

## ANNEX D TEST DATA

For

|                |                                                    |
|----------------|----------------------------------------------------|
| Project No.:   | 8333EU122801W                                      |
| Client:        | Huizhou Shangmeijia Electronic Technology Co.,Ltd. |
| Product Name:  | WATER RESISTANT BLUETOOTH SPEAKER                  |
| Model No.:     | ISBW804W                                           |
| FCC ID:        | 2A657-ISBW804W                                     |
| Technology:    | Bluetooth BDR&EDR                                  |
| Test Engineer: | <i>Mikoy zhu</i>                                   |
| Test Date:     | 2025-09-08                                         |

## 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

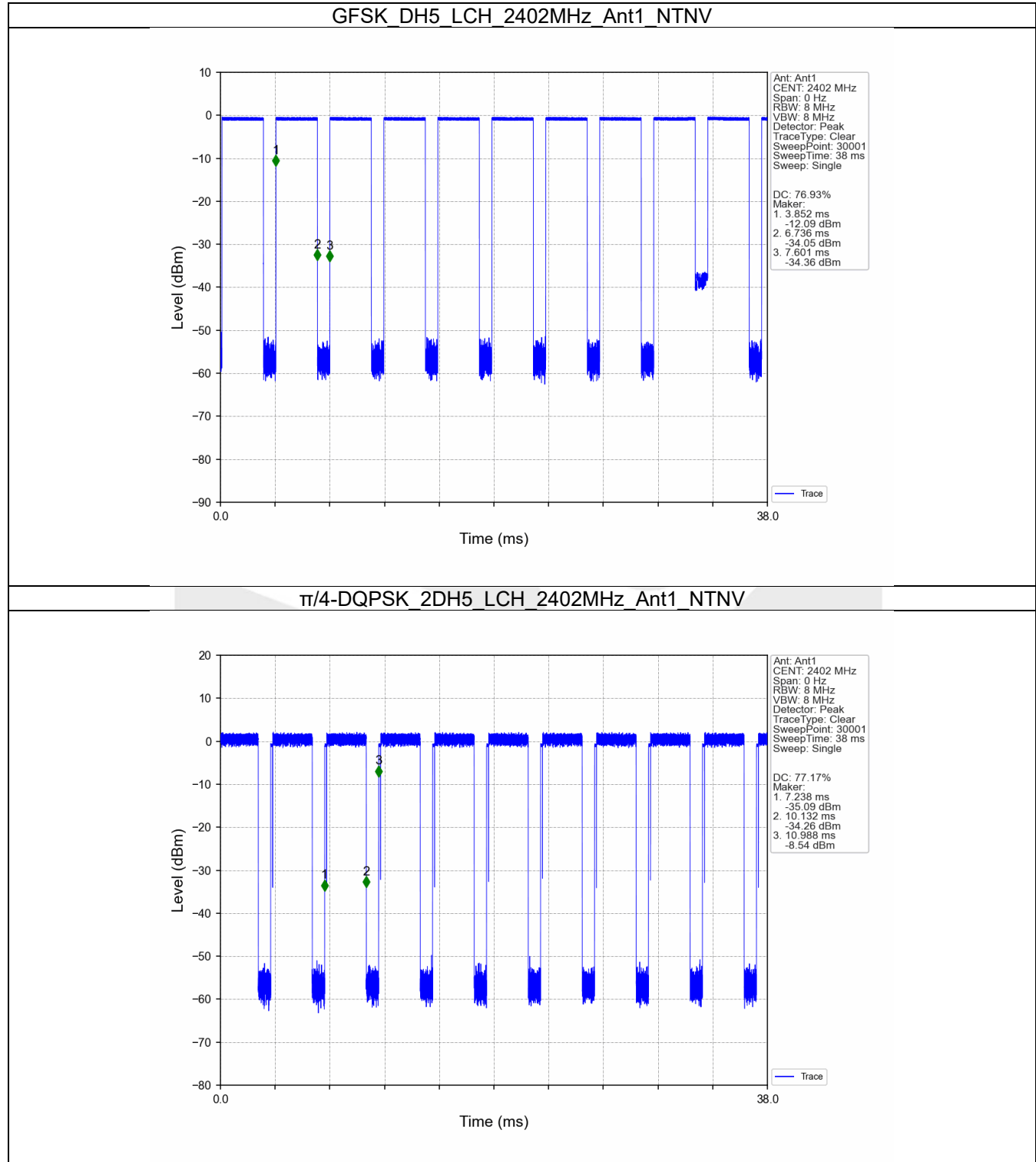
### 1.1 Test Result

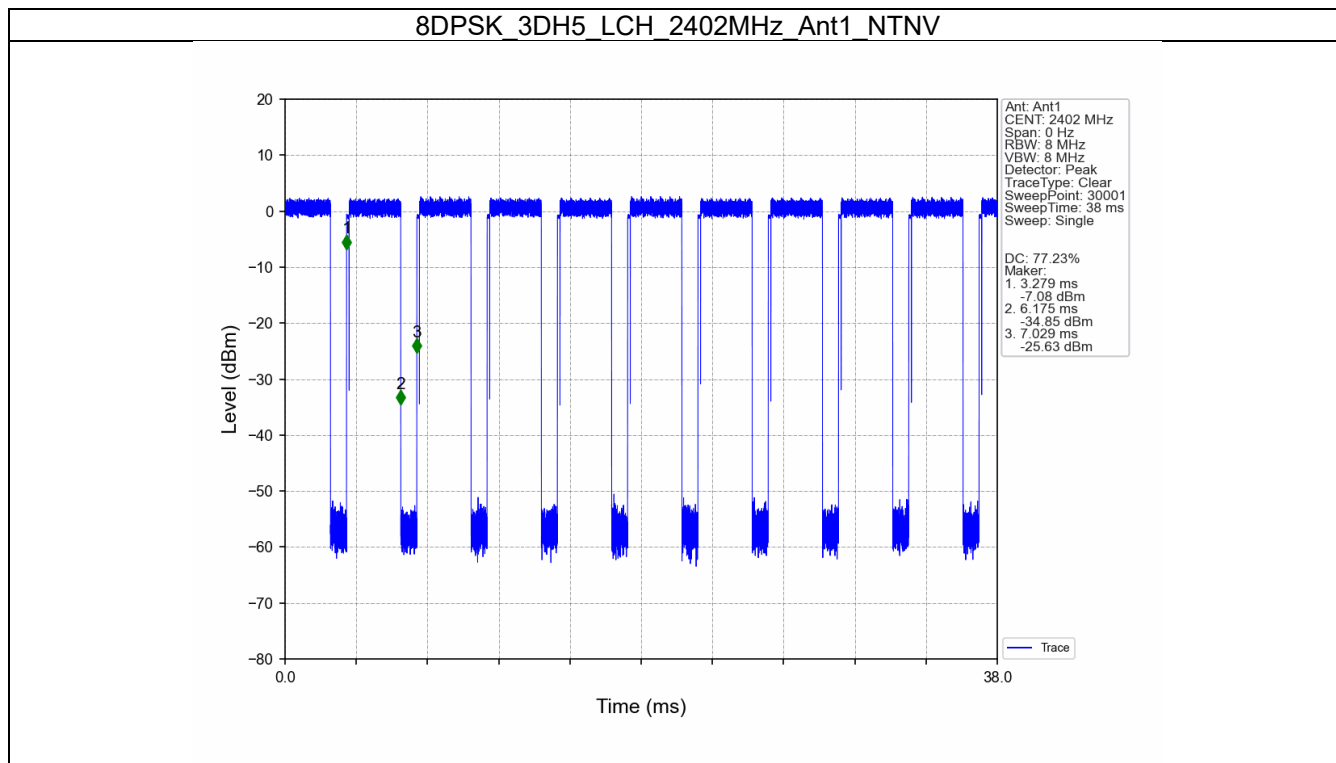
#### 1.1.1 Ant1

| 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         | 2.884     | 3.749       | 76.93          | 1.14                              | 11.52                 |
| $\pi/4$ -DQPSK | SISO    | 2402            | 2DH5        | 2.894     | 3.750       | 77.17          | 1.13                              | 0.03                  |
| 8DPSK          | SISO    | 2402            | 3DH5        | 2.896     | 3.750       | 77.23          | 1.12                              | 0.03                  |

## 1.2 Test Graph

### 1.2.1 Ant1





## 2. Bandwidth

### 2.1 Test Result

#### 2.1.1 OBW

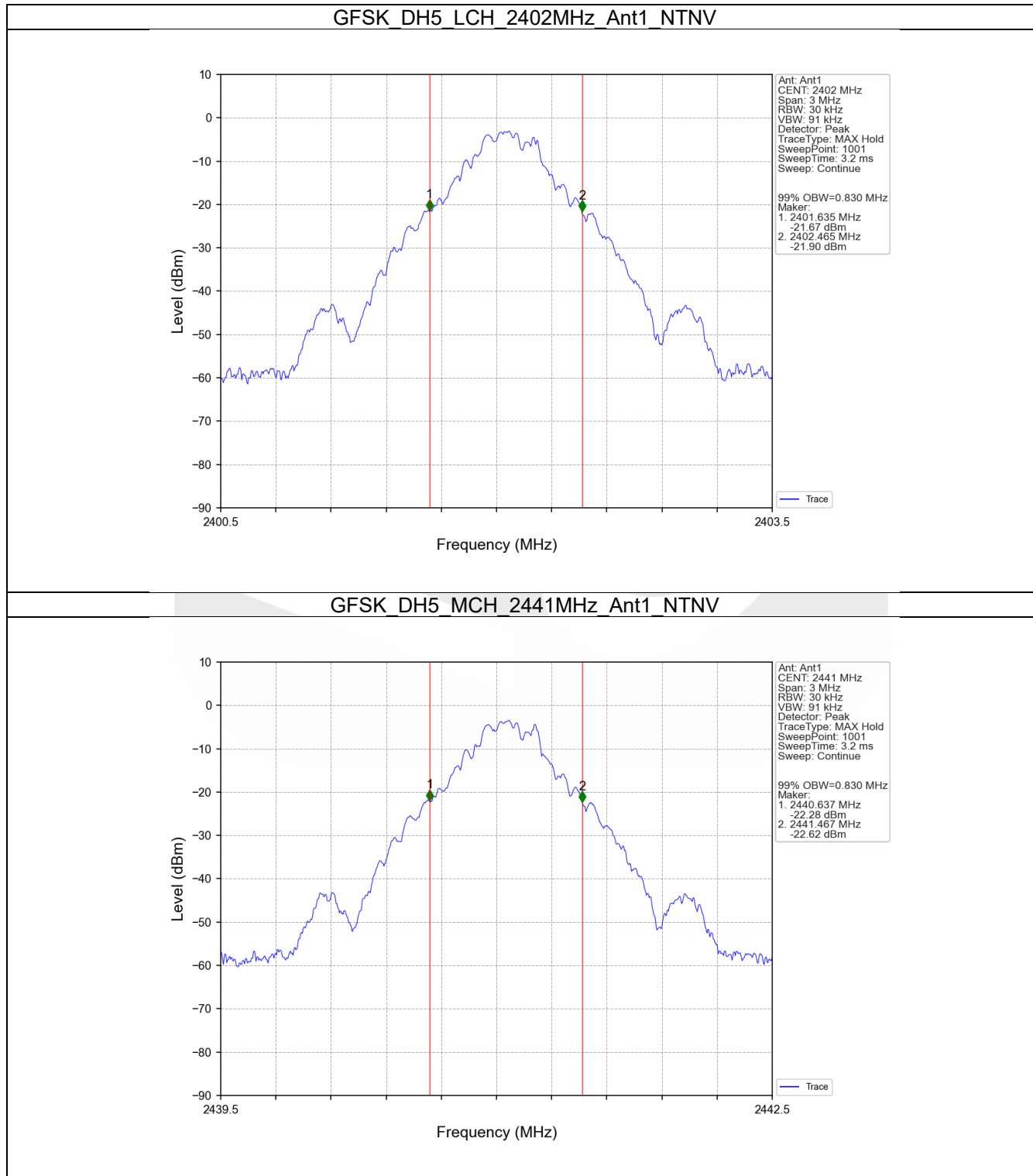
| Mode           | TX Type | Frequency (MHz) | Packet Type | ANT | 99% Occupied Bandwidth (MHz) |       | Verdict |
|----------------|---------|-----------------|-------------|-----|------------------------------|-------|---------|
|                |         |                 |             |     | Result                       | Limit |         |
| GFSK           | SISO    | 2402            | DH5         | 1   | 0.830                        | /     | Pass    |
|                |         | 2441            | DH5         | 1   | 0.830                        | /     | Pass    |
|                |         | 2480            | DH5         | 1   | 0.837                        | /     | Pass    |
| $\pi/4$ -DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.183                        | /     | Pass    |
|                |         | 2441            | 2DH5        | 1   | 1.174                        | /     | Pass    |
|                |         | 2480            | 2DH5        | 1   | 1.179                        | /     | Pass    |
| 8DPSK          | SISO    | 2402            | 3DH5        | 1   | 1.181                        | /     | Pass    |
|                |         | 2441            | 3DH5        | 1   | 1.188                        | /     | Pass    |
|                |         | 2480            | 3DH5        | 1   | 1.182                        | /     | Pass    |

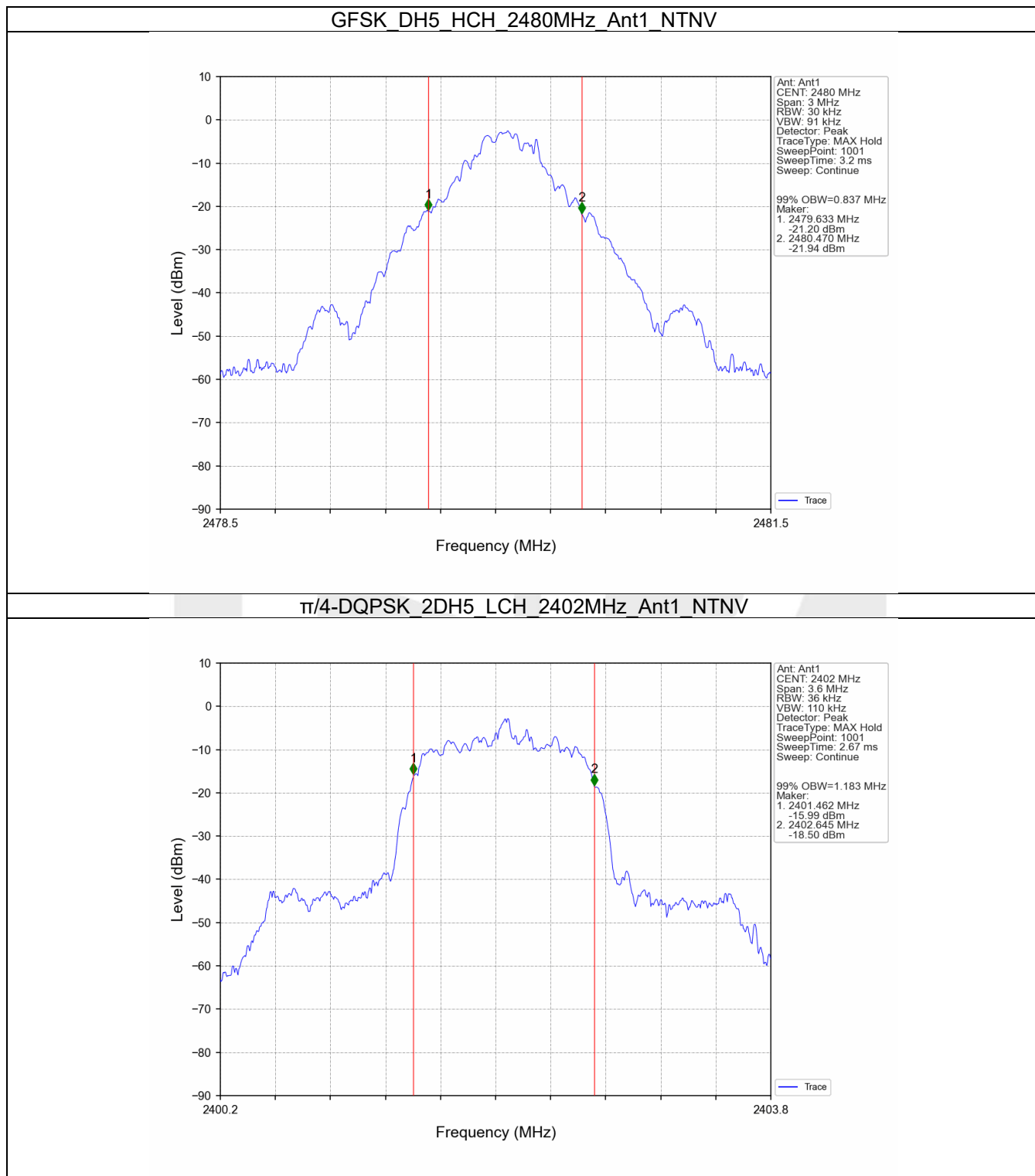
#### 2.1.2 20dB BW

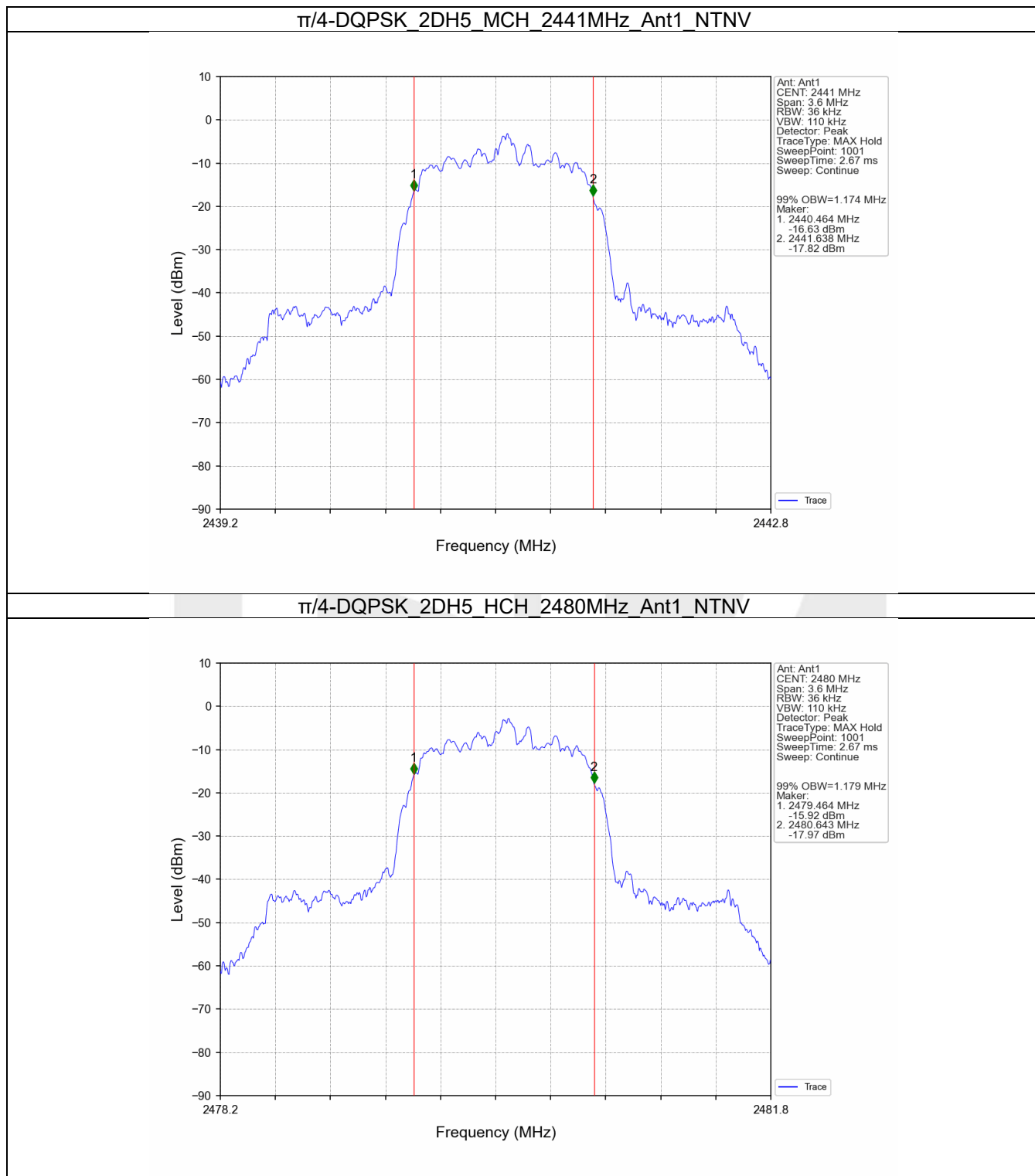
| Mode           | TX Type | Frequency (MHz) | Packet Type | ANT | 20dB Bandwidth (MHz) |       | Verdict |
|----------------|---------|-----------------|-------------|-----|----------------------|-------|---------|
|                |         |                 |             |     | Result               | Limit |         |
| GFSK           | SISO    | 2402            | DH5         | 1   | 0.940                | /     | Pass    |
|                |         | 2441            | DH5         | 1   | 0.940                | /     | Pass    |
|                |         | 2480            | DH5         | 1   | 0.939                | /     | Pass    |
| $\pi/4$ -DQPSK | SISO    | 2402            | 2DH5        | 1   | 1.294                | /     | Pass    |
|                |         | 2441            | 2DH5        | 1   | 1.293                | /     | Pass    |
|                |         | 2480            | 2DH5        | 1   | 1.294                | /     | Pass    |
| 8DPSK          | SISO    | 2402            | 3DH5        | 1   | 1.305                | /     | Pass    |
|                |         | 2441            | 3DH5        | 1   | 1.306                | /     | Pass    |
|                |         | 2480            | 3DH5        | 1   | 1.305                | /     | Pass    |

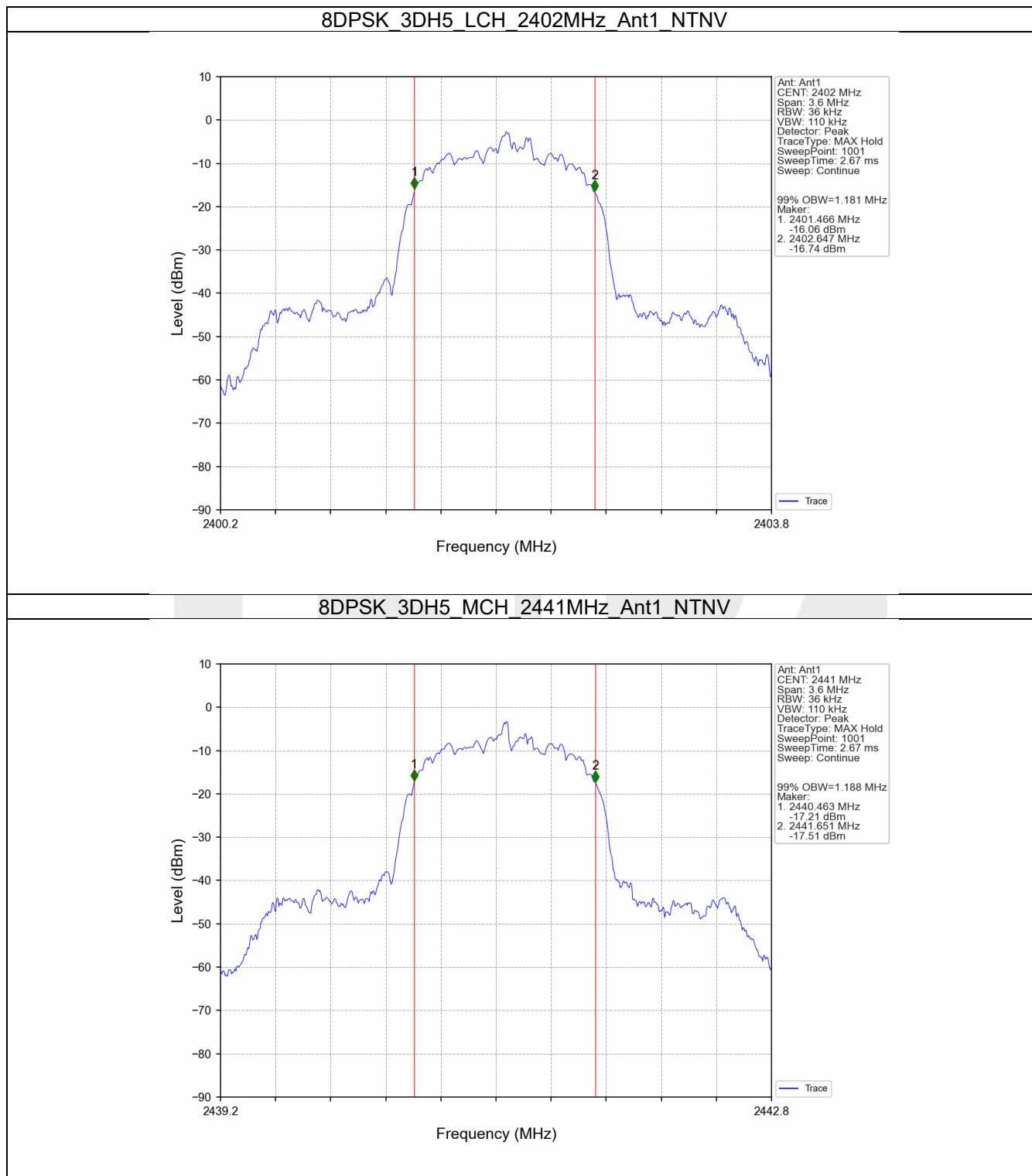
## 2.2 Test Graph

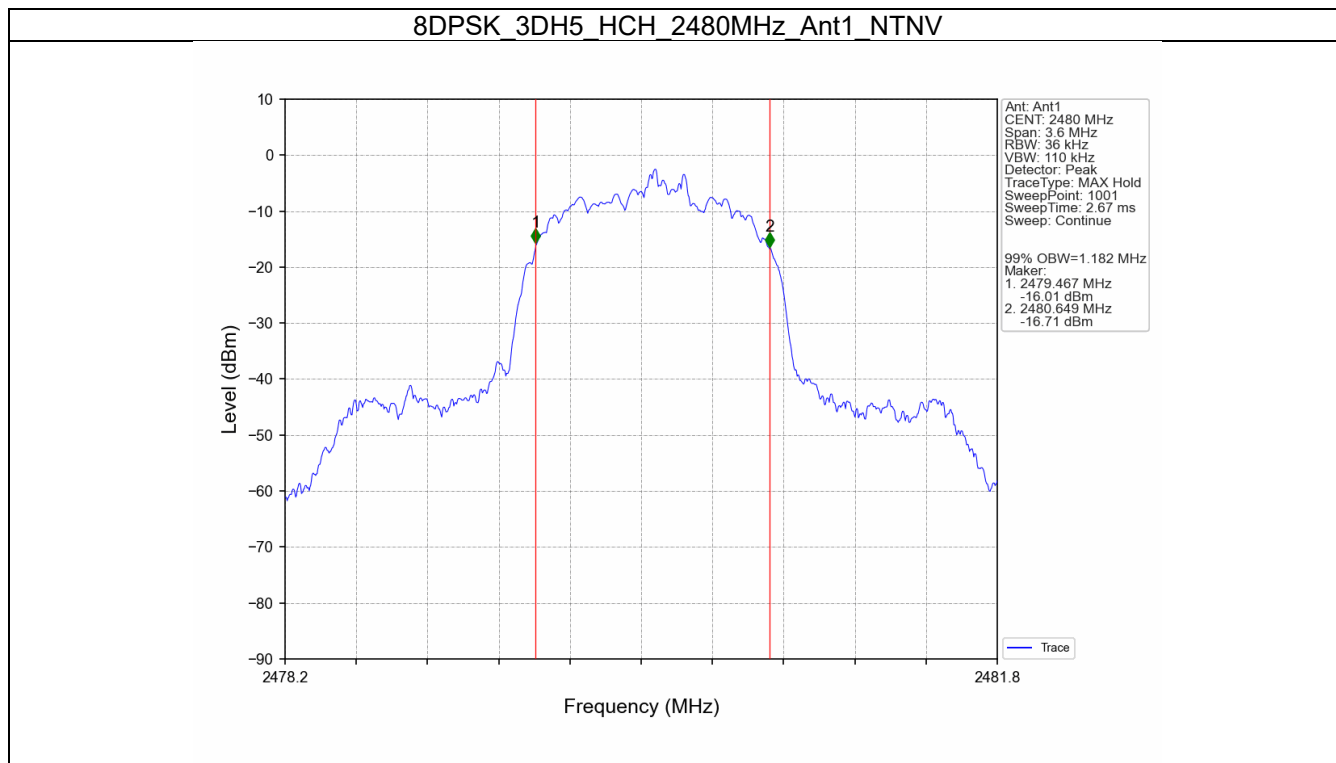
### 2.2.1 OBW



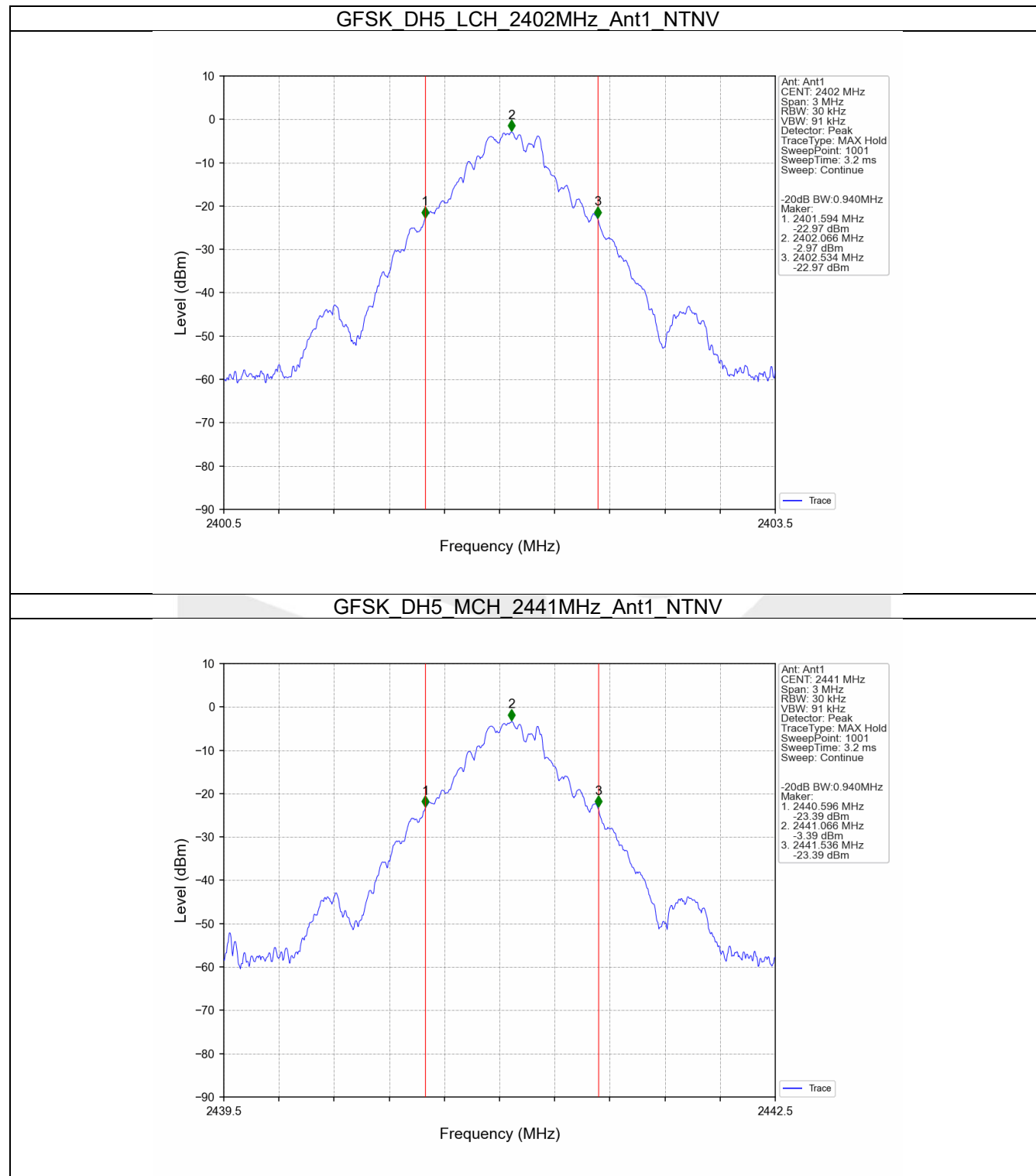


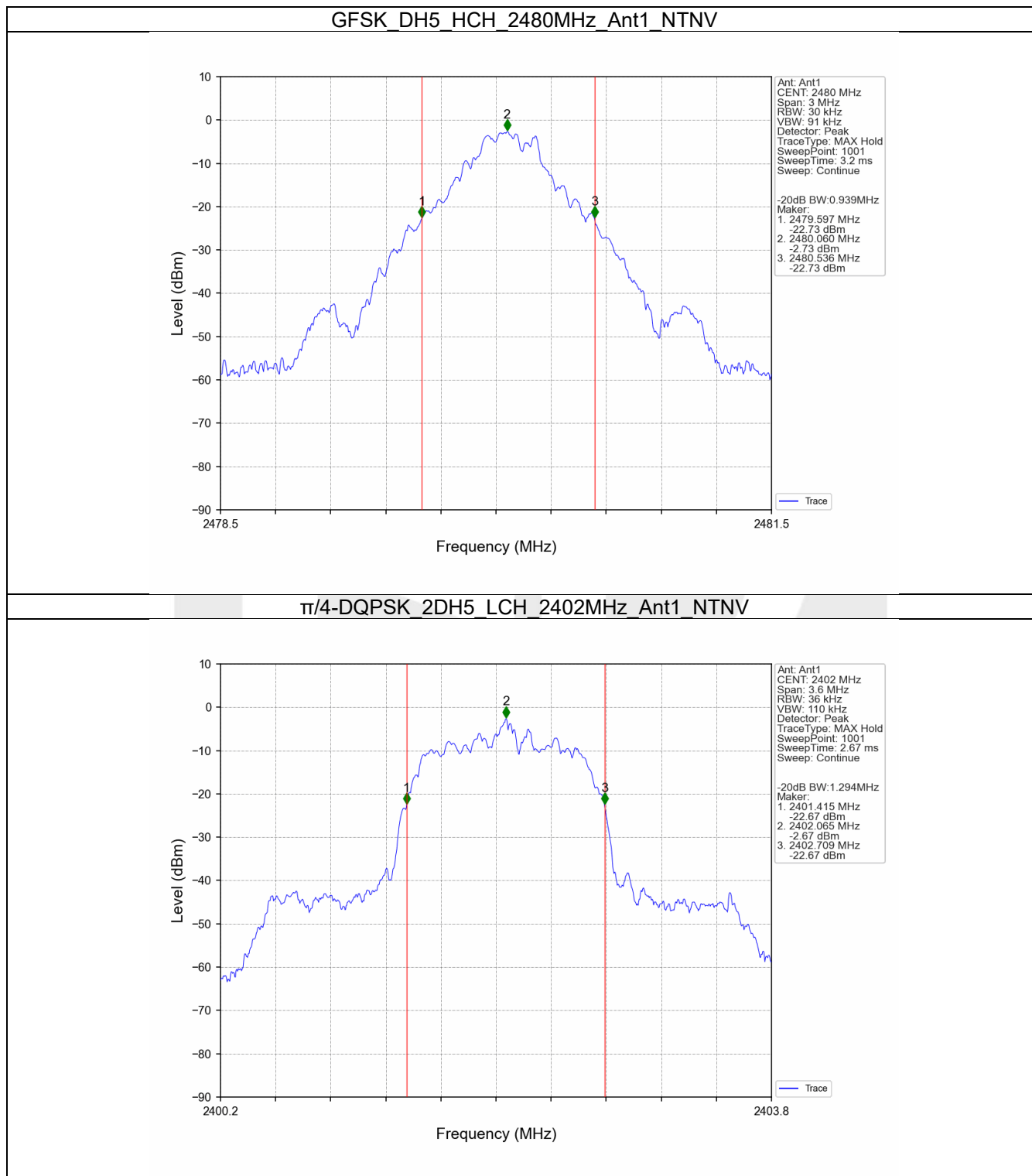


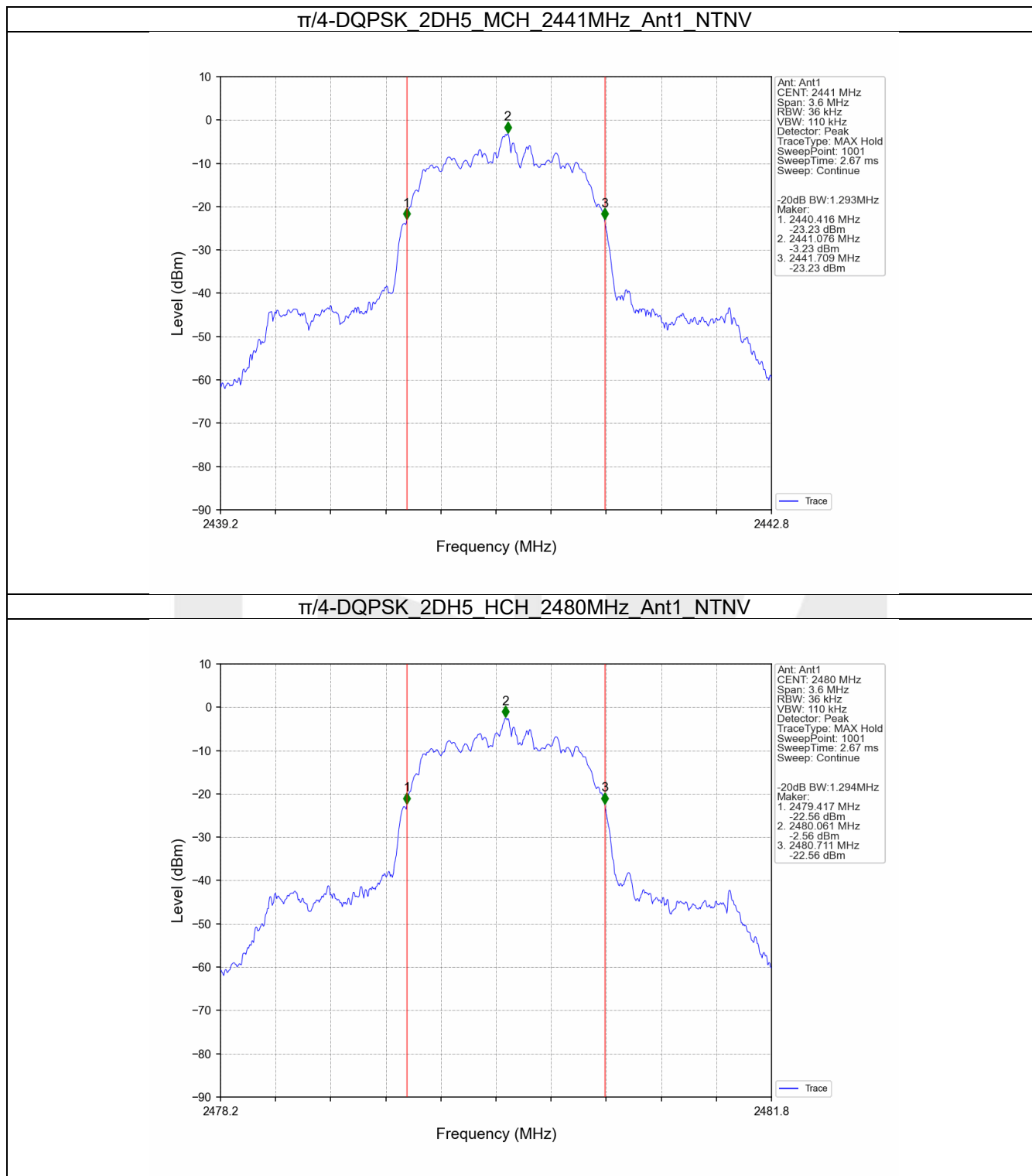


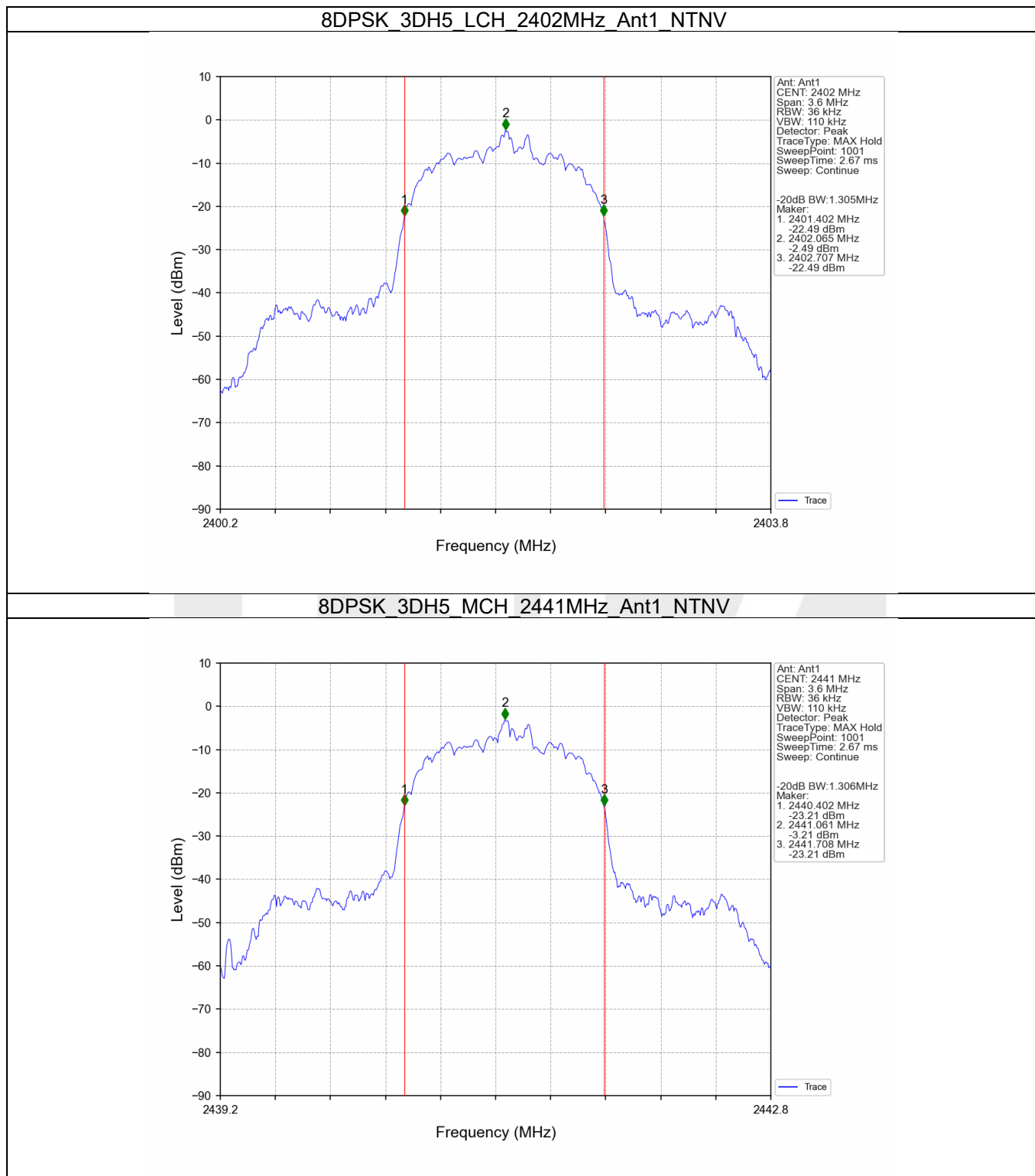


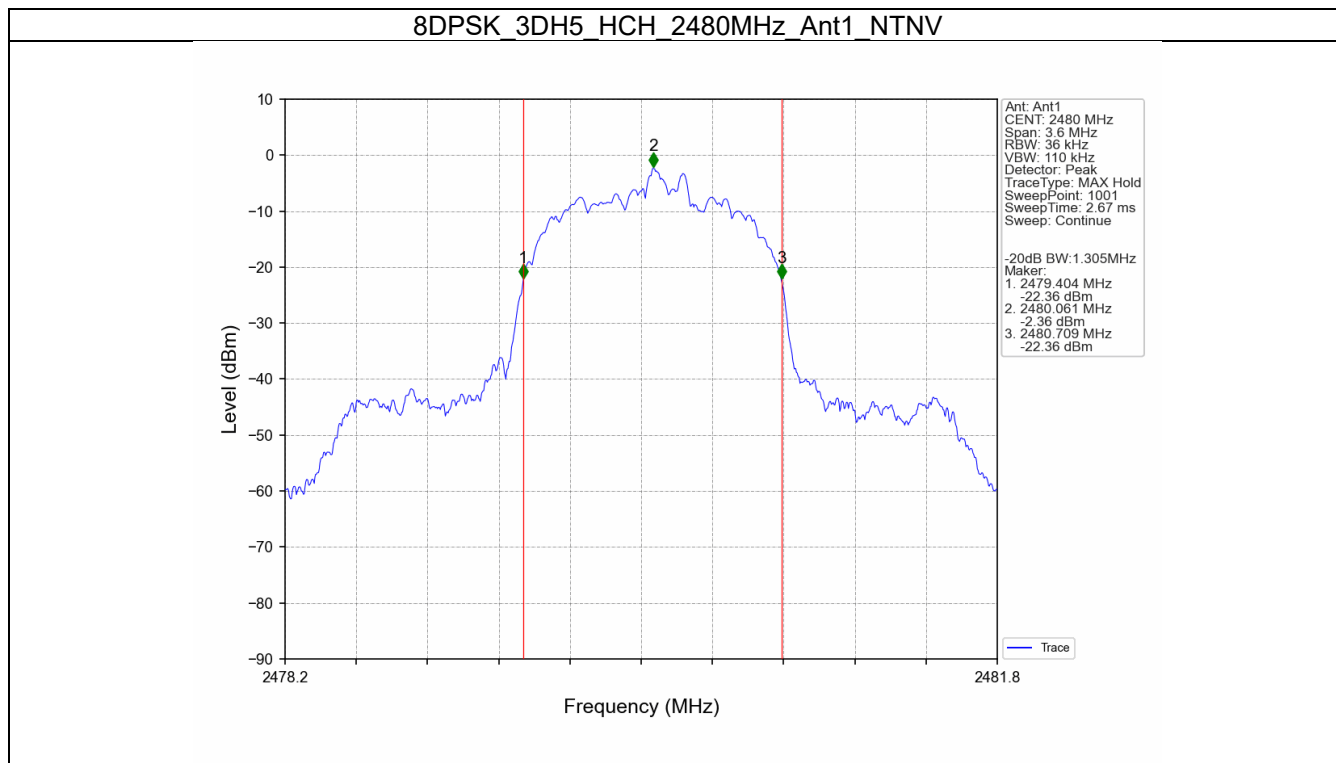
## 2.2.2 20dB BW











### 3. Maximum Conducted Output Power

#### 3.1 Test Result

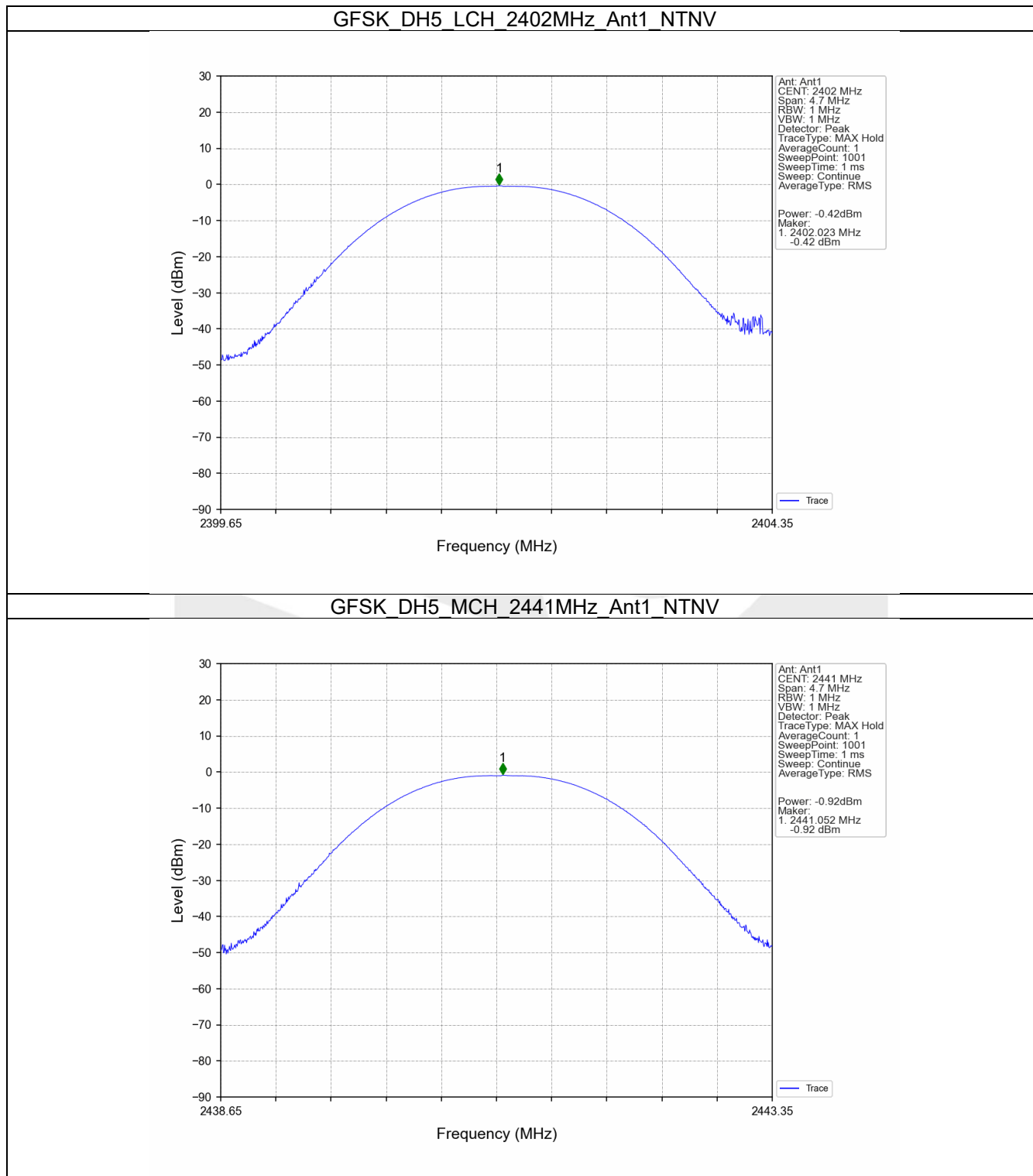
##### 3.1.1 Power

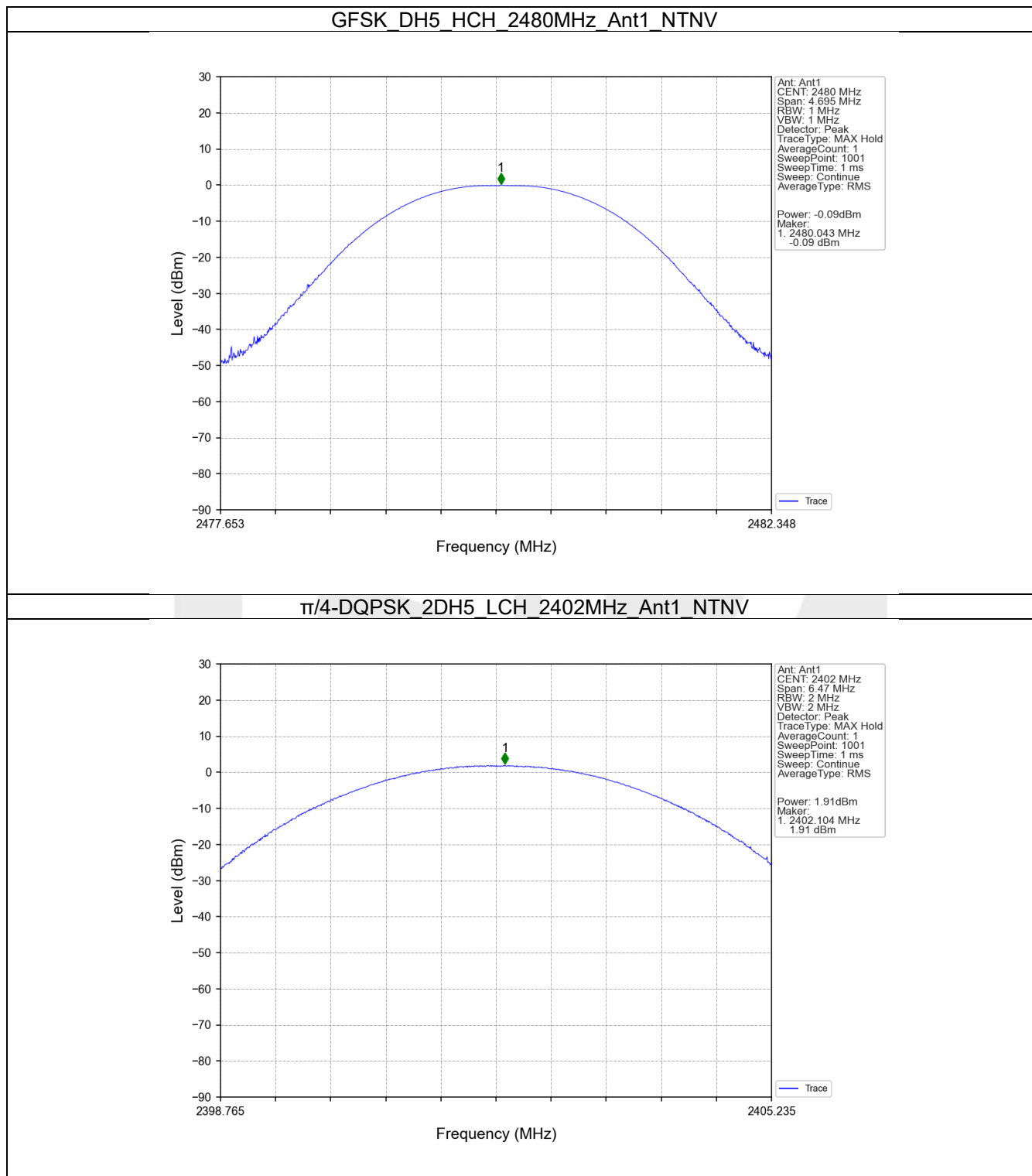
| Mode           | TX Type | Frequency (MHz) | Packet Type | Maximum Peak Conducted Output Power (dBm) |              | Verdict |
|----------------|---------|-----------------|-------------|-------------------------------------------|--------------|---------|
|                |         |                 |             | ANT1                                      | Limit        |         |
| GFSK           | SISO    | 2402            | DH5         | -0.42                                     | $\leq 30$    | Pass    |
|                |         | 2441            | DH5         | -0.92                                     | $\leq 30$    | Pass    |
|                |         | 2480            | DH5         | -0.09                                     | $\leq 30$    | Pass    |
| $\pi/4$ -DQPSK | SISO    | 2402            | 2DH5        | 1.91                                      | $\leq 20.97$ | Pass    |
|                |         | 2441            | 2DH5        | 1.33                                      | $\leq 20.97$ | Pass    |
|                |         | 2480            | 2DH5        | 2.15                                      | $\leq 20.97$ | Pass    |
| 8DPSK          | SISO    | 2402            | 3DH5        | 2.37                                      | $\leq 20.97$ | Pass    |
|                |         | 2441            | 3DH5        | 1.72                                      | $\leq 20.97$ | Pass    |
|                |         | 2480            | 3DH5        | 2.50                                      | $\leq 20.97$ | Pass    |

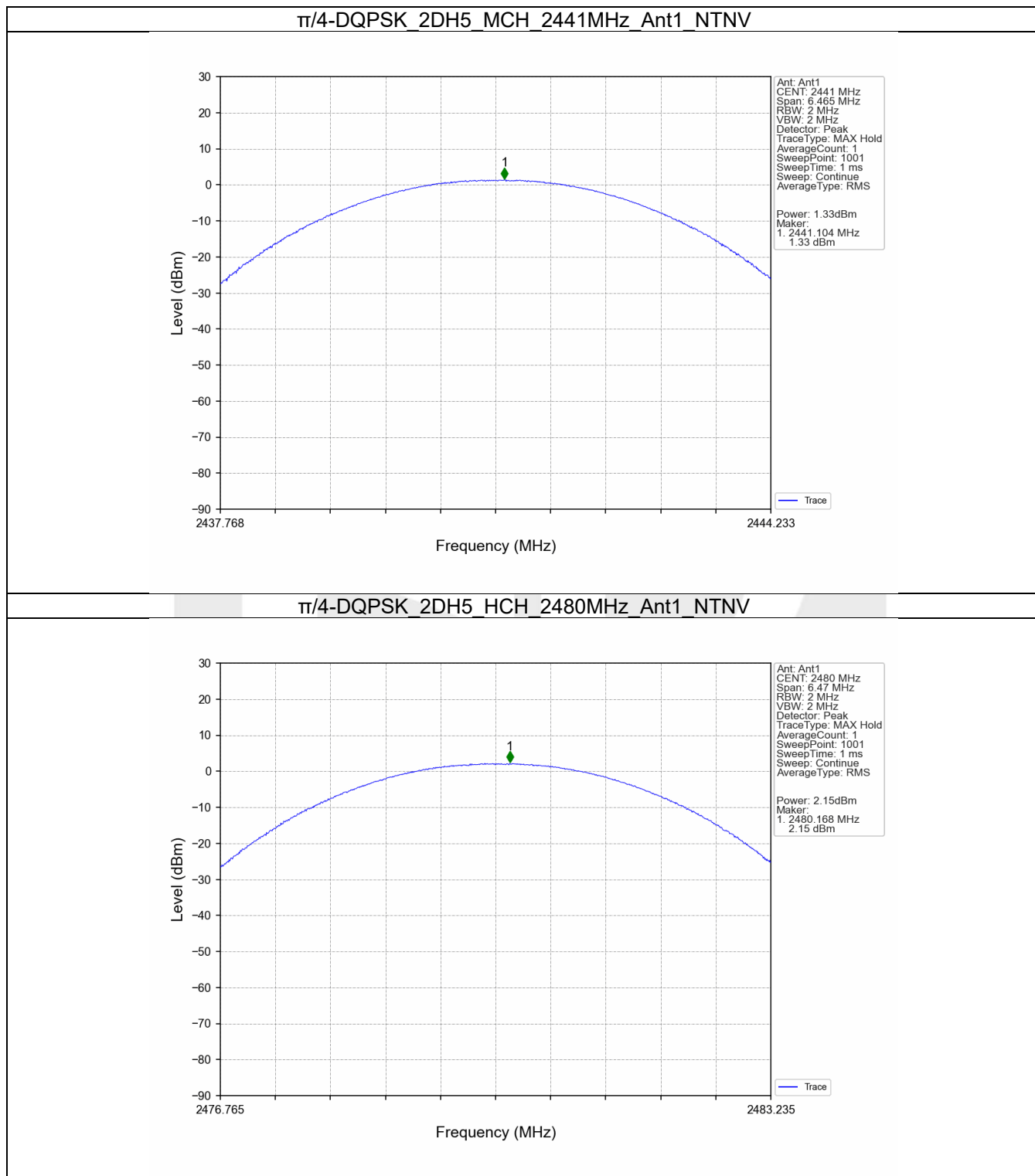
Note1: Antenna Gain: Ant1: 0.00dBi;

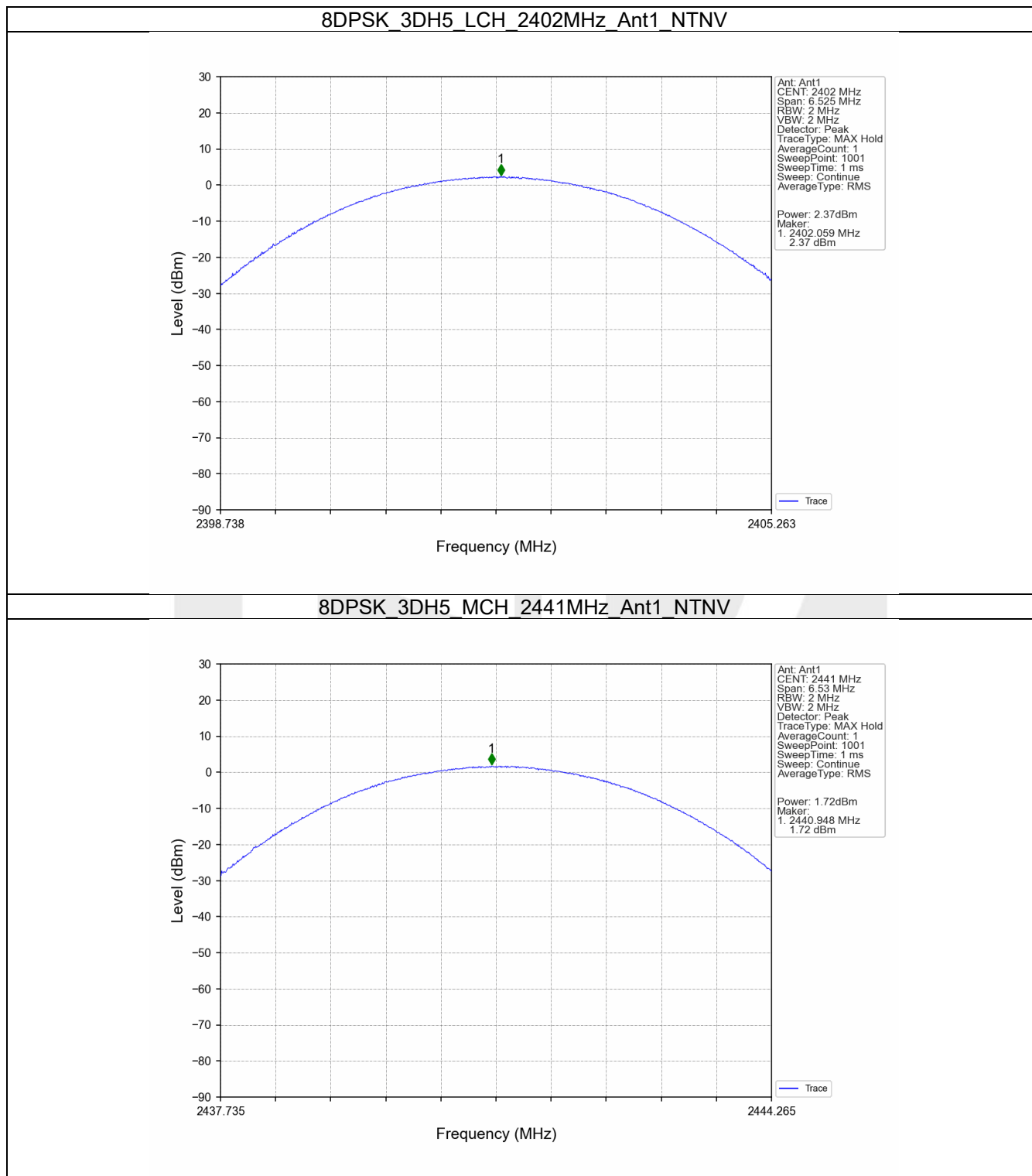
## 3.2 Test Graph

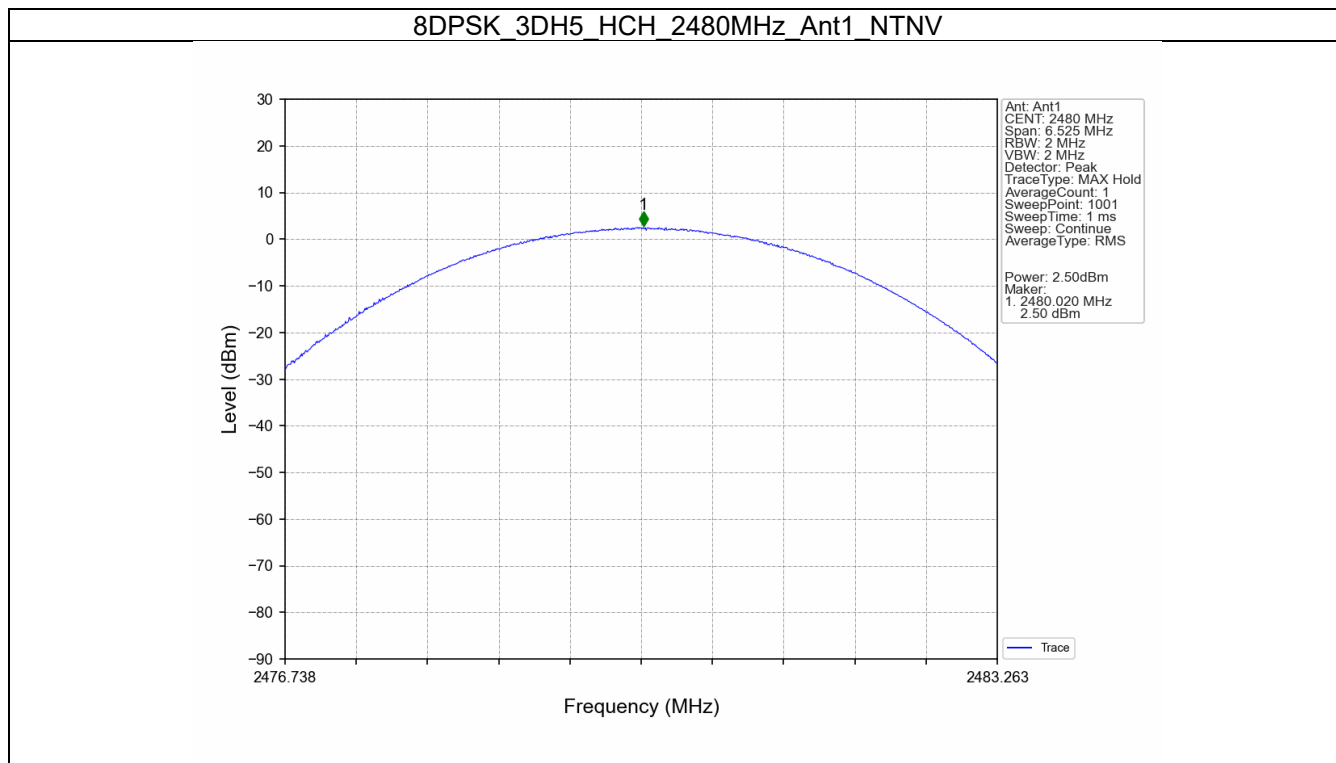
### 3.2.1 Power











#### 4. Carrier Frequency Separation

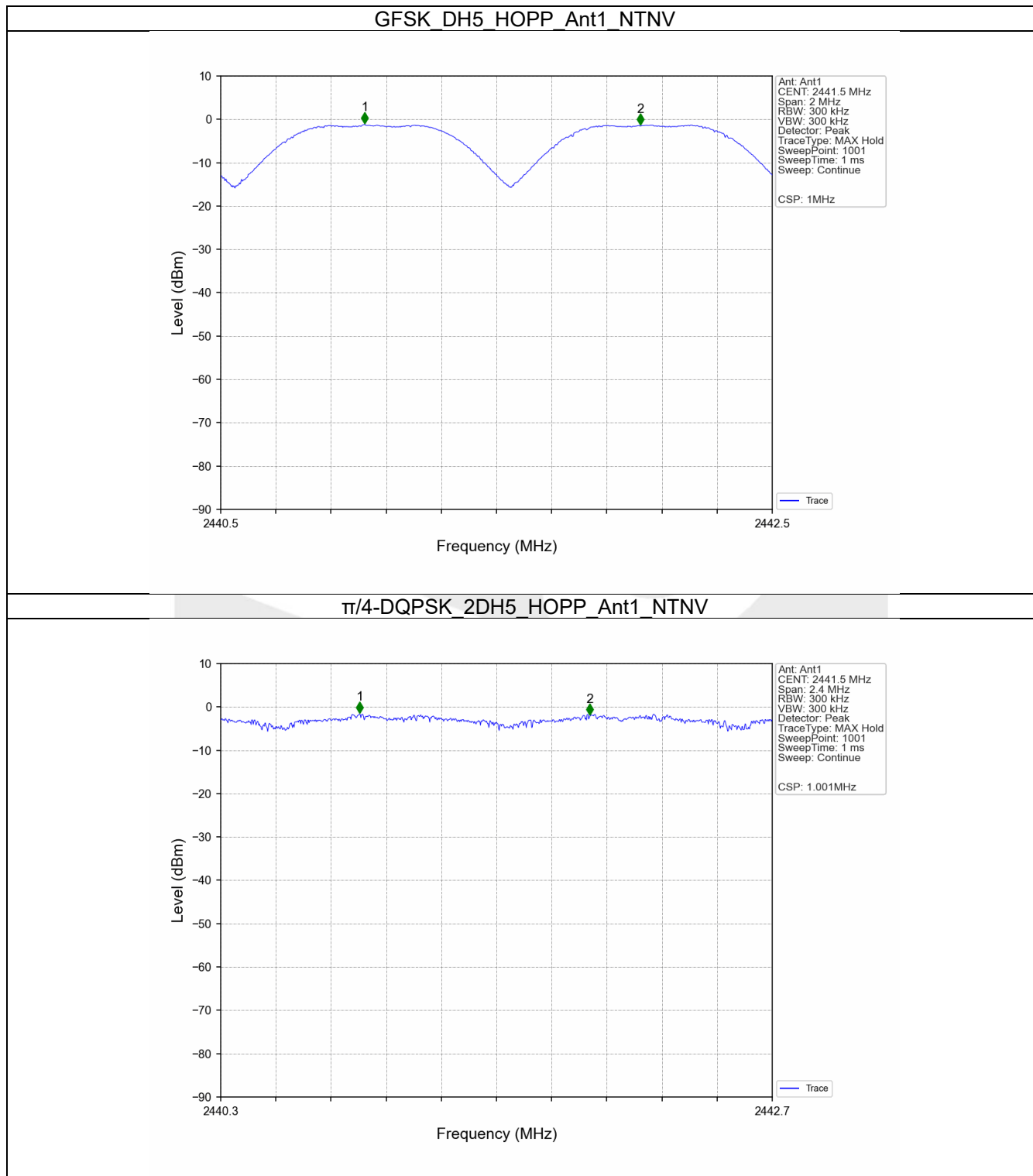
##### 4.1 Test Result

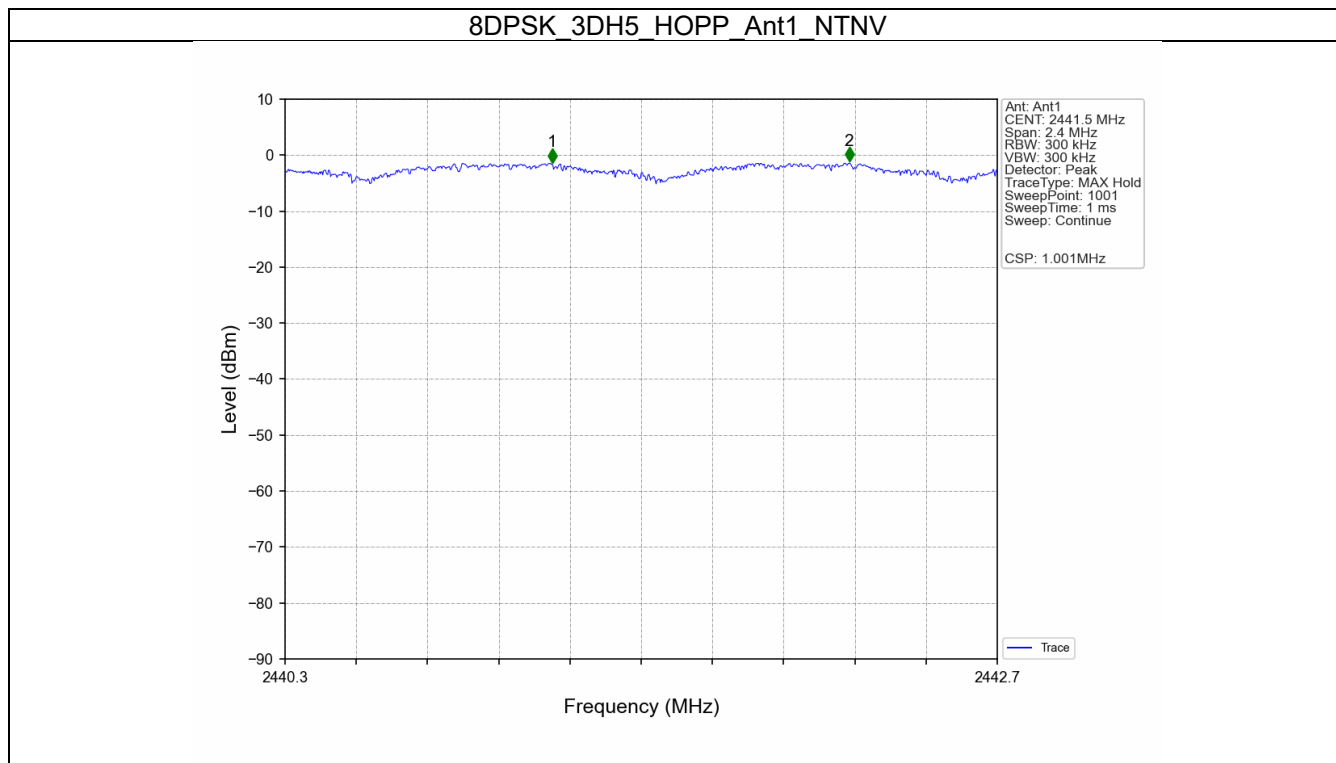
###### 4.1.1 Ant1

| Ant1           |         |                 |             |                          |                      |              |         |
|----------------|---------|-----------------|-------------|--------------------------|----------------------|--------------|---------|
| Mode           | TX Type | Frequency (MHz) | Packet Type | Channel Separation (MHz) | 20dB Bandwidth (MHz) | Limit (MHz)  | Verdict |
| GFSK           | SISO    | HOPP            | DH5         | 1.000                    | 0.940                | $\geq 0.940$ | Pass    |
| $\pi/4$ -DQPSK | SISO    | HOPP            | 2DH5        | 1.001                    | 1.294                | $\geq 0.863$ | Pass    |
| 8DPSK          | SISO    | HOPP            | 3DH5        | 1.001                    | 1.306                | $\geq 0.871$ | Pass    |

## 4.2 Test Graph

### 4.2.1 Ant1





## 5. Number of Hopping Frequencies

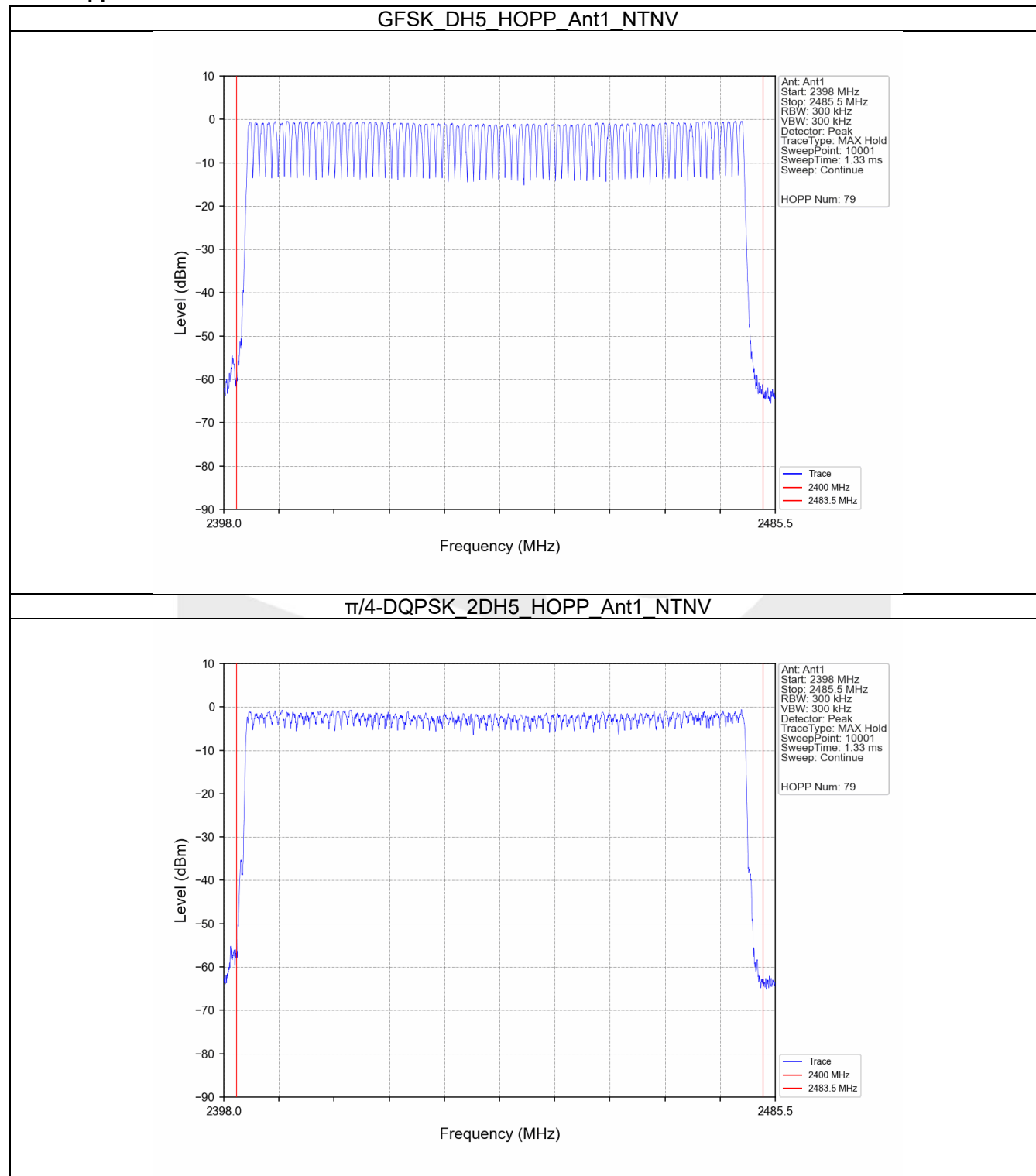
### 5.1 Test Result

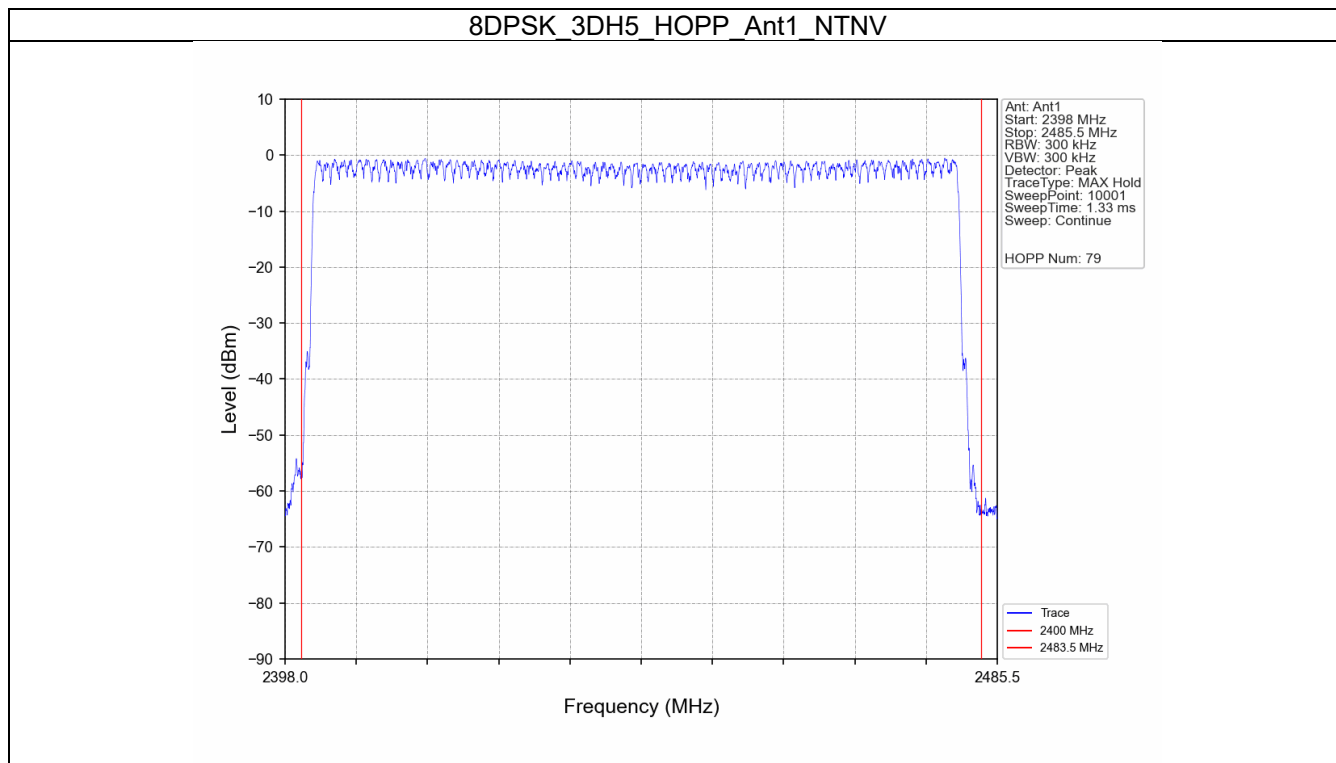
#### 5.1.1 HoppNum

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

## 5.2 Test Graph

### 5.2.1 HoppNum





## 6. Time of Occupancy (Dwell Time)

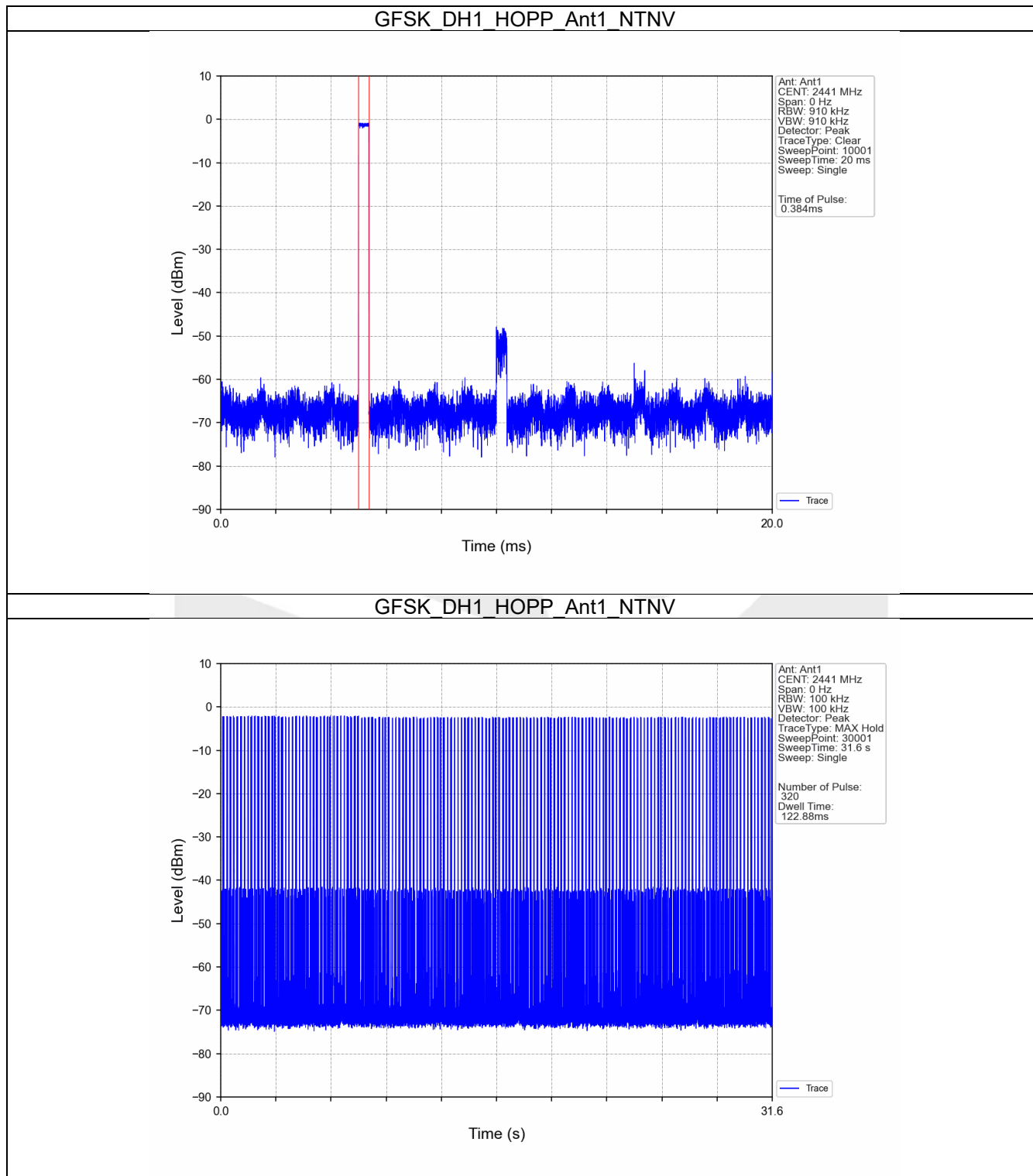
### 6.1 Test Result

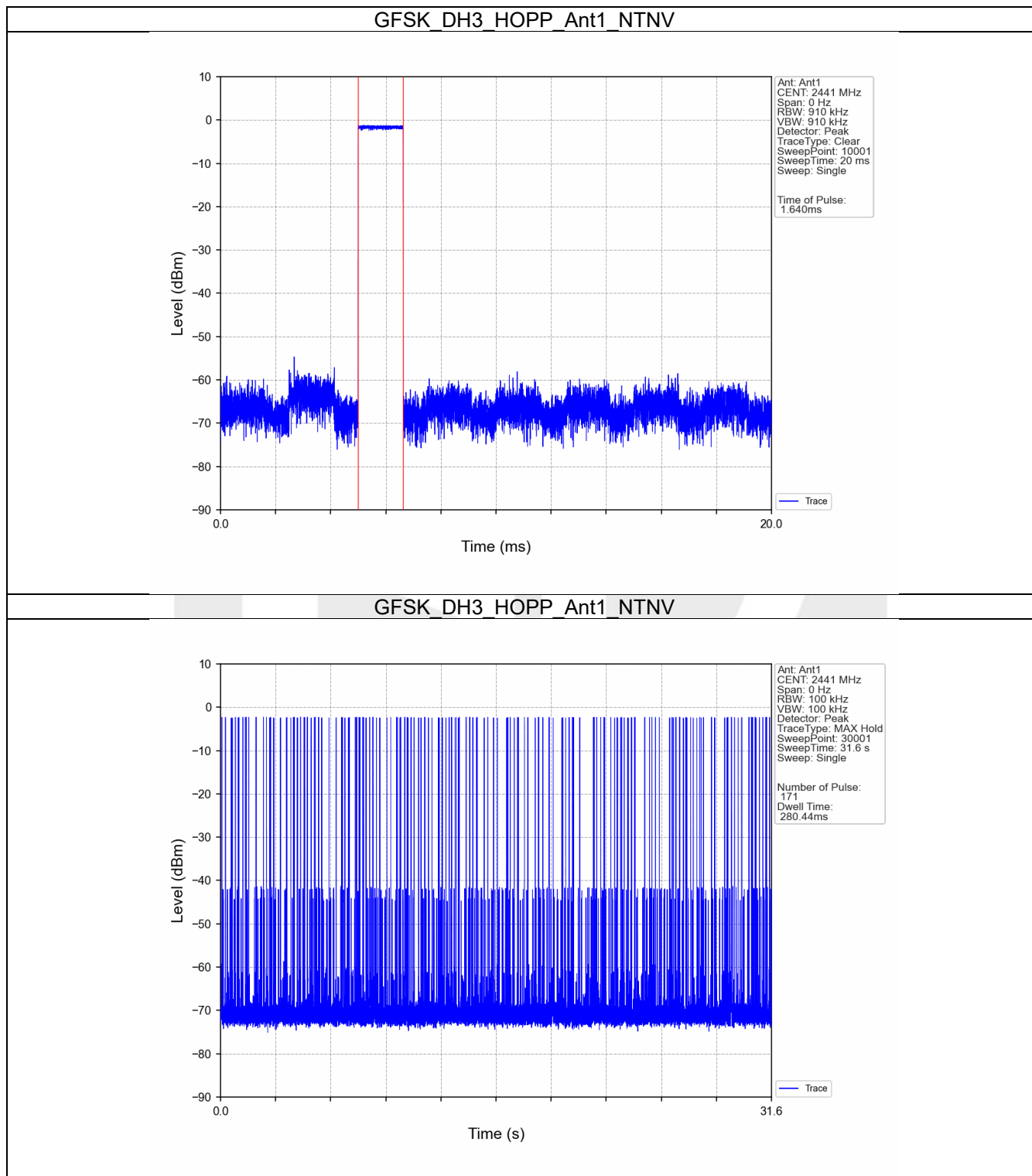
#### 6.1.1 Ant1

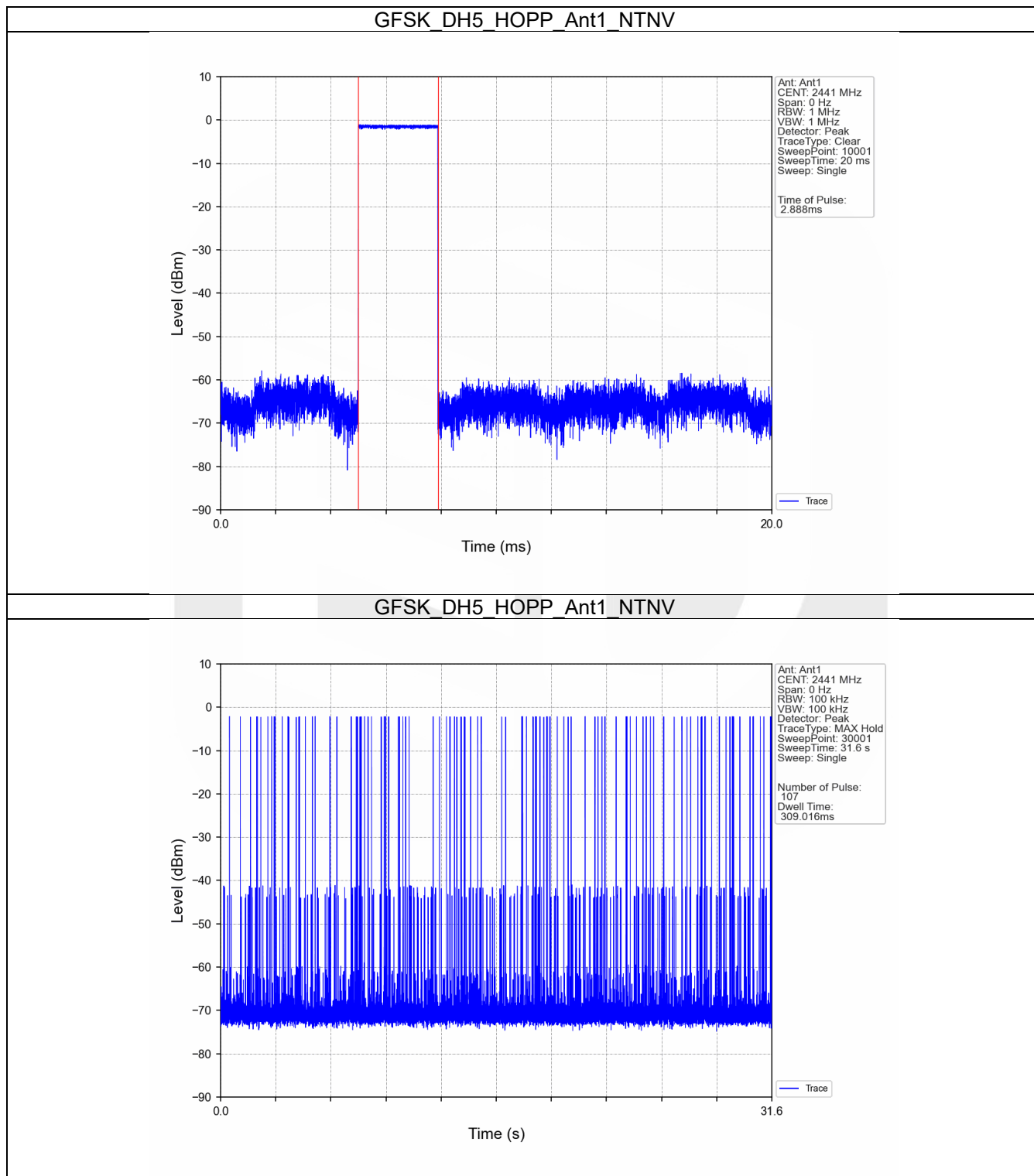
| Ant1           |         |                 |             |                               |                        |                                    |                 |            |         |
|----------------|---------|-----------------|-------------|-------------------------------|------------------------|------------------------------------|-----------------|------------|---------|
| 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         | 0.384                         | 31.600                 | 320                                | 122.880         | <=400      | Pass    |
|                |         |                 | DH3         | 1.640                         | 31.600                 | 171                                | 280.440         | <=400      | Pass    |
|                |         |                 | DH5         | 2.888                         | 31.600                 | 107                                | 309.016         | <=400      | Pass    |
| $\pi/4$ -DQPSK | SISO    | HOPP            | 2DH1        | 0.394                         | 31.600                 | 320                                | 126.080         | <=400      | Pass    |
|                |         |                 | 2DH3        | 1.650                         | 31.600                 | 156                                | 257.400         | <=400      | Pass    |
|                |         |                 | 2DH5        | 2.894                         | 31.600                 | 97                                 | 280.718         | <=400      | Pass    |
| 8DPSK          | SISO    | HOPP            | 3DH1        | 0.394                         | 31.600                 | 320                                | 126.080         | <=400      | Pass    |
|                |         |                 | 3DH3        | 1.642                         | 31.600                 | 167                                | 274.214         | <=400      | Pass    |
|                |         |                 | 3DH5        | 2.900                         | 31.600                 | 107                                | 310.300         | <=400      | Pass    |

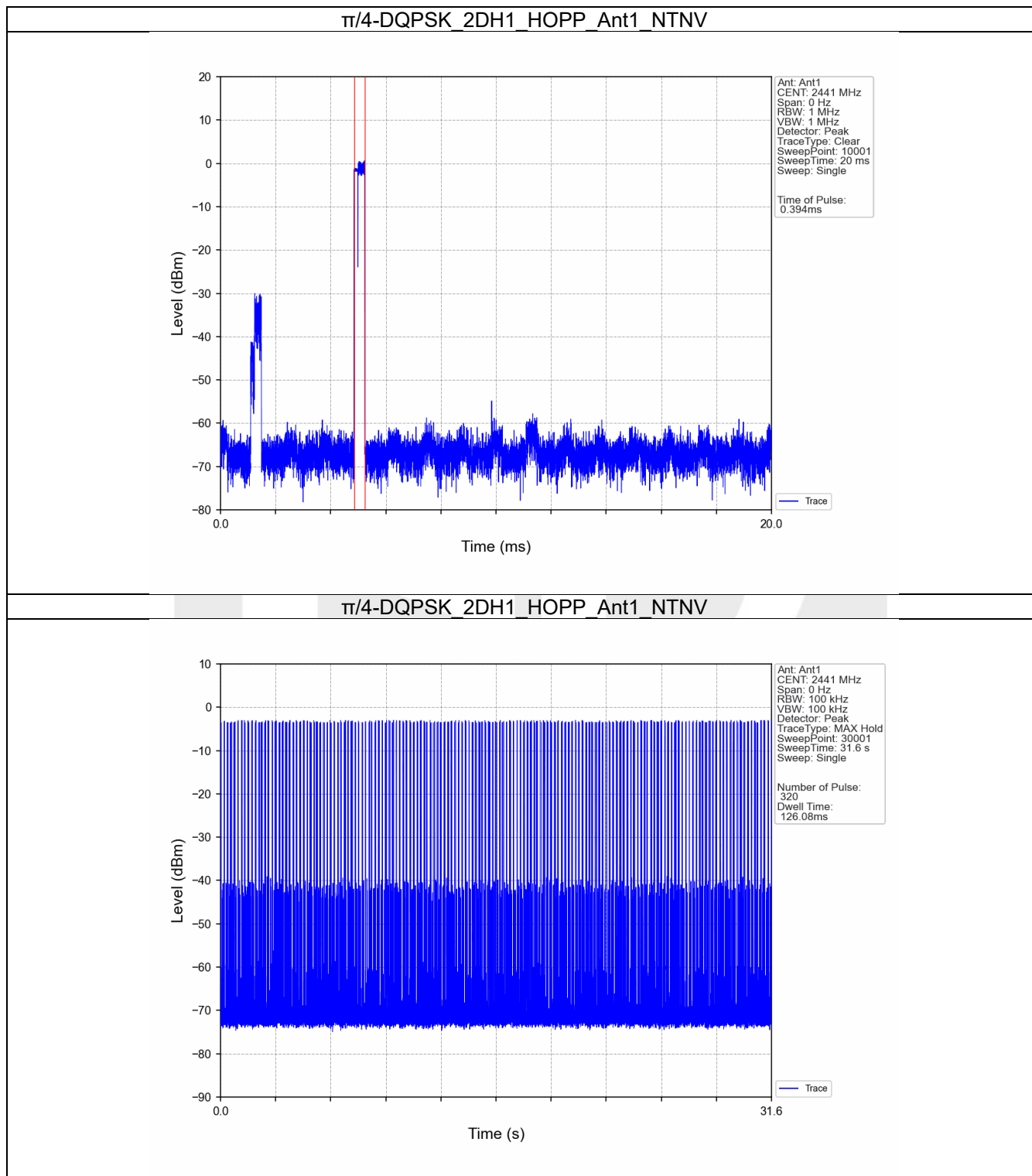
## 6.2 Test Graph

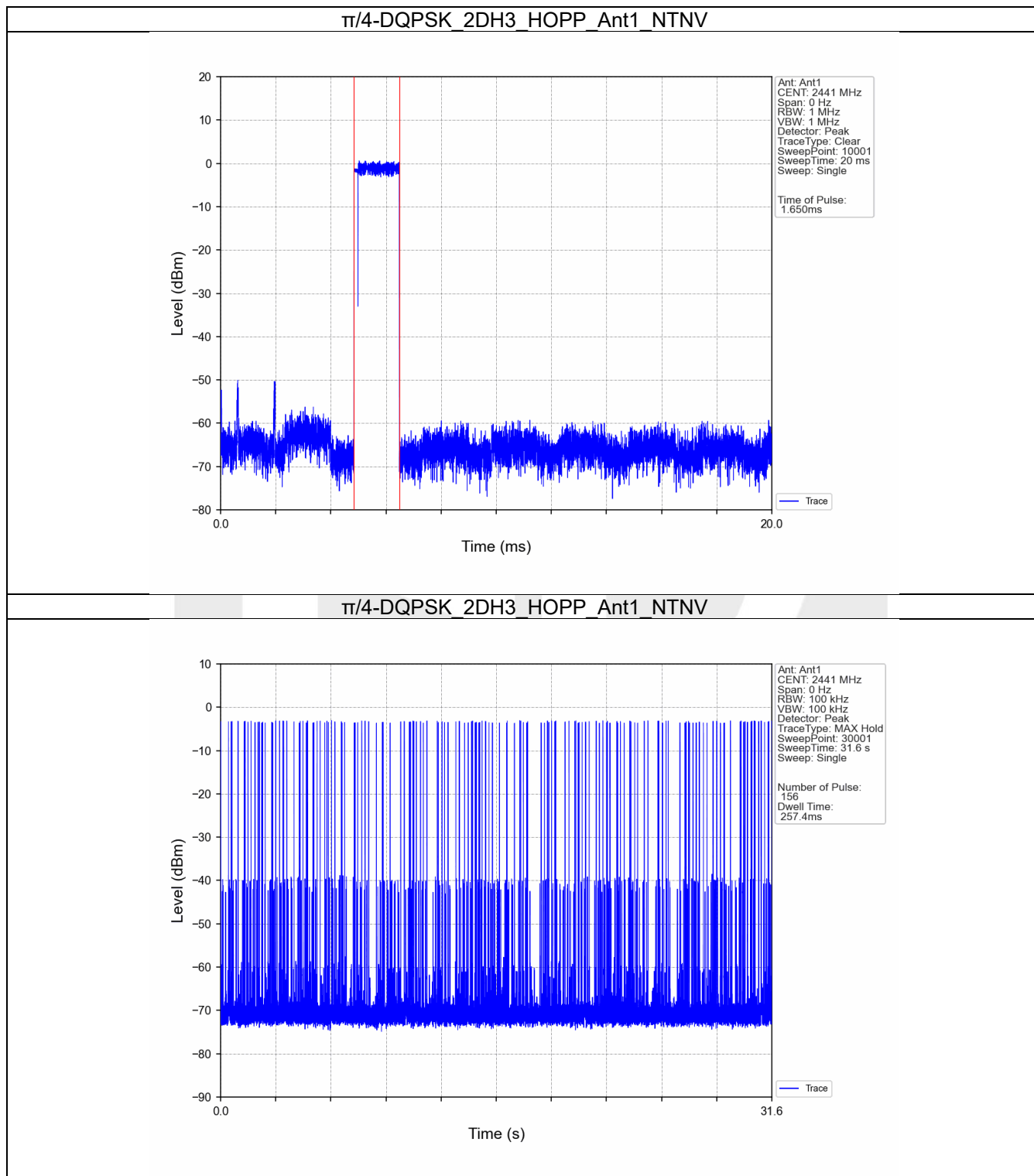
### 6.2.1 Ant1

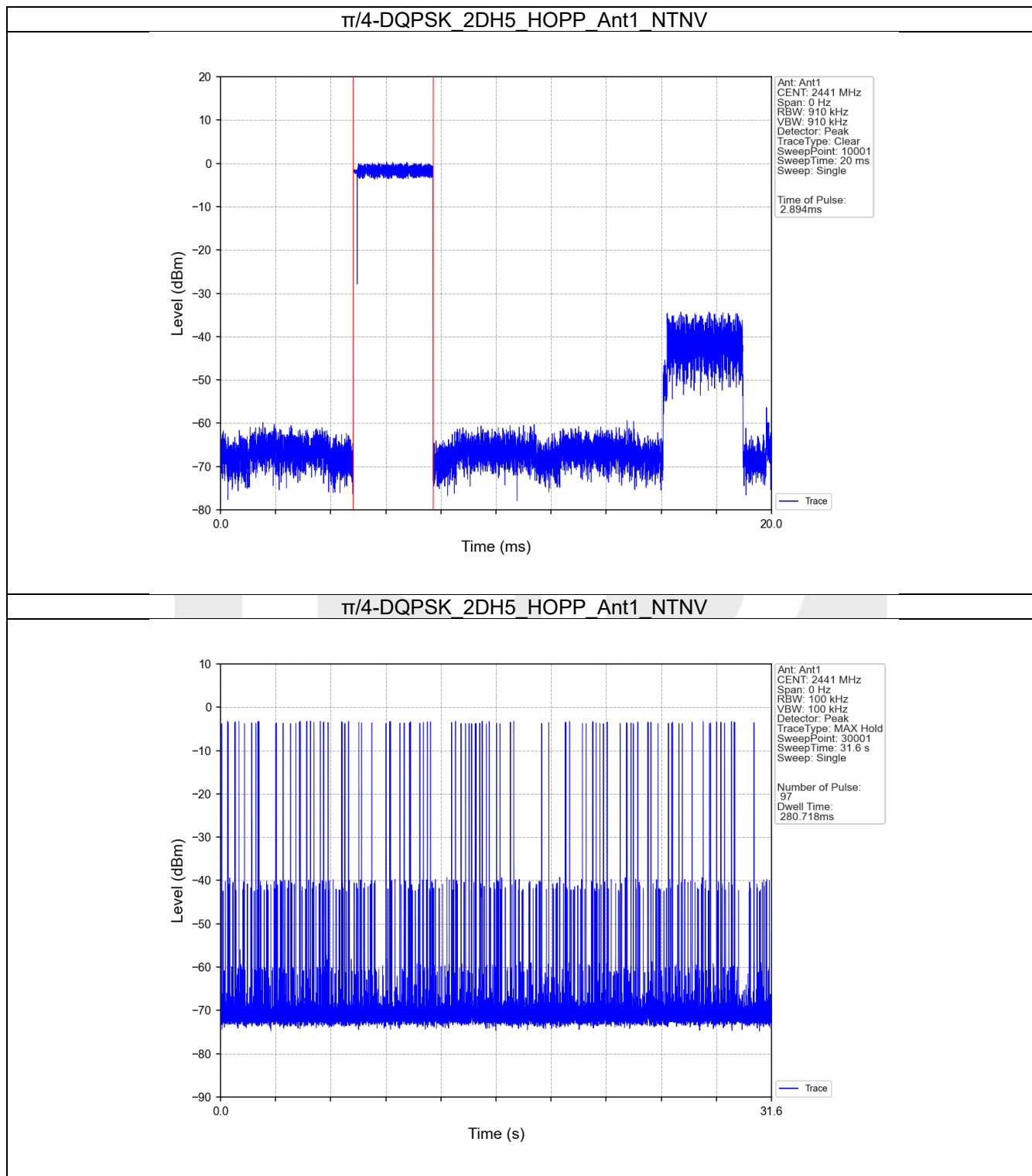


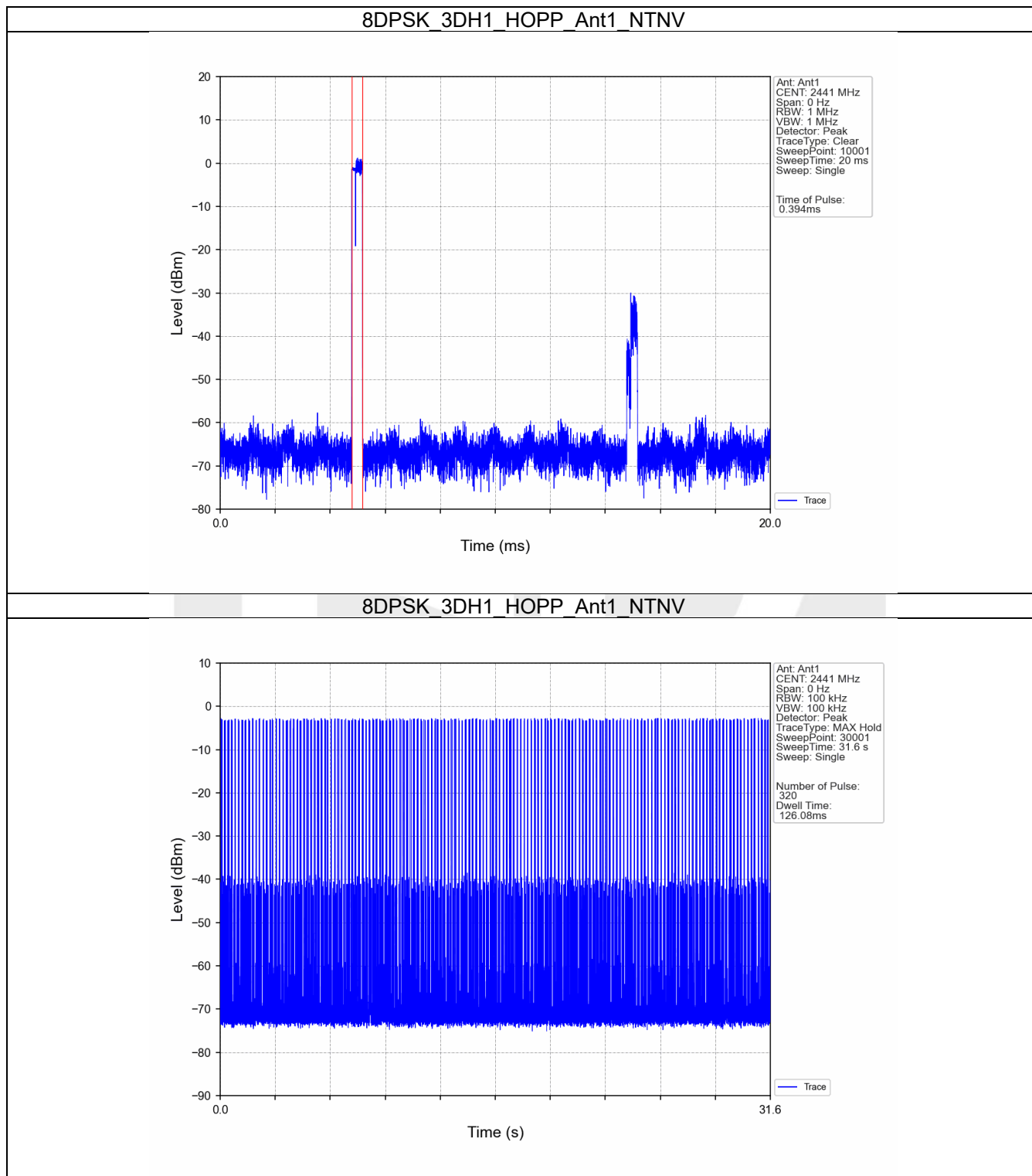


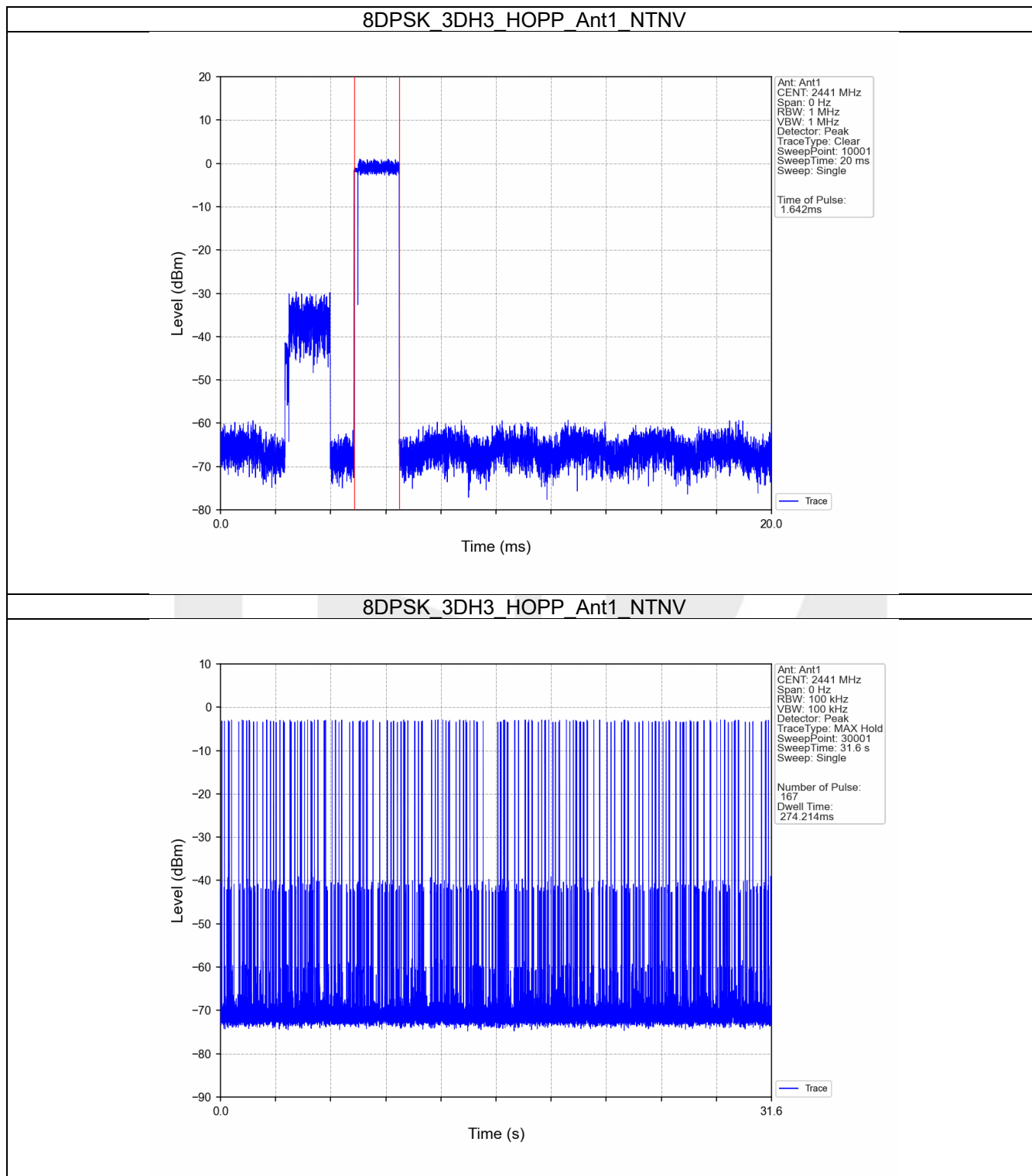


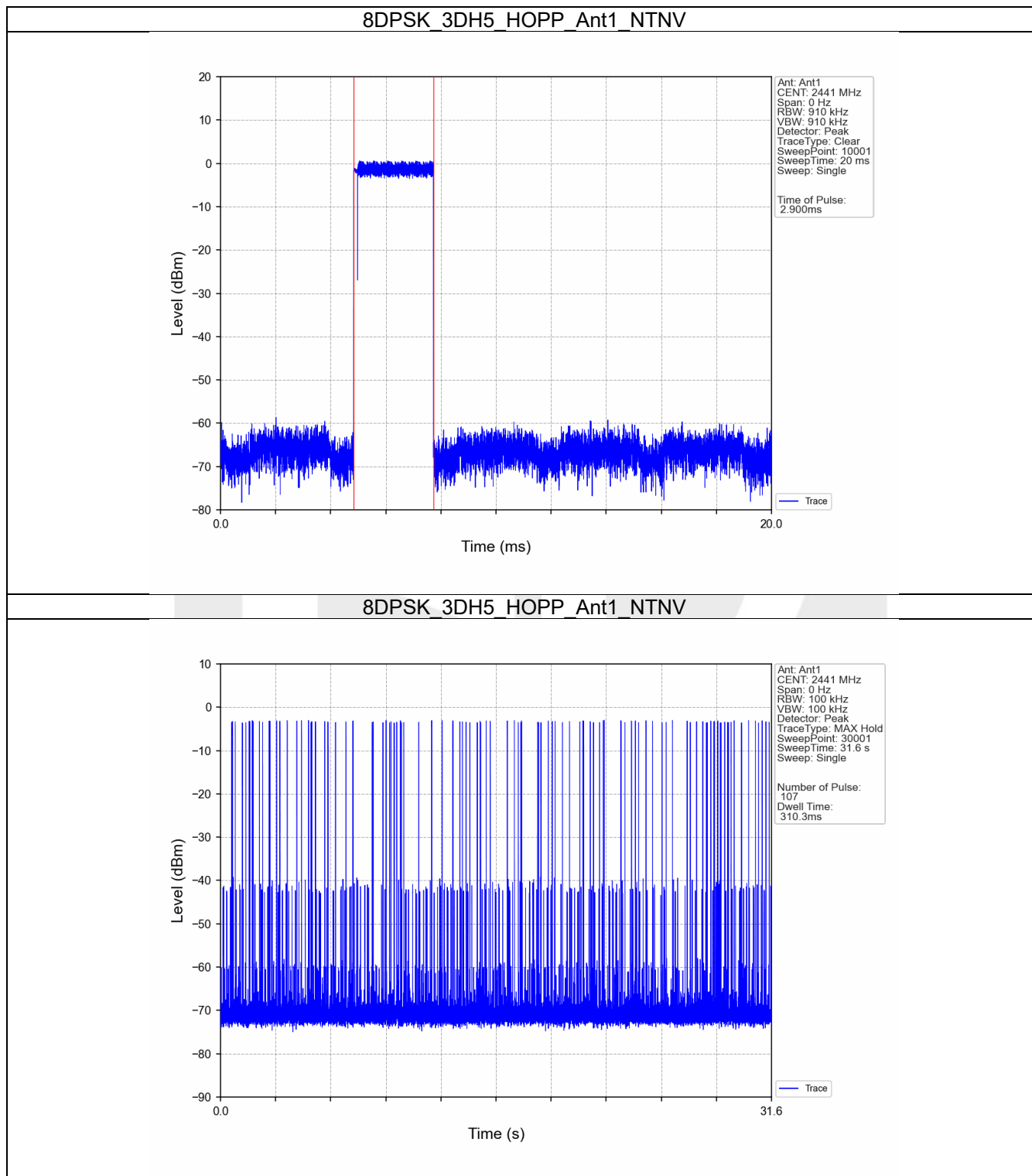












## 7. Unwanted Emissions In Non-restricted Frequency Bands

### 7.1 Test Result

#### 7.1.1 Ref

| Mode           | TX Type | Frequency (MHz) | Packet Type | ANT | Level of Reference (dBm) |
|----------------|---------|-----------------|-------------|-----|--------------------------|
| GFSK           | SISO    | 2402            | DH5         | 1   | -0.92                    |
|                |         | 2441            | DH5         | 1   | -1.16                    |
|                |         | 2480            | DH5         | 1   | -0.51                    |
|                |         | HOPP            | DH5         | 1   | -0.57                    |
|                |         |                 |             |     | -0.57                    |
| $\pi/4$ -DQPSK | SISO    | 2402            | 2DH5        | 1   | -1.20                    |
|                |         | 2441            | 2DH5        | 1   | -1.30                    |
|                |         | 2480            | 2DH5        | 1   | -0.62                    |
|                |         | HOPP            | 2DH5        | 1   | -0.52                    |
|                |         |                 |             |     | -0.52                    |
| 8DPSK          | SISO    | 2402            | 3DH5        | 1   | -0.85                    |
|                |         | 2441            | 3DH5        | 1   | -1.63                    |
|                |         | 2480            | 3DH5        | 1   | -0.57                    |
|                |         | HOPP            | 3DH5        | 1   | -0.71                    |
|                |         |                 |             |     | -0.71                    |

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.

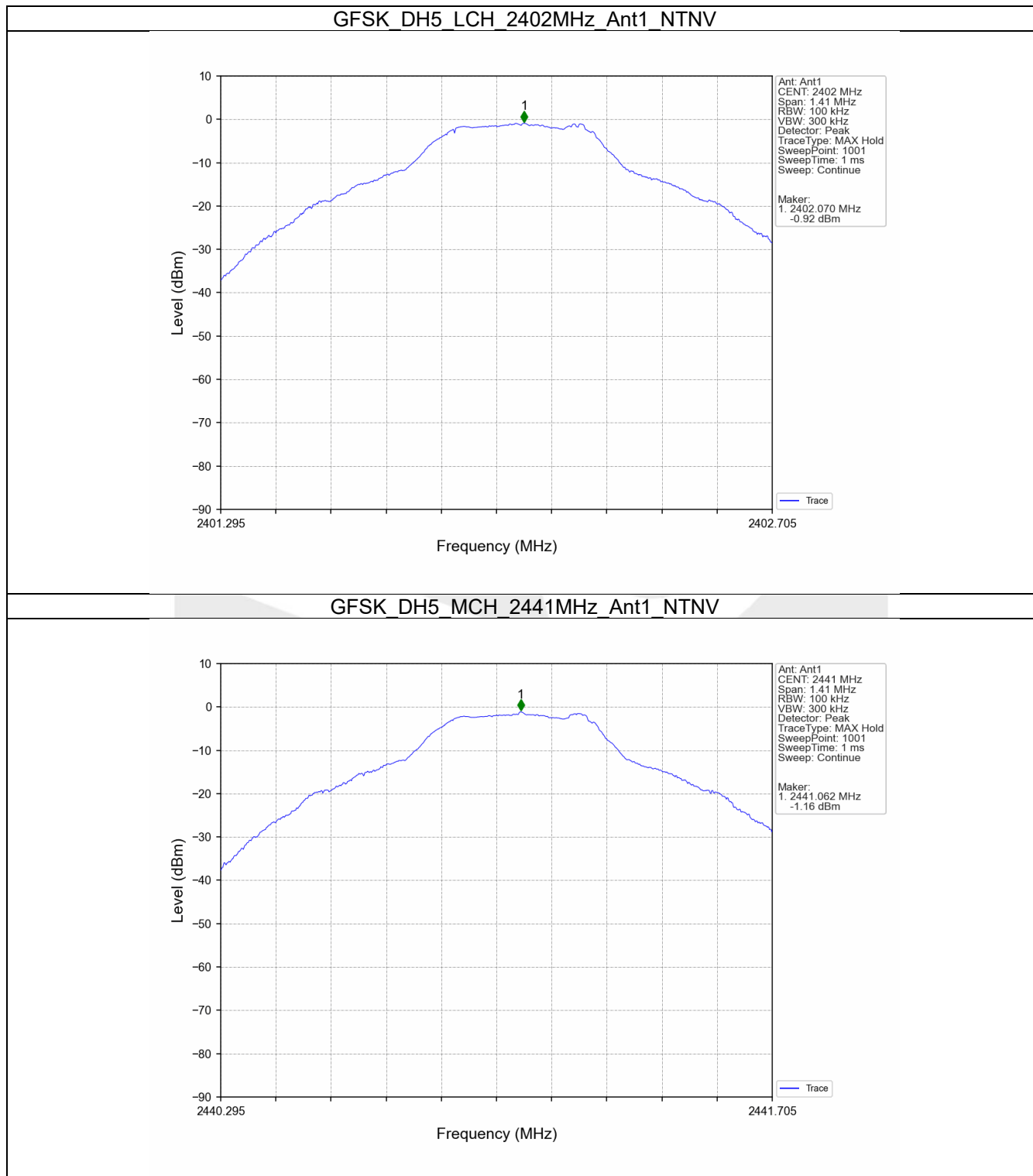
#### 7.1.2 CSE

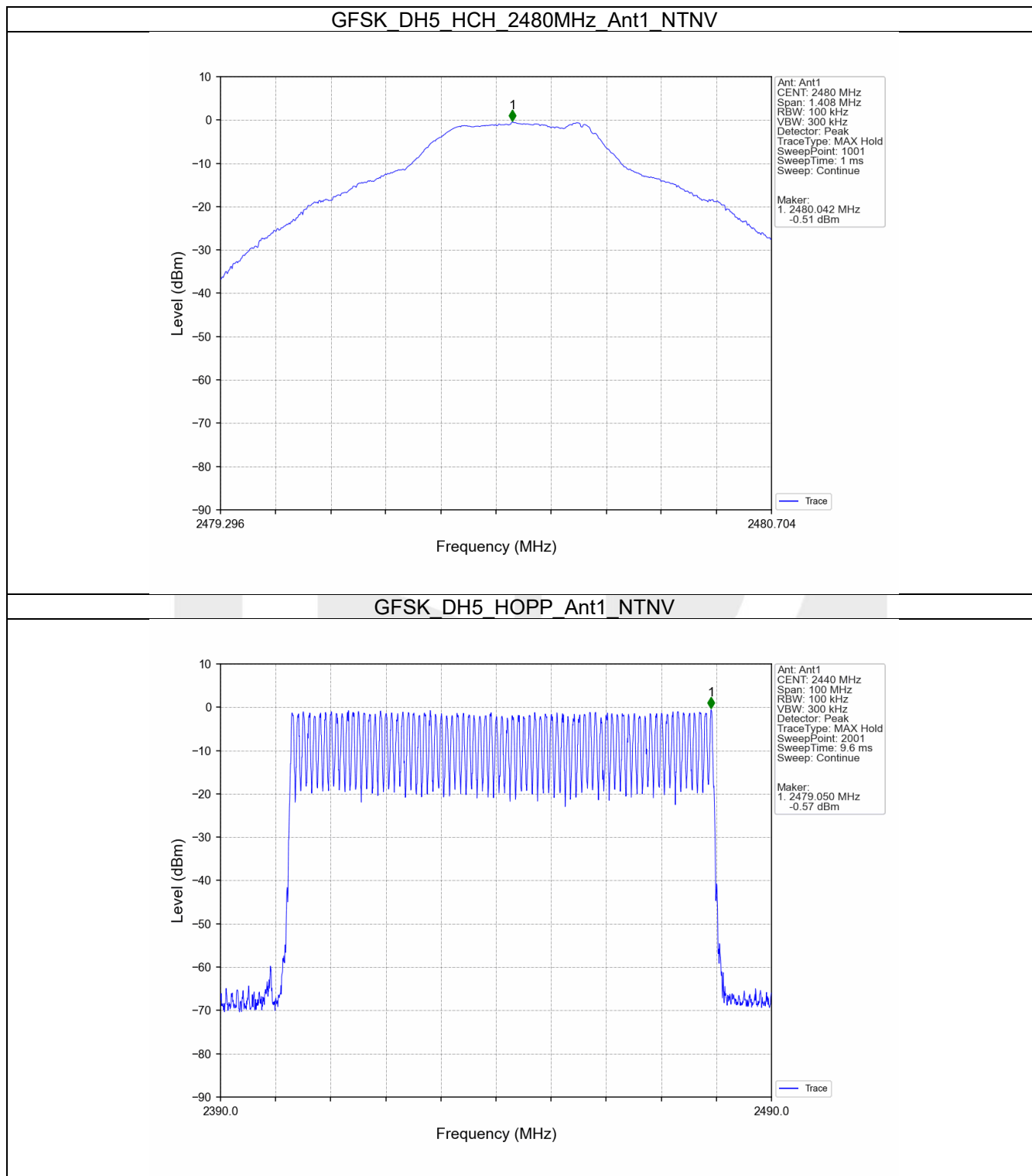
| Mode           | TX Type | Frequency (MHz) | Packet Type | ANT | Level of Reference (dBm) | Limit (dBm) | Verdict |
|----------------|---------|-----------------|-------------|-----|--------------------------|-------------|---------|
| GFSK           | SISO    | 2402            | DH5         | 1   | -0.92                    | -20.92      | Pass    |
|                |         | 2441            | DH5         | 1   | -1.16                    | -21.16      | Pass    |
|                |         | 2480            | DH5         | 1   | -0.51                    | -20.51      | Pass    |
|                |         | HOPP            | DH5         | 1   | -0.57                    | -20.57      | Pass    |
|                |         |                 |             |     | -0.57                    | -20.57      | Pass    |
| $\pi/4$ -DQPSK | SISO    | 2402            | 2DH5        | 1   | -1.20                    | -21.20      | Pass    |
|                |         | 2441            | 2DH5        | 1   | -1.30                    | -21.30      | Pass    |
|                |         | 2480            | 2DH5        | 1   | -0.62                    | -20.62      | Pass    |
|                |         | HOPP            | 2DH5        | 1   | -0.52                    | -20.52      | Pass    |
|                |         |                 |             |     | -0.52                    | -20.52      | Pass    |
| 8DPSK          | SISO    | 2402            | 3DH5        | 1   | -0.85                    | -20.85      | Pass    |
|                |         | 2441            | 3DH5        | 1   | -1.63                    | -21.63      | Pass    |
|                |         | 2480            | 3DH5        | 1   | -0.57                    | -20.57      | Pass    |
|                |         | HOPP            | 3DH5        | 1   | -0.71                    | -20.71      | Pass    |
|                |         |                 |             |     | -0.71                    | -20.71      | Pass    |

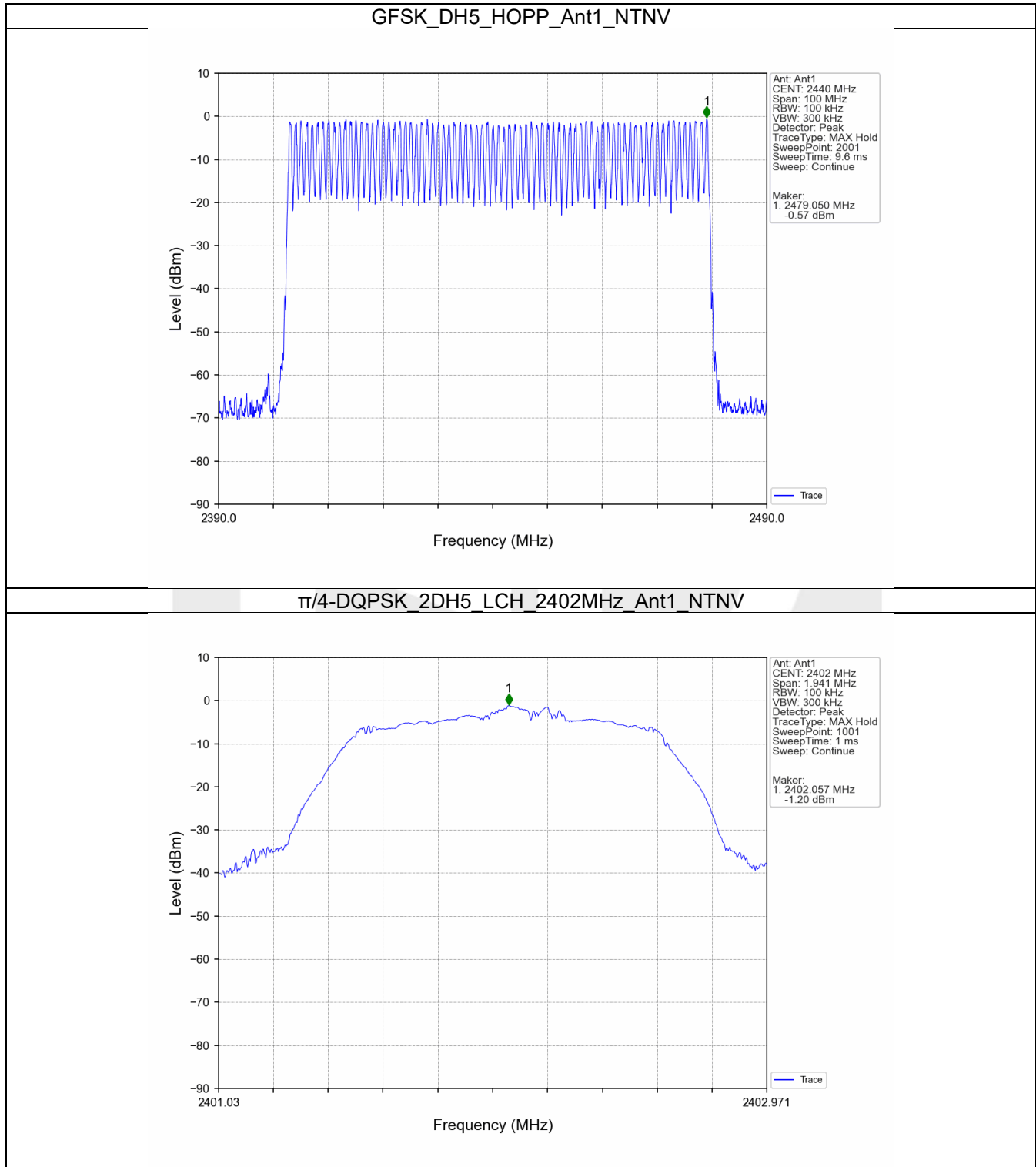
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

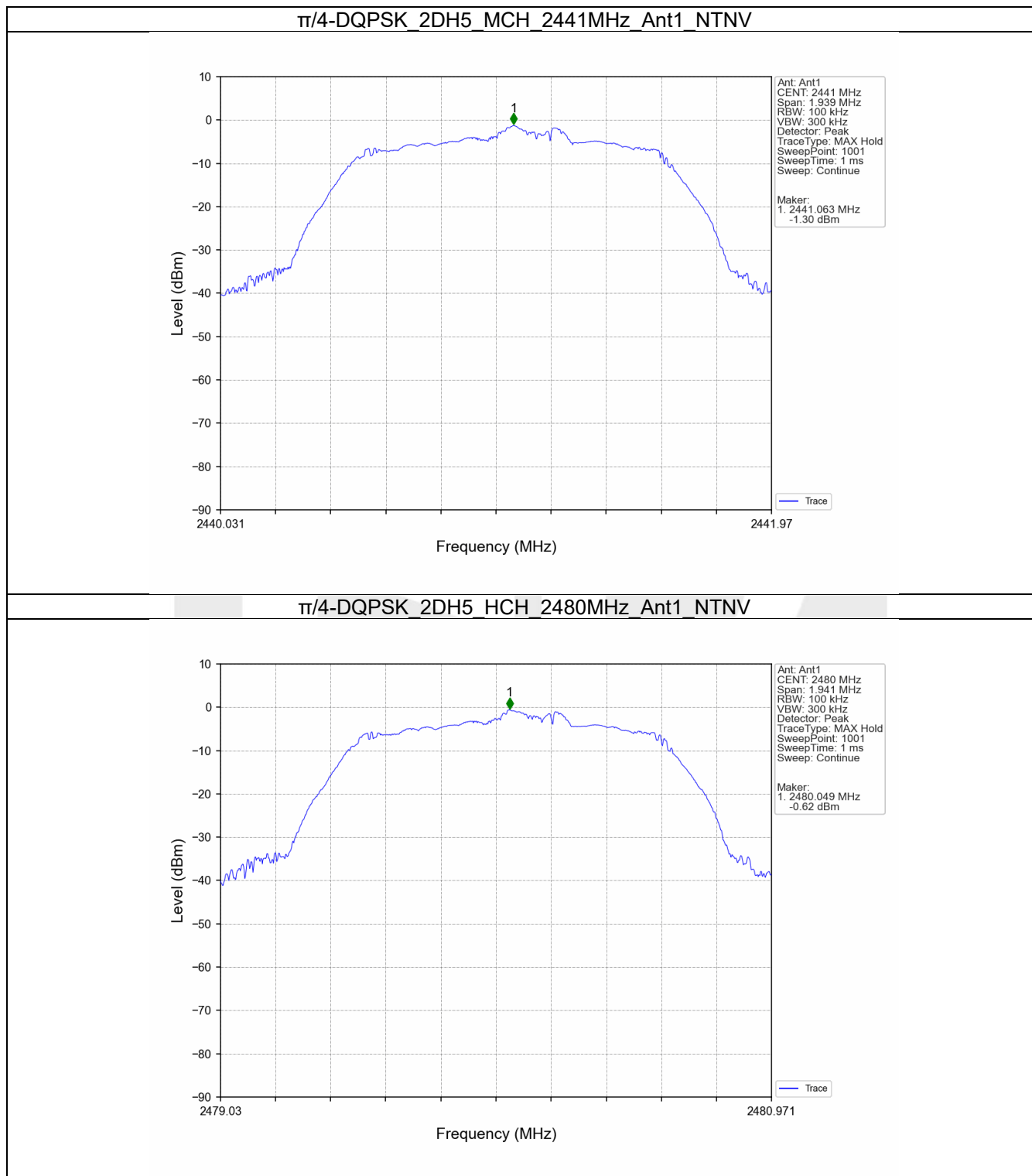
## 7.2 Test Graph

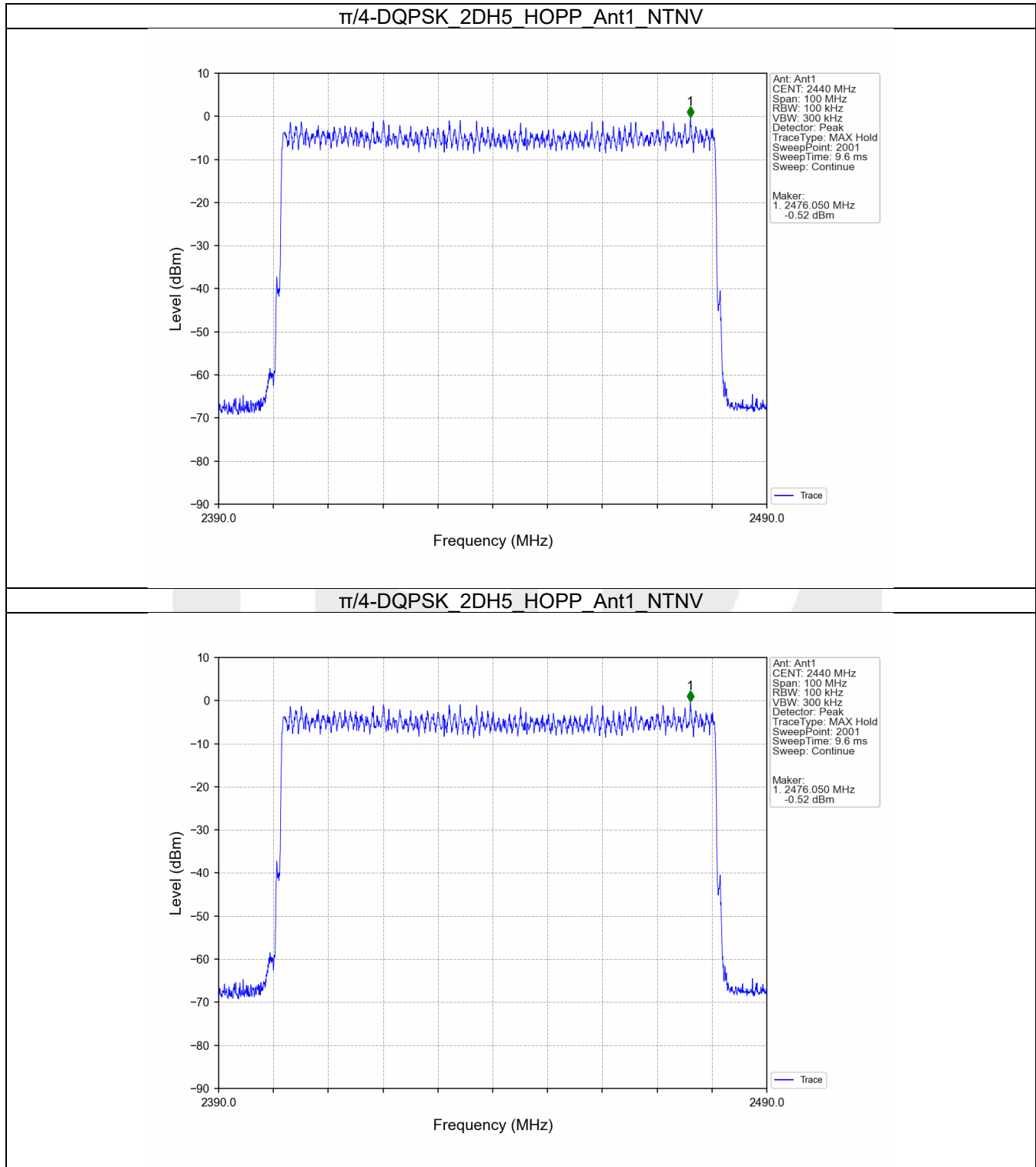
### 7.2.1 Ref

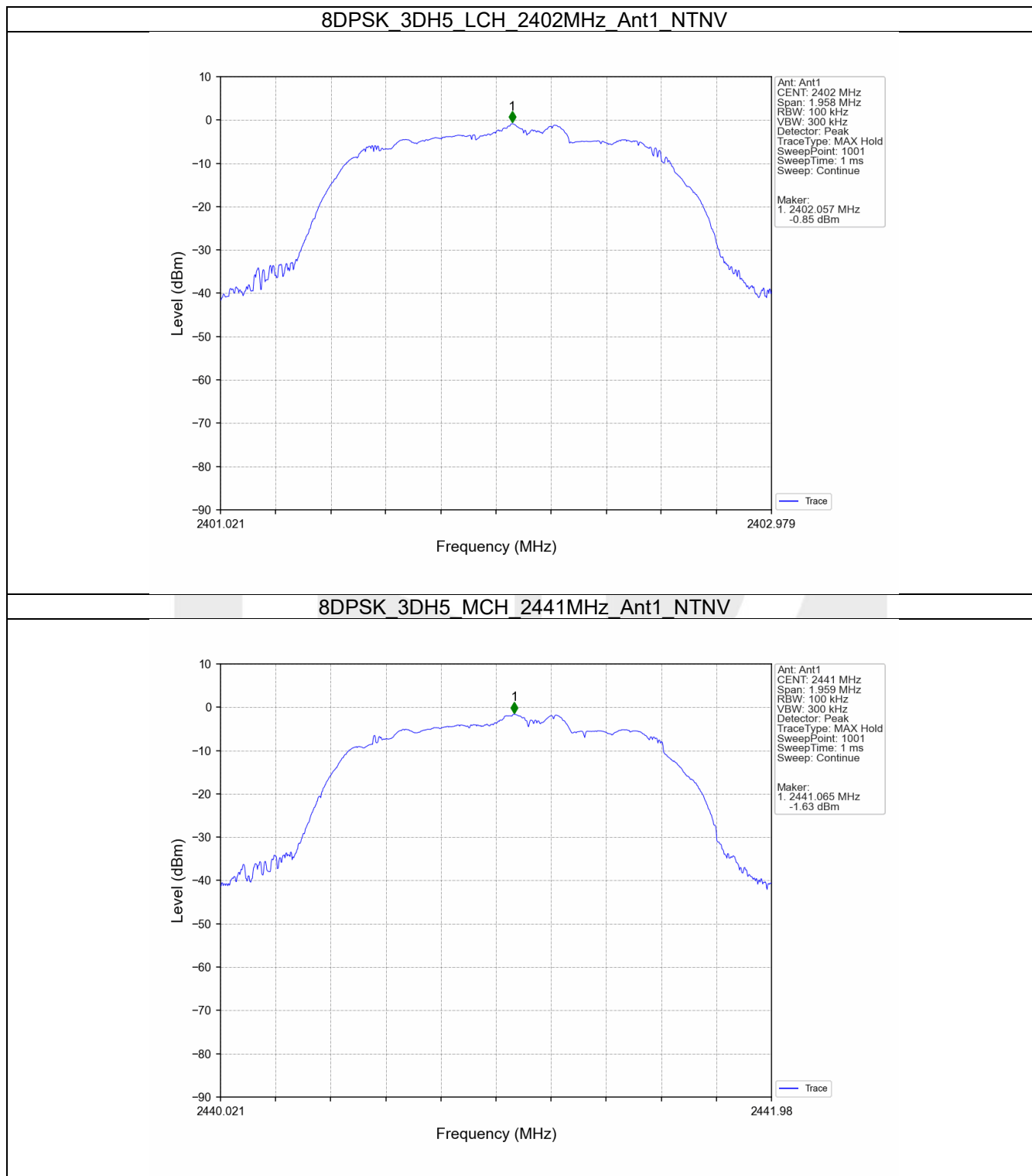


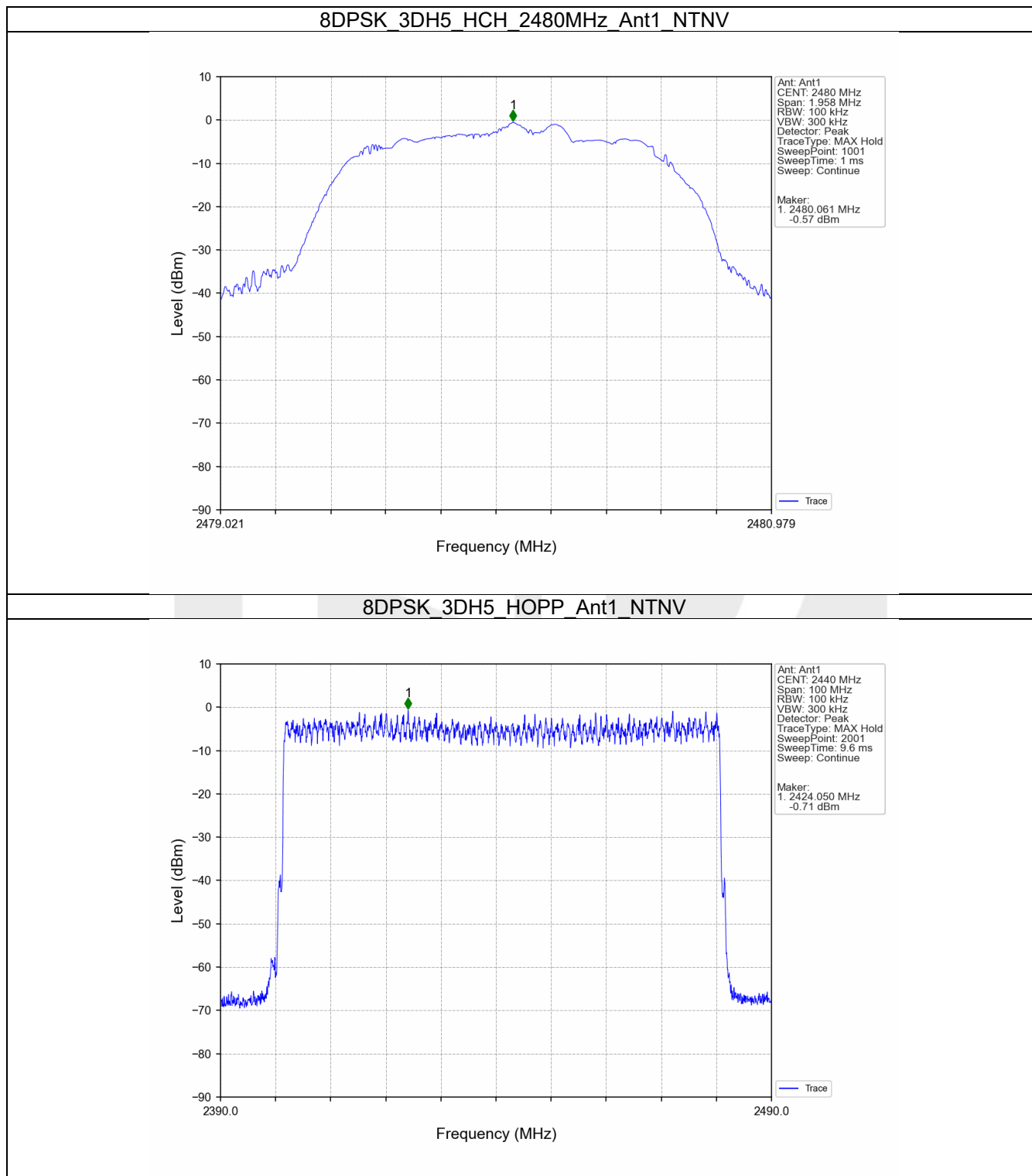


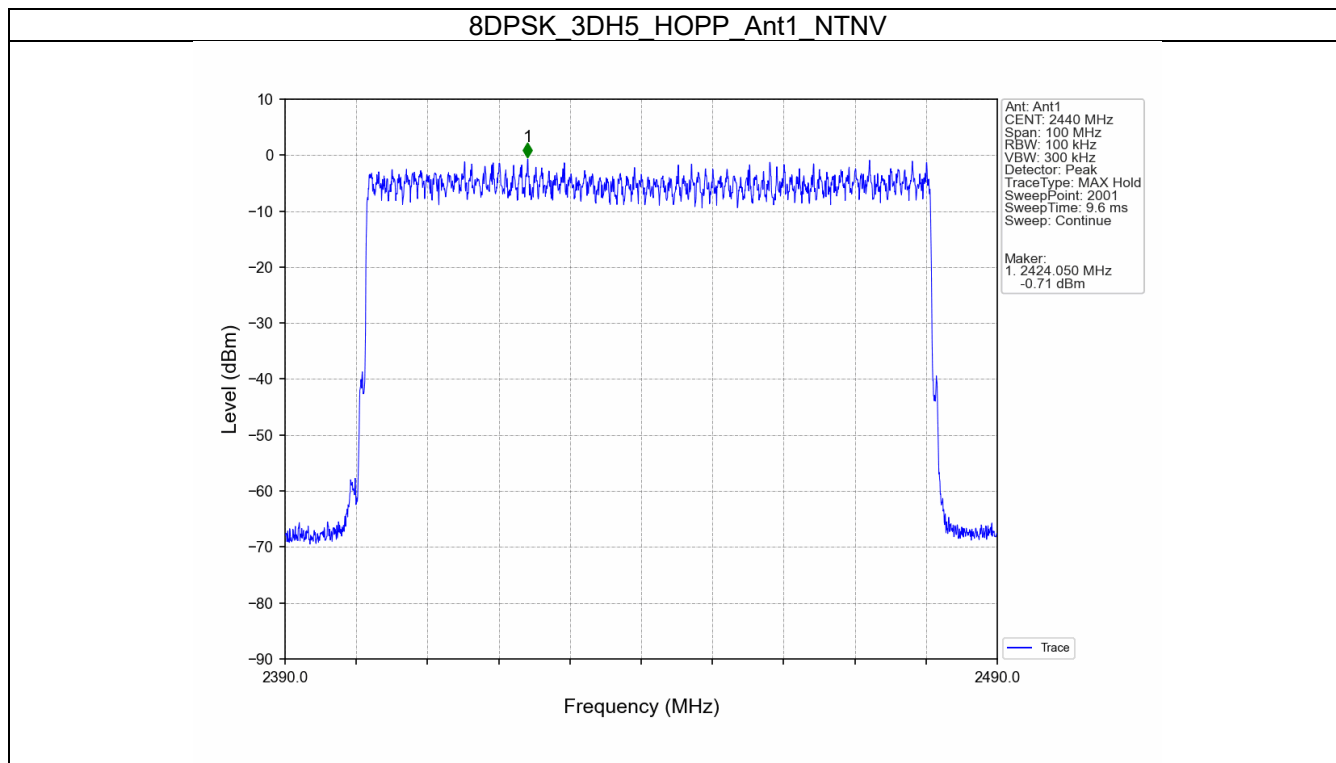




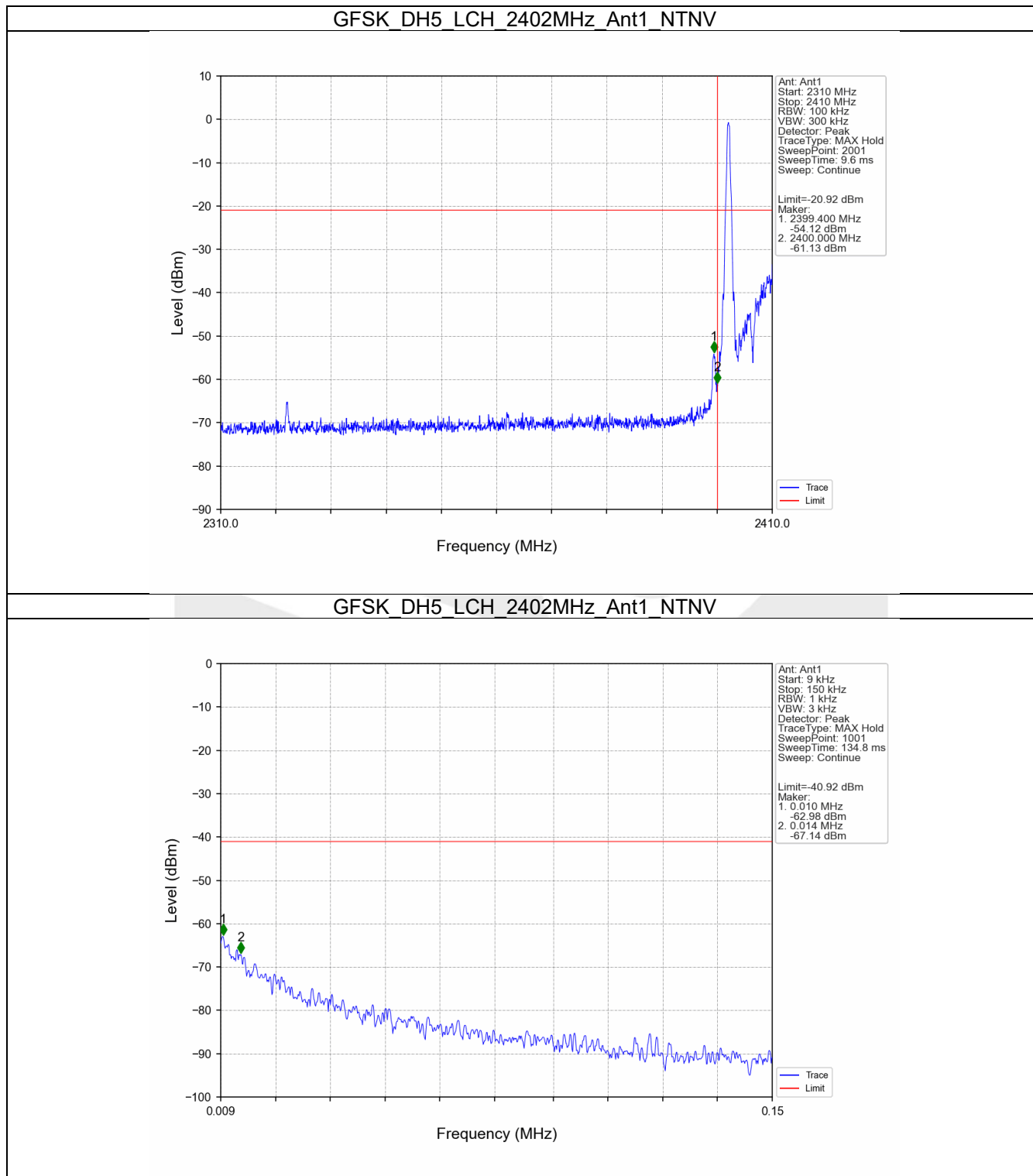


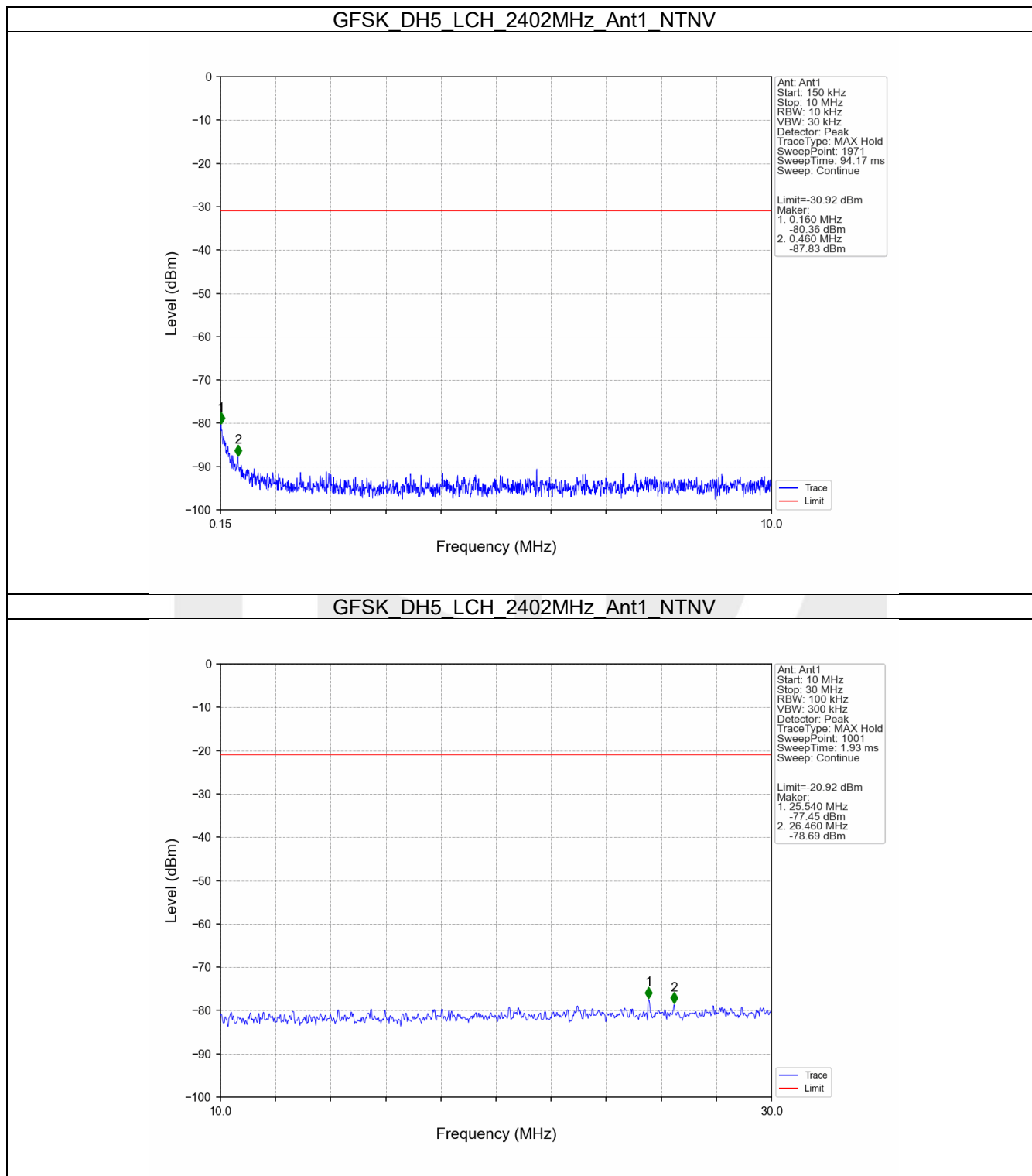


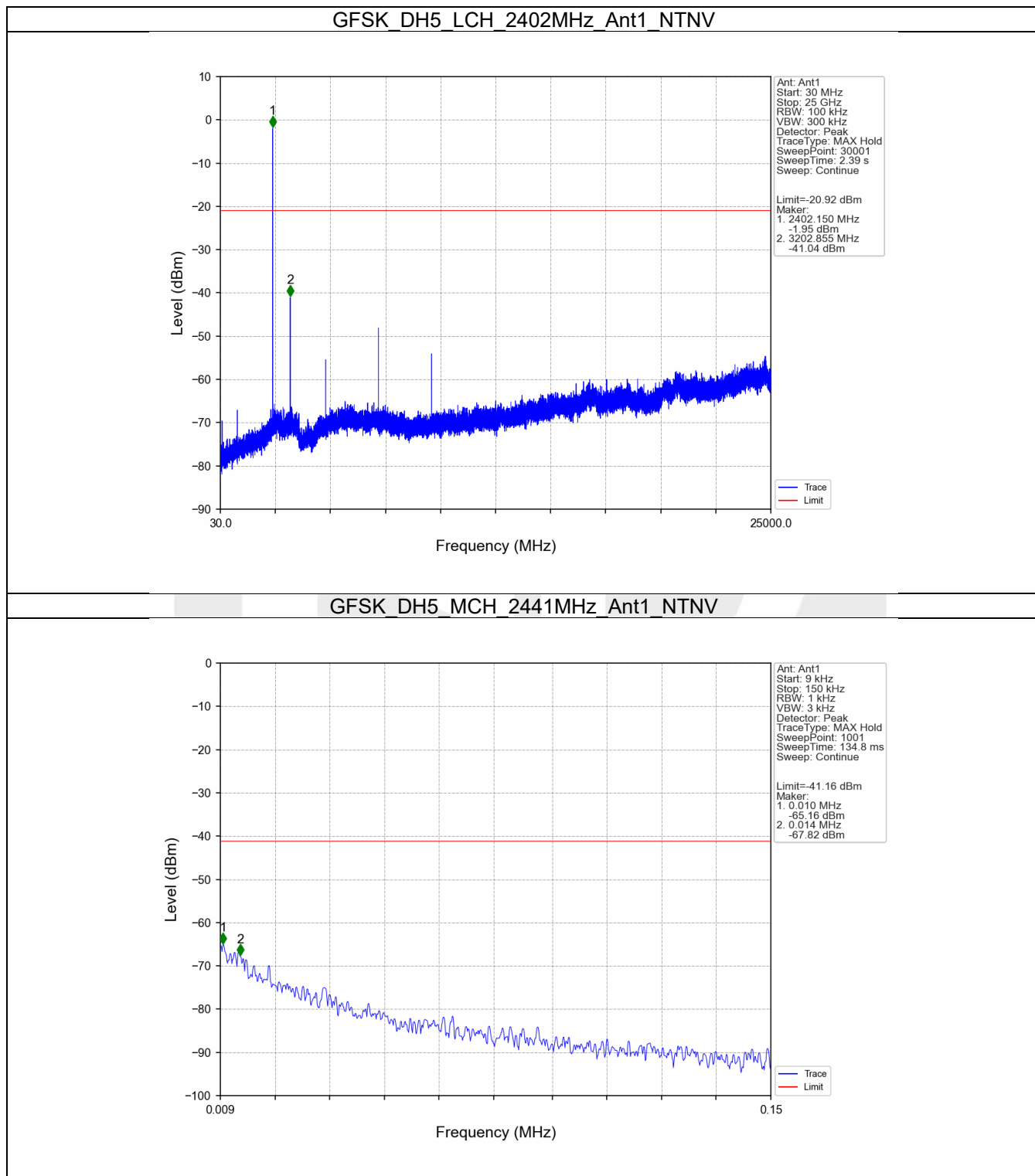


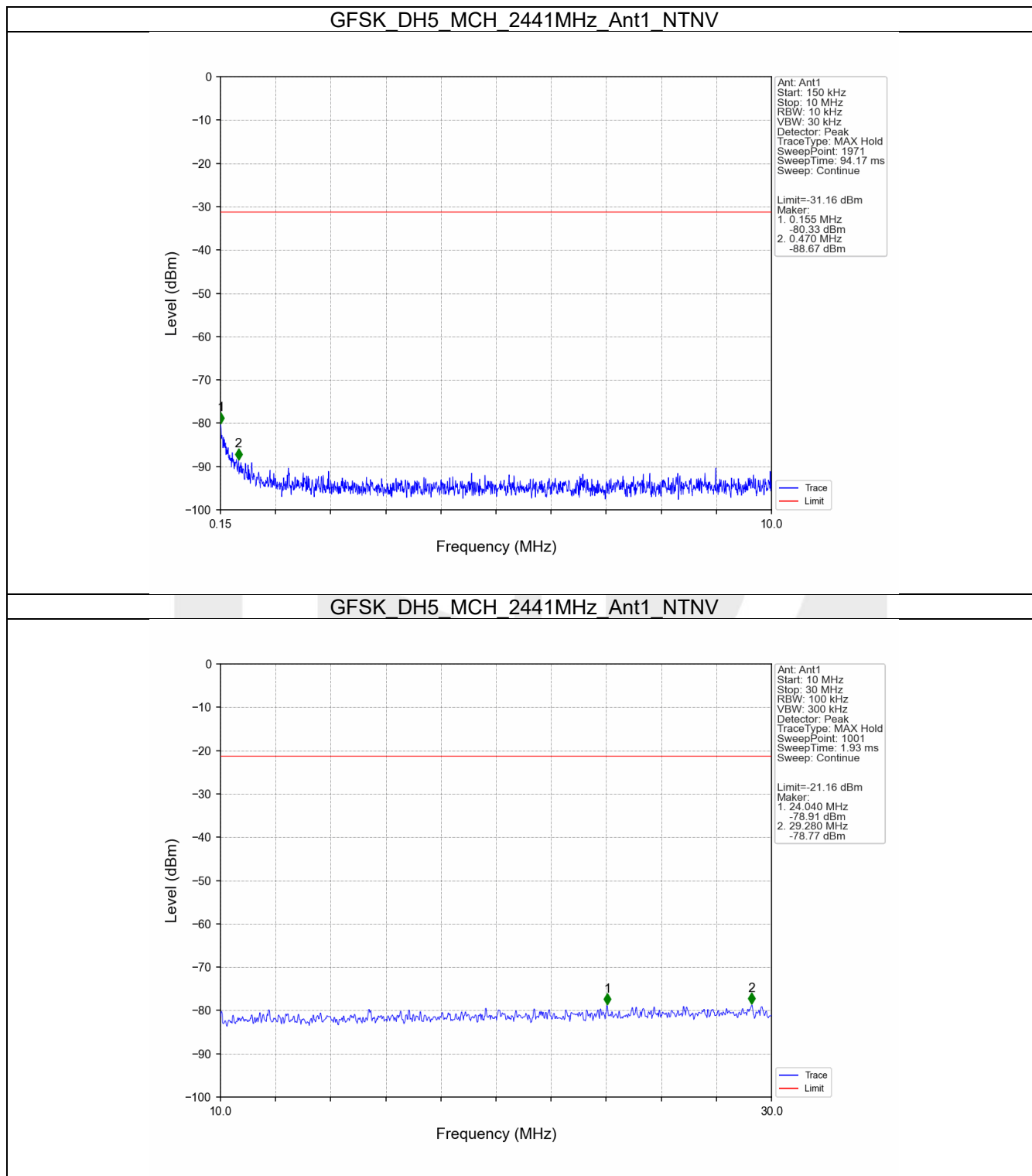


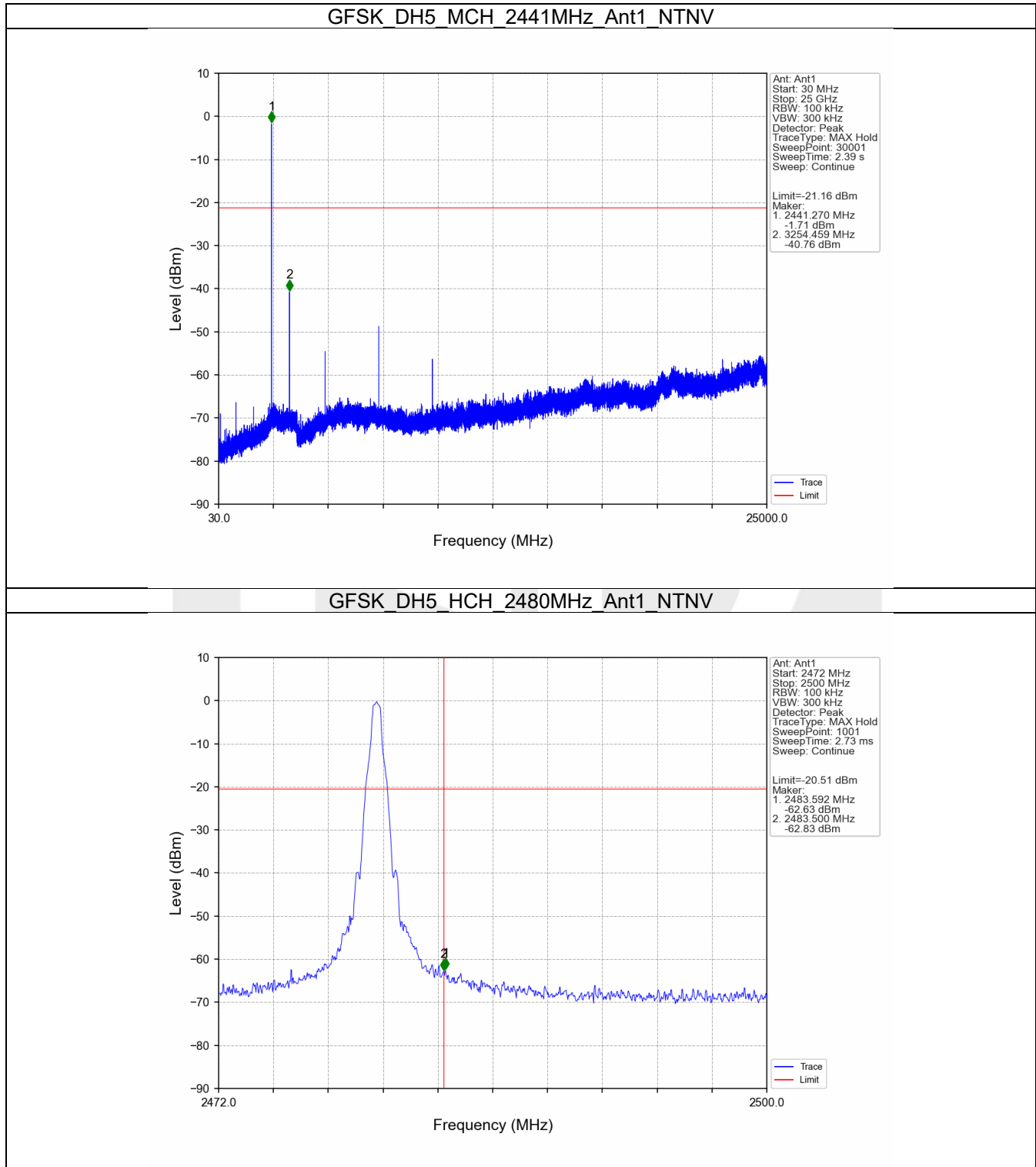
## 7.2.2 CSE

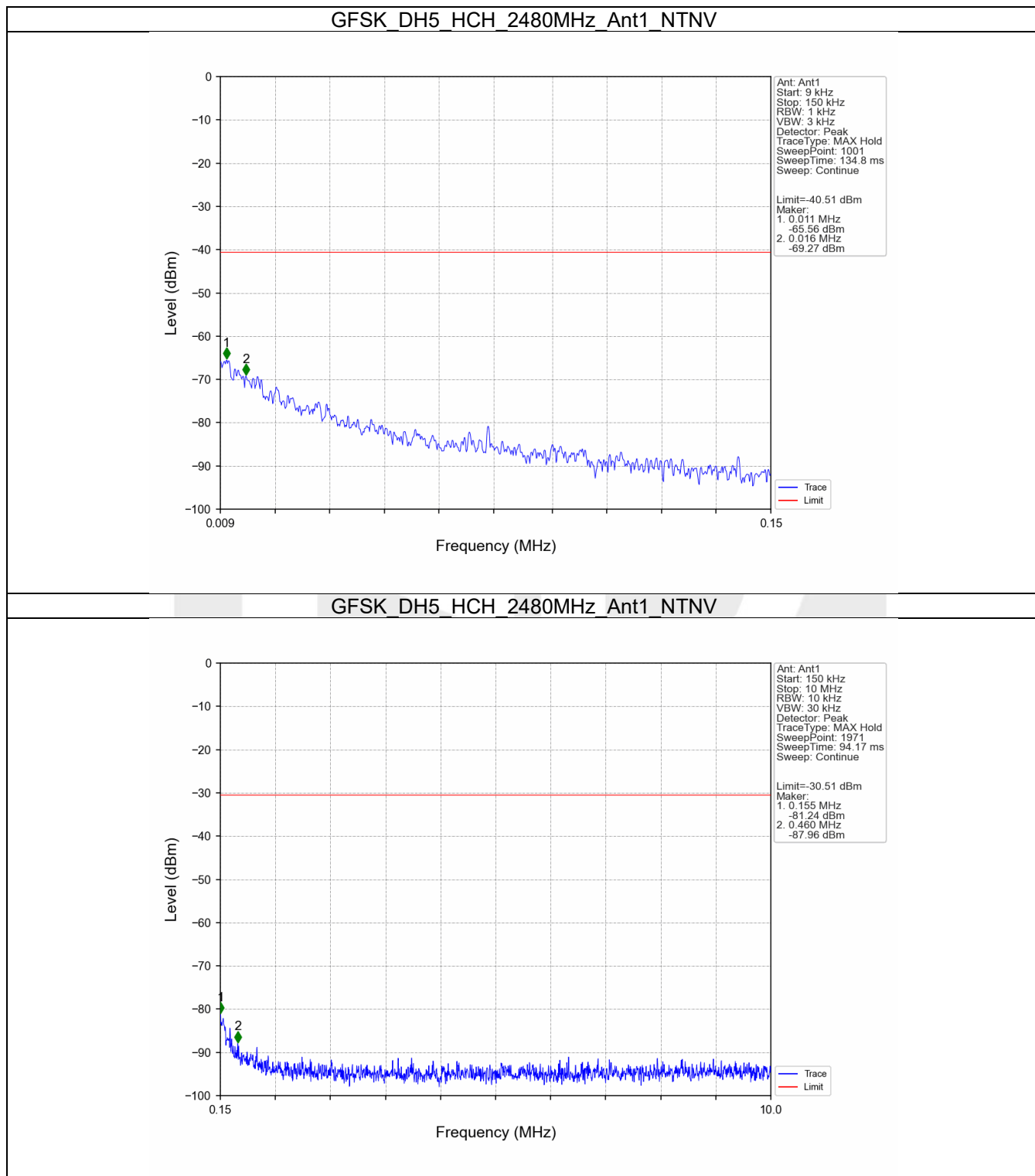


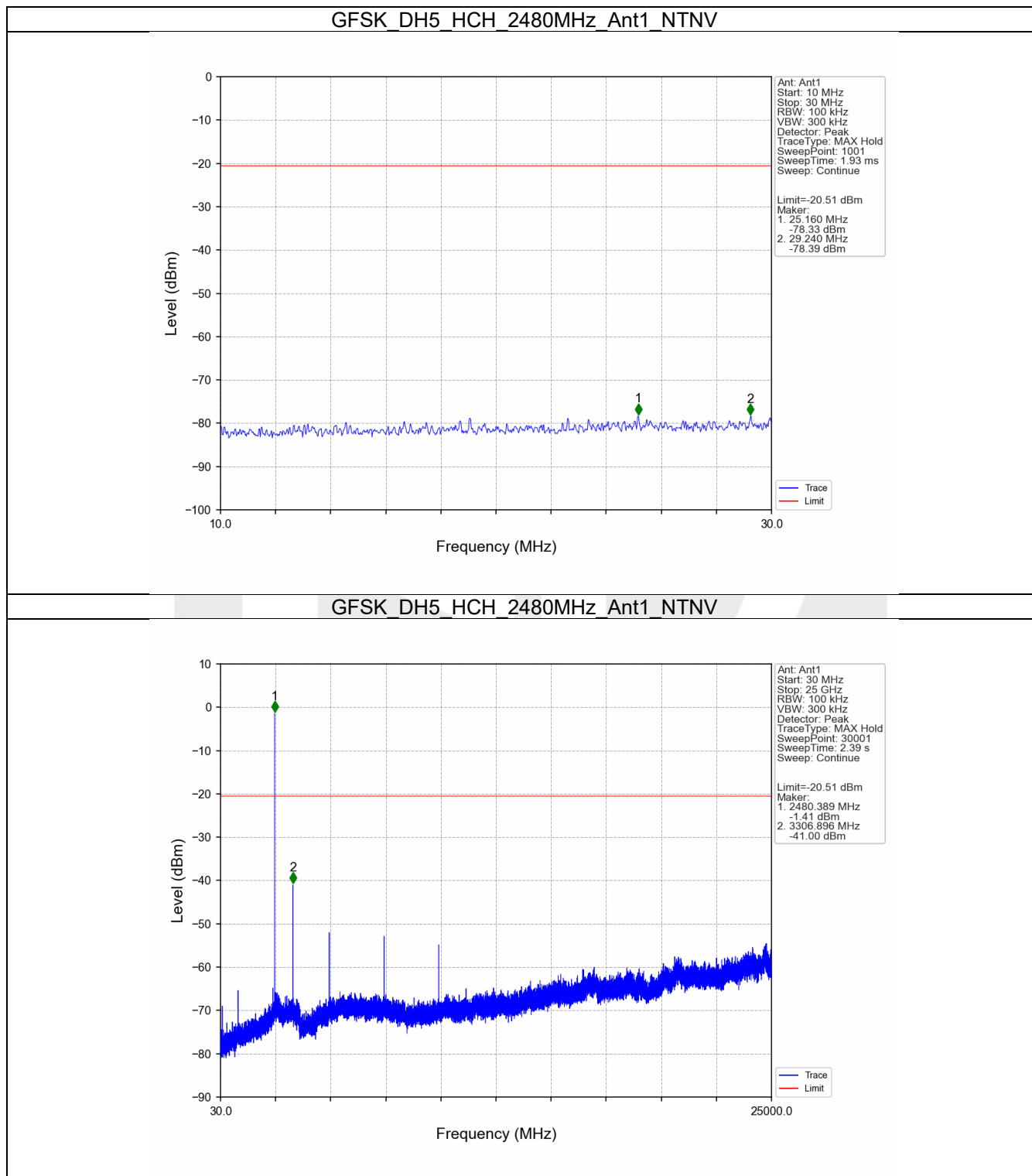


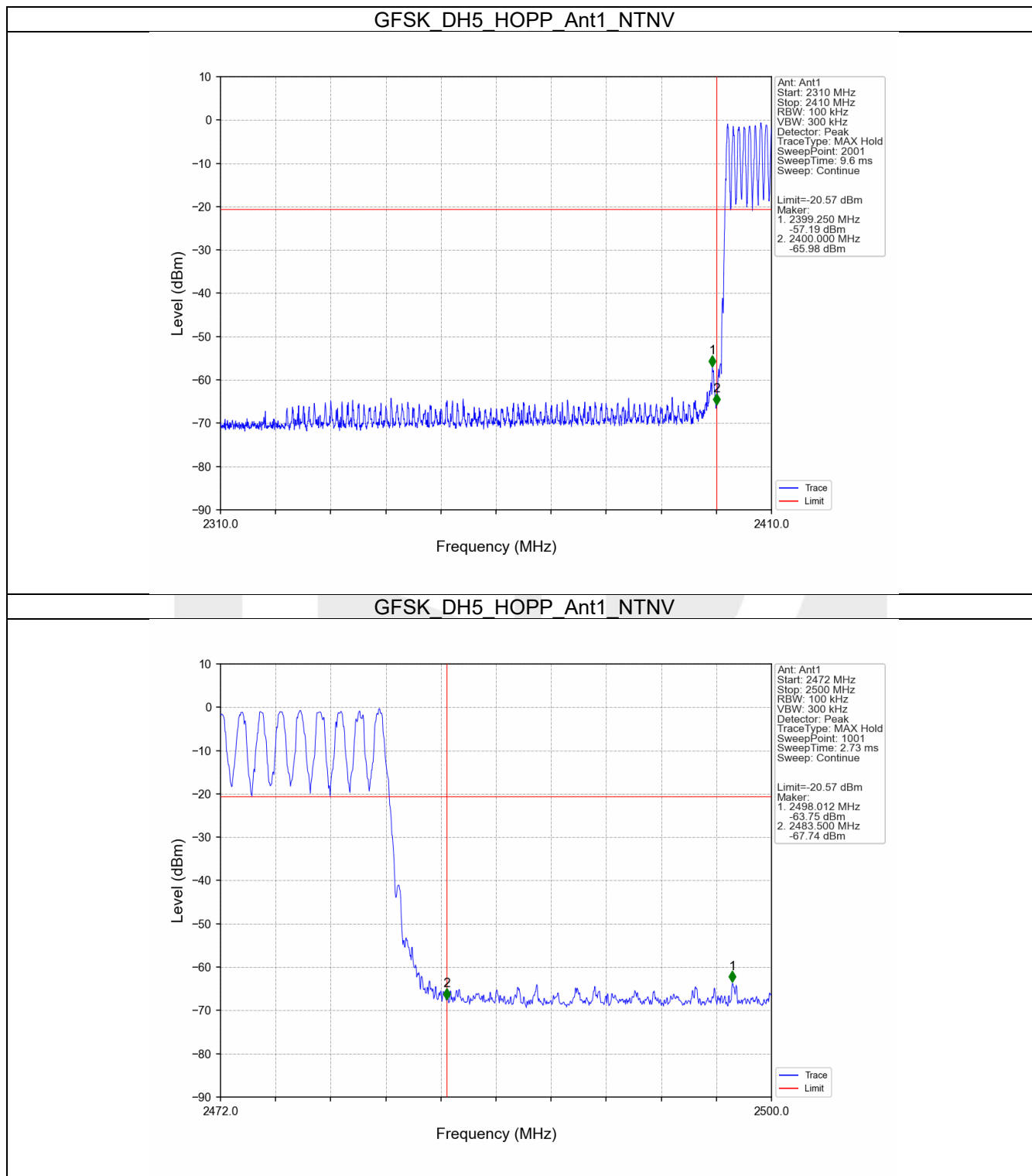


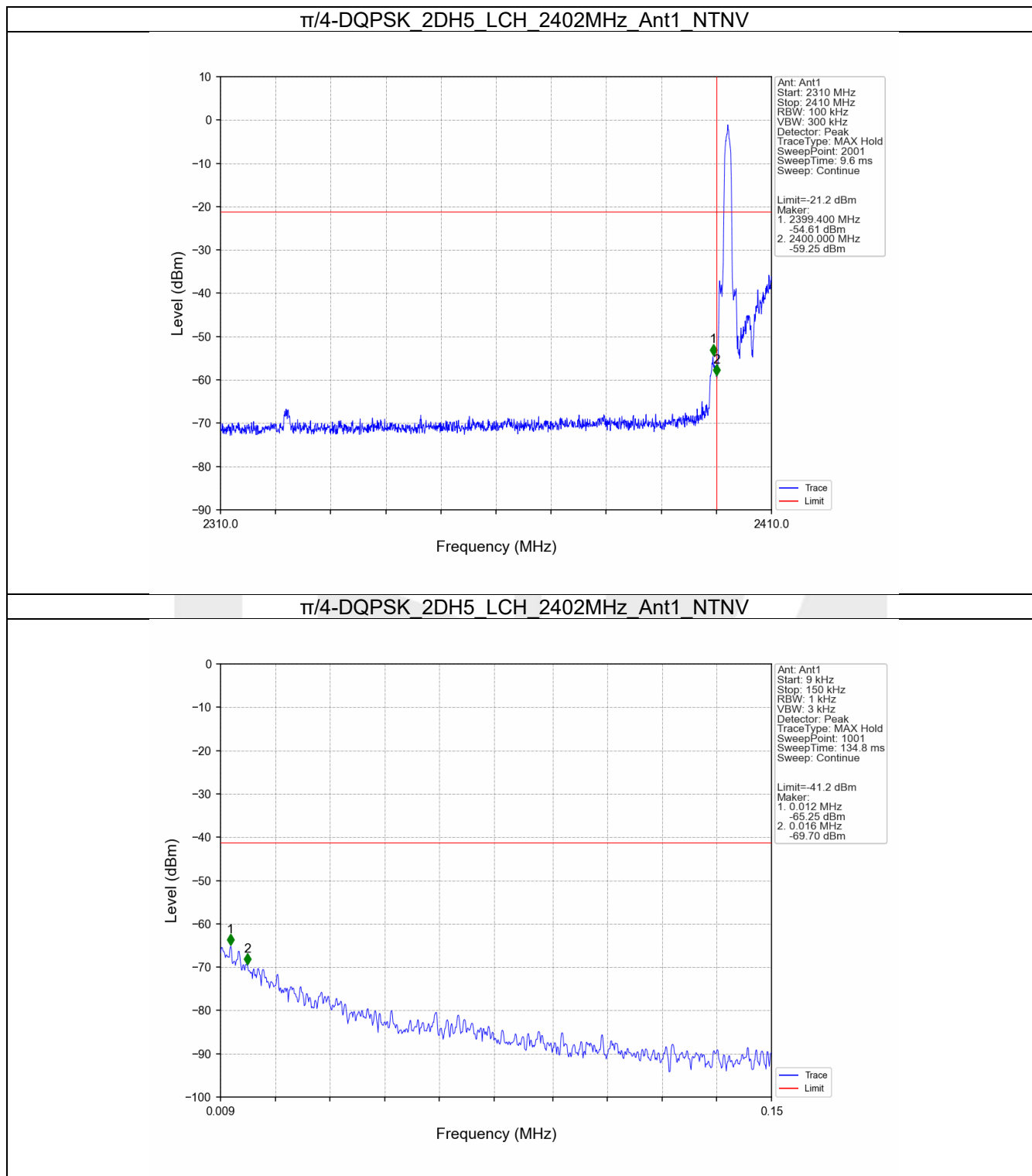


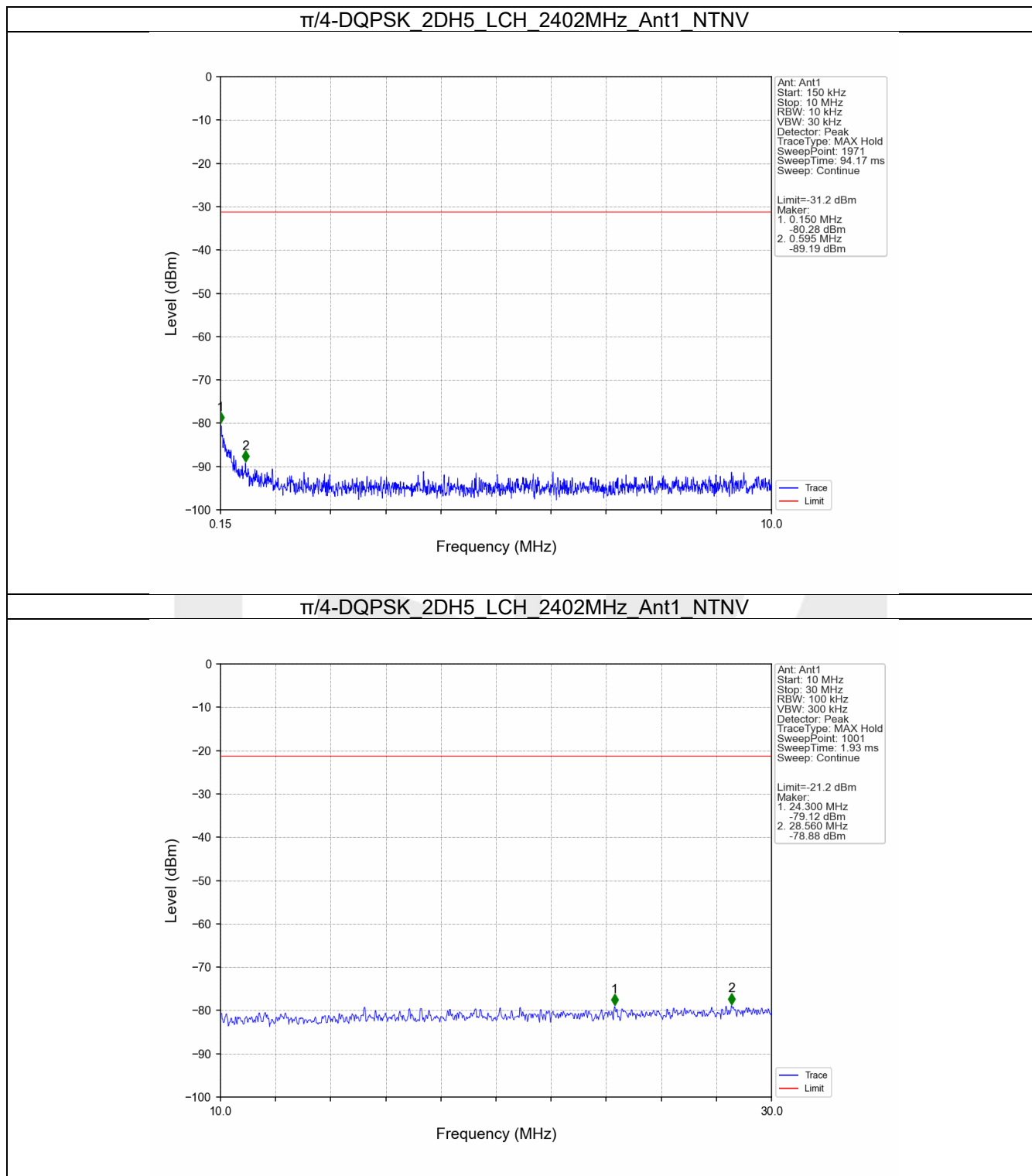


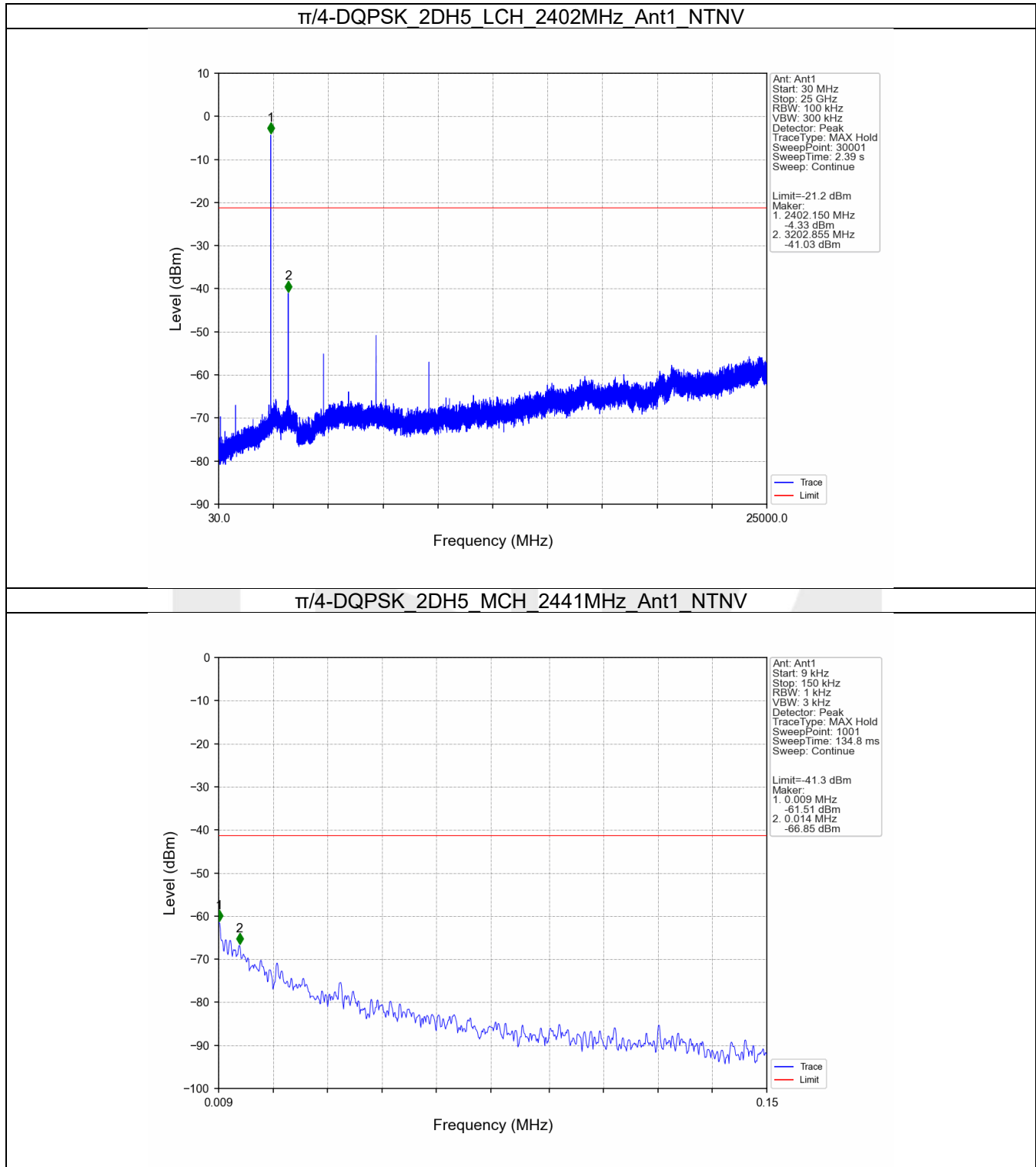


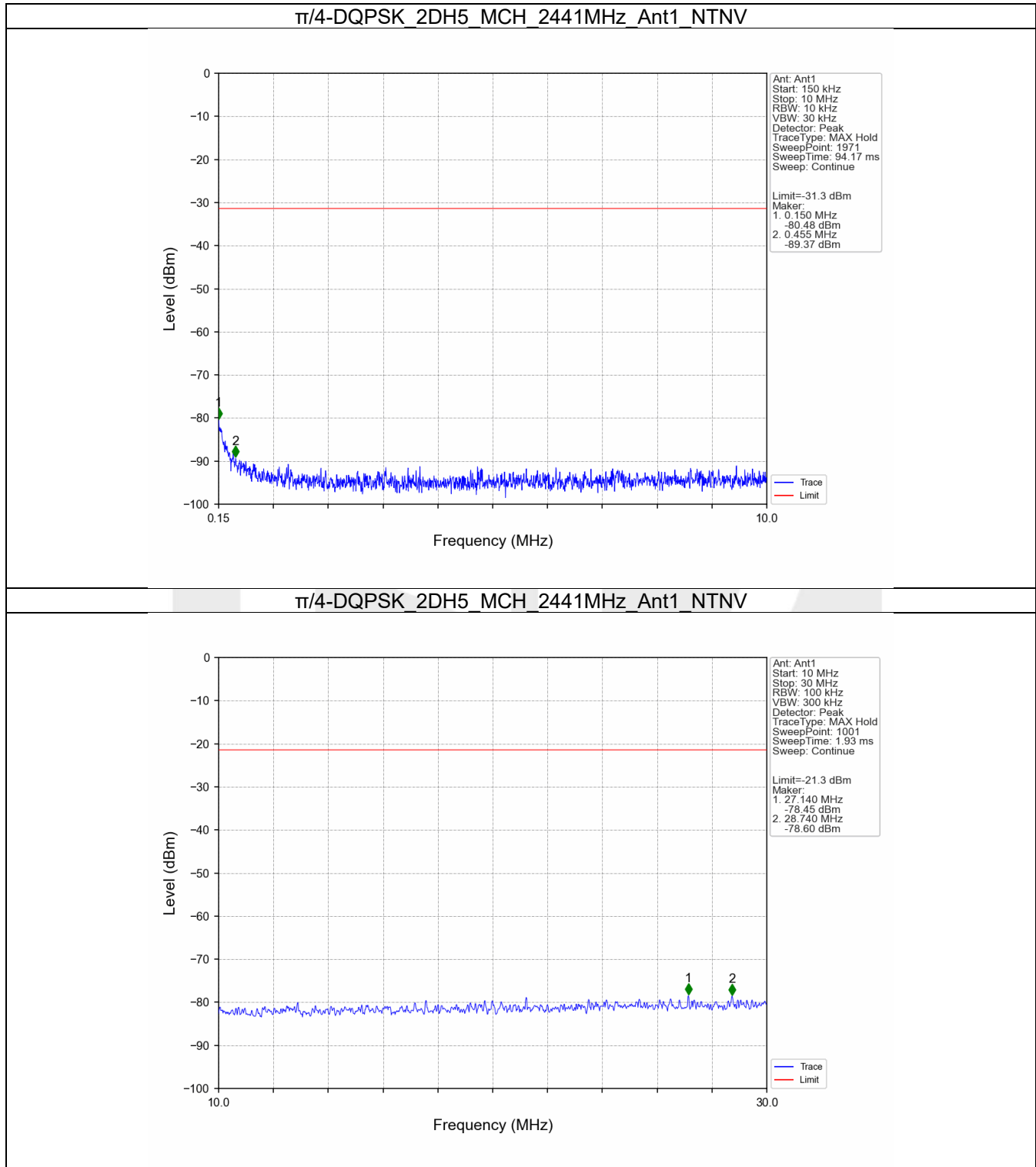


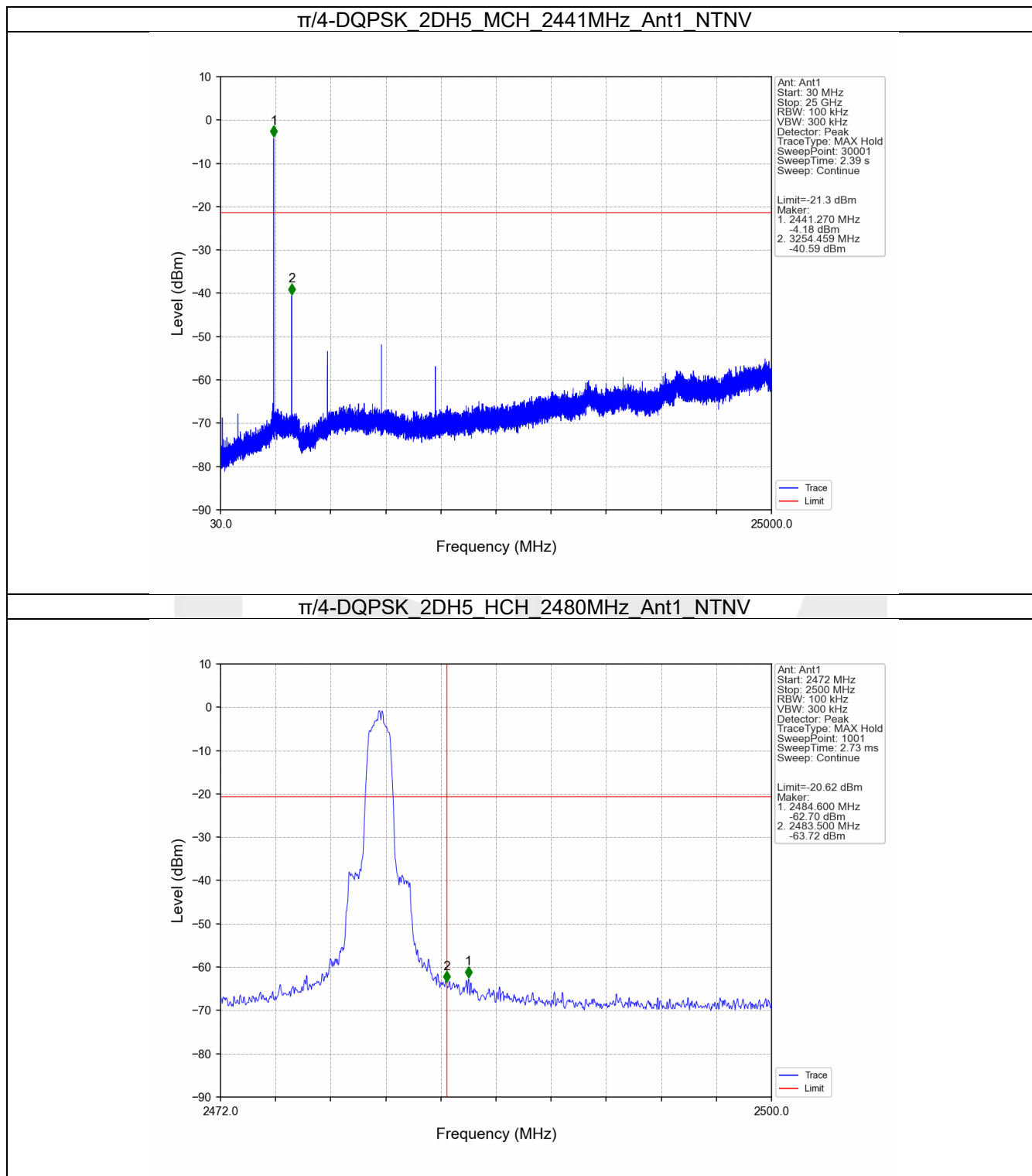


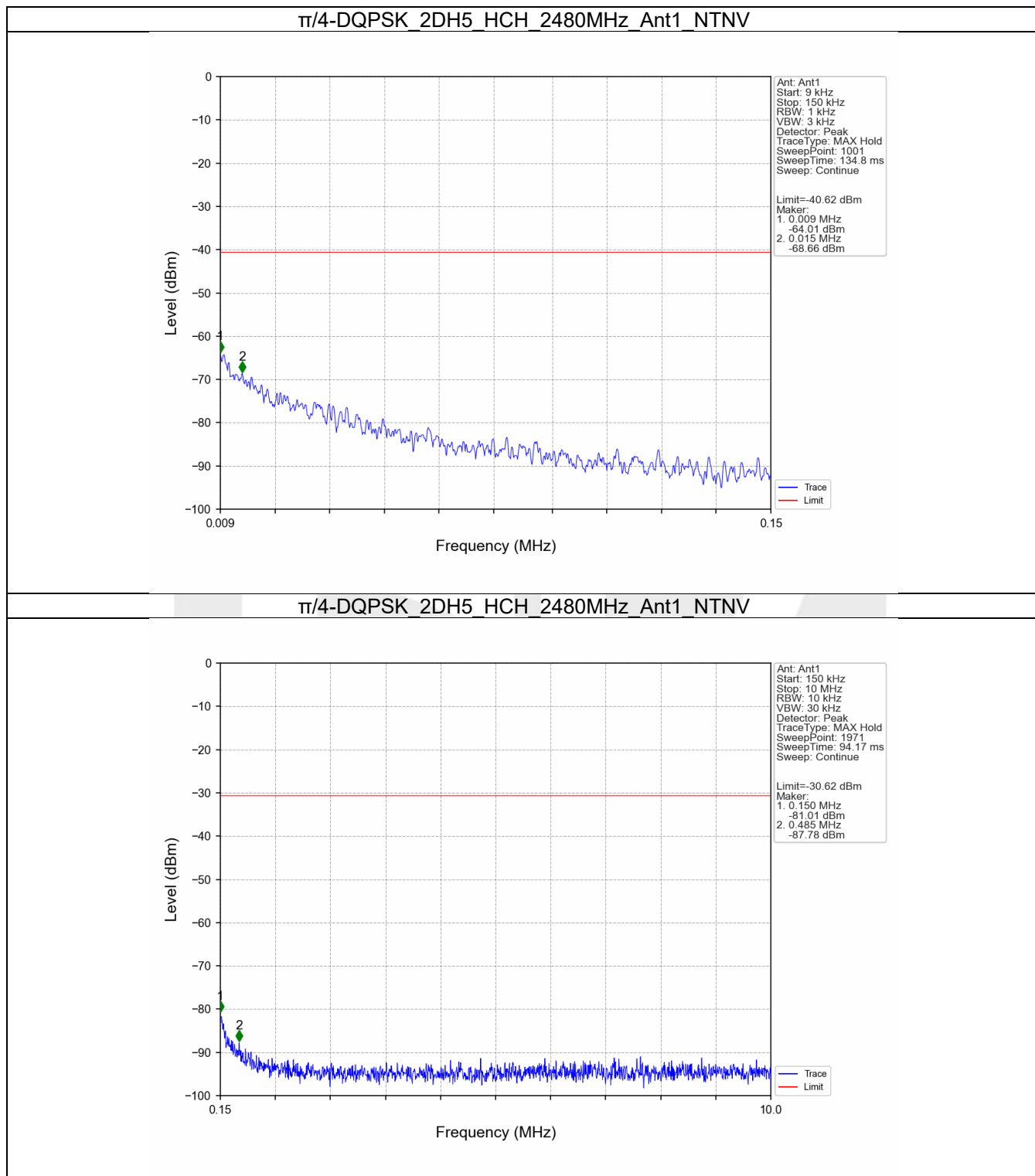


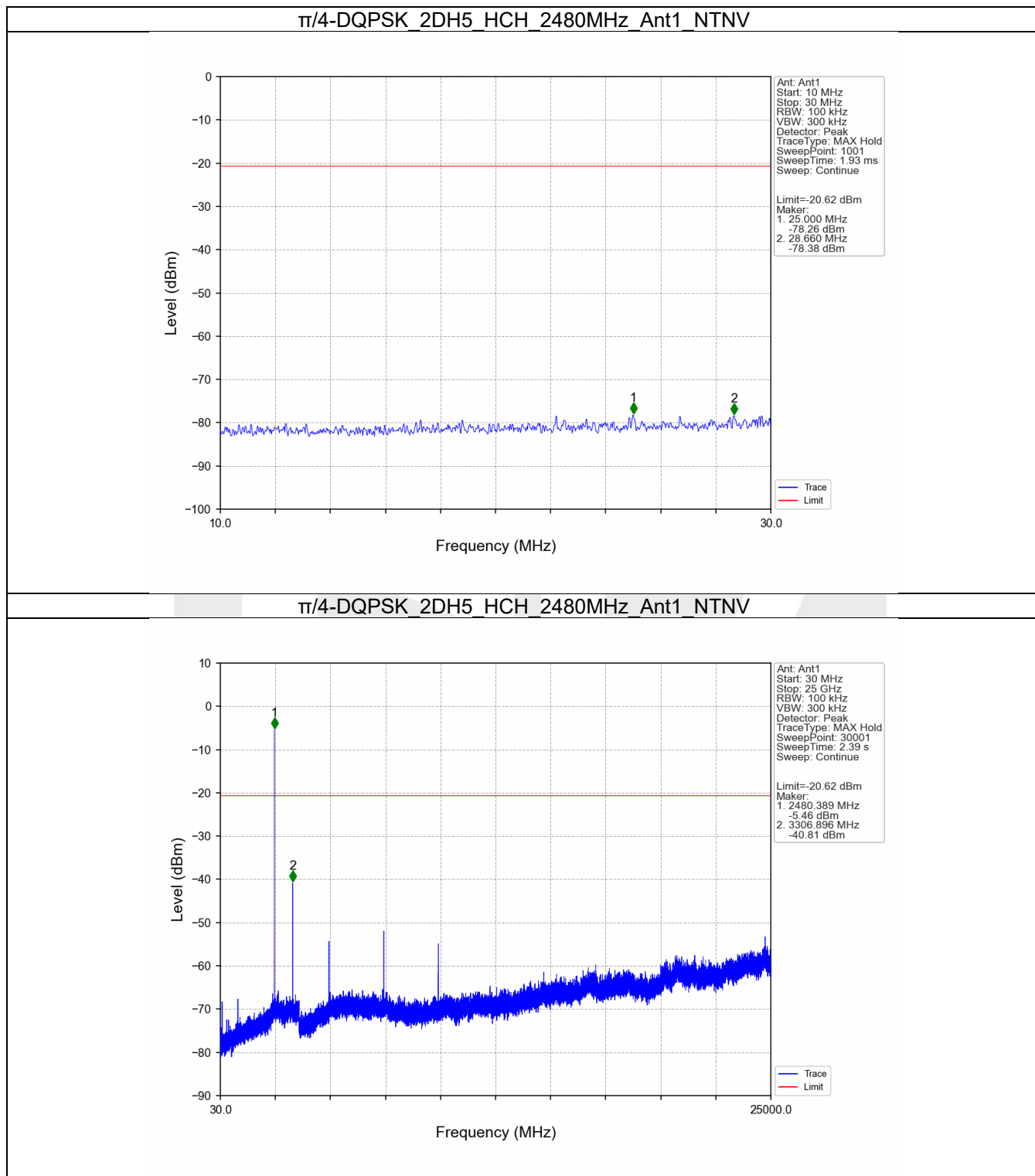


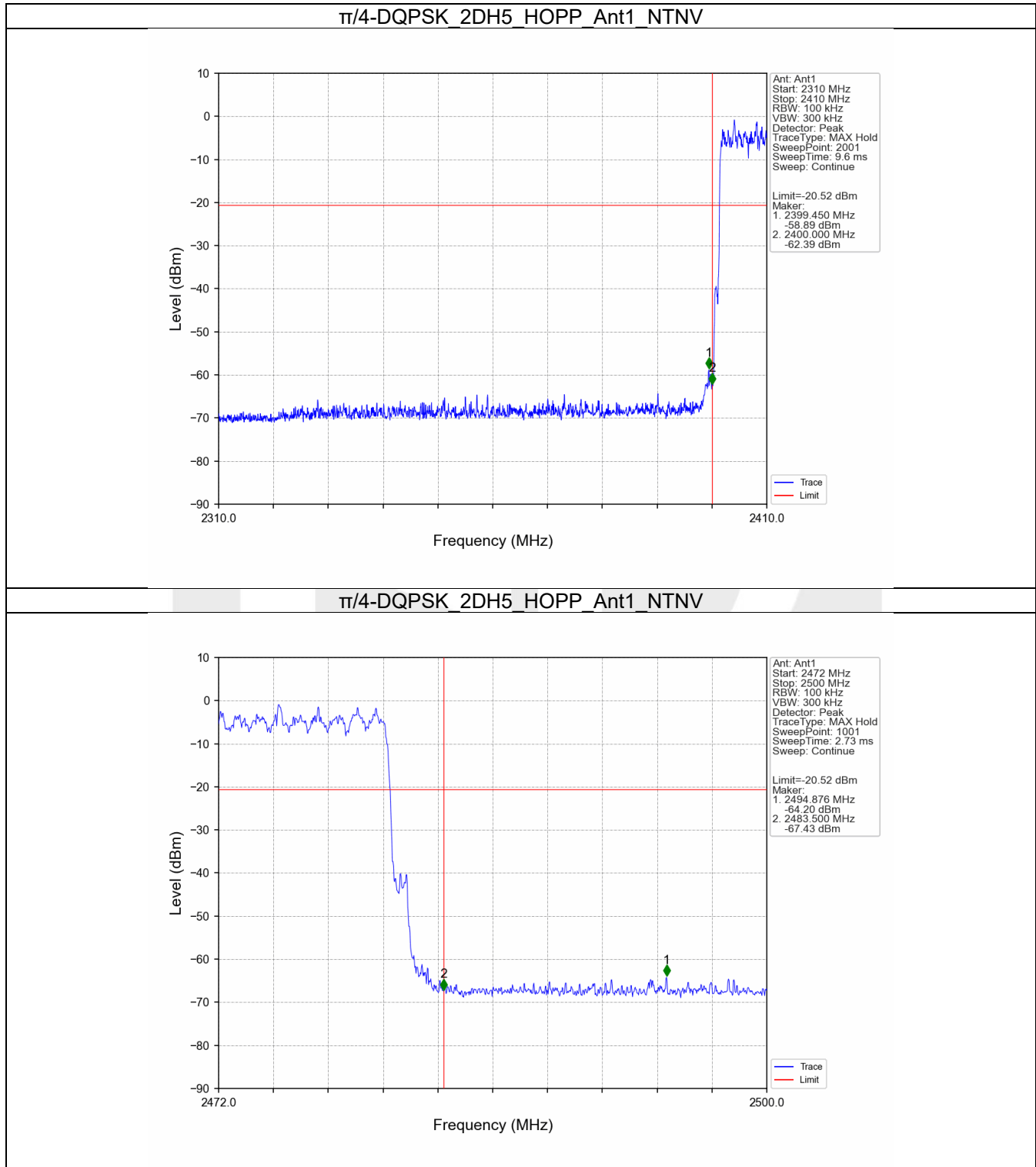


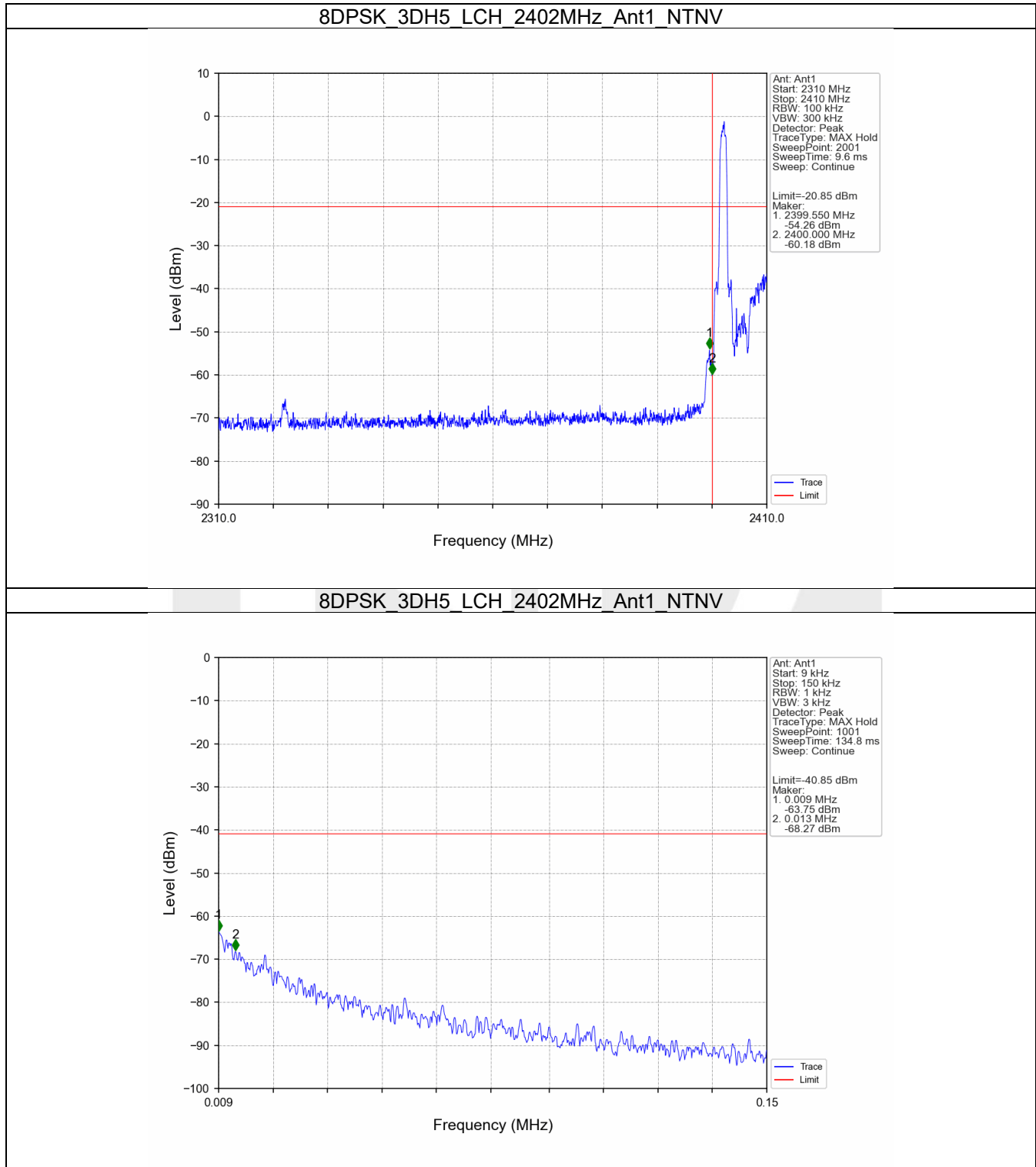


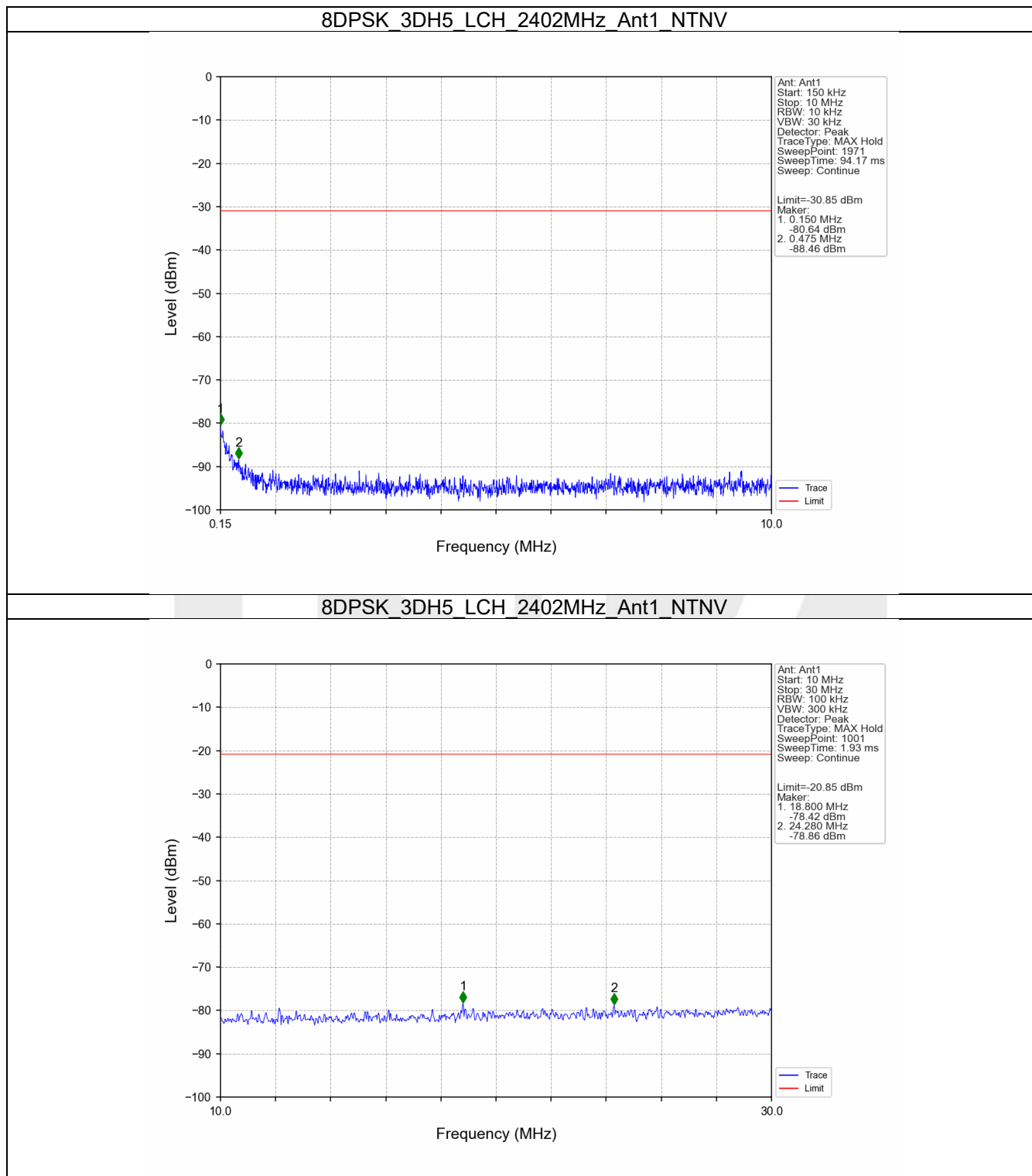


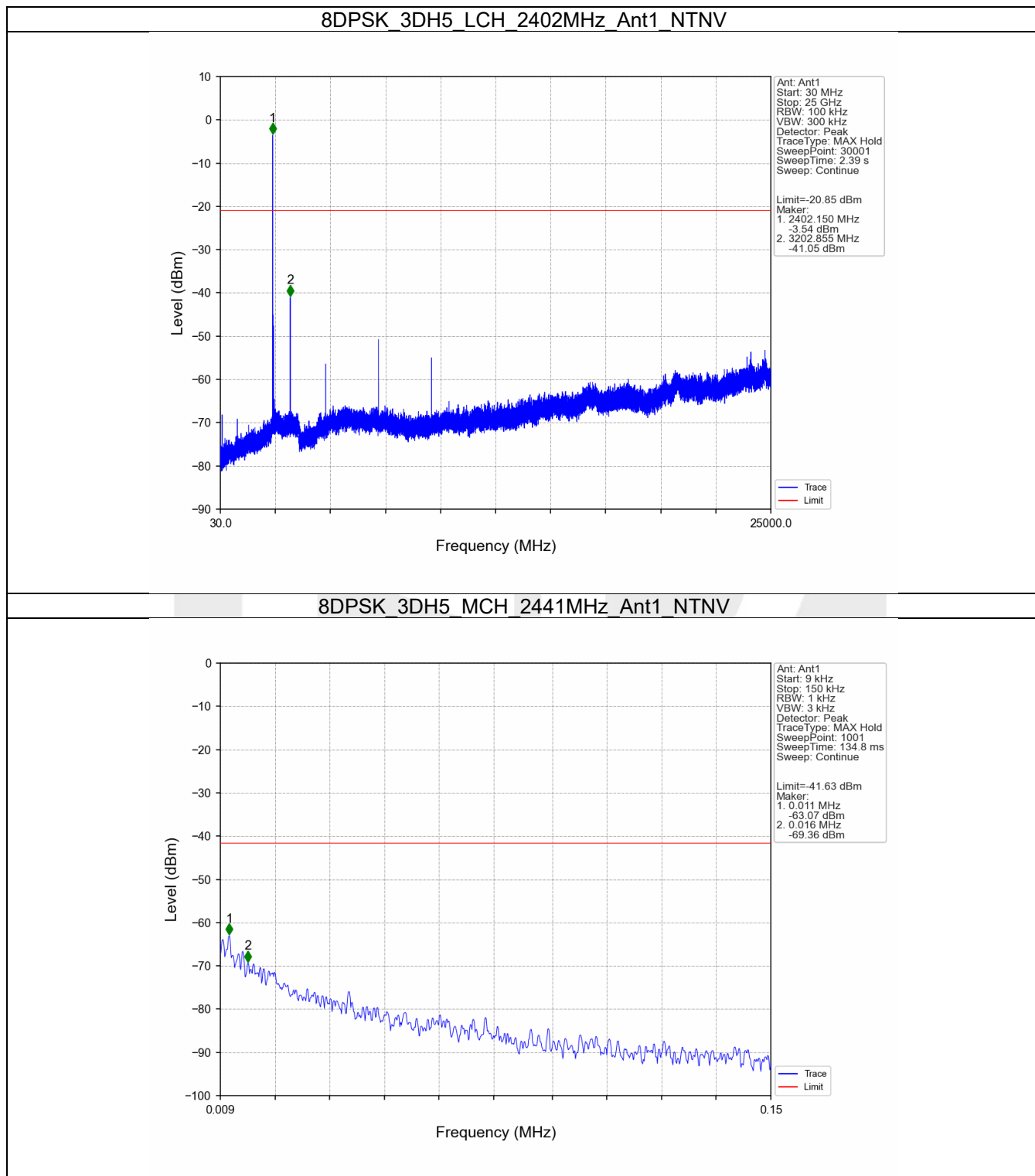


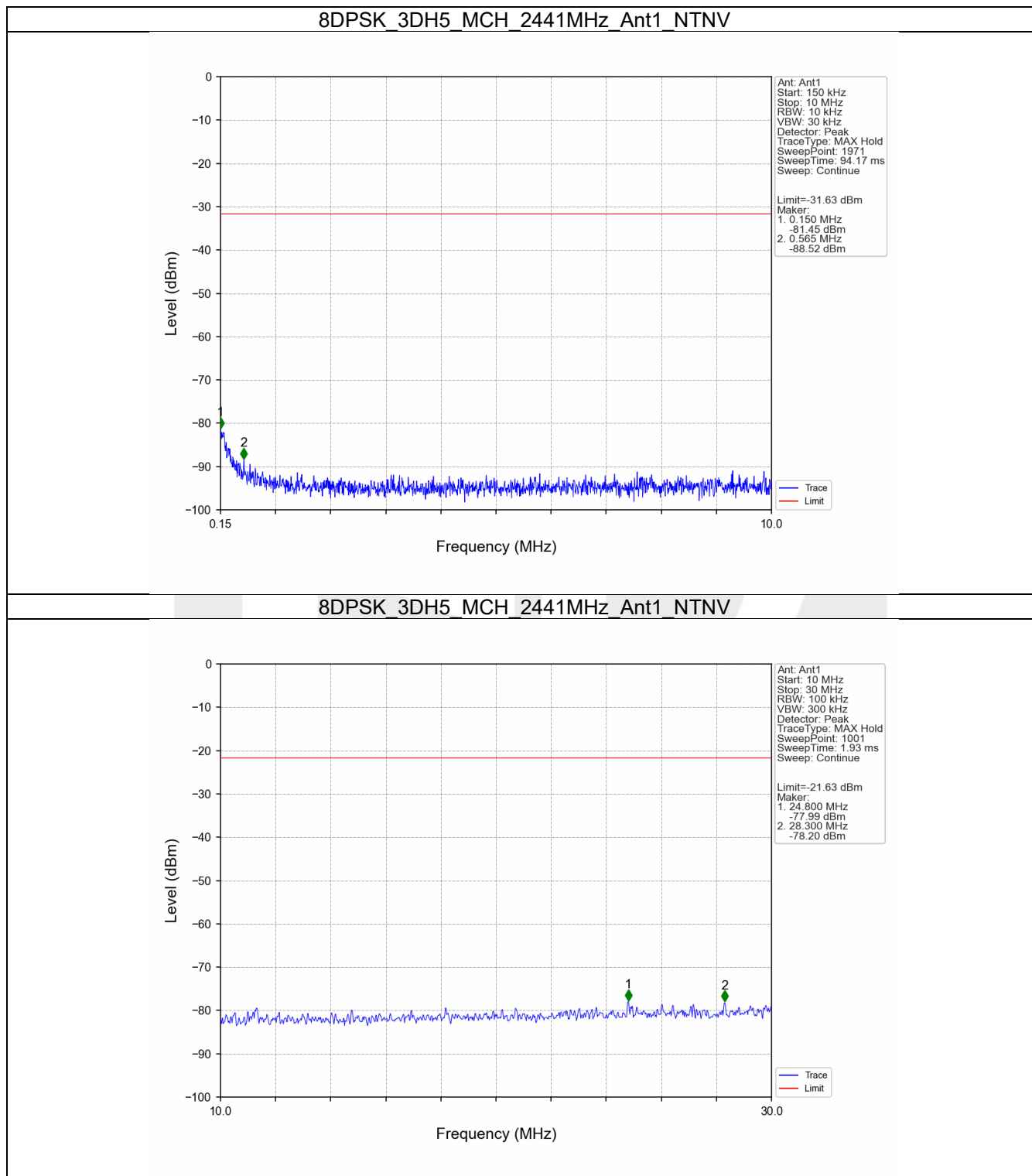


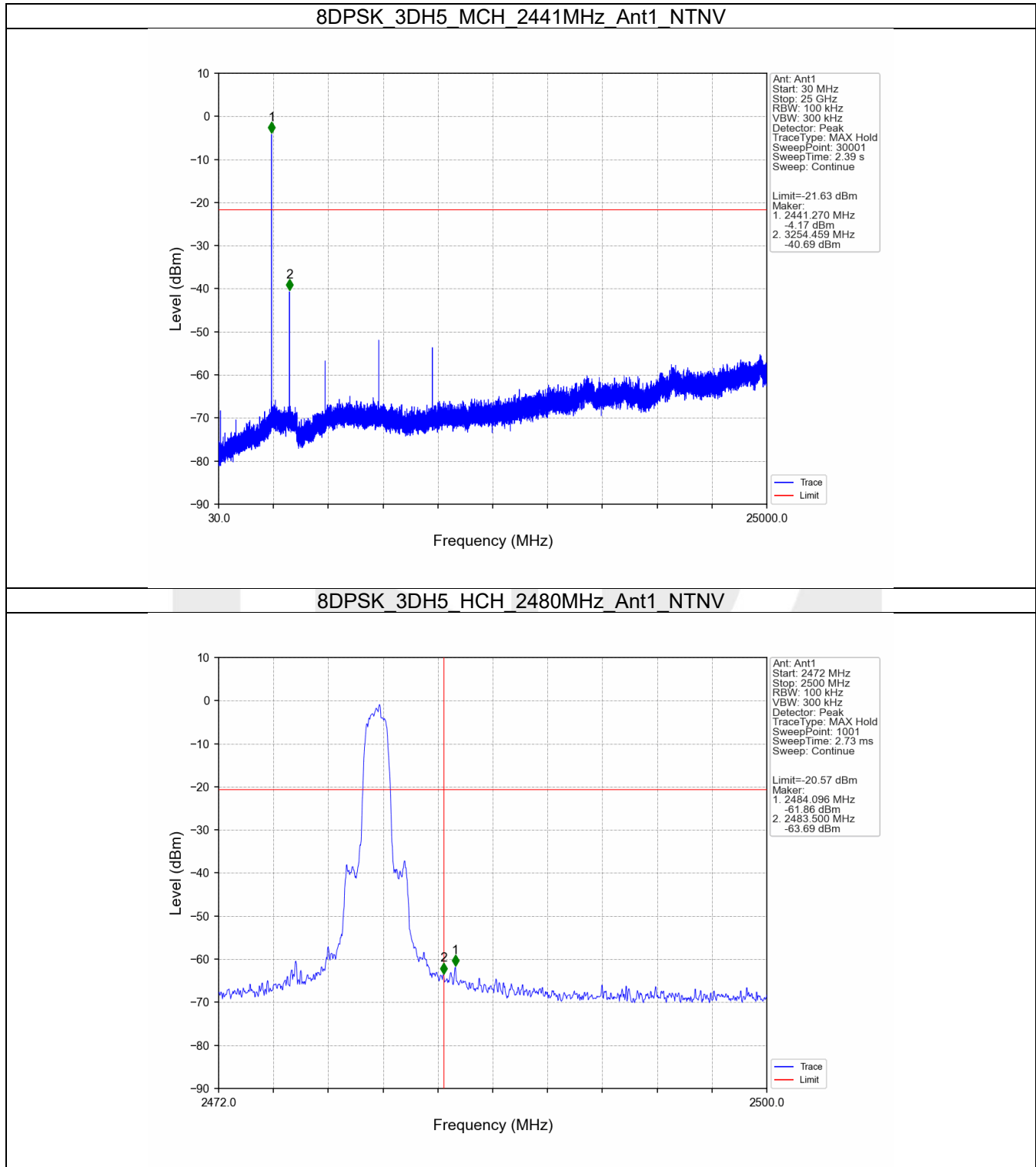


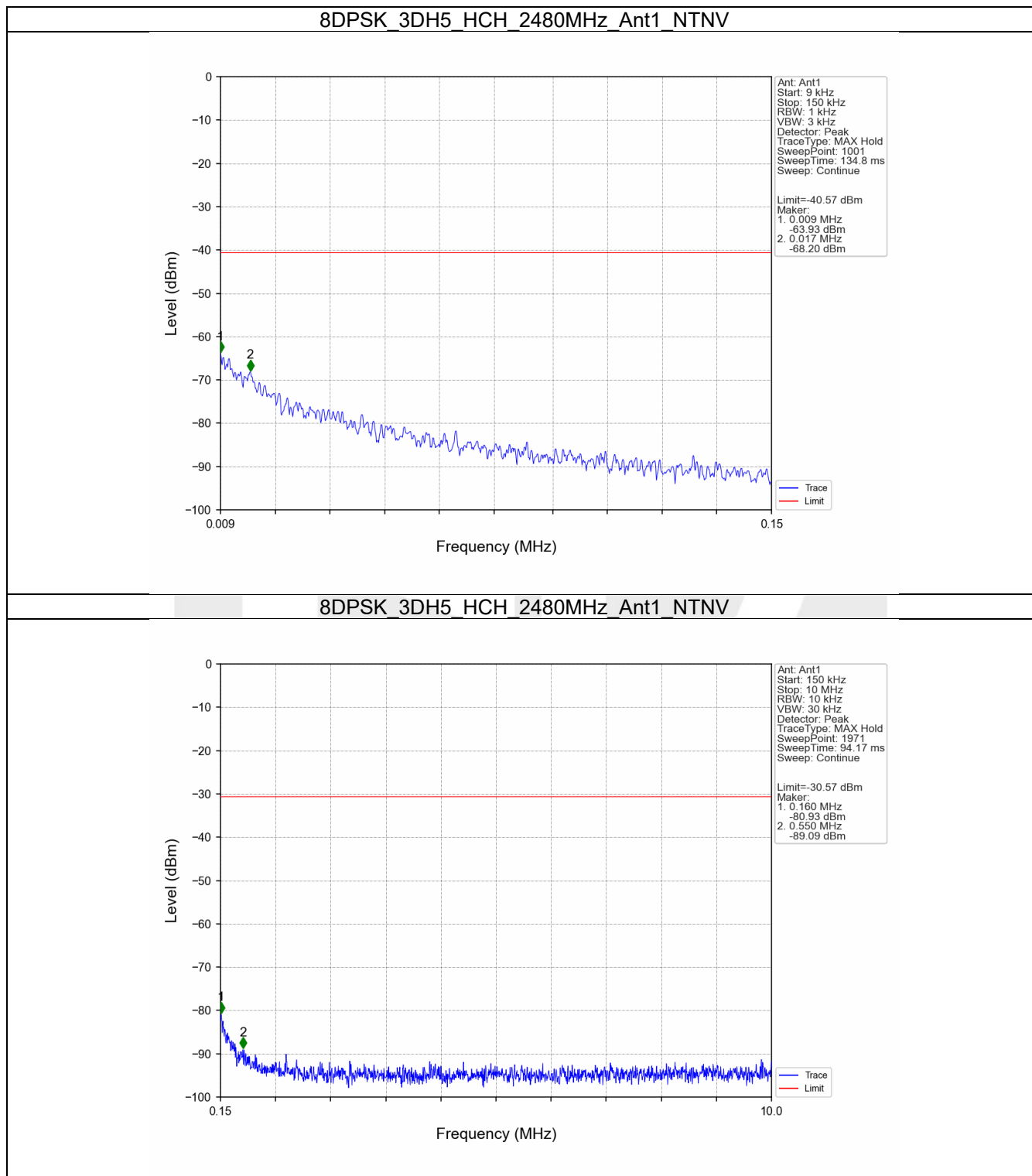


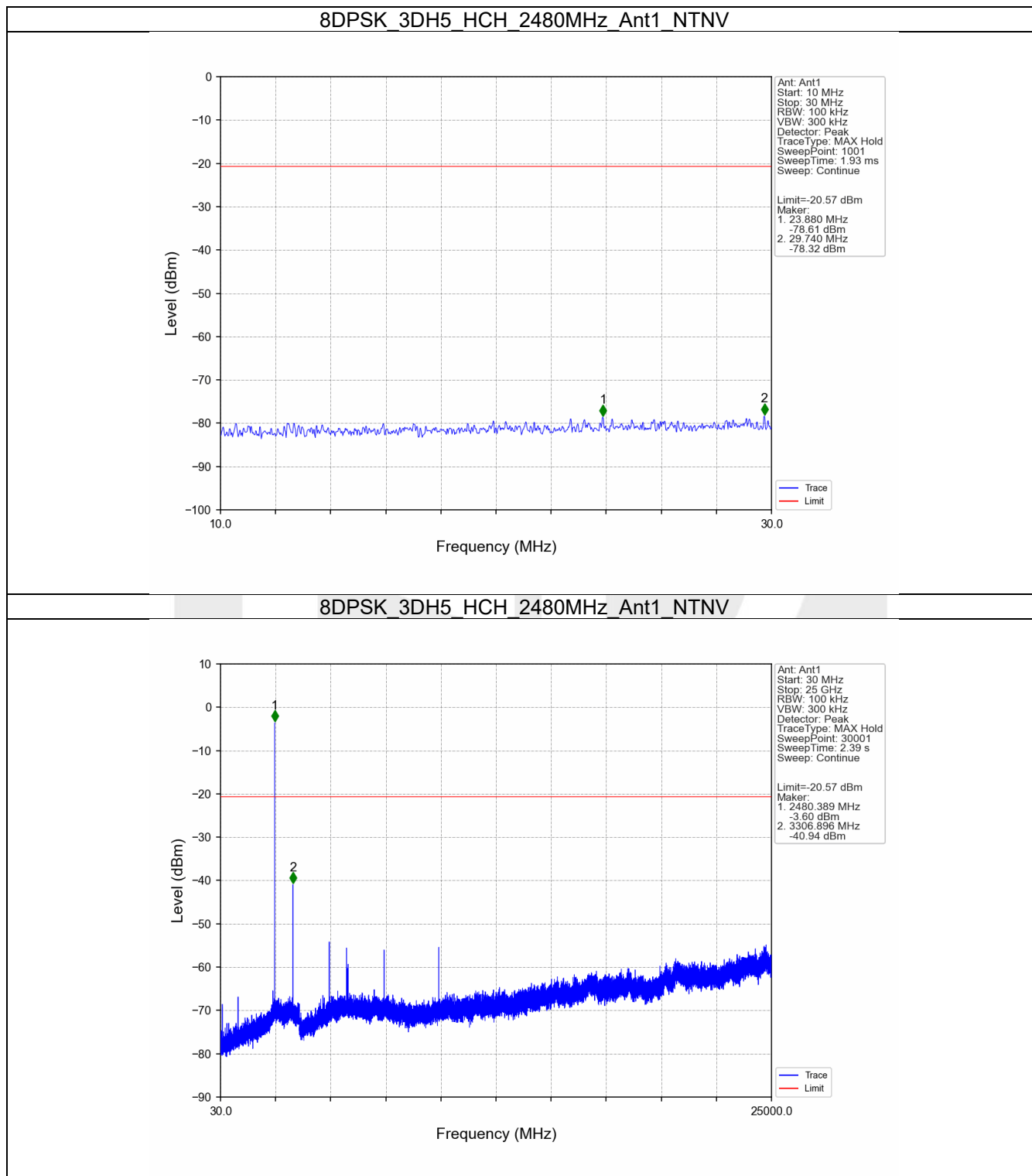


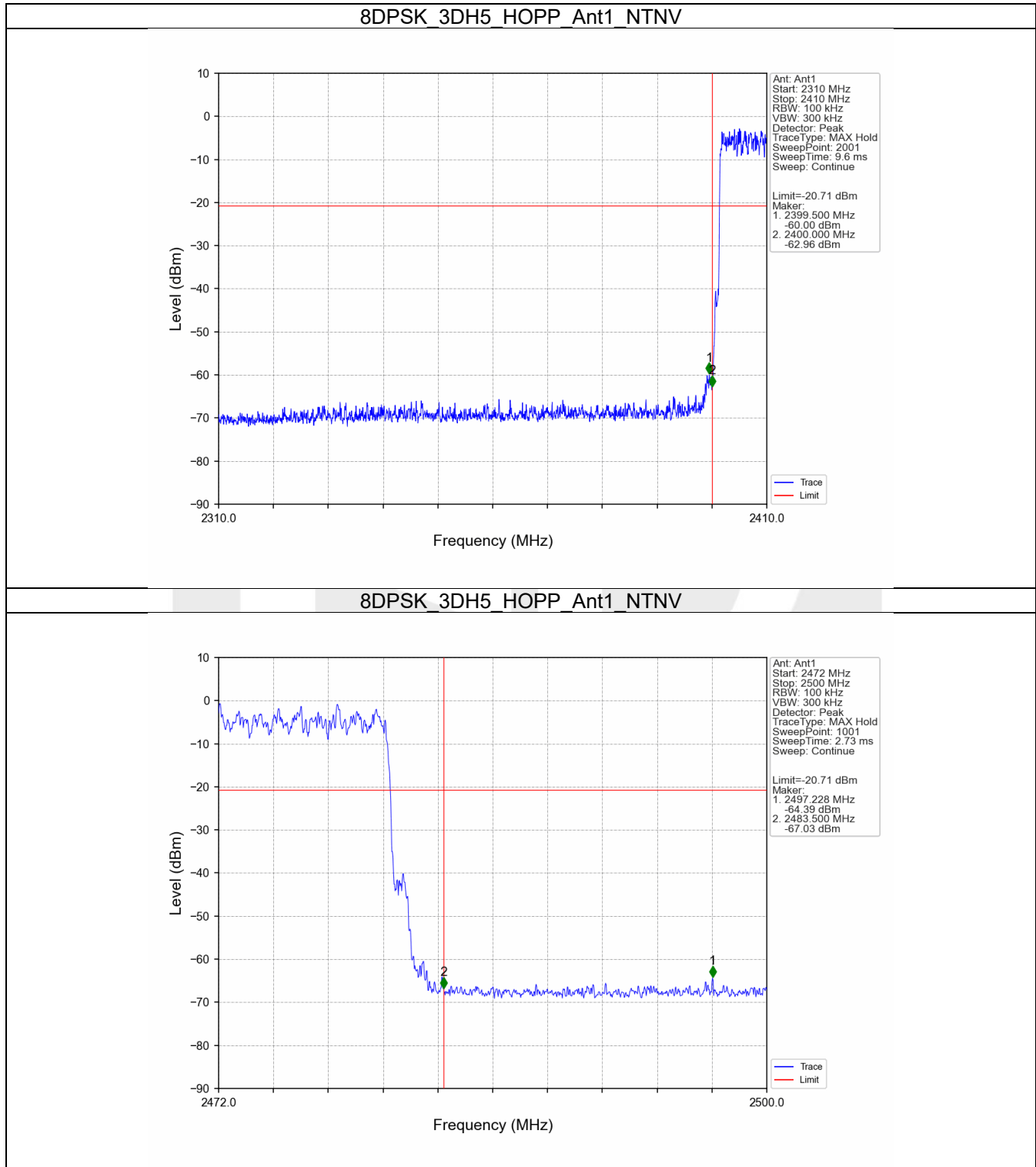












----- End of Report -----