

## Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR241100232201

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### 3. Maximum Conducted Output Power

#### 3.1 Test Result

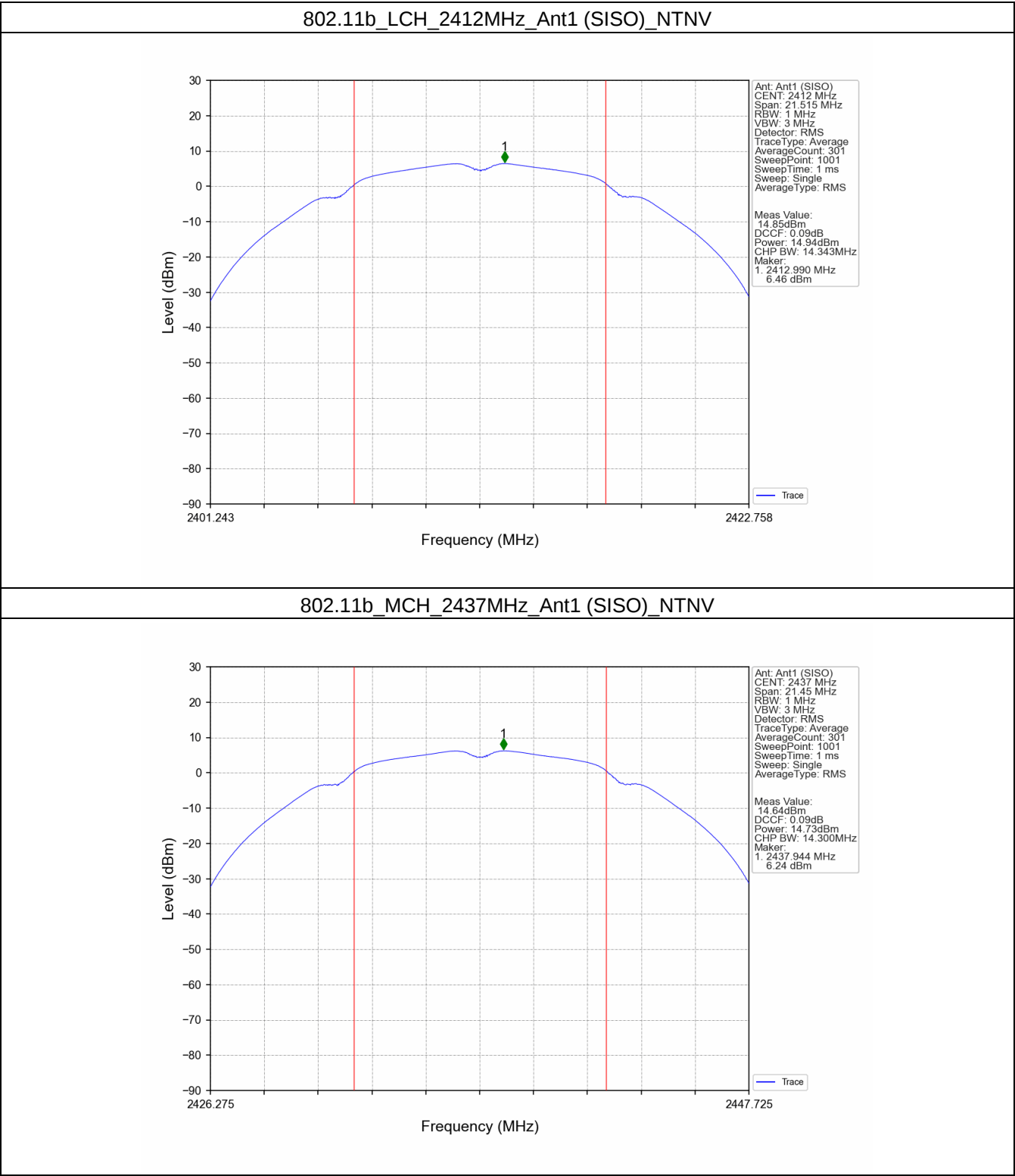
##### 3.1.1 Power

| Mode            | TX Type | Frequency (MHz) | RU | RU Pos | Maximum Average Conducted Output Power (dBm) |       | Verdict |
|-----------------|---------|-----------------|----|--------|----------------------------------------------|-------|---------|
|                 |         |                 |    |        | ANT1                                         | Limit |         |
| 802.11b         | SISO    | 2412            | /  | /      | 14.94                                        | <=30  | Pass    |
|                 |         | 2437            | /  | /      | 14.73                                        | <=30  | Pass    |
|                 |         | 2462            | /  | /      | 13.78                                        | <=30  | Pass    |
| 802.11g         | SISO    | 2412            | /  | /      | 14.26                                        | <=30  | Pass    |
|                 |         | 2437            | /  | /      | 14.43                                        | <=30  | Pass    |
|                 |         | 2462            | /  | /      | 14.03                                        | <=30  | Pass    |
| 802.11n (HT20)  | SISO    | 2412            | /  | /      | 14.23                                        | <=30  | Pass    |
|                 |         | 2437            | /  | /      | 14.42                                        | <=30  | Pass    |
|                 |         | 2462            | /  | /      | 14.83                                        | <=30  | Pass    |
| 802.11n (HT40)  | SISO    | 2422            | /  | /      | 14.08                                        | <=30  | Pass    |
|                 |         | 2437            | /  | /      | 14.24                                        | <=30  | Pass    |
|                 |         | 2452            | /  | /      | 14.08                                        | <=30  | Pass    |
| 802.11ax (HE20) | SISO    | 2412            | SU | /      | 14.14                                        | <=30  | Pass    |
|                 |         | 2437            | SU | /      | 14.33                                        | <=30  | Pass    |
|                 |         | 2462            | SU | /      | 14.83                                        | <=30  | Pass    |
| 802.11ax (HE40) | SISO    | 2422            | SU | /      | 14.12                                        | <=30  | Pass    |
|                 |         | 2437            | SU | /      | 14.29                                        | <=30  | Pass    |
|                 |         | 2452            | SU | /      | 14.06                                        | <=30  | Pass    |

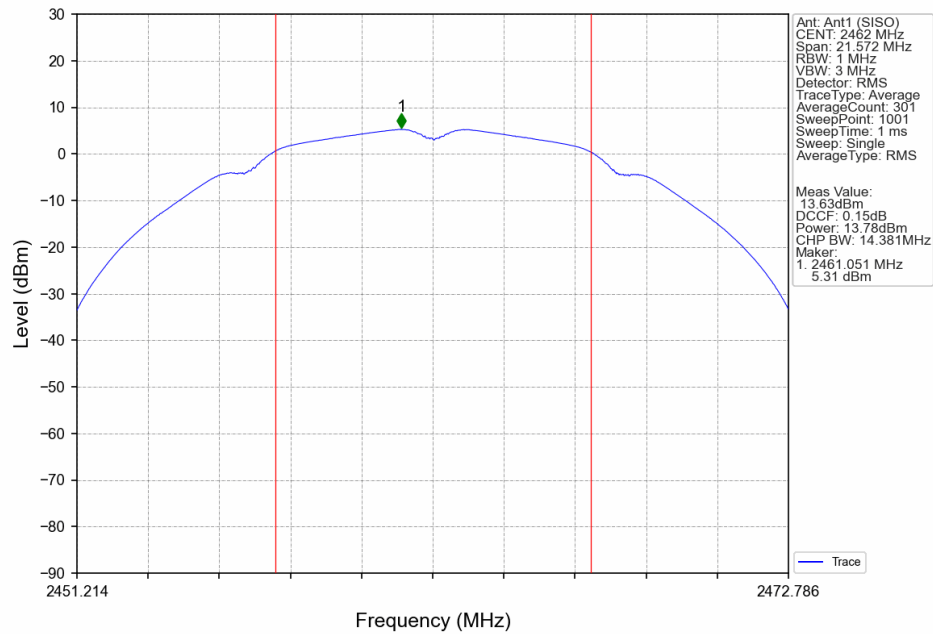
Note1: Antenna Gain: Ant1: 5.03dBi;

### 3.2 Test Graph

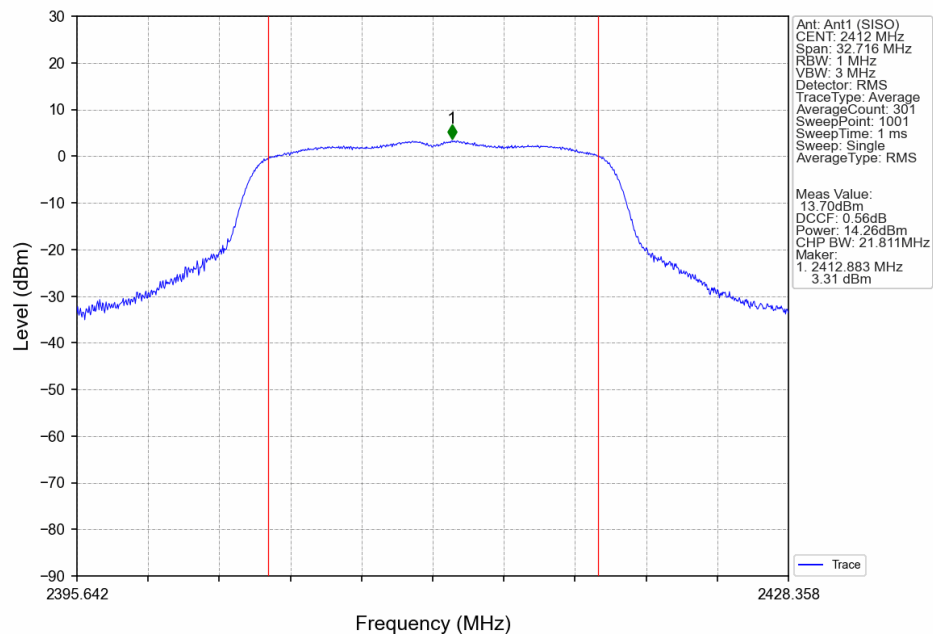
#### 3.2.1 Power



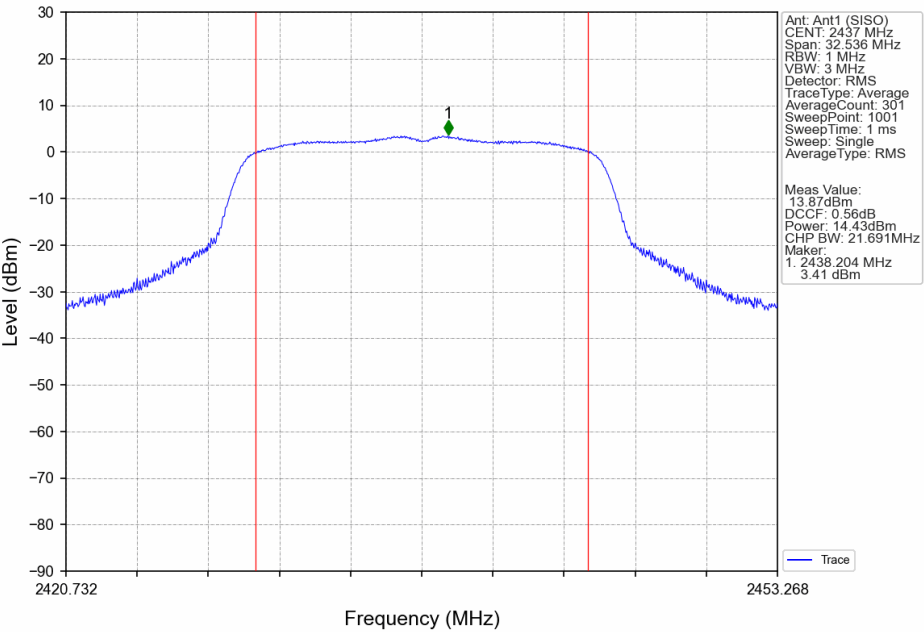
### 802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



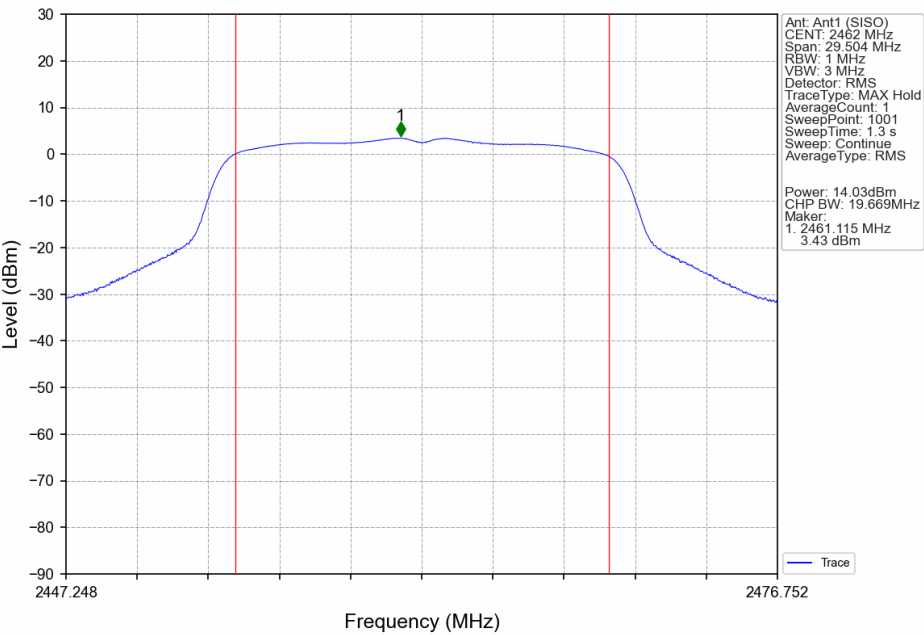
### 802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



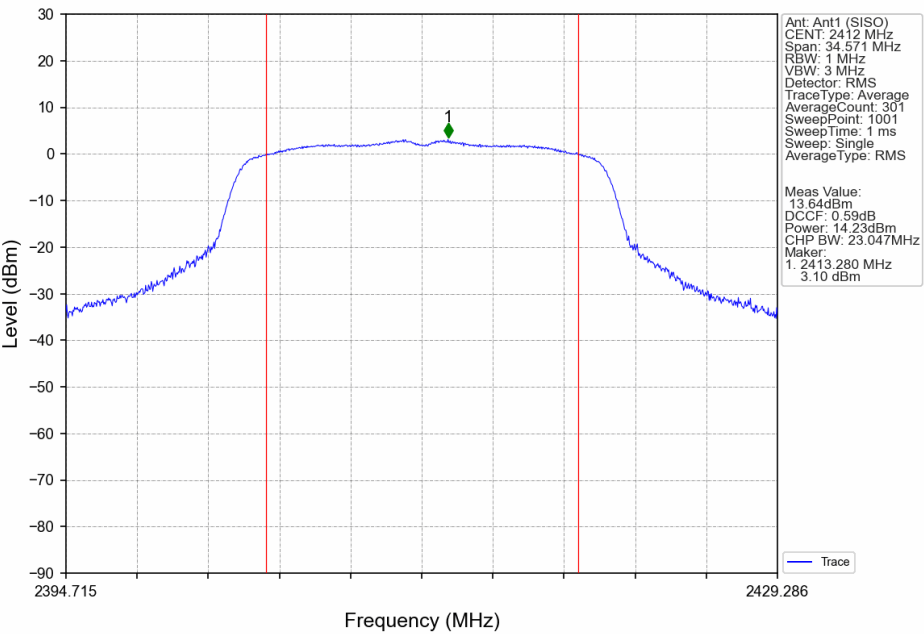
802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



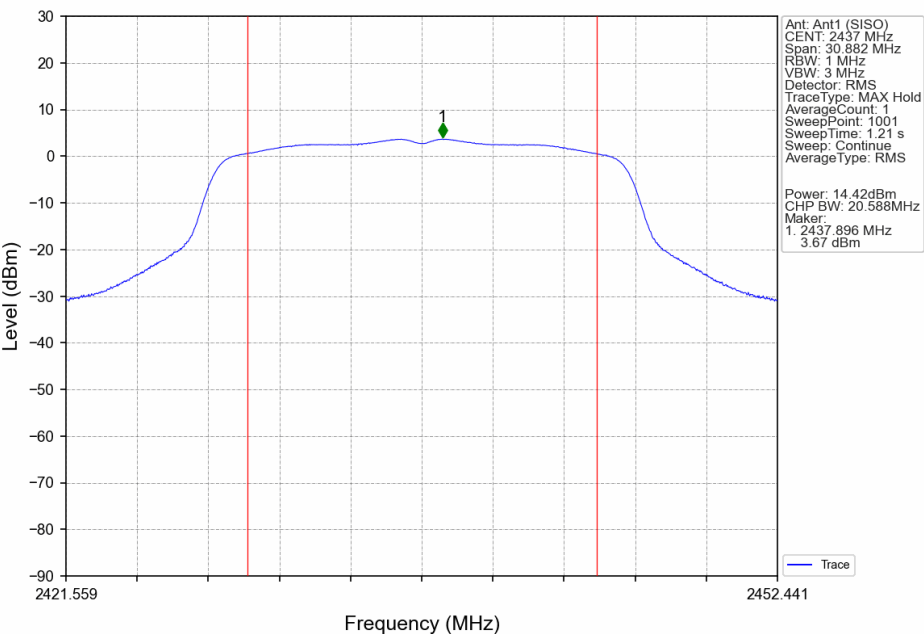
802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



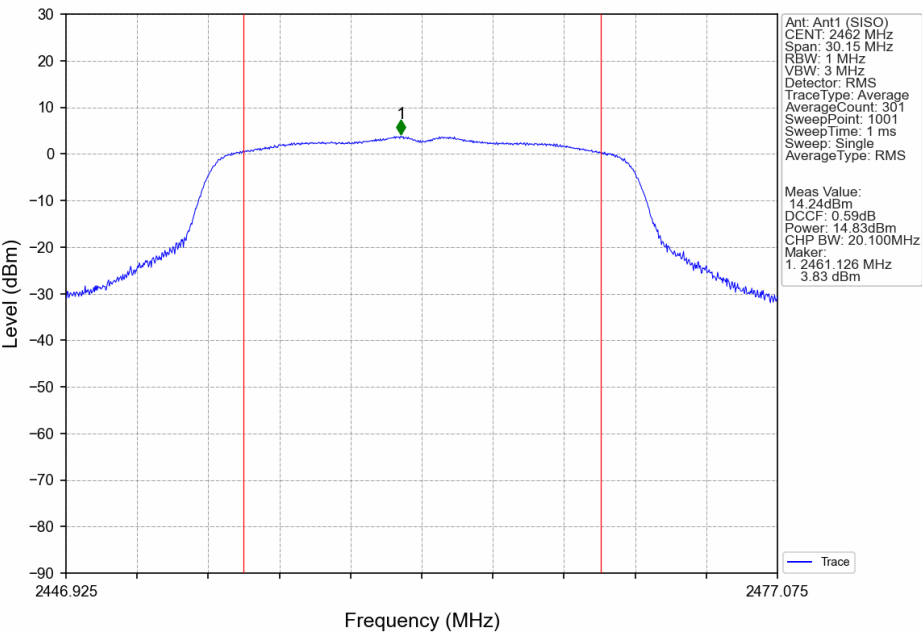
802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



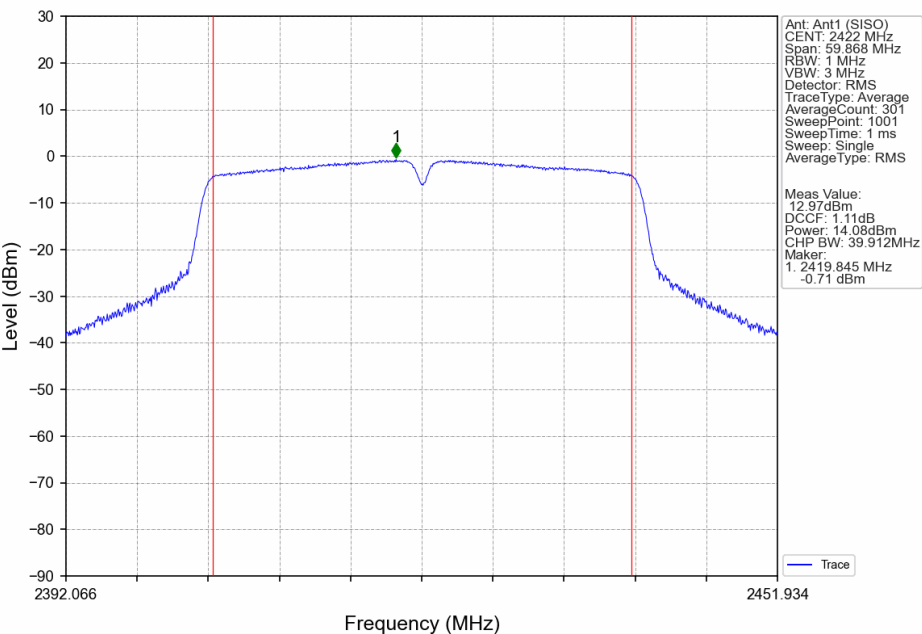
802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



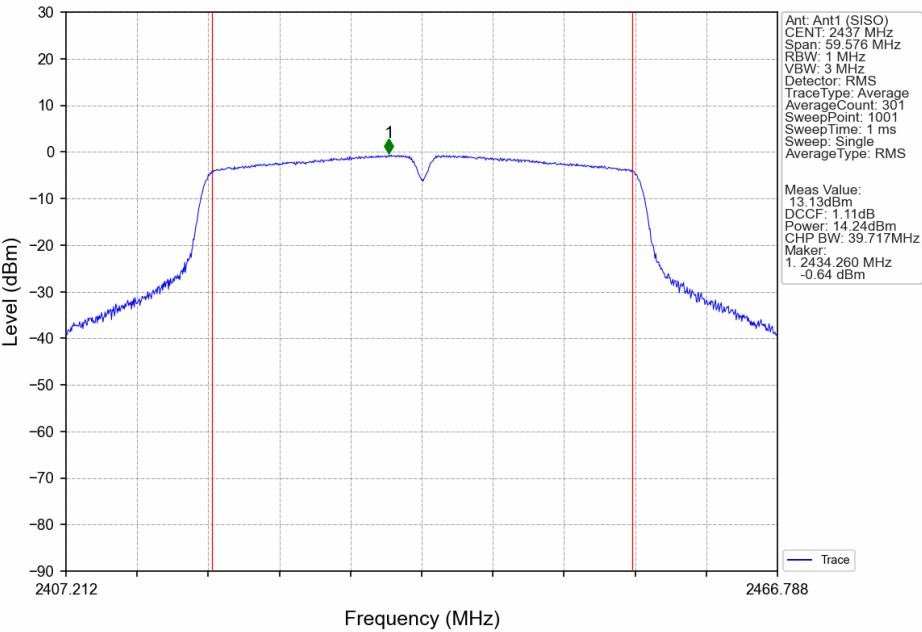
802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



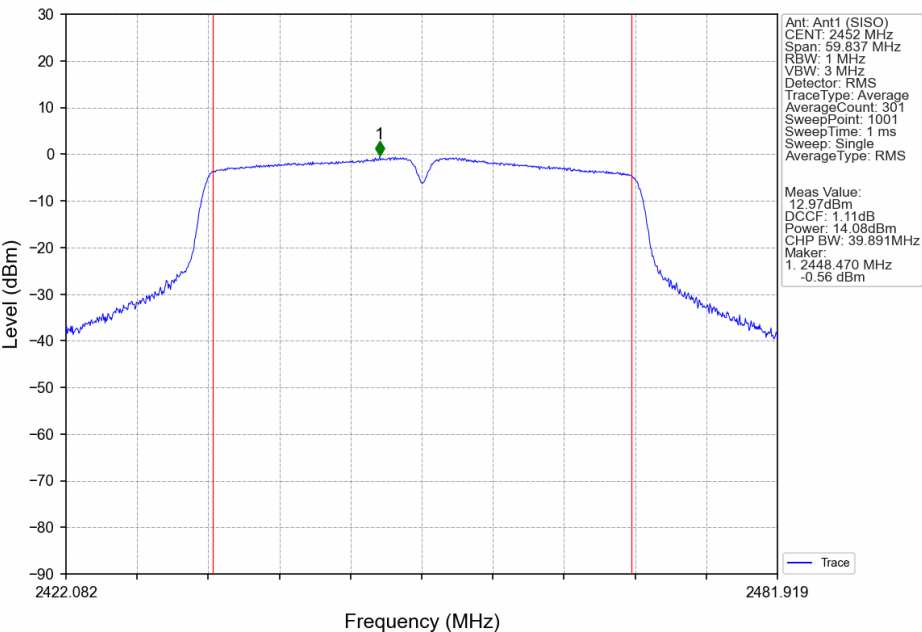
802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



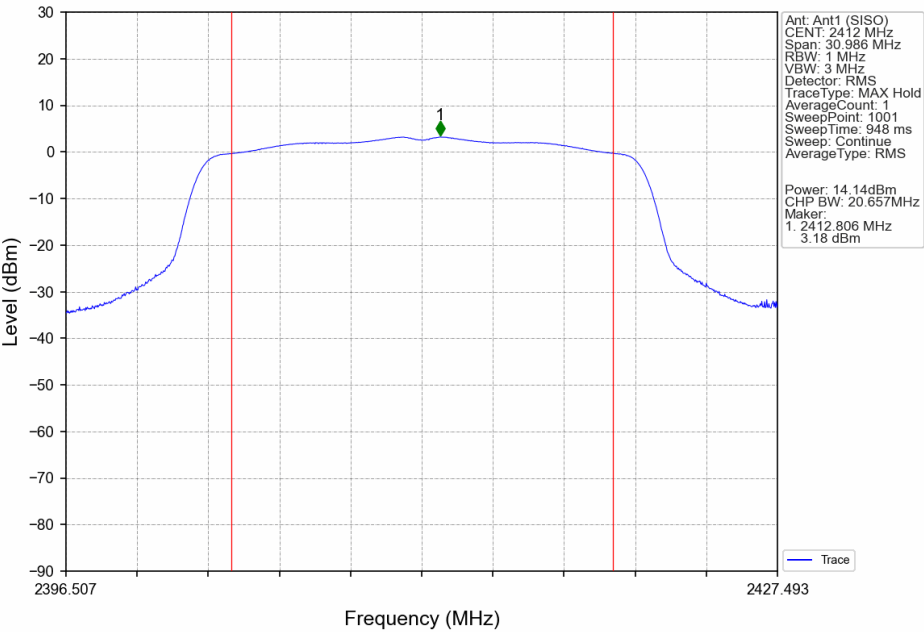
802.11n(HT40)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



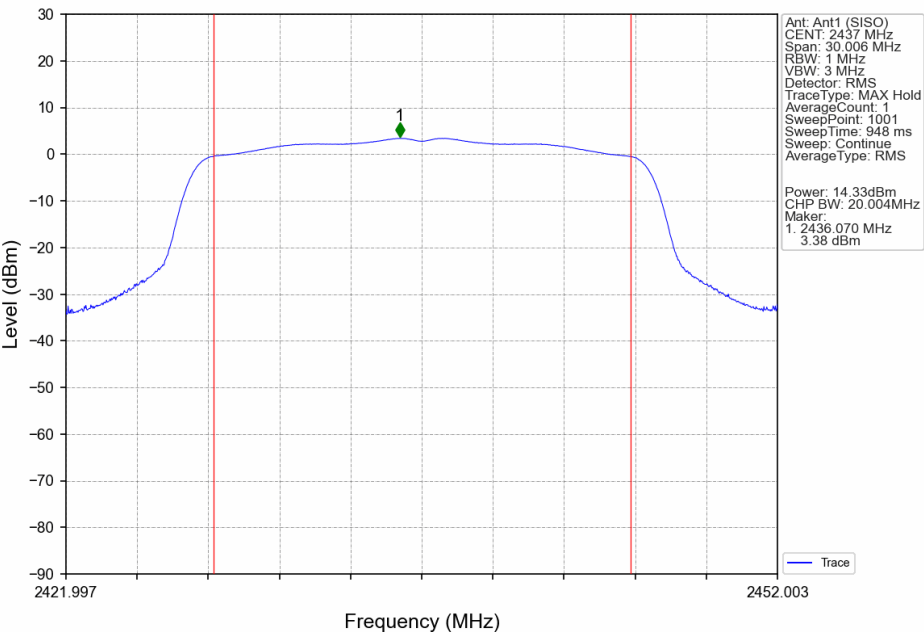
802.11n(HT40)\_HCH\_2452MHz\_Ant1 (SISO)\_NTNV



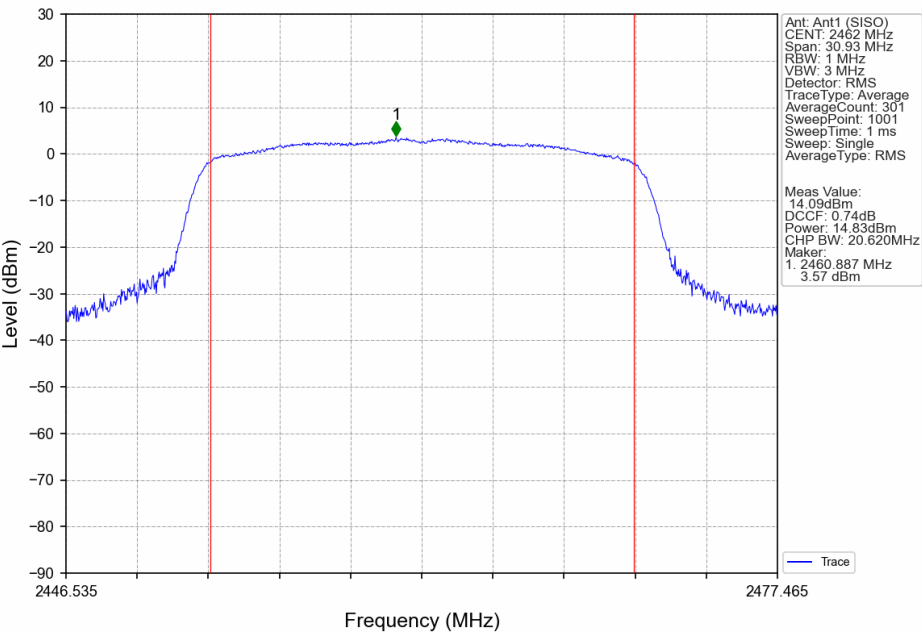
### 802.11ax(HE20)\_LCH\_2412MHz\_SU\_/\_Ant1 (SISO)\_NTNV



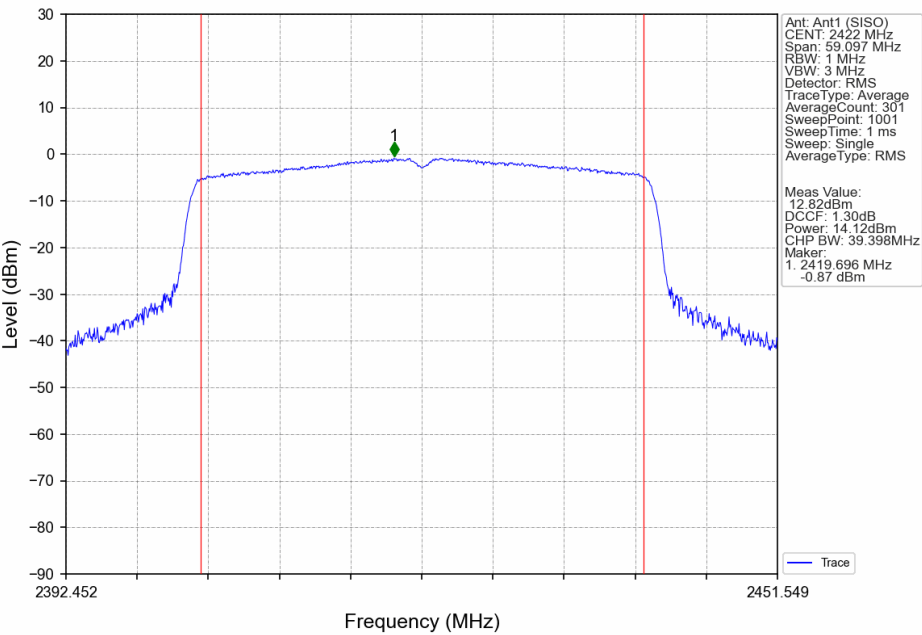
### 802.11ax(HE20)\_MCH\_2437MHz\_SU\_/\_Ant1 (SISO)\_NTNV



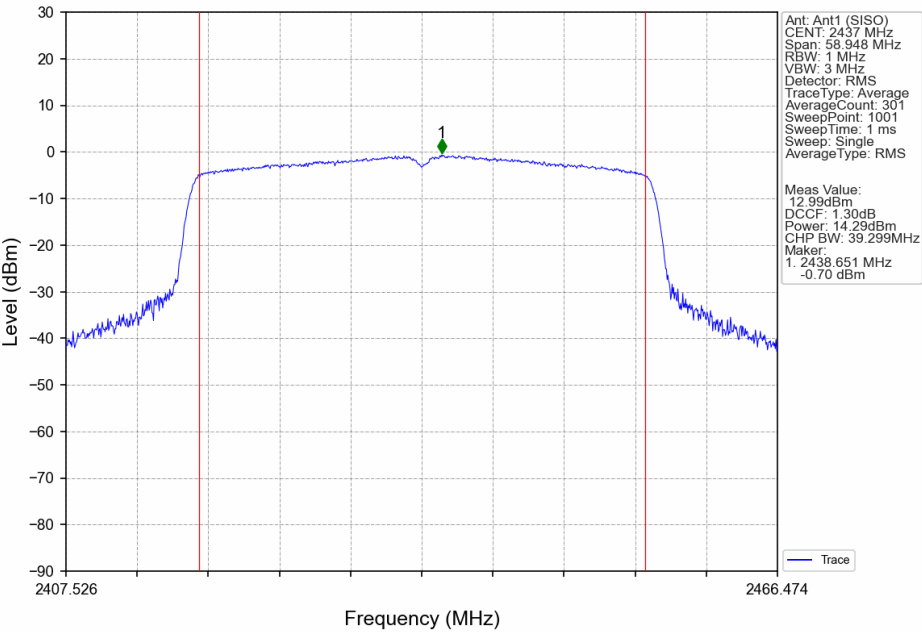
802.11ax(HE20)\_HCH\_2462MHz\_SU\_/\_Ant1 (SISO)\_NTNV



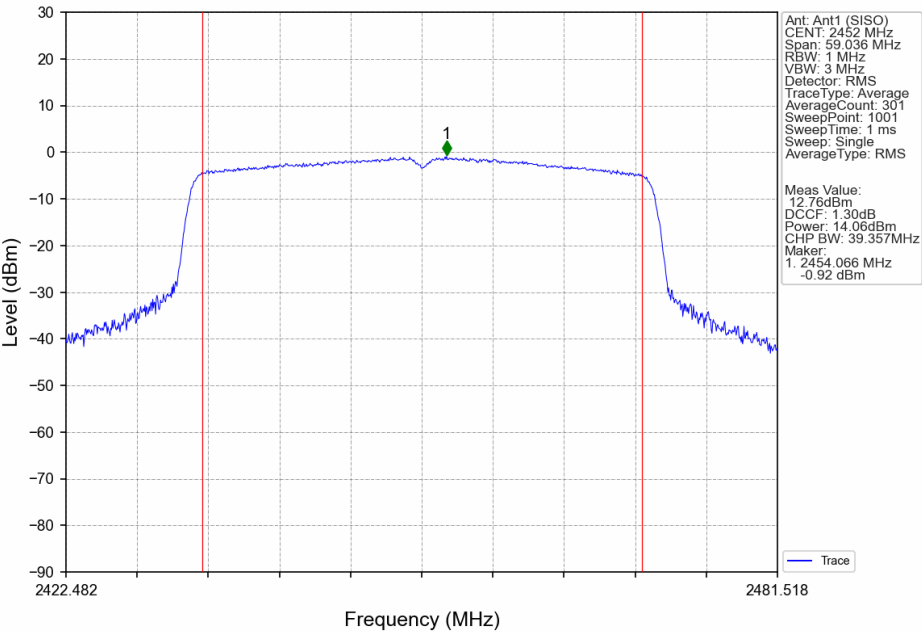
802.11ax(HE40)\_LCH\_2422MHz\_SU\_/\_Ant1 (SISO)\_NTNV



### 802.11ax(HE40)\_MCH\_2437MHz\_SU / \_Ant1 (SISO)\_NTNV



### 802.11ax(HE40)\_HCH\_2452MHz\_SU / \_Ant1 (SISO)\_NTNV



## 4. Maximum Power Spectral Density

### 4.1 Test Result

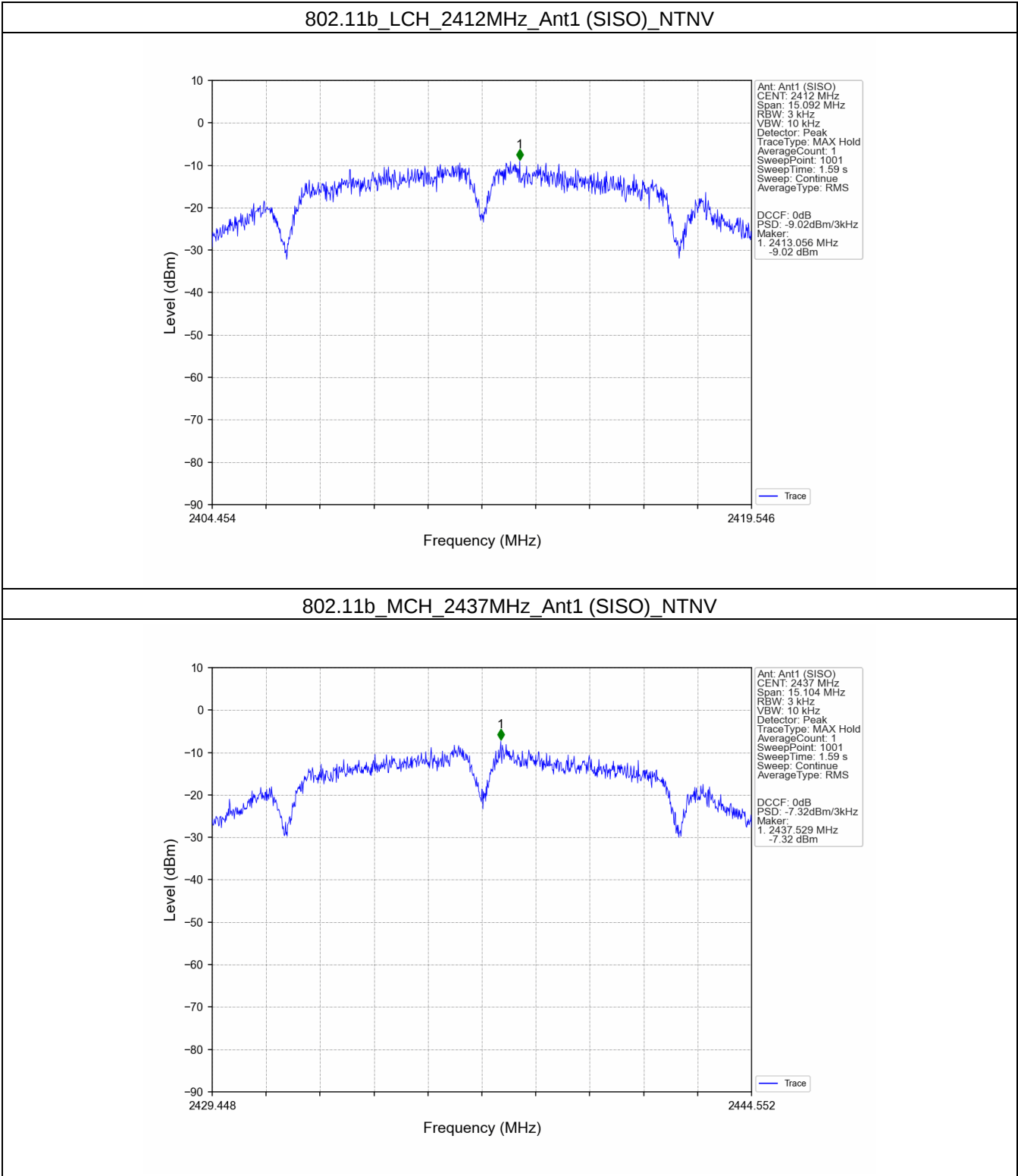
#### 4.1.1 PSD

| Mode            | TX Type | Frequency (MHz) | RU | RU Pos | Maximum PSD (dBm/3kHz) |       | Verdict |
|-----------------|---------|-----------------|----|--------|------------------------|-------|---------|
|                 |         |                 |    |        | ANT1                   | Limit |         |
| 802.11b         | SISO    | 2412            | /  | /      | -9.02                  | <=8   | Pass    |
|                 |         | 2437            | /  | /      | -7.32                  | <=8   | Pass    |
|                 |         | 2462            | /  | /      | -9.70                  | <=8   | Pass    |
| 802.11g         | SISO    | 2412            | /  | /      | -10.81                 | <=8   | Pass    |
|                 |         | 2437            | /  | /      | -10.11                 | <=8   | Pass    |
|                 |         | 2462            | /  | /      | -10.87                 | <=8   | Pass    |
| 802.11n (HT20)  | SISO    | 2412            | /  | /      | -11.32                 | <=8   | Pass    |
|                 |         | 2437            | /  | /      | -11.24                 | <=8   | Pass    |
|                 |         | 2462            | /  | /      | -10.48                 | <=8   | Pass    |
| 802.11n (HT40)  | SISO    | 2422            | /  | /      | -14.53                 | <=8   | Pass    |
|                 |         | 2437            | /  | /      | -14.12                 | <=8   | Pass    |
|                 |         | 2452            | /  | /      | -14.15                 | <=8   | Pass    |
| 802.11ax (HE20) | SISO    | 2412            | SU | /      | -11.90                 | <=8   | Pass    |
|                 |         | 2437            | SU | /      | -11.48                 | <=8   | Pass    |
|                 |         | 2462            | SU | /      | -10.28                 | <=8   | Pass    |
| 802.11ax (HE40) | SISO    | 2422            | SU | /      | -14.75                 | <=8   | Pass    |
|                 |         | 2437            | SU | /      | -14.29                 | <=8   | Pass    |
|                 |         | 2452            | SU | /      | -15.28                 | <=8   | Pass    |

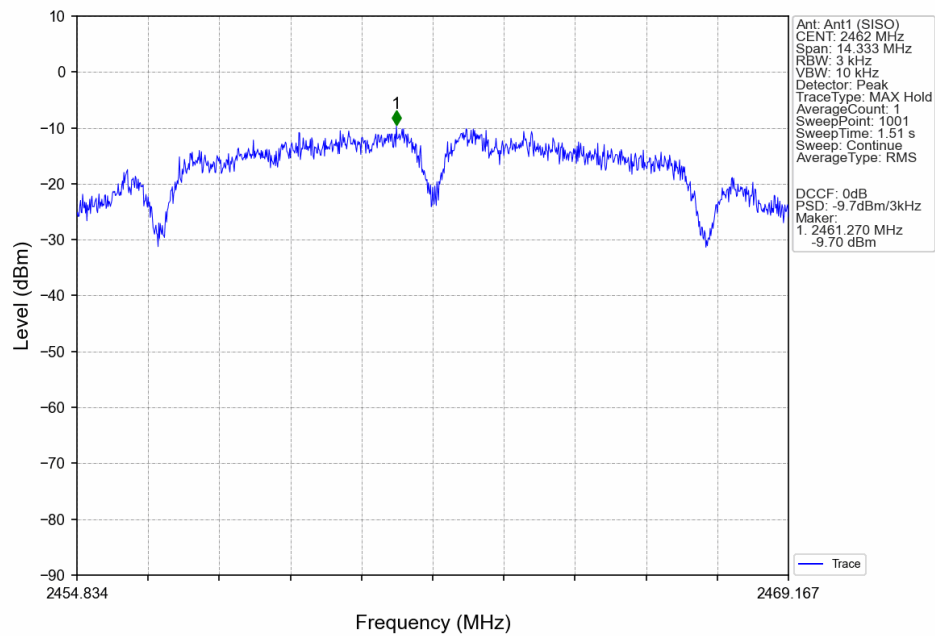
Note1: Antenna Gain: Ant1: 5.03dBi;

### 4.2 Test Graph

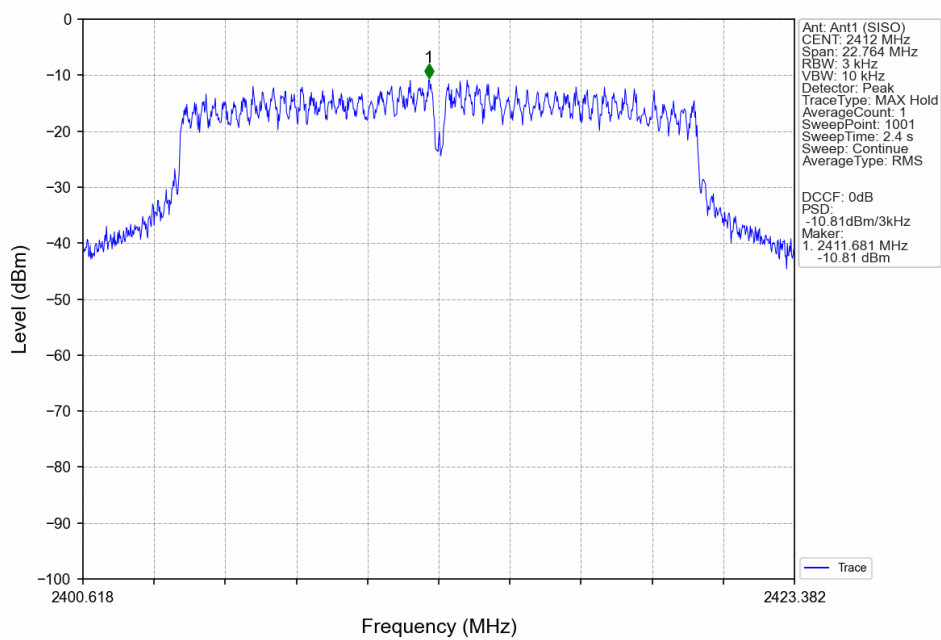
#### 4.2.1 PSD



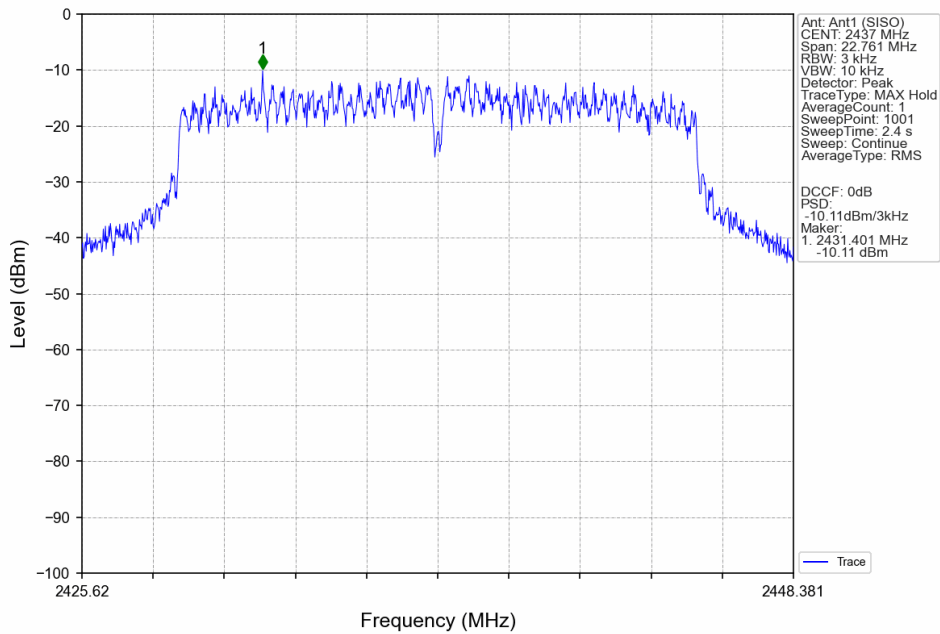
802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



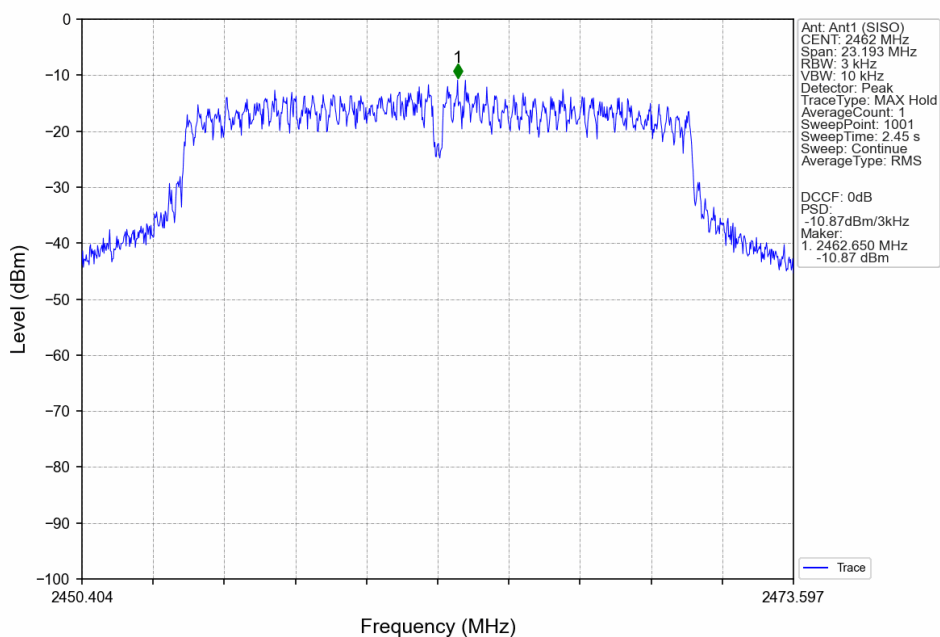
802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



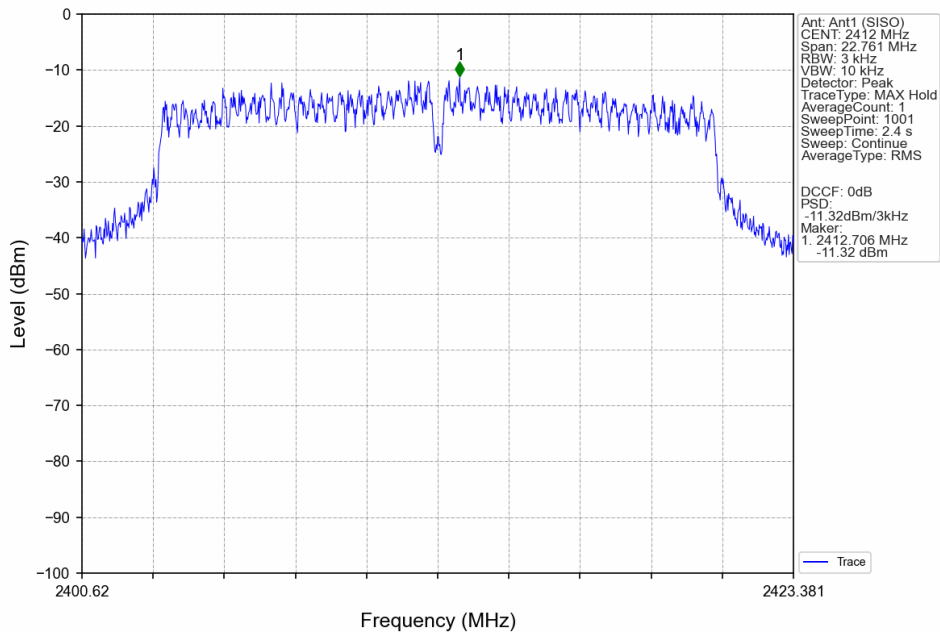
802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



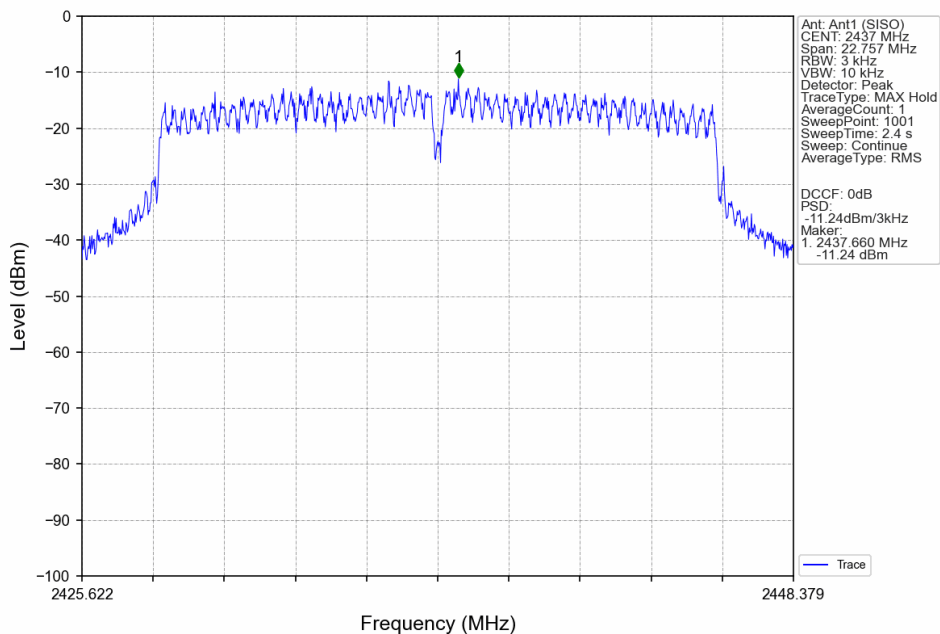
802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



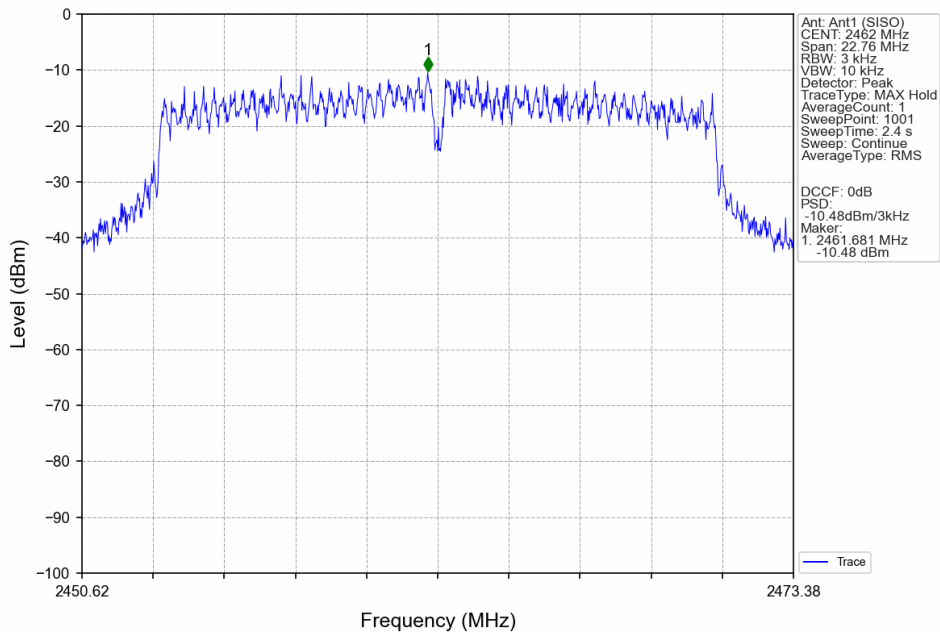
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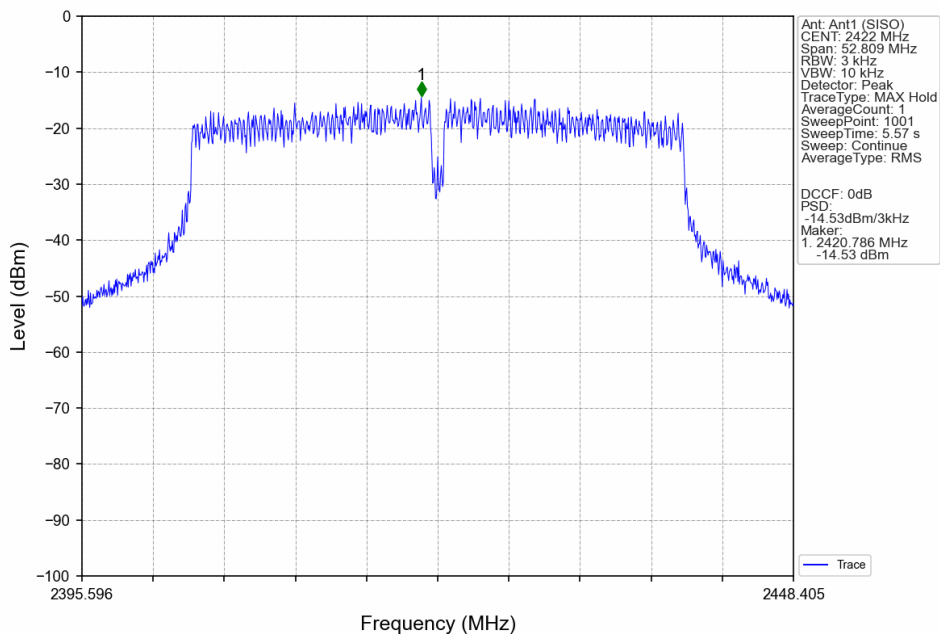
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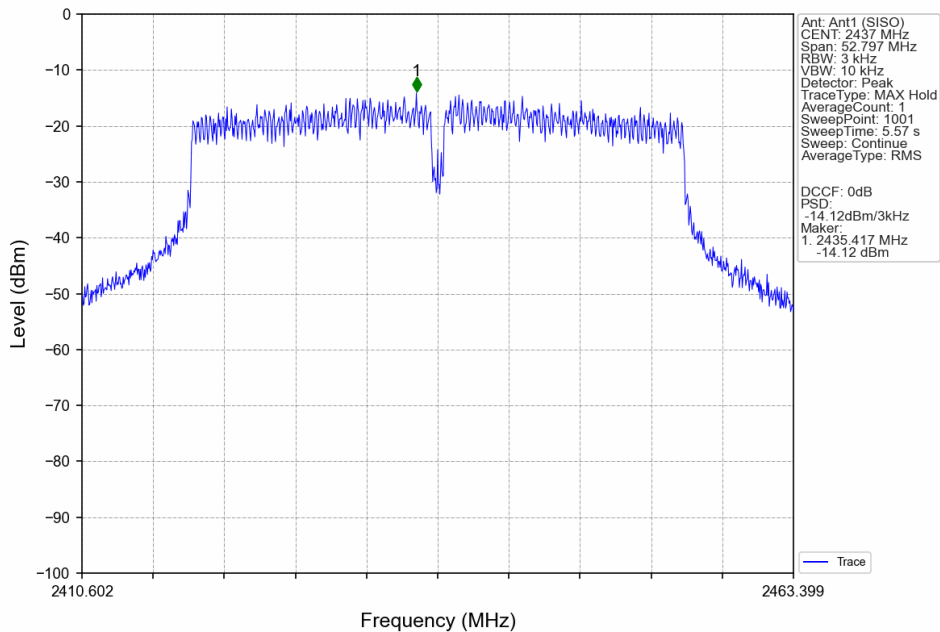
802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



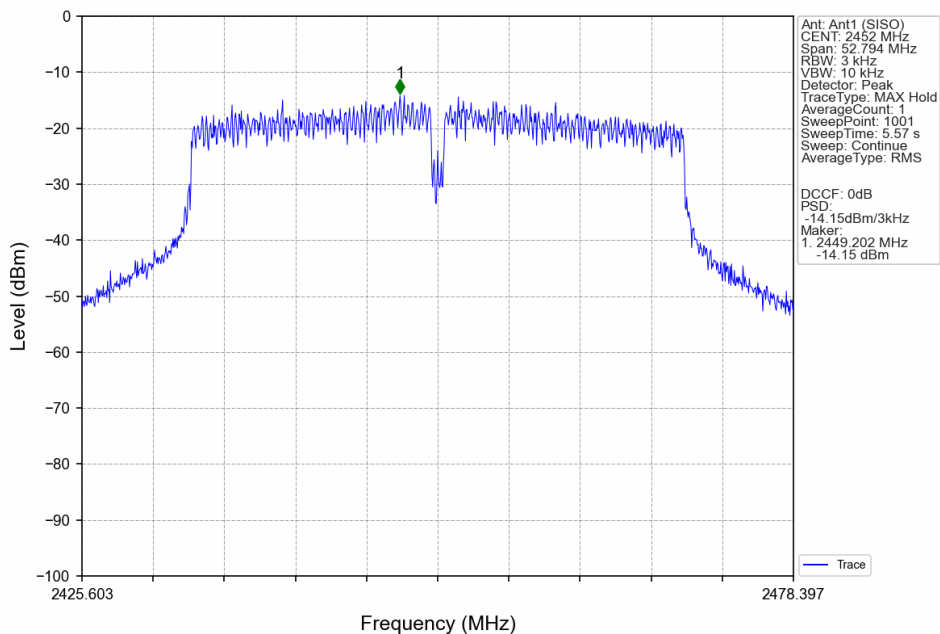
802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



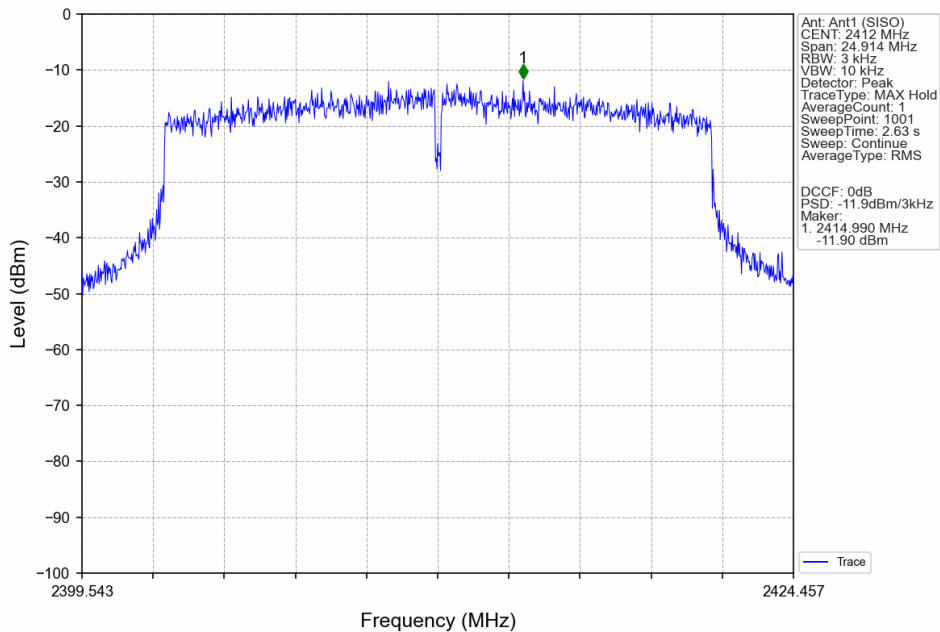
802.11n(HT40)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



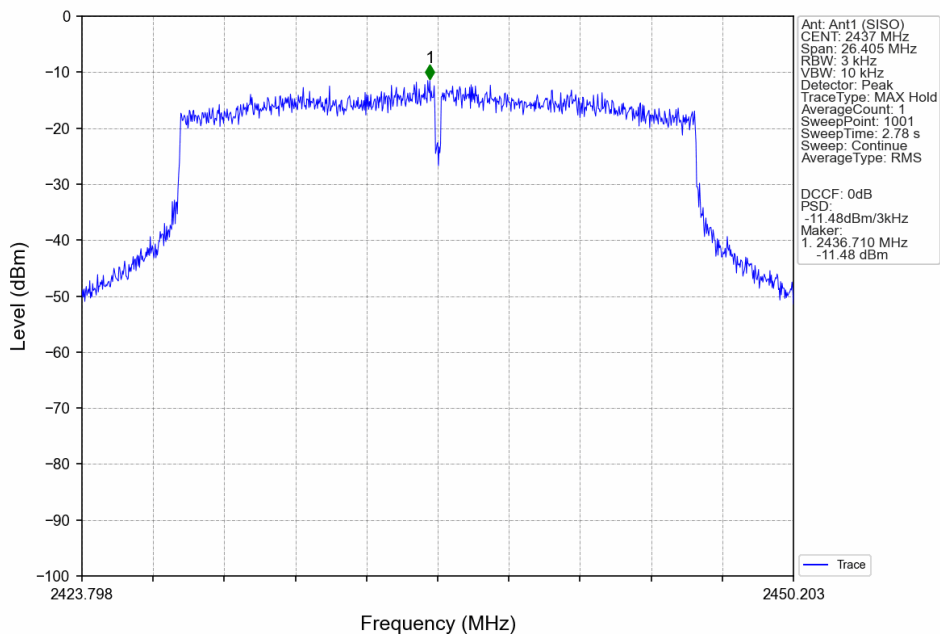
802.11n(HT40)\_HCH\_2452MHz\_Ant1 (SISO)\_NTNV



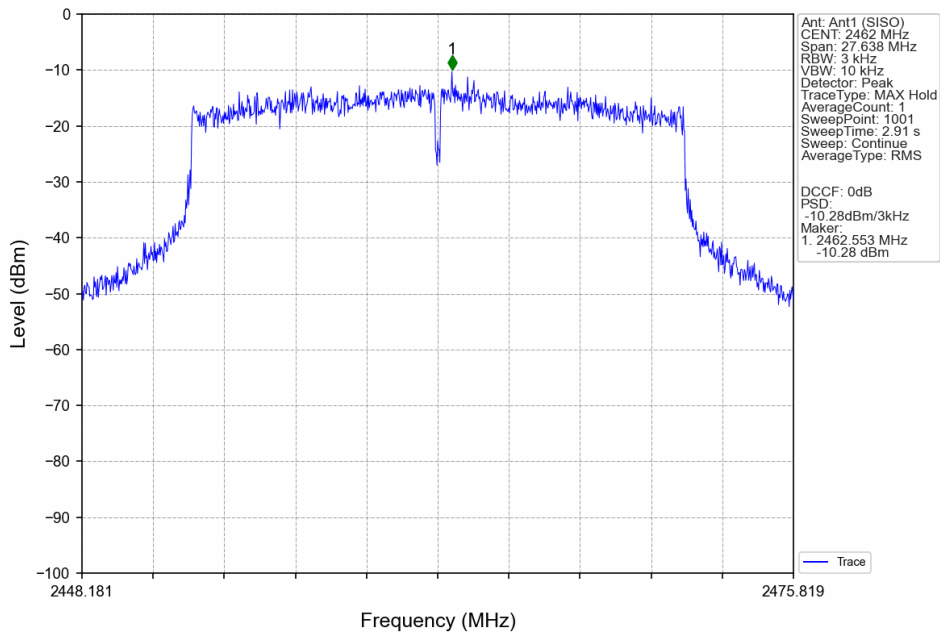
802.11ax(HE20)\_LCH\_2412MHz\_SU\_/\_Ant1 (SISO)\_NTNV



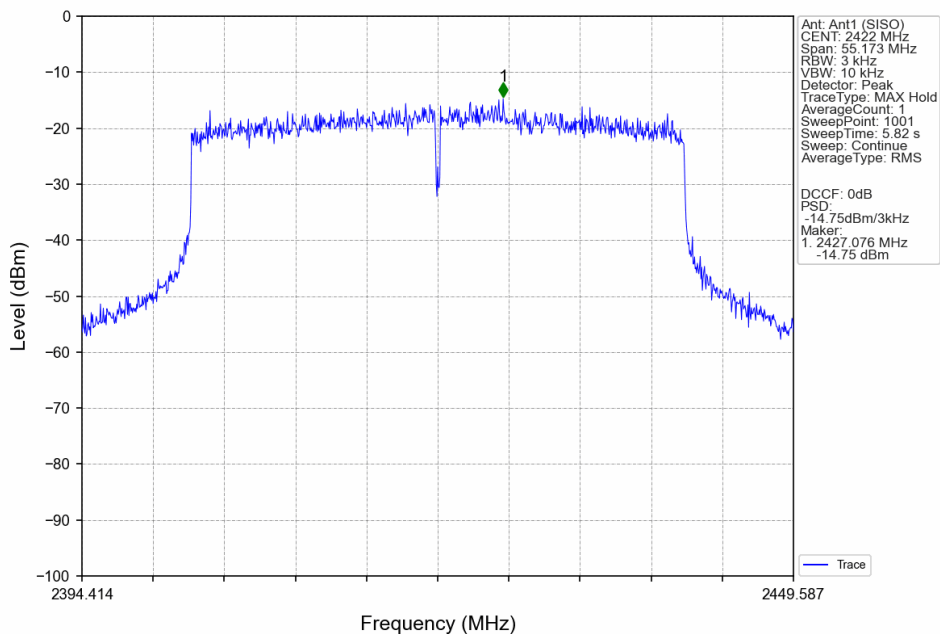
802.11ax(HE20)\_MCH\_2437MHz\_SU\_/\_Ant1 (SISO)\_NTNV



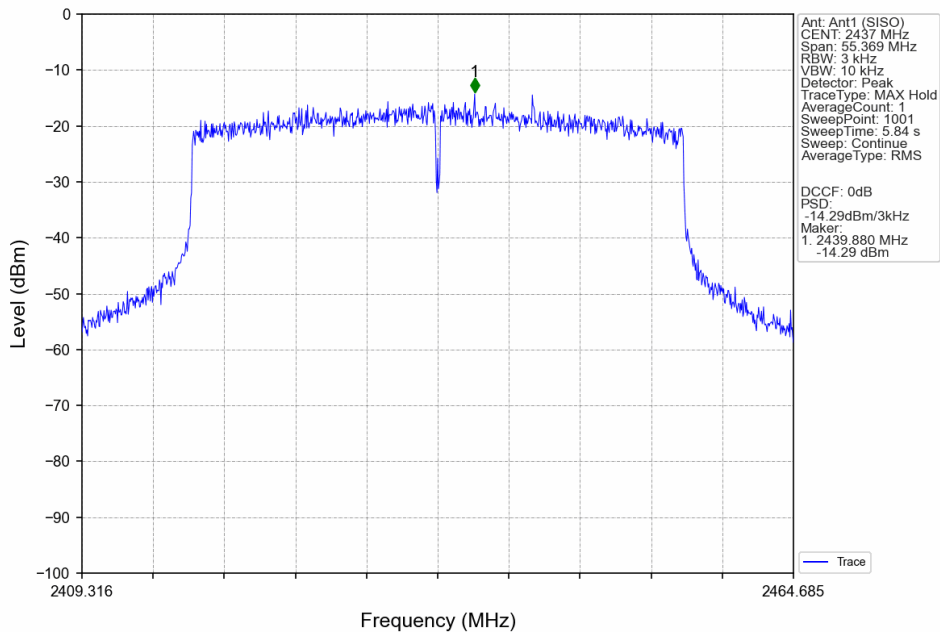
802.11ax(HE20)\_HCH\_2462MHz\_SU\_/\_Ant1 (SISO)\_NTNV



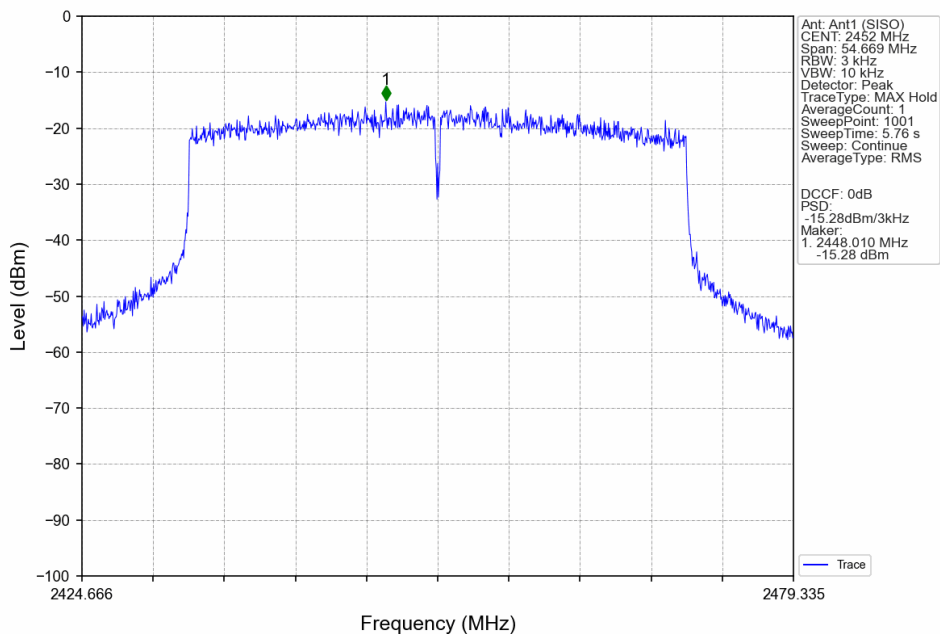
802.11ax(HE40)\_LCH\_2422MHz\_SU\_/\_Ant1 (SISO)\_NTNV



802.11ax(HE40)\_MCH\_2437MHz\_SU\_/\_Ant1 (SISO)\_NTNV



802.11ax(HE40)\_HCH\_2452MHz\_SU\_/\_Ant1 (SISO)\_NTNV



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

### 5.1 Test Result

#### 5.1.1 Ref

| Mode            | TX Type | Frequency (MHz) | RU | RU Pos | ANT | Level of Reference (dBm) |
|-----------------|---------|-----------------|----|--------|-----|--------------------------|
| 802.11b         | SISO    | 2412            | /  | /      | 1   | 6.38                     |
|                 |         | 2437            | /  | /      | 1   | 6.38                     |
|                 |         | 2462            | /  | /      | 1   | 5.47                     |
| 802.11g         | SISO    | 2412            | /  | /      | 1   | 3.87                     |
|                 |         | 2437            | /  | /      | 1   | 4.42                     |
|                 |         | 2462            | /  | /      | 1   | 3.82                     |
| 802.11n (HT20)  | SISO    | 2412            | /  | /      | 1   | 3.20                     |
|                 |         | 2437            | /  | /      | 1   | 3.43                     |
|                 |         | 2462            | /  | /      | 1   | 4.78                     |
| 802.11n (HT40)  | SISO    | 2422            | /  | /      | 1   | -3.94                    |
|                 |         | 2437            | /  | /      | 1   | 1.07                     |
|                 |         | 2452            | /  | /      | 1   | 0.78                     |
| 802.11ax (HE20) | SISO    | 2412            | SU | /      | 1   | -0.57                    |
|                 |         | 2437            | SU | /      | 1   | 4.35                     |
|                 |         | 2462            | SU | /      | 1   | 4.80                     |
| 802.11ax (HE40) | SISO    | 2422            | SU | /      | 1   | 1.02                     |
|                 |         | 2437            | SU | /      | 1   | 1.12                     |
|                 |         | 2452            | SU | /      | 1   | 0.91                     |

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

#### 5.1.2 CSE

| Mode    | TX Type | Frequency (MHz) | RU | RU Pos | ANT | Level of Reference (dBm) | Limit (dBm) | Verdict |
|---------|---------|-----------------|----|--------|-----|--------------------------|-------------|---------|
| 802.11b | SISO    | 2412            | /  | /      | 1   | 6.38                     | -23.62      | Pass    |
|         |         | 2437            | /  | /      | 1   | 6.38                     | -23.62      | Pass    |
|         |         | 2462            | /  | /      | 1   | 6.38                     | -23.62      | Pass    |
| 802.11g | SISO    | 2412            | /  | /      | 1   | 4.42                     | -25.58      | Pass    |
|         |         | 2437            | /  | /      | 1   | 4.42                     | -25.58      | Pass    |
|         |         | 2462            | /  | /      | 1   | 4.42                     | -25.58      | Pass    |



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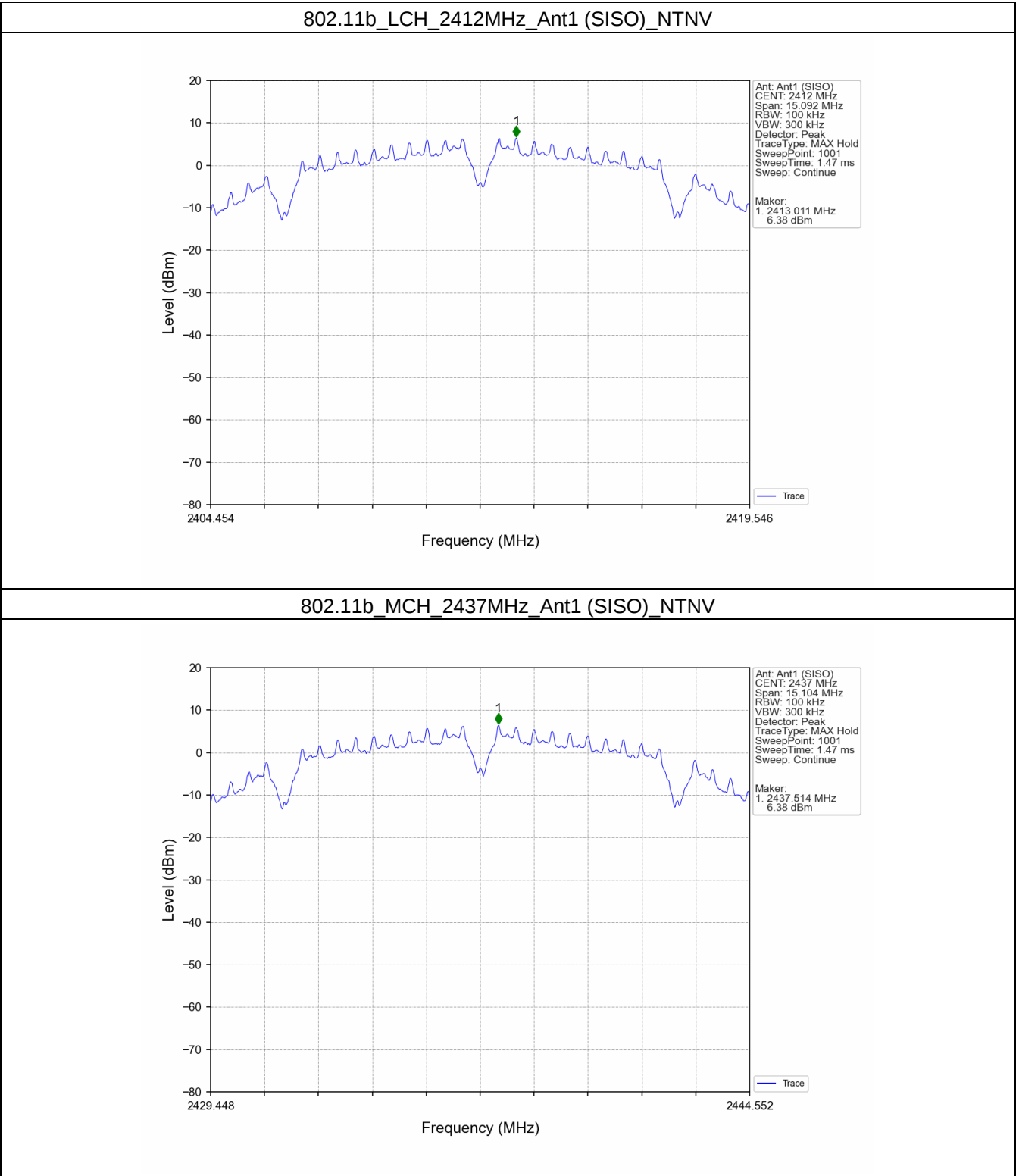
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|                    |      |      |    |   |   |      |        |      |
|--------------------|------|------|----|---|---|------|--------|------|
| 802.11n<br>(HT20)  | SISO | 2412 | /  | / | 1 | 4.78 | -25.22 | Pass |
|                    |      | 2437 | /  | / | 1 | 4.78 | -25.22 | Pass |
|                    |      | 2462 | /  | / | 1 | 4.78 | -25.22 | Pass |
| 802.11n<br>(HT40)  | SISO | 2422 | /  | / | 1 | 1.07 | -28.93 | Pass |
|                    |      | 2437 | /  | / | 1 | 1.07 | -28.93 | Pass |
|                    |      | 2452 | /  | / | 1 | 1.07 | -28.93 | Pass |
| 802.11ax<br>(HE20) | SISO | 2412 | SU | / | 1 | 4.80 | -25.20 | Pass |
|                    |      | 2437 | SU | / | 1 | 4.80 | -25.20 | Pass |
|                    |      | 2462 | SU | / | 1 | 4.80 | -25.20 | Pass |
| 802.11ax<br>(HE40) | SISO | 2422 | SU | / | 1 | 1.12 | -28.88 | Pass |
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|                    |      | 2452 | SU | / | 1 | 1.12 | -28.88 | Pass |

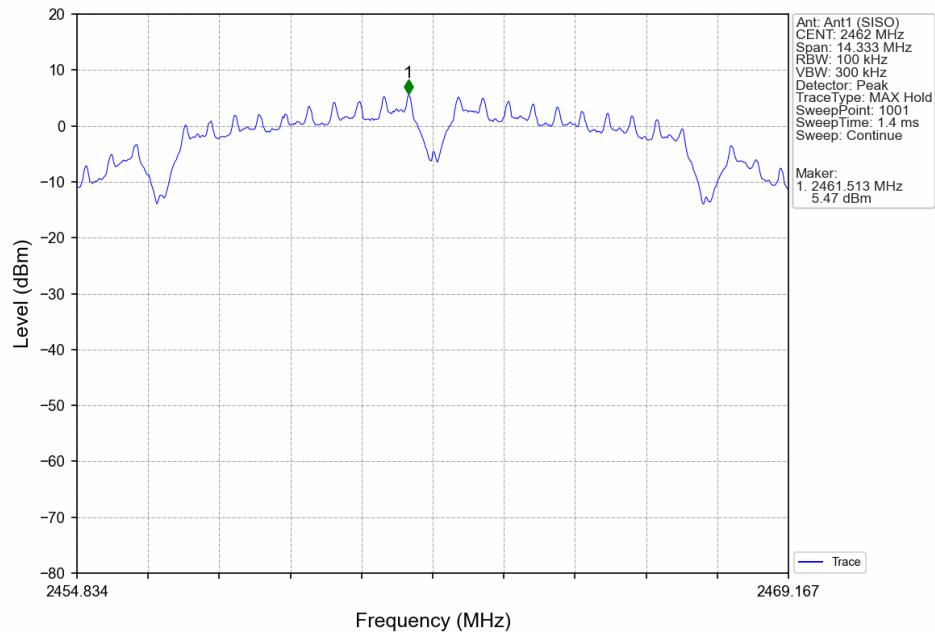
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

### 5.2 Test Graph

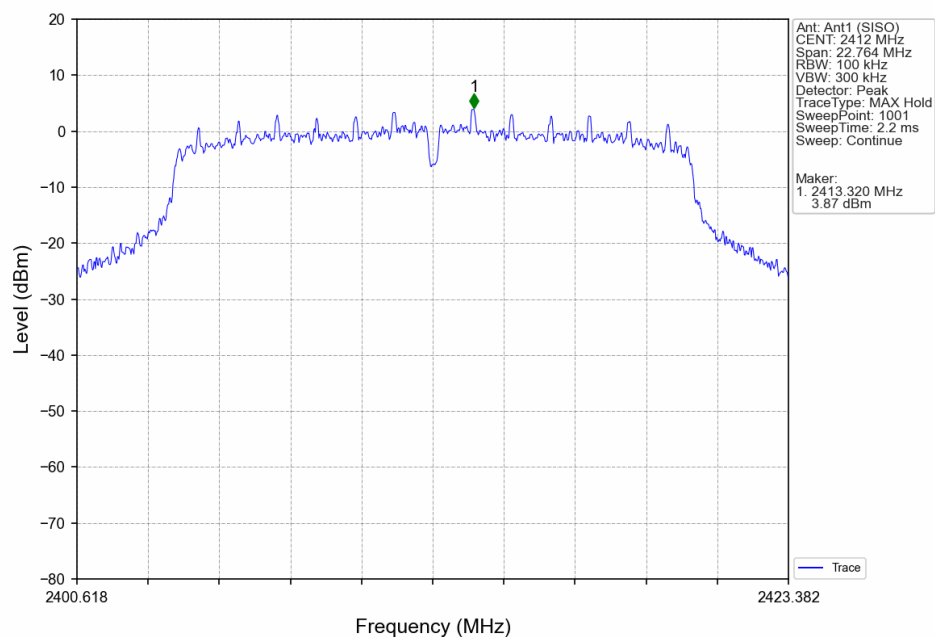
#### 5.2.1 Ref



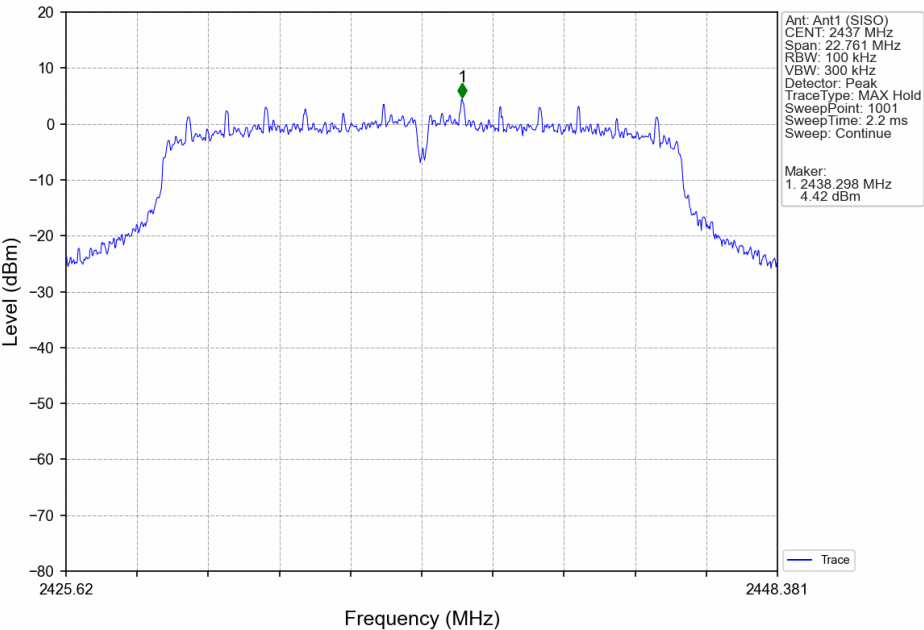
802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



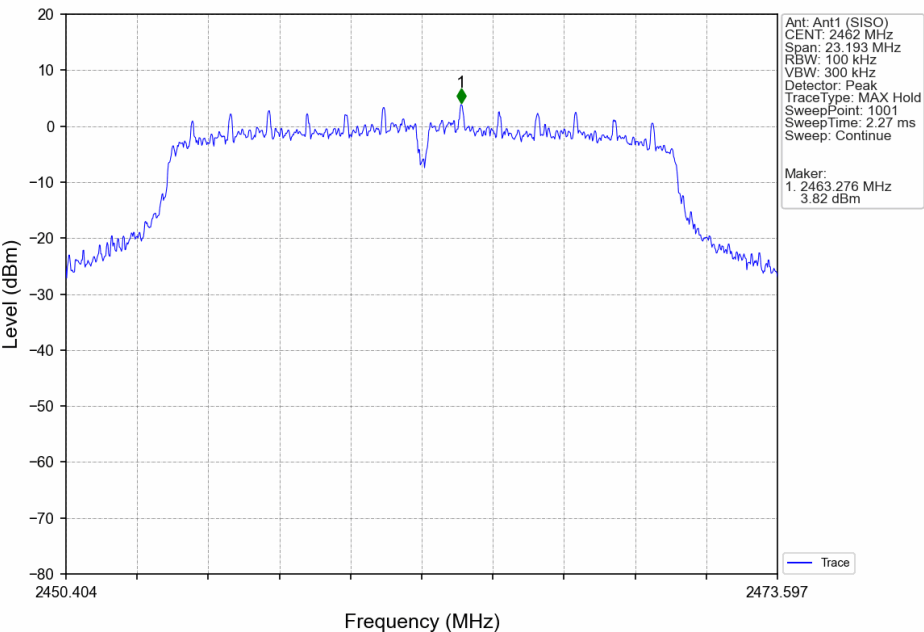
802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



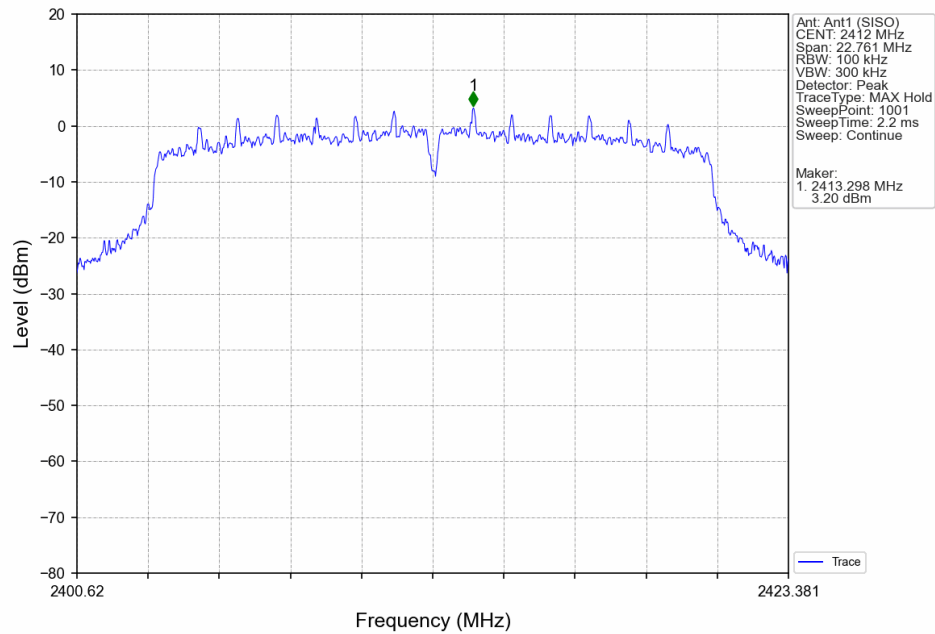
802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



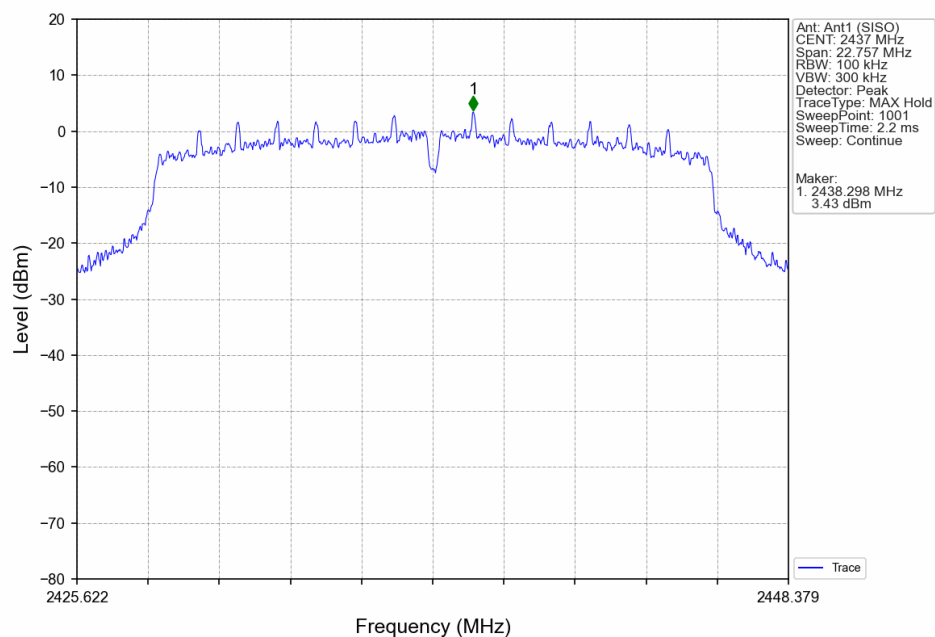
802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



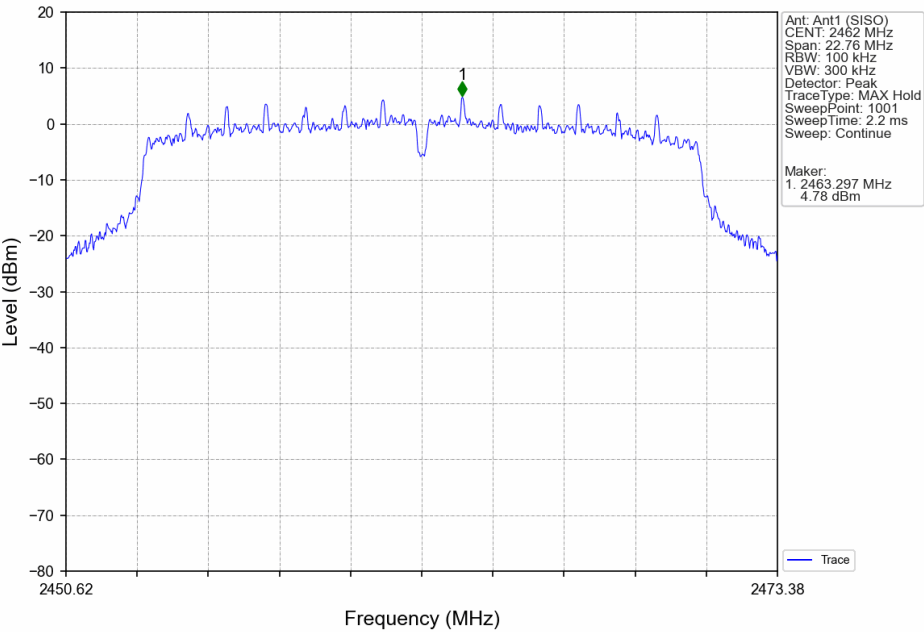
802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



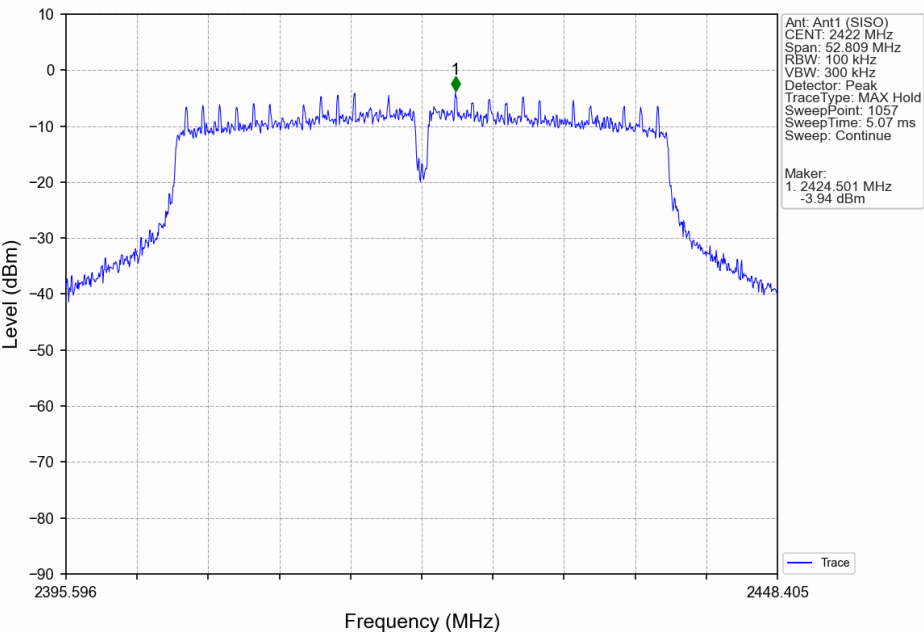
802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



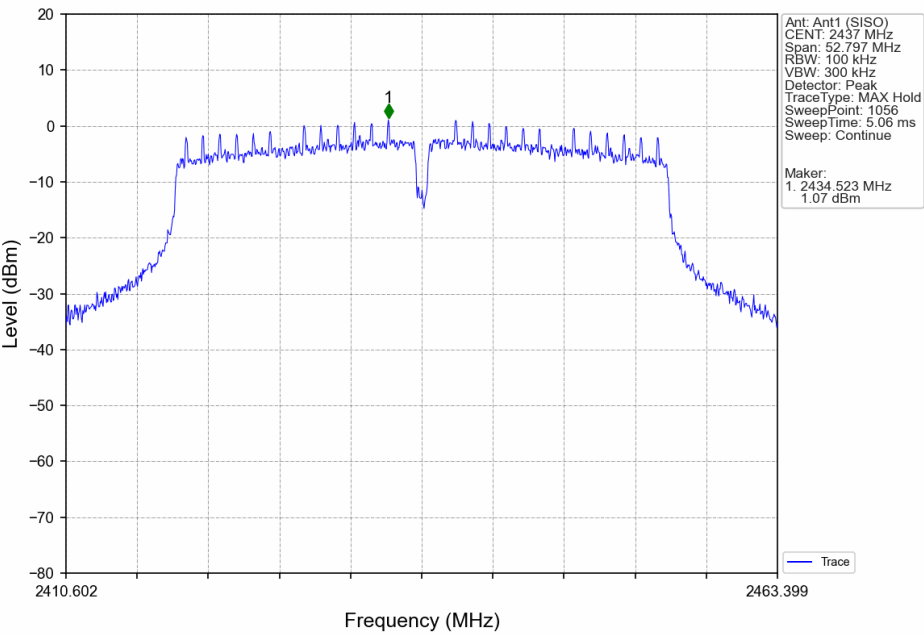
802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



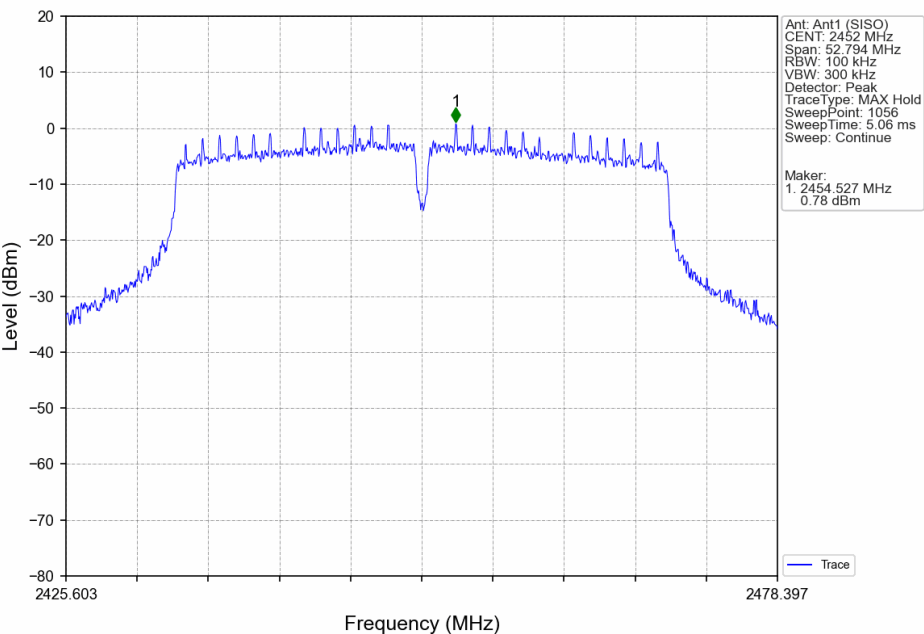
802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



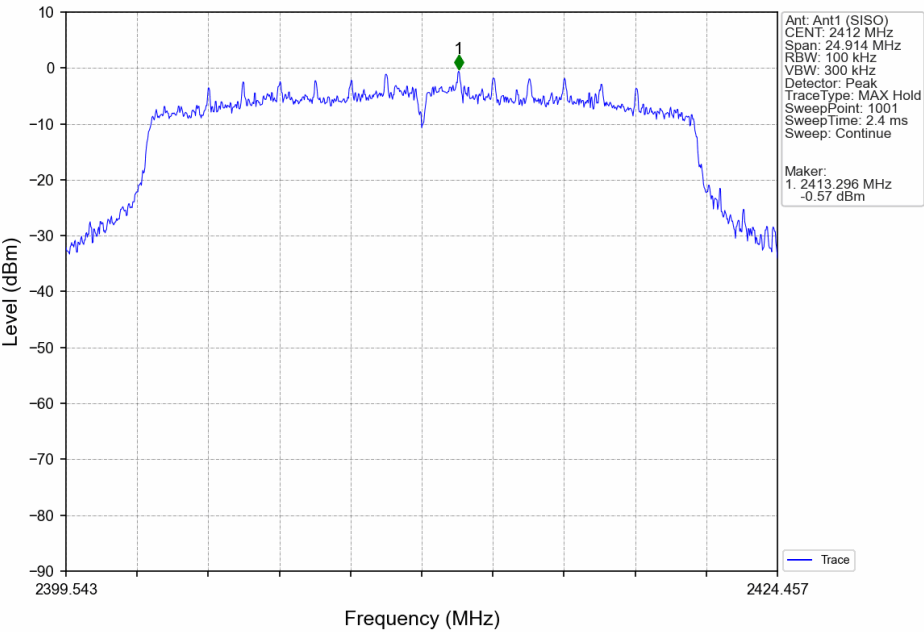
802.11n(HT40)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



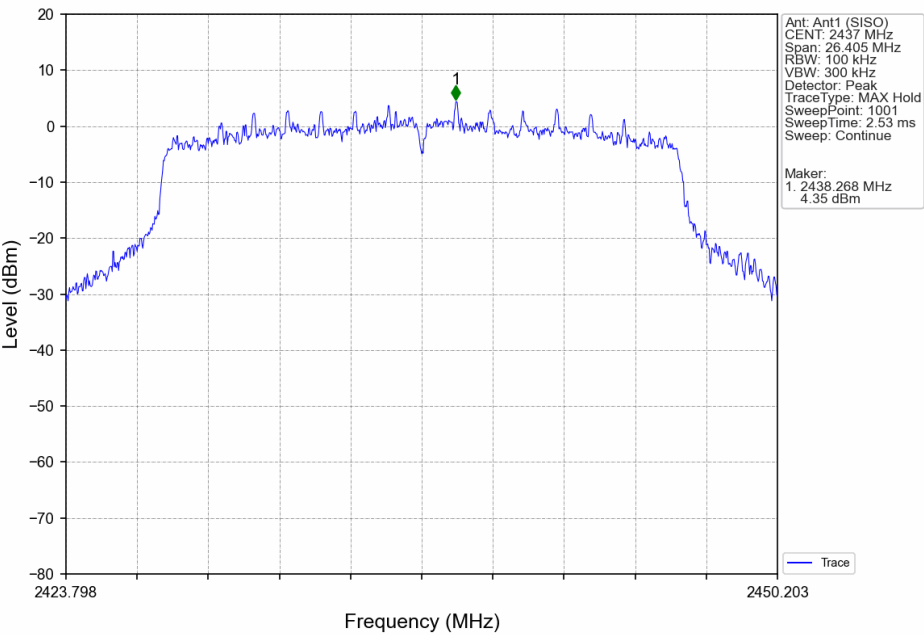
802.11n(HT40)\_HCH\_2452MHz\_Ant1 (SISO)\_NTNV



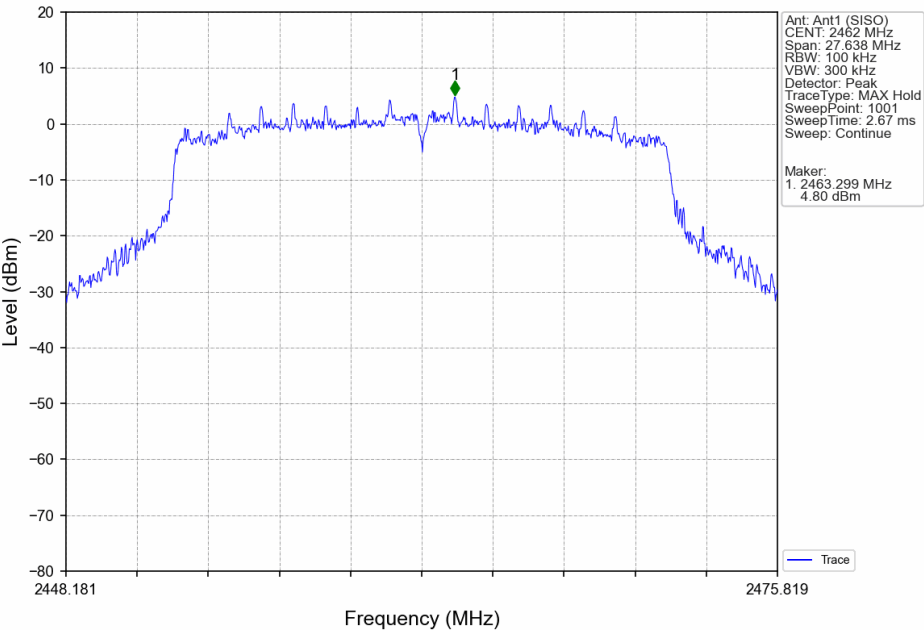
### 802.11ax(HE20)\_LCH\_2412MHz\_SU\_/\_Ant1 (SISO)\_NTNV



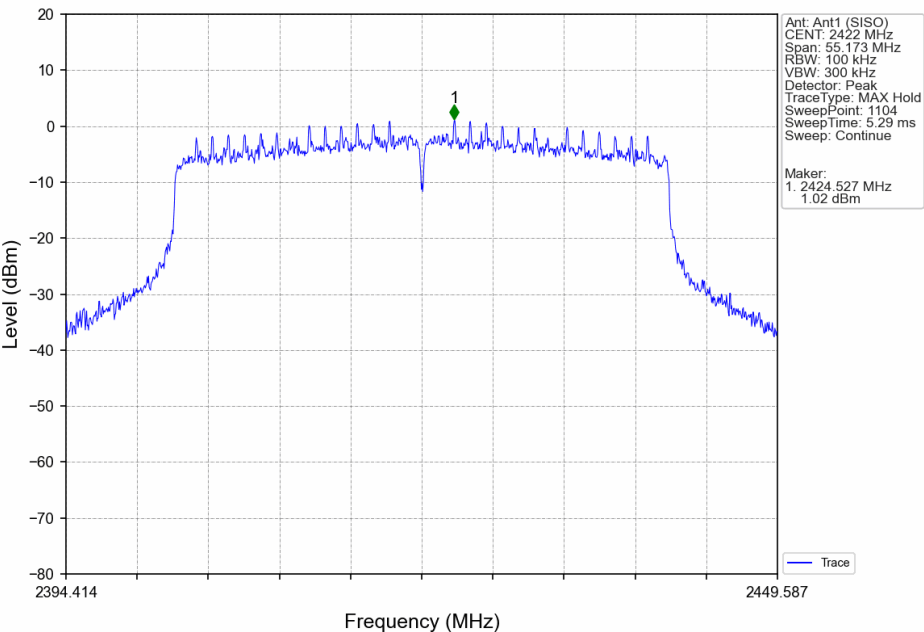
### 802.11ax(HE20)\_MCH\_2437MHz\_SU\_/\_Ant1 (SISO)\_NTNV



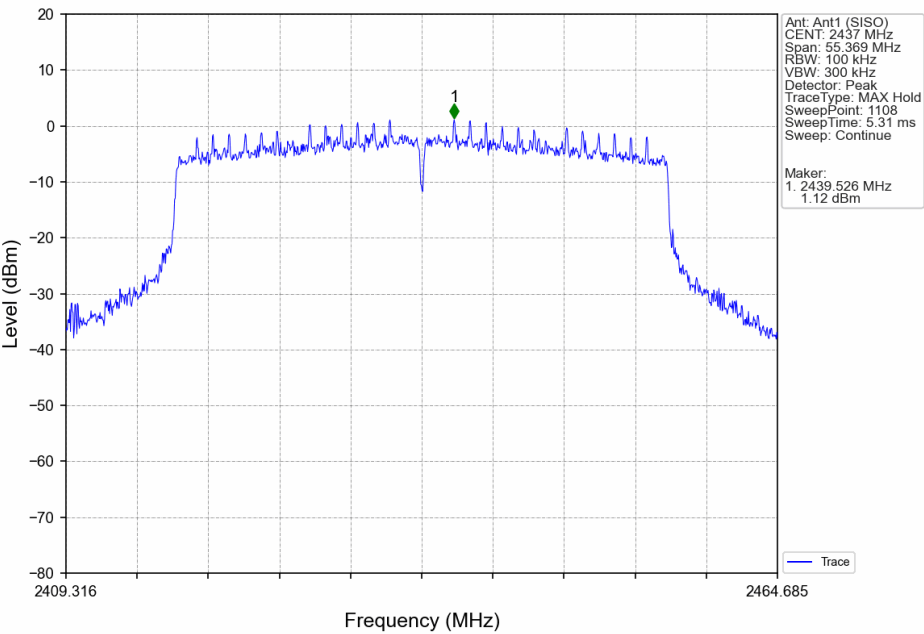
802.11ax(HE20)\_HCH\_2462MHz\_SU\_/\_Ant1 (SISO)\_NTNV



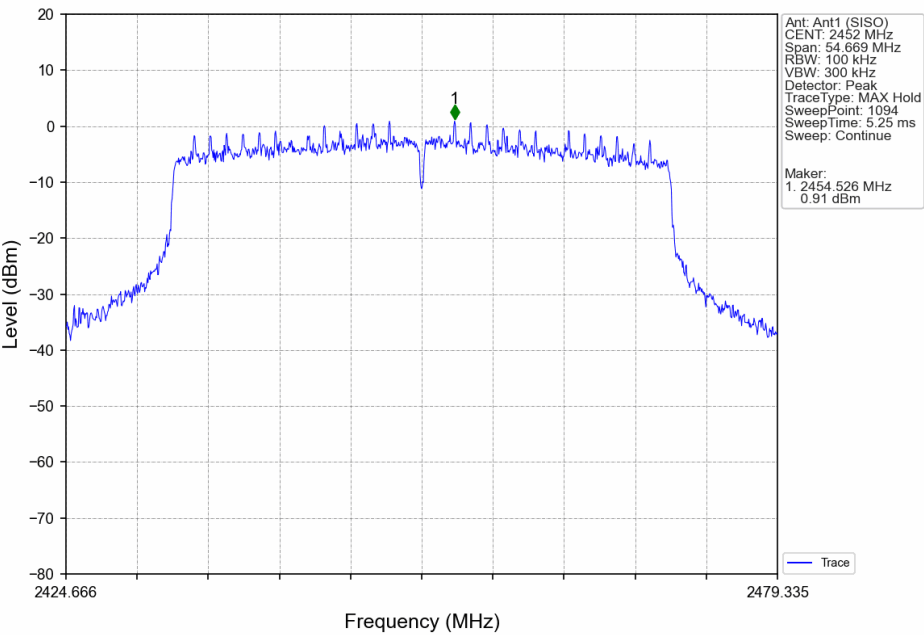
802.11ax(HE40)\_LCH\_2422MHz\_SU\_/\_Ant1 (SISO)\_NTNV



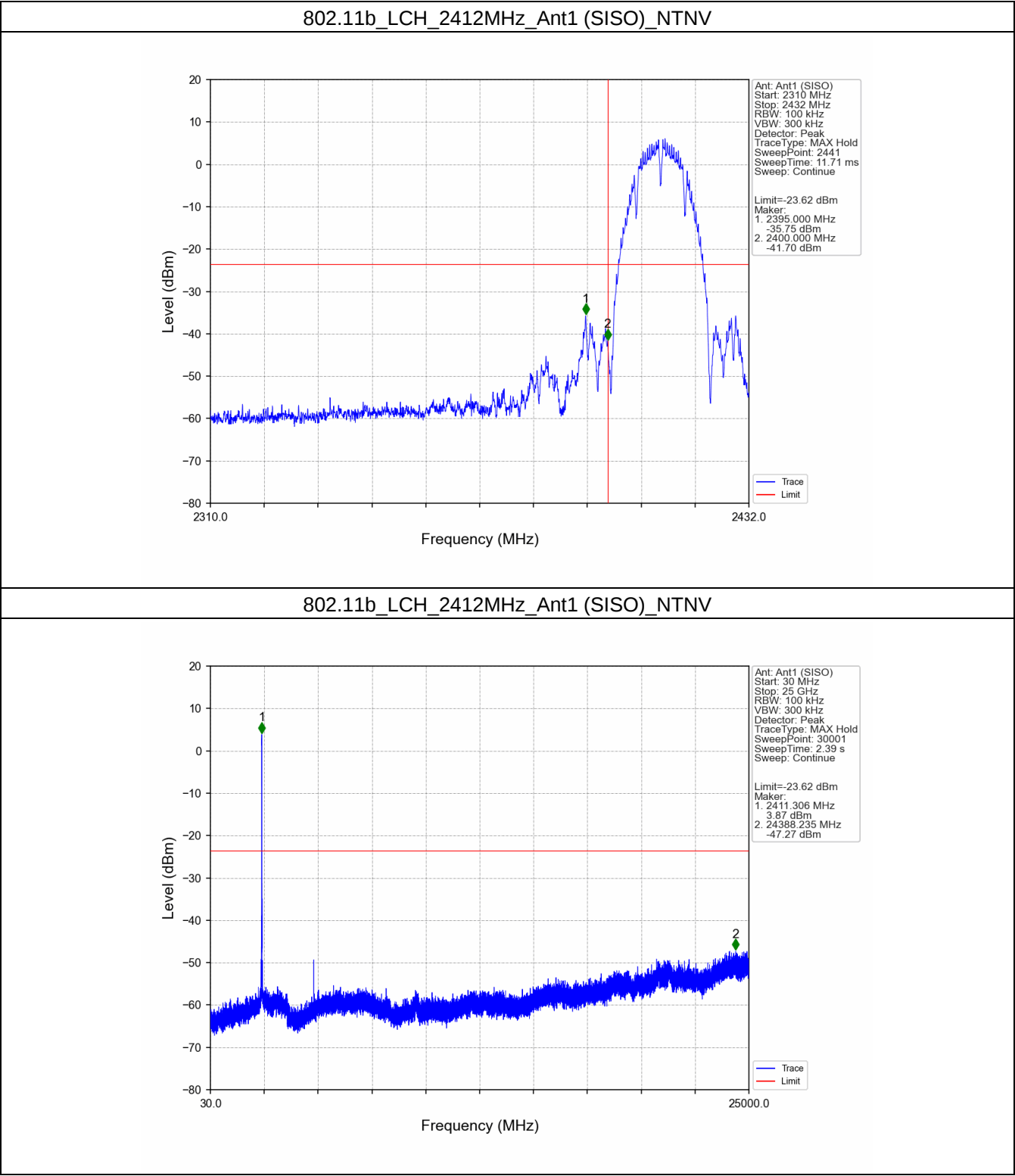
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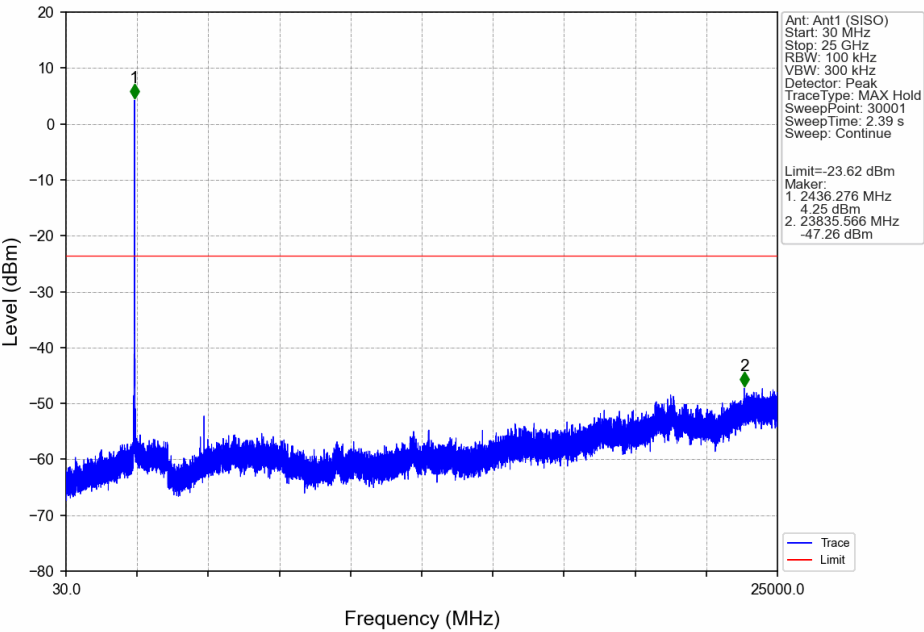
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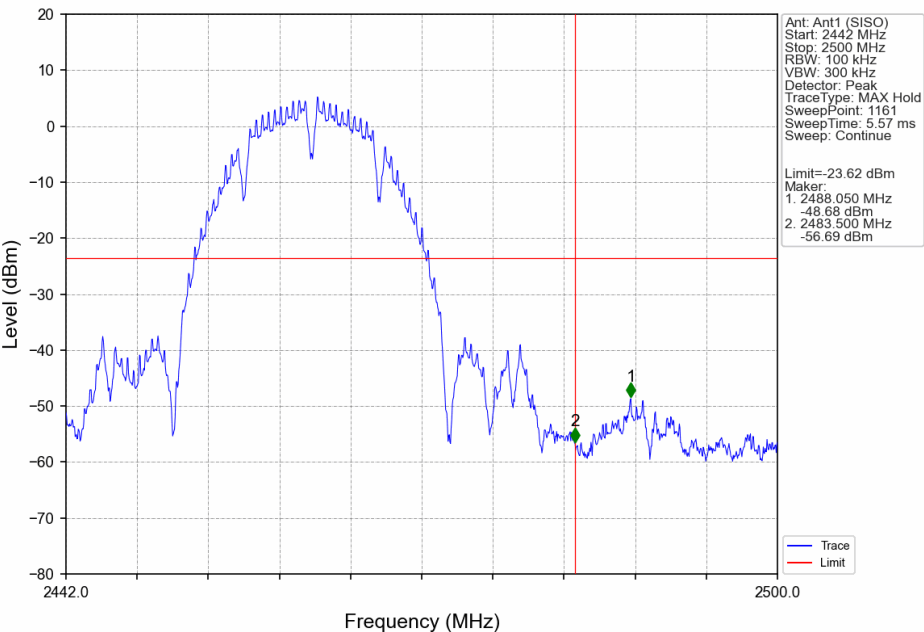
### 5.2.2 CSE



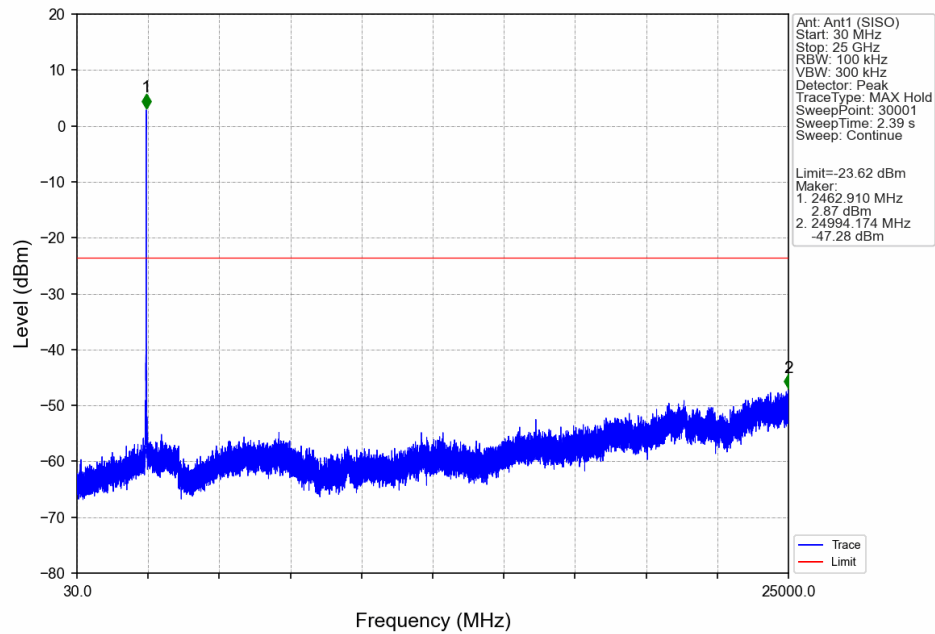
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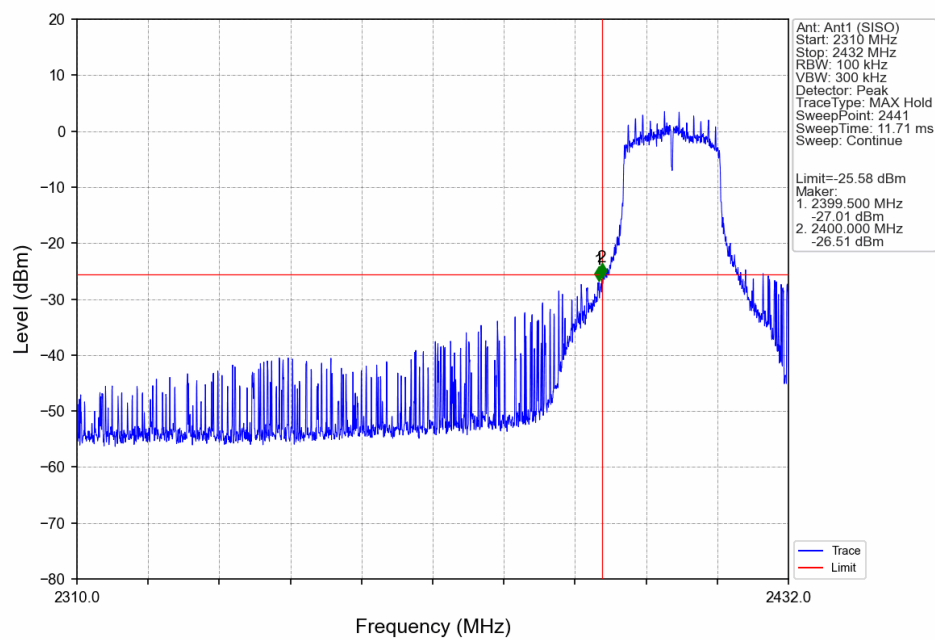
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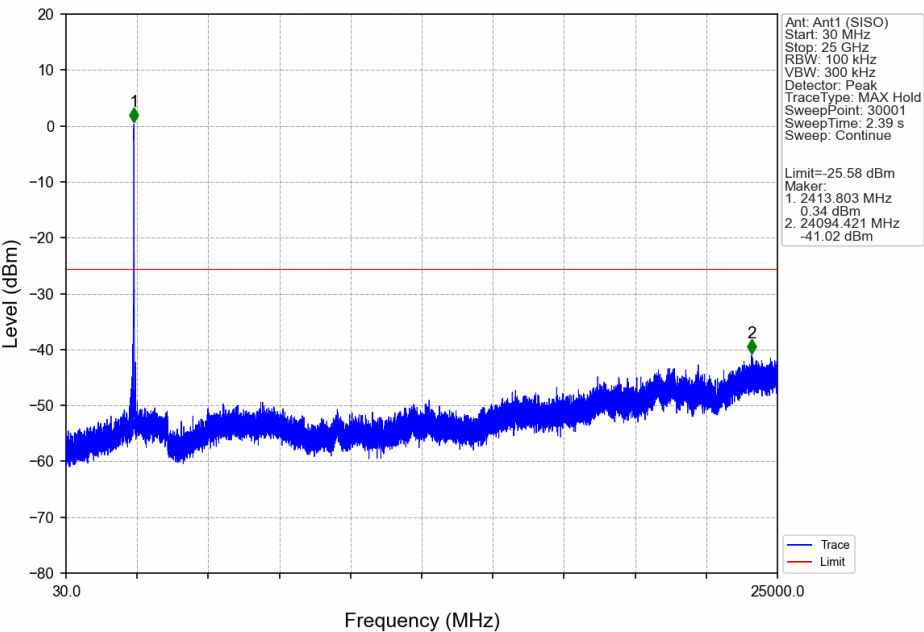
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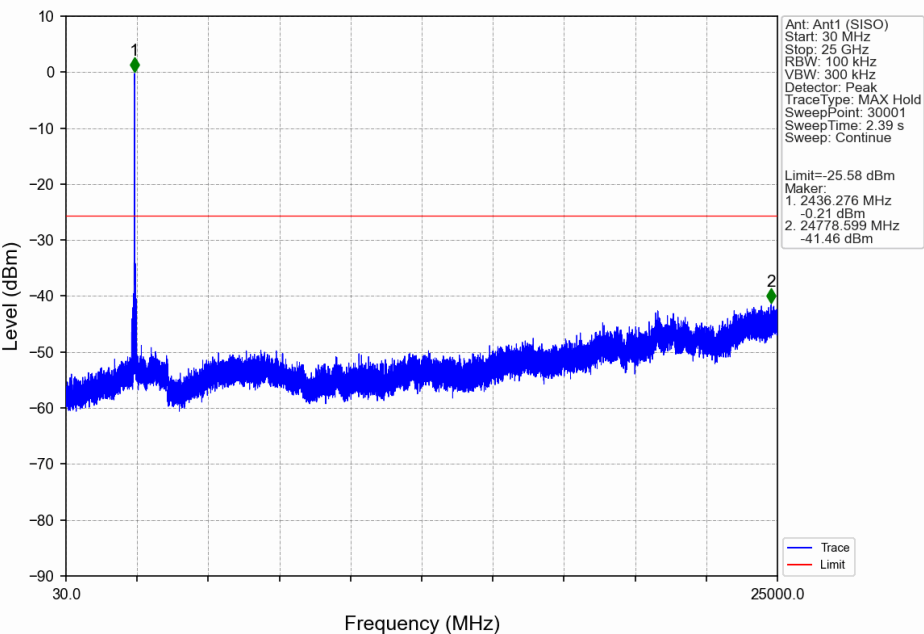
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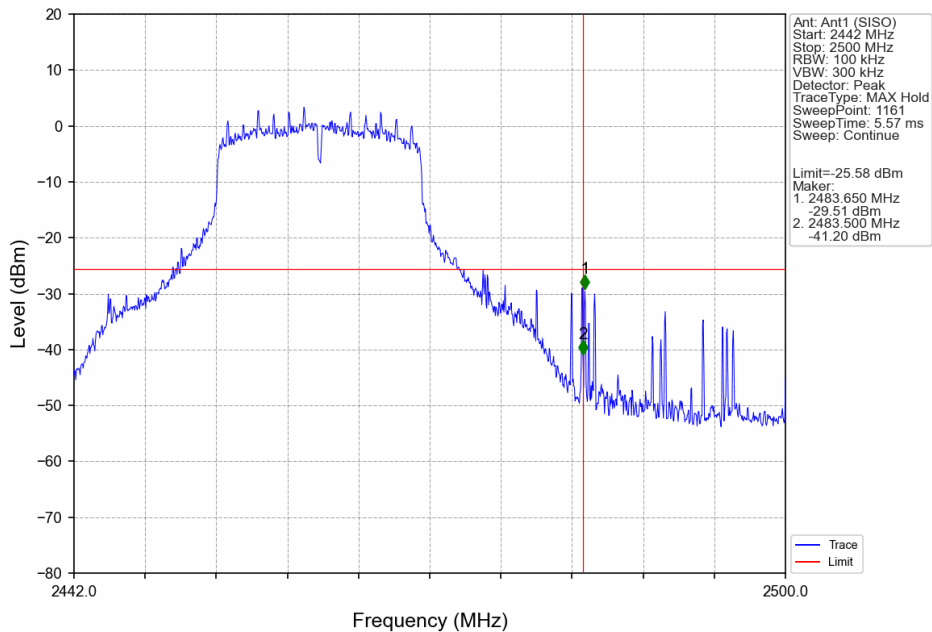
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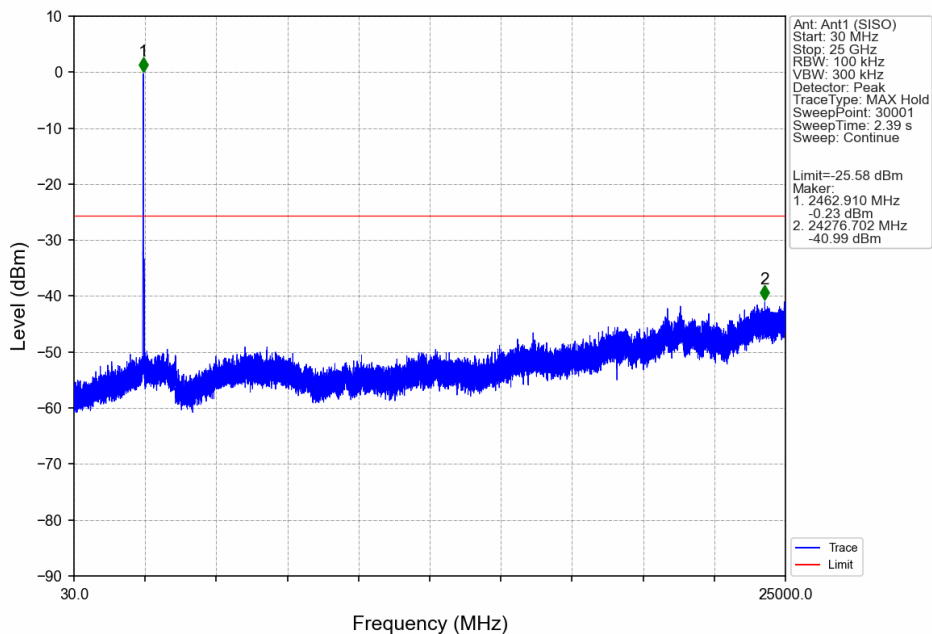
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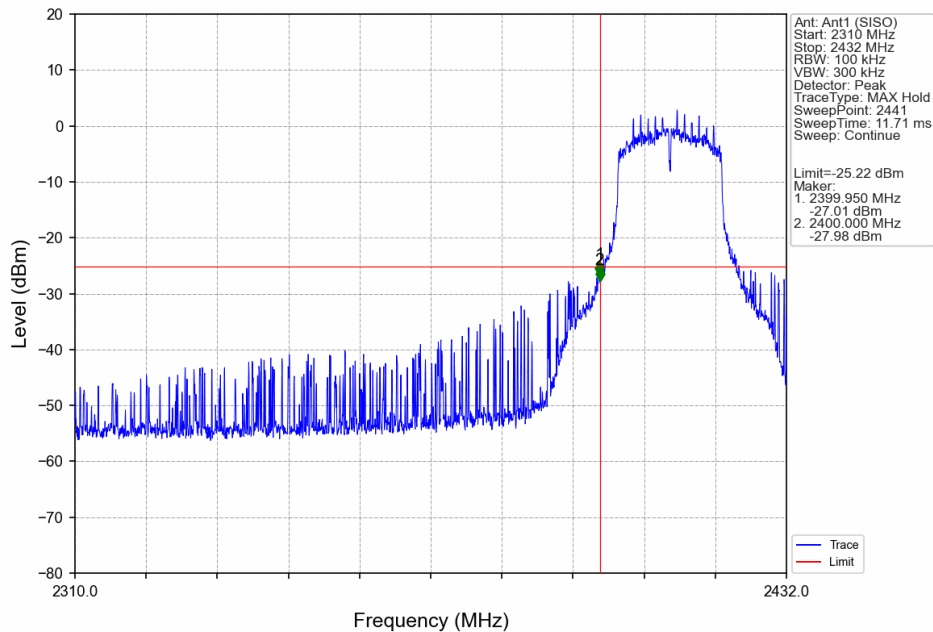
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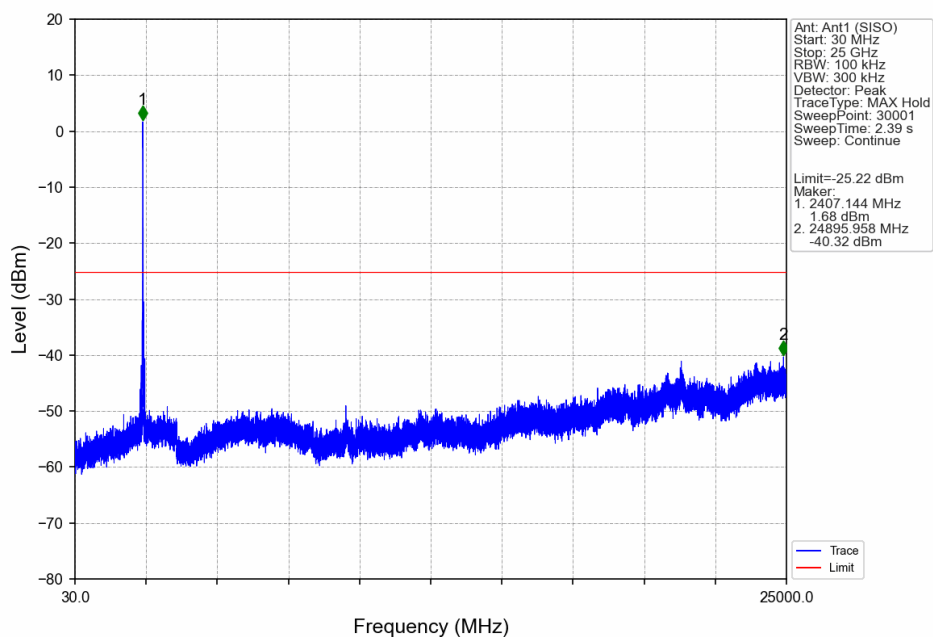
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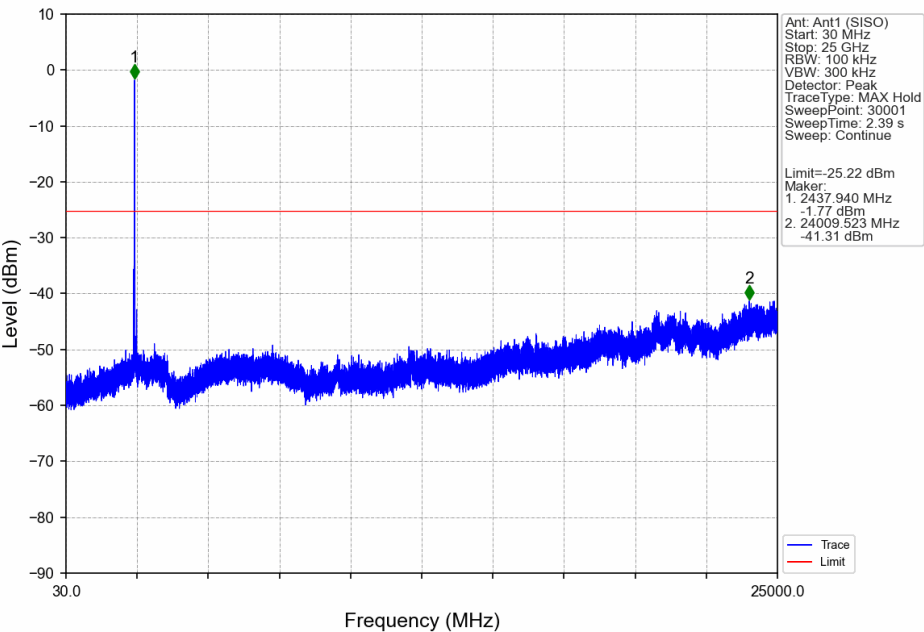
802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



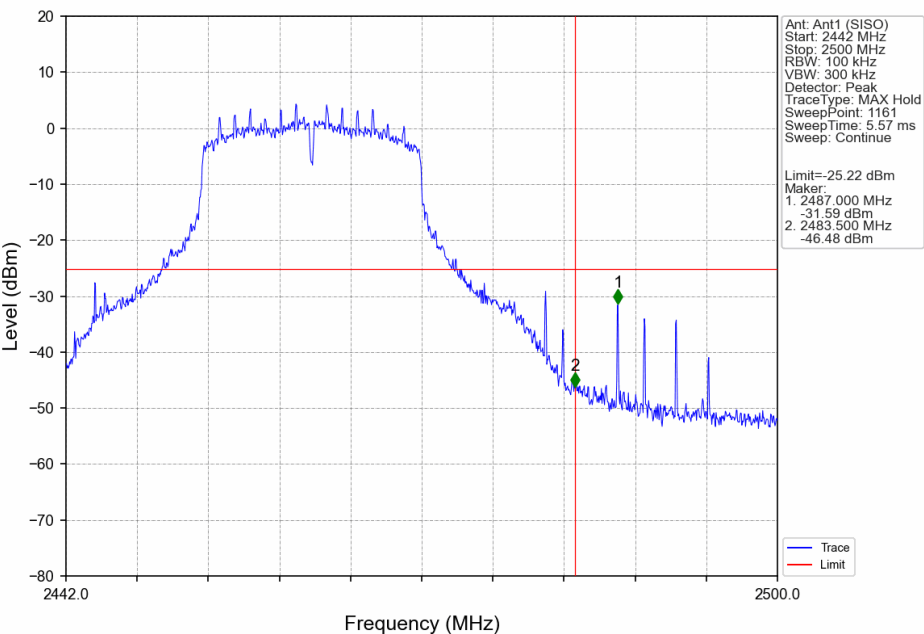
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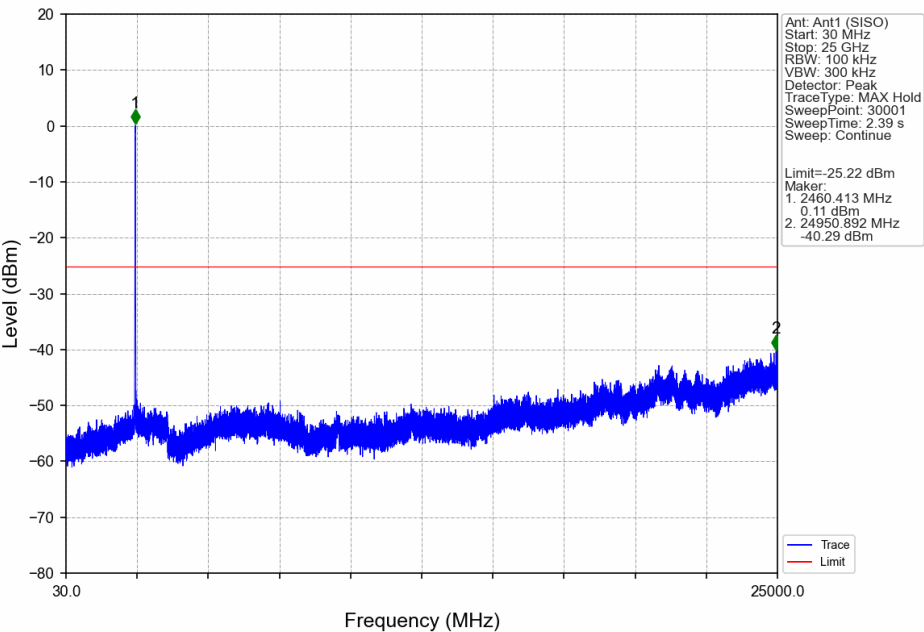
802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



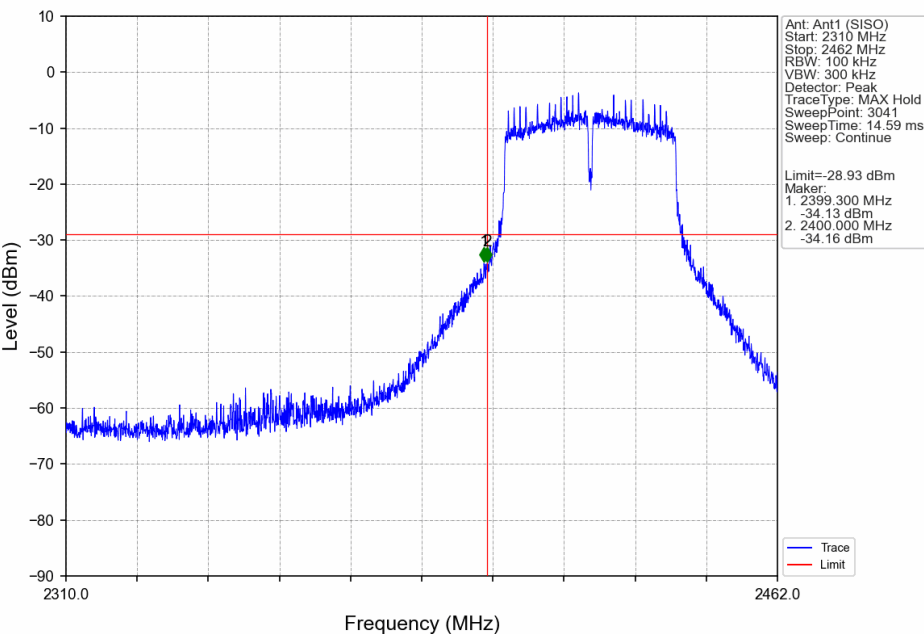
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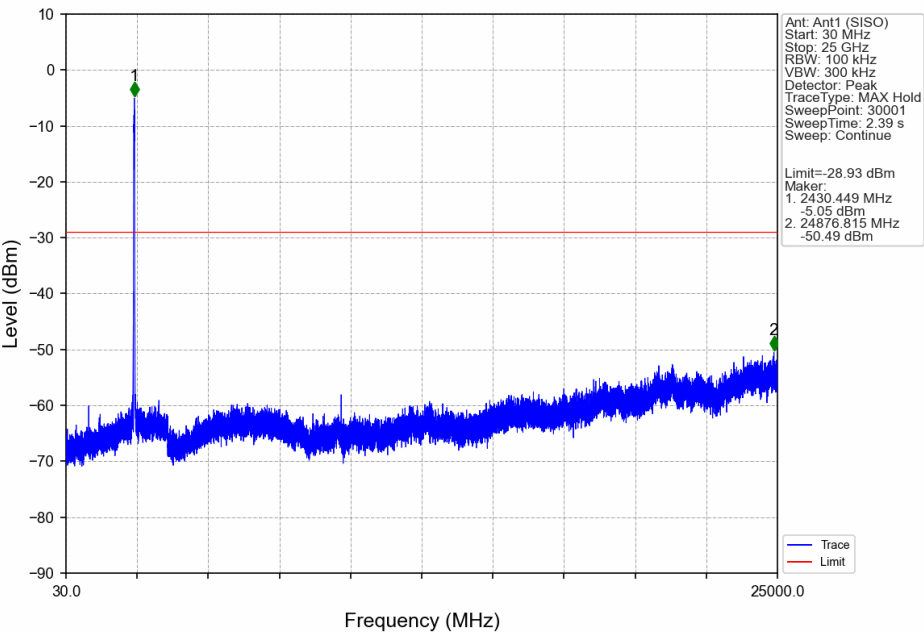
802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



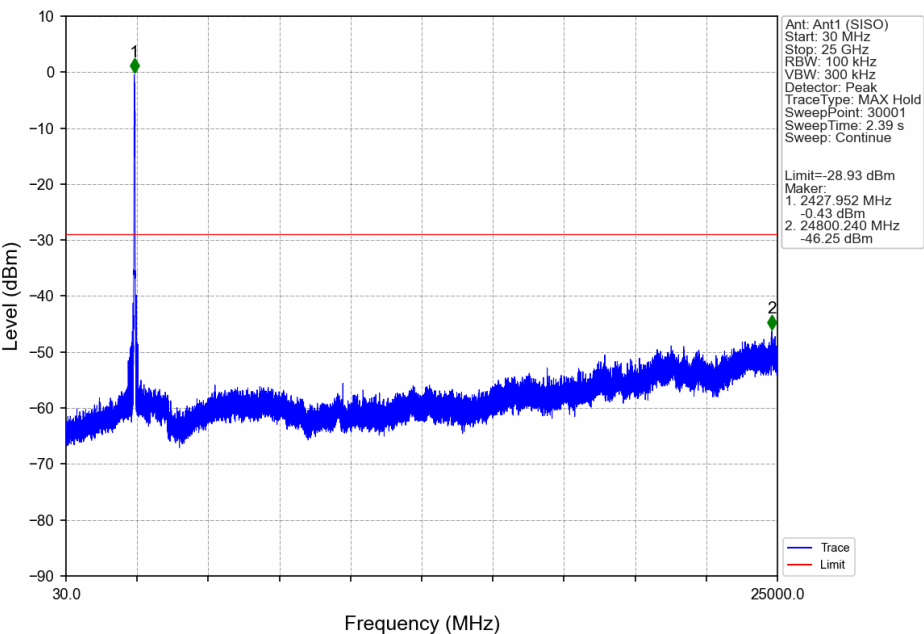
802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



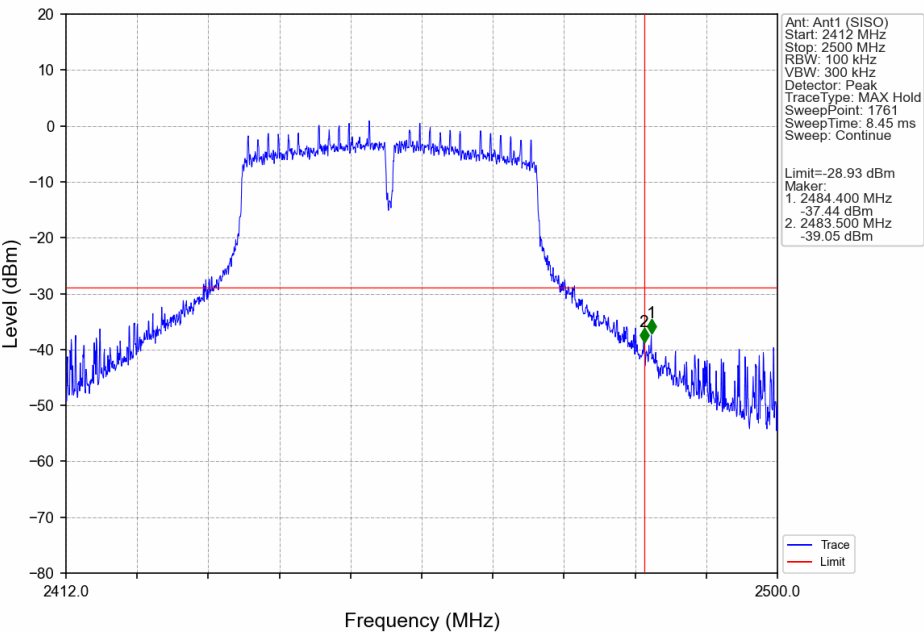
802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



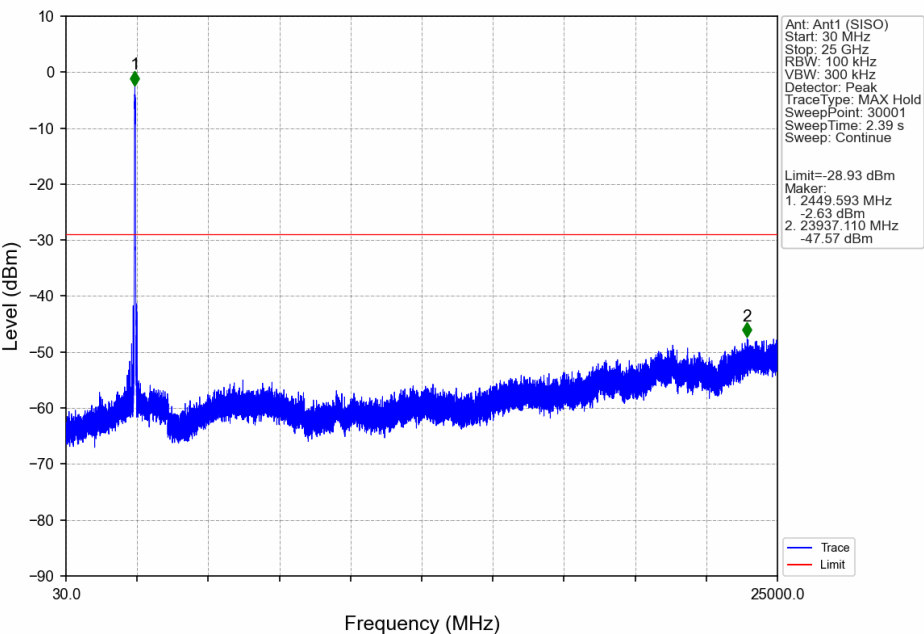
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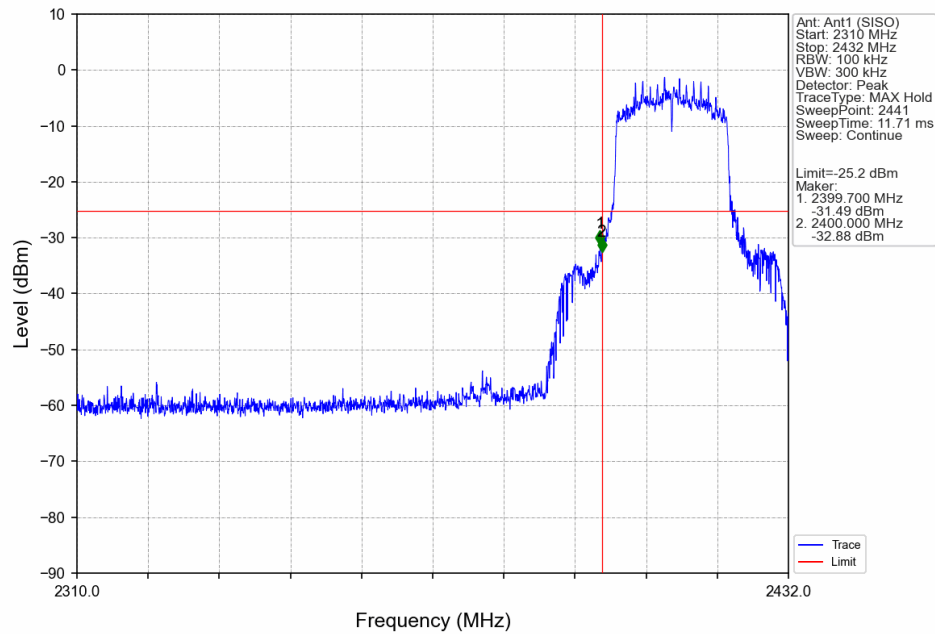
### 802.11n(HT40)\_HCH\_2452MHz\_Ant1 (SISO)\_NTNV



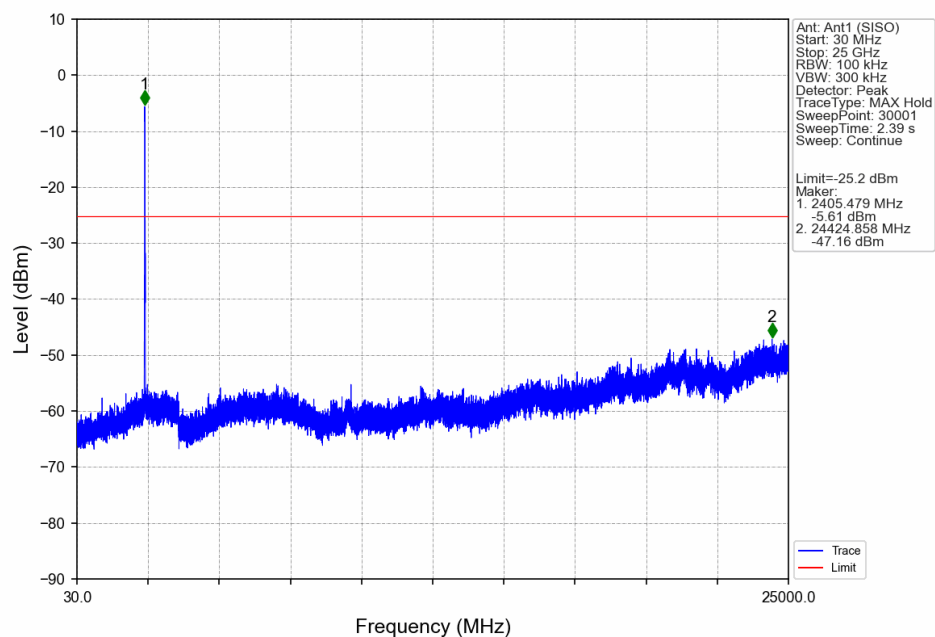
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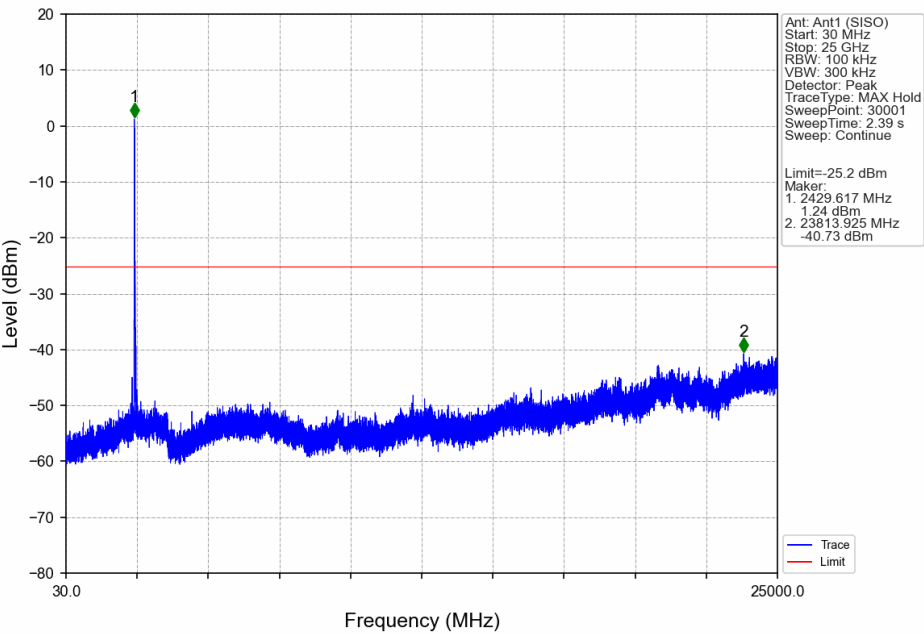
### 802.11ax(HE20)\_LCH\_2412MHz\_SU\_ / \_Ant1 (SISO)\_NTNV



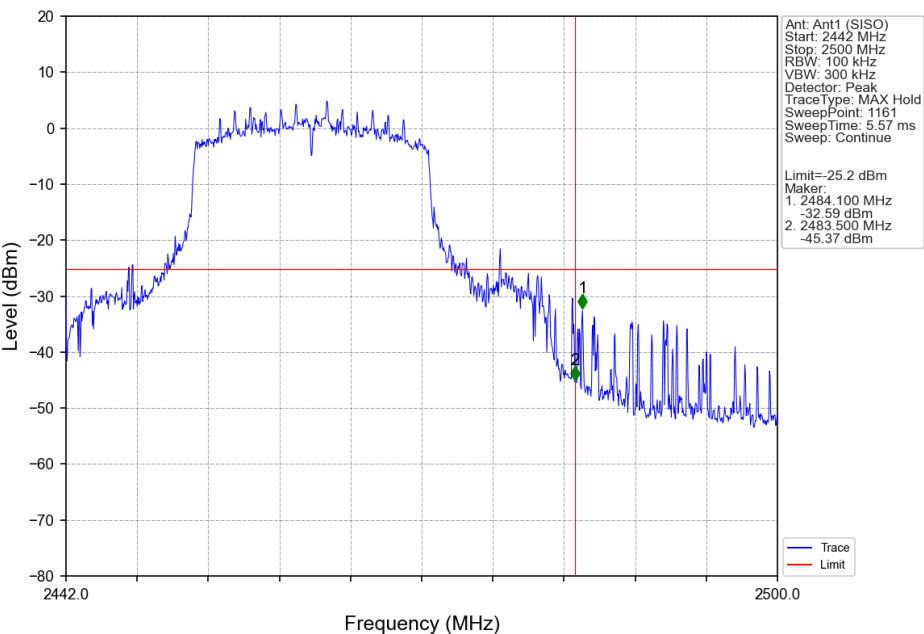
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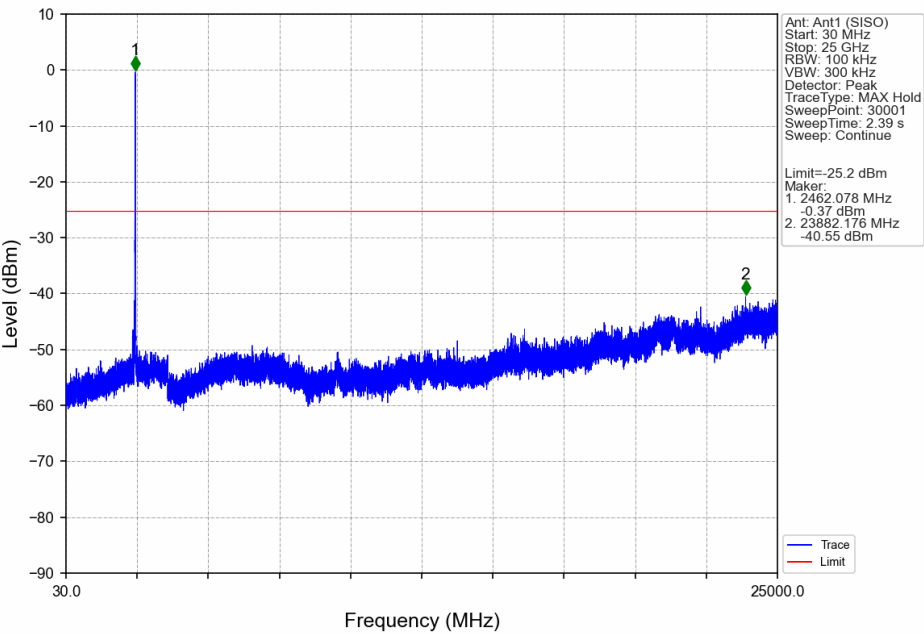
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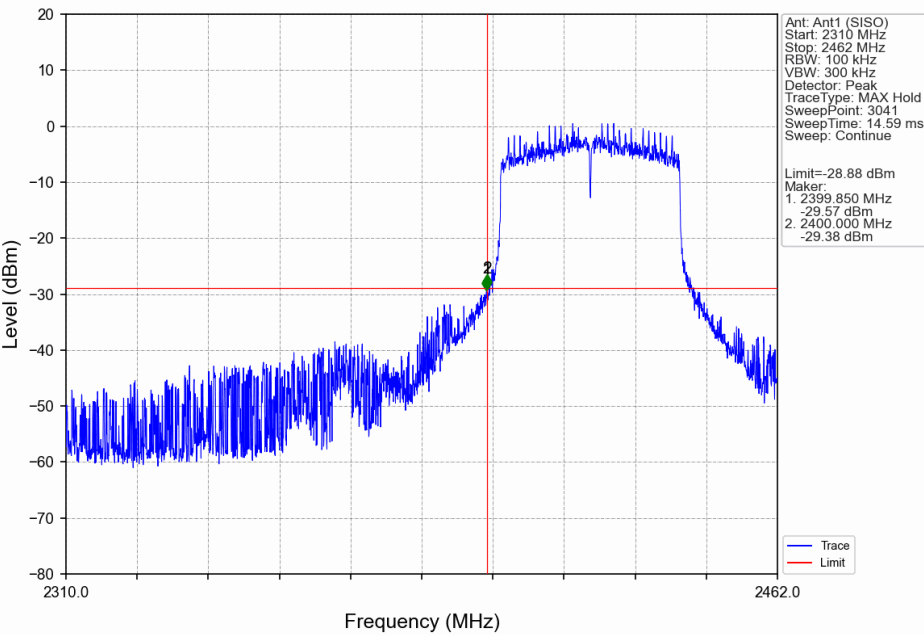
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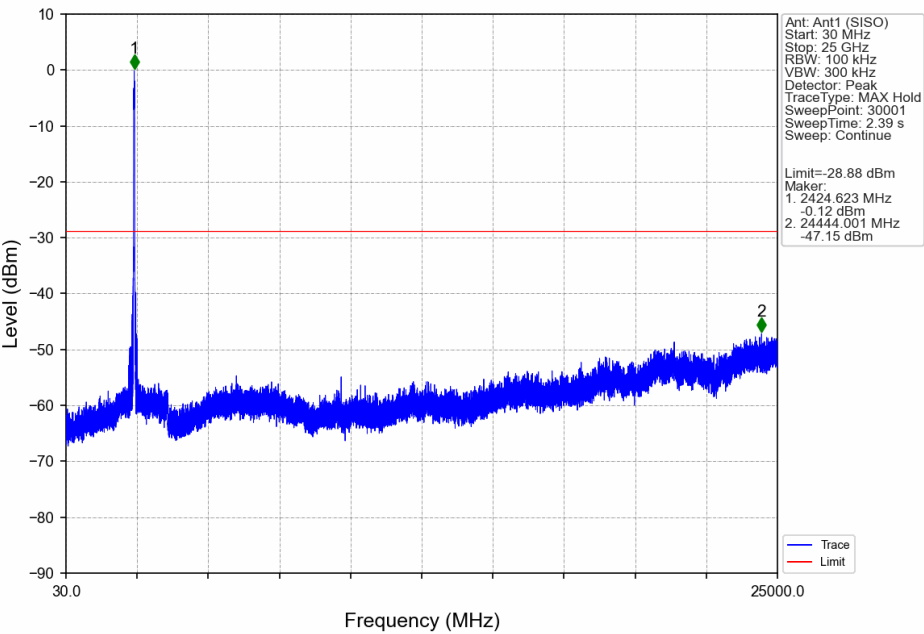
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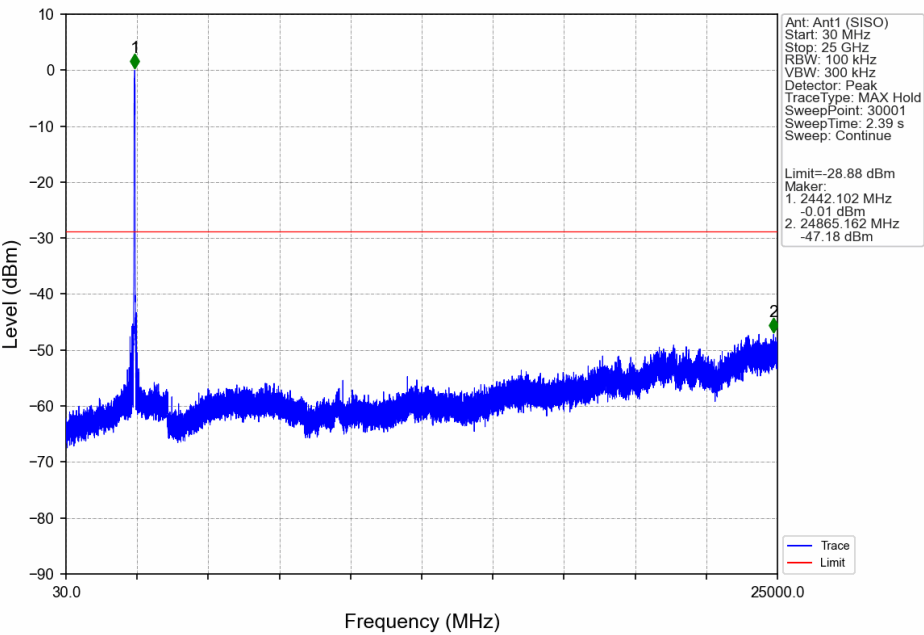
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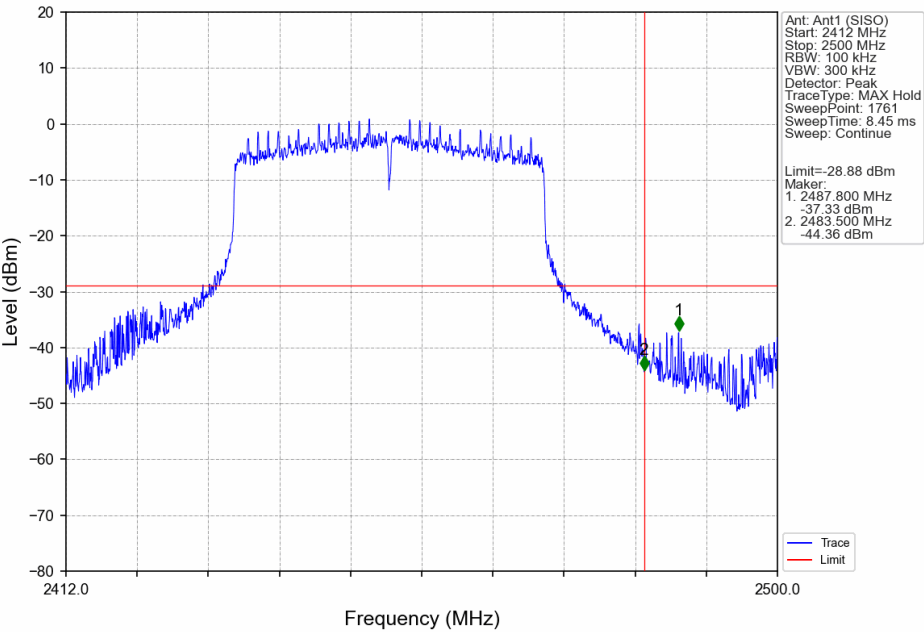
### 802.11ax(HE40)\_LCH\_2422MHz\_SU\_/\_Ant1 (SISO)\_NTNV



### 802.11ax(HE40)\_MCH\_2437MHz\_SU\_/\_Ant1 (SISO)\_NTNV



### 802.11ax(HE40)\_HCH\_2452MHz\_SU\_/\_Ant1 (SISO)\_NTNV



### 802.11ax(HE40)\_HCH\_2452MHz\_SU\_/\_Ant1 (SISO)\_NTNV

