

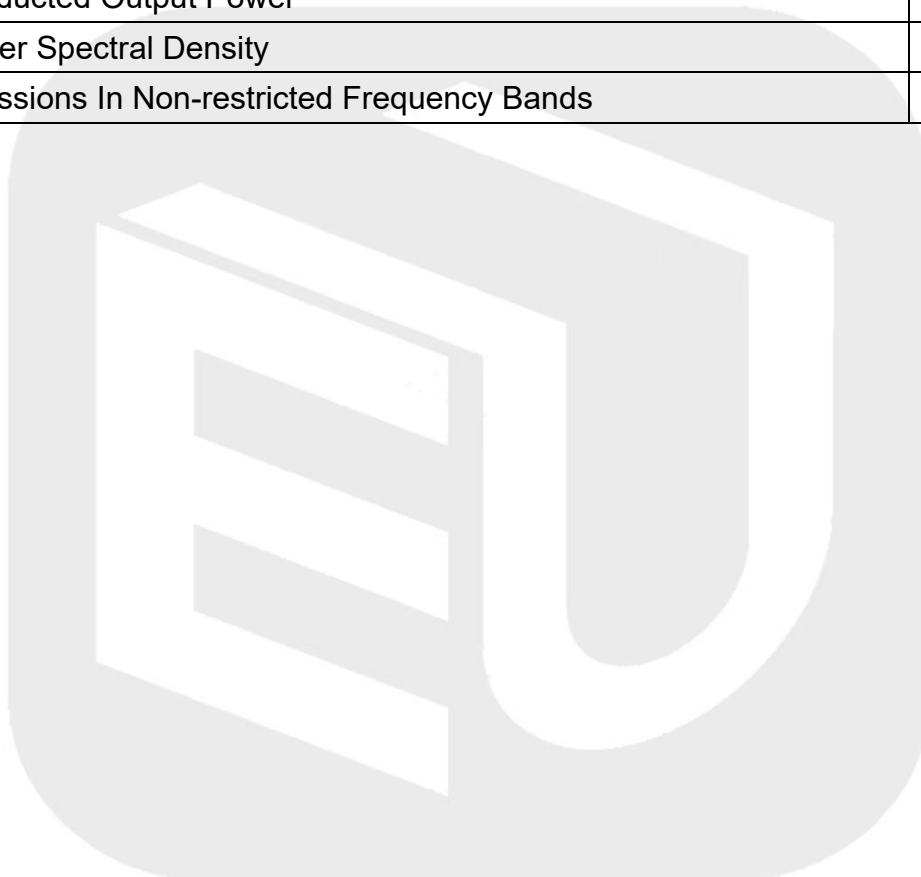
# ANNEX F TEST DATA

## For

|                      |                                                          |
|----------------------|----------------------------------------------------------|
| Project No.:         | 8328EU011225W                                            |
| Client:              | Tongyi World (Shenzhen) Intelligent Technology Co., Ltd. |
| Product Description: | Mother tongue teacher machine                            |
| Model No.:           | M1                                                       |
| FCC ID:              | 2BN8Q-M1                                                 |
| Technology:          | WiFi 2.4G                                                |
| Test Engineer:       | <i>Mikoy zhu</i>                                         |
| Test Date:           | 2025-04-02                                               |

## Test Summary

| Item                                                 | Result |
|------------------------------------------------------|--------|
| Duty Cycle                                           | Pass   |
| Bandwidth                                            | Pass   |
| Maximum Conducted Output Power                       | Pass   |
| Maximum Power Spectral Density                       | Pass   |
| Unwanted Emissions In Non-restricted Frequency Bands | Pass   |



## 1. Duty Cycle

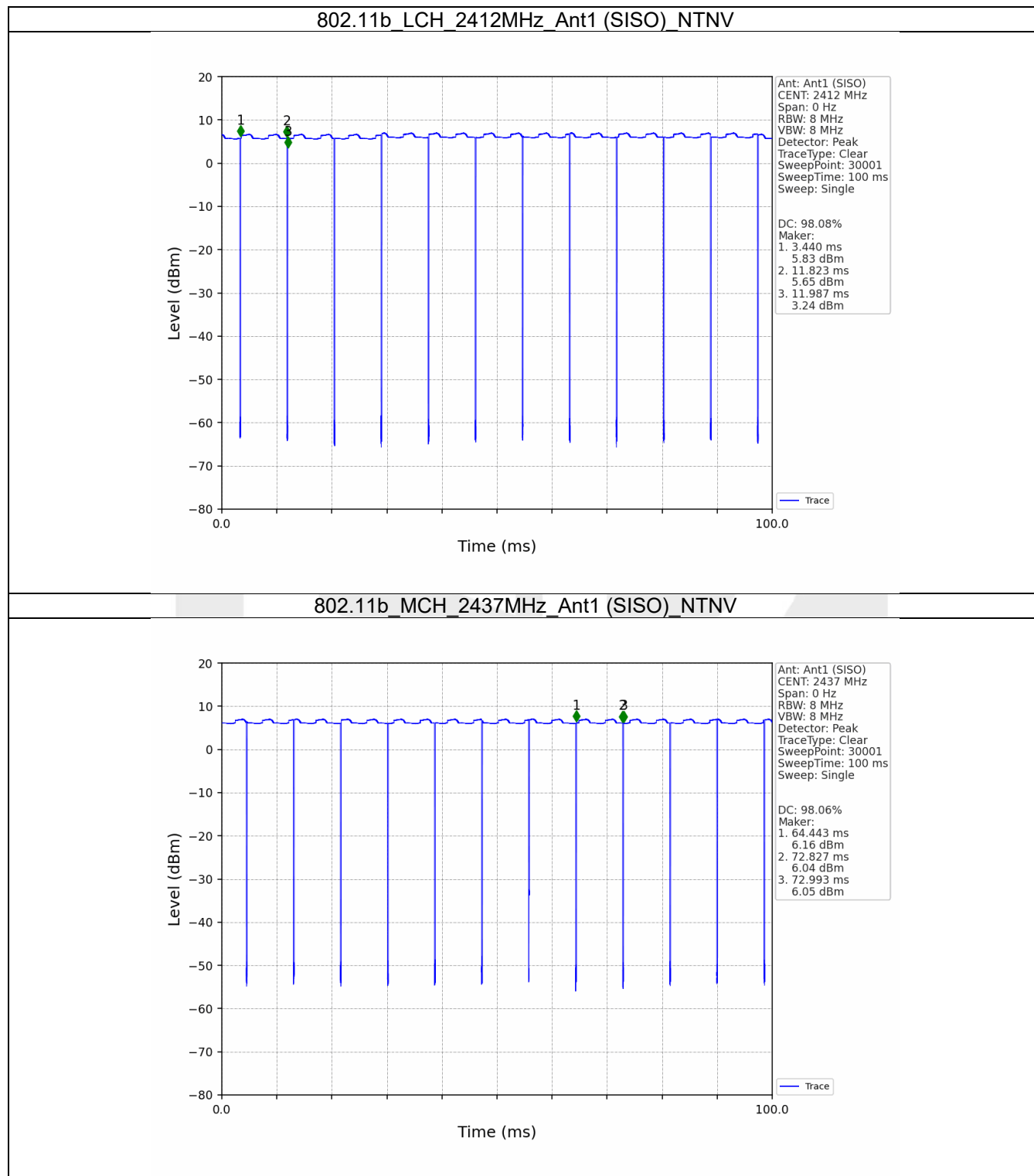
### 1.1 Test Result

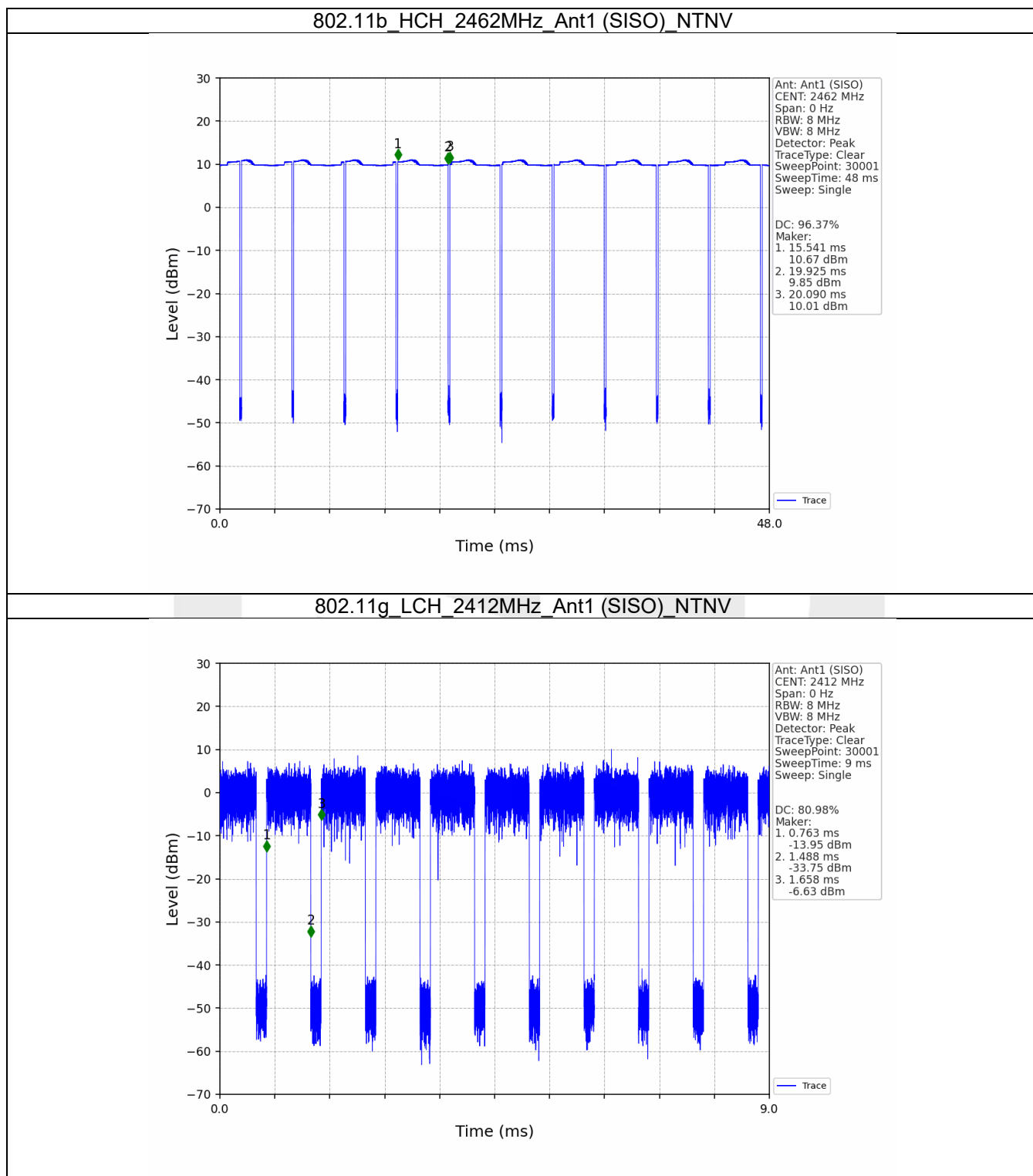
#### 1.1.1 Ant1

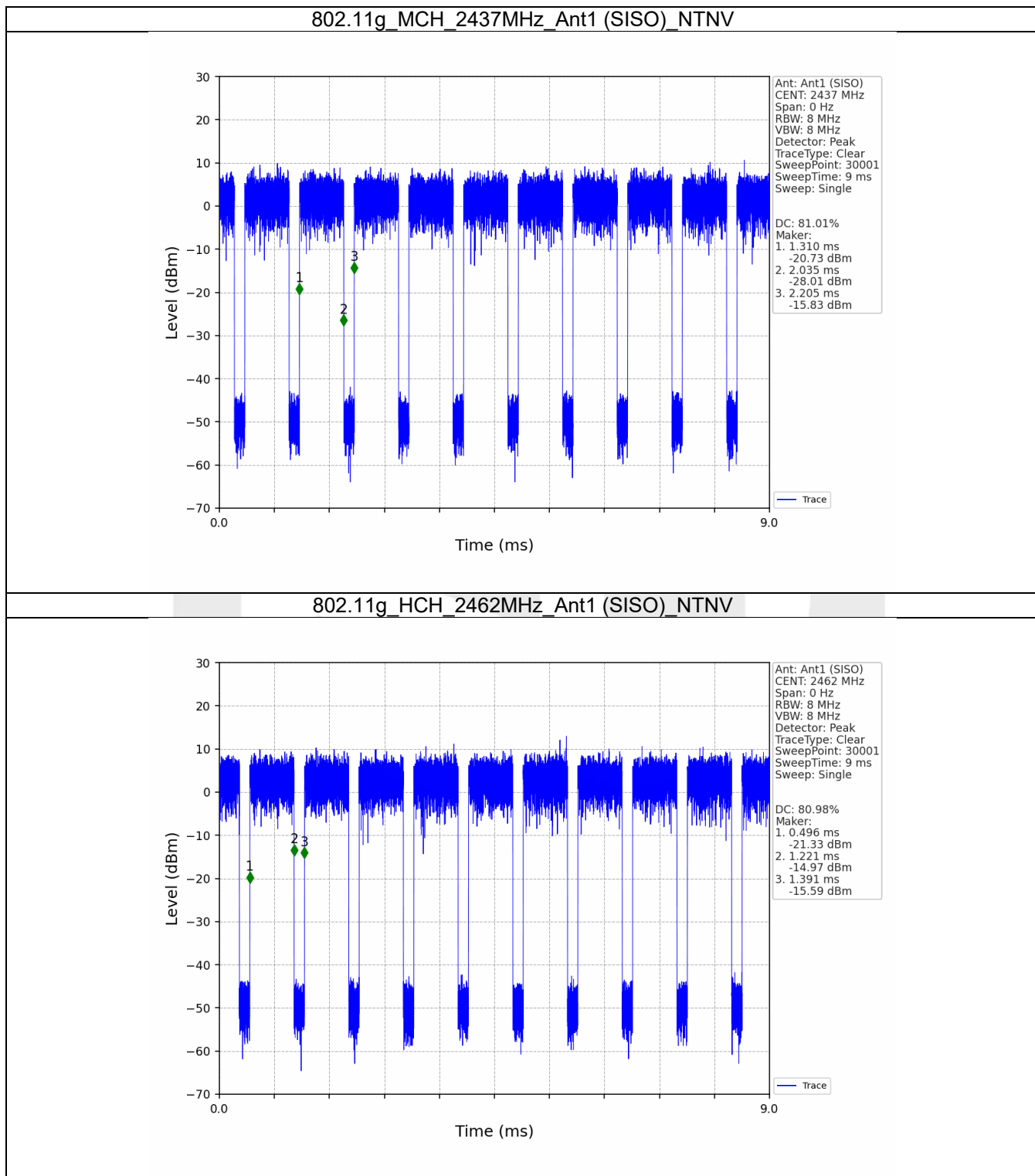
| Ant1           |         |                 |                      |             |                |                                   |                       |
|----------------|---------|-----------------|----------------------|-------------|----------------|-----------------------------------|-----------------------|
| Mode           | Tx Type | Frequency (MHz) | T <sub>on</sub> (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle Correction Factor (dB) | Max. DC Variation (%) |
| 802.11b        | SISO    | 2412            | 8.383                | 8.547       | 98.08          | 0.08                              | 0.00                  |
|                |         | 2437            | 8.384                | 8.550       | 98.06          | 0.09                              | 1.48                  |
|                |         | 2462            | 4.384                | 4.549       | 96.37          | 0.16                              | 0.04                  |
| 802.11g        | SISO    | 2412            | 0.724                | 0.894       | 80.98          | 0.92                              | 0.03                  |
|                |         | 2437            | 0.725                | 0.895       | 81.01          | 0.91                              | 0.03                  |
|                |         | 2462            | 0.724                | 0.894       | 80.98          | 0.92                              | 0.03                  |
| 802.11n (HT20) | SISO    | 2412            | 0.677                | 0.847       | 79.93          | 0.97                              | 0.07                  |
|                |         | 2437            | 0.676                | 0.847       | 79.81          | 0.98                              | 0.04                  |
|                |         | 2462            | 0.676                | 0.847       | 79.81          | 0.98                              | 0.04                  |

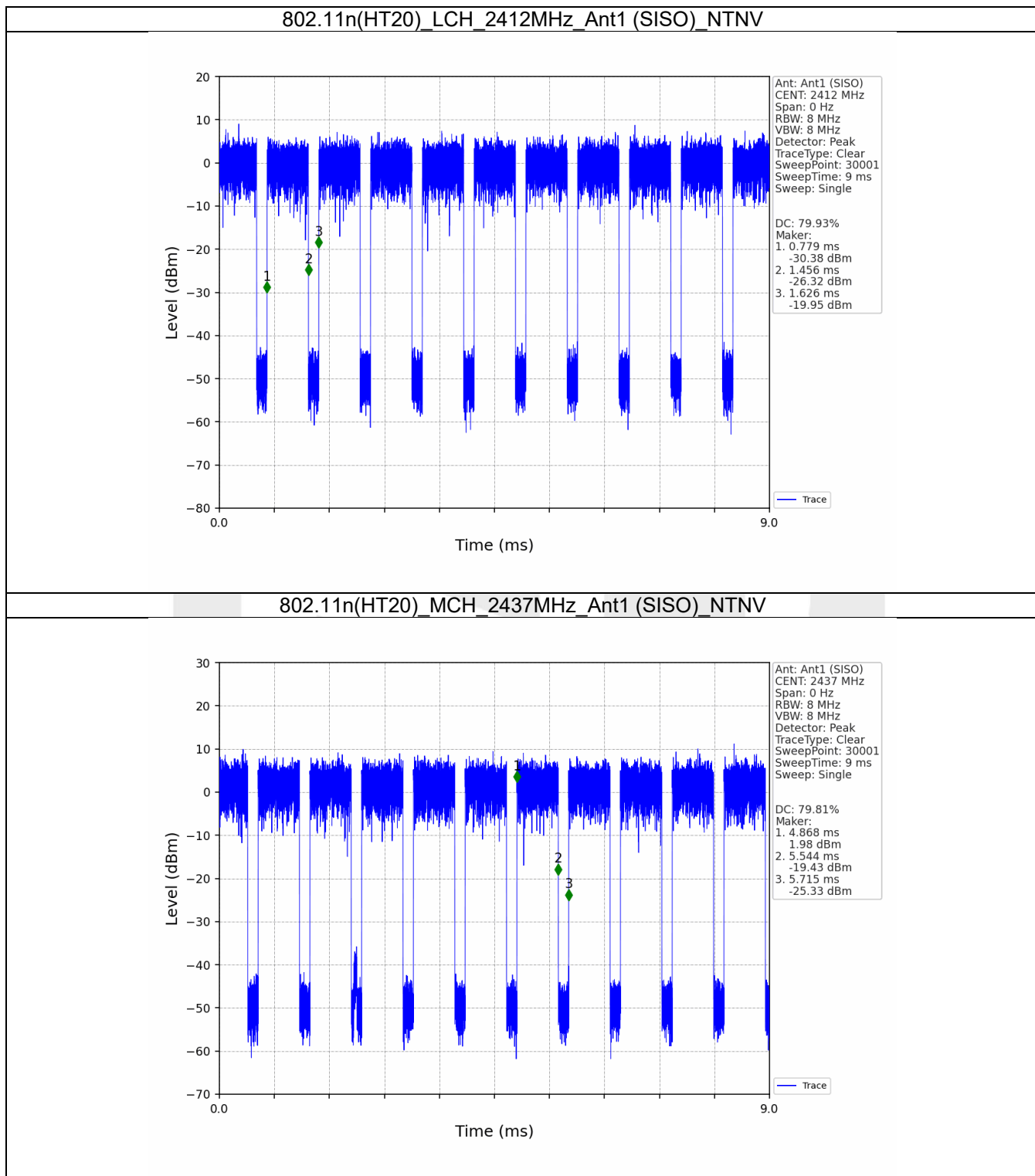
## 1.2 Test Graph

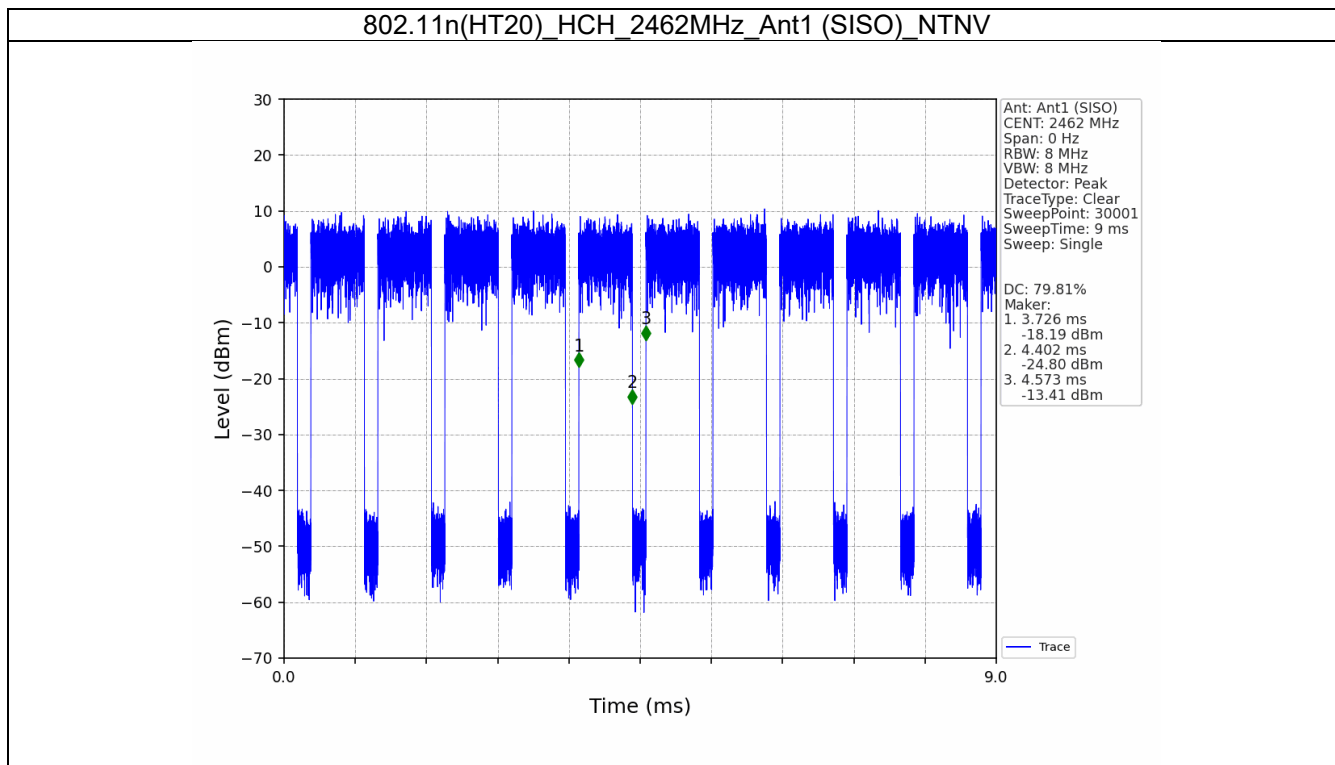
### 1.2.1 Ant1













## 2. Bandwidth

### 2.1 Test Result

#### 2.1.1 OBW

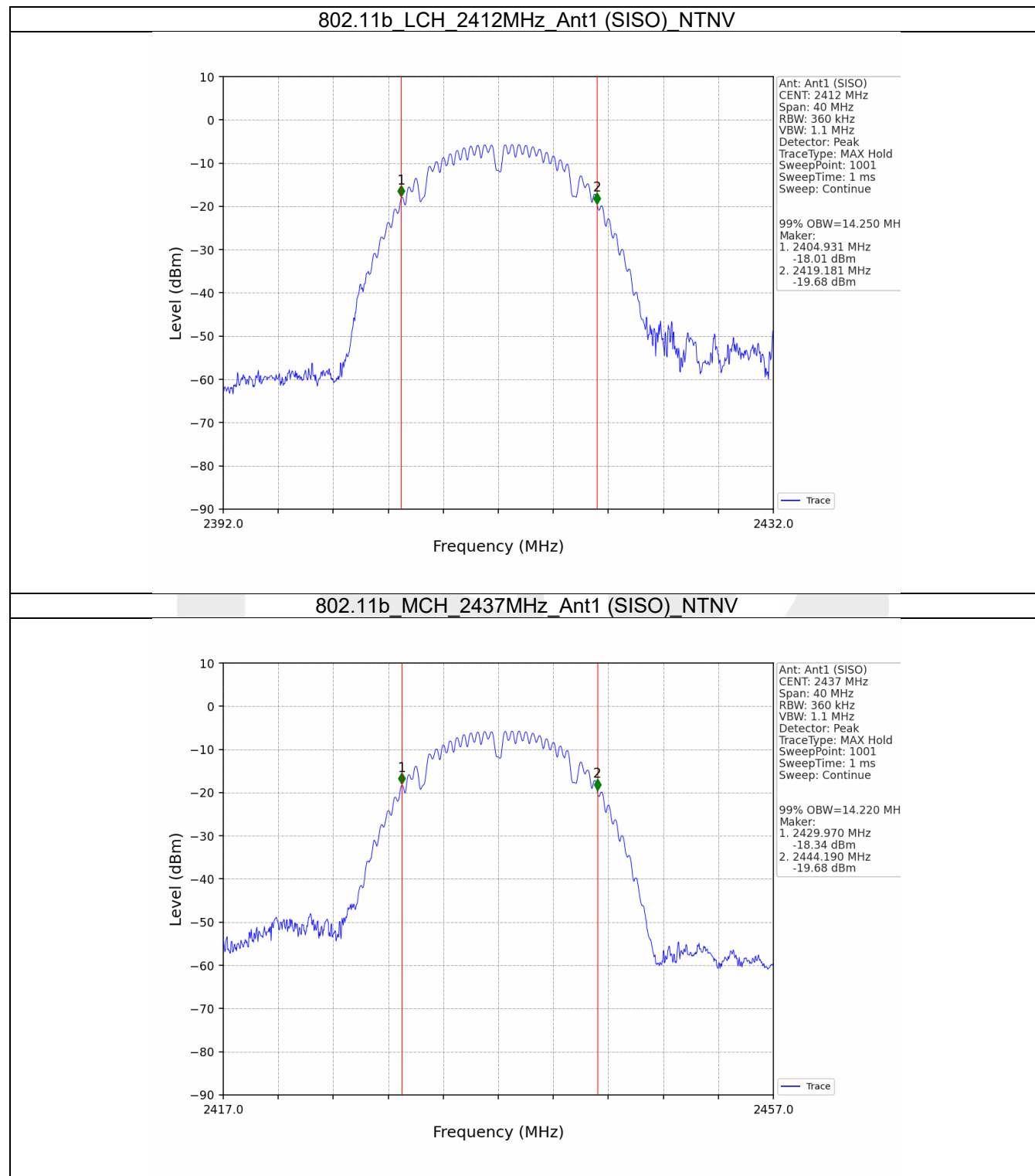
| Mode           | TX Type | Frequency (MHz) | ANT | 99% Occupied Bandwidth (MHz) |       | Verdict |
|----------------|---------|-----------------|-----|------------------------------|-------|---------|
|                |         |                 |     | Result                       | Limit |         |
| 802.11b        | SISO    | 2412            | 1   | 14.250                       | /     | Pass    |
|                |         | 2437            | 1   | 14.220                       | /     | Pass    |
|                |         | 2462            | 1   | 14.193                       | /     | Pass    |
| 802.11g        | SISO    | 2412            | 1   | 17.727                       | /     | Pass    |
|                |         | 2437            | 1   | 17.717                       | /     | Pass    |
|                |         | 2462            | 1   | 17.692                       | /     | Pass    |
| 802.11n (HT20) | SISO    | 2412            | 1   | 18.304                       | /     | Pass    |
|                |         | 2437            | 1   | 18.293                       | /     | Pass    |
|                |         | 2462            | 1   | 18.299                       | /     | Pass    |

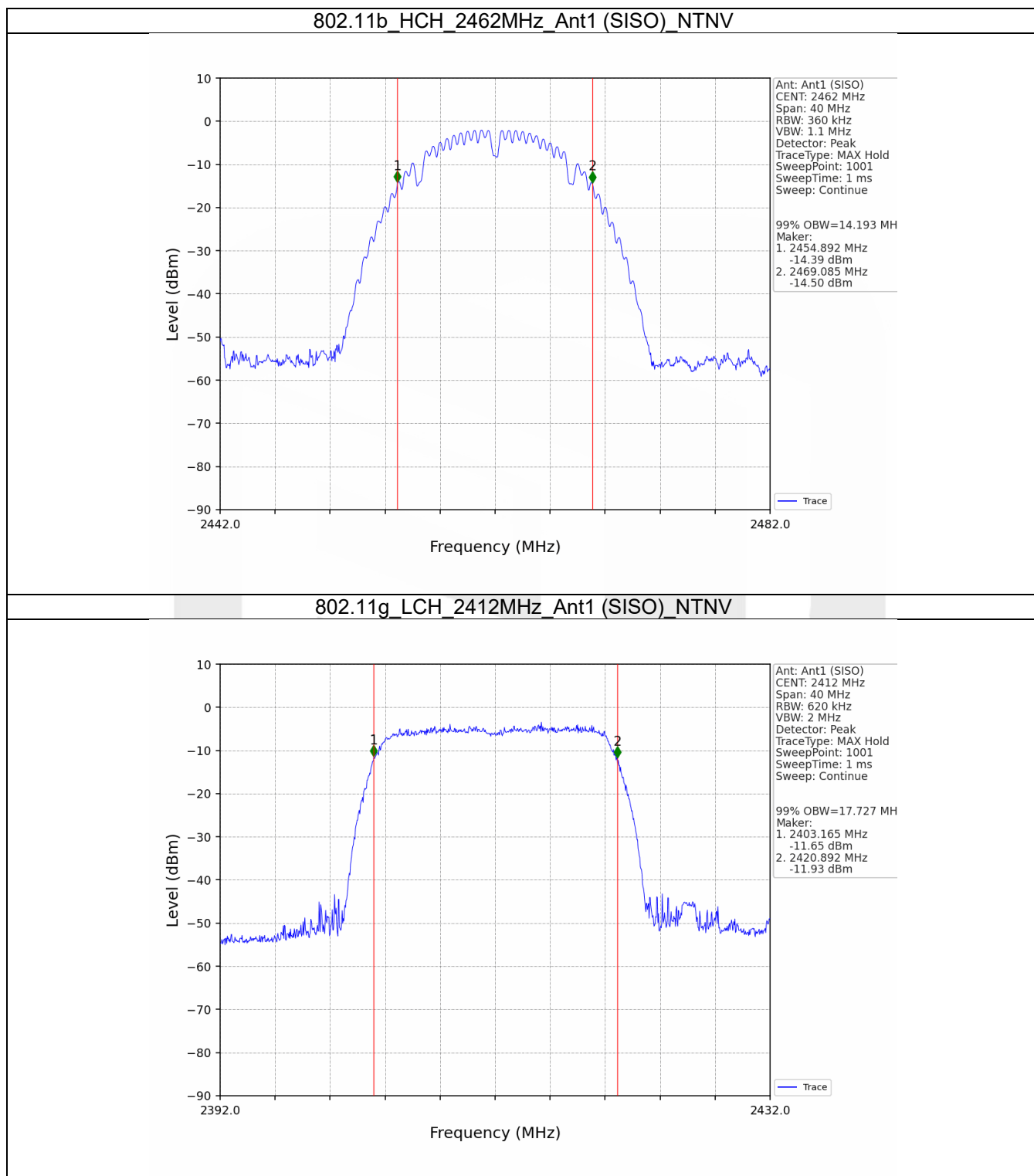
#### 2.1.2 6dB BW

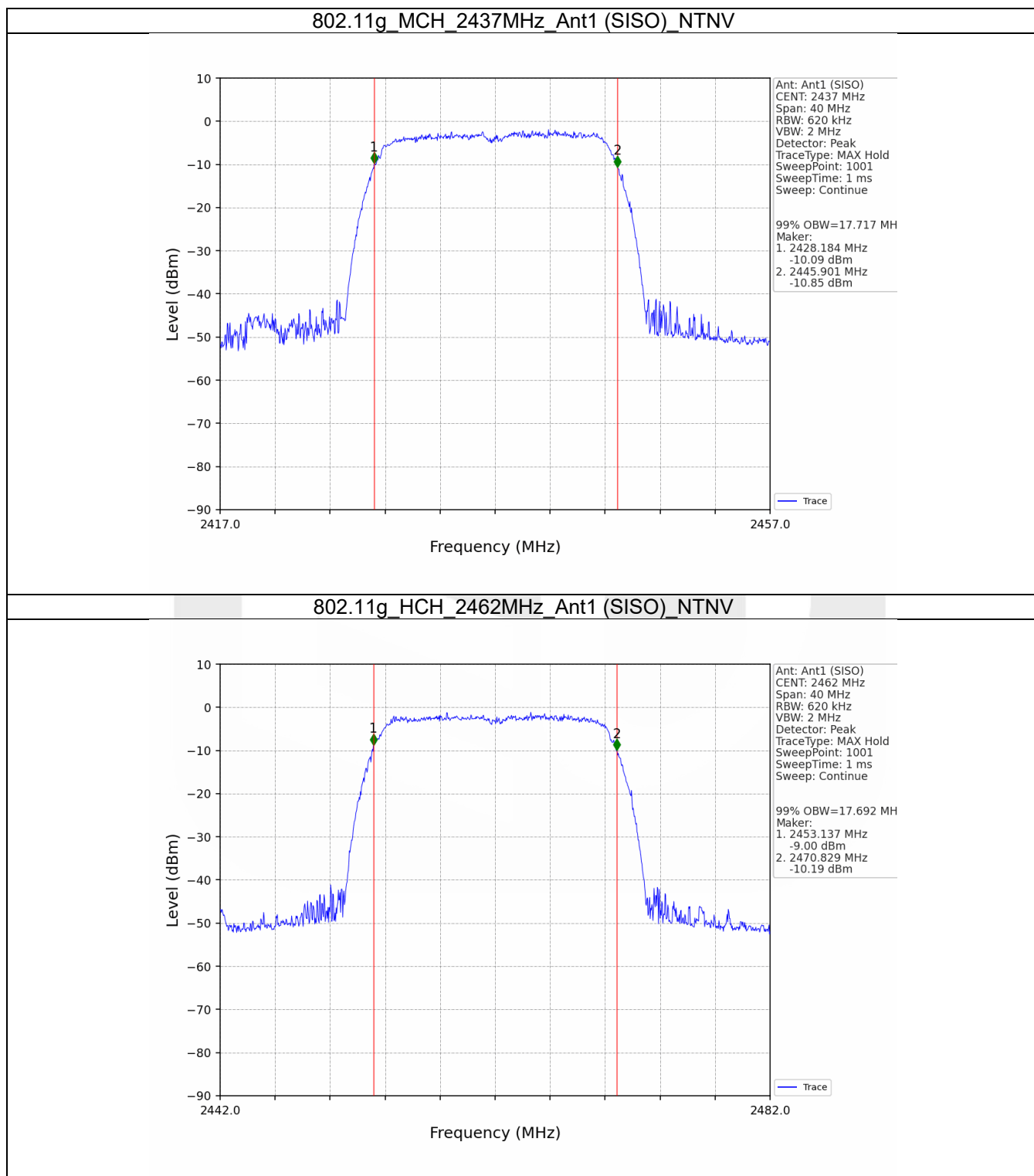
| Mode           | TX Type | Frequency (MHz) | ANT | 6dB Bandwidth (MHz) |            | Verdict |
|----------------|---------|-----------------|-----|---------------------|------------|---------|
|                |         |                 |     | Result              | Limit      |         |
| 802.11b        | SISO    | 2412            | 1   | 10.270              | $\geq 0.5$ | Pass    |
|                |         | 2437            | 1   | 10.253              | $\geq 0.5$ | Pass    |
|                |         | 2462            | 1   | 10.260              | $\geq 0.5$ | Pass    |
| 802.11g        | SISO    | 2412            | 1   | 16.872              | $\geq 0.5$ | Pass    |
|                |         | 2437            | 1   | 16.906              | $\geq 0.5$ | Pass    |
|                |         | 2462            | 1   | 16.933              | $\geq 0.5$ | Pass    |
| 802.11n (HT20) | SISO    | 2412            | 1   | 17.899              | $\geq 0.5$ | Pass    |
|                |         | 2437            | 1   | 18.040              | $\geq 0.5$ | Pass    |
|                |         | 2462            | 1   | 17.999              | $\geq 0.5$ | Pass    |

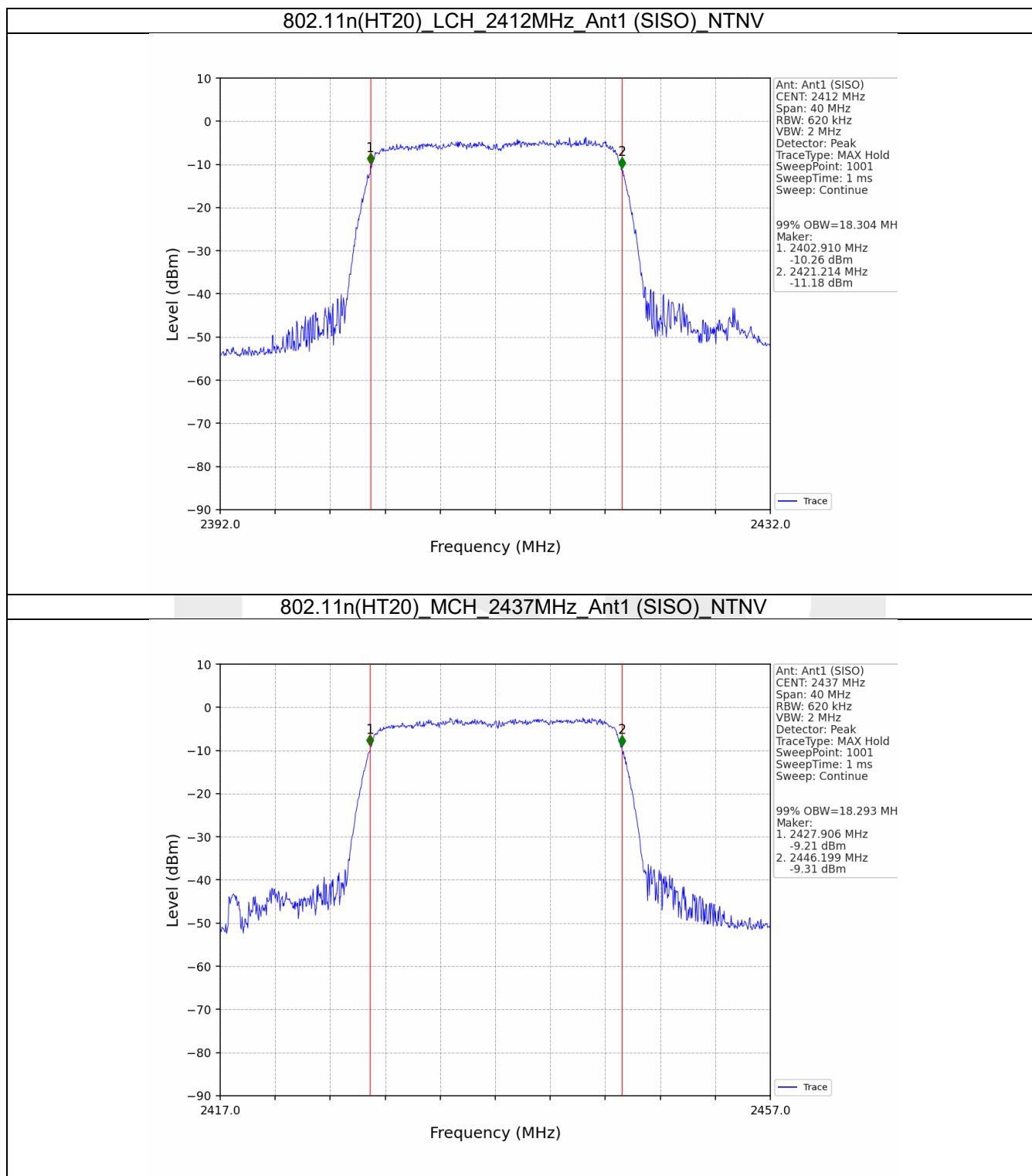
## 2.2 Test Graph

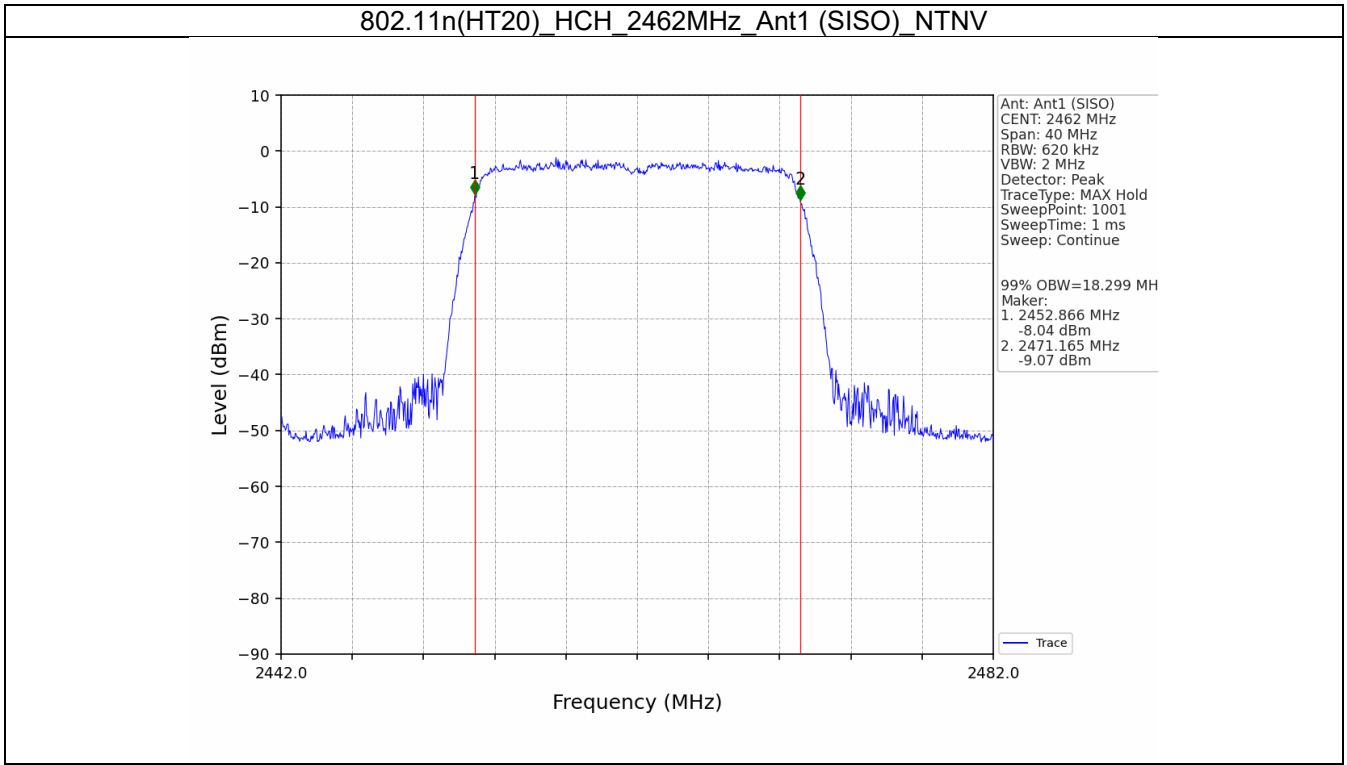
### 2.2.1 OBW



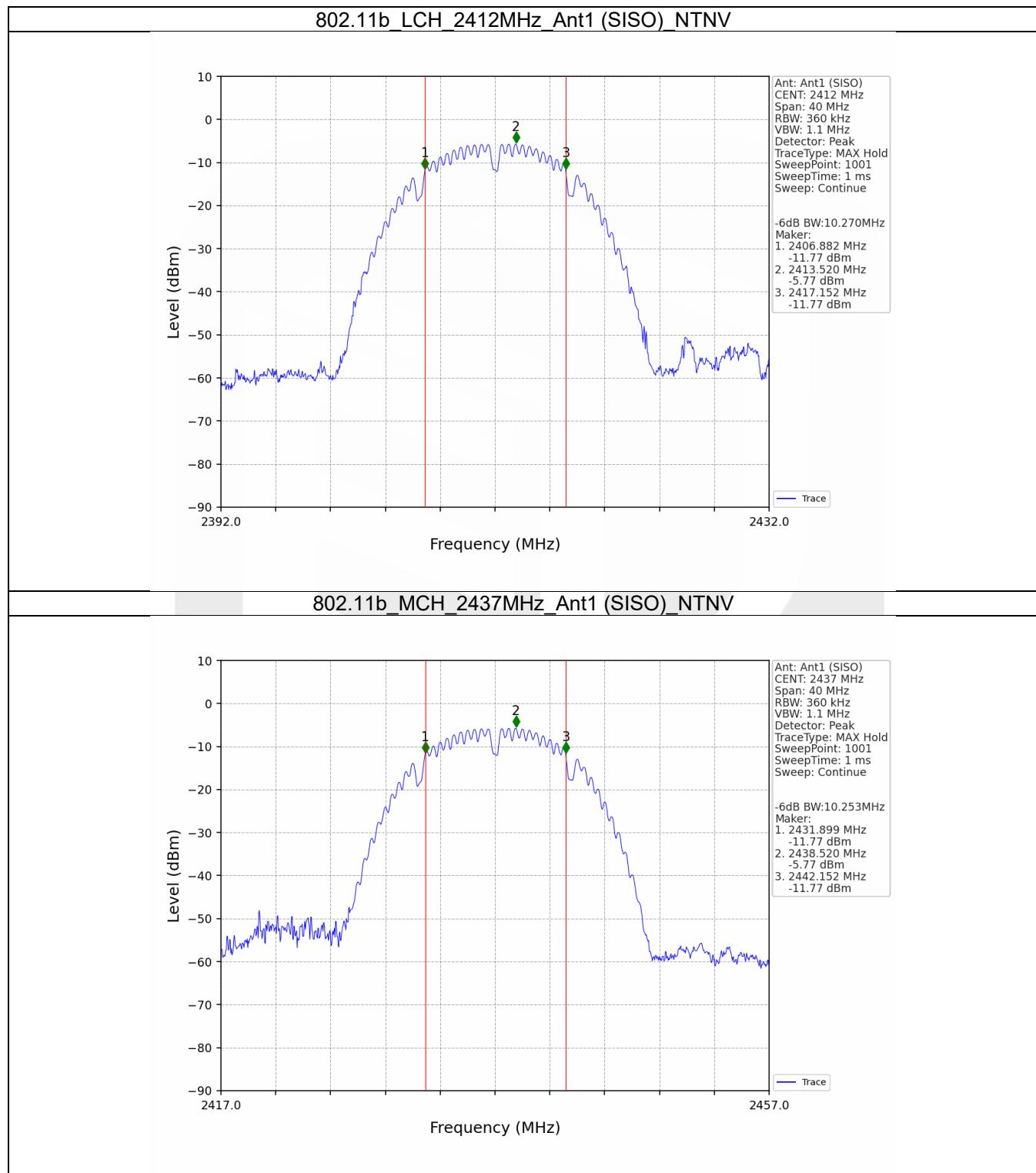


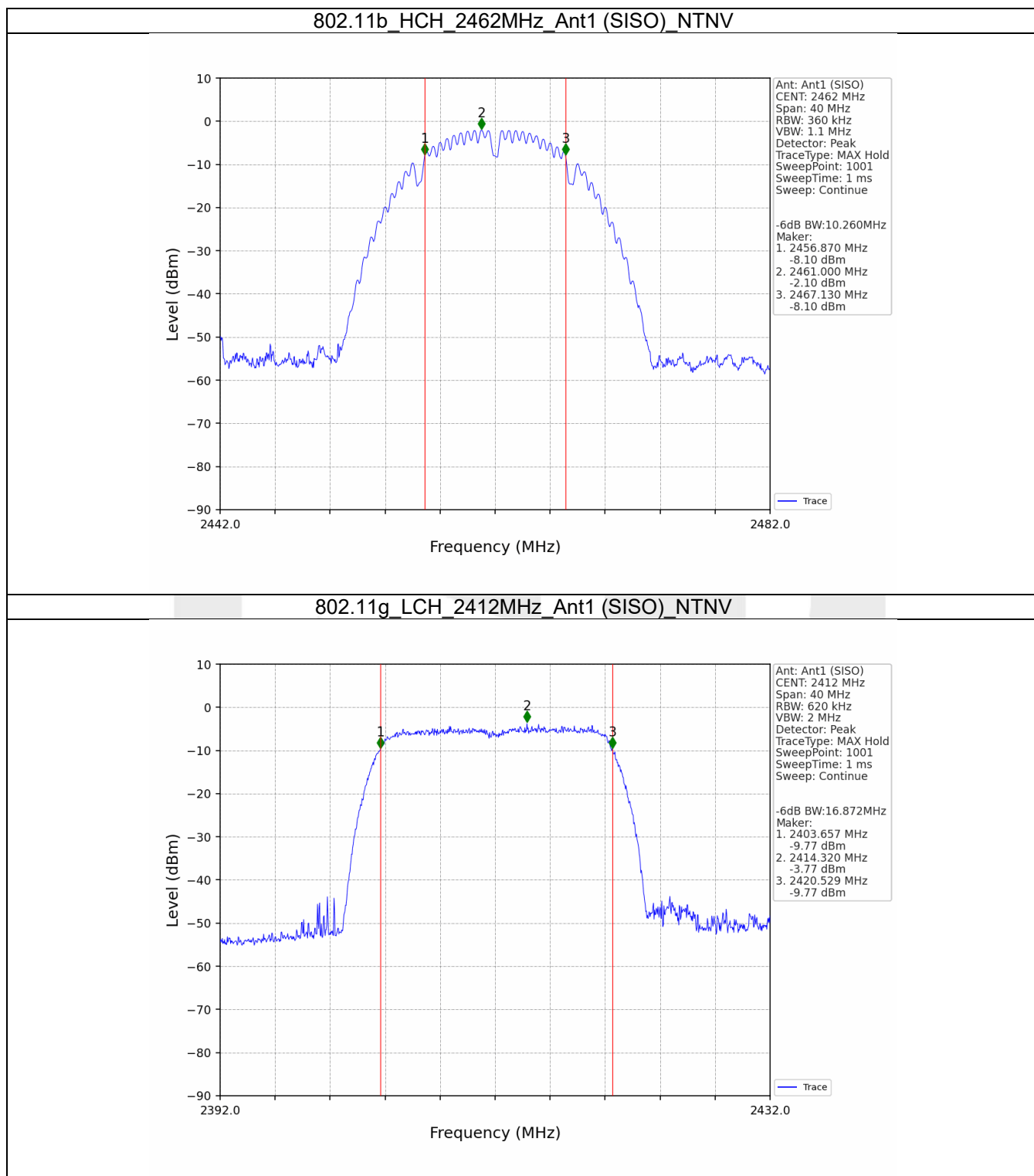




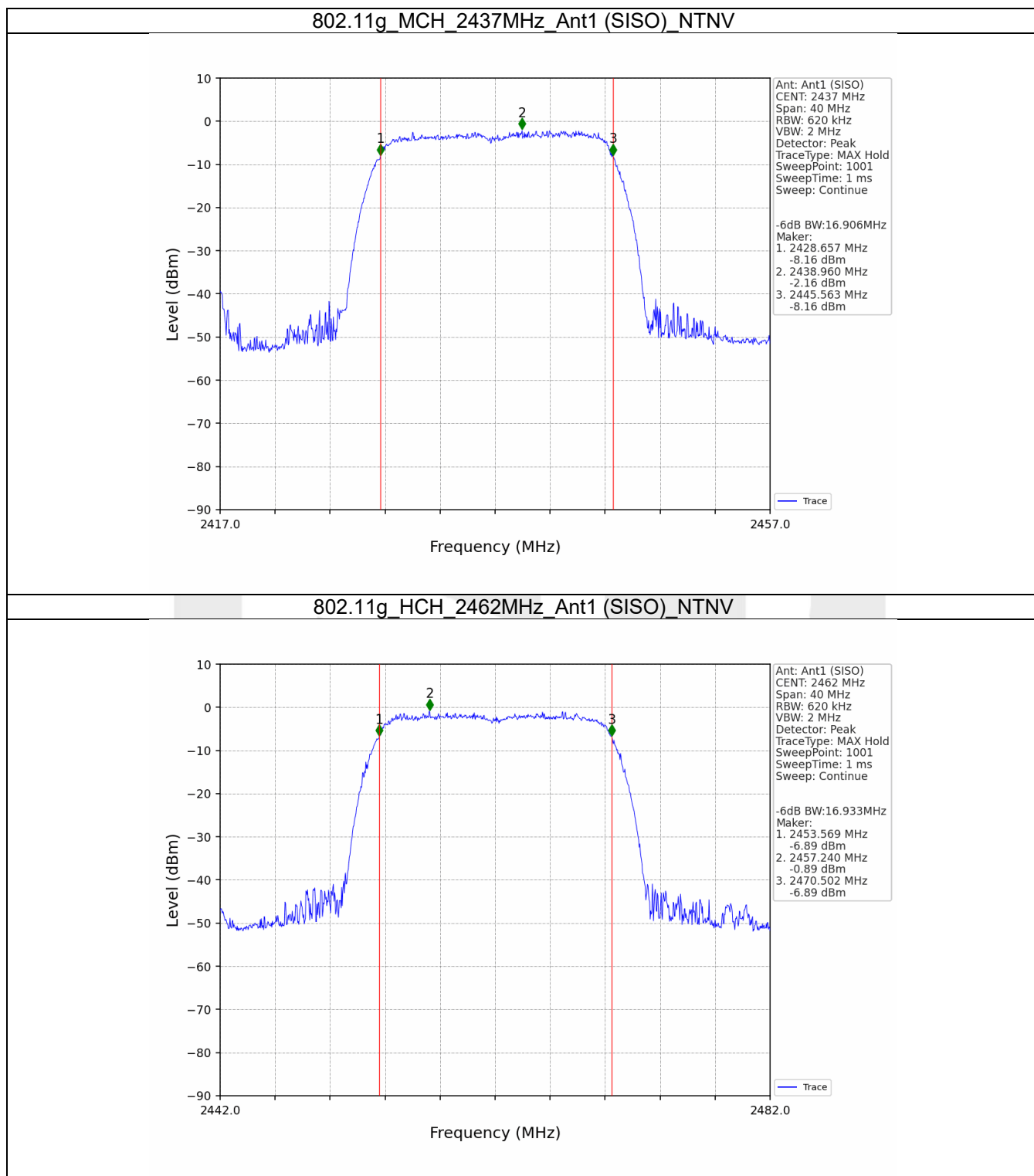


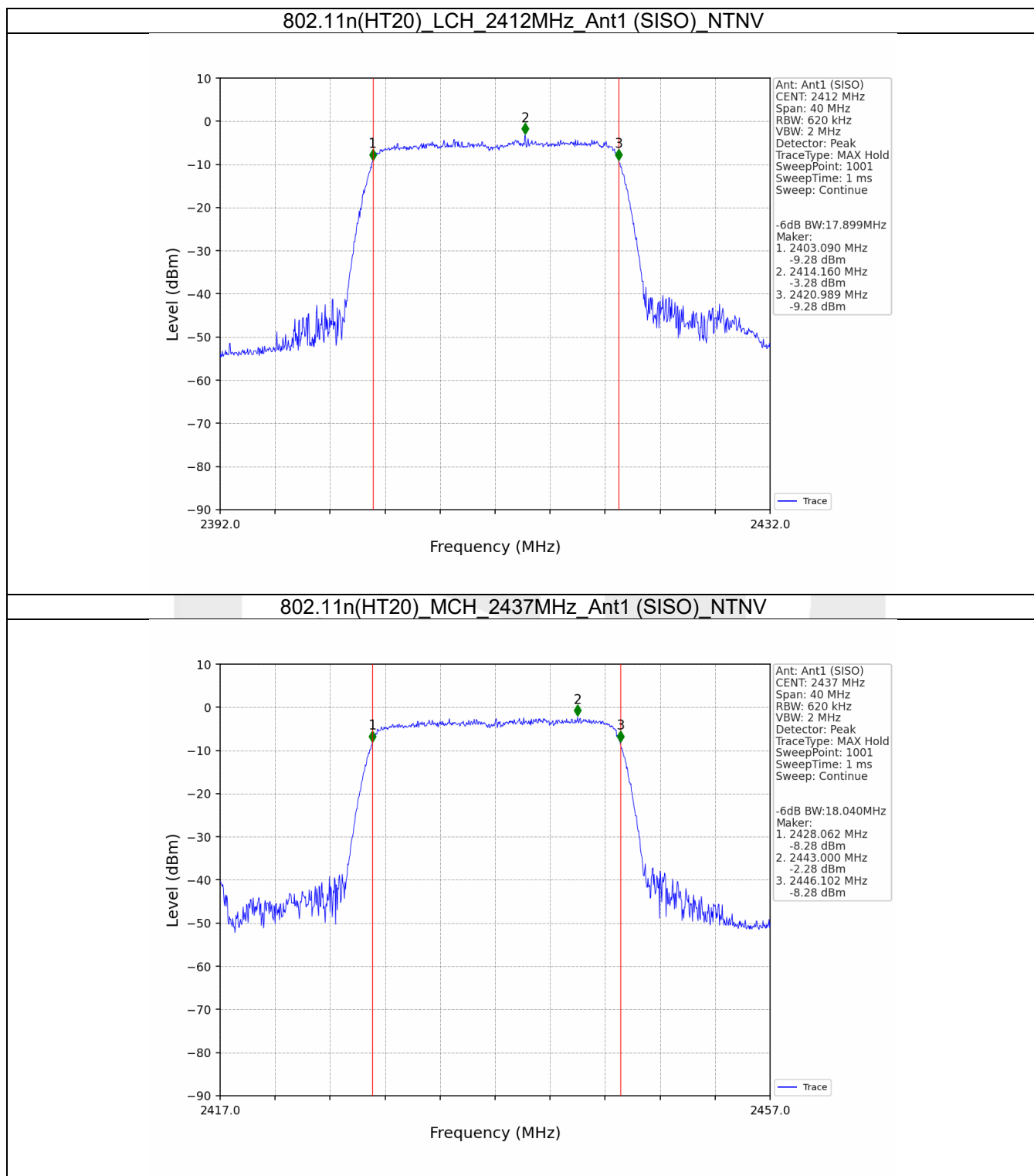
## 2.2.2 6dB BW

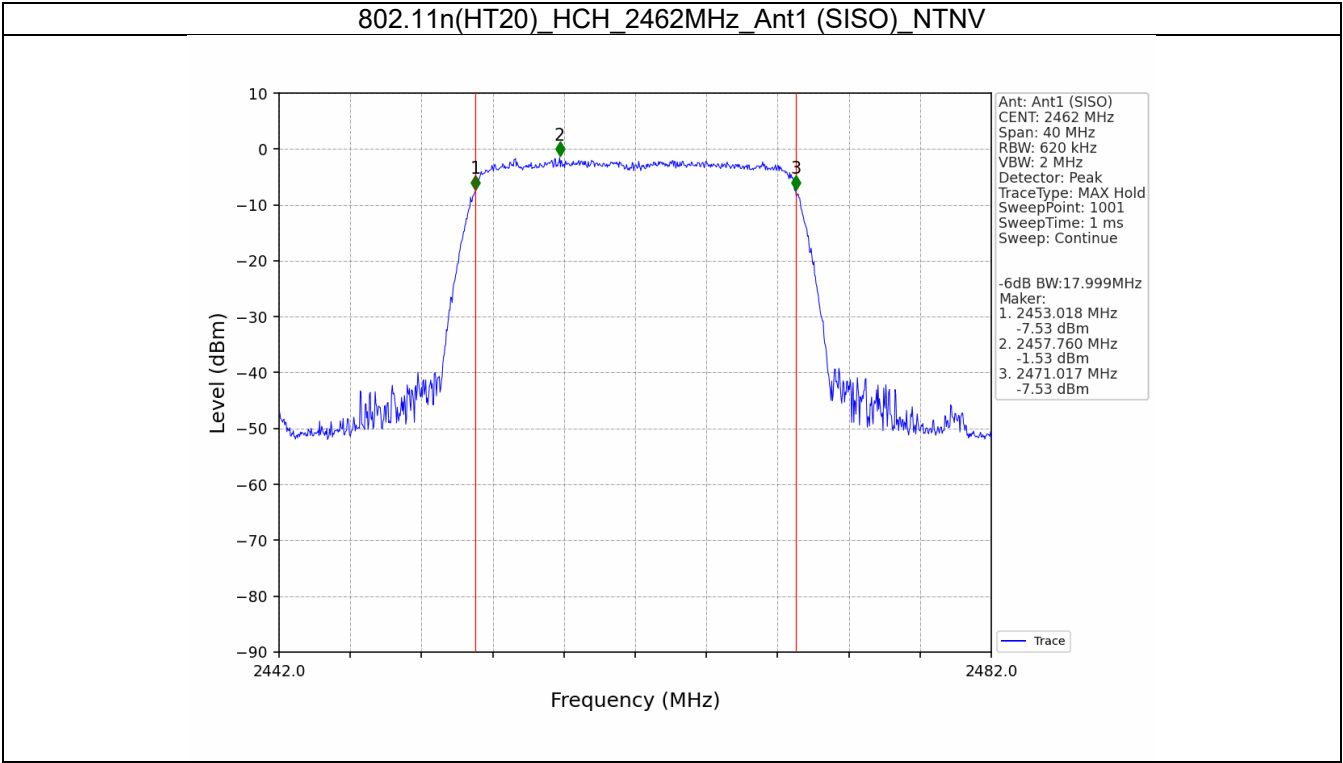












### 3. Maximum Conducted Output Power

#### 3.1 Test Result

##### 3.1.1 Power

| Mode           | TX Type | Frequency (MHz) | Maximum Peak Conducted Output Power (dBm) |       | Verdict |
|----------------|---------|-----------------|-------------------------------------------|-------|---------|
|                |         |                 | ANT1                                      | Limit |         |
| 802.11b        | SISO    | 2412            | 5.33                                      | <=30  | Pass    |
|                |         | 2437            | 5.51                                      | <=30  | Pass    |
|                |         | 2462            | 5.77                                      | <=30  | Pass    |
| 802.11g        | SISO    | 2412            | 5.97                                      | <=30  | Pass    |
|                |         | 2437            | 5.93                                      | <=30  | Pass    |
|                |         | 2462            | 5.94                                      | <=30  | Pass    |
| 802.11n (HT20) | SISO    | 2412            | 5.98                                      | <=30  | Pass    |
|                |         | 2437            | 5.95                                      | <=30  | Pass    |
|                |         | 2462            | 5.94                                      | <=30  | Pass    |

#### 4. Maximum Power Spectral Density

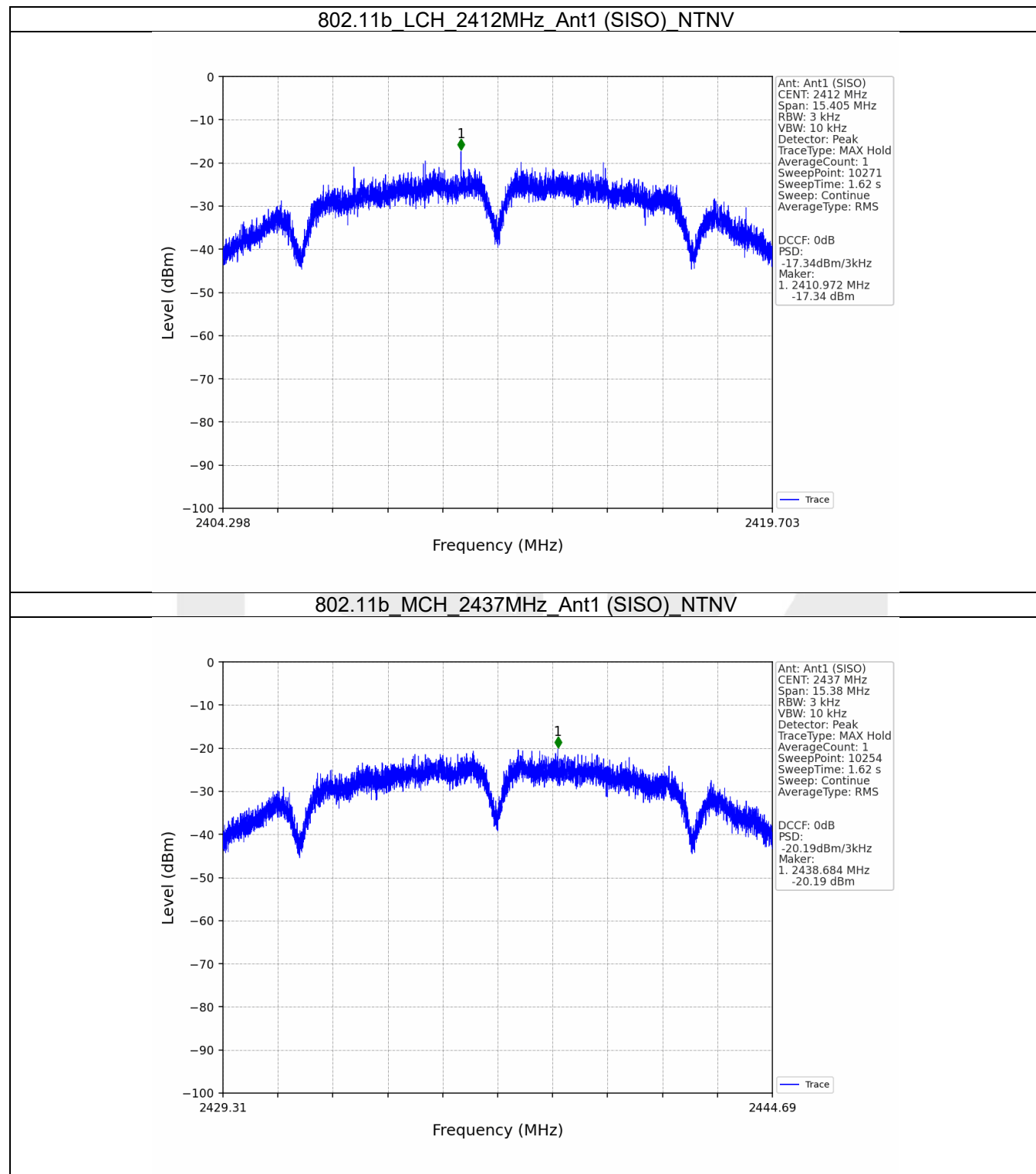
##### 4.1 Test Result

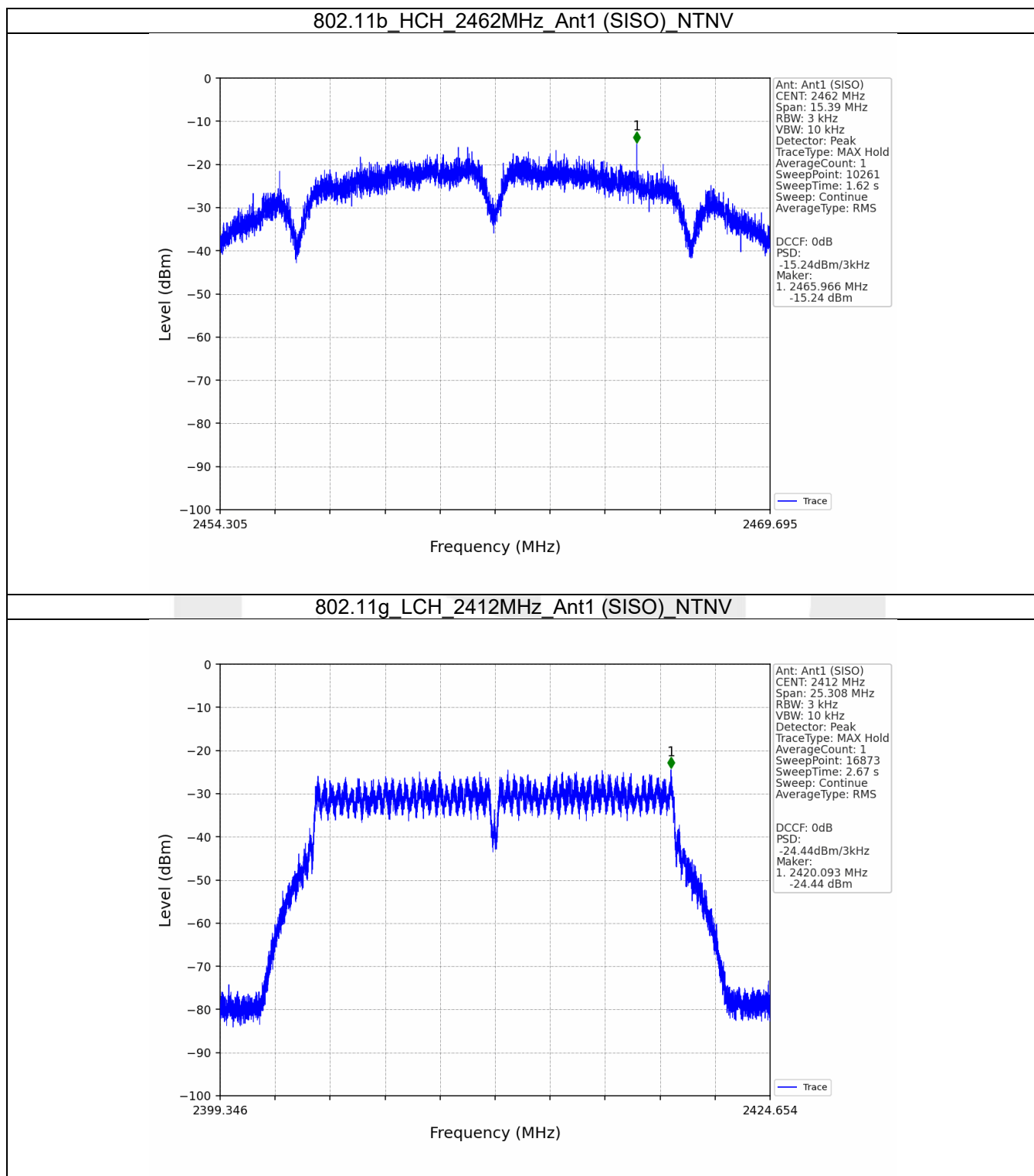
##### 4.1.1 PSD

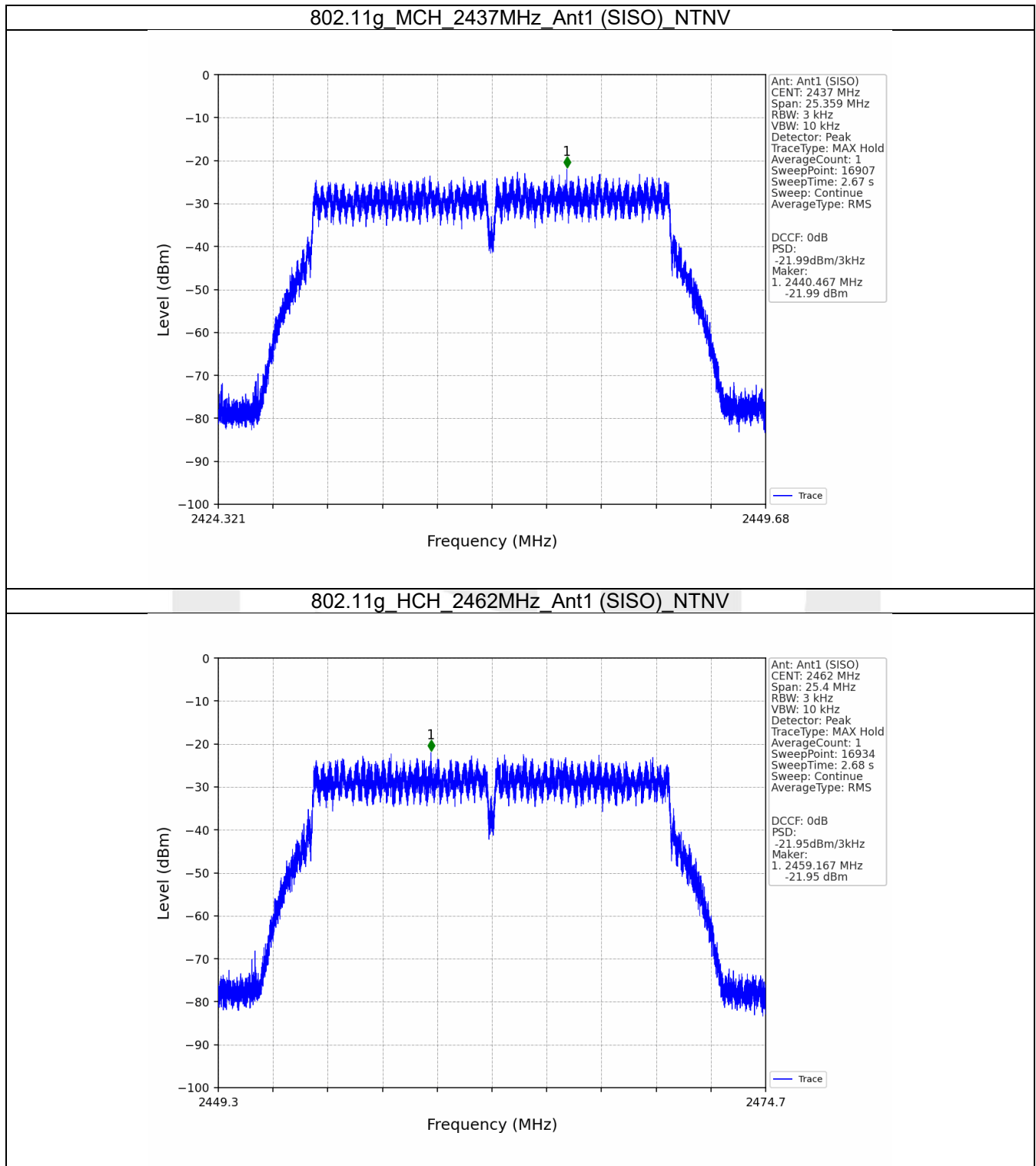
| Mode           | TX Type | Frequency (MHz) | Maximum PSD (dBm/3kHz) |       | Verdict |
|----------------|---------|-----------------|------------------------|-------|---------|
|                |         |                 | ANT1                   | Limit |         |
| 802.11b        | SISO    | 2412            | -17.34                 | <=8   | Pass    |
|                |         | 2437            | -20.19                 | <=8   | Pass    |
|                |         | 2462            | -15.24                 | <=8   | Pass    |
| 802.11g        | SISO    | 2412            | -24.44                 | <=8   | Pass    |
|                |         | 2437            | -21.99                 | <=8   | Pass    |
|                |         | 2462            | -21.95                 | <=8   | Pass    |
| 802.11n (HT20) | SISO    | 2412            | -23.71                 | <=8   | Pass    |
|                |         | 2437            | -22.80                 | <=8   | Pass    |
|                |         | 2462            | -37.64                 | <=8   | Pass    |

## 4.2 Test Graph

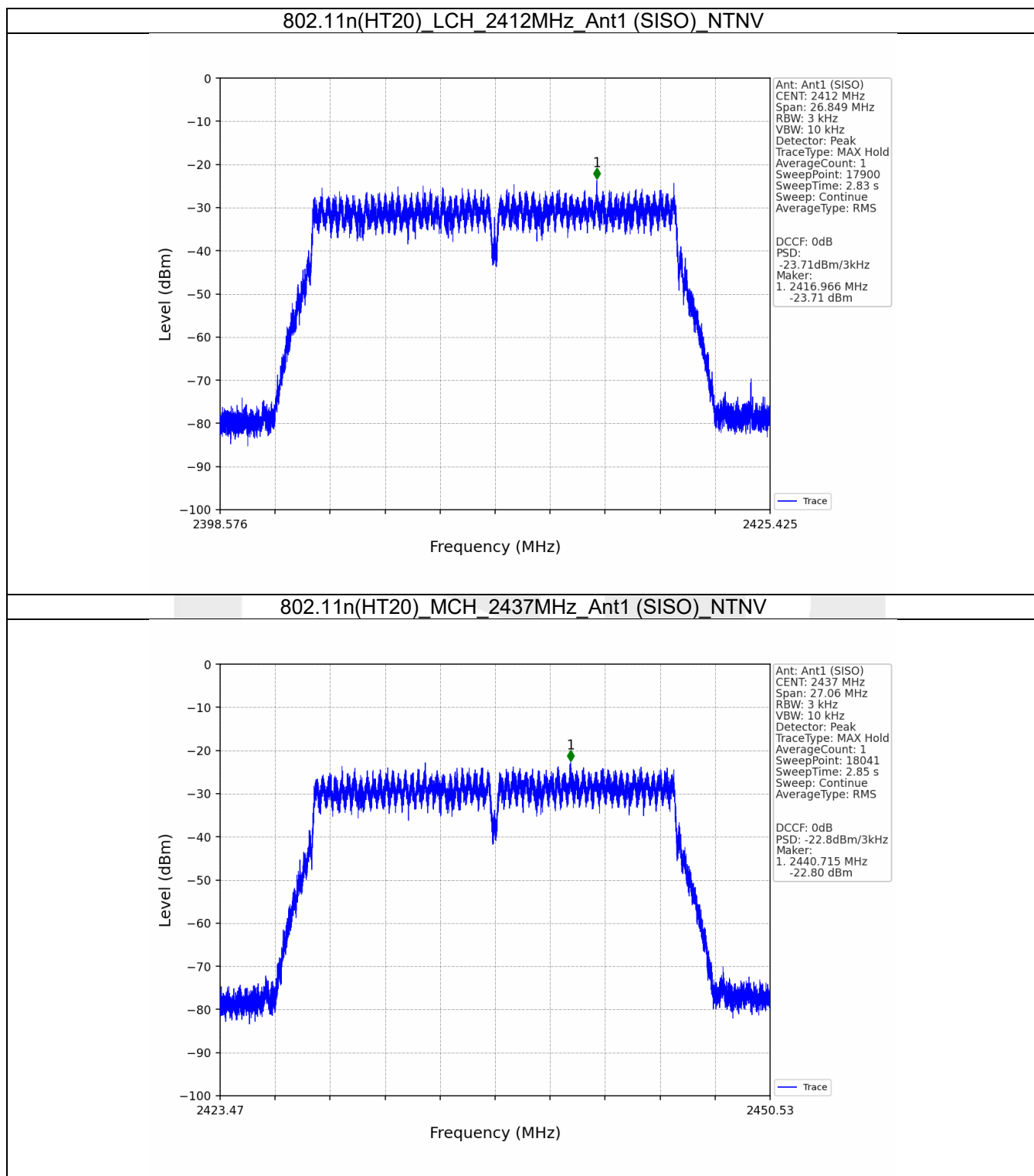
### 4.2.1 PSD

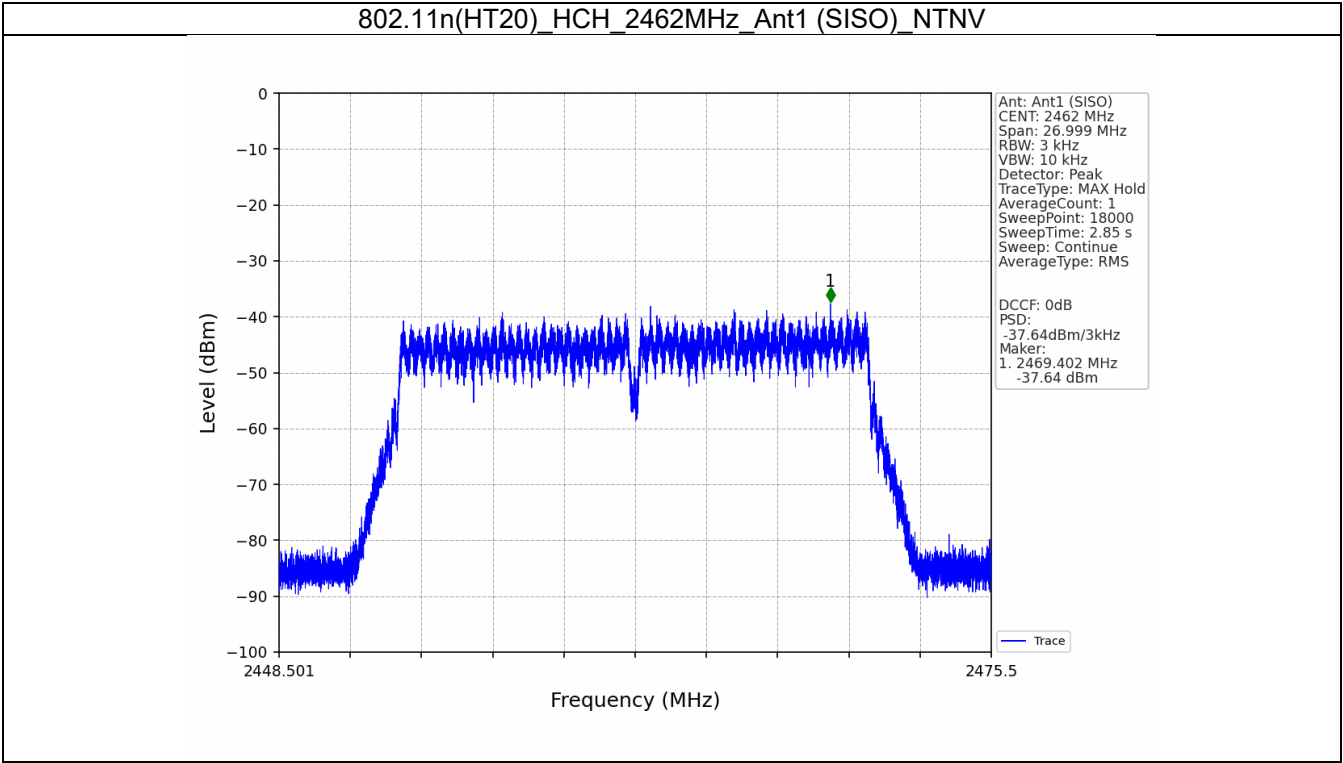












## 5. Unwanted Emissions In Non-restricted Frequency Bands

### 5.1 Test Result

#### 5.1.1 Ref

| Mode           | TX Type | Frequency (MHz) | ANT | Level of Reference (dBm) |
|----------------|---------|-----------------|-----|--------------------------|
| 802.11b        | SISO    | 2412            | 1   | -6.18                    |
|                |         | 2437            | 1   | -5.98                    |
|                |         | 2462            | 1   | -2.17                    |
| 802.11g        | SISO    | 2412            | 1   | -10.90                   |
|                |         | 2437            | 1   | -8.06                    |
|                |         | 2462            | 1   | -7.25                    |
| 802.11n (HT20) | SISO    | 2412            | 1   | -10.17                   |
|                |         | 2437            | 1   | -8.05                    |
|                |         | 2462            | 1   | -23.36                   |

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.

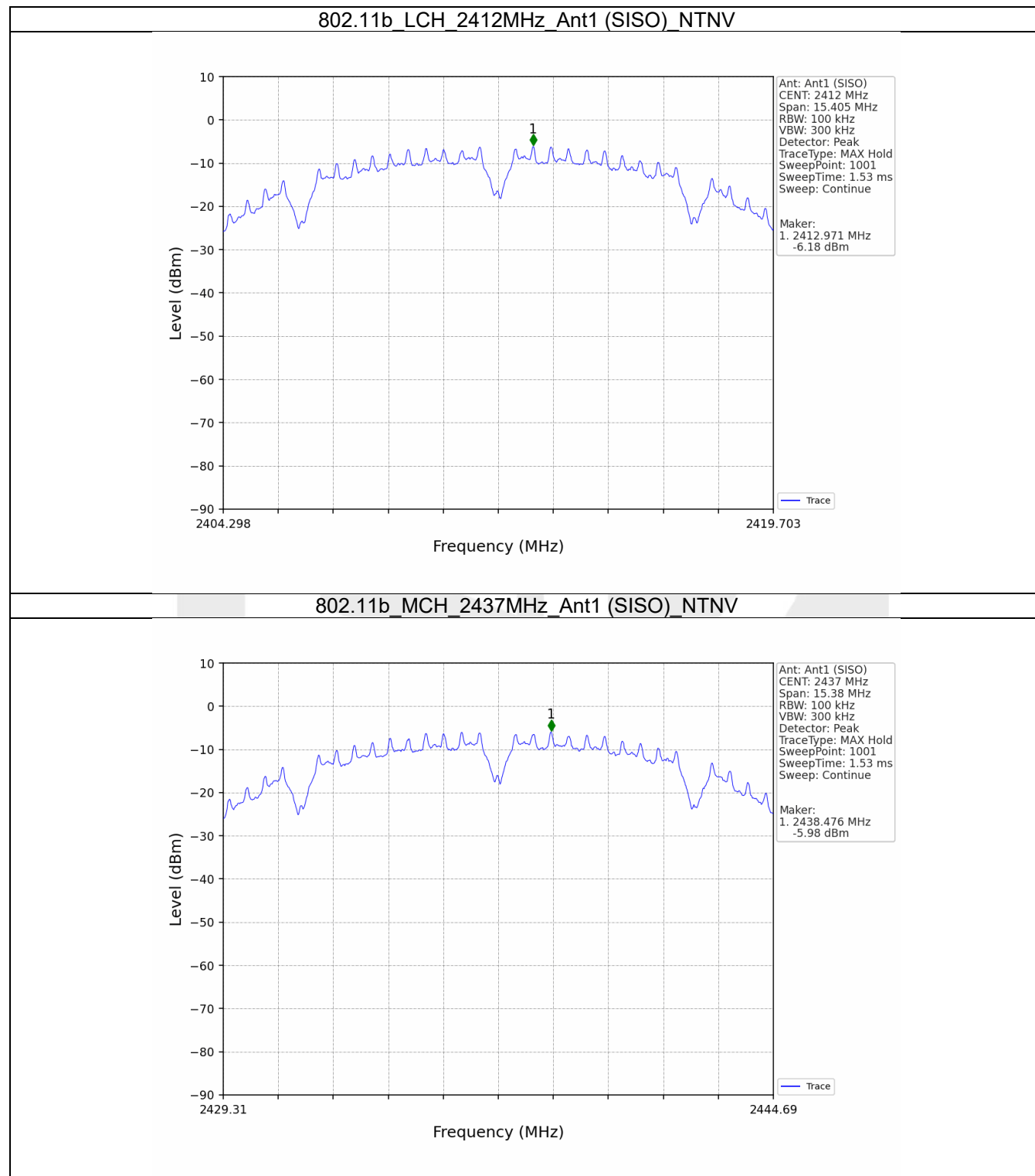
#### 5.1.2 CSE

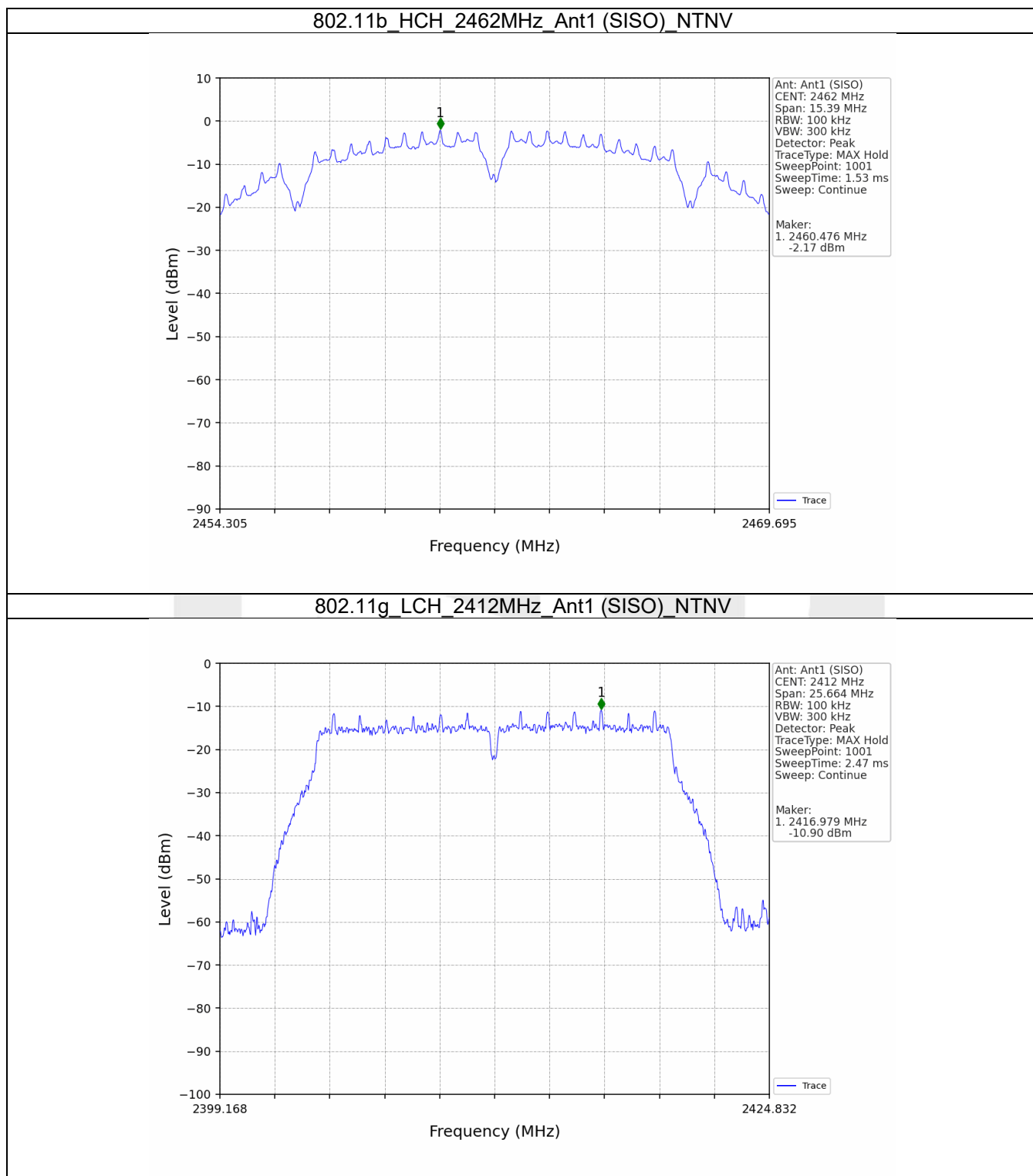
| Mode           | TX Type | Frequency (MHz) | ANT | Level of Reference (dBm) | Limit (dBm) | Verdict |
|----------------|---------|-----------------|-----|--------------------------|-------------|---------|
| 802.11b        | SISO    | 2412            | 1   | -6.18                    | -26.18      | Pass    |
|                |         | 2437            | 1   | -5.98                    | -25.98      | Pass    |
|                |         | 2462            | 1   | -2.17                    | -22.17      | Pass    |
| 802.11g        | SISO    | 2412            | 1   | -10.90                   | -30.90      | Pass    |
|                |         | 2437            | 1   | -8.06                    | -28.06      | Pass    |
|                |         | 2462            | 1   | -7.25                    | -27.25      | Pass    |
| 802.11n (HT20) | SISO    | 2412            | 1   | -10.17                   | -30.17      | Pass    |
|                |         | 2437            | 1   | -8.05                    | -28.05      | Pass    |
|                |         | 2462            | 1   | -23.36                   | -43.36      | Pass    |

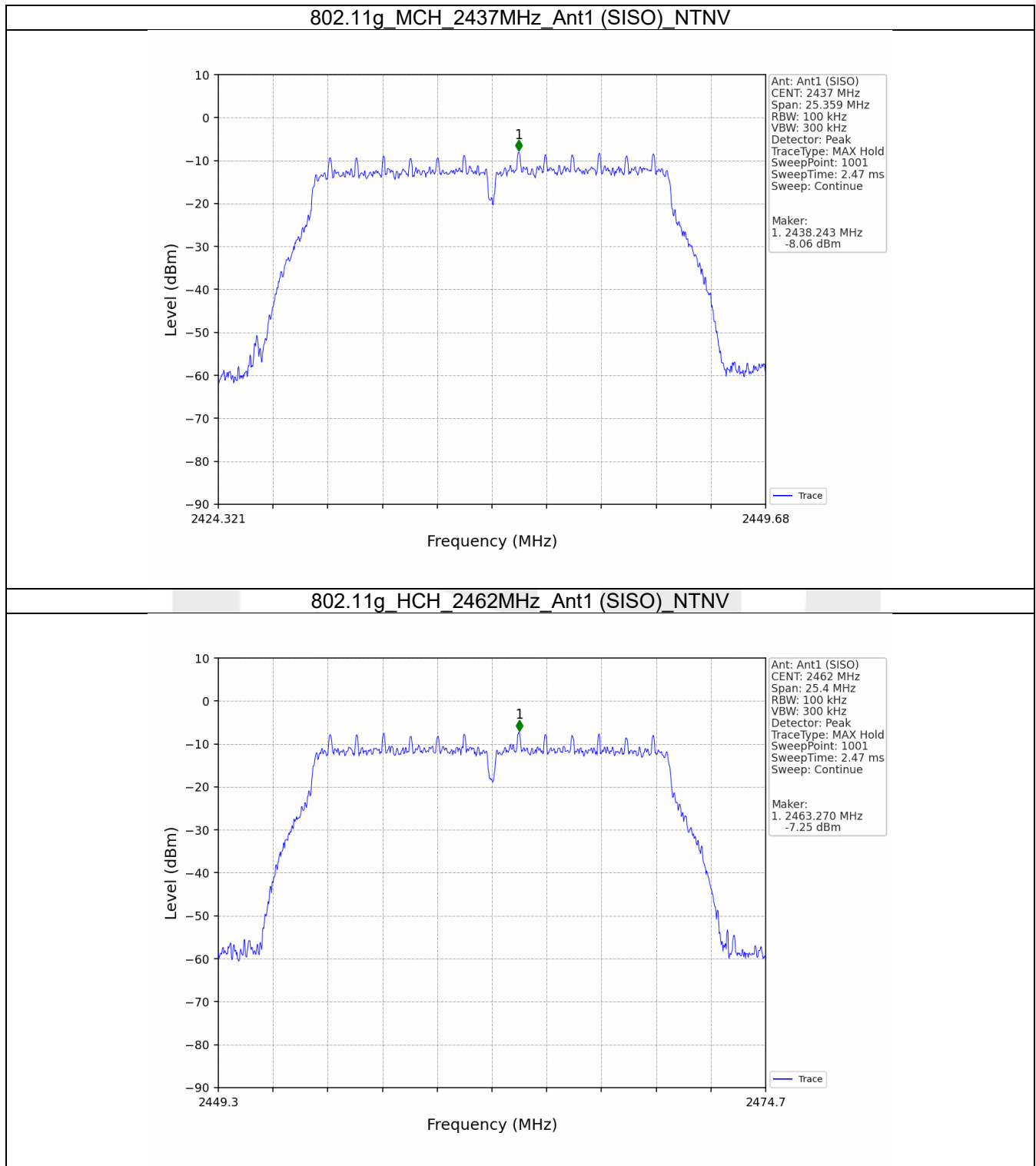
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

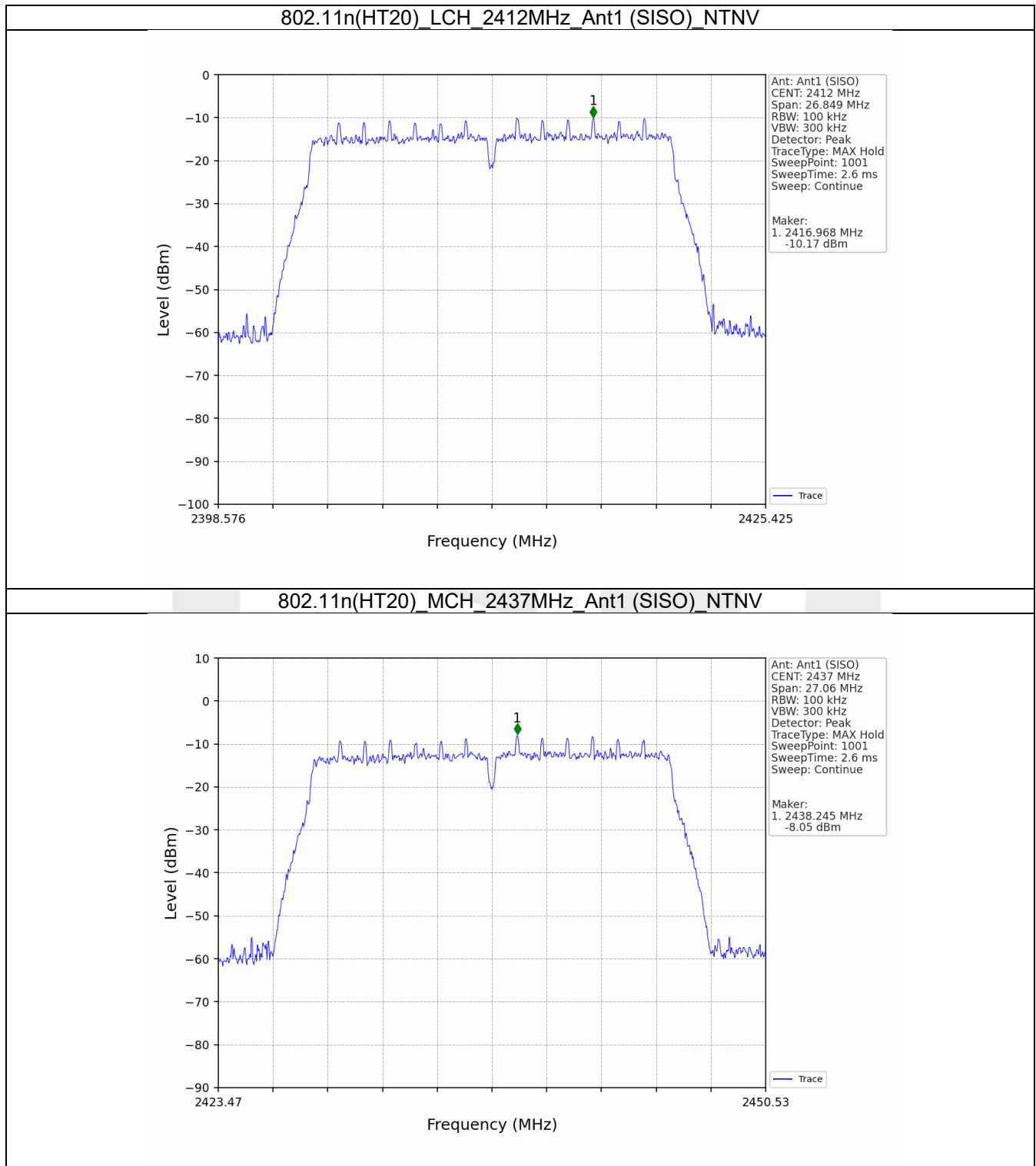
## 5.2 Test Graph

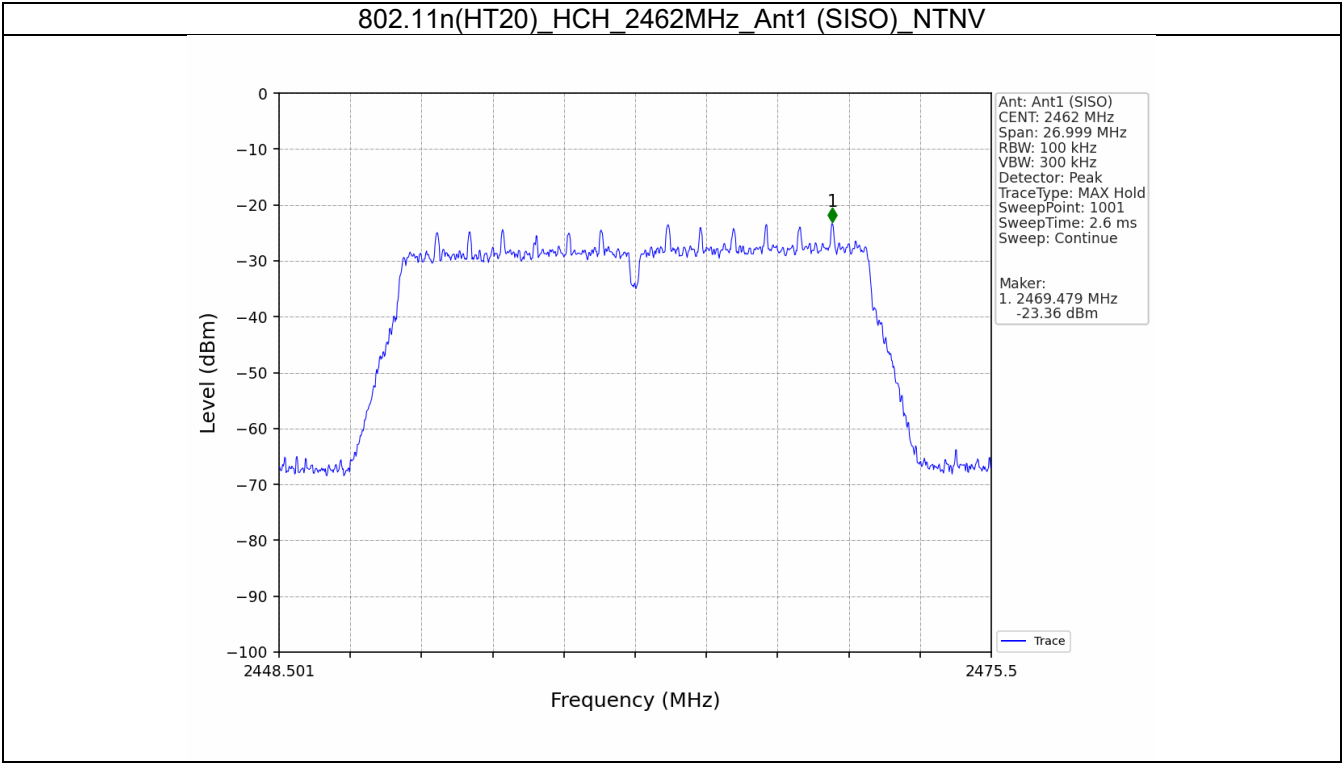
### 5.2.1 Ref





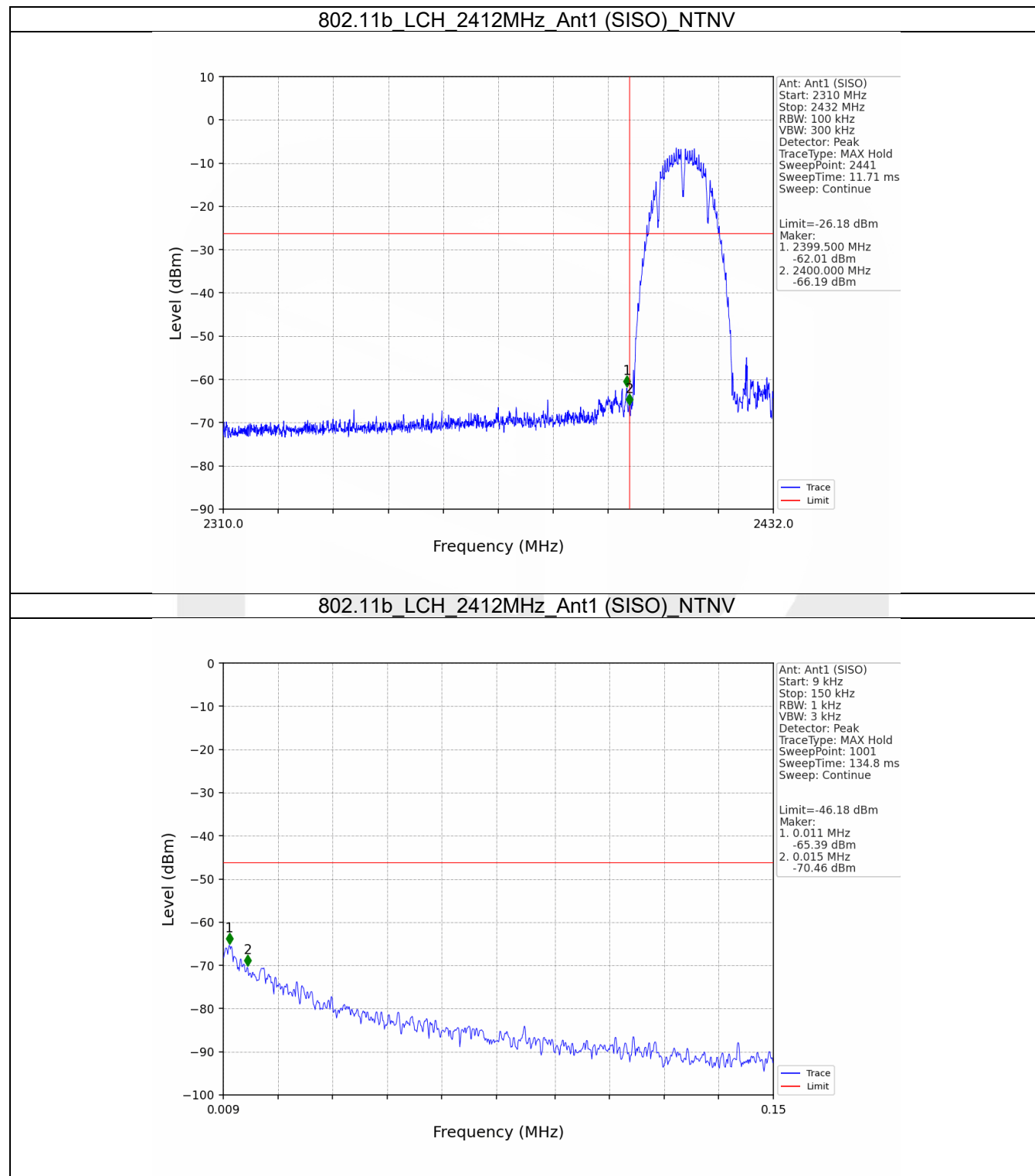


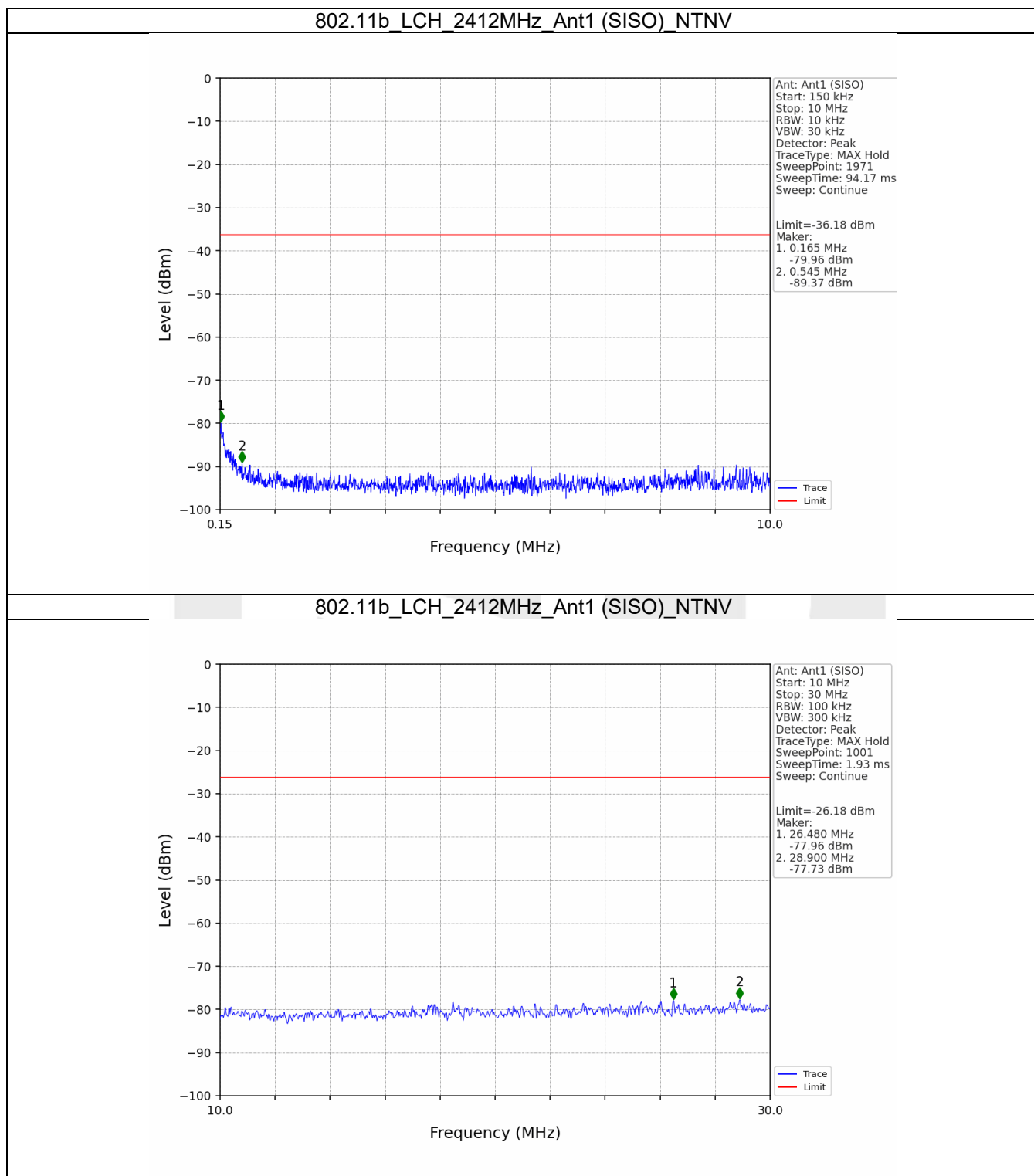


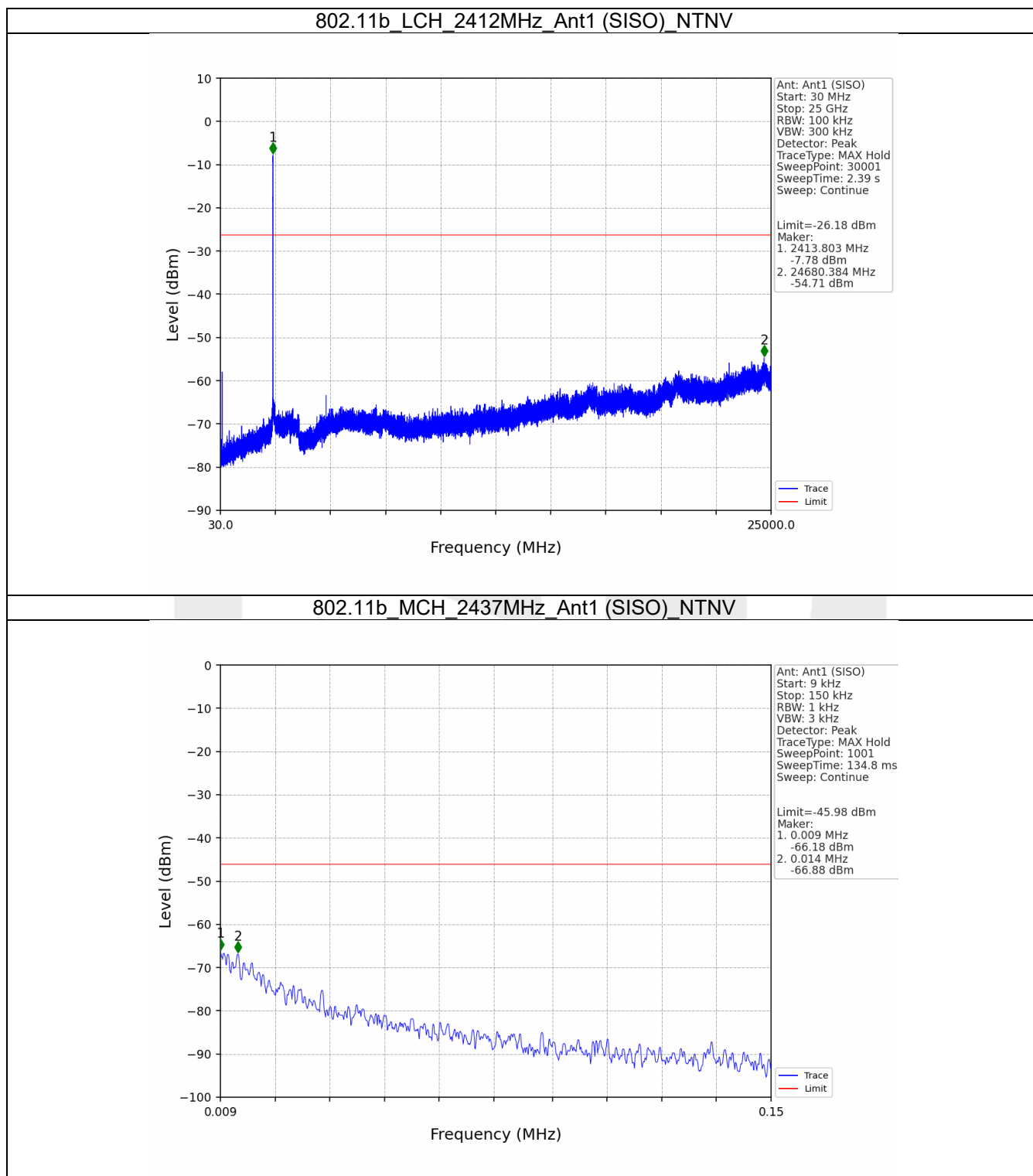


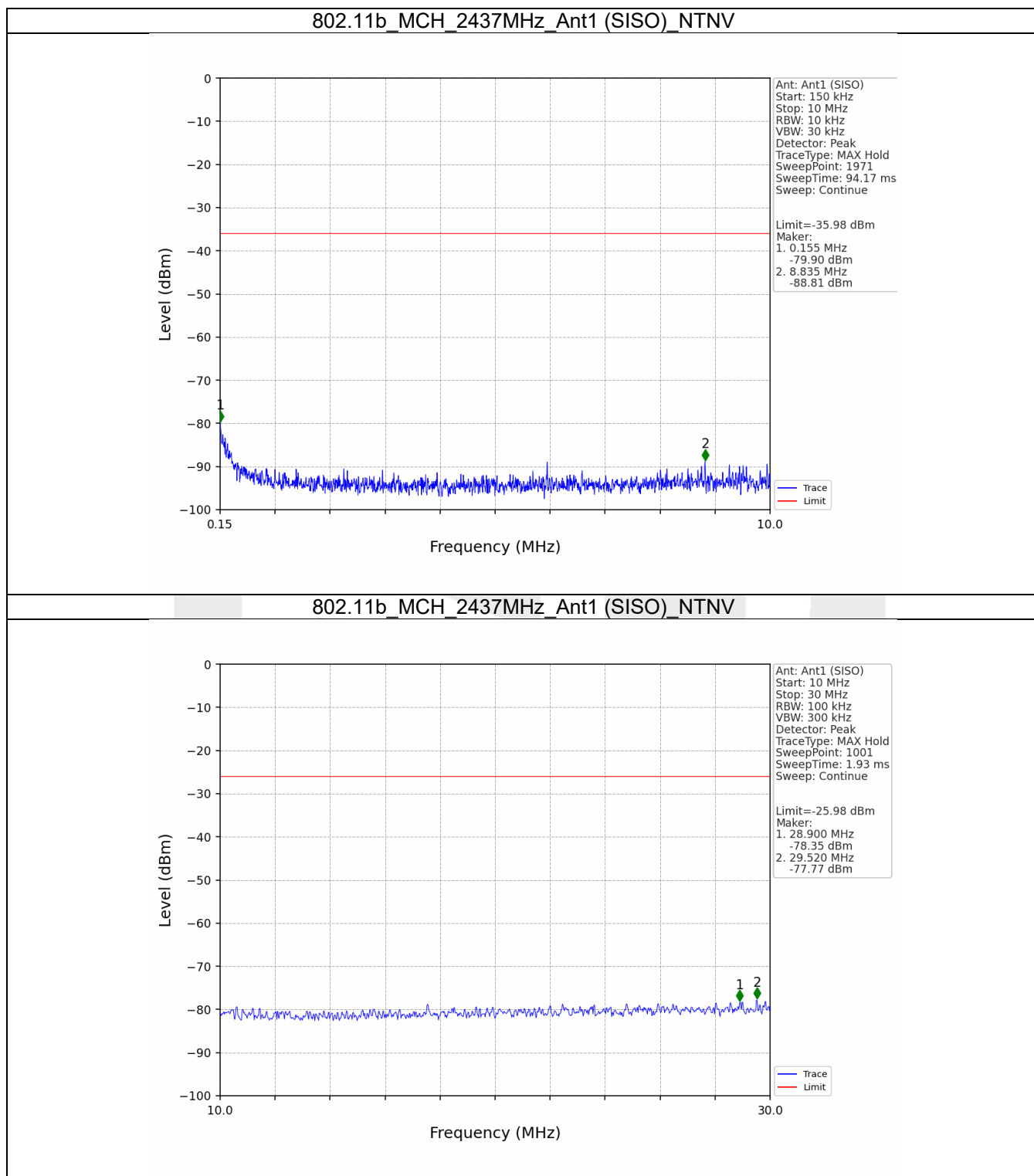


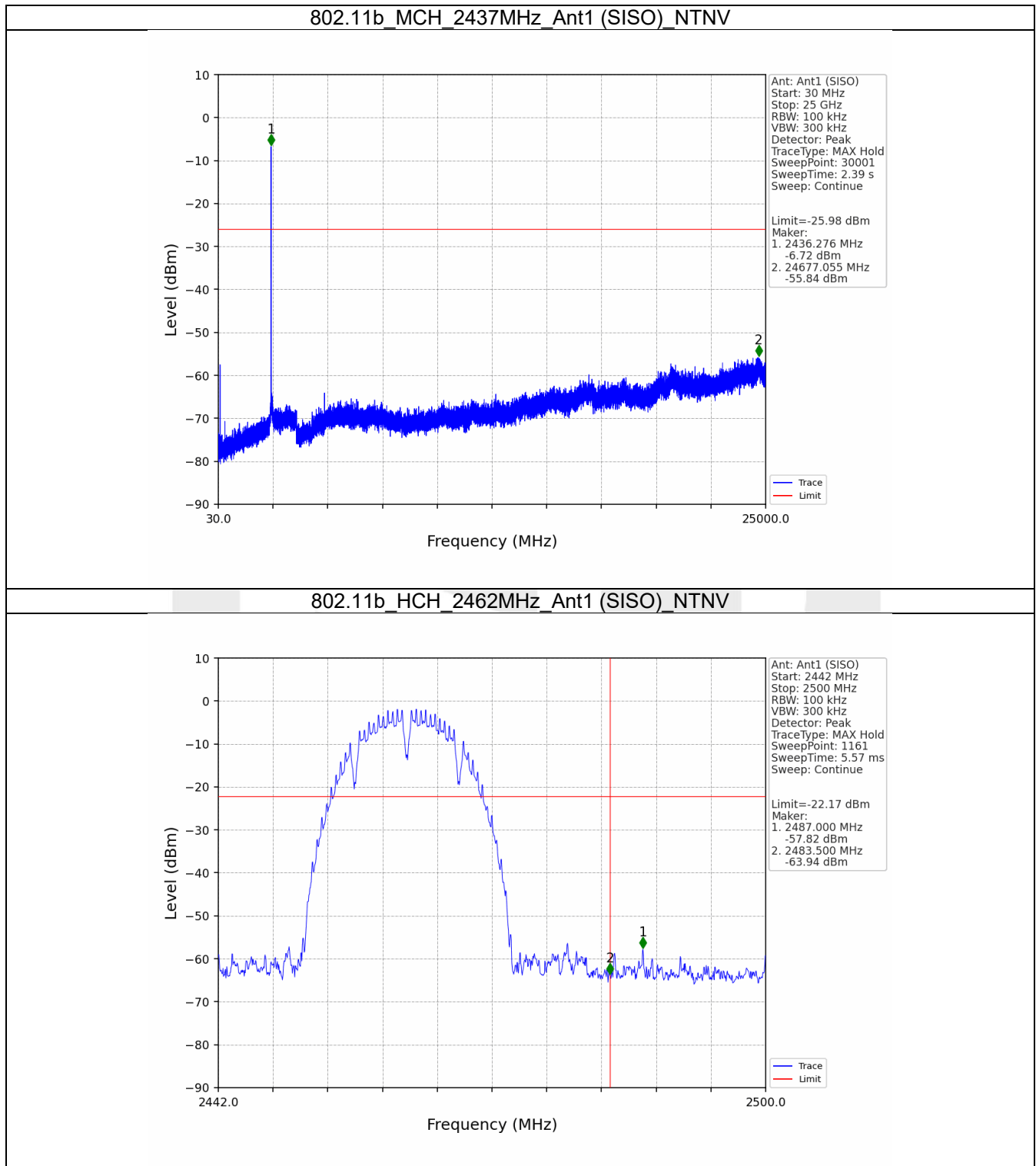
## 5.2.2 CSE

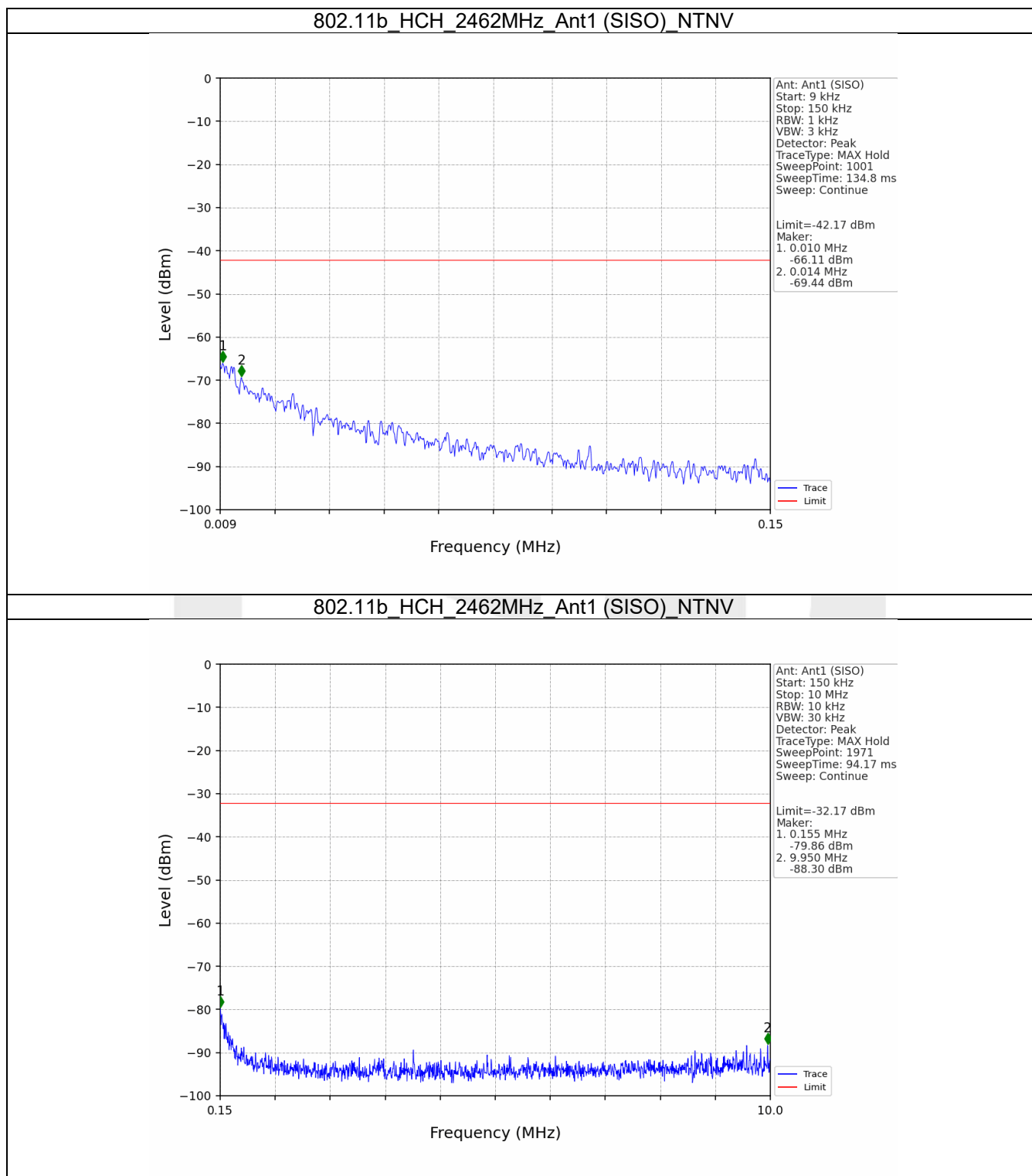


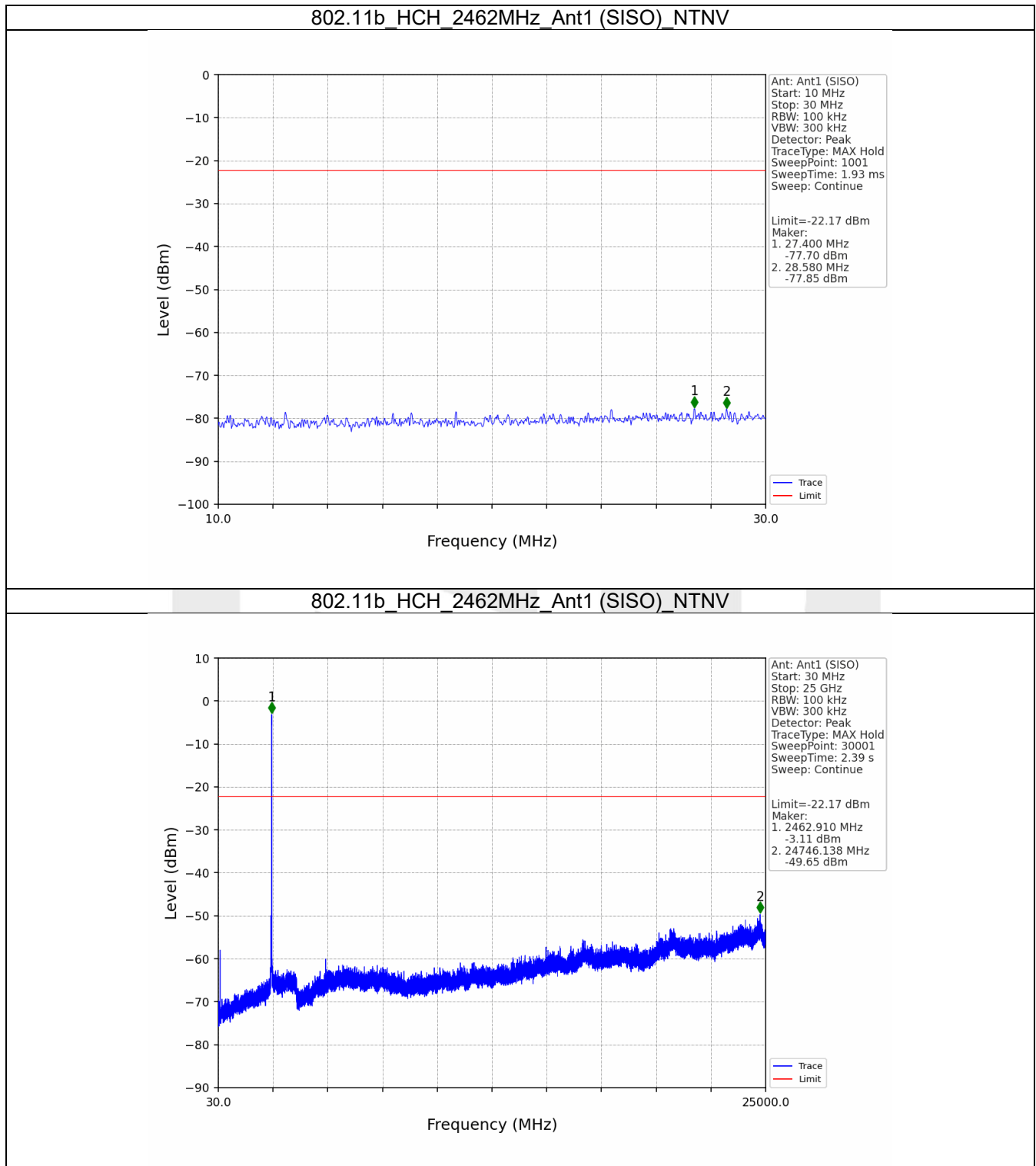


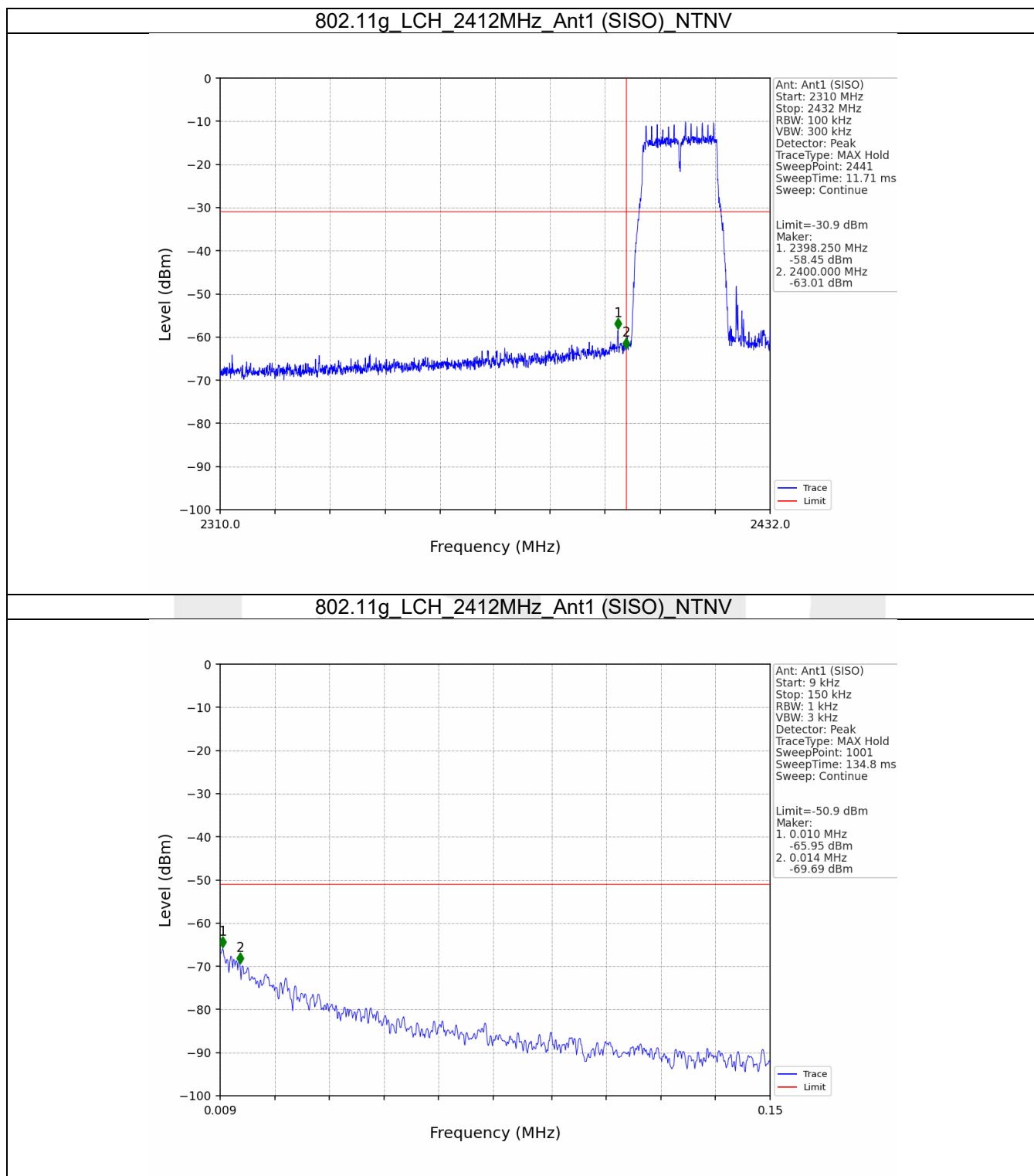




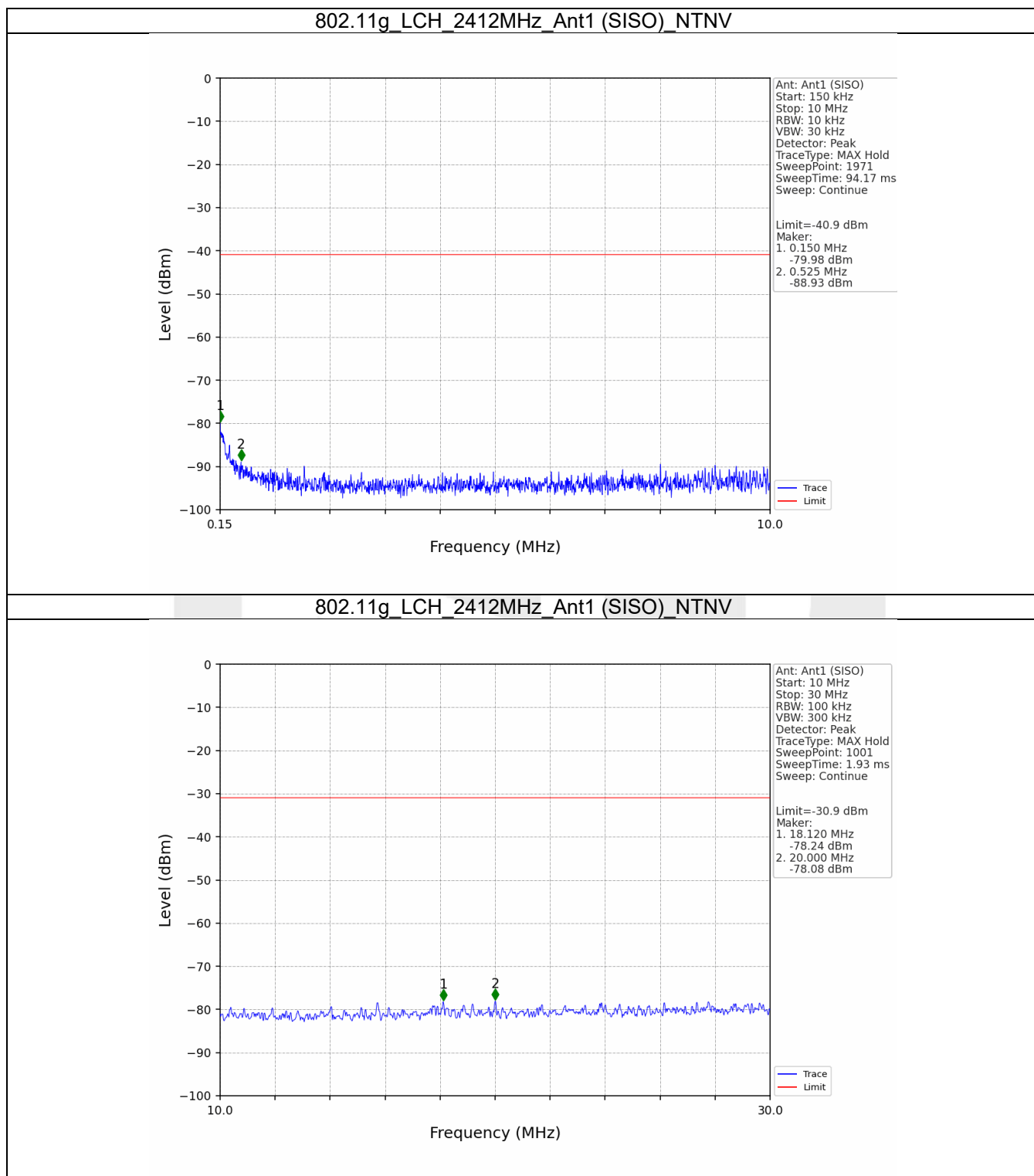


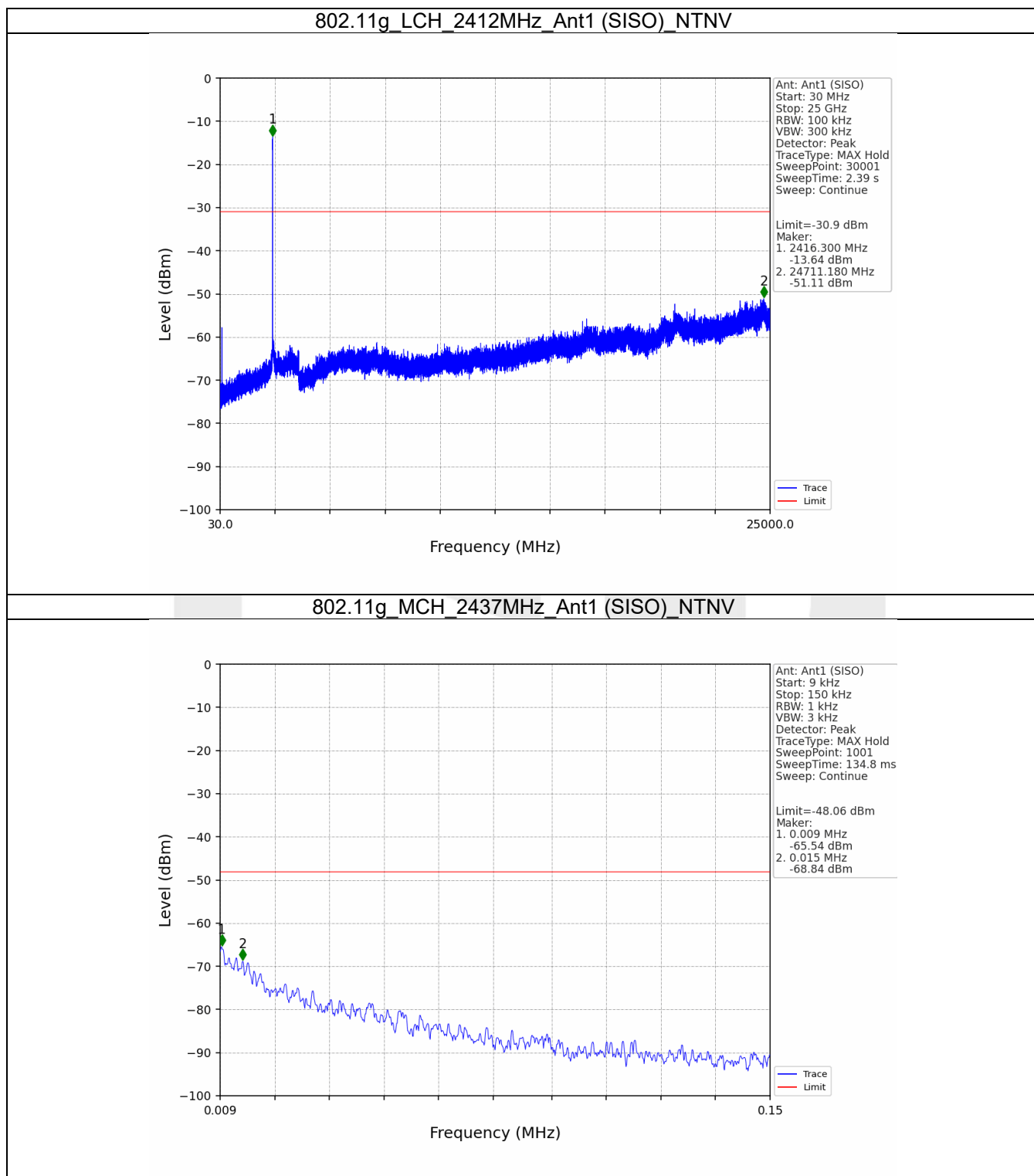


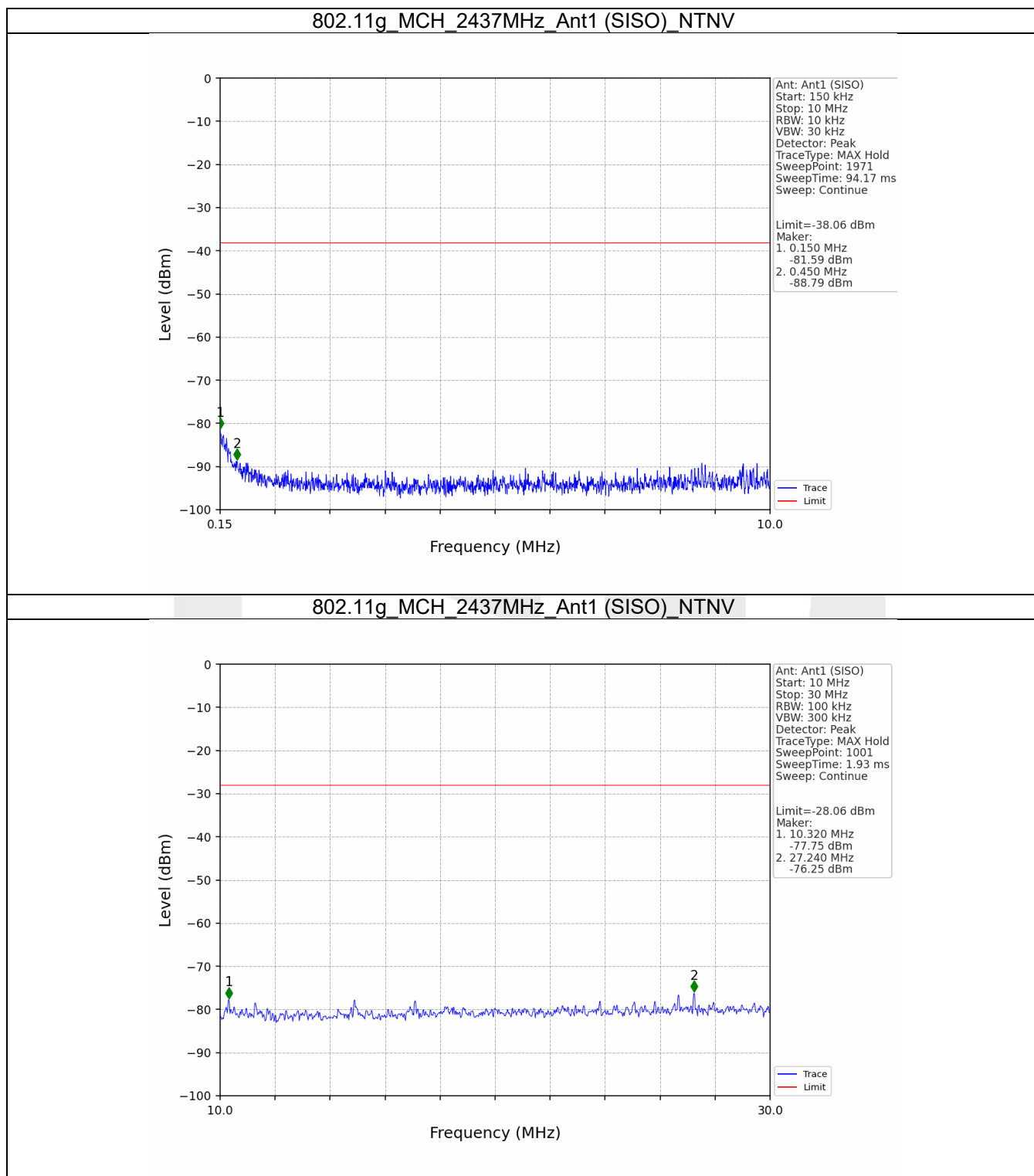


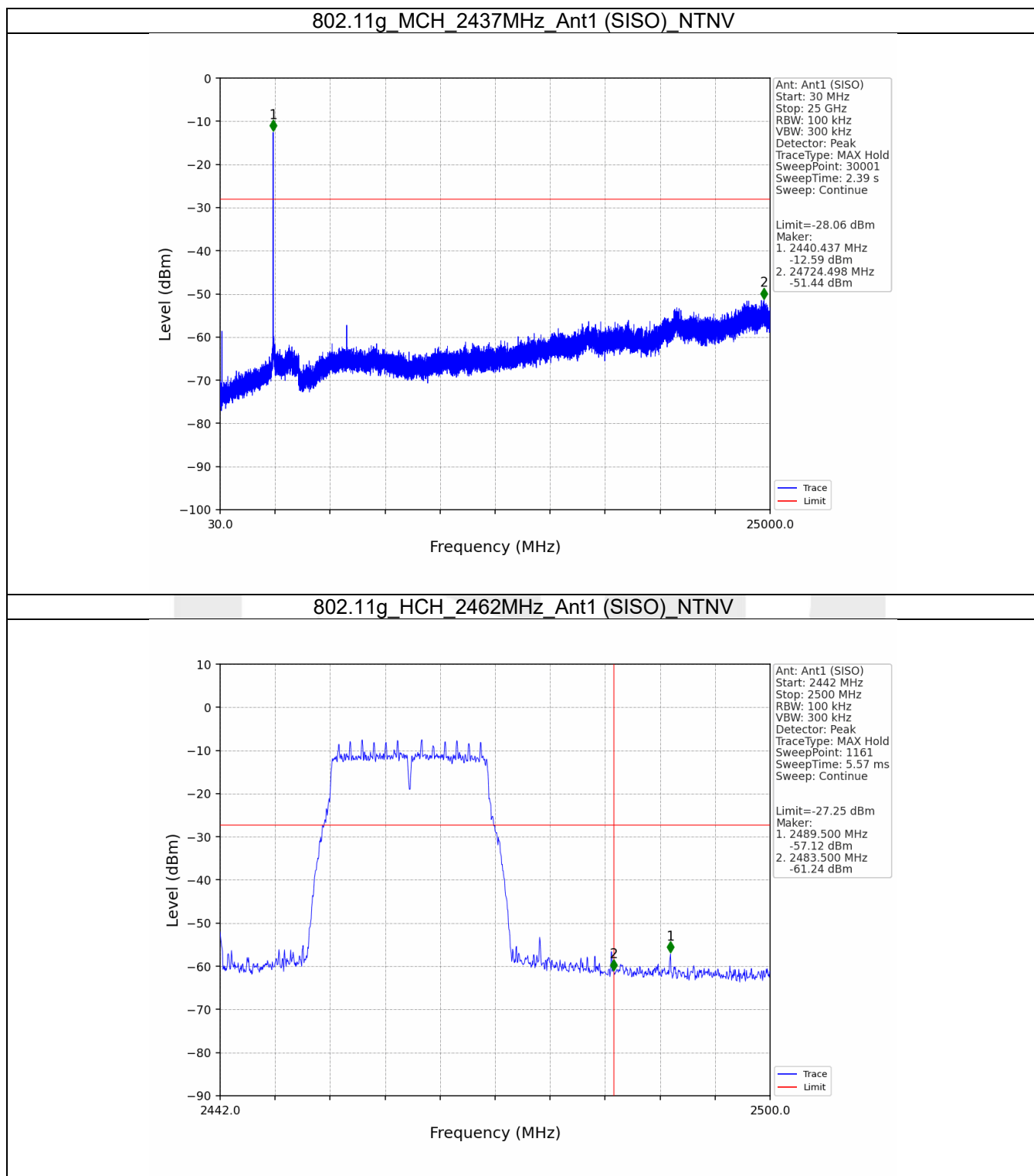


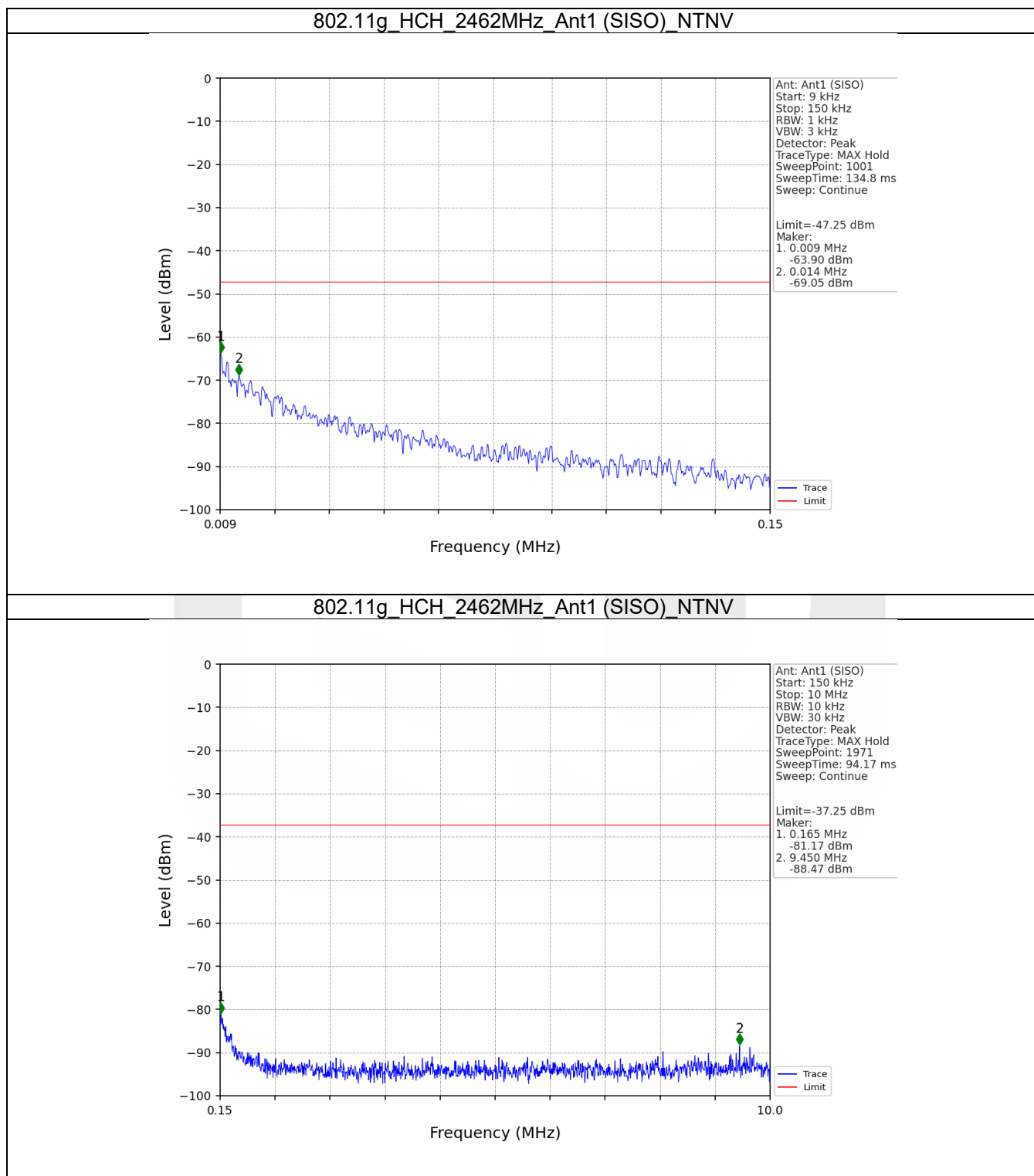


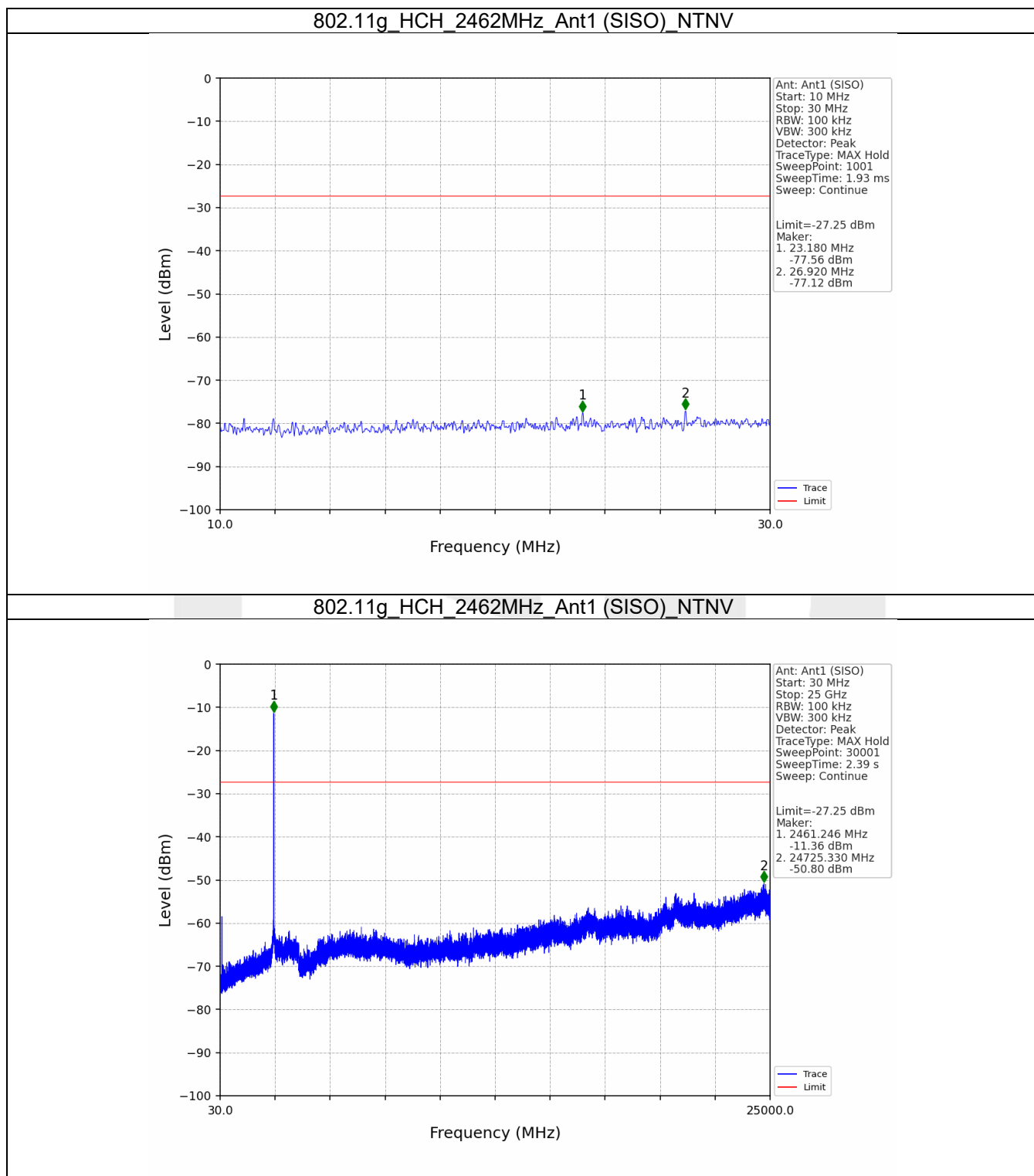


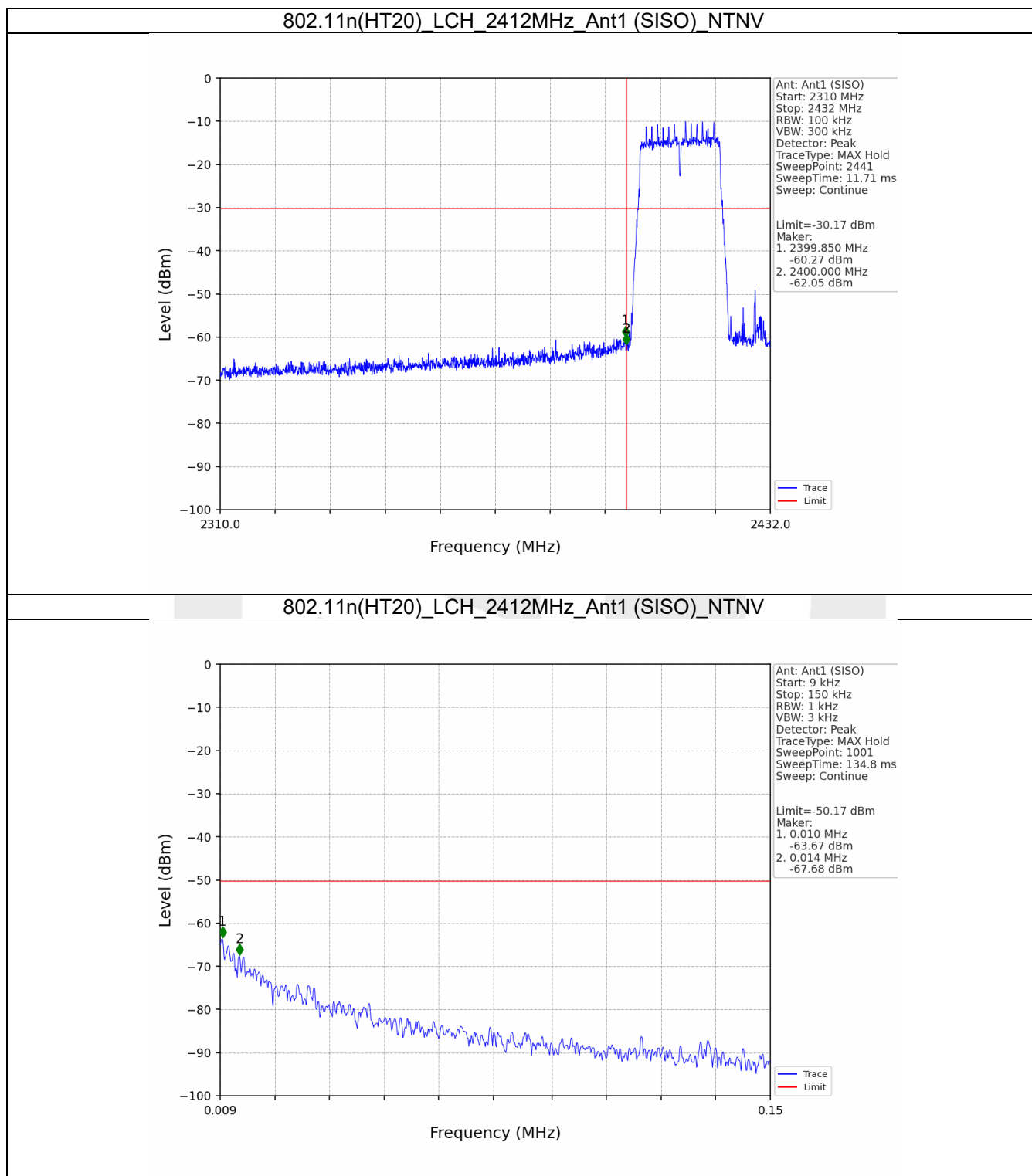


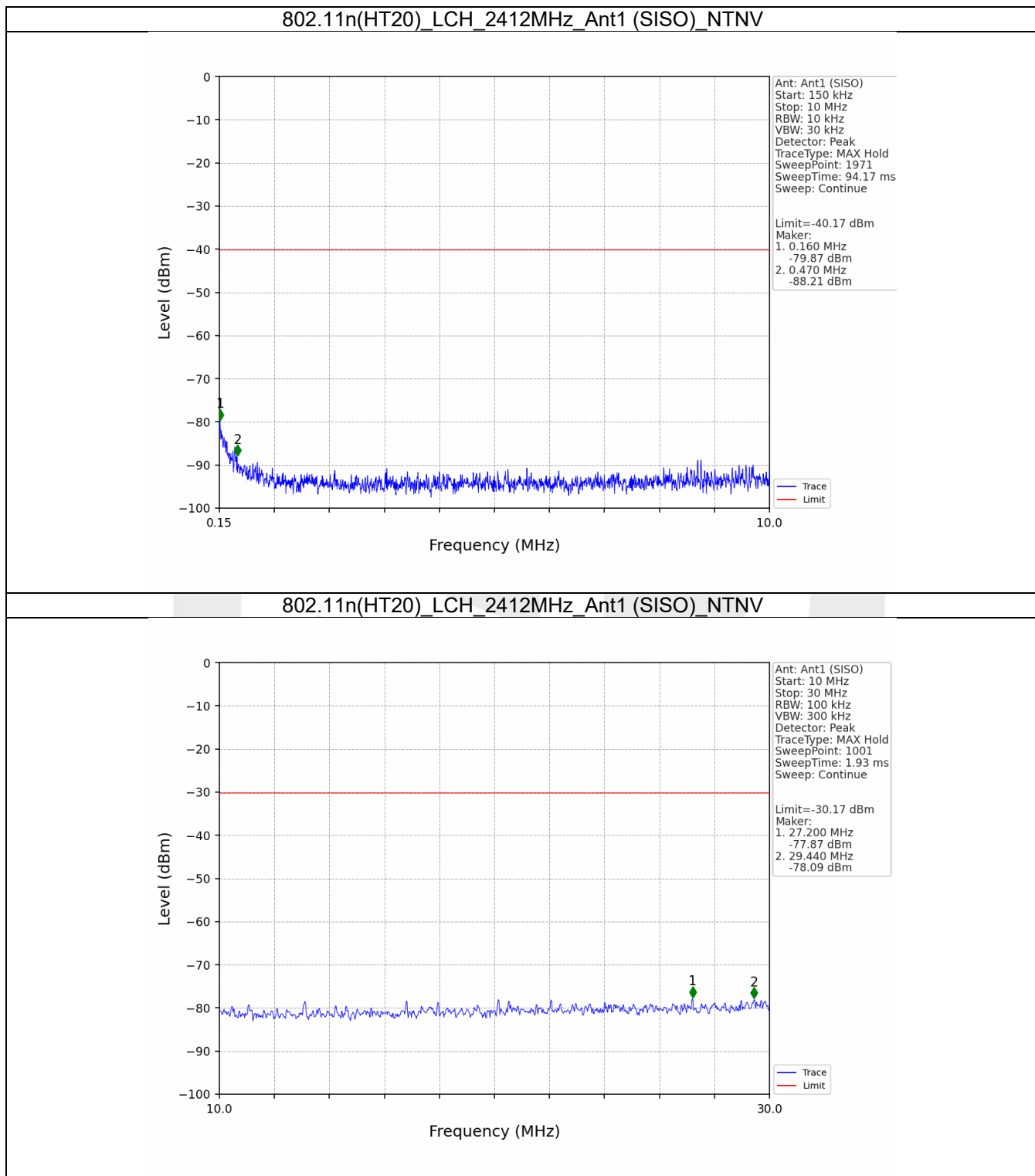




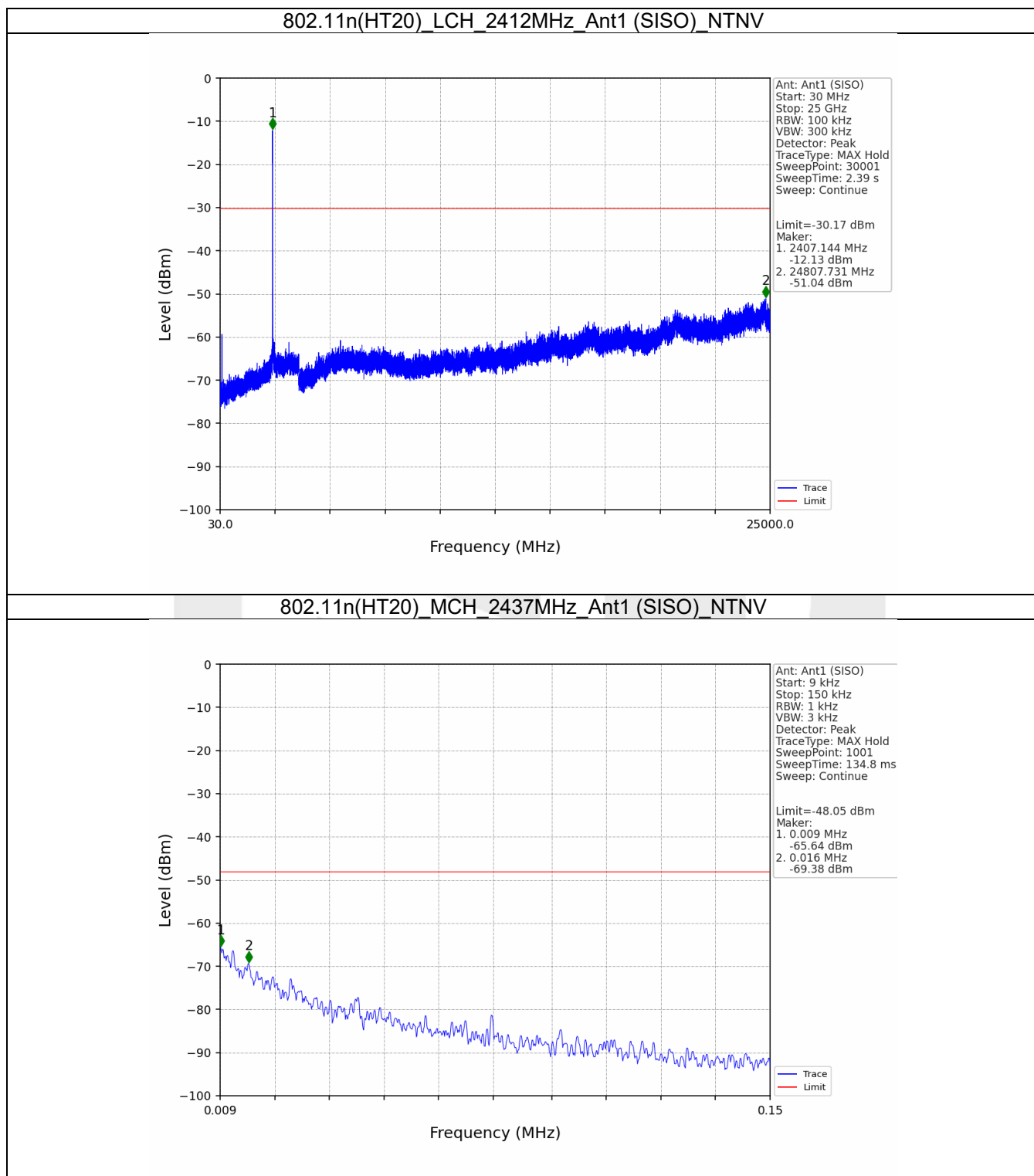


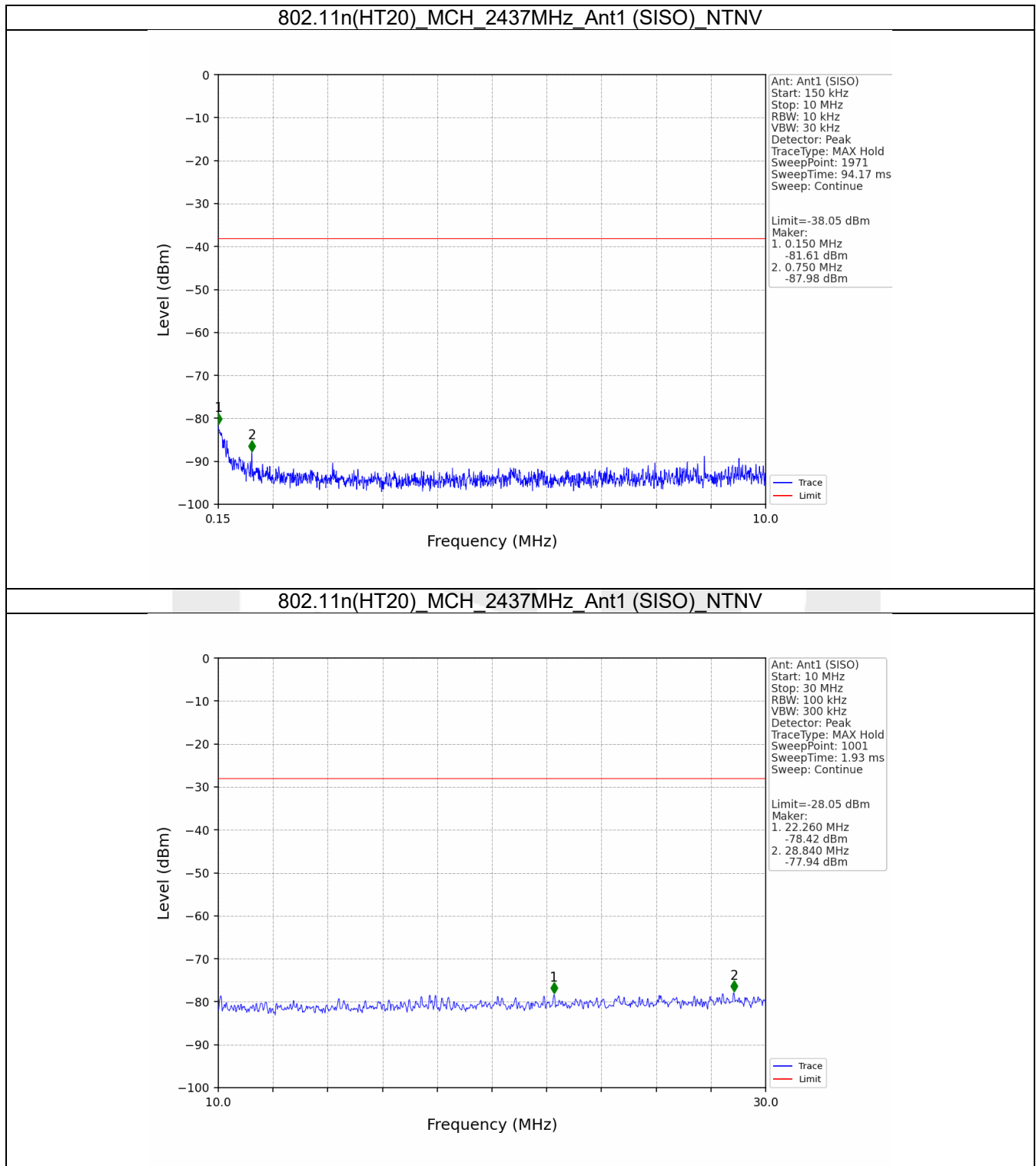


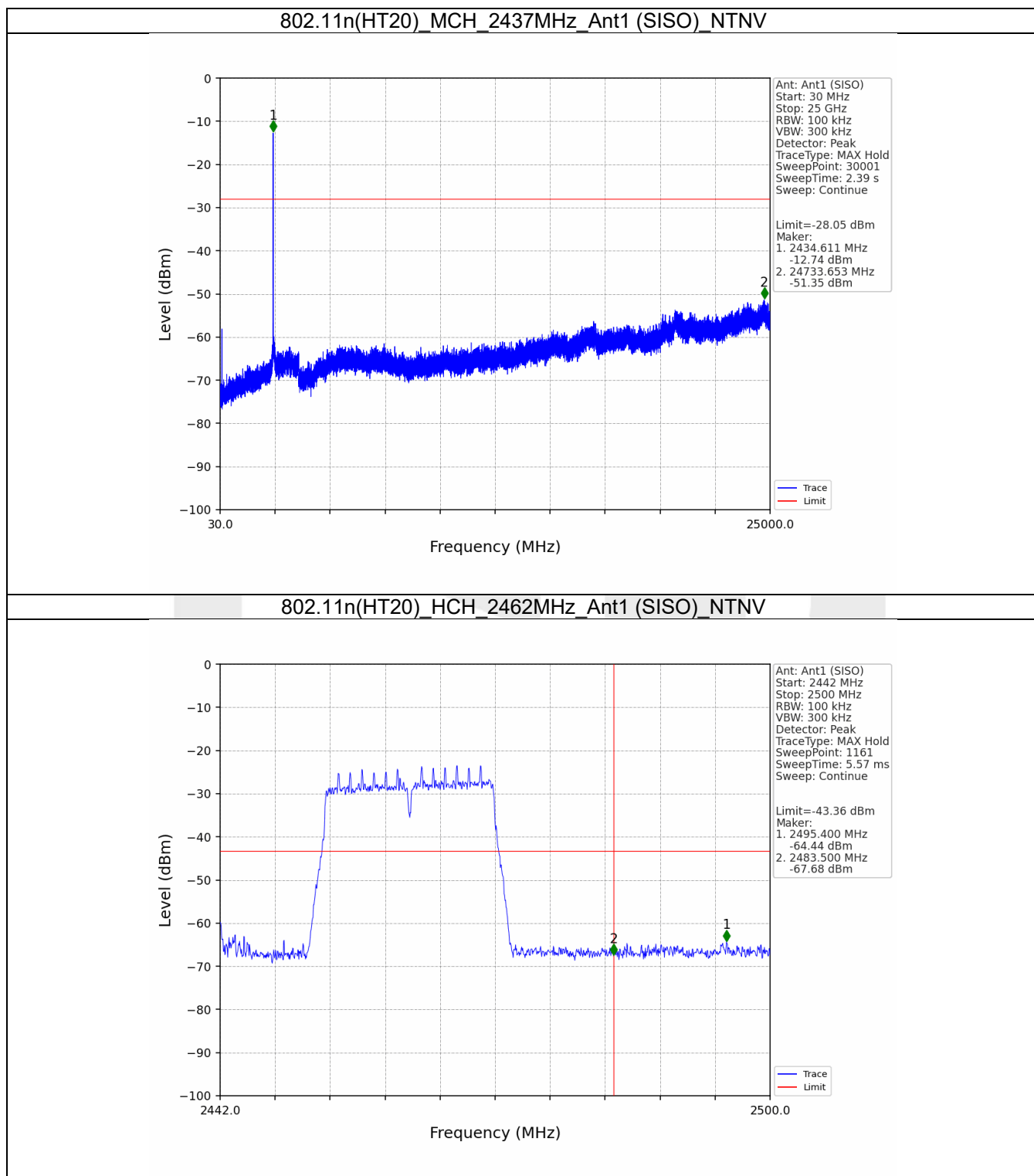


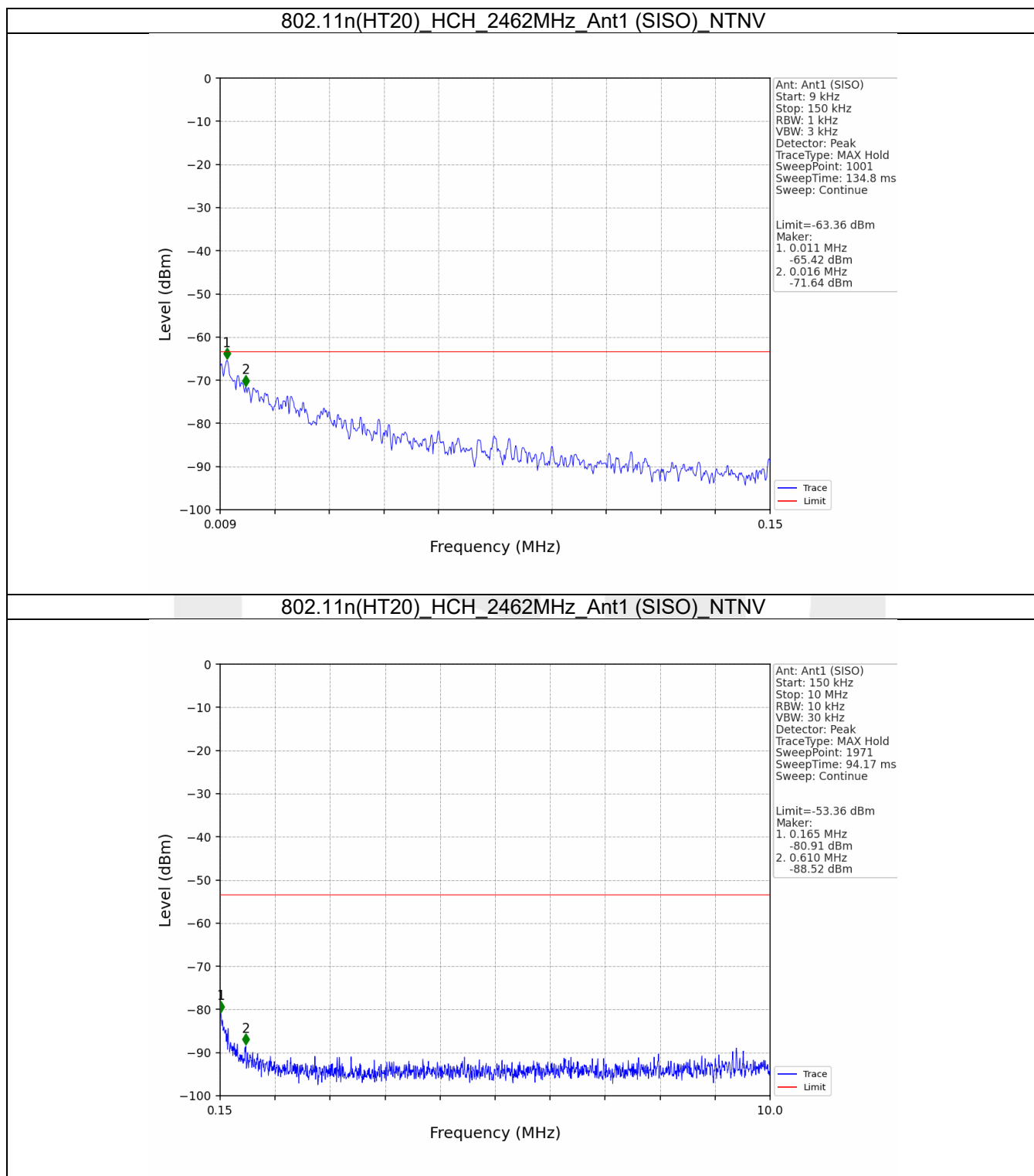


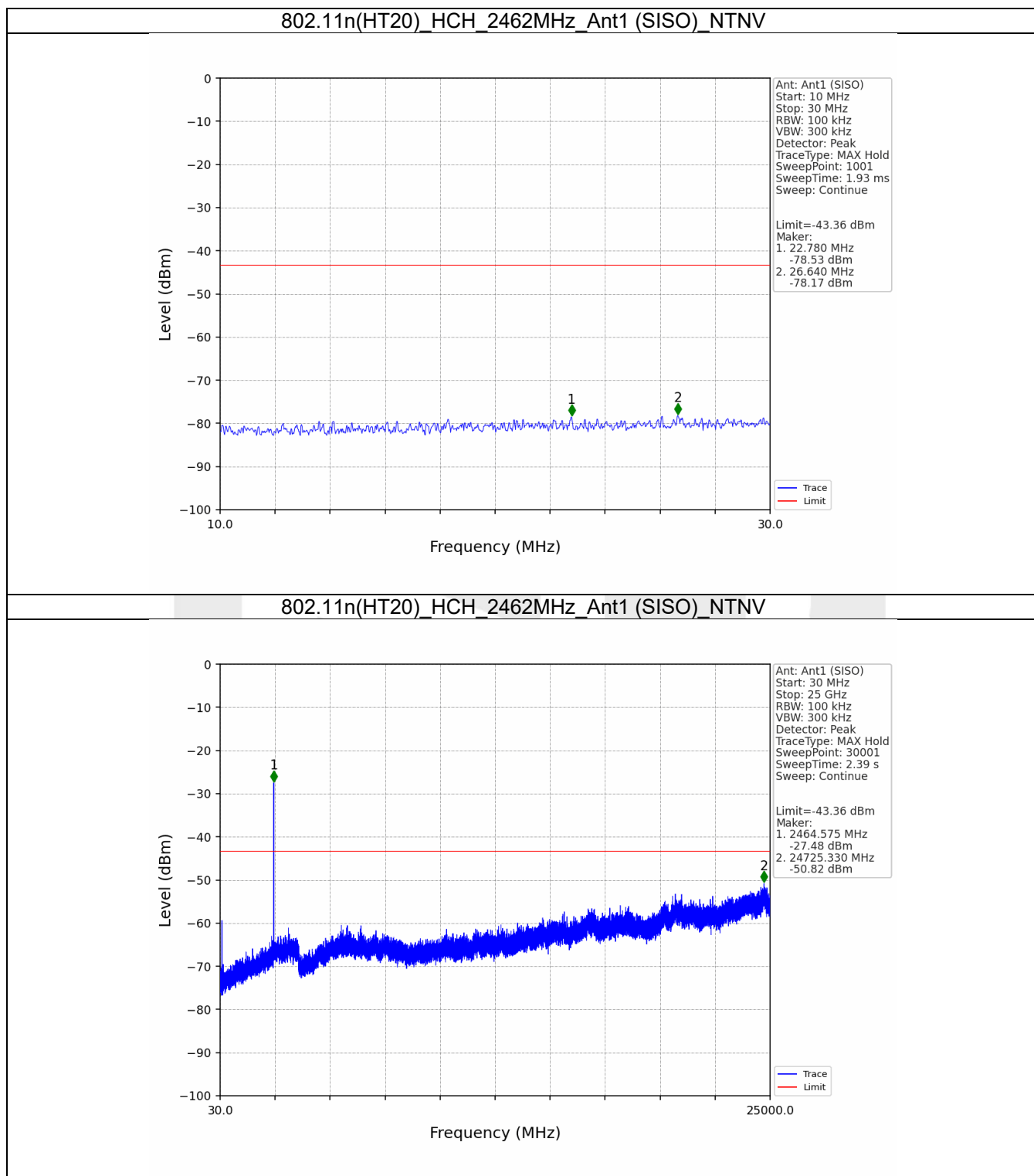












----- End of Report -----