HOPP            | DH5         | 1   | -6.76                    | -26.76      | Pass    |
| $\pi/4$ DQPSK | SISO    | 2402            | 2DH5        | 1   | -6.96                    | -26.96      | Pass    |
|               |         | 2441            | 2DH5        | 1   | -6.96                    | -26.96      | Pass    |
|               |         | 2480            | 2DH5        | 1   | -6.96                    | -26.96      | Pass    |
|               |         | HOPP            | 2DH5        | 1   | -6.96                    | -26.96      | Pass    |
| 8DPSK         | SISO    | 2402            | 3DH5        | 1   | -6.99                    | -26.99      | Pass    |
|               |         | 2441            | 3DH5        | 1   | -6.99                    | -26.99      | Pass    |
|               |         | 2480            | 3DH5        | 1   | -6.99                    | -26.99      | Pass    |
|               |         | HOPP            | 3DH5        | 1   | -6.99                    | -26.99      | Pass    |

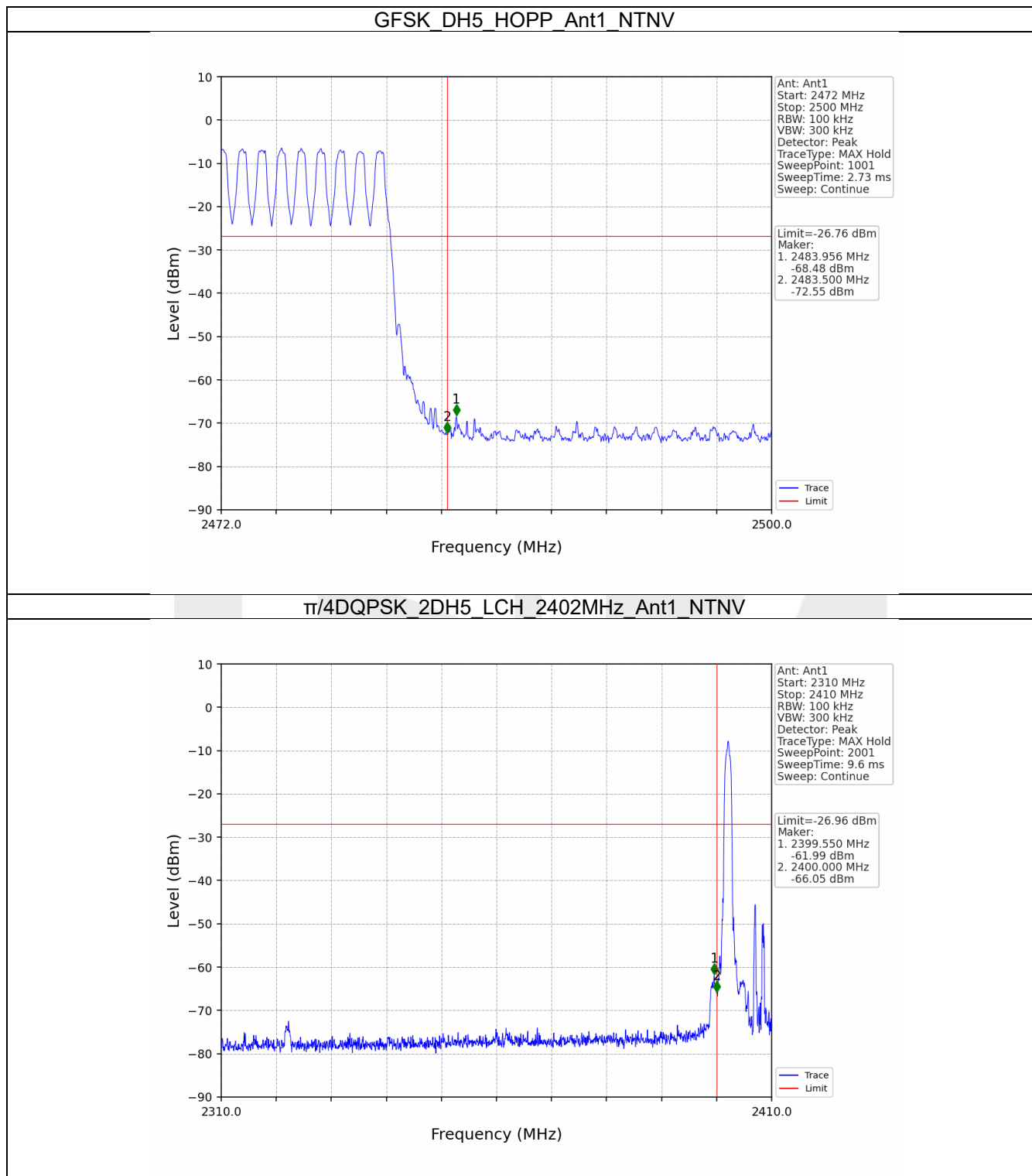
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

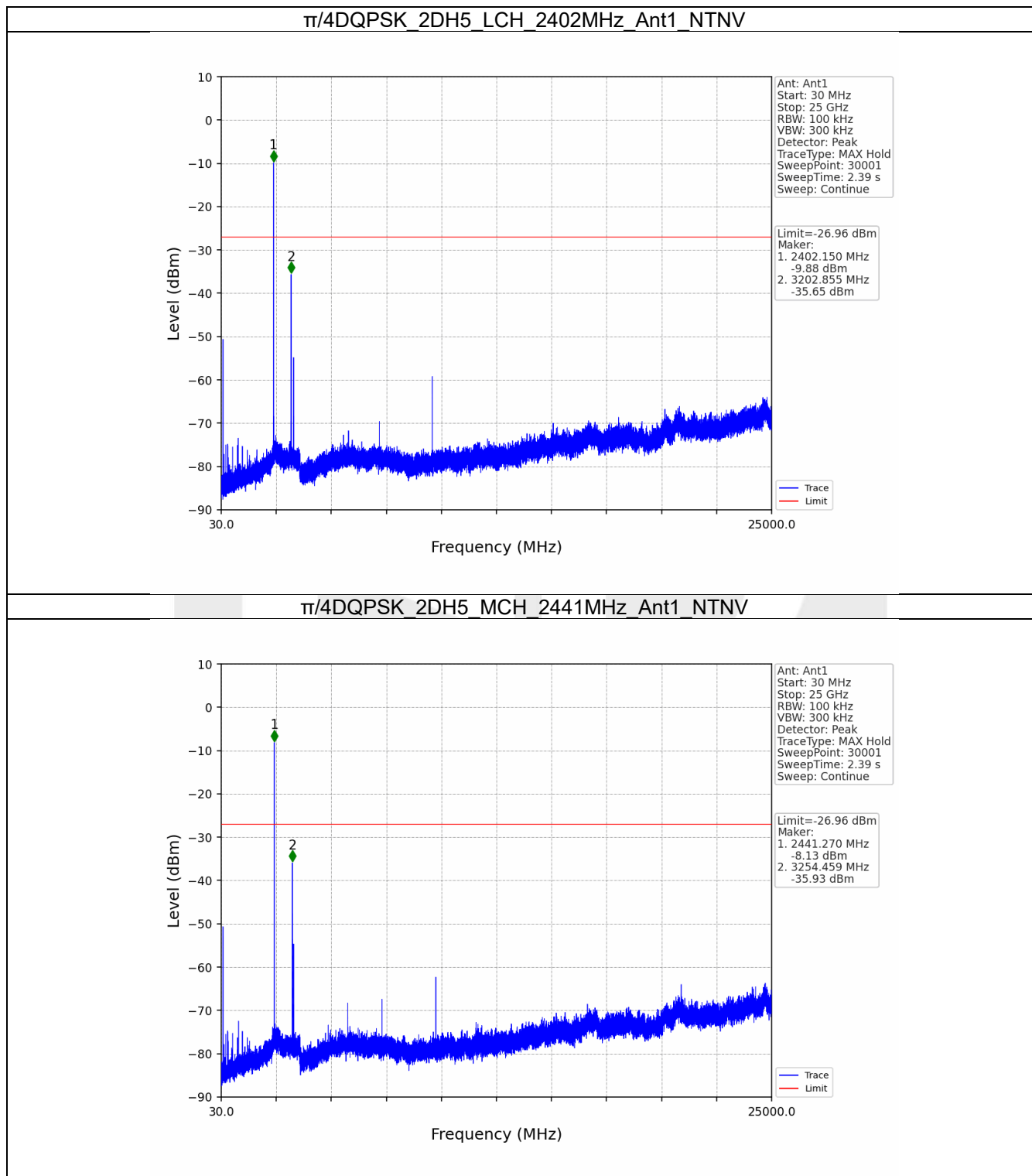
### 7.2.2 Test Graph

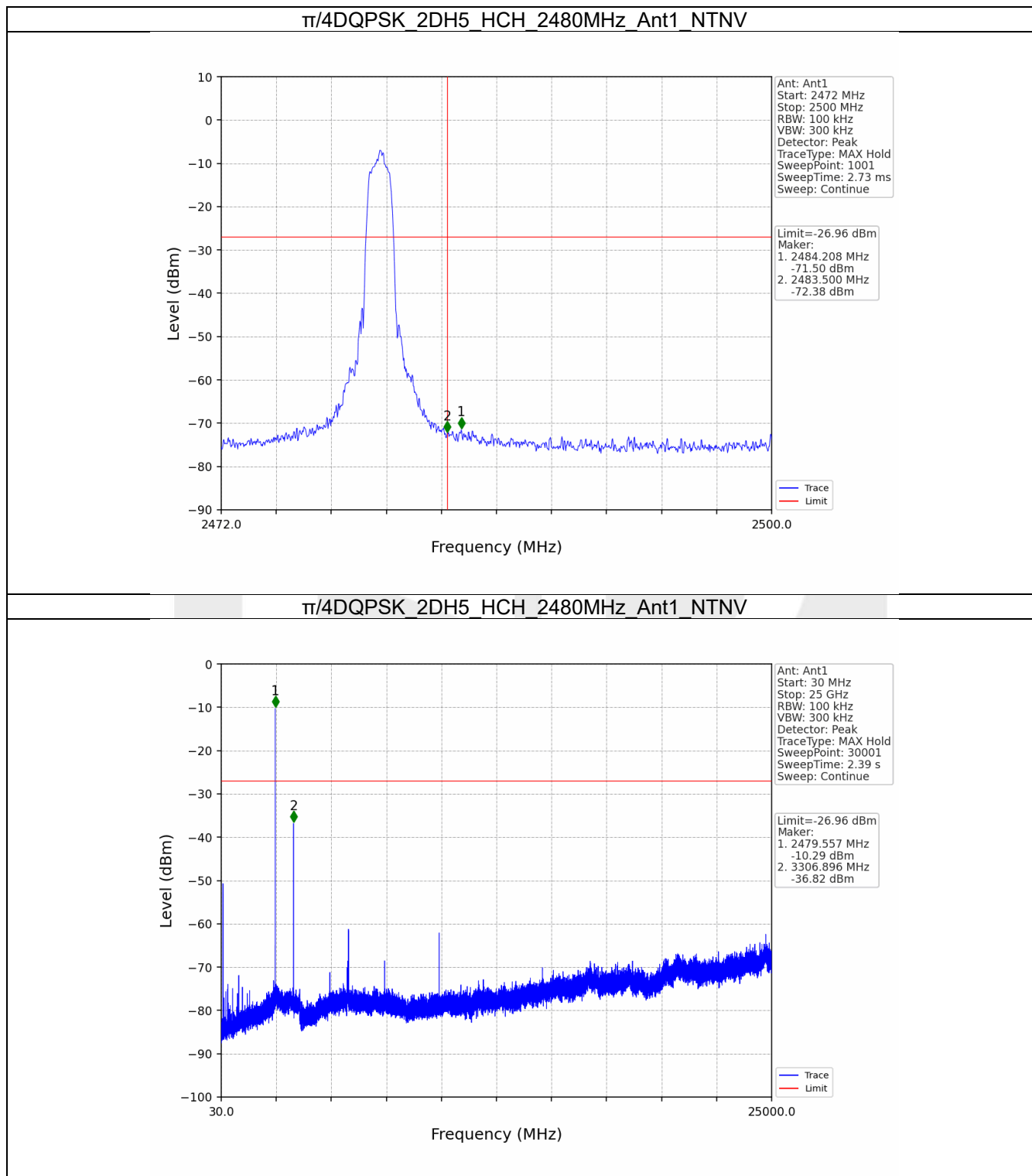


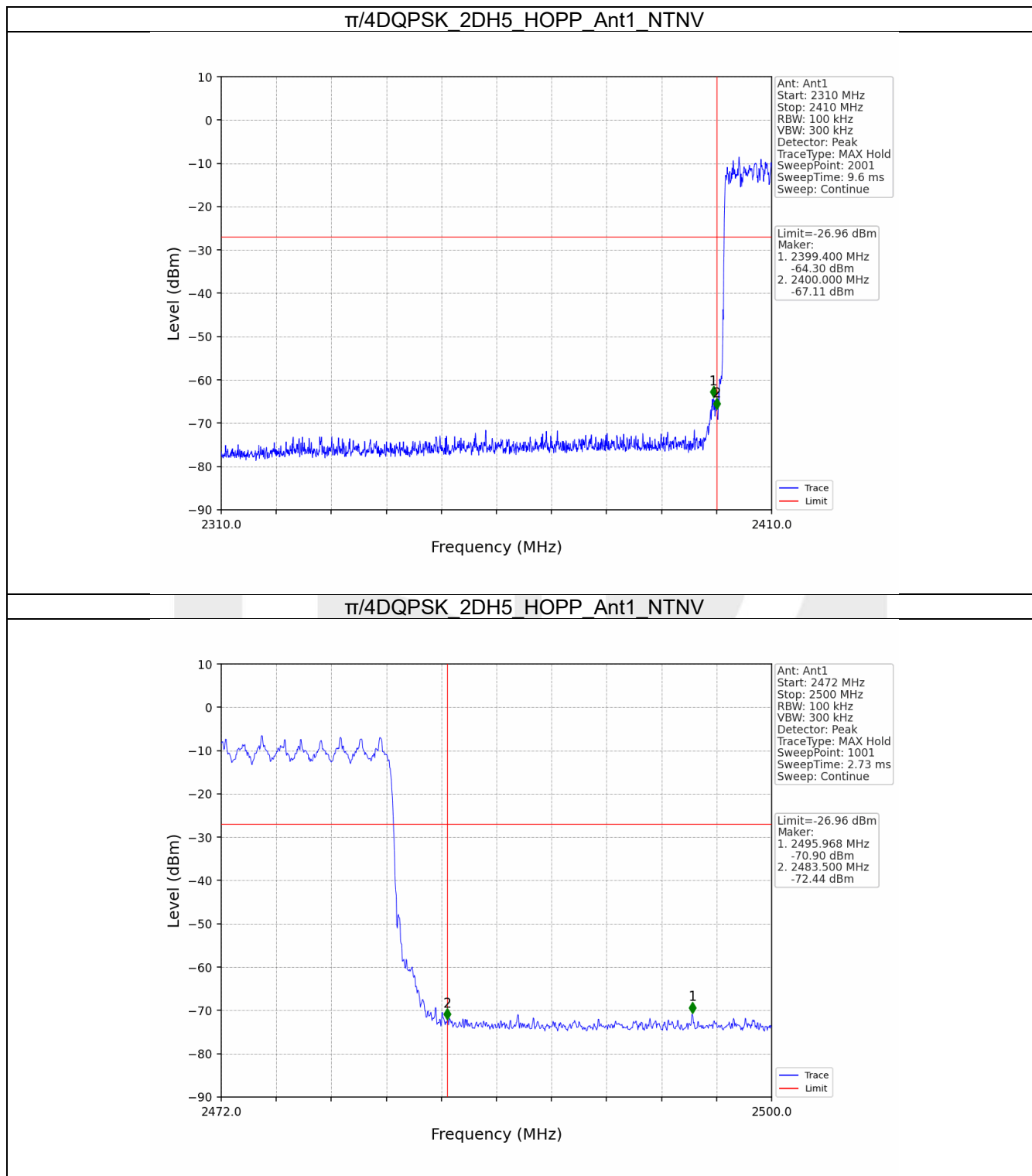


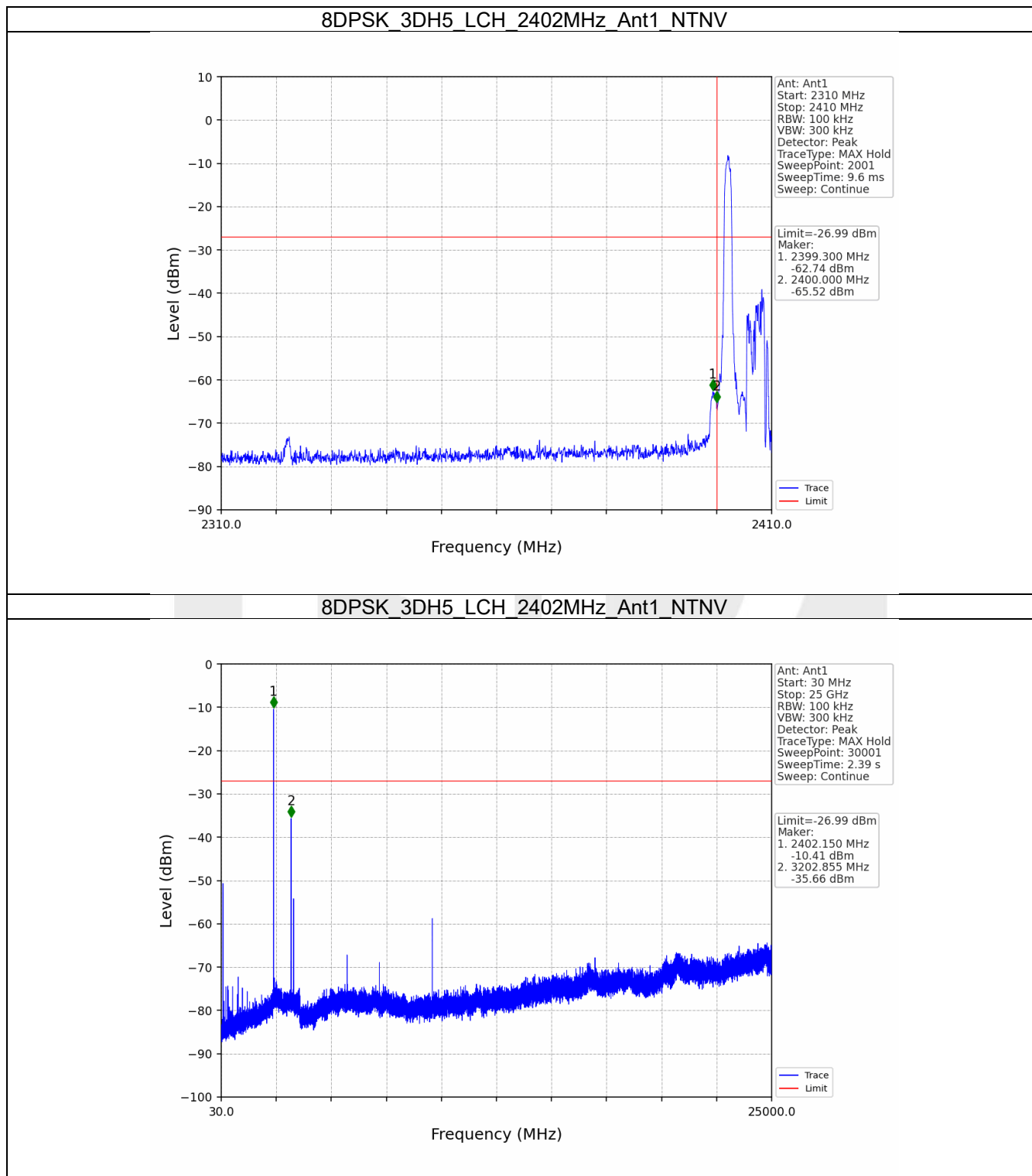


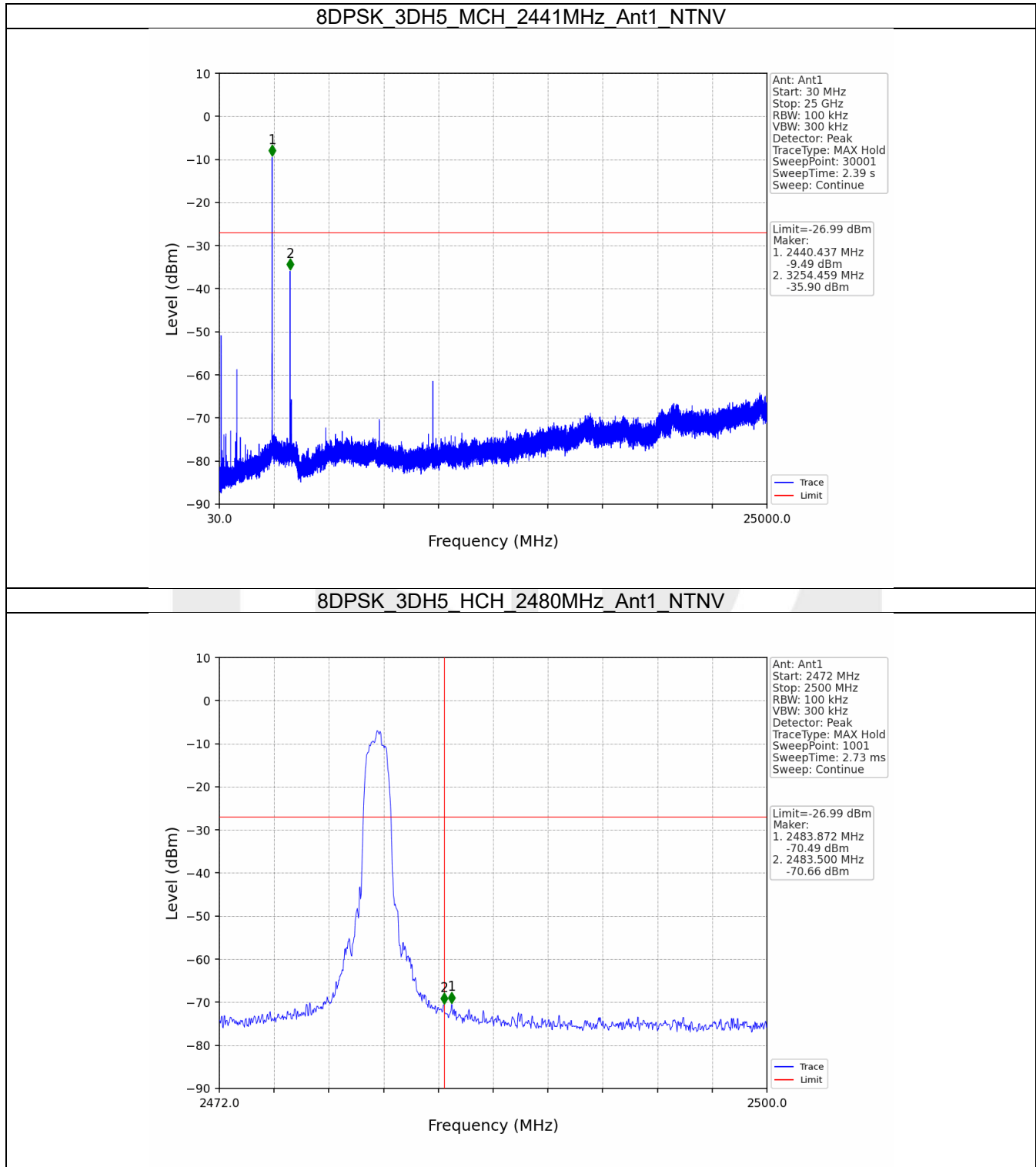


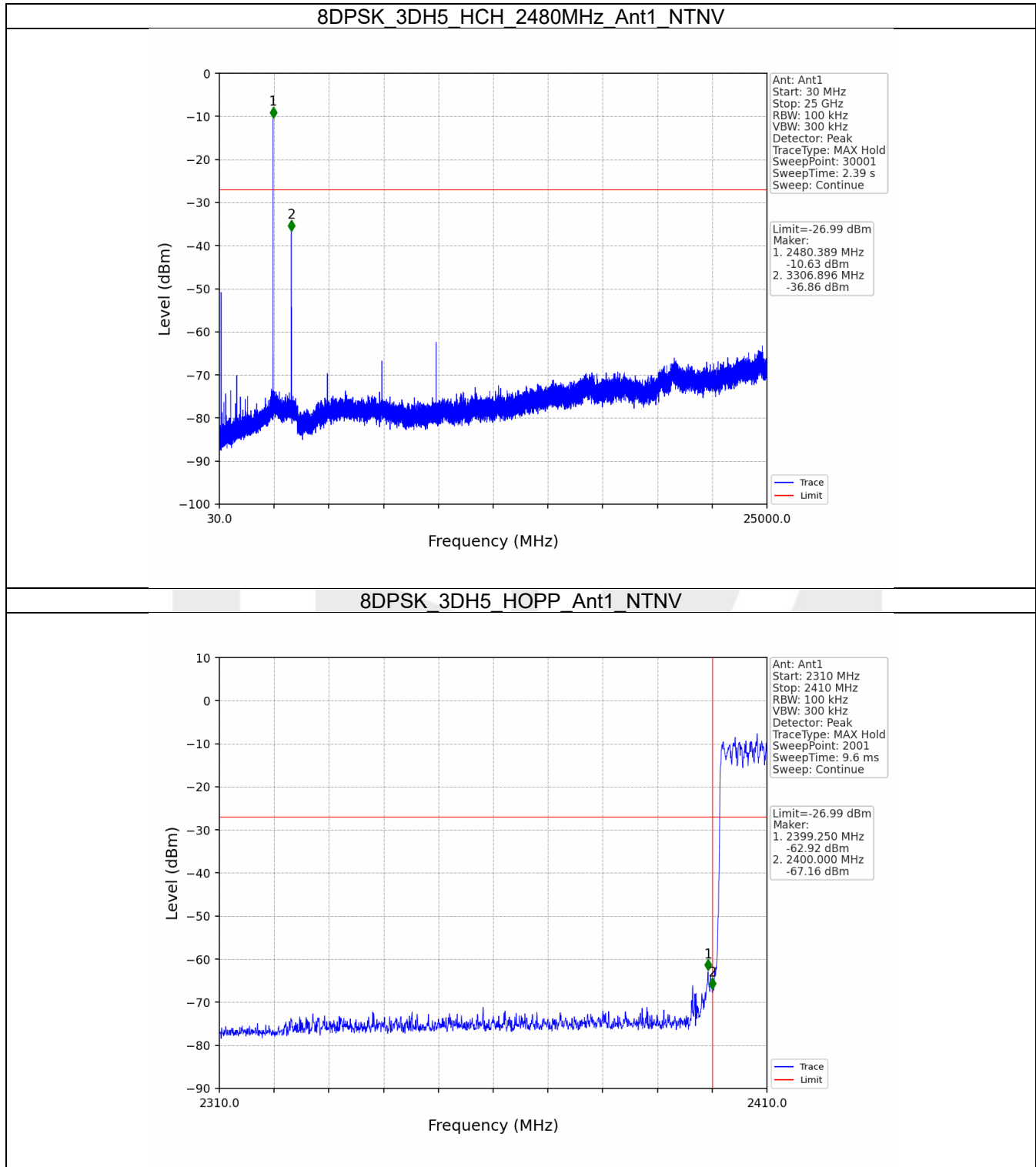


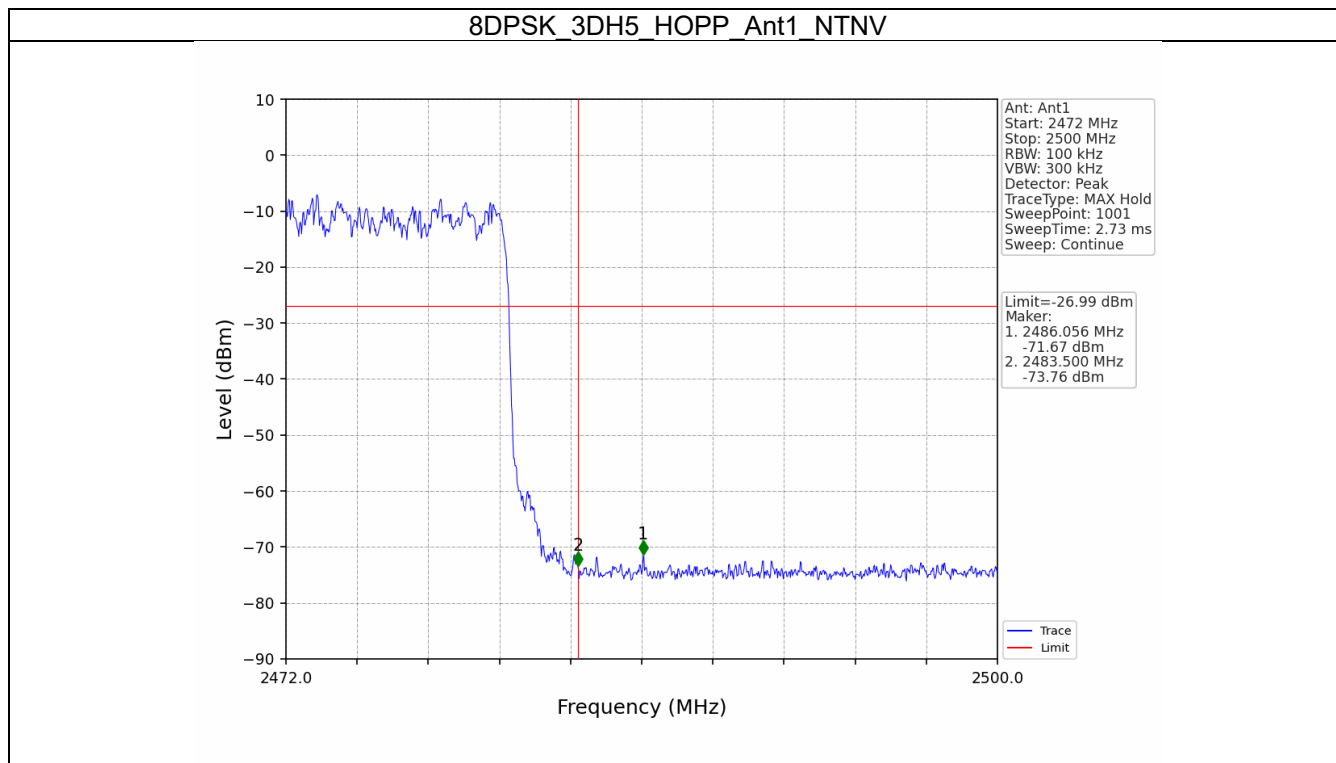












----- End of Report -----