

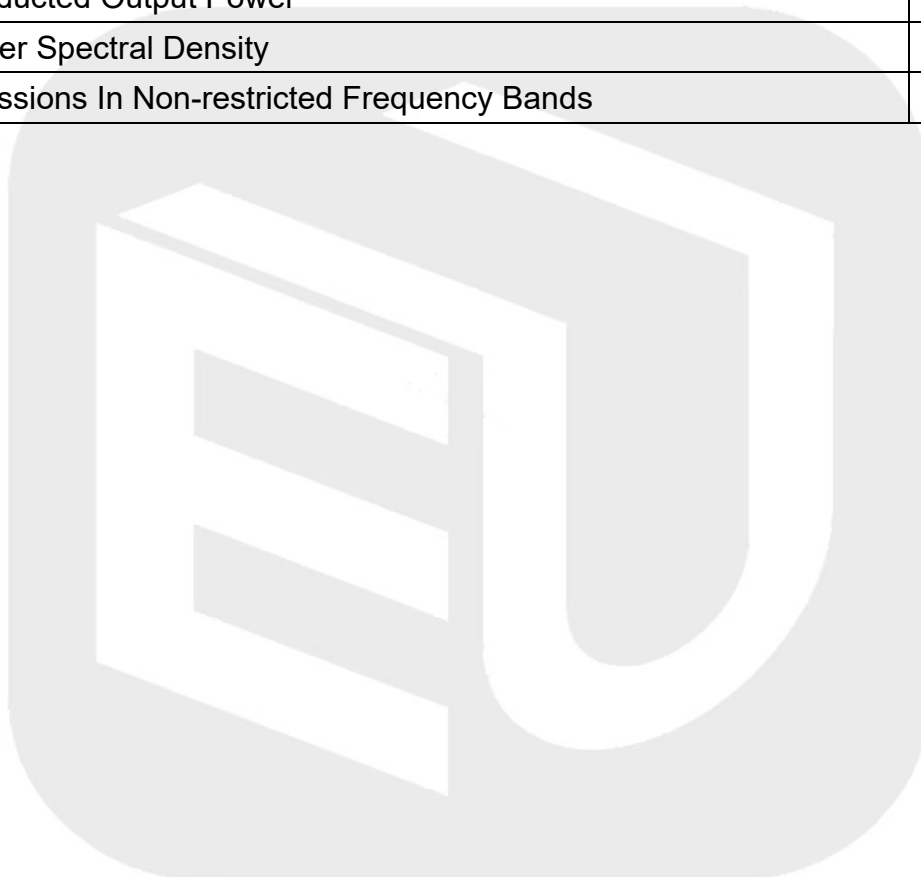
## ANNEX E TEST DATA

For

|                |                                 |
|----------------|---------------------------------|
| Project No.:   | 8234EU012201W                   |
| Client:        | Shenzhen Qianyan Technology LTD |
| Product Name:  | Smart Gateway 1s                |
| Model No.:     | H5044                           |
| FCC ID:        | 2A7VD-H5044                     |
| Technology:    | WiFi 2.4G                       |
| Test Engineer: | <i>Mikoy zhu</i>                |
| Test Date:     | 2024-10-26                      |

## 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

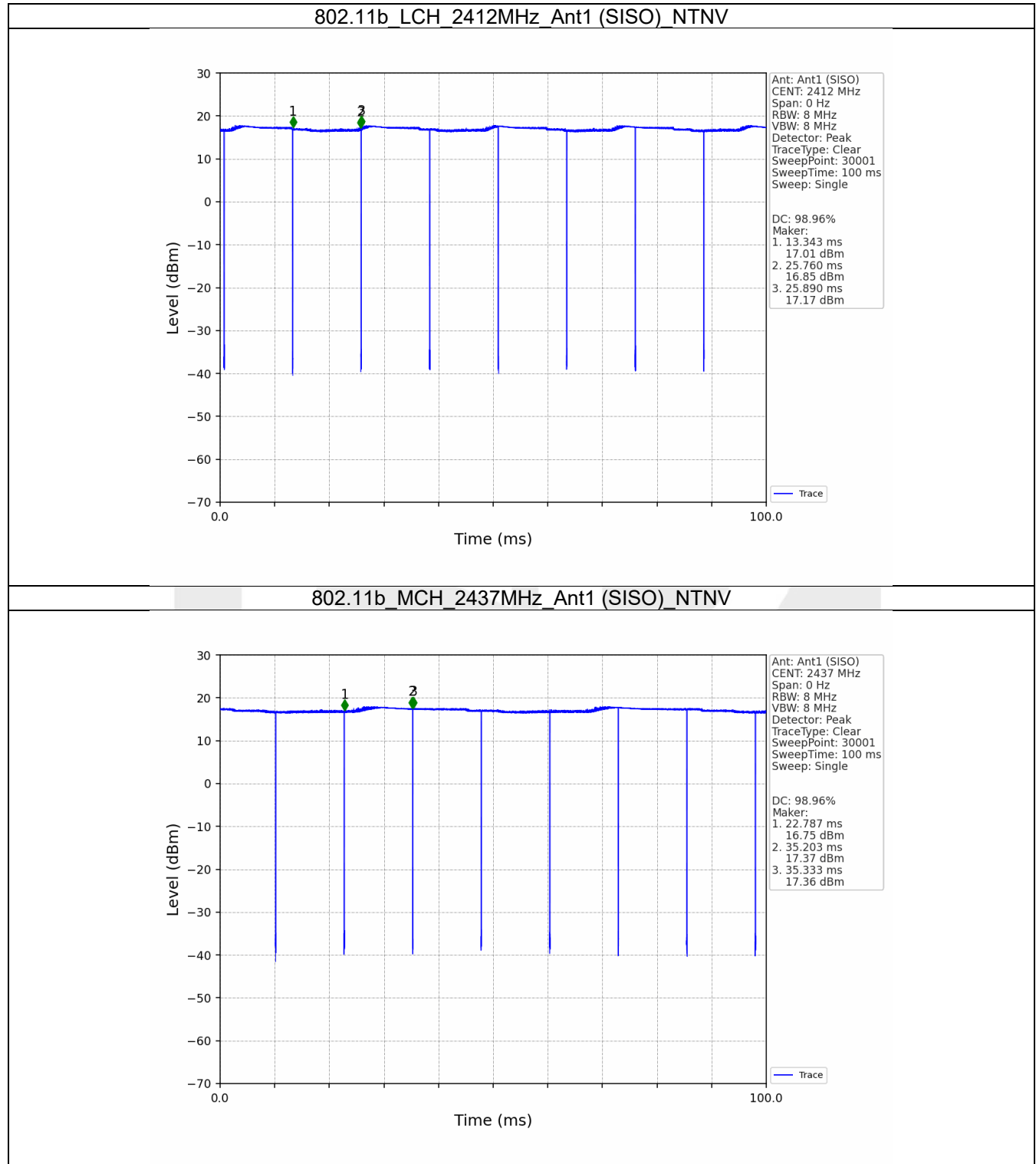
### 1.1 Test Result

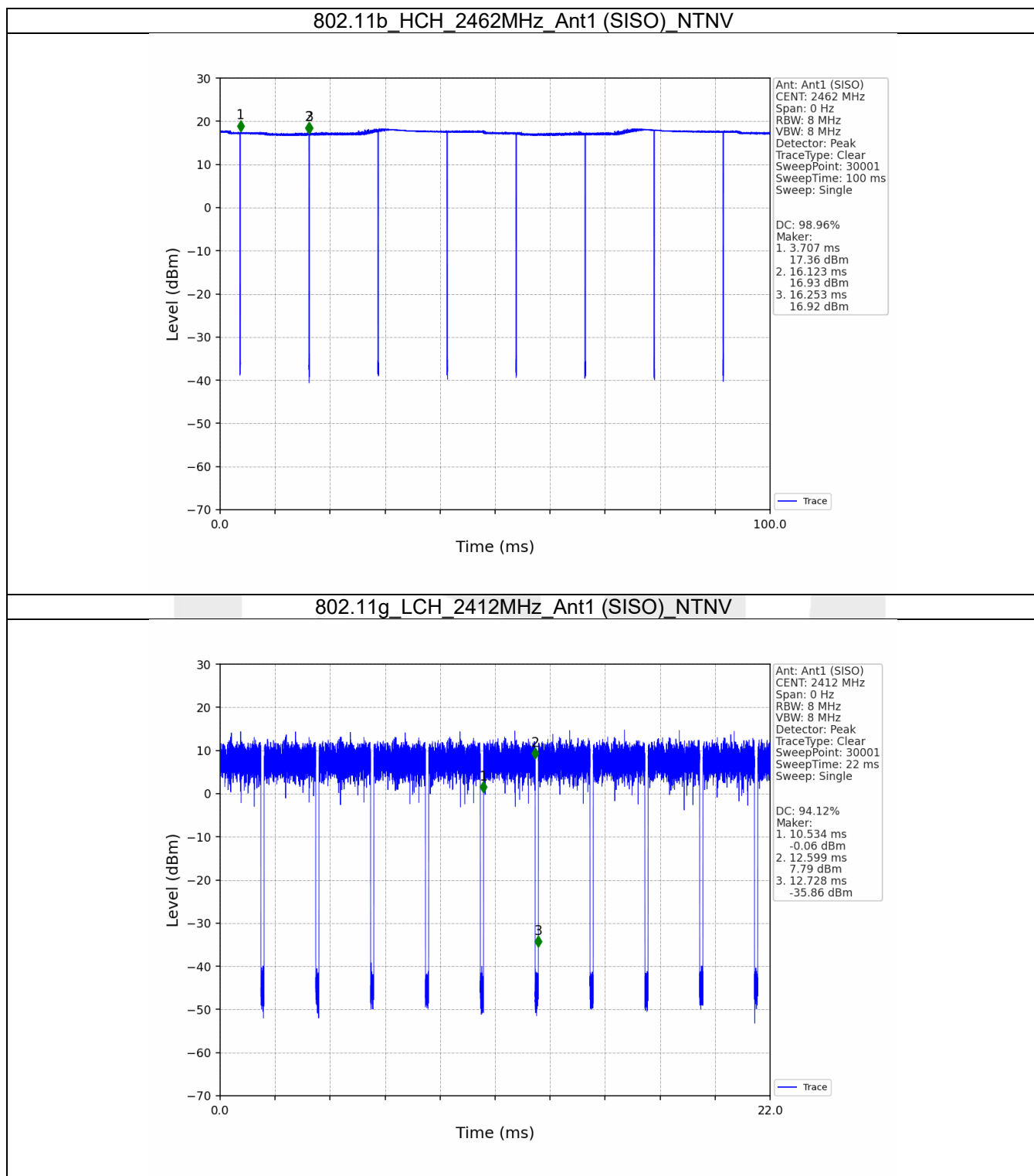
#### 1.1.1 Ant1

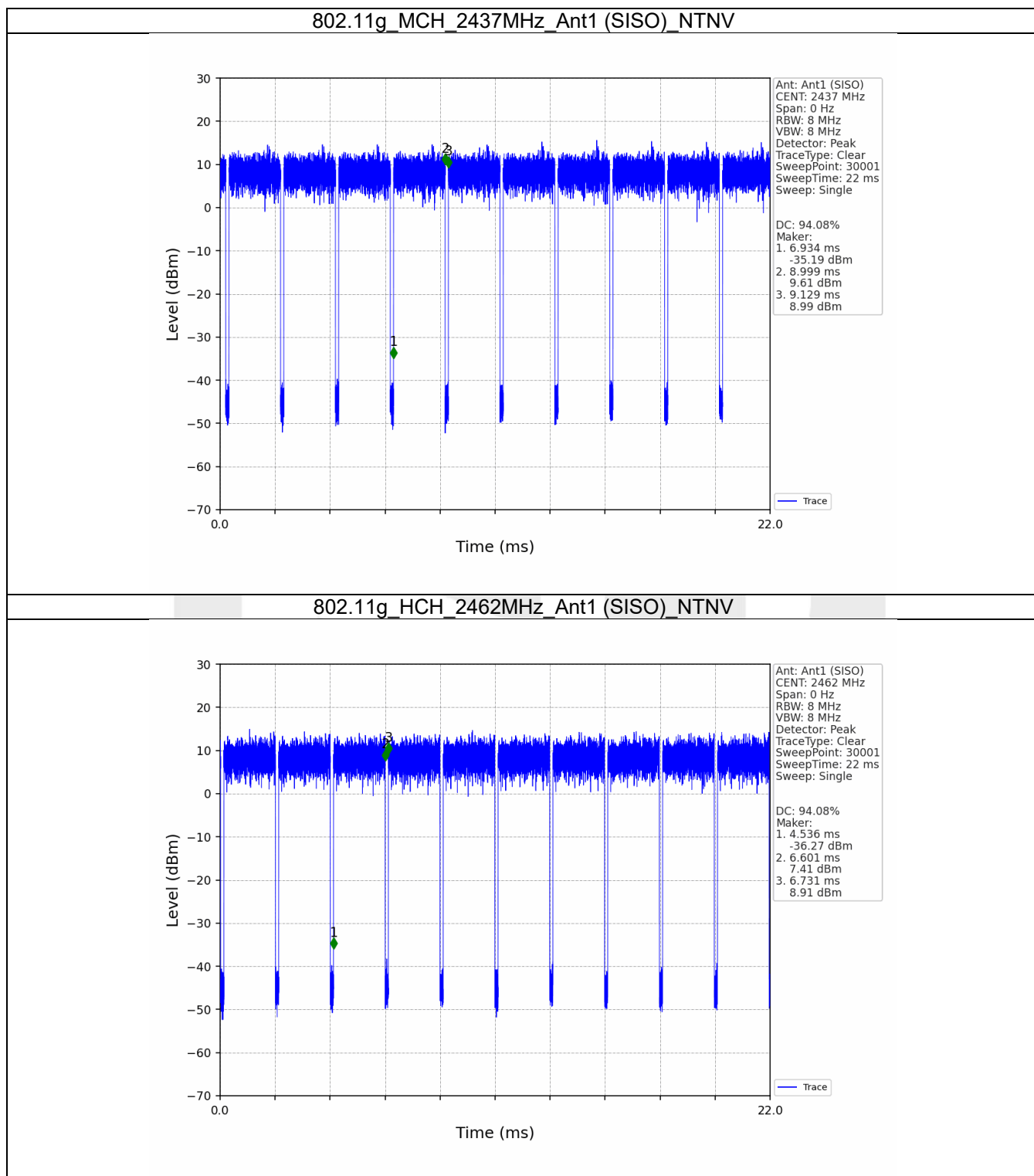
| Ant1           |         |                 |           |             |                |                                   |                       |
|----------------|---------|-----------------|-----------|-------------|----------------|-----------------------------------|-----------------------|
| Mode           | TX Type | Frequency (MHz) | T_on (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle Correction Factor (dB) | Max. DC Variation (%) |
| 802.11b        | SISO    | 2412            | 12.417    | 12.547      | 98.96          | 0.05                              | 0.03                  |
|                |         | 2437            | 12.416    | 12.546      | 98.96          | 0.05                              | 0.03                  |
|                |         | 2462            | 12.416    | 12.546      | 98.96          | 0.05                              | 0.03                  |
| 802.11g        | SISO    | 2412            | 2.065     | 2.194       | 94.12          | 0.26                              | 0.00                  |
|                |         | 2437            | 2.065     | 2.195       | 94.08          | 0.27                              | 0.06                  |
|                |         | 2462            | 2.065     | 2.195       | 94.08          | 0.27                              | 0.03                  |
| 802.11n (HT20) | SISO    | 2412            | 1.921     | 2.050       | 93.71          | 0.28                              | 0.04                  |
|                |         | 2437            | 1.921     | 2.050       | 93.71          | 0.28                              | 0.04                  |
|                |         | 2462            | 1.920     | 2.049       | 93.70          | 0.28                              | 0.04                  |

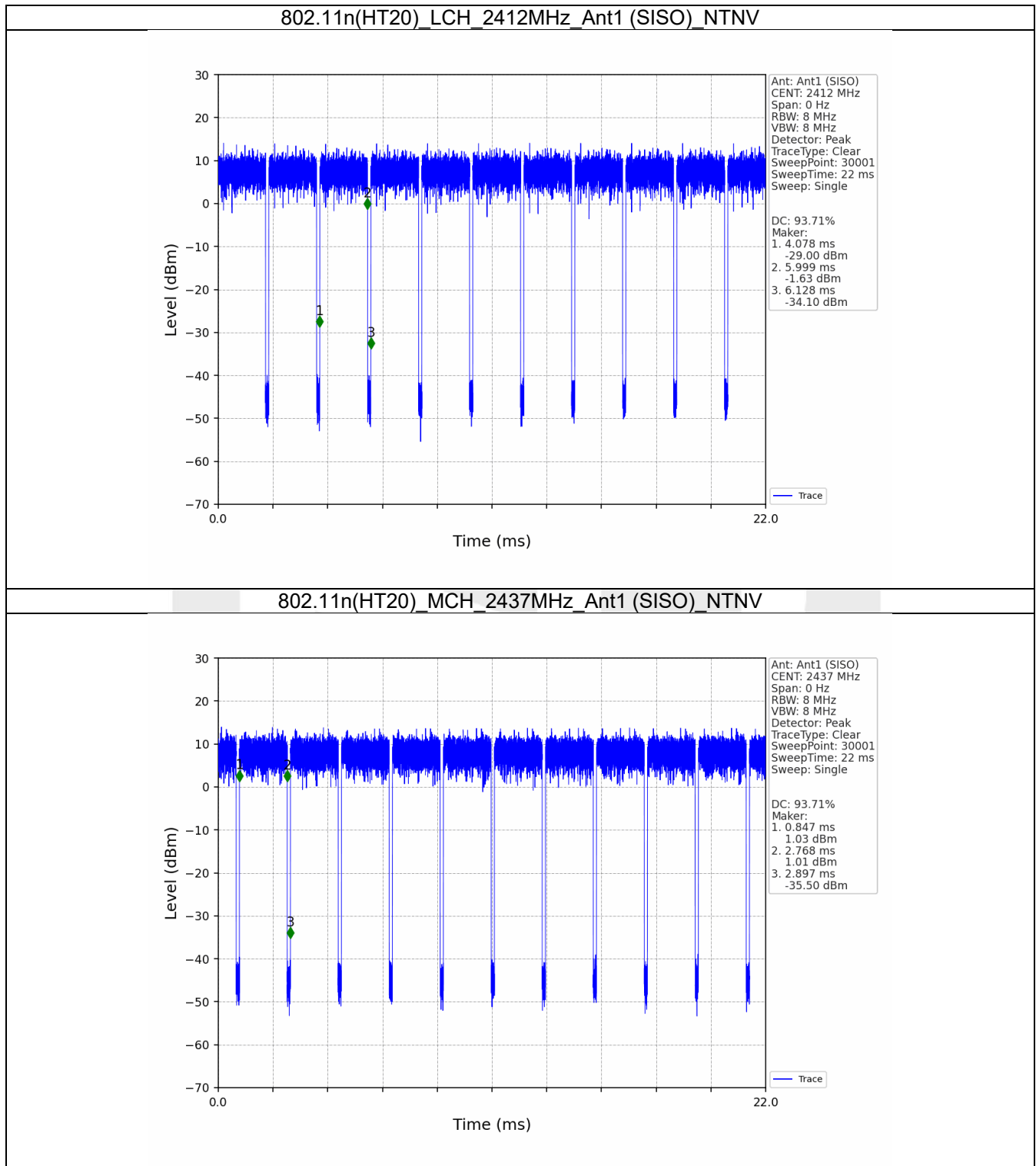
## 1.2 Test Graph

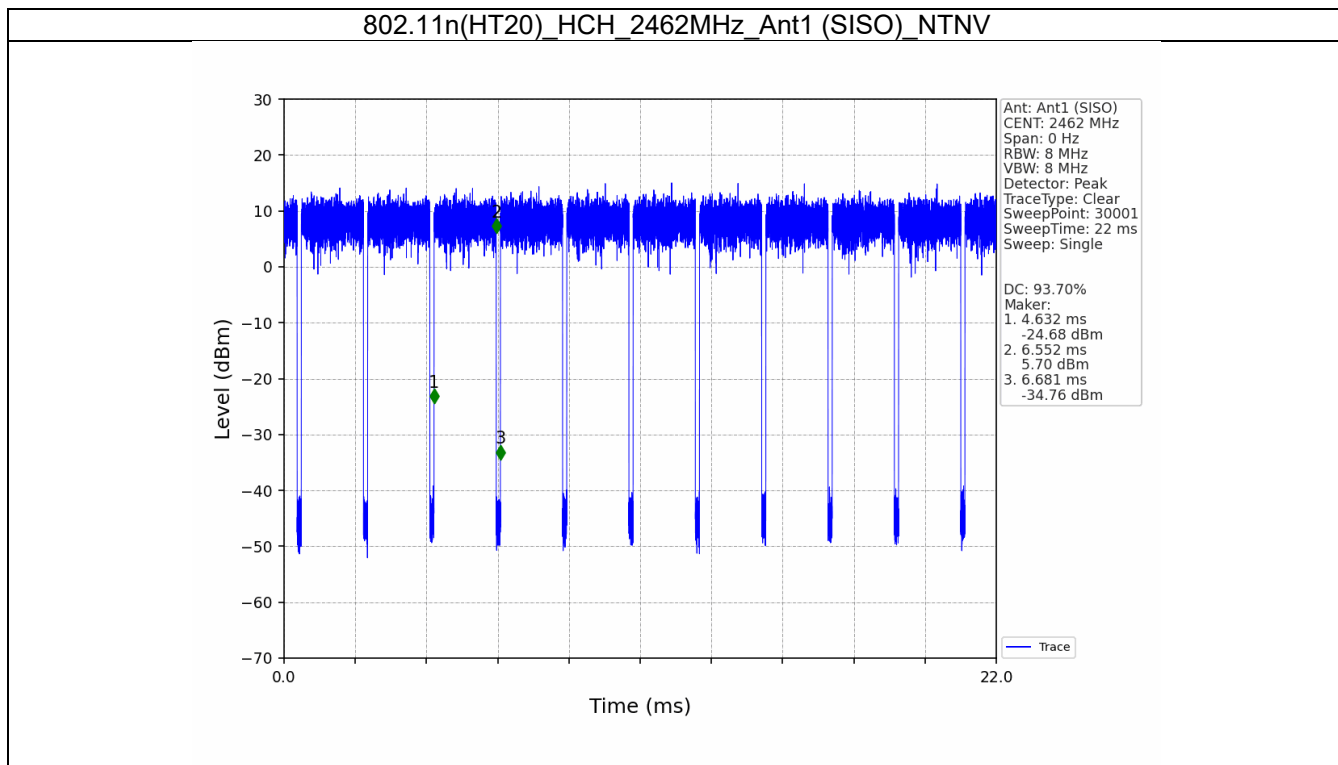
### 1.2.1 Ant1











## 2. Bandwidth

### 2.1 Test Result

#### 2.1.1 OBW

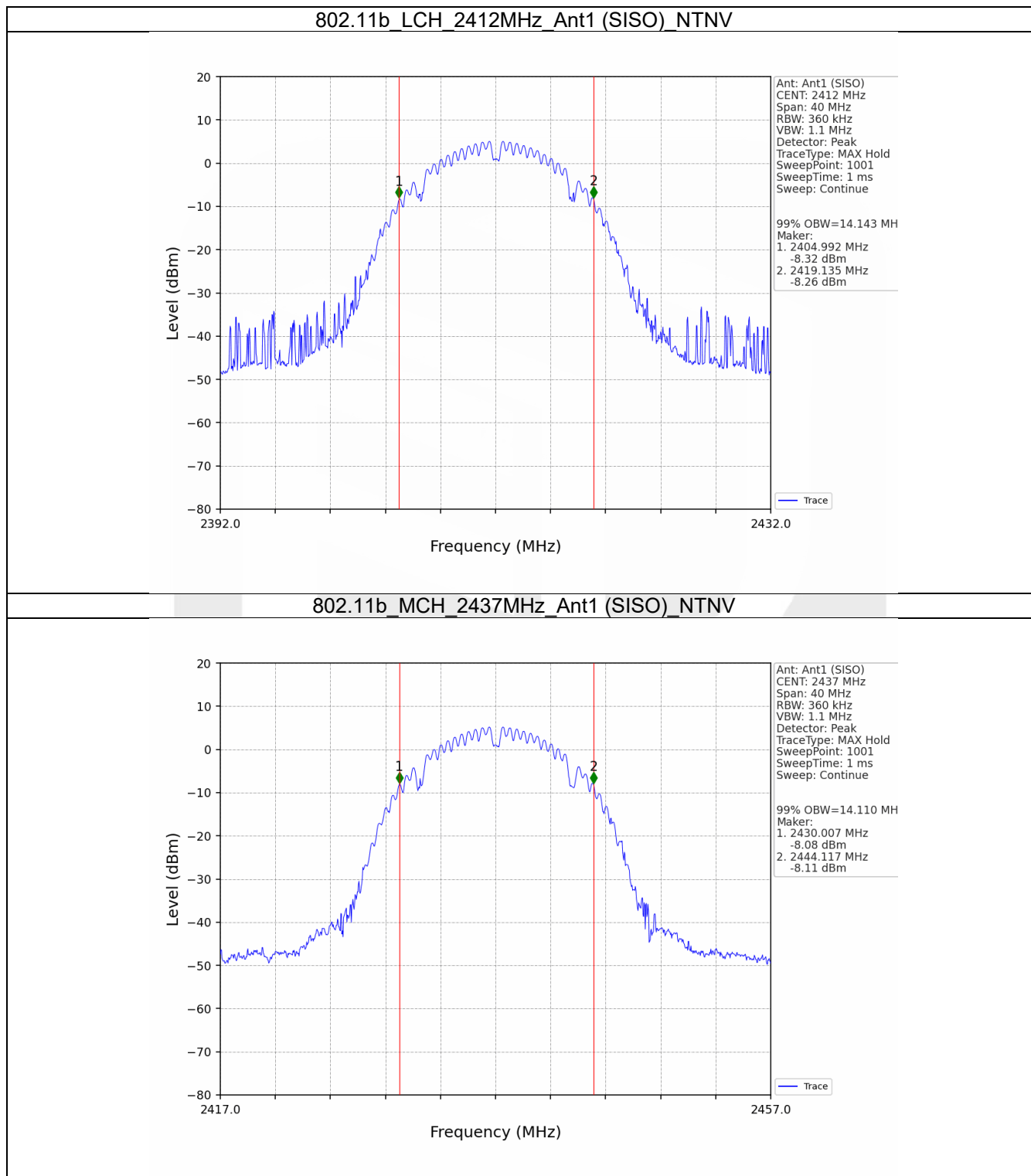
| Mode           | TX Type | Frequency (MHz) | ANT | 99% Occupied Bandwidth (MHz) |       | Verdict |
|----------------|---------|-----------------|-----|------------------------------|-------|---------|
|                |         |                 |     | Result                       | Limit |         |
| 802.11b        | SISO    | 2412            | 1   | 14.143                       | /     | Pass    |
|                |         | 2437            | 1   | 14.110                       | /     | Pass    |
|                |         | 2462            | 1   | 14.113                       | /     | Pass    |
| 802.11g        | SISO    | 2412            | 1   | 17.988                       | /     | Pass    |
|                |         | 2437            | 1   | 18.199                       | /     | Pass    |
|                |         | 2462            | 1   | 18.049                       | /     | Pass    |
| 802.11n (HT20) | SISO    | 2412            | 1   | 19.011                       | /     | Pass    |
|                |         | 2437            | 1   | 18.934                       | /     | Pass    |
|                |         | 2462            | 1   | 18.950                       | /     | Pass    |

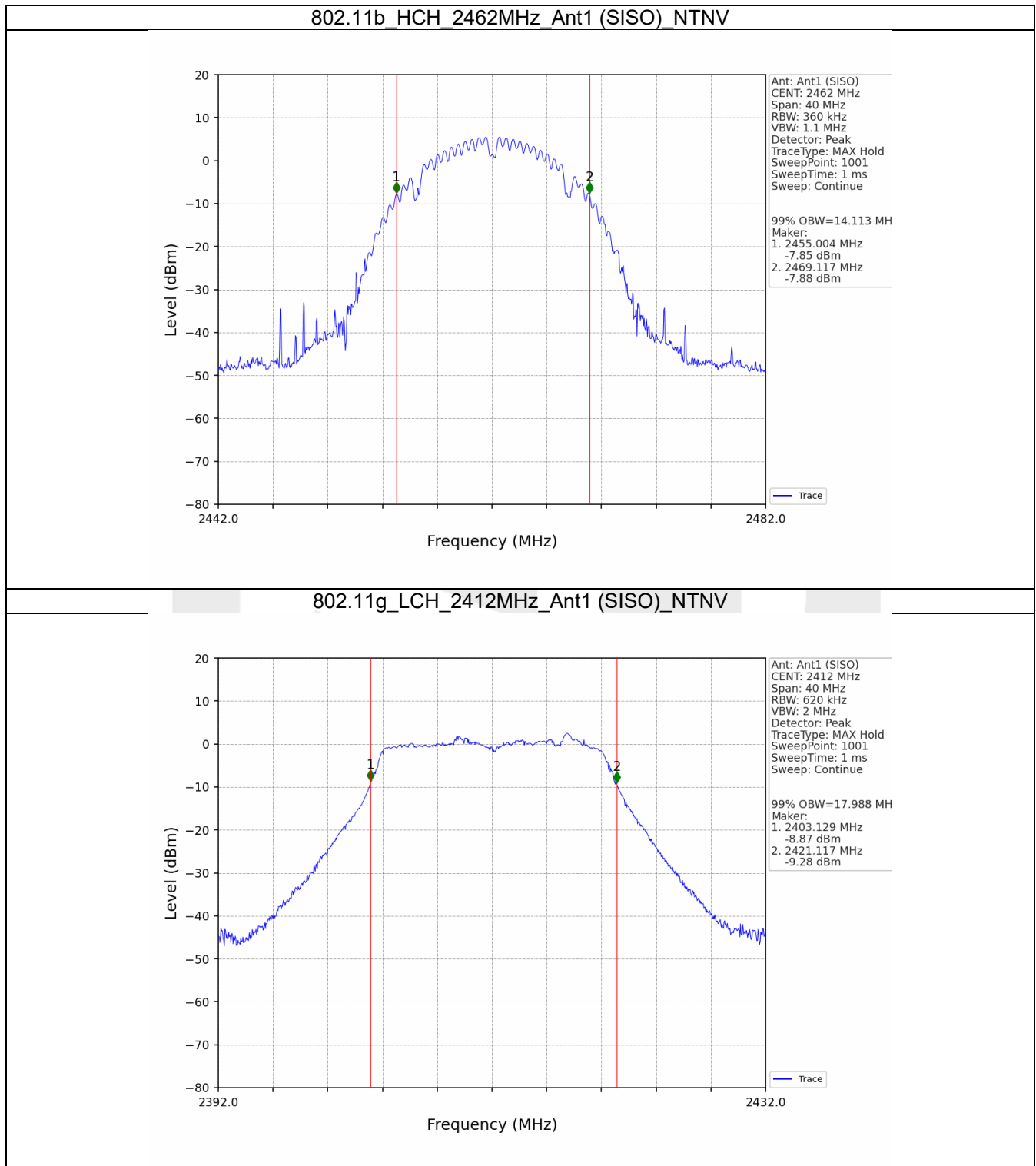
#### 2.1.2 6dB BW

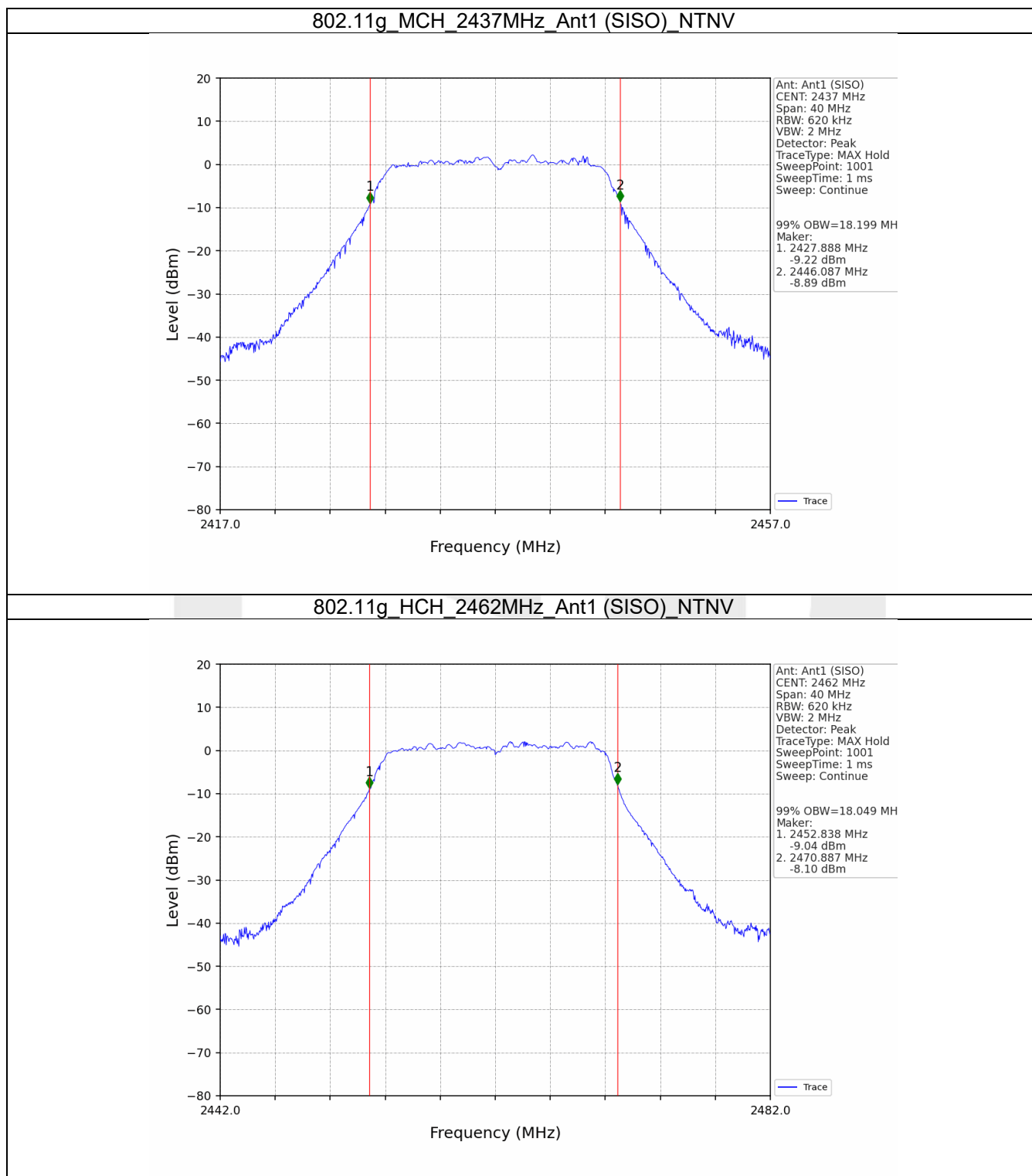
| Mode           | TX Type | Frequency (MHz) | ANT | 6dB Bandwidth (MHz) |            | Verdict |
|----------------|---------|-----------------|-----|---------------------|------------|---------|
|                |         |                 |     | Result              | Limit      |         |
| 802.11b        | SISO    | 2412            | 1   | 9.255               | $\geq 0.5$ | Pass    |
|                |         | 2437            | 1   | 9.254               | $\geq 0.5$ | Pass    |
|                |         | 2462            | 1   | 9.253               | $\geq 0.5$ | Pass    |
| 802.11g        | SISO    | 2412            | 1   | 16.527              | $\geq 0.5$ | Pass    |
|                |         | 2437            | 1   | 16.746              | $\geq 0.5$ | Pass    |
|                |         | 2462            | 1   | 16.933              | $\geq 0.5$ | Pass    |
| 802.11n (HT20) | SISO    | 2412            | 1   | 17.899              | $\geq 0.5$ | Pass    |
|                |         | 2437            | 1   | 17.805              | $\geq 0.5$ | Pass    |
|                |         | 2462            | 1   | 17.850              | $\geq 0.5$ | Pass    |

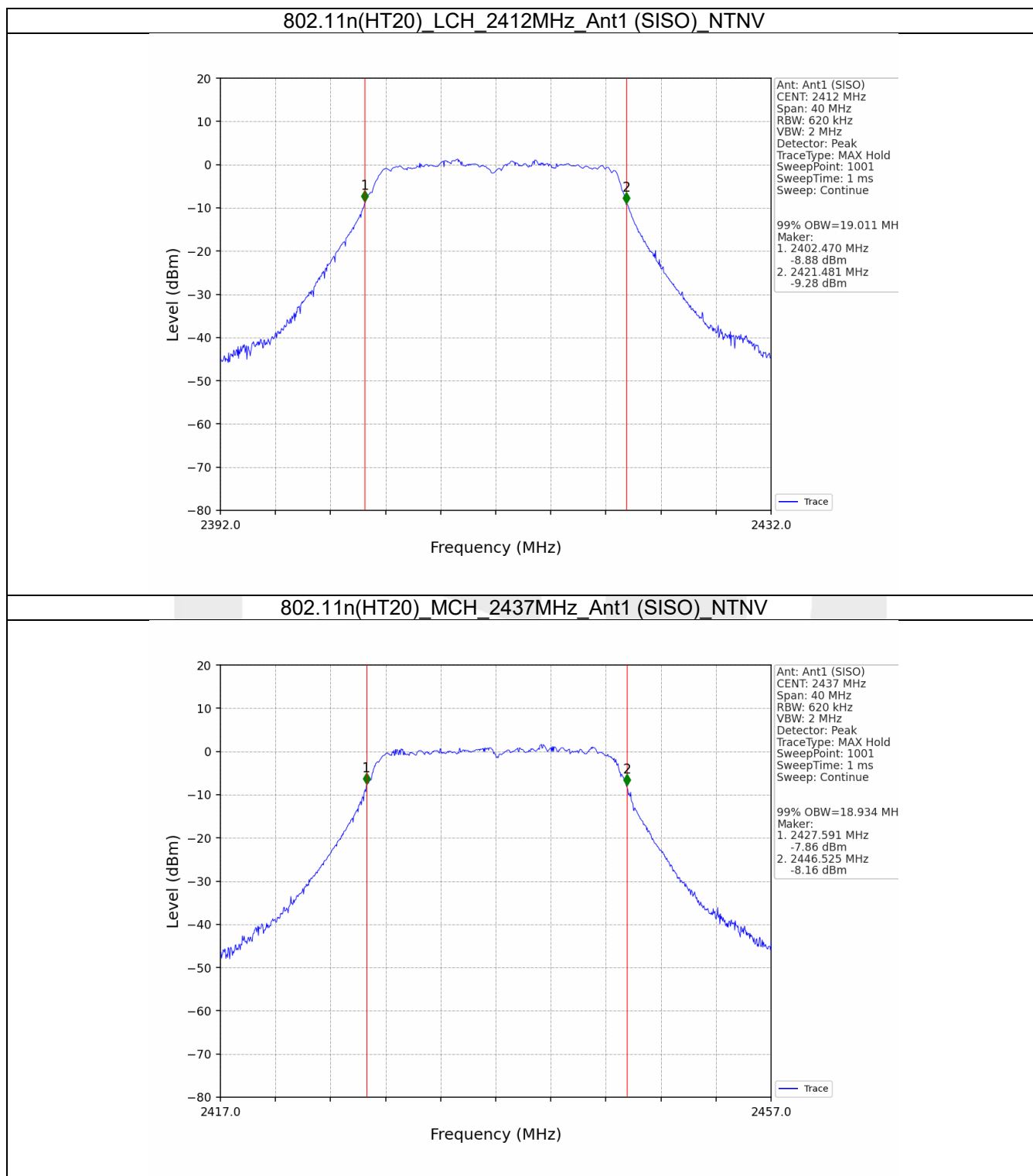
## 2.2 Test Graph

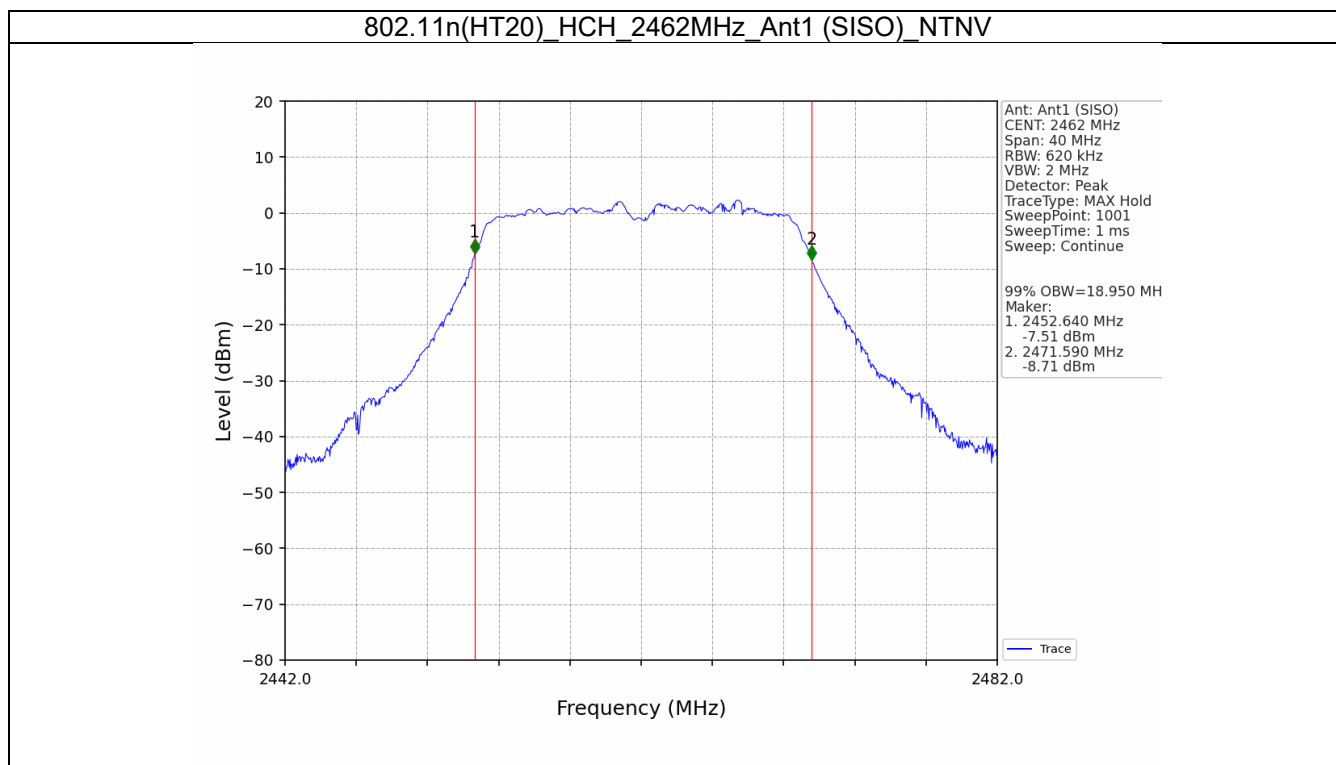
### 2.2.1 OBW



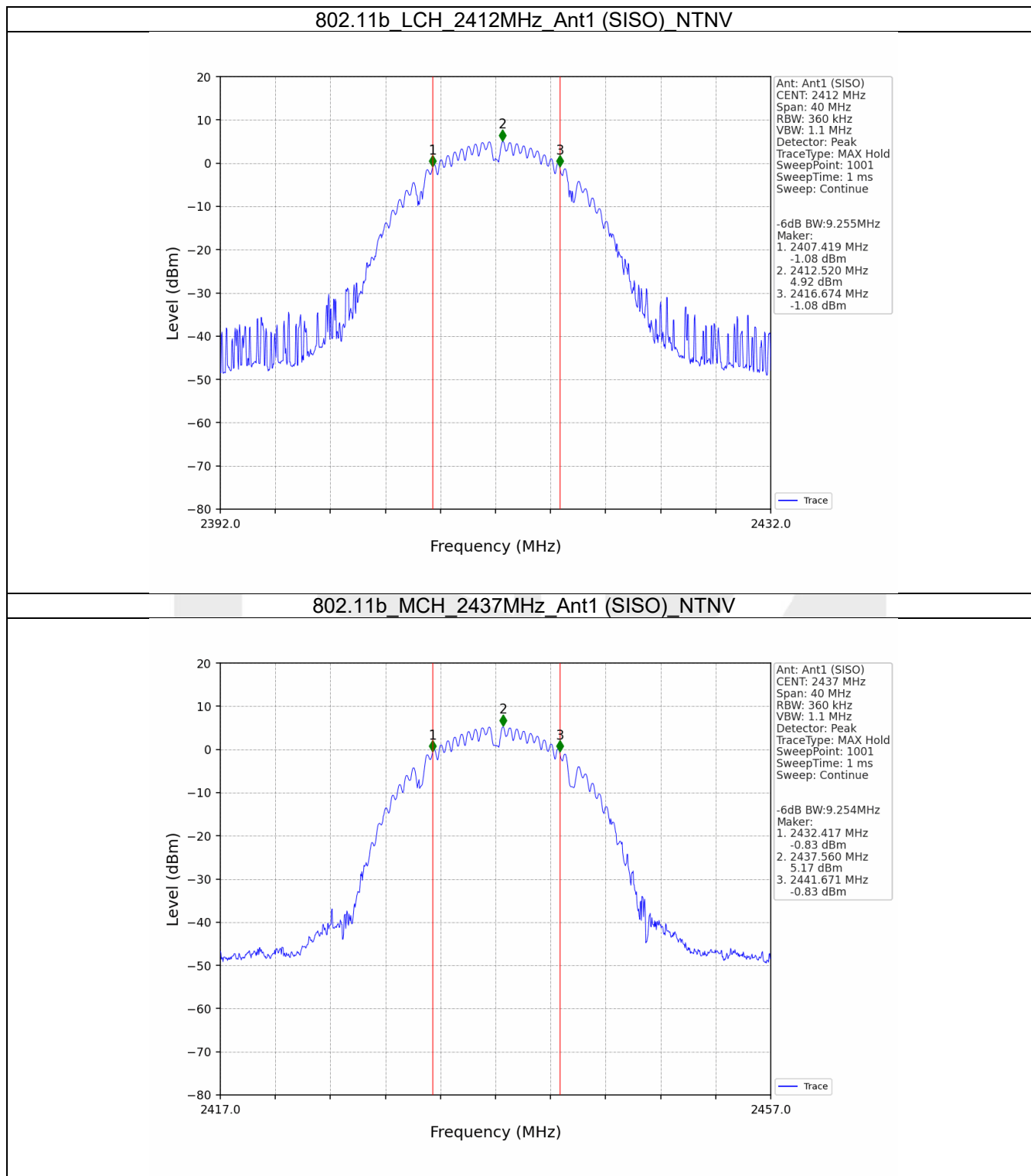


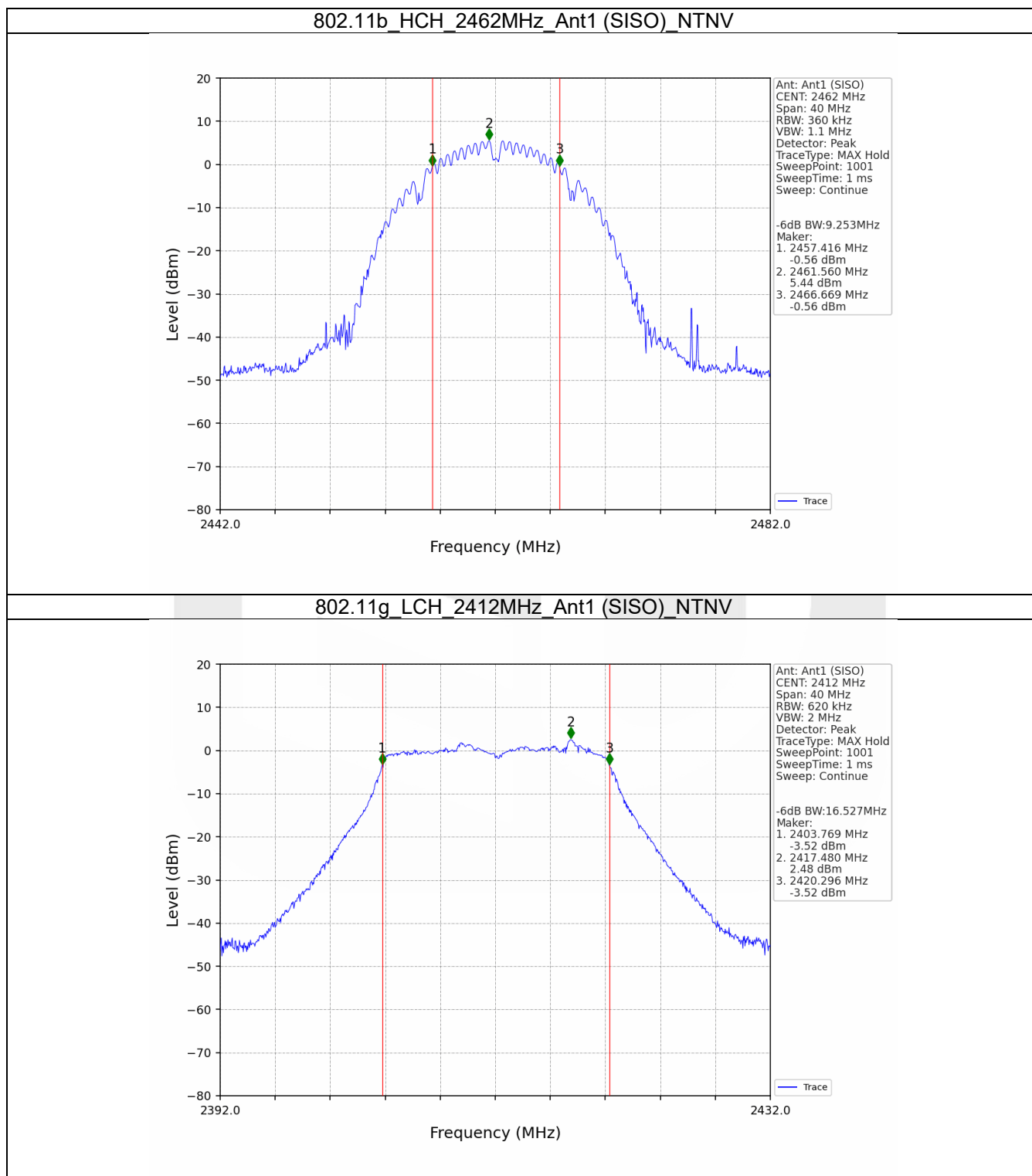


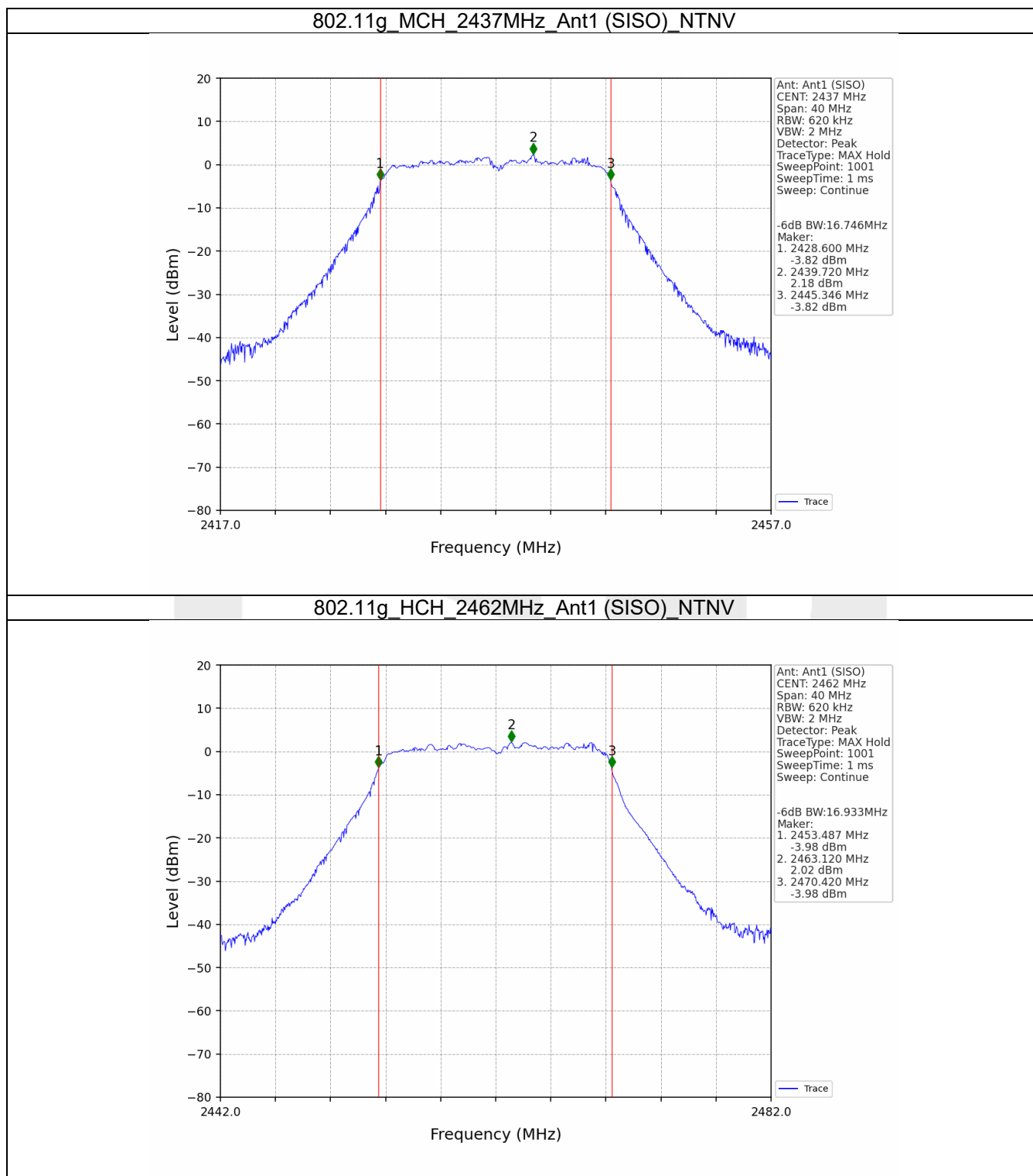


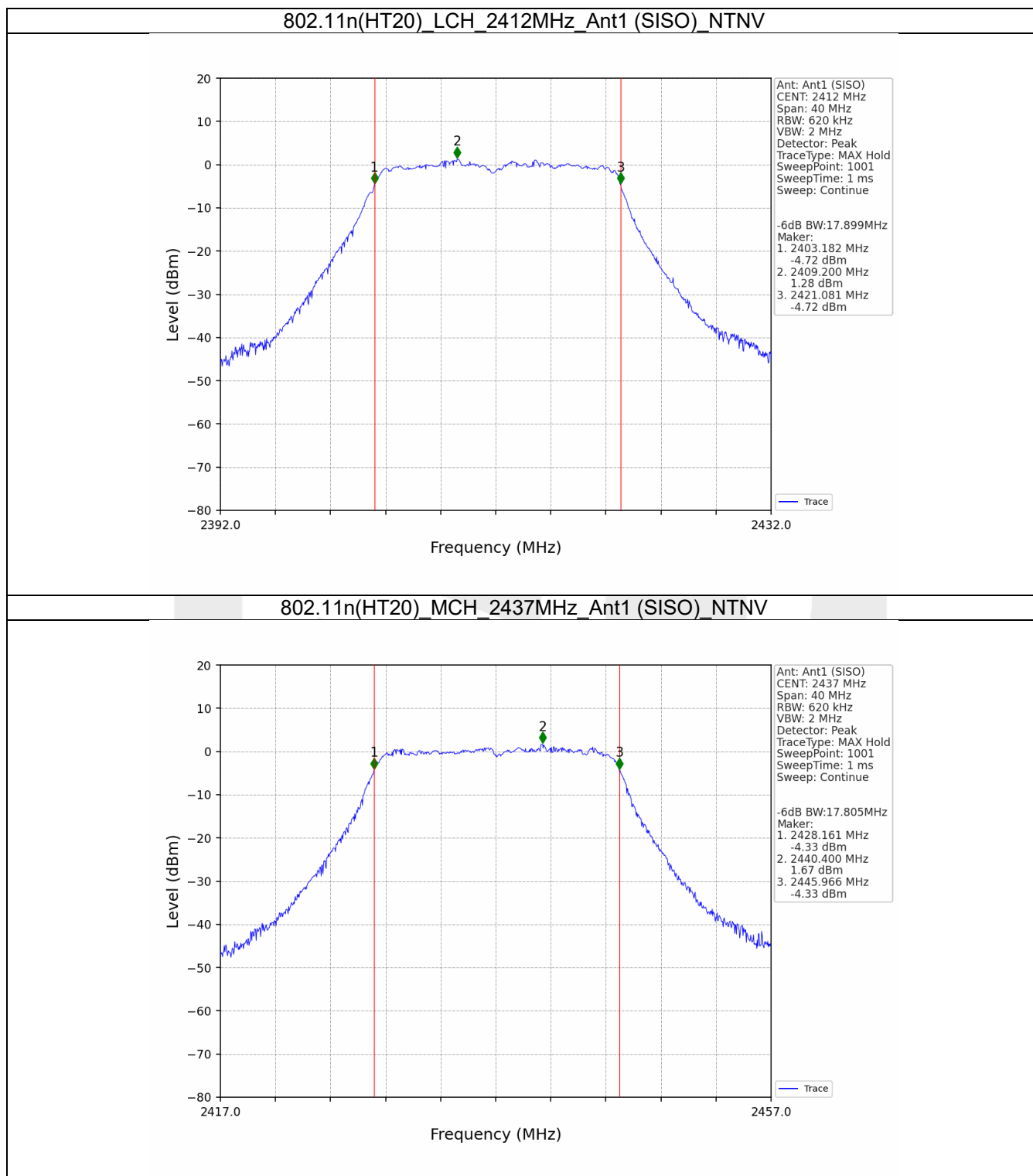


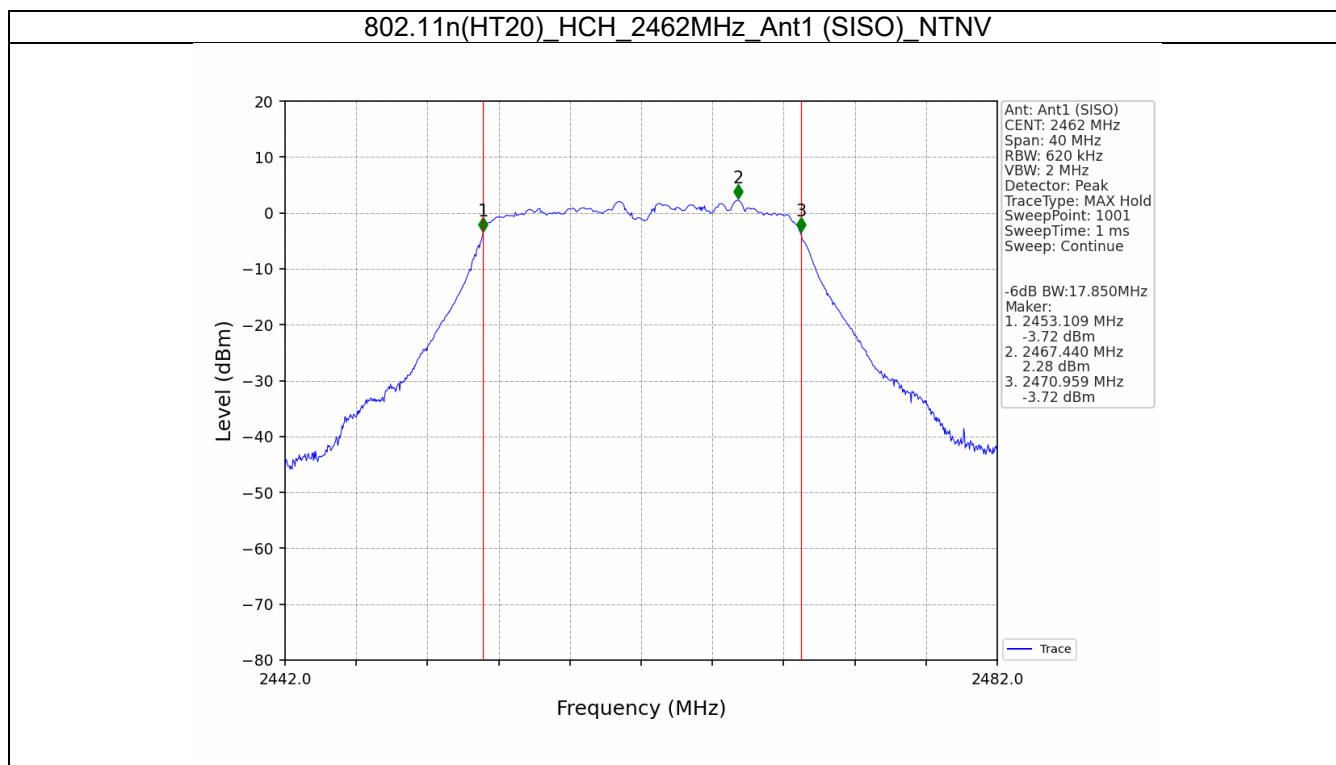
## 2.2.2 6dB BW











### 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            | 15.77                                     | <=30  | Pass    |
|                |         | 2437            | 16.05                                     | <=30  | Pass    |
|                |         | 2462            | 16.32                                     | <=30  | Pass    |
| 802.11g        | SISO    | 2412            | 14.62                                     | <=30  | Pass    |
|                |         | 2437            | 15.09                                     | <=30  | Pass    |
|                |         | 2462            | 15.39                                     | <=30  | Pass    |
| 802.11n (HT20) | SISO    | 2412            | 14.62                                     | <=30  | Pass    |
|                |         | 2437            | 15.03                                     | <=30  | Pass    |
|                |         | 2462            | 15.32                                     | <=30  | Pass    |

#### 4. Maximum Power Spectral Density

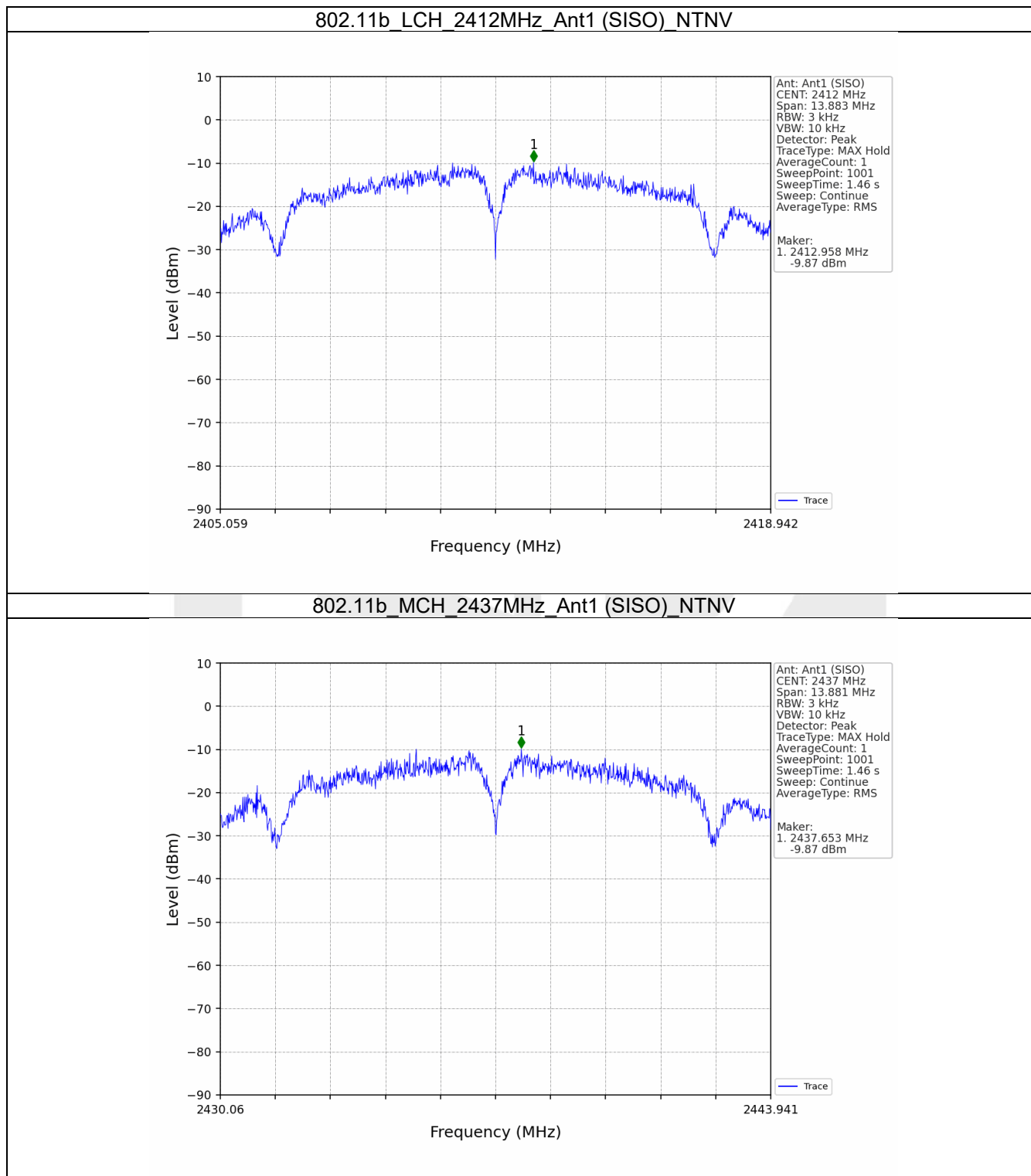
##### 4.1 Test Result

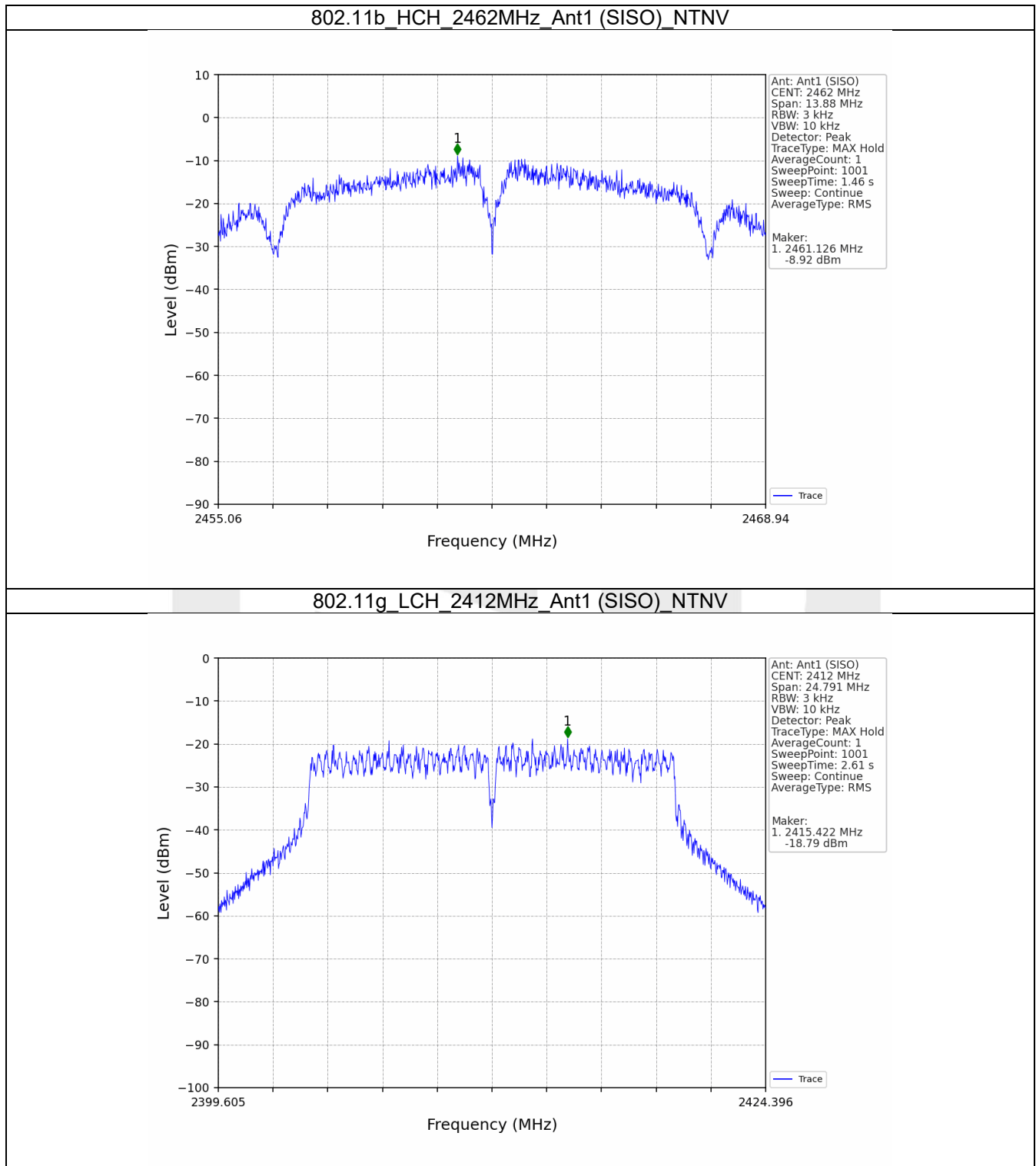
##### 4.1.1 PSD

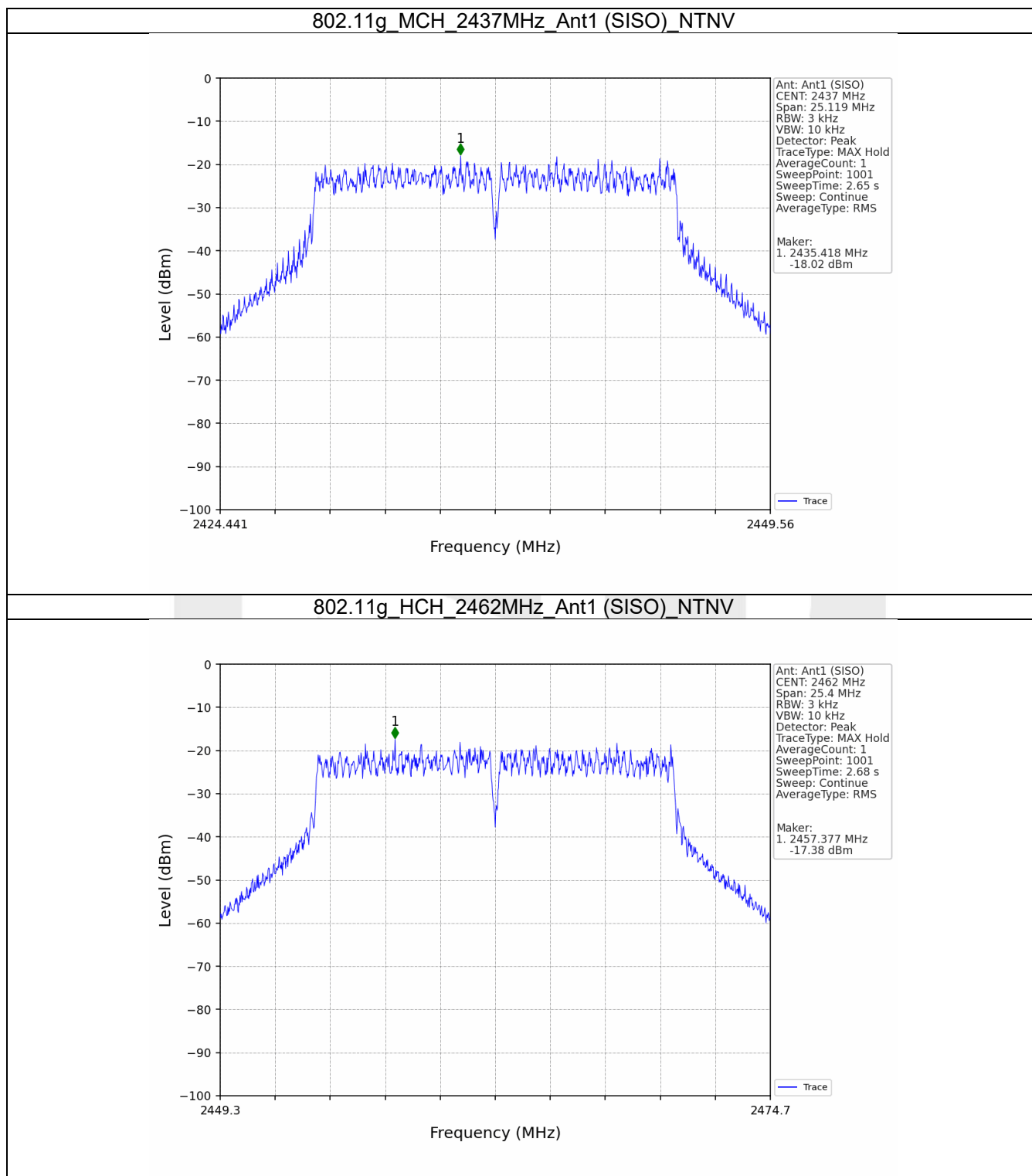
| Mode           | TX Type | Frequency (MHz) | Maximum PSD (dBm/3kHz) |       | Verdict |
|----------------|---------|-----------------|------------------------|-------|---------|
|                |         |                 | ANT1                   | Limit |         |
| 802.11b        | SISO    | 2412            | -9.87                  | <=8   | Pass    |
|                |         | 2437            | -9.87                  | <=8   | Pass    |
|                |         | 2462            | -8.92                  | <=8   | Pass    |
| 802.11g        | SISO    | 2412            | -18.79                 | <=8   | Pass    |
|                |         | 2437            | -18.02                 | <=8   | Pass    |
|                |         | 2462            | -17.38                 | <=8   | Pass    |
| 802.11n (HT20) | SISO    | 2412            | -18.69                 | <=8   | Pass    |
|                |         | 2437            | -17.21                 | <=8   | Pass    |
|                |         | 2462            | -18.97                 | <=8   | Pass    |

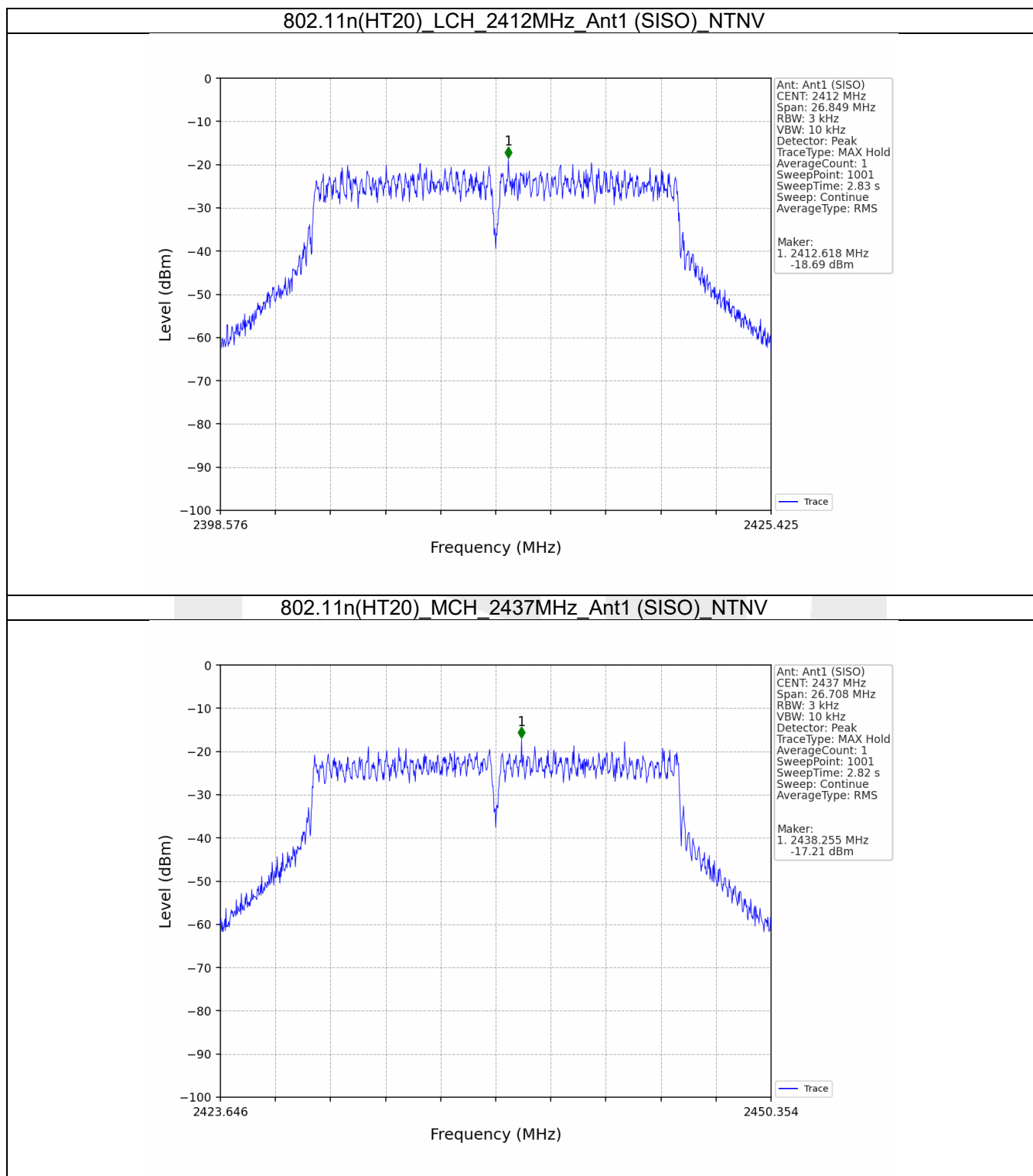
## 4.2 Test Graph

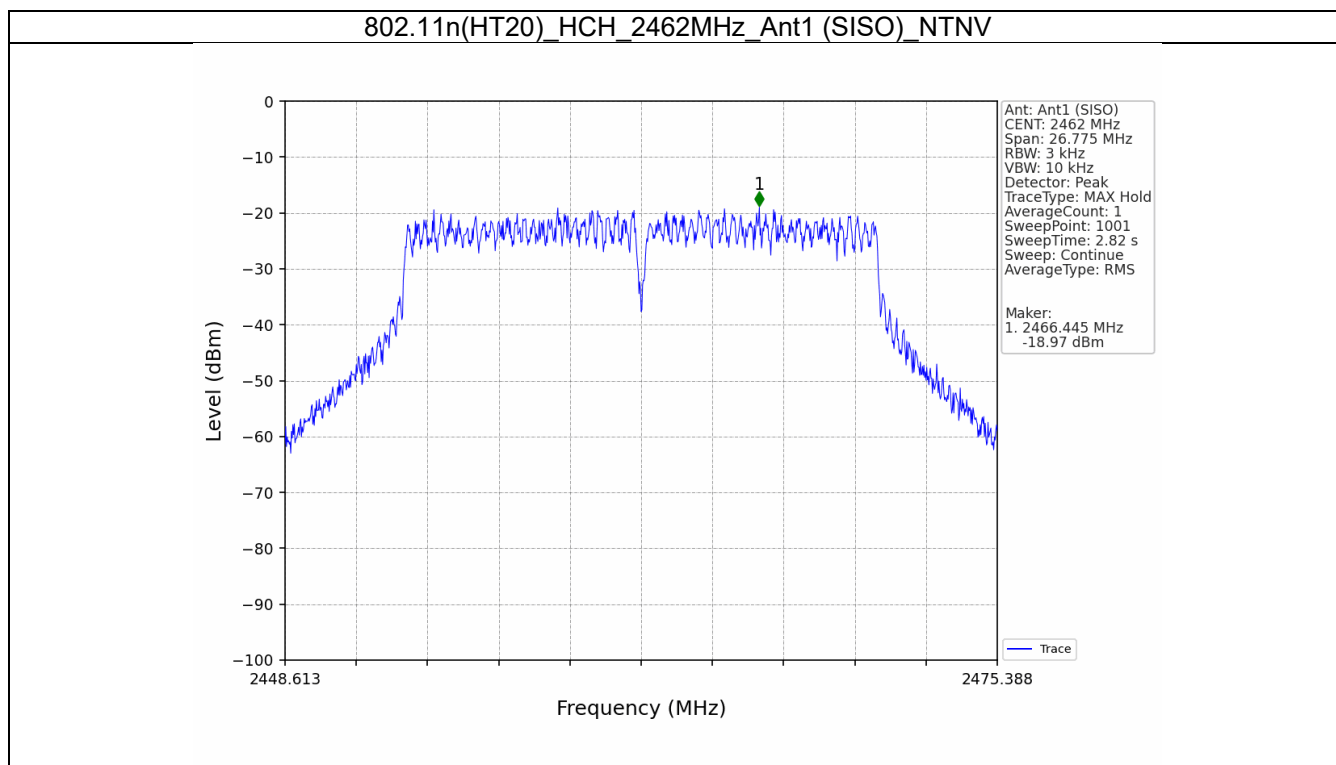
### 4.2.1 PSD











## 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   | 4.79                     |
|                |         | 2437            | 1   | 5.02                     |
|                |         | 2462            | 1   | 5.40                     |
| 802.11g        | SISO    | 2412            | 1   | -4.08                    |
|                |         | 2437            | 1   | -3.66                    |
|                |         | 2462            | 1   | -3.31                    |
| 802.11n (HT20) | SISO    | 2412            | 1   | -4.04                    |
|                |         | 2437            | 1   | -3.62                    |
|                |         | 2462            | 1   | -3.51                    |

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.

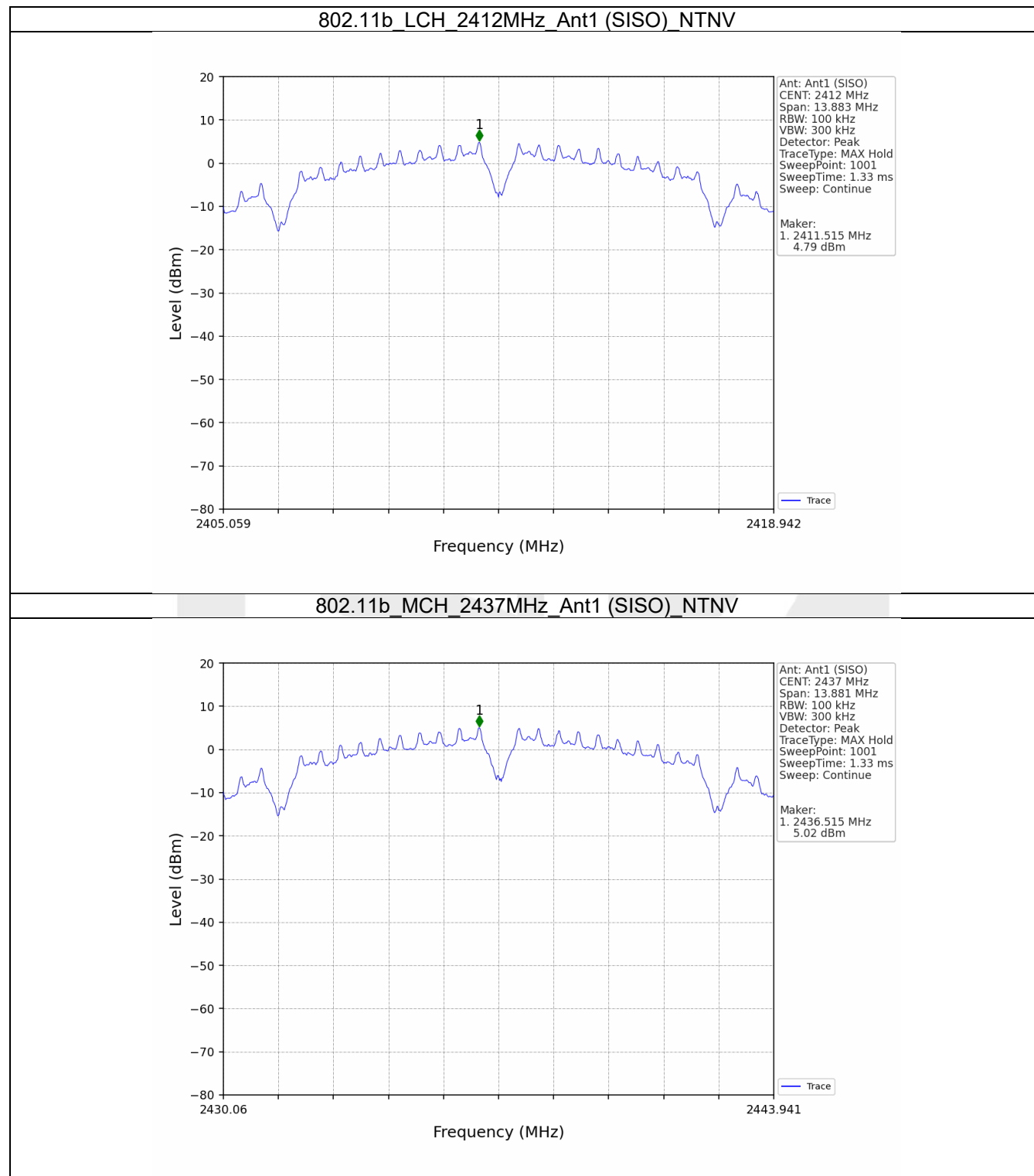
#### 5.1.2 CSE

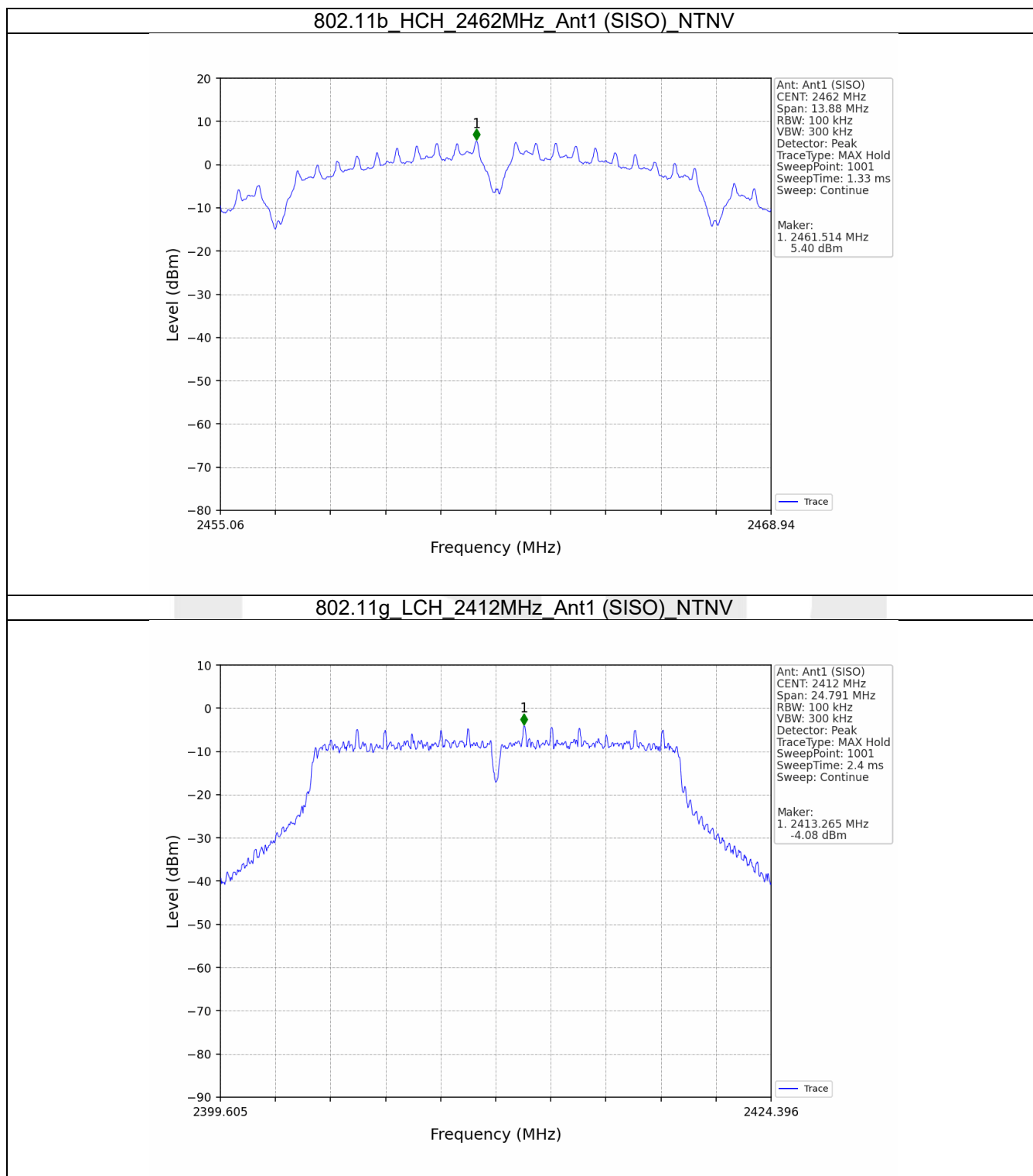
| Mode           | TX Type | Frequency (MHz) | ANT | Level of Reference (dBm) | Limit (dBm) | Verdict |
|----------------|---------|-----------------|-----|--------------------------|-------------|---------|
| 802.11b        | SISO    | 2412            | 1   | 4.79                     | -15.21      | Pass    |
|                |         | 2437            | 1   | 5.02                     | -14.98      | Pass    |
|                |         | 2462            | 1   | 5.40                     | -14.60      | Pass    |
| 802.11g        | SISO    | 2412            | 1   | -4.08                    | -24.08      | Pass    |
|                |         | 2437            | 1   | -3.66                    | -23.66      | Pass    |
|                |         | 2462            | 1   | -3.31                    | -23.31      | Pass    |
| 802.11n (HT20) | SISO    | 2412            | 1   | -4.04                    | -24.04      | Pass    |
|                |         | 2437            | 1   | -3.62                    | -23.62      | Pass    |
|                |         | 2462            | 1   | -3.51                    | -23.51      | Pass    |

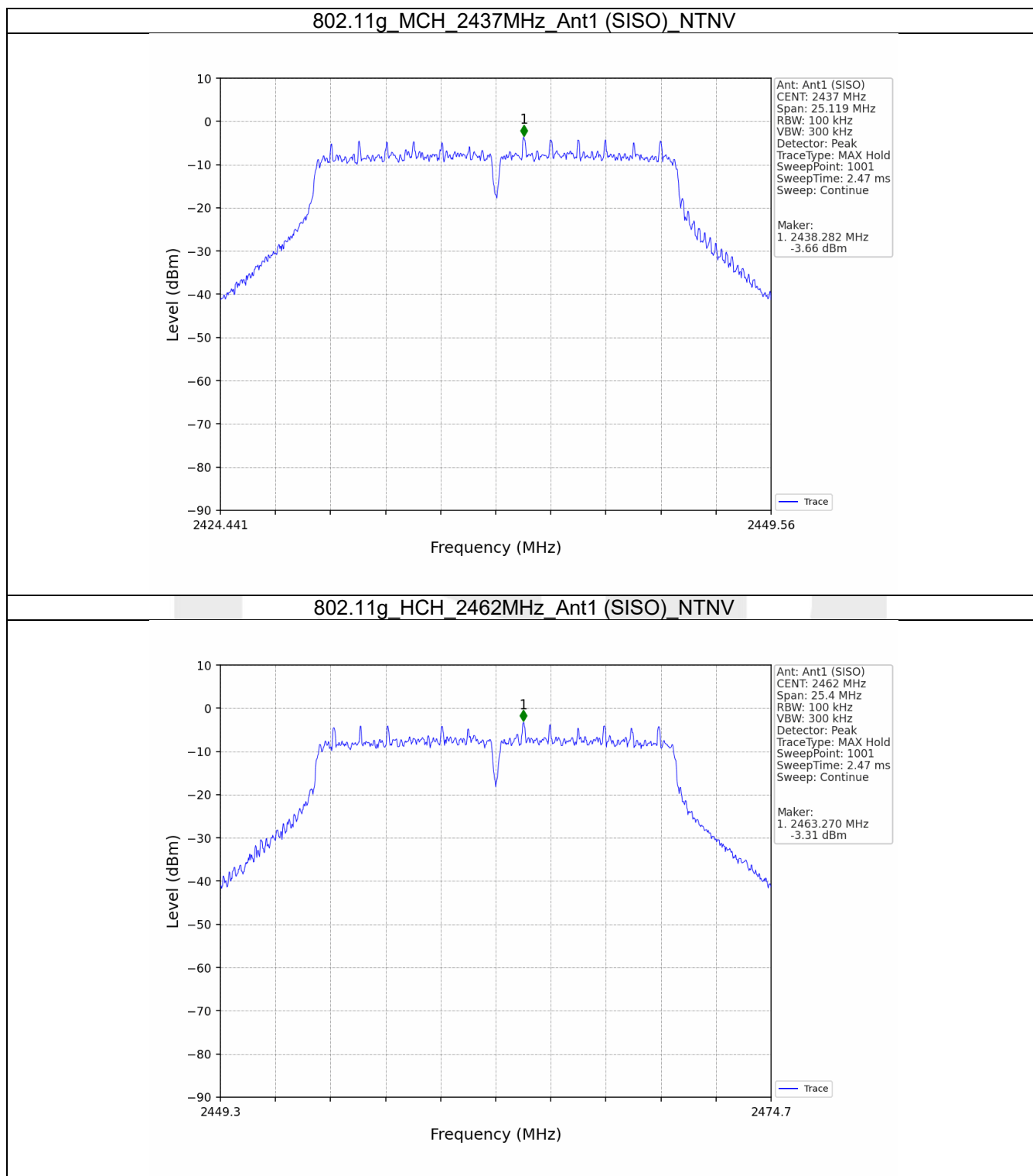
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

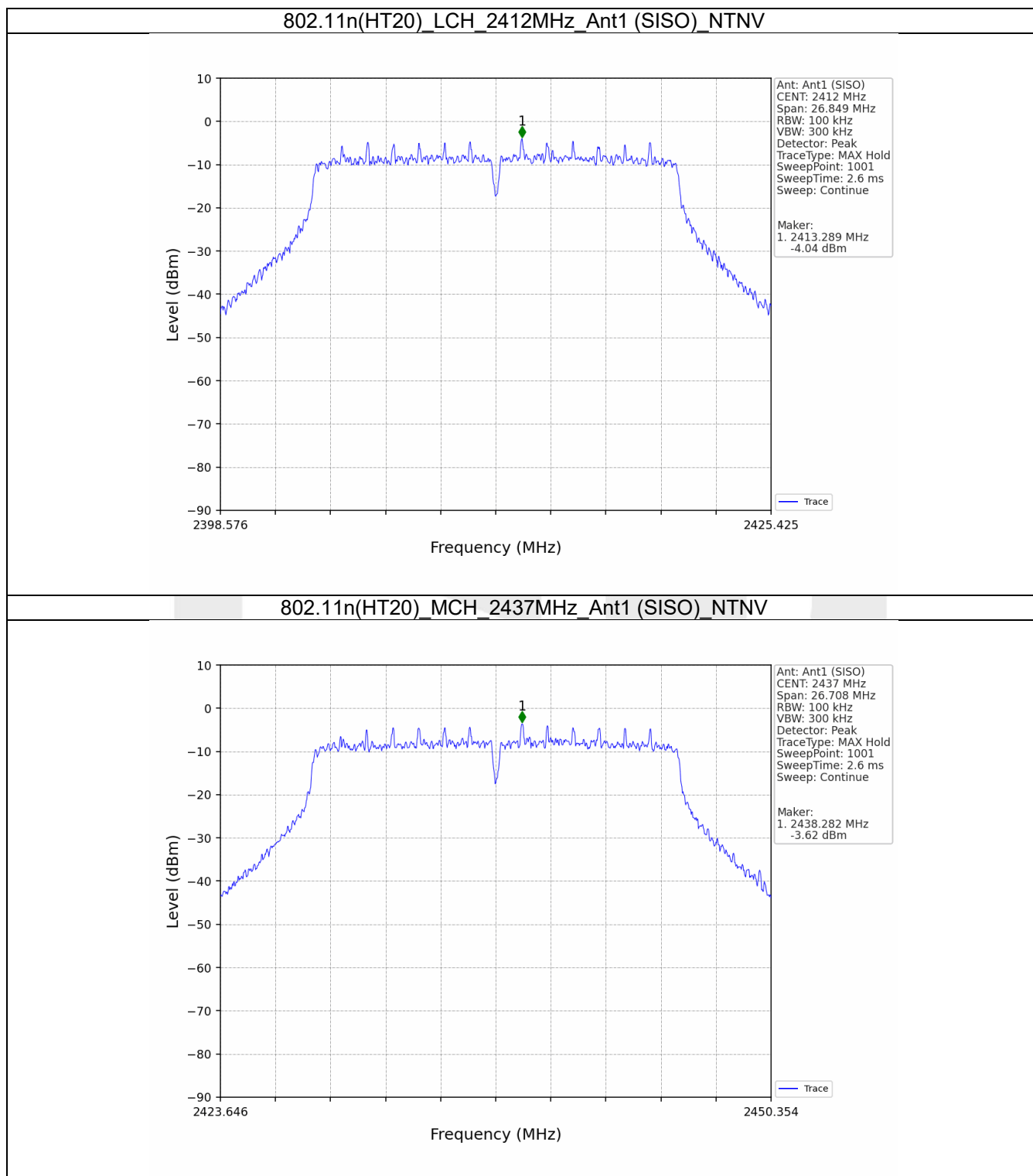
## 5.2 Test Graph

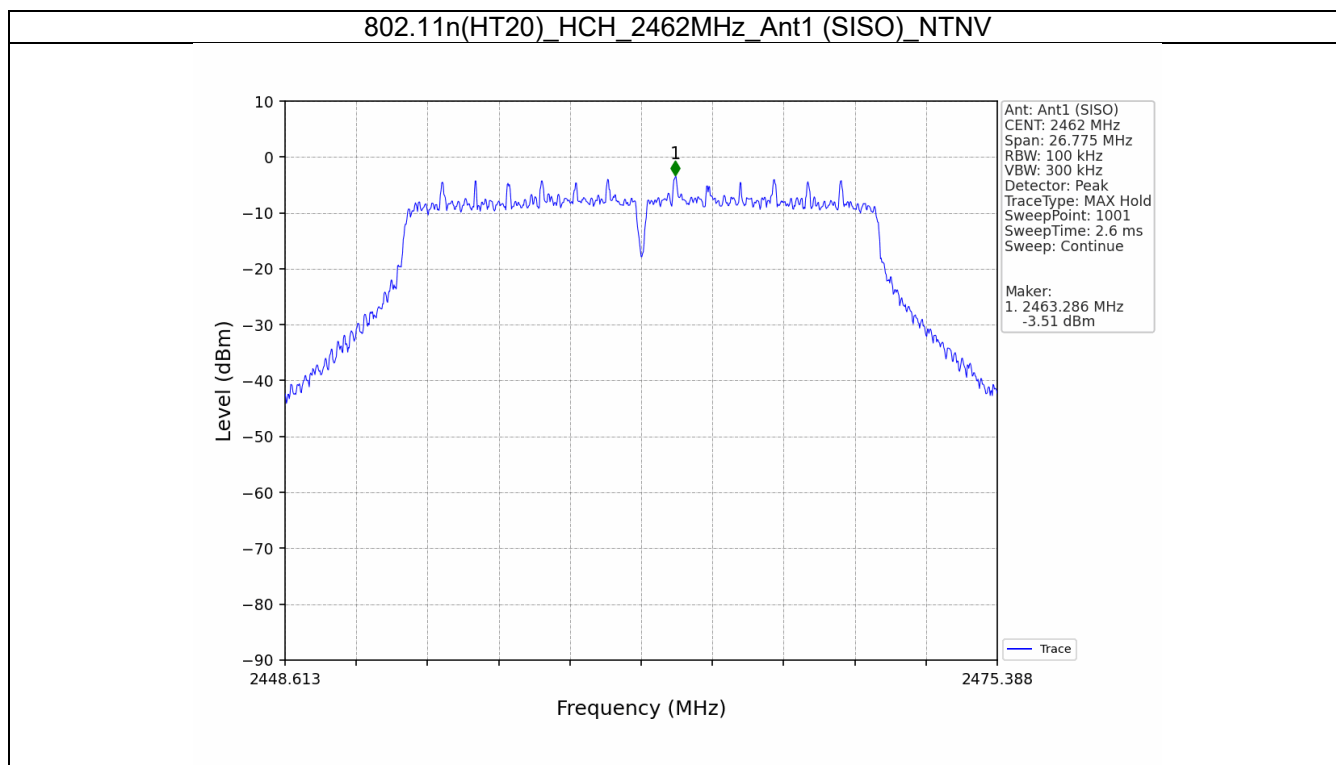
### 5.2.1 Ref



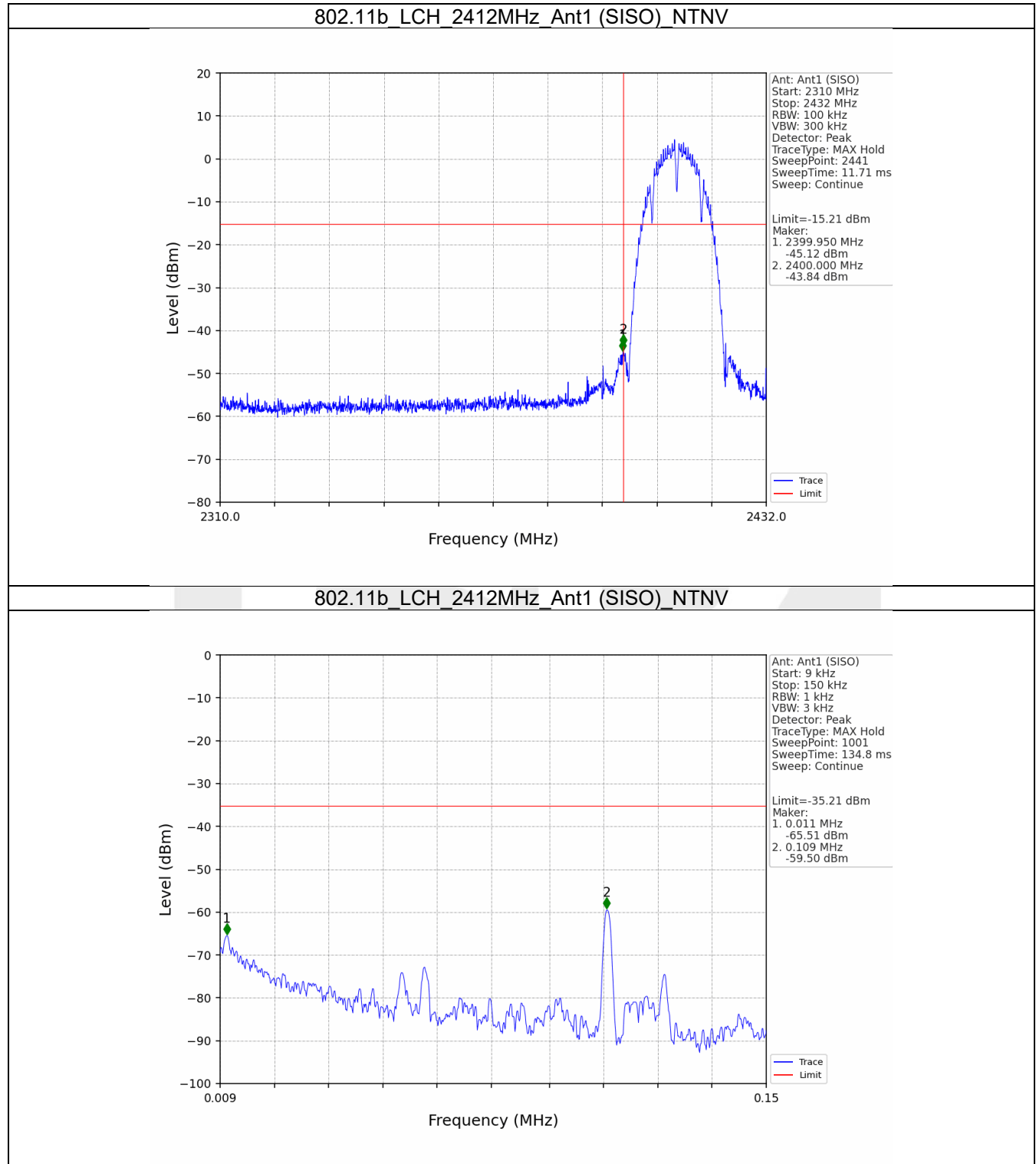


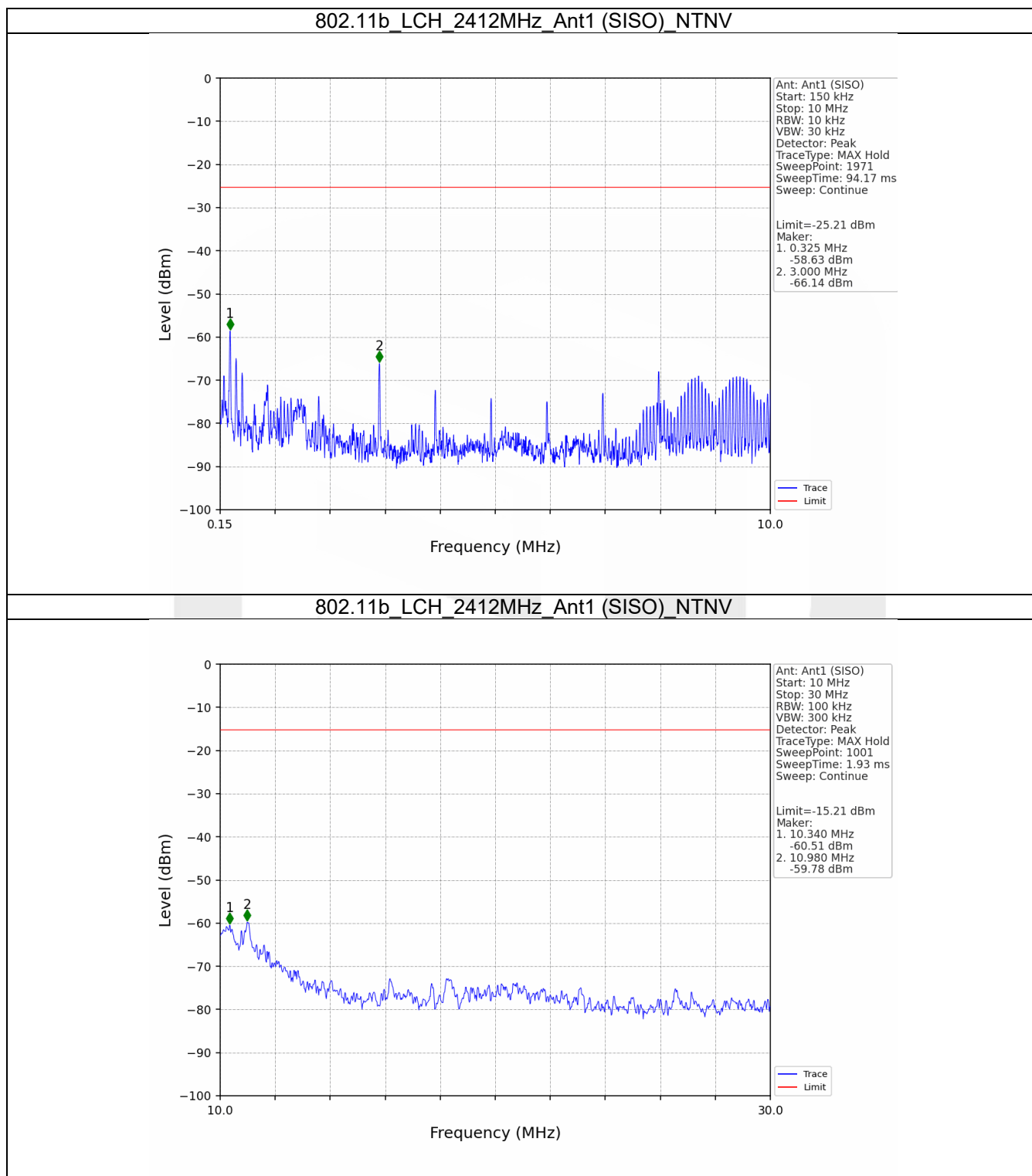


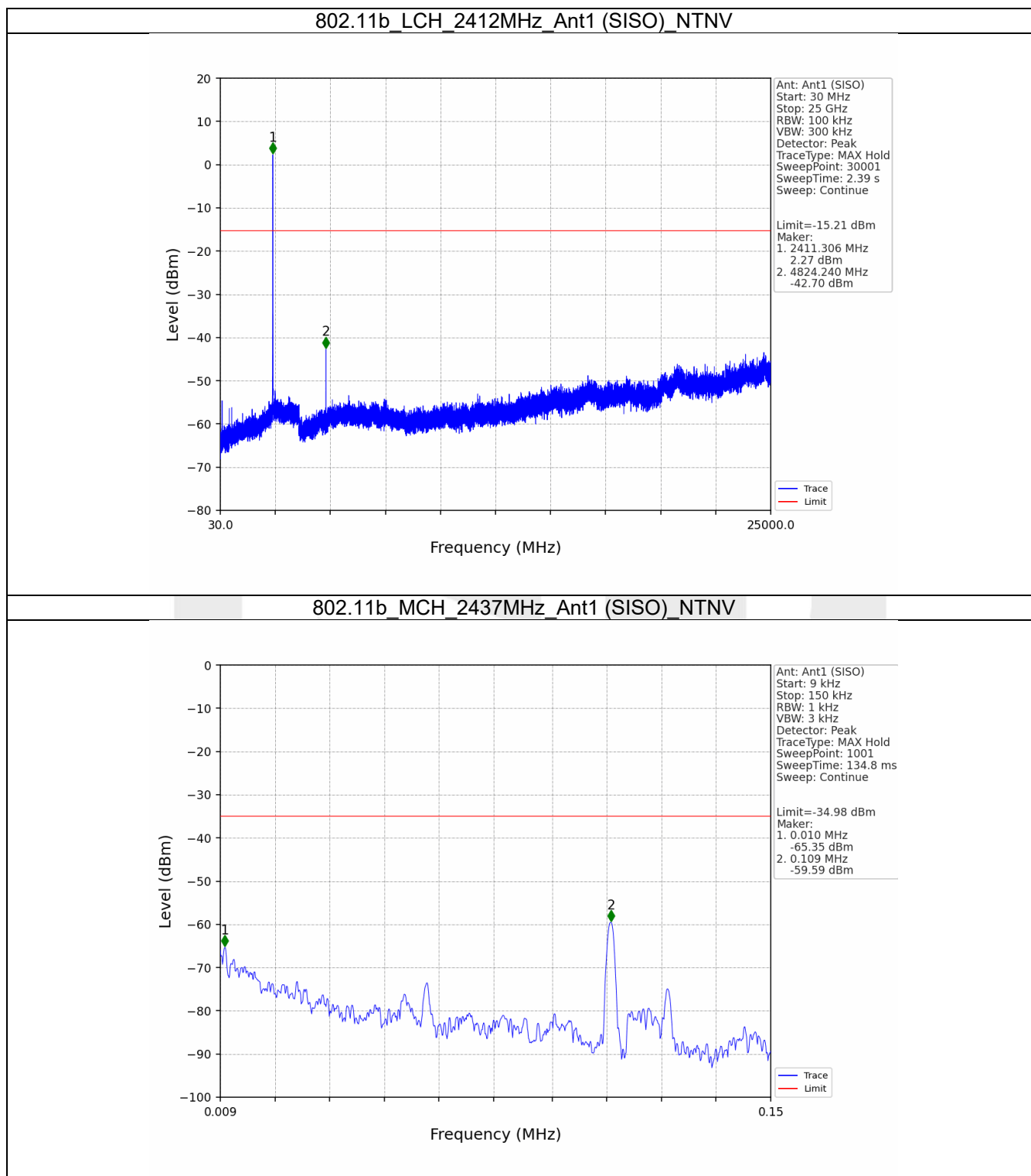


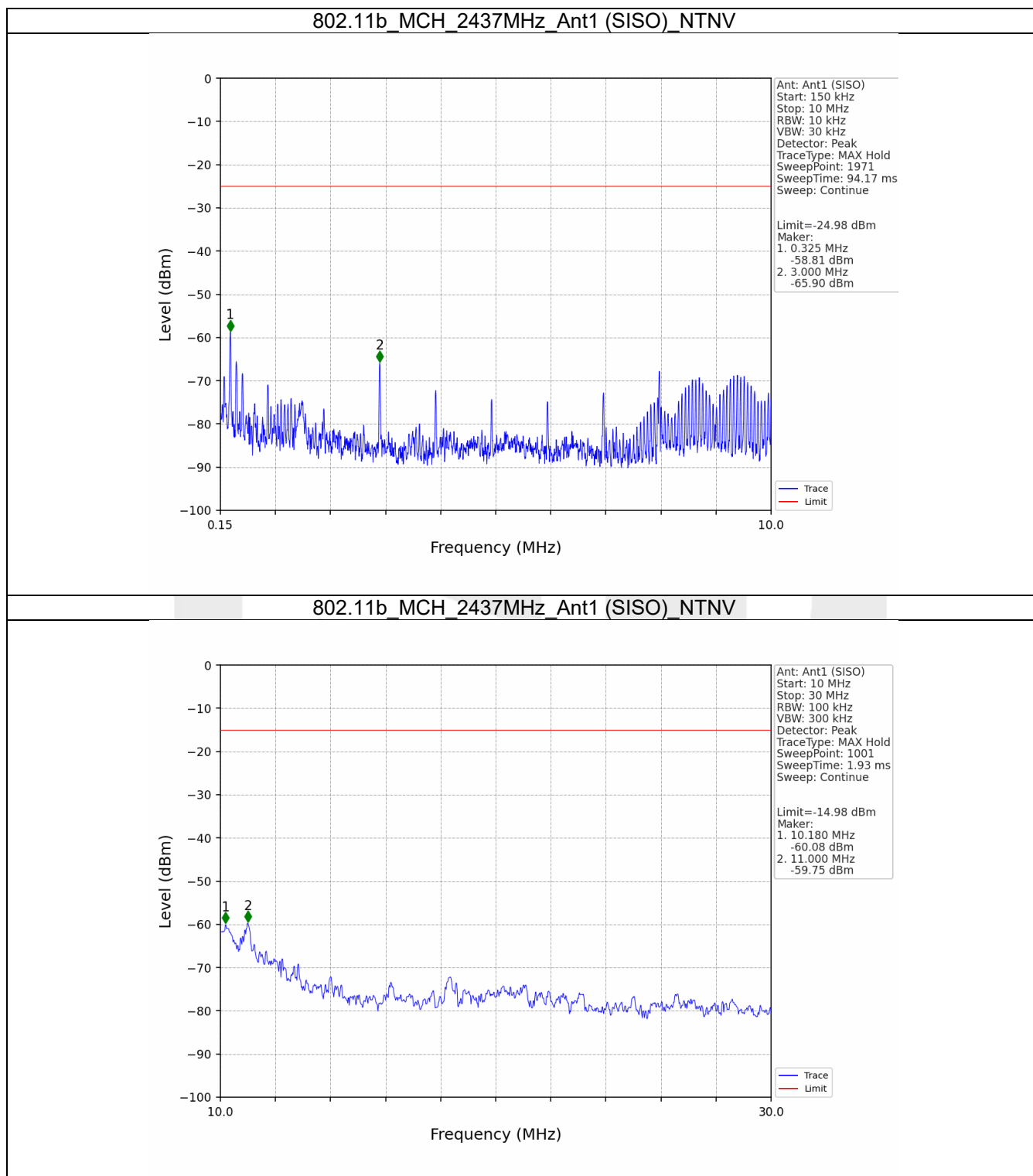


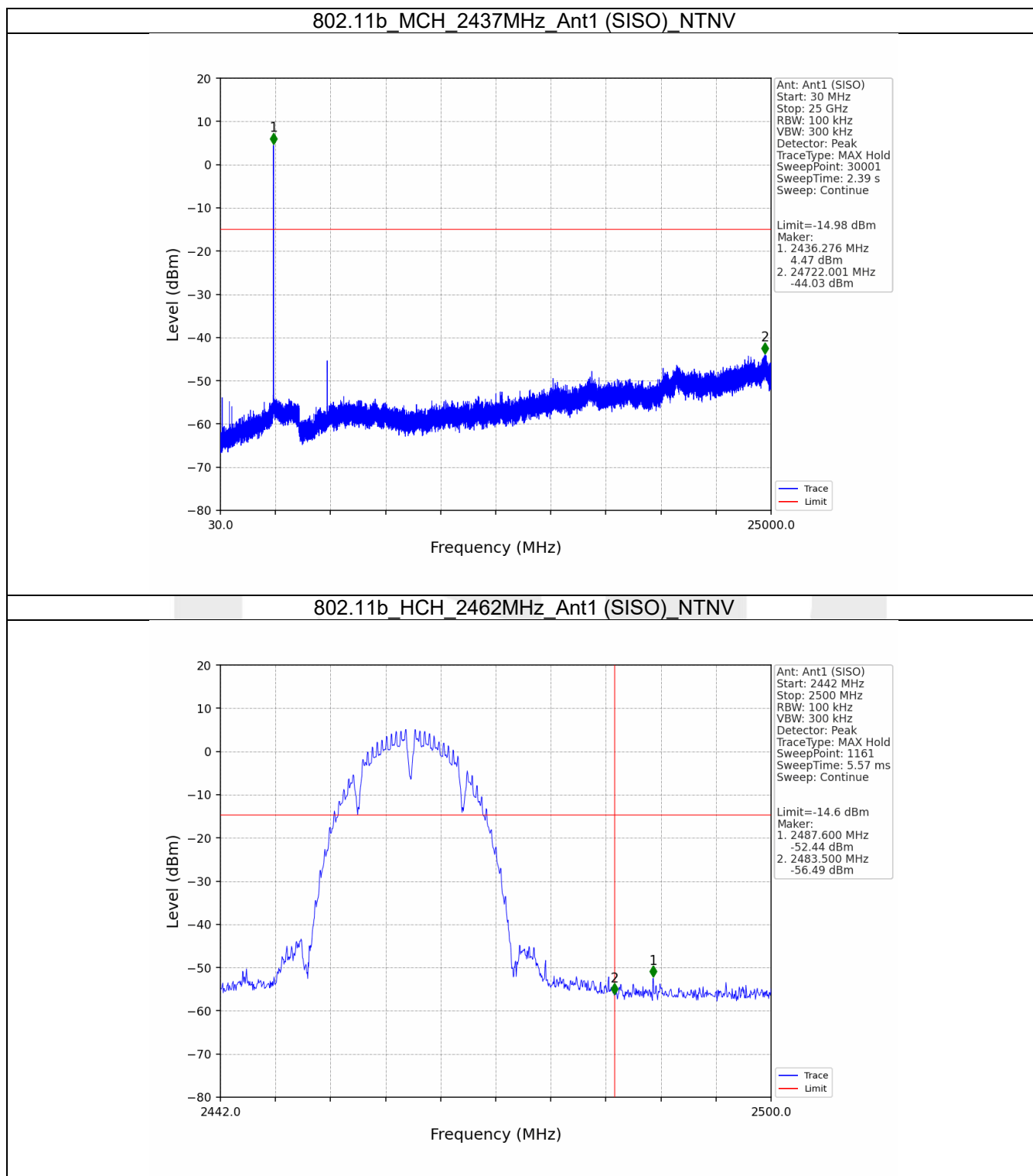
### 5.2.2 CSE

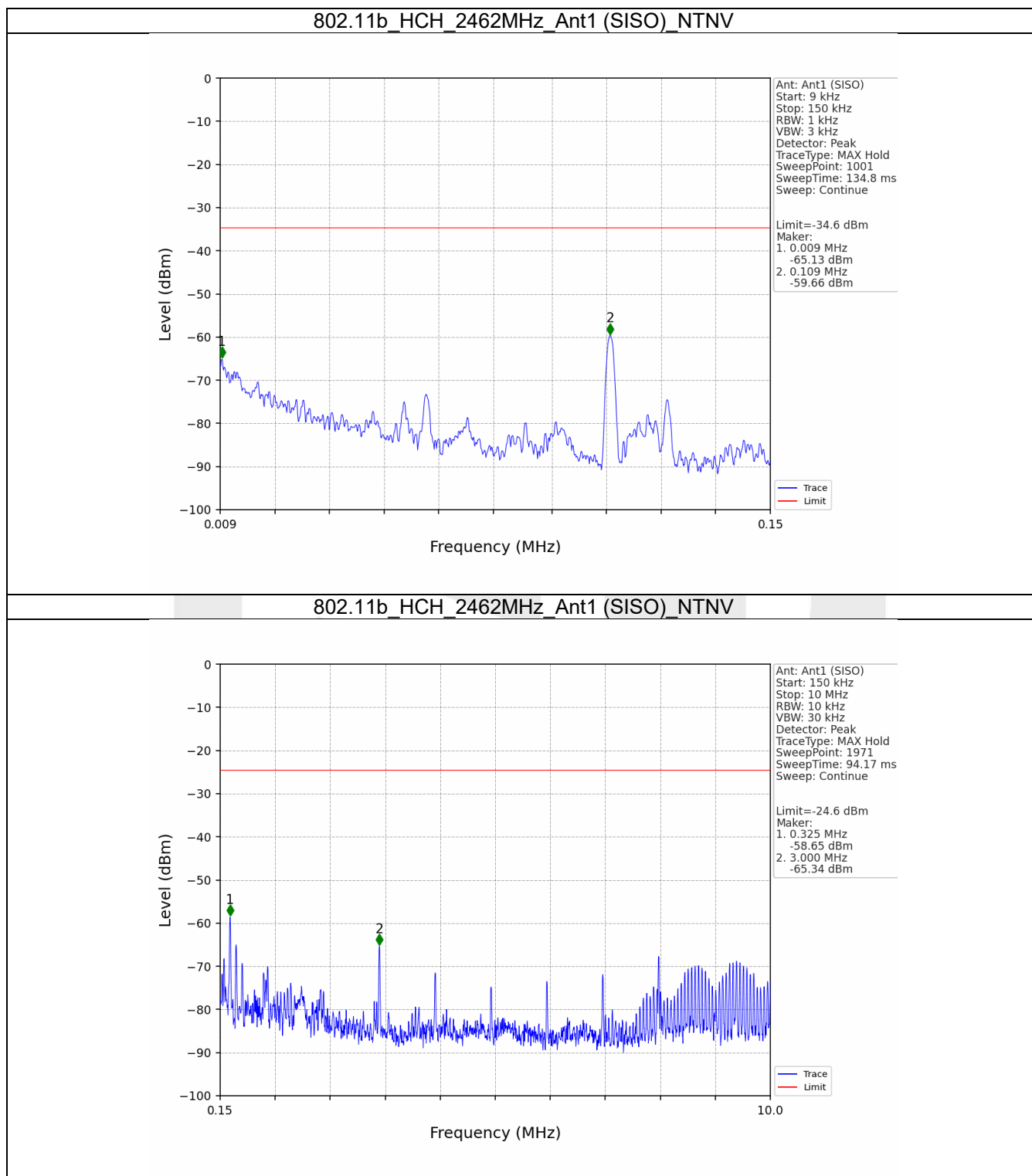


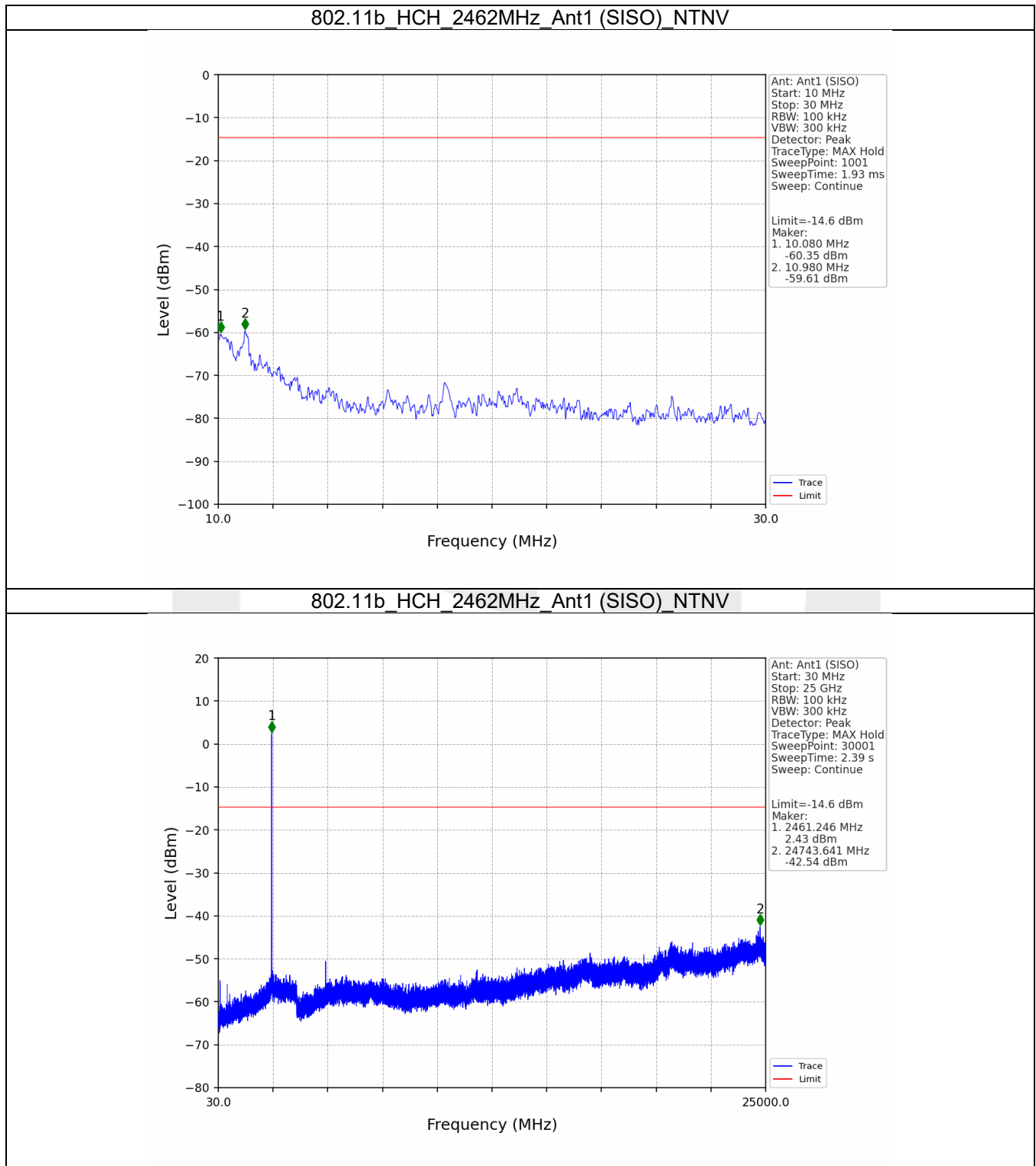


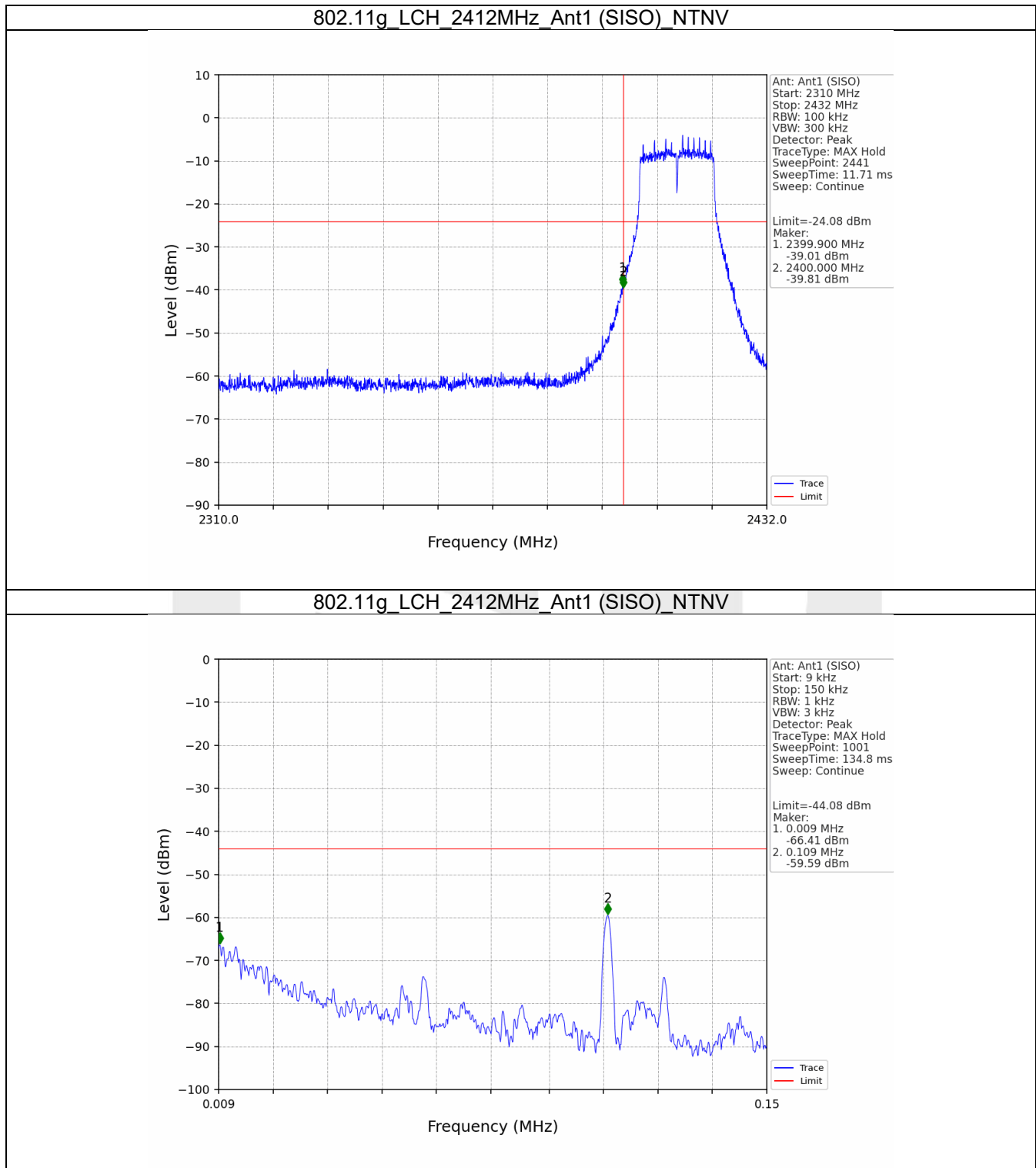


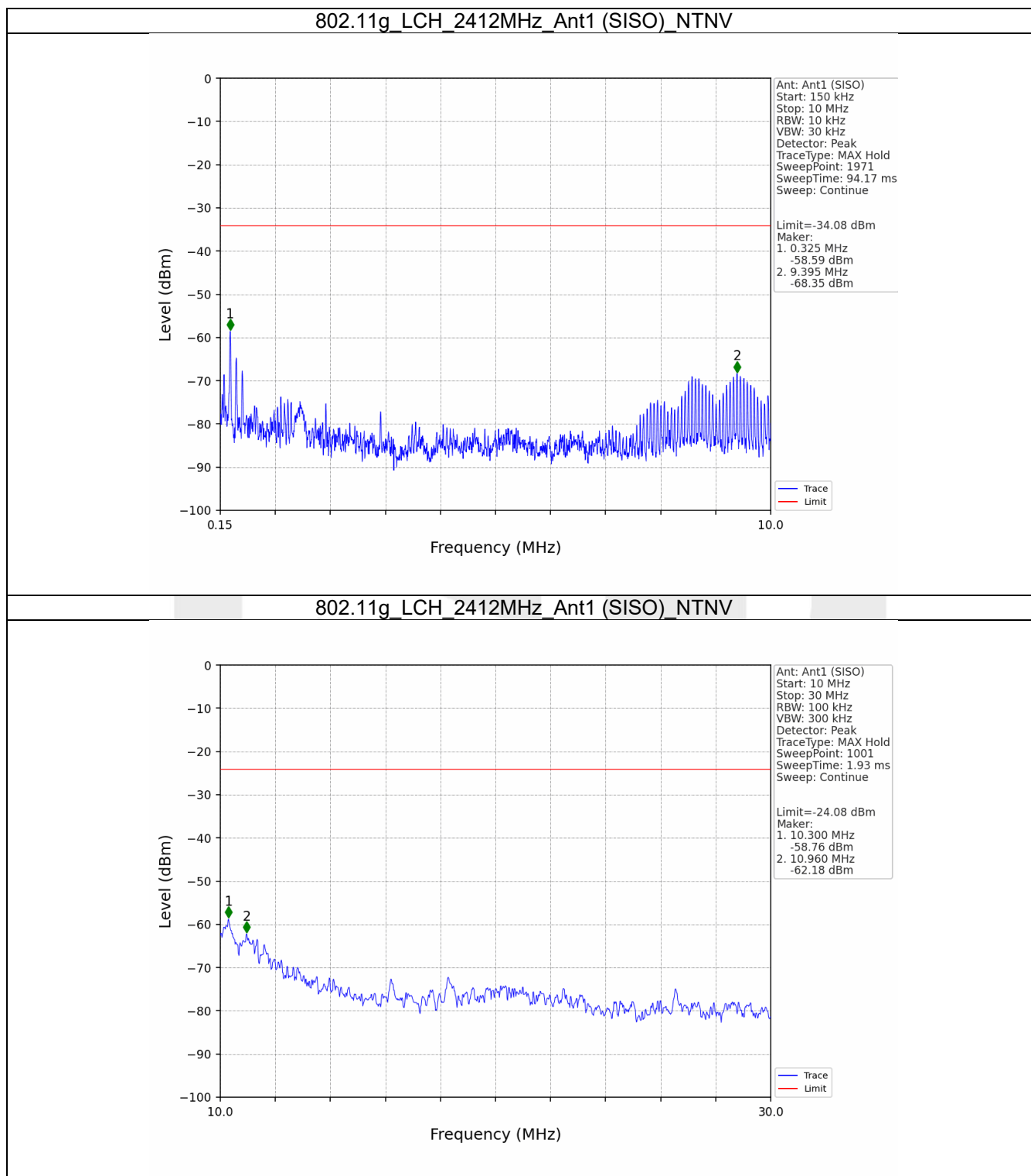


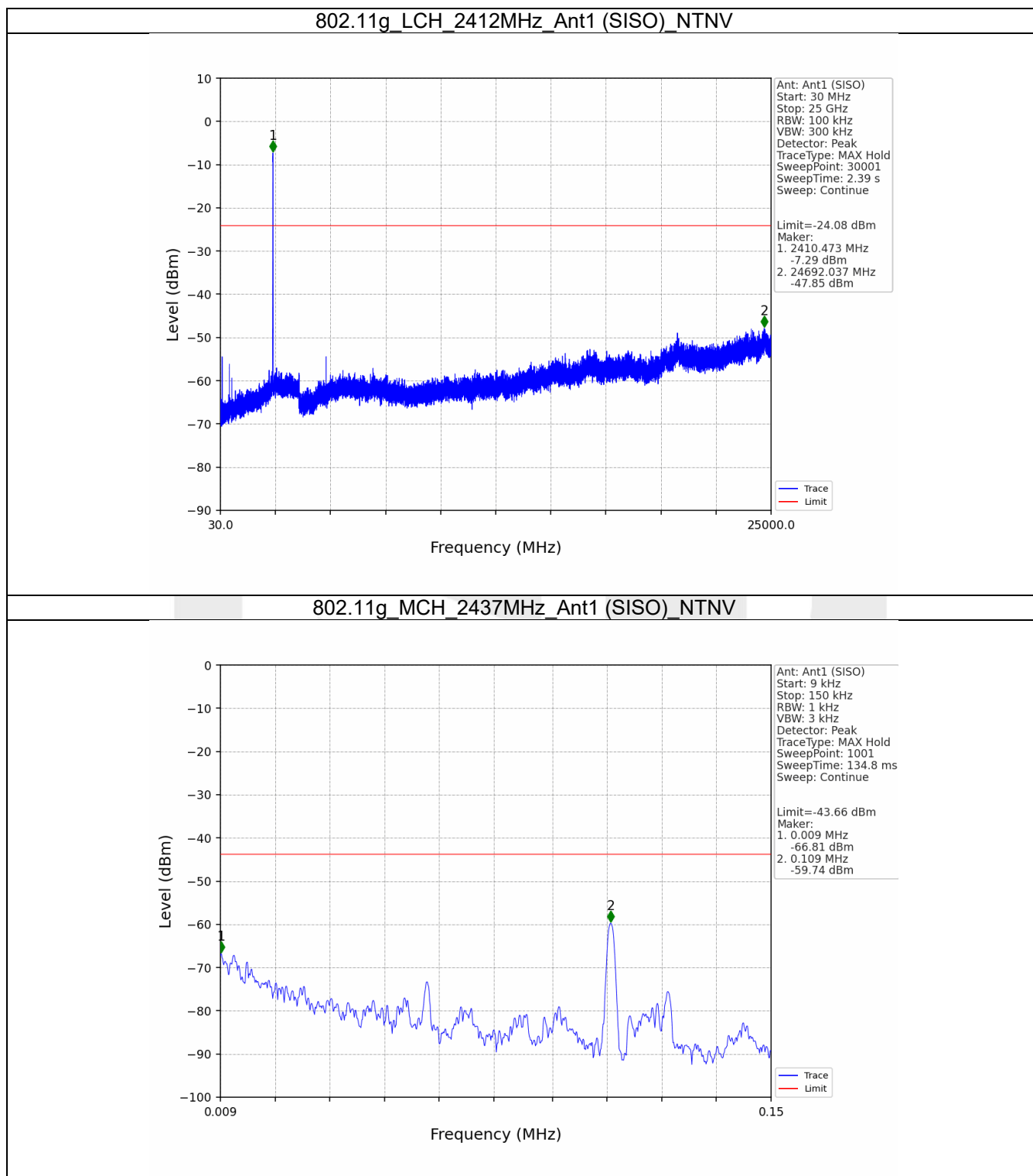


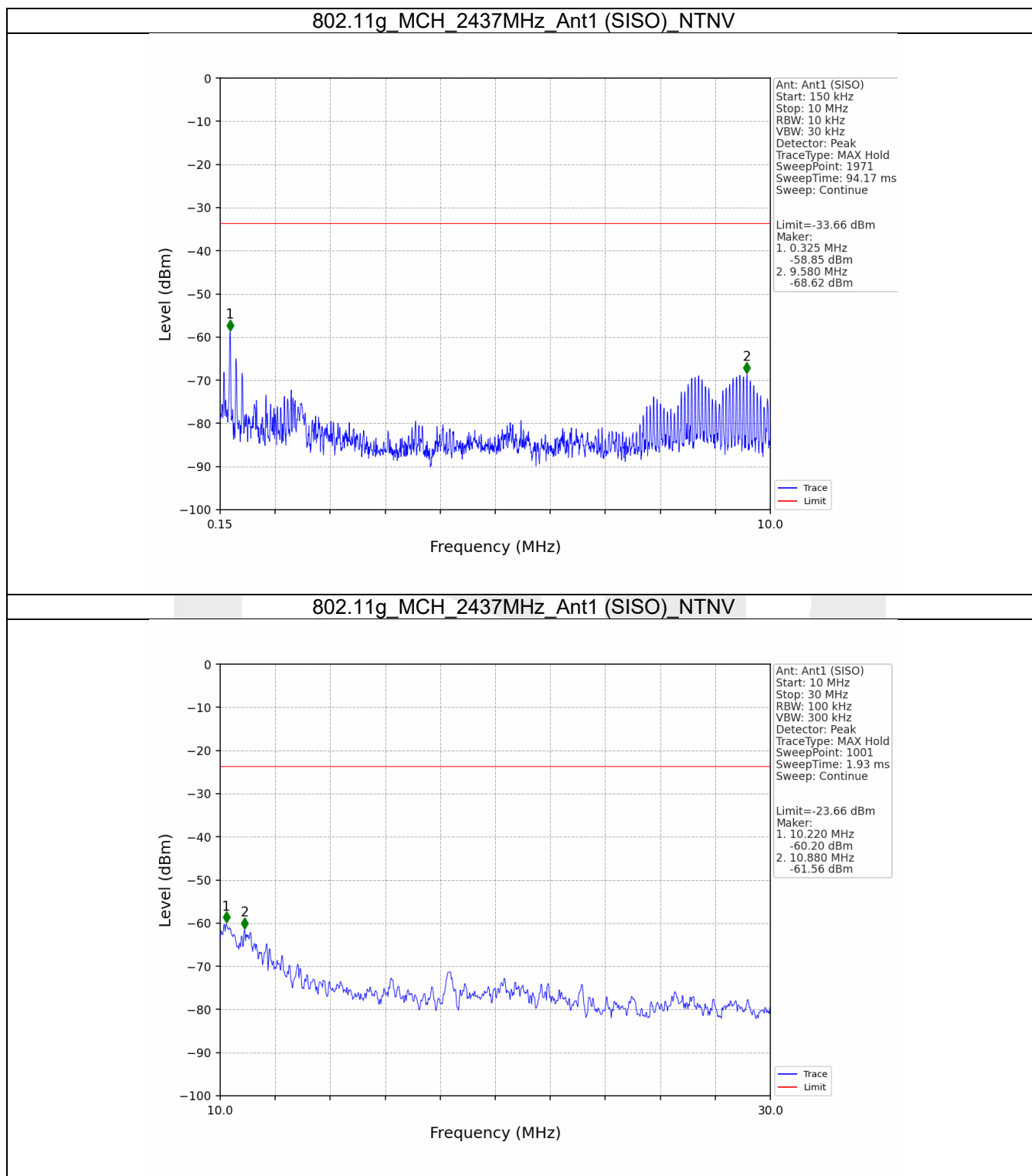


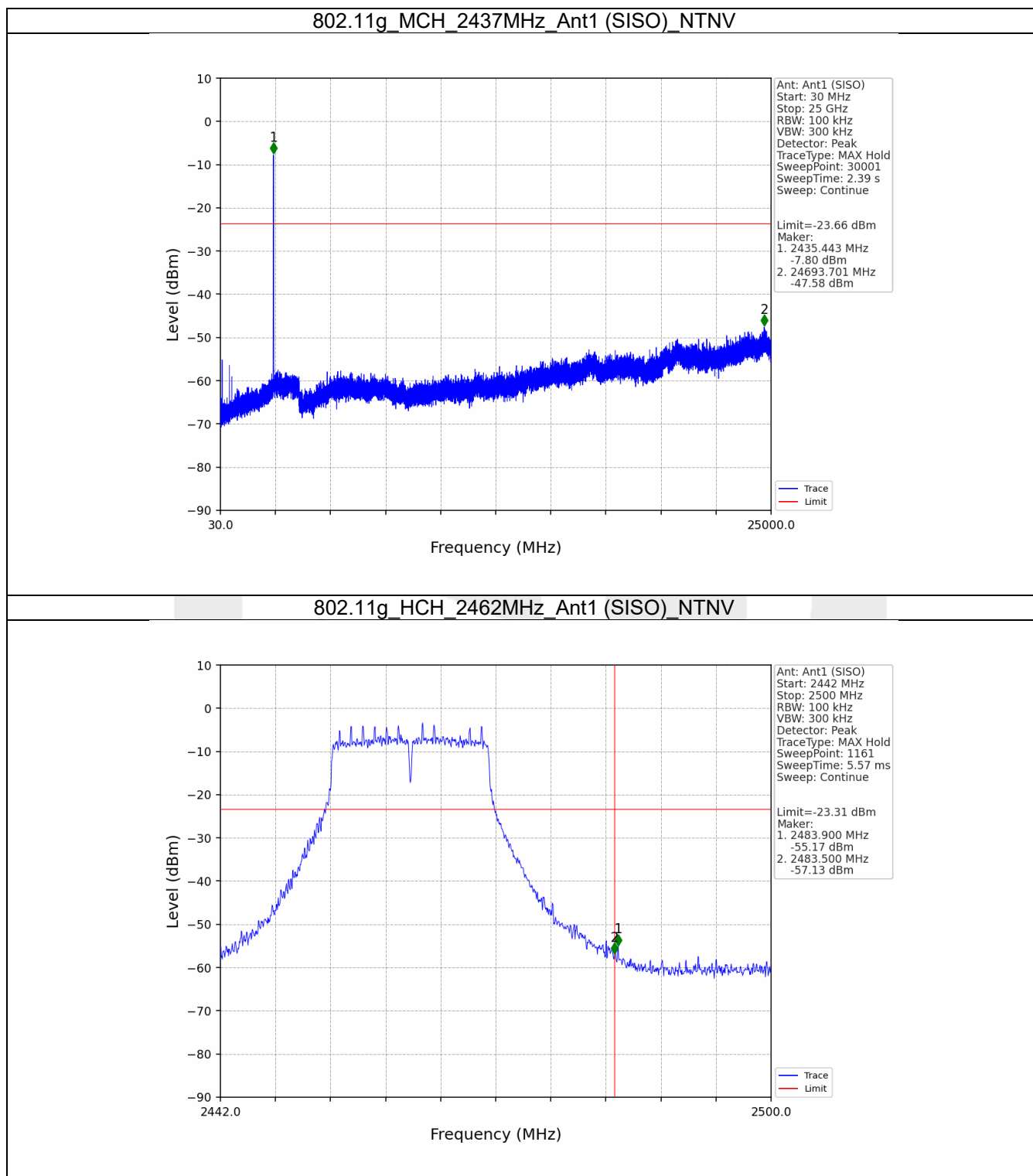


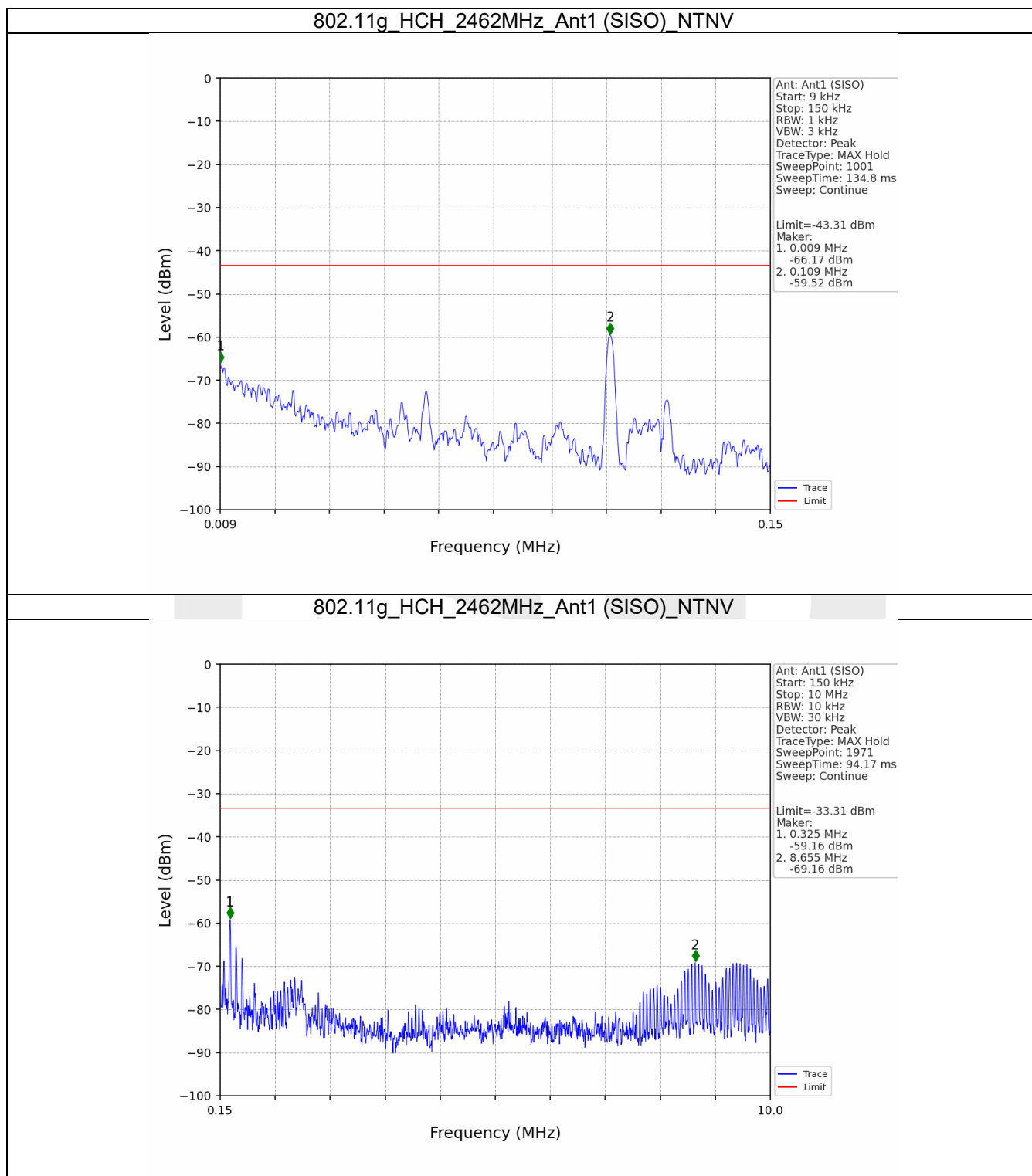


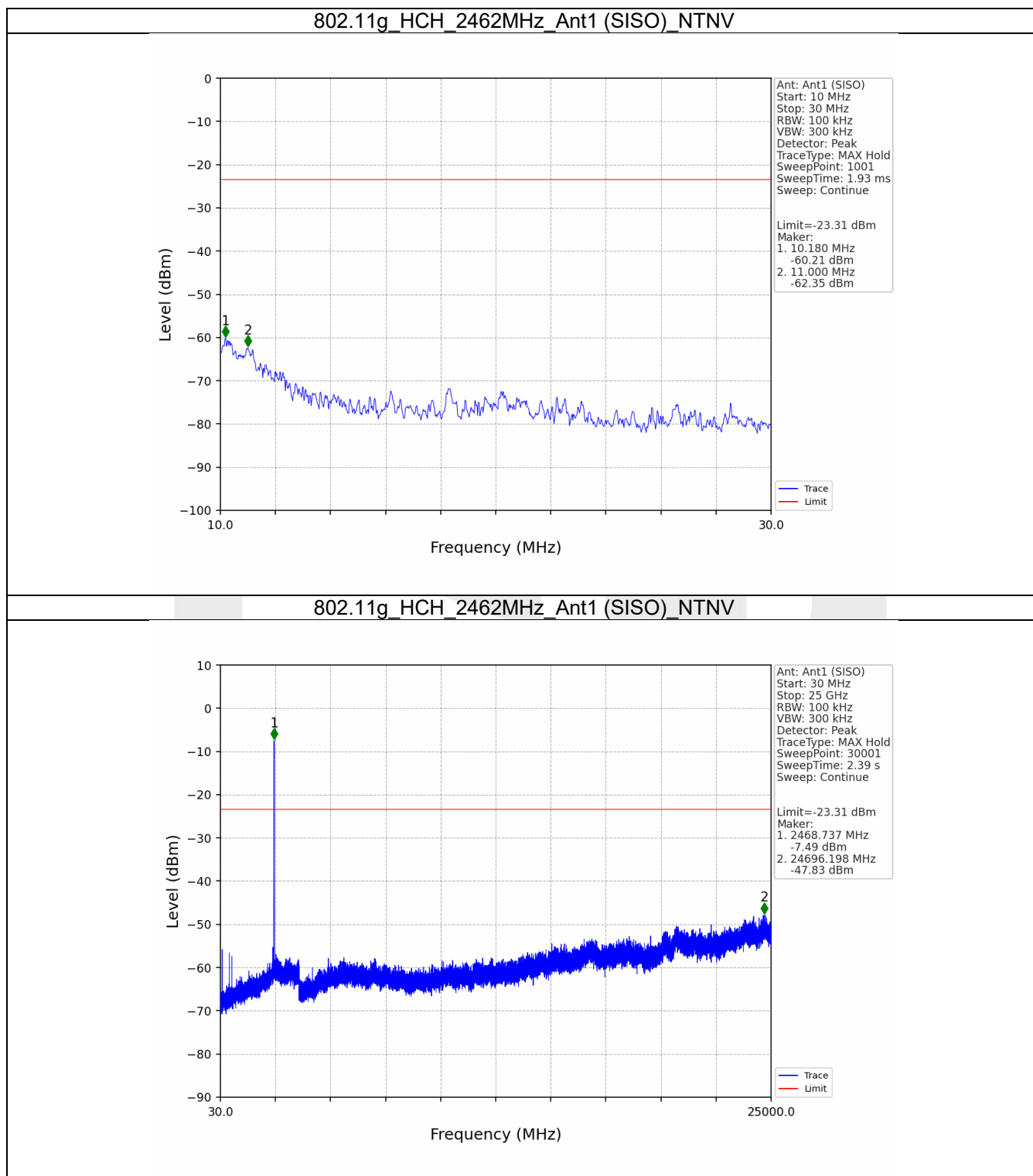


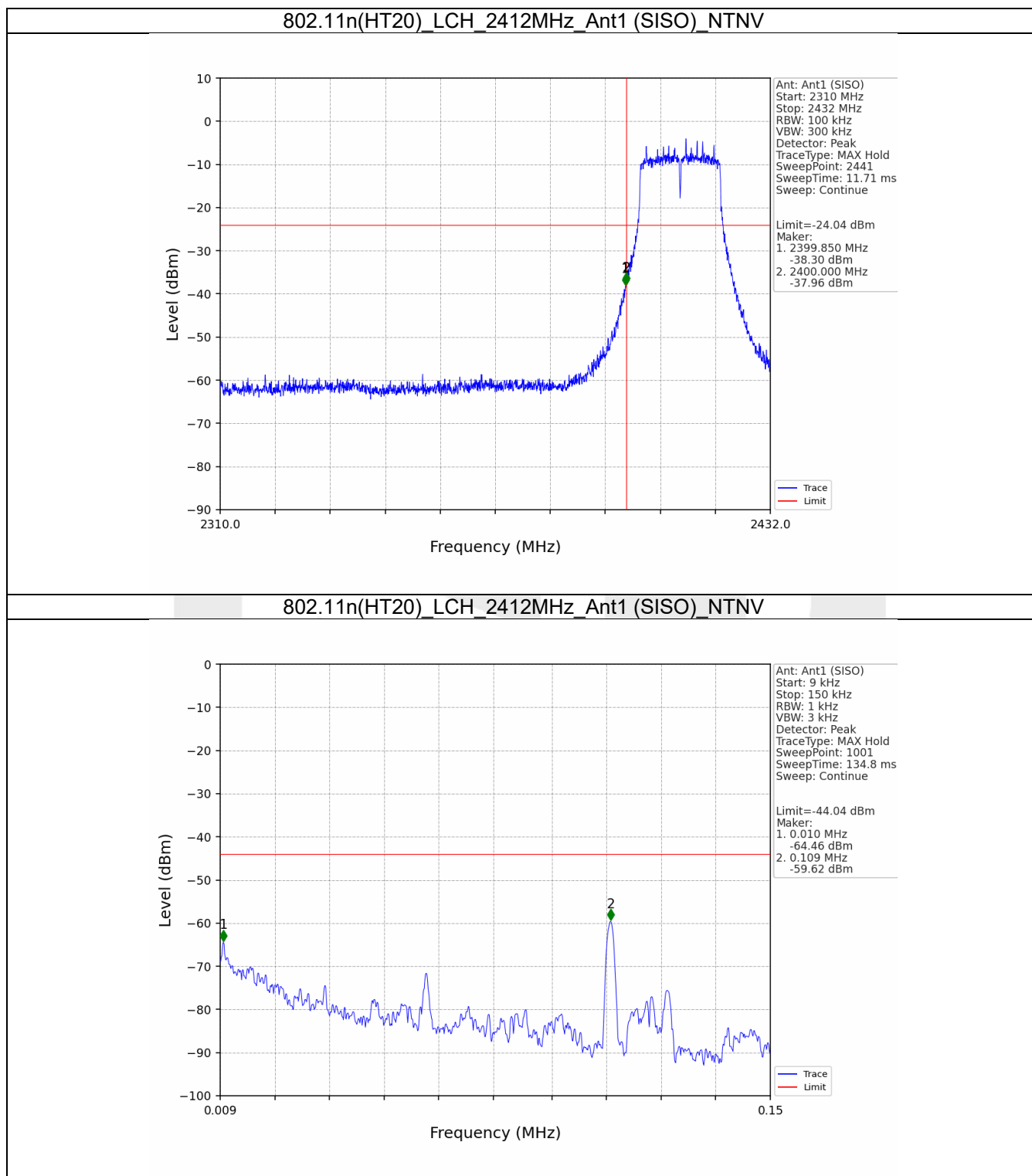


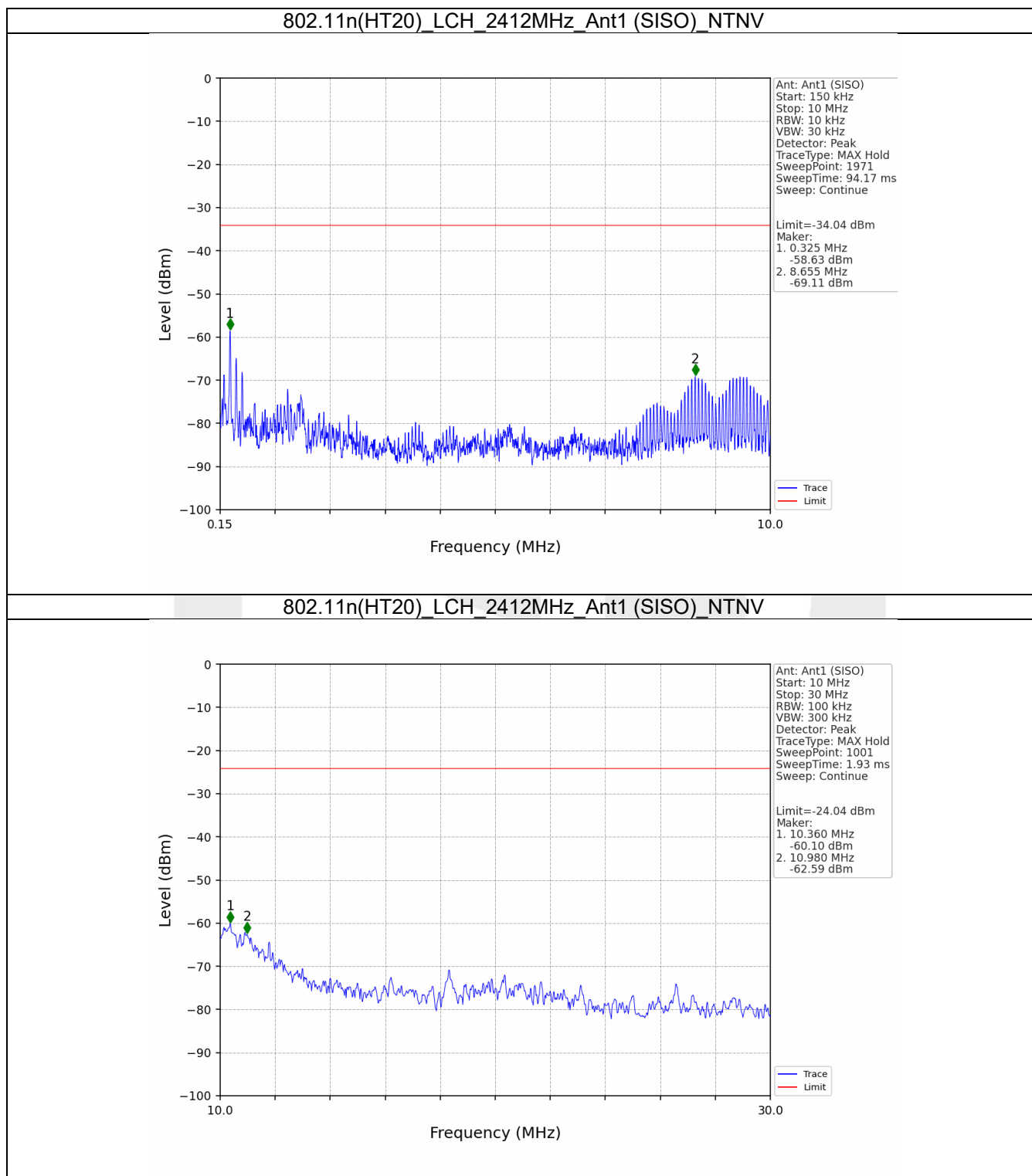


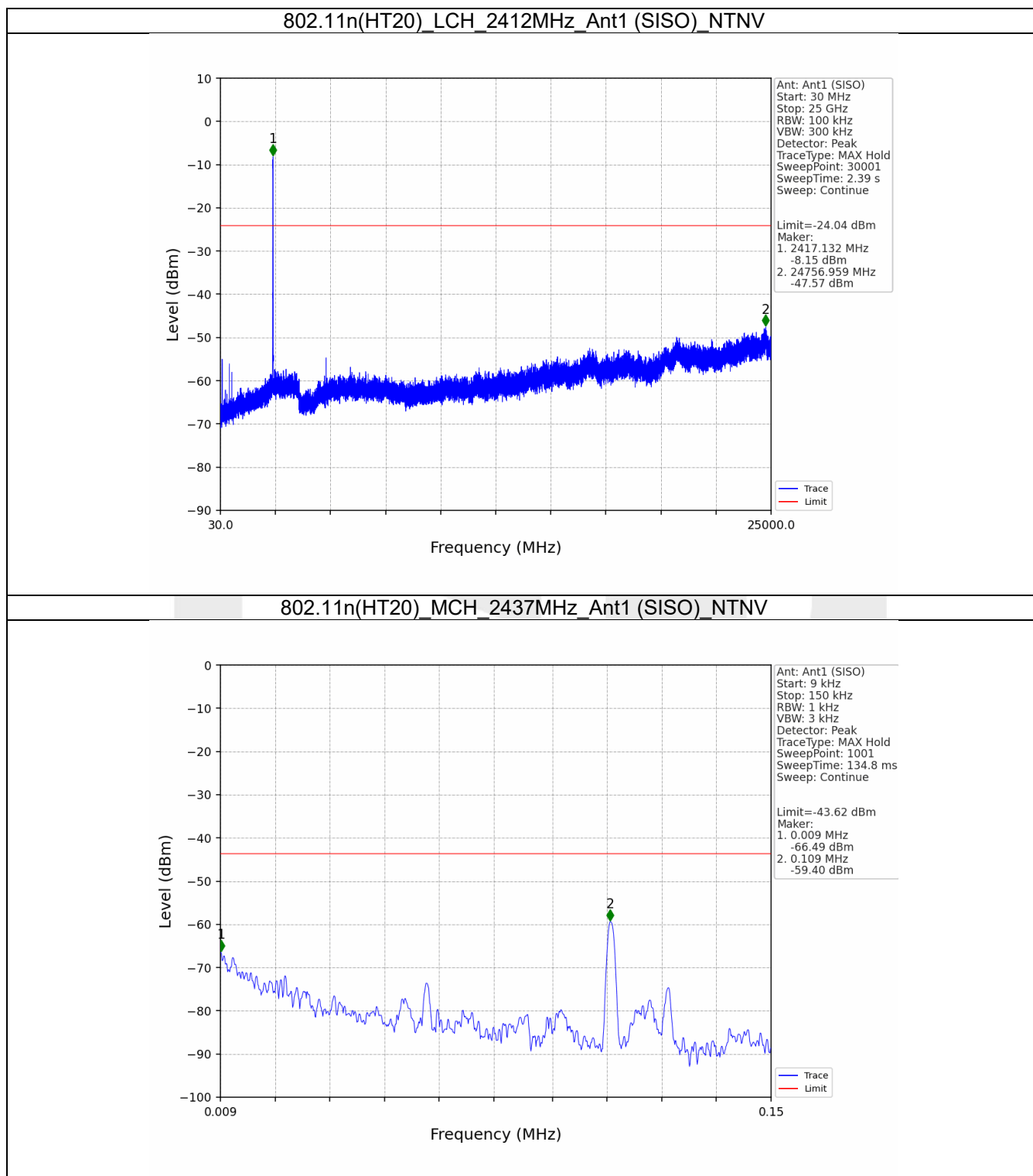


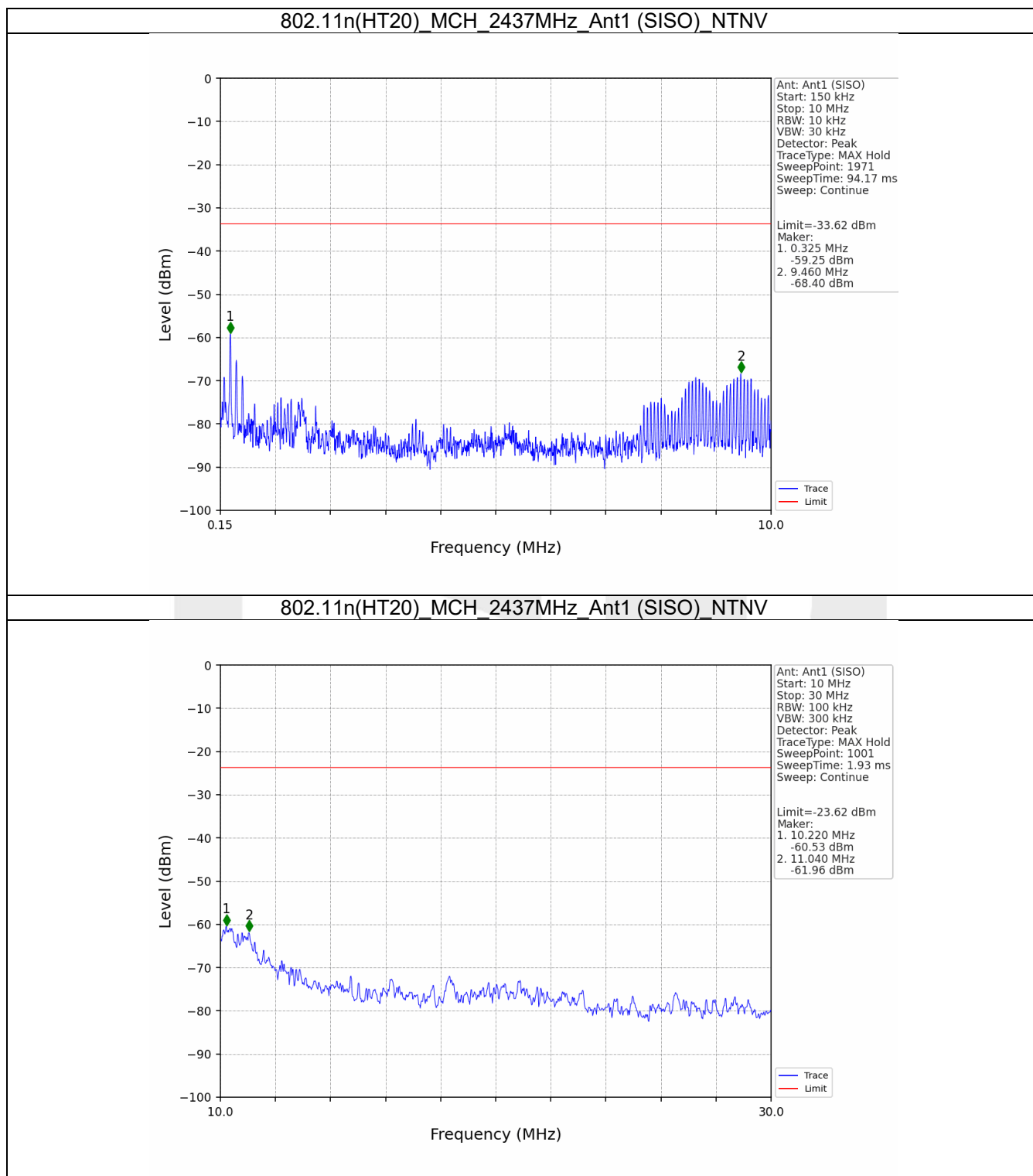


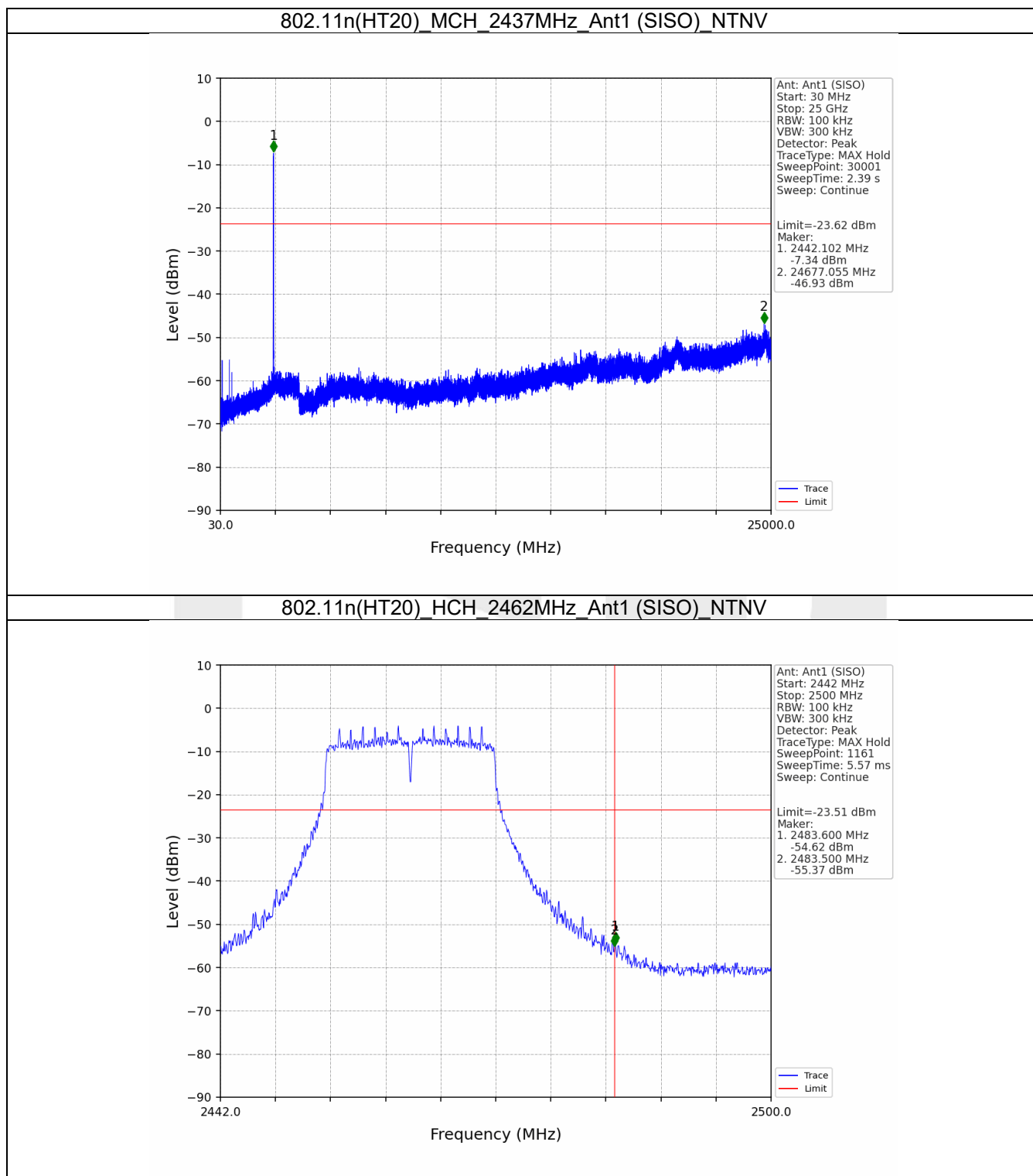


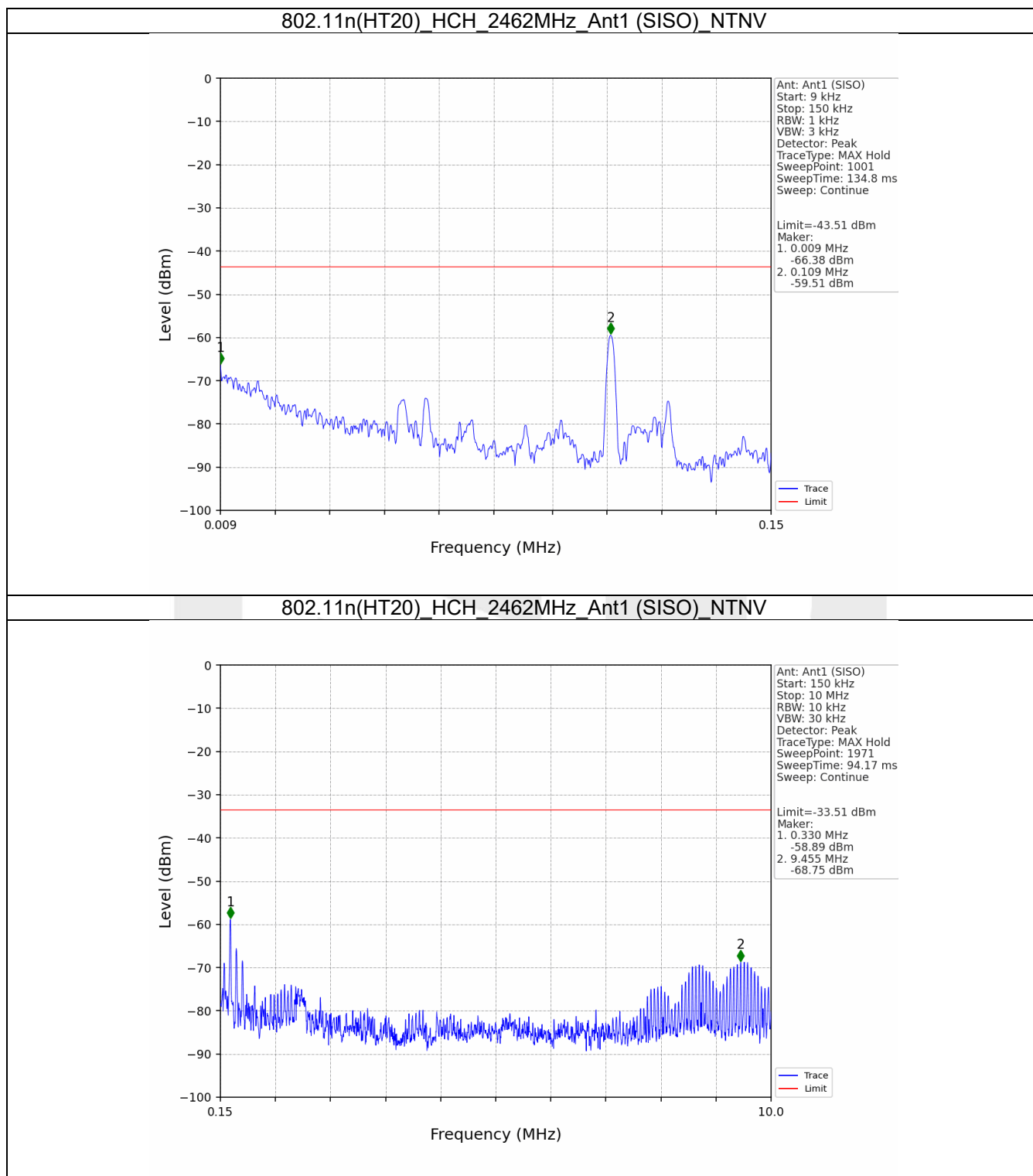


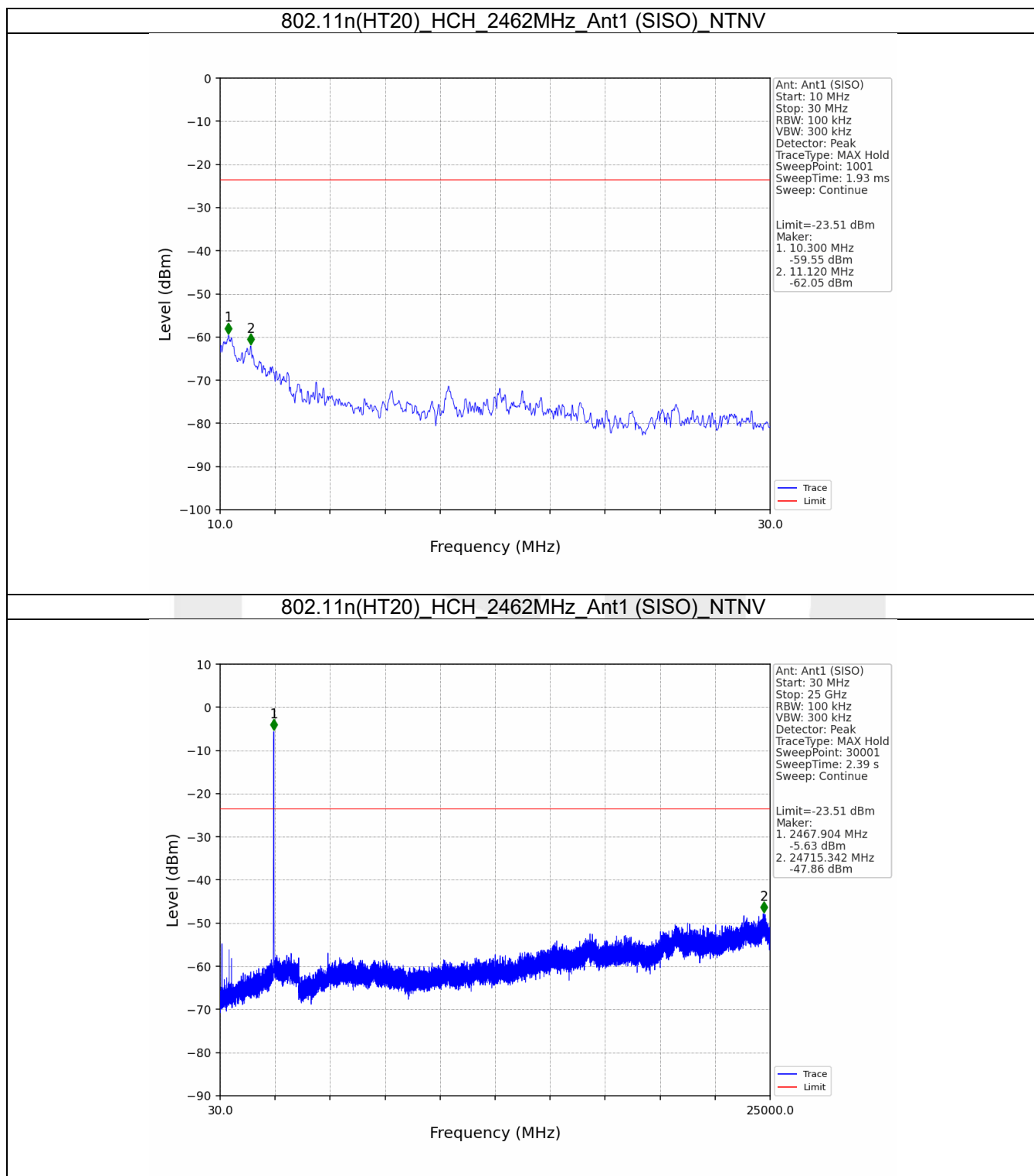












----- End of Report -----