

## **Appendix RF test data for WIFI2.4G**

## 1. Duty Cycle

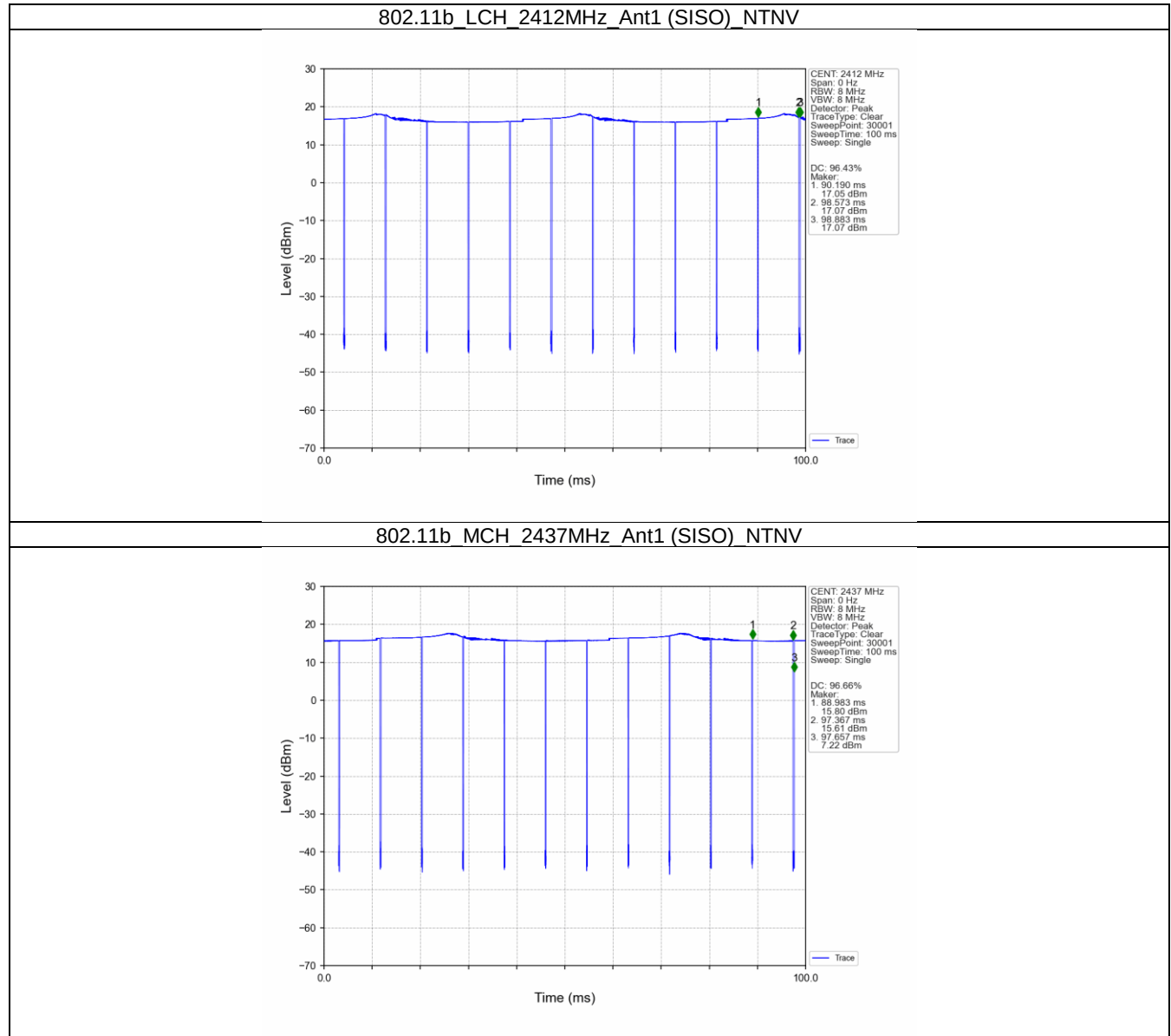
### 1.1 Test Result

#### 1.1.1 Ant1

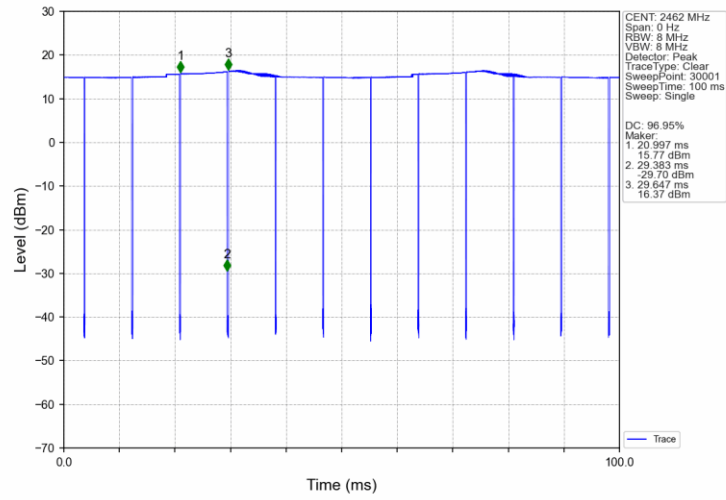
| Ant1           |         |                 |           |             |                |                                   |                       |
|----------------|---------|-----------------|-----------|-------------|----------------|-----------------------------------|-----------------------|
| Mode           | TX Type | Frequency (MHz) | T_on (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle Correction Factor (dB) | Max. DC Variation (%) |
| 802.11b        | SISO    | 2412            | 8.383     | 8.693       | 96.43          | 0.16                              | 1.43                  |
|                |         | 2437            | 8.384     | 8.674       | 96.66          | 0.15                              | 1.32                  |
|                |         | 2462            | 8.386     | 8.650       | 96.95          | 0.13                              | 1.02                  |
| 802.11g        | SISO    | 2412            | 1.393     | 1.599       | 87.12          | 0.60                              | 1.99                  |
|                |         | 2437            | 1.393     | 1.653       | 84.27          | 0.74                              | 4.35                  |
|                |         | 2462            | 1.393     | 1.663       | 83.76          | 0.77                              | 5.32                  |
| 802.11n (HT20) | SISO    | 2412            | 1.174     | 1.435       | 81.81          | 0.87                              | 5.52                  |
|                |         | 2437            | 1.174     | 1.354       | 86.71          | 0.62                              | 0.61                  |
|                |         | 2462            | 1.174     | 1.462       | 80.30          | 0.95                              | 7.00                  |
| 802.11n (HT40) | SISO    | 2422            | 0.588     | 0.874       | 67.28          | 1.72                              | 10.42                 |
|                |         | 2437            | 0.588     | 0.875       | 67.20          | 1.73                              | 10.42                 |
|                |         | 2452            | 0.587     | 0.838       | 70.05          | 1.55                              | 7.50                  |

## 1.2 Test Graph

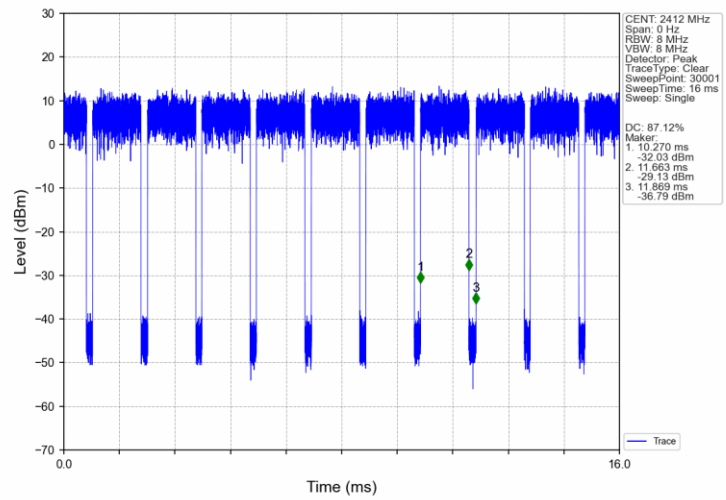
### 1.2.1 Ant1



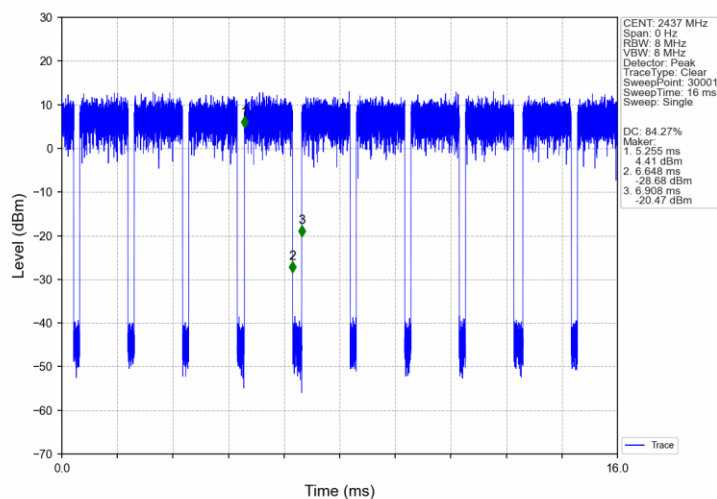
### 802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



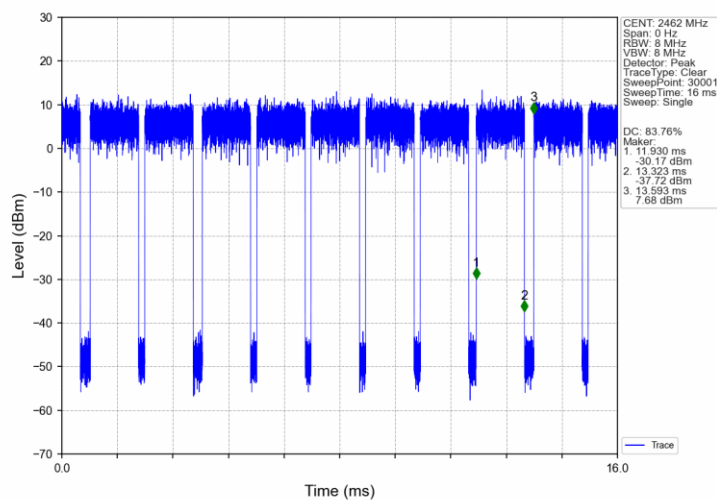
### 802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



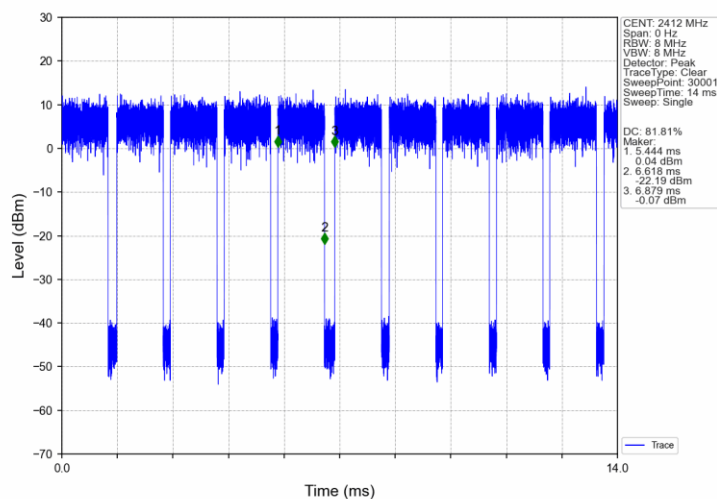
### 802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



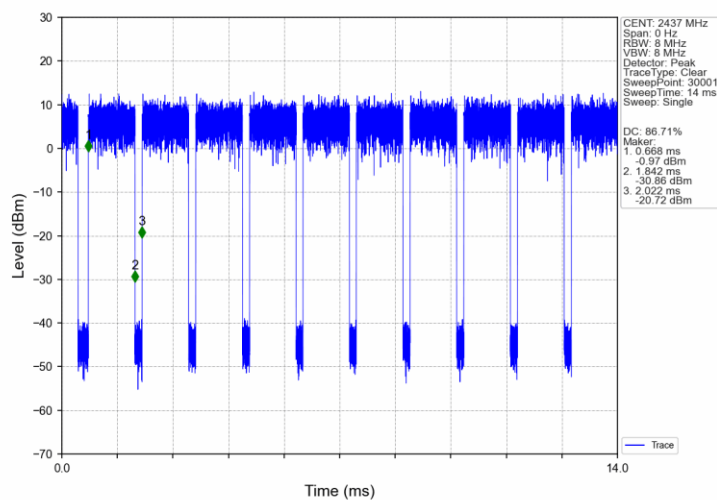
### 802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



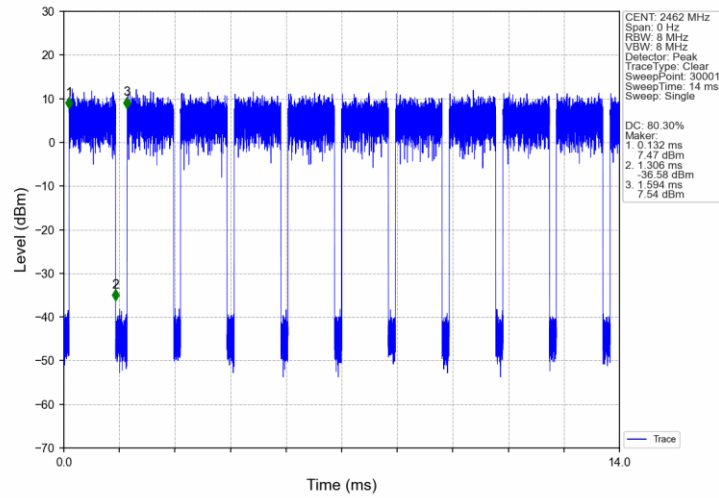
## 802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



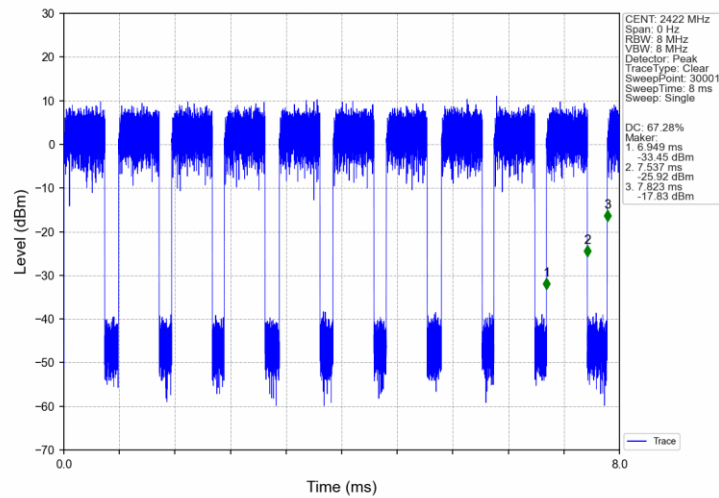
## 802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



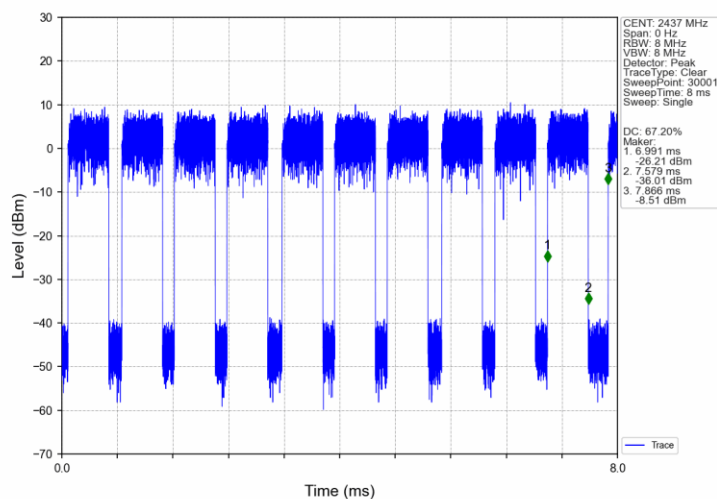
## 802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



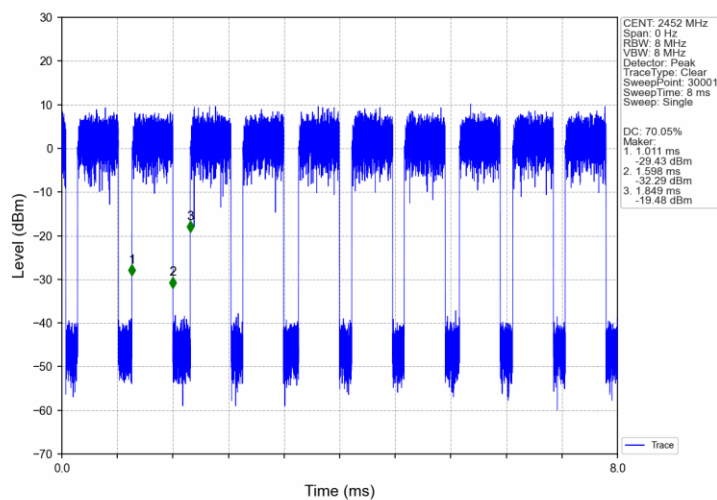
## 802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



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



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



## 2. Bandwidth

### 2.1 Test Result

#### 2.1.1 OBW

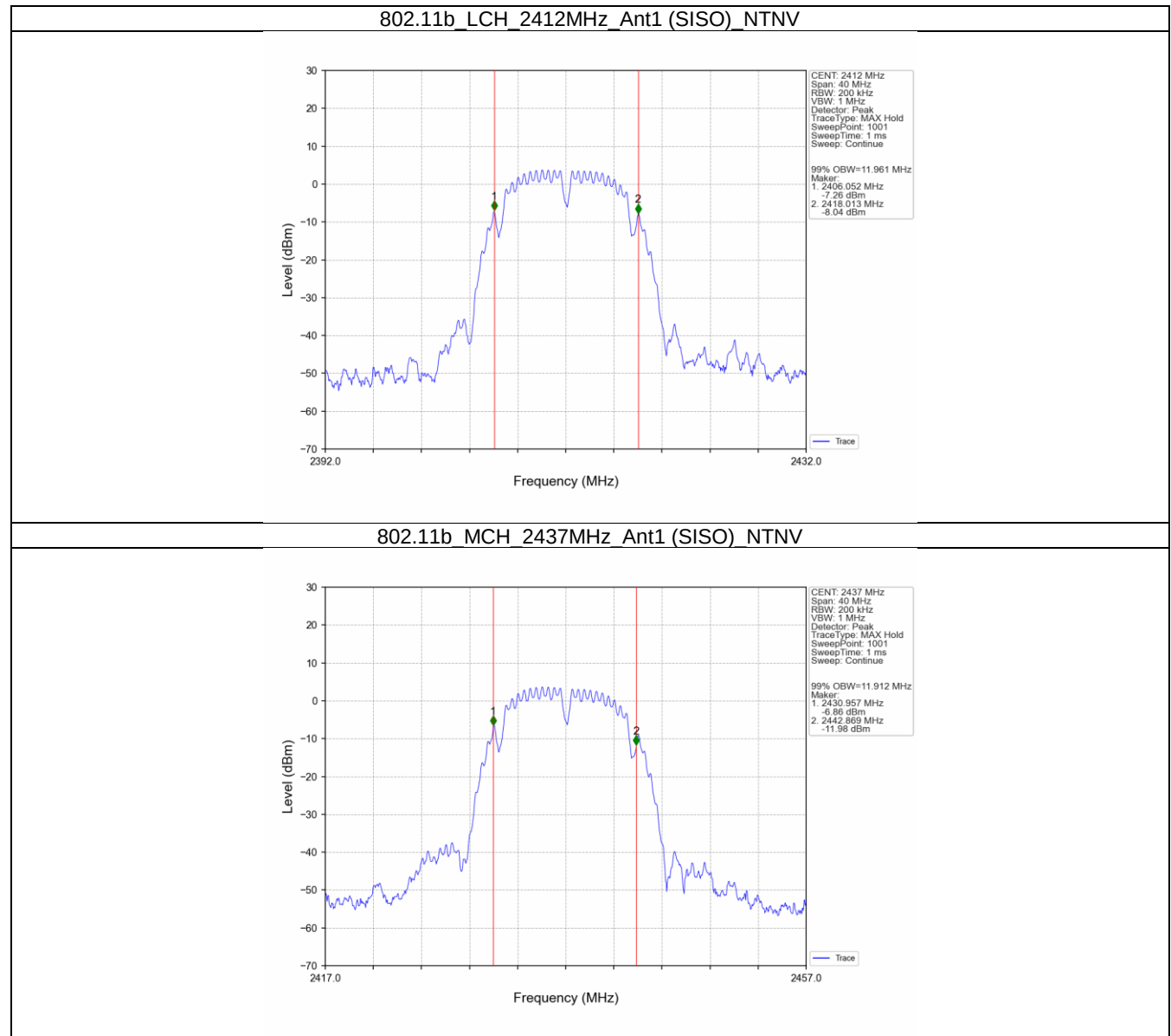
| Mode           | TX Type | Frequency (MHz) | ANT | 99% Occupied Bandwidth (MHz) |       | Verdict |
|----------------|---------|-----------------|-----|------------------------------|-------|---------|
|                |         |                 |     | Result                       | Limit |         |
| 802.11b        | SISO    | 2412            | 1   | 11.961                       | /     | Pass    |
|                |         | 2437            | 1   | 11.912                       | /     | Pass    |
|                |         | 2462            | 1   | 11.979                       | /     | Pass    |
| 802.11g        | SISO    | 2412            | 1   | 16.496                       | /     | Pass    |
|                |         | 2437            | 1   | 16.493                       | /     | Pass    |
|                |         | 2462            | 1   | 16.604                       | /     | Pass    |
| 802.11n (HT20) | SISO    | 2412            | 1   | 17.543                       | /     | Pass    |
|                |         | 2437            | 1   | 17.591                       | /     | Pass    |
|                |         | 2462            | 1   | 17.660                       | /     | Pass    |
| 802.11n (HT40) | SISO    | 2422            | 1   | 36.046                       | /     | Pass    |
|                |         | 2437            | 1   | 36.329                       | /     | Pass    |
|                |         | 2452            | 1   | 37.217                       | /     | Pass    |

#### 2.1.2 6dB BW

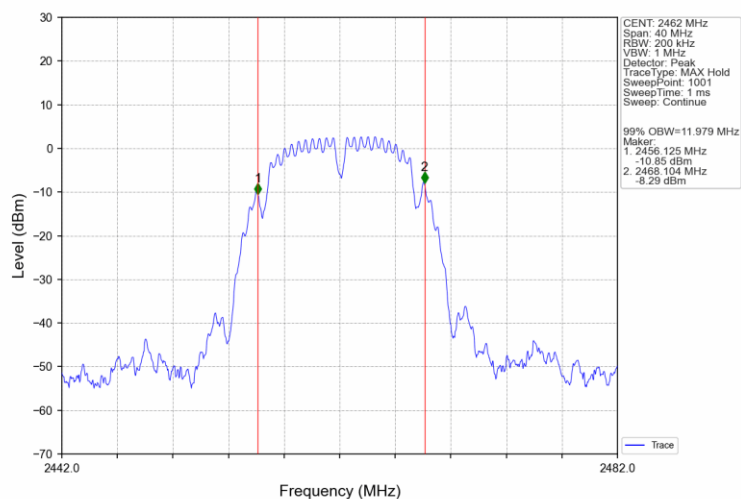
| Mode           | TX Type | Frequency (MHz) | ANT | 6dB Bandwidth (MHz) |            | Verdict |
|----------------|---------|-----------------|-----|---------------------|------------|---------|
|                |         |                 |     | Result              | Limit      |         |
| 802.11b        | SISO    | 2412            | 1   | 9.889               | $\geq 0.5$ | Pass    |
|                |         | 2437            | 1   | 9.753               | $\geq 0.5$ | Pass    |
|                |         | 2462            | 1   | 9.902               | $\geq 0.5$ | Pass    |
| 802.11g        | SISO    | 2412            | 1   | 16.210              | $\geq 0.5$ | Pass    |
|                |         | 2437            | 1   | 16.306              | $\geq 0.5$ | Pass    |
|                |         | 2462            | 1   | 16.418              | $\geq 0.5$ | Pass    |
| 802.11n (HT20) | SISO    | 2412            | 1   | 17.123              | $\geq 0.5$ | Pass    |
|                |         | 2437            | 1   | 16.908              | $\geq 0.5$ | Pass    |
|                |         | 2462            | 1   | 17.460              | $\geq 0.5$ | Pass    |
| 802.11n (HT40) | SISO    | 2422            | 1   | 34.466              | $\geq 0.5$ | Pass    |
|                |         | 2437            | 1   | 34.951              | $\geq 0.5$ | Pass    |
|                |         | 2452            | 1   | 36.270              | $\geq 0.5$ | Pass    |

## 2.2 Test Graph

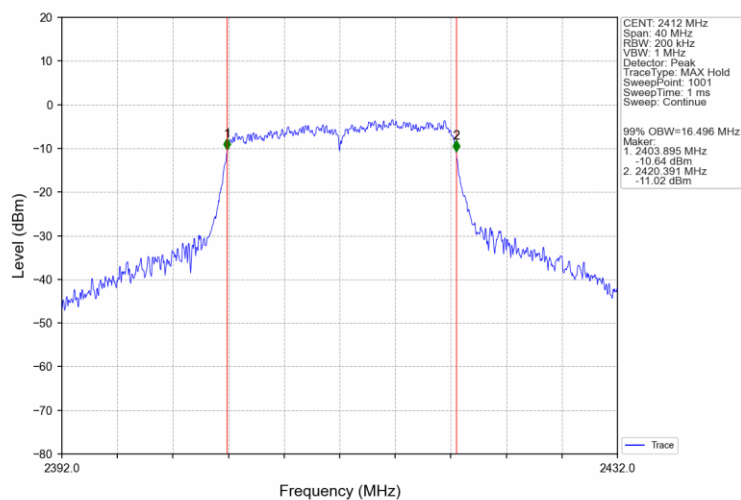
### 2.2.1 OBW



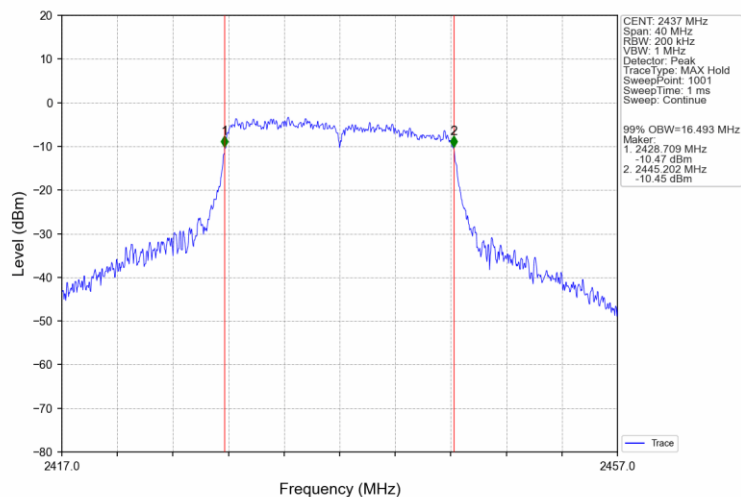
## 802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



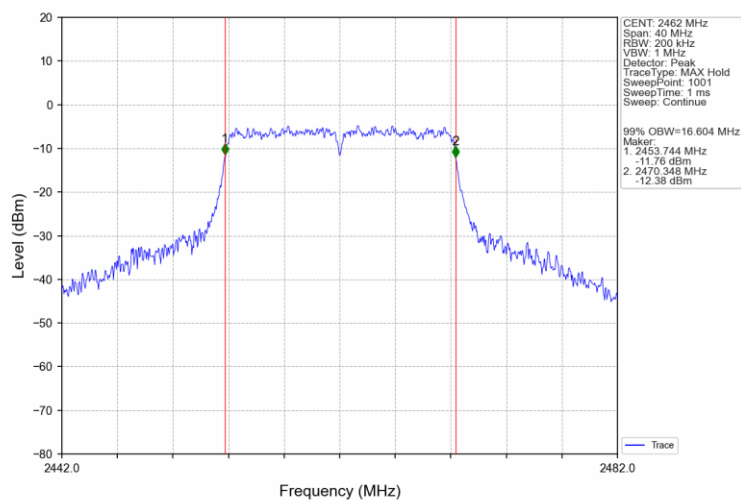
## 802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



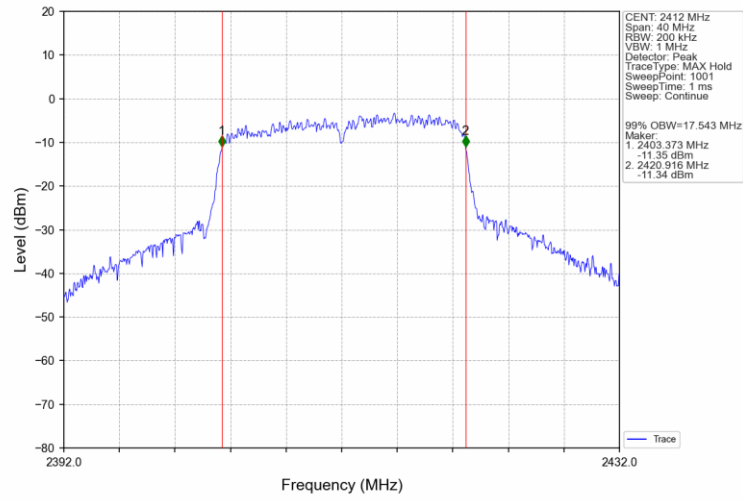
### 802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



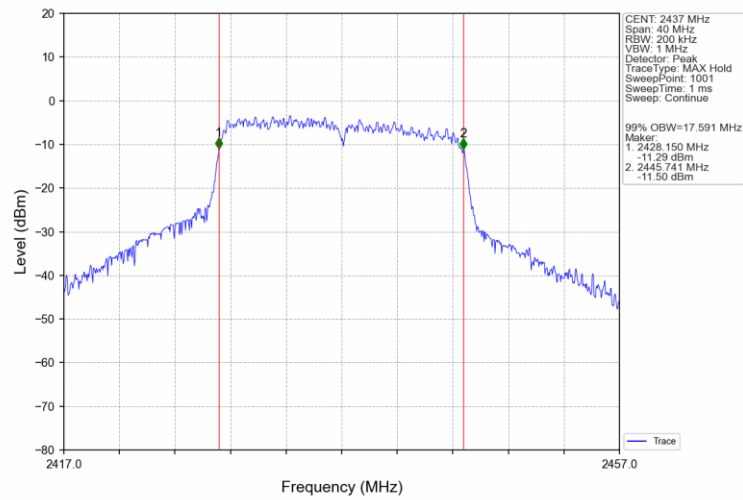
### 802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



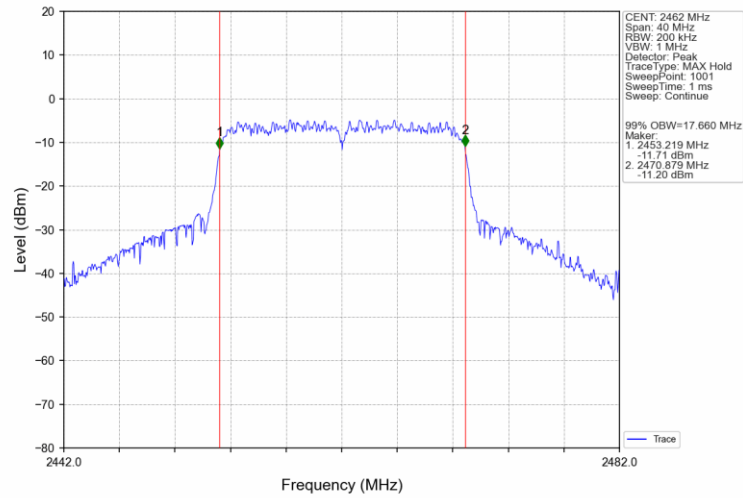
## 802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



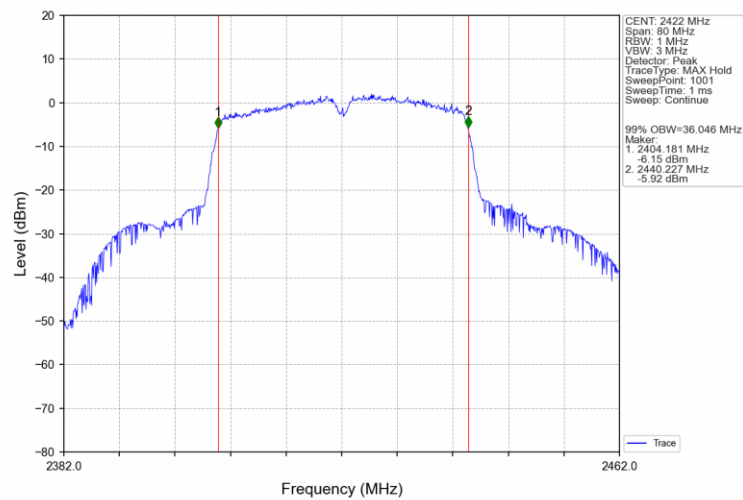
## 802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



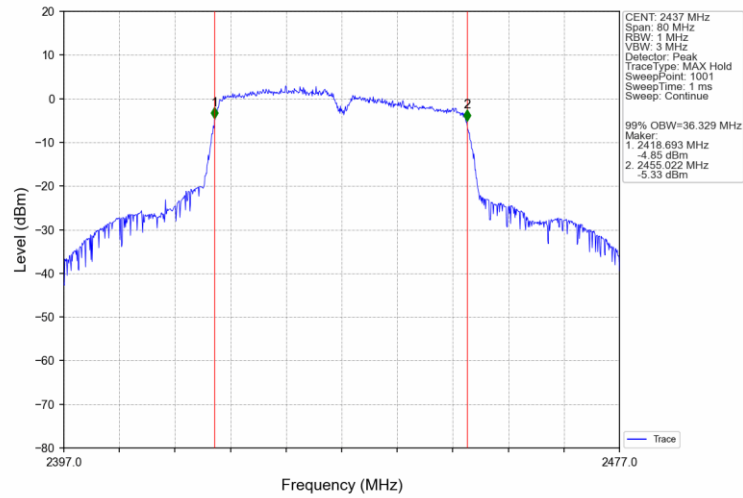
## 802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



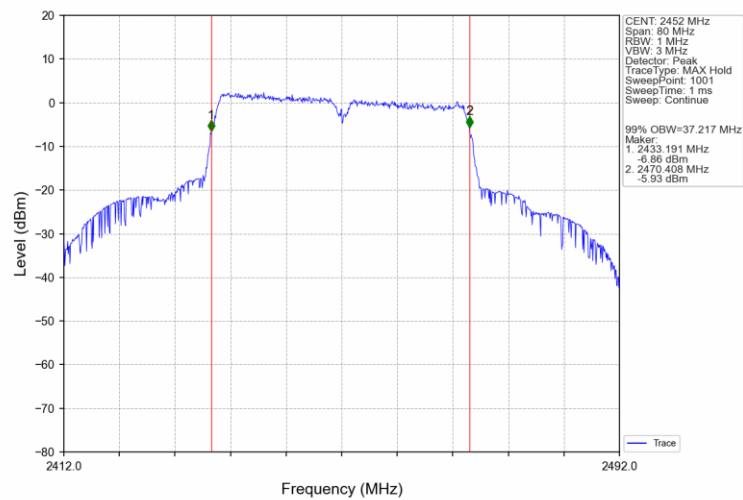
## 802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



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

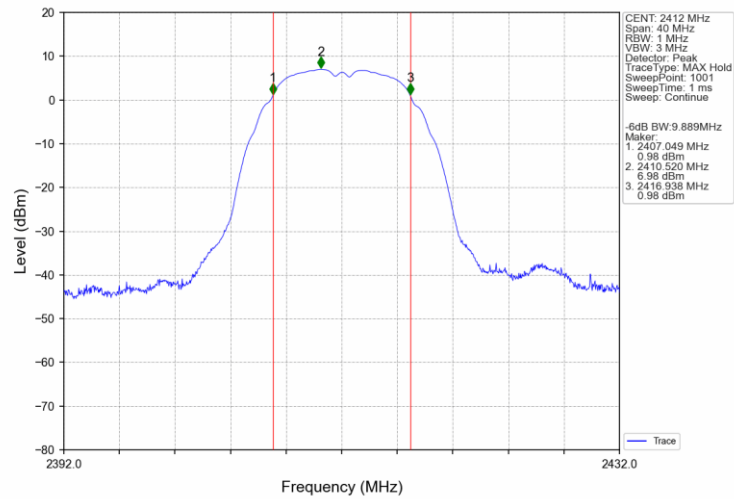


## 802.11n(HT40)\_HCH\_2452MHz\_Ant1 (SISO)\_NTNV

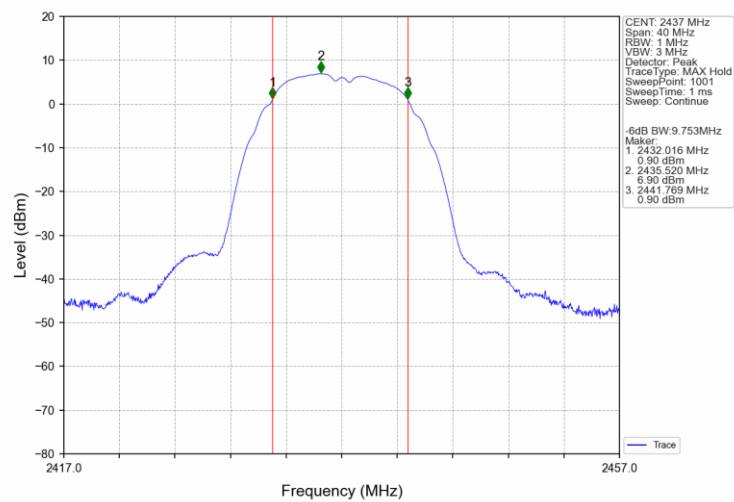


## 2.2.2 6dB BW

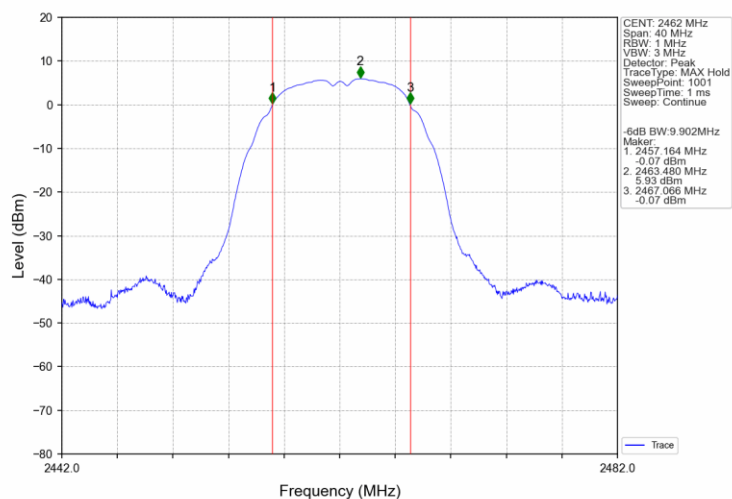
802.11b\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



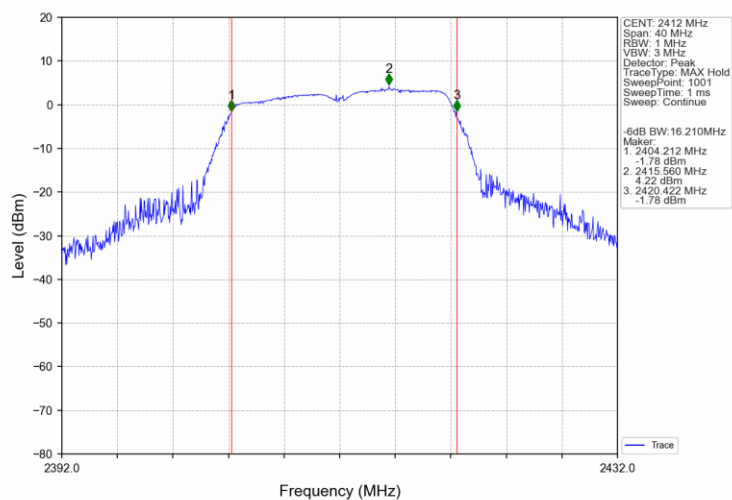
802.11b\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



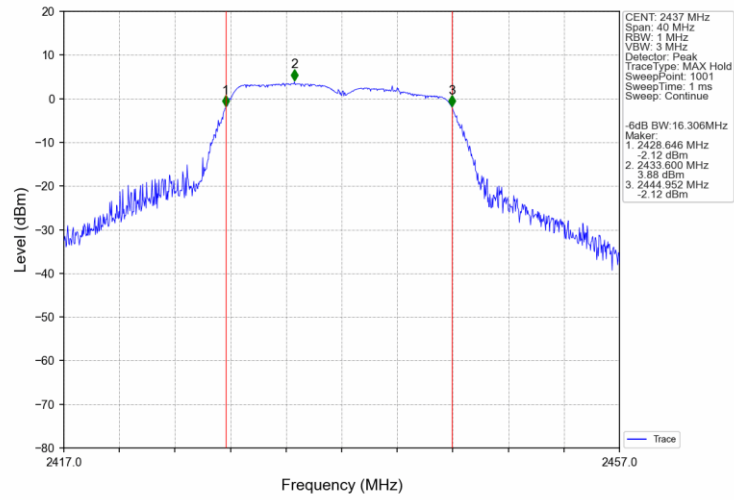
## 802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



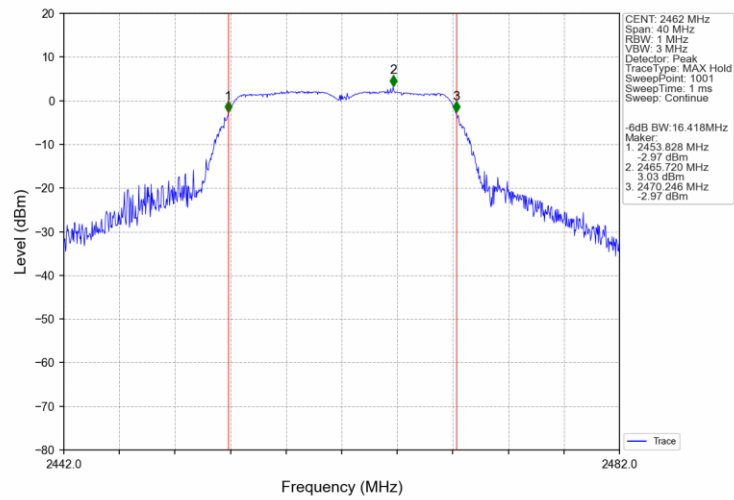
## 802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



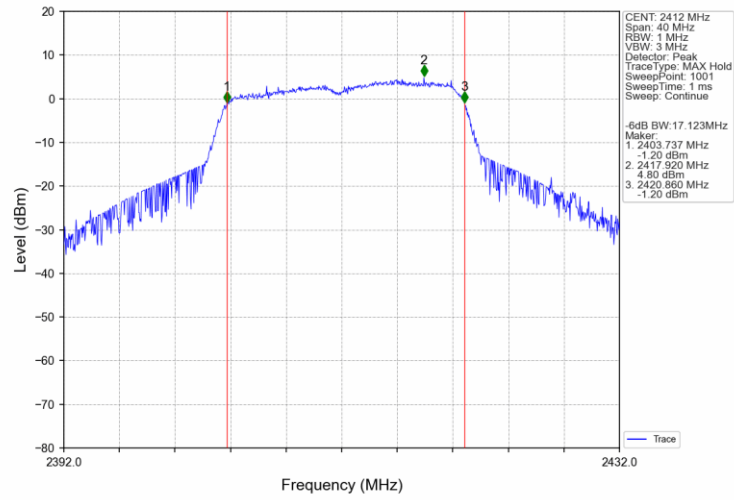
## 802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



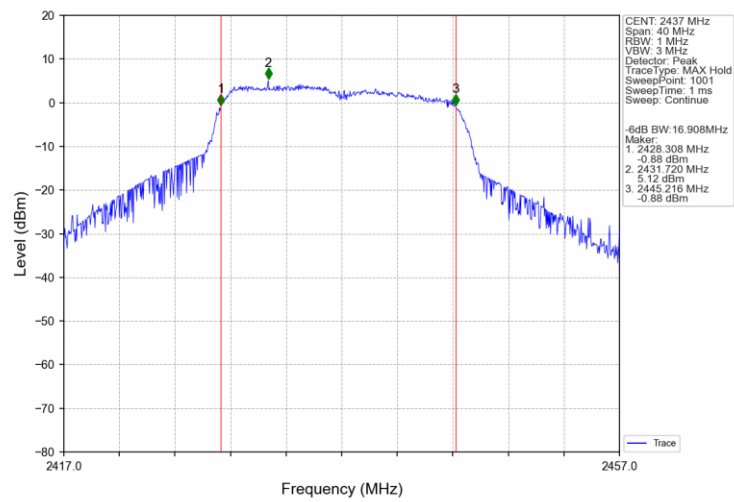
## 802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



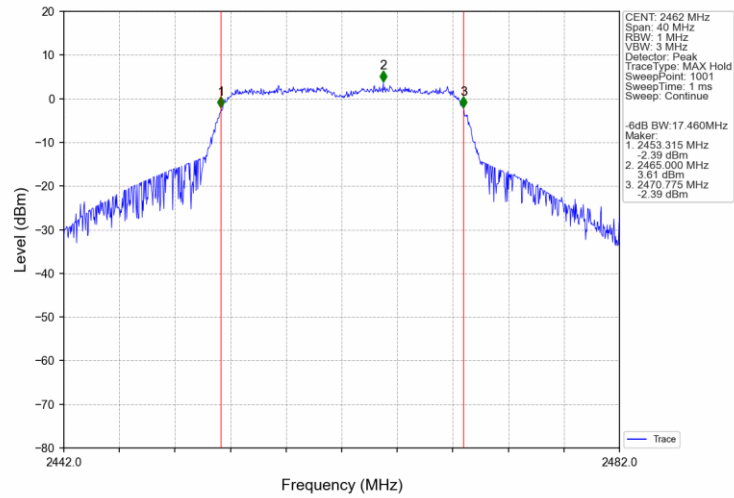
## 802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



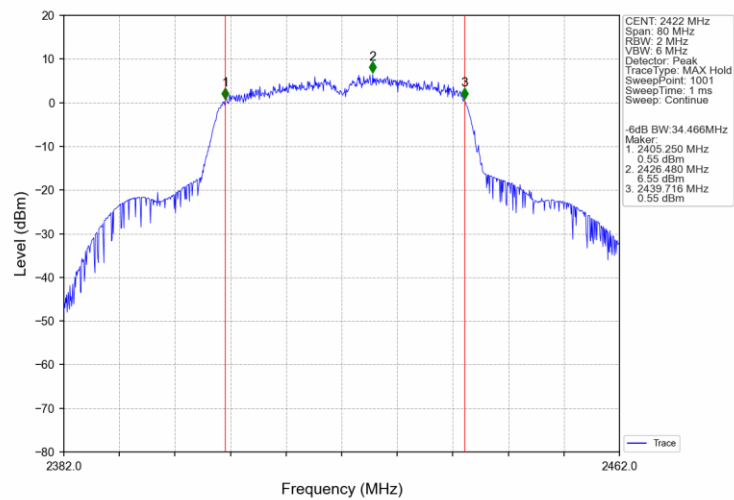
## 802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



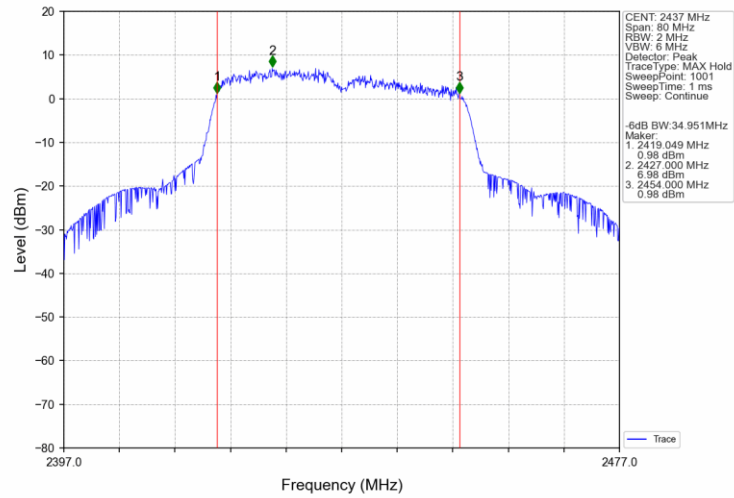
## 802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



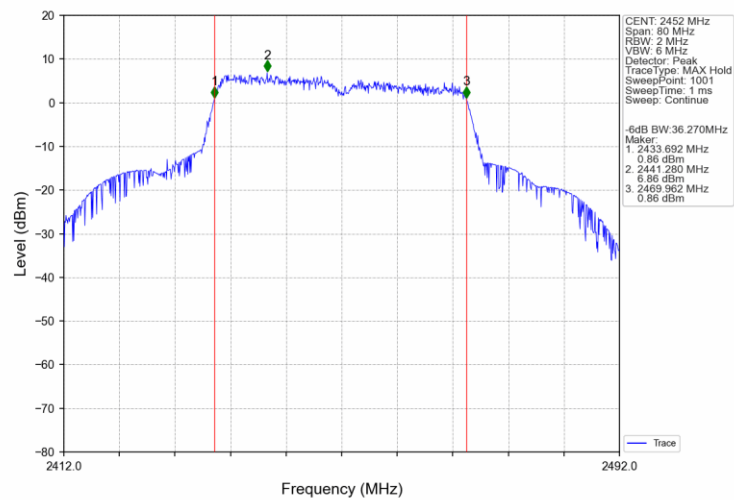
## 802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



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



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



### 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            | 15.36                                     | <=30  | Pass    |
|                                     |         | 2437            | 15.00                                     | <=30  | Pass    |
|                                     |         | 2462            | 14.30                                     | <=30  | Pass    |
| 802.11g                             | SISO    | 2412            | 13.95                                     | <=30  | Pass    |
|                                     |         | 2437            | 13.97                                     | <=30  | Pass    |
|                                     |         | 2462            | 13.28                                     | <=30  | Pass    |
| 802.11n (HT20)                      | SISO    | 2412            | 14.23                                     | <=30  | Pass    |
|                                     |         | 2437            | 14.27                                     | <=30  | Pass    |
|                                     |         | 2462            | 13.65                                     | <=30  | Pass    |
| 802.11n (HT40)                      | SISO    | 2422            | 14.52                                     | <=30  | Pass    |
|                                     |         | 2437            | 15.11                                     | <=30  | Pass    |
|                                     |         | 2452            | 15.41                                     | <=30  | Pass    |
| Note1: Antenna Gain: Ant1: 3.16dBi; |         |                 |                                           |       |         |

## 4. Maximum Power Spectral Density

### 4.1 Test Result

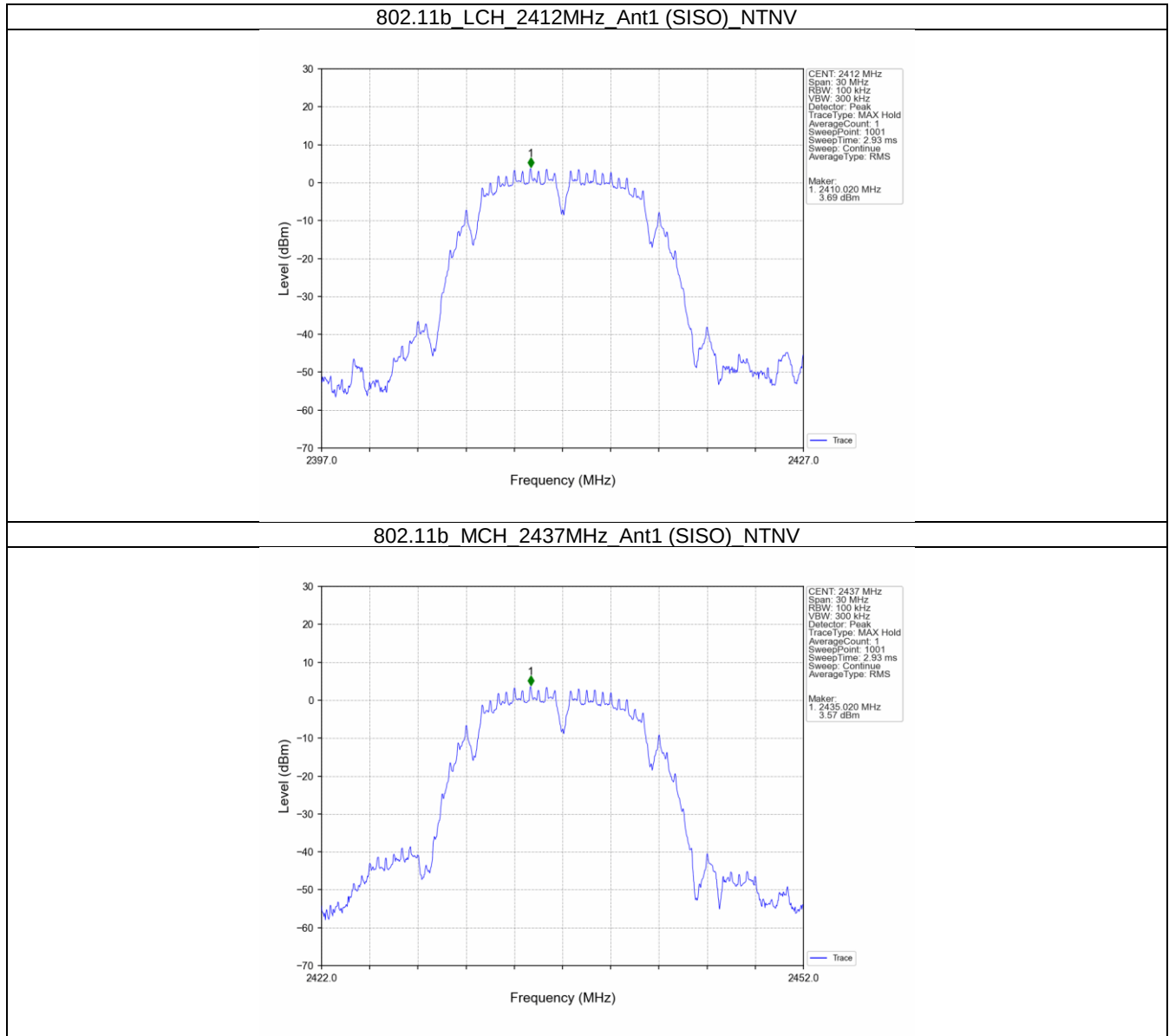
#### 4.1.1 PSD

| Mode           | TX Type | Frequency (MHz) | Maximum PSD (dBm) |       | Verdict |
|----------------|---------|-----------------|-------------------|-------|---------|
|                |         |                 | ANT1              | Limit |         |
| 802.11b        | SISO    | 2412            | 3.69              | <=8   | Pass    |
|                |         | 2437            | 3.57              | <=8   | Pass    |
|                |         | 2462            | 2.52              | <=8   | Pass    |
| 802.11g        | SISO    | 2412            | -4.61             | <=8   | Pass    |
|                |         | 2437            | -4.61             | <=8   | Pass    |
|                |         | 2462            | -5.99             | <=8   | Pass    |
| 802.11n (HT20) | SISO    | 2412            | -4.55             | <=8   | Pass    |
|                |         | 2437            | -4.46             | <=8   | Pass    |
|                |         | 2462            | -5.53             | <=8   | Pass    |
| 802.11n (HT40) | SISO    | 2422            | -6.66             | <=8   | Pass    |
|                |         | 2437            | -5.93             | <=8   | Pass    |
|                |         | 2452            | -5.59             | <=8   | Pass    |

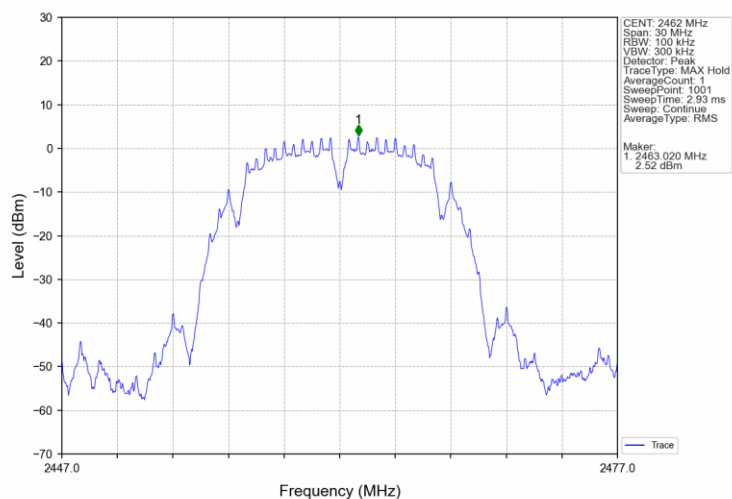
Note1: Antenna Gain: Ant1: 3.16dBi;

## 4.2 Test Graph

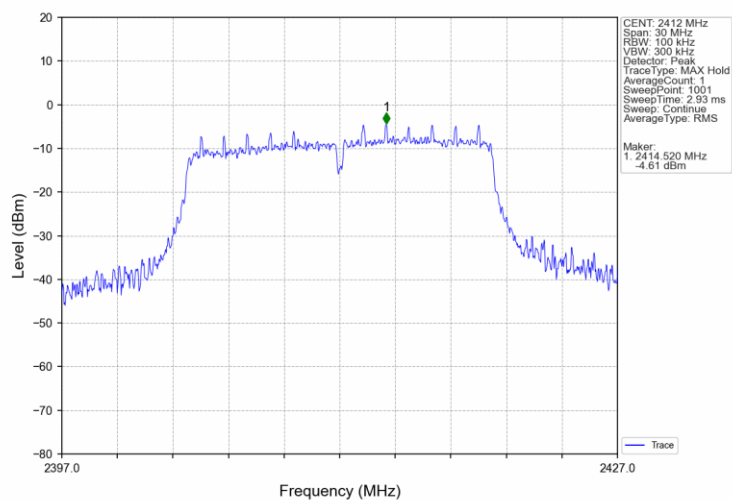
### 4.2.1 PSD



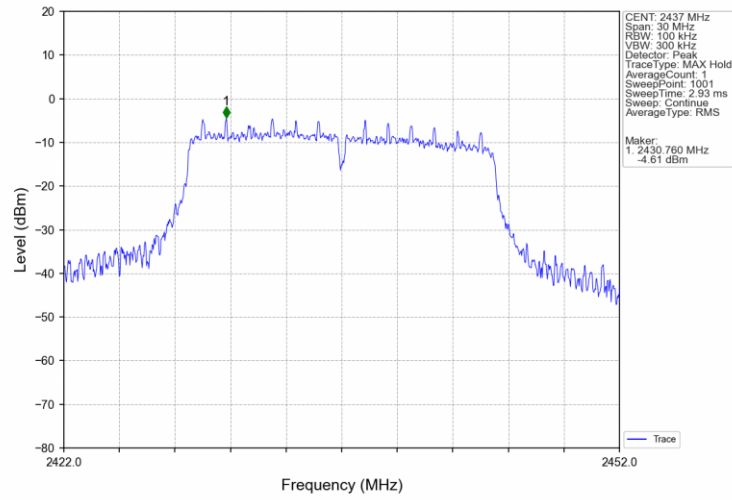
## 802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



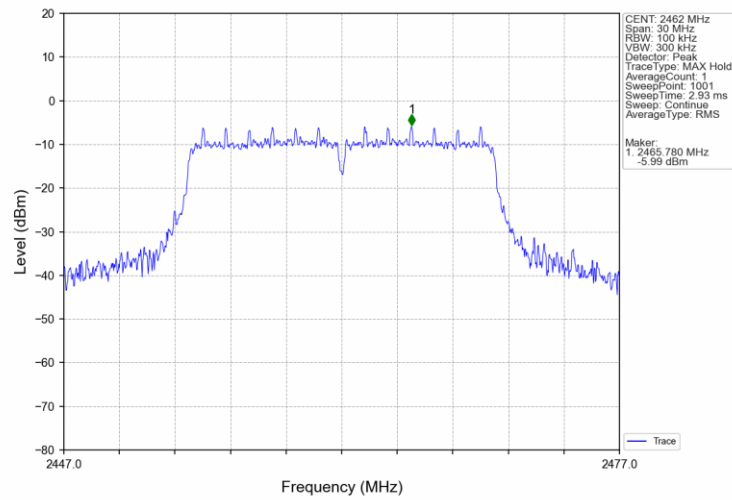
## 802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



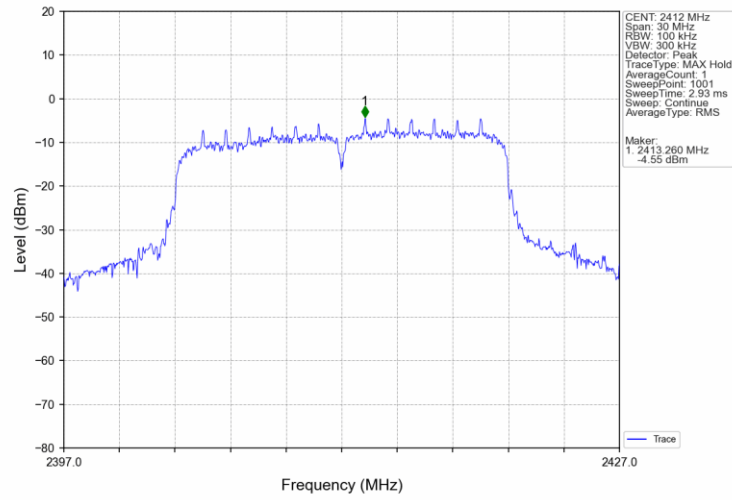
## 802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



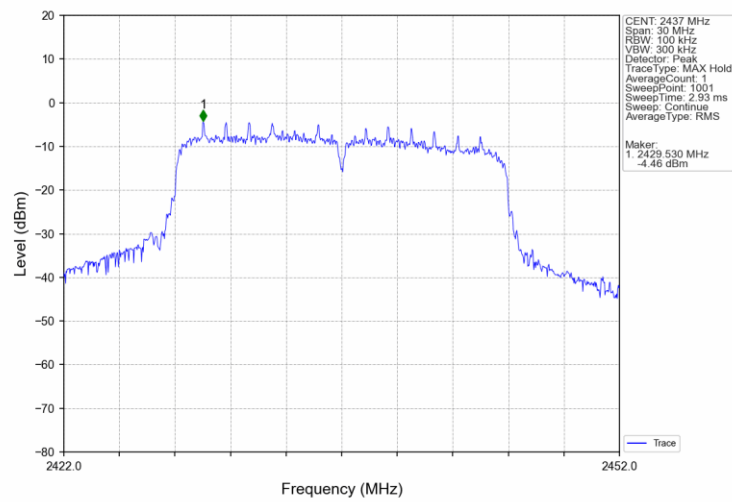
## 802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



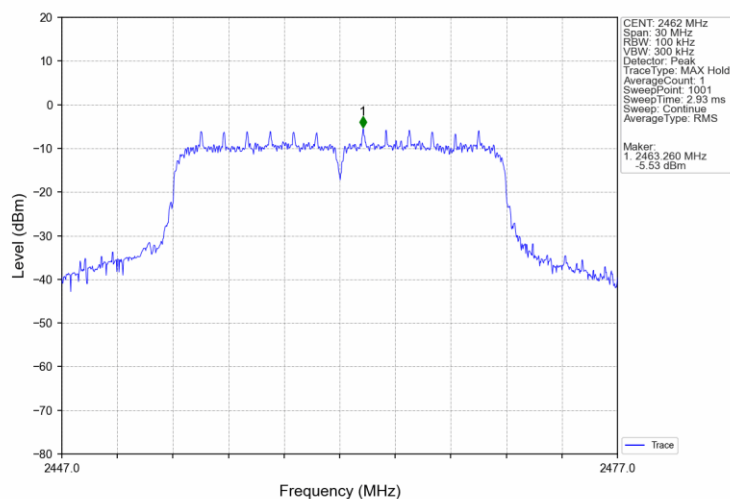
## 802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



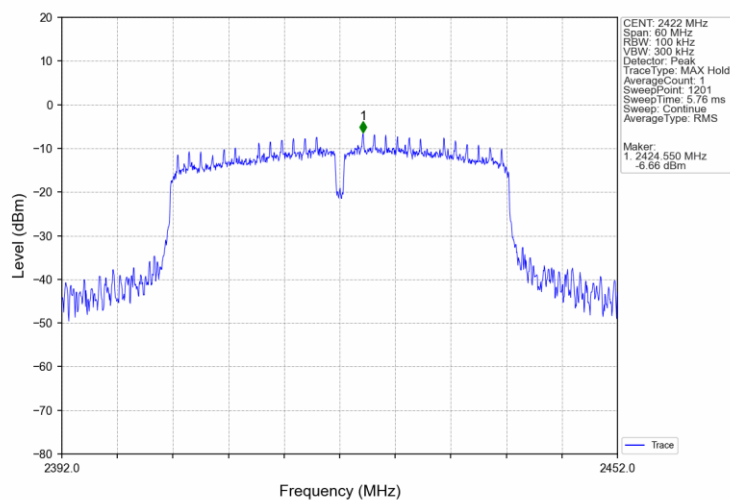
## 802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



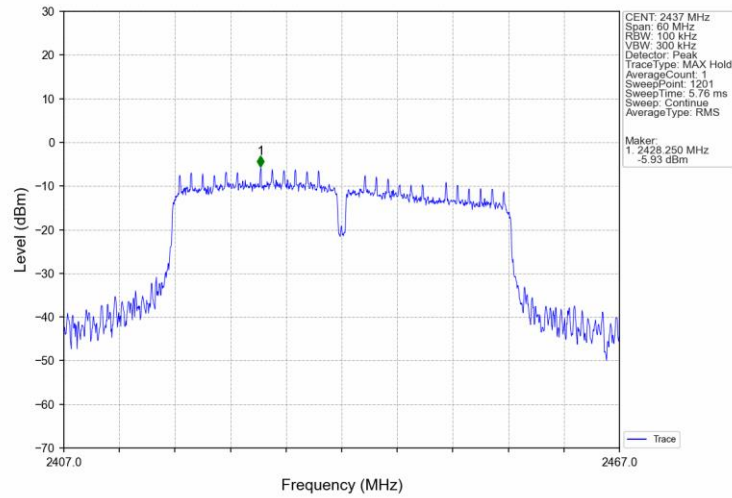
## 802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



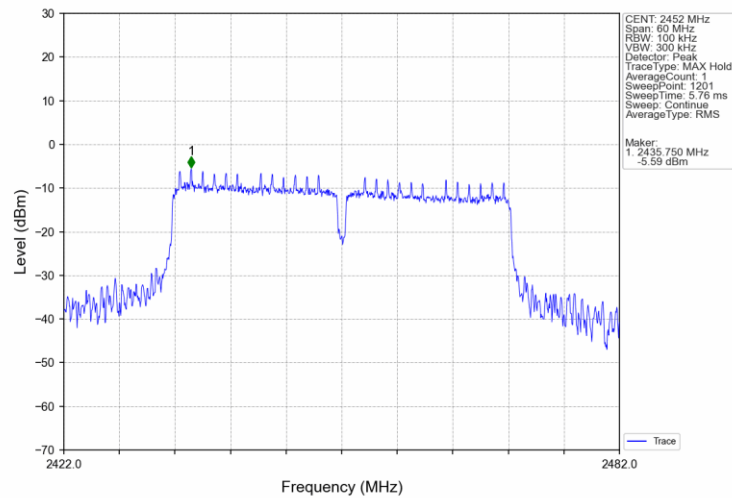
## 802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



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



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



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

### 5.1 Test Result

#### 5.1.1 Ref

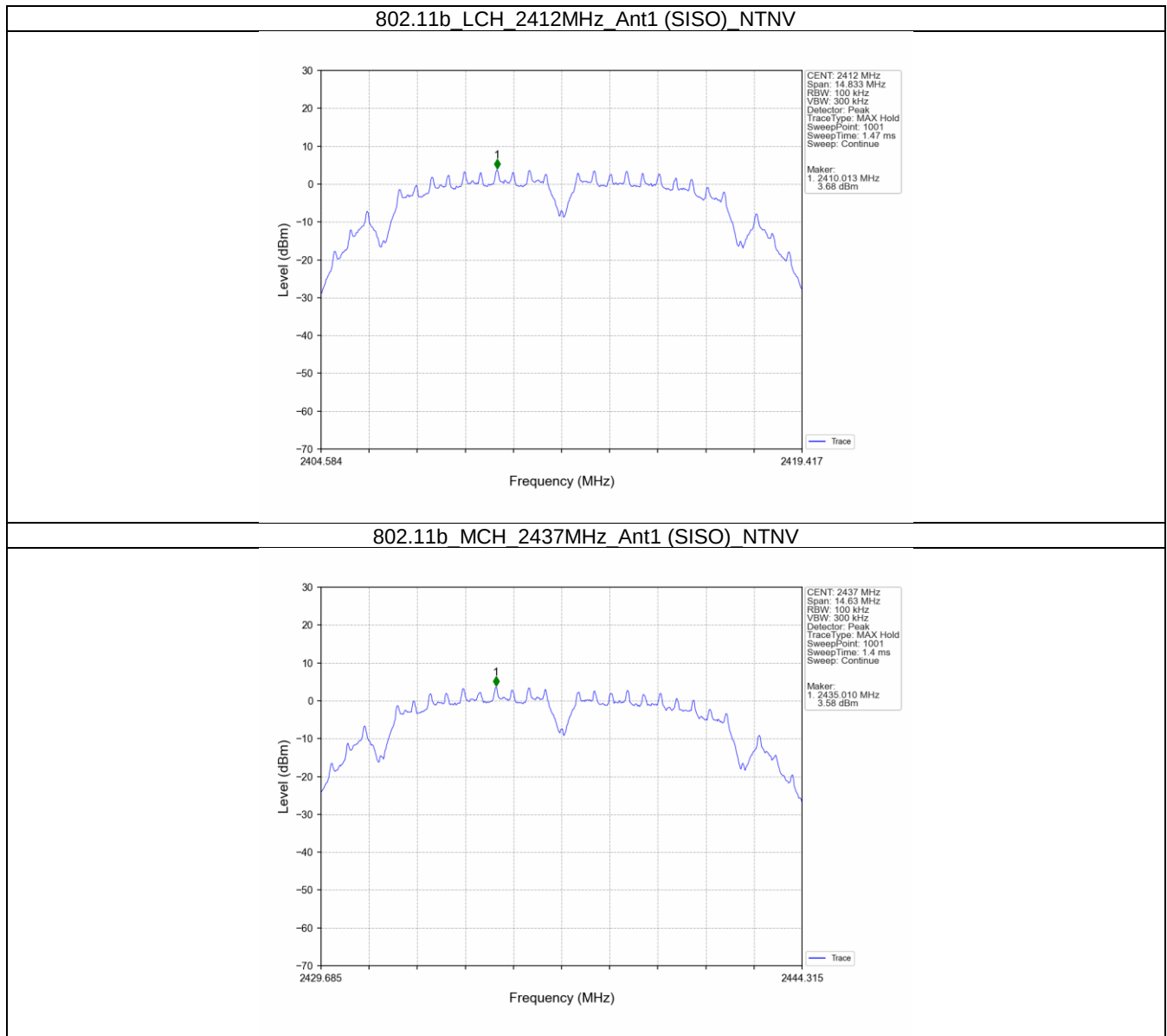
| Mode           | TX Type | Frequency (MHz) | ANT | Level of Reference (dBm) |
|----------------|---------|-----------------|-----|--------------------------|
| 802.11b        | SISO    | 2412            | 1   | 3.68                     |
|                |         | 2437            | 1   | 3.58                     |
|                |         | 2462            | 1   | 2.50                     |
| 802.11g        | SISO    | 2412            | 1   | -4.40                    |
|                |         | 2437            | 1   | -4.48                    |
|                |         | 2462            | 1   | -5.54                    |
| 802.11n (HT20) | SISO    | 2412            | 1   | -4.32                    |
|                |         | 2437            | 1   | -4.49                    |
|                |         | 2462            | 1   | -5.50                    |
| 802.11n (HT40) | SISO    | 2422            | 1   | -6.70                    |
|                |         | 2437            | 1   | -5.97                    |
|                |         | 2452            | 1   | -5.93                    |

#### 5.1.2 CSE

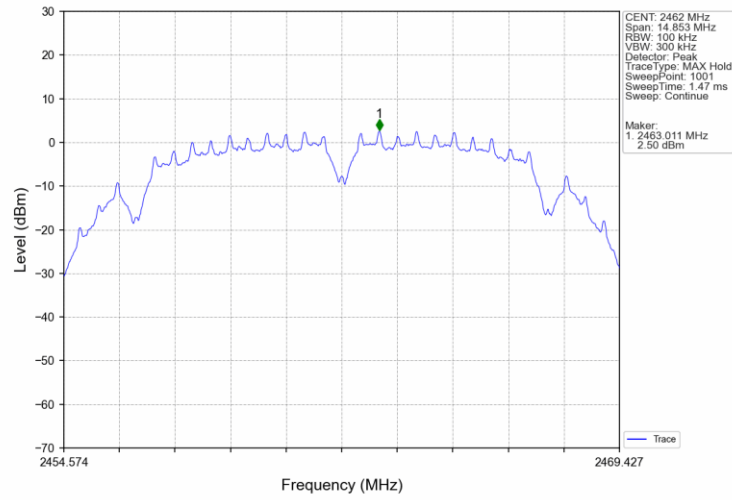
| Mode           | TX Type | Frequency (MHz) | ANT | Level of Reference (dBm) | Limit (dBm) | Verdict |
|----------------|---------|-----------------|-----|--------------------------|-------------|---------|
| 802.11b        | SISO    | 2412            | 1   | 3.68                     | -16.32      | Pass    |
|                |         | 2437            | 1   | 3.58                     | -16.42      | Pass    |
|                |         | 2462            | 1   | 2.50                     | -17.50      | Pass    |
| 802.11g        | SISO    | 2412            | 1   | -4.40                    | -24.40      | Pass    |
|                |         | 2437            | 1   | -4.48                    | -24.48      | Pass    |
|                |         | 2462            | 1   | -5.54                    | -25.54      | Pass    |
| 802.11n (HT20) | SISO    | 2412            | 1   | -4.32                    | -24.32      | Pass    |
|                |         | 2437            | 1   | -4.49                    | -24.49      | Pass    |
|                |         | 2462            | 1   | -5.50                    | -25.50      | Pass    |
| 802.11n (HT40) | SISO    | 2422            | 1   | -6.70                    | -26.70      | Pass    |
|                |         | 2437            | 1   | -5.97                    | -25.97      | Pass    |
|                |         | 2452            | 1   | -5.93                    | -25.93      | Pass    |

## 5.2 Test Graph

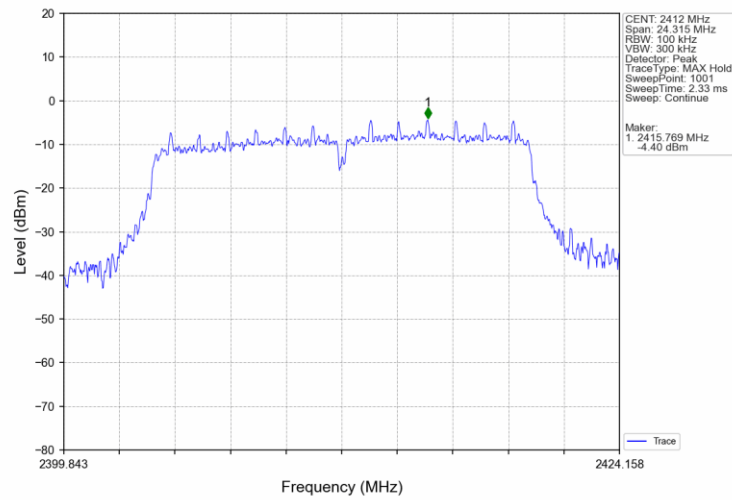
### 5.2.1 Ref



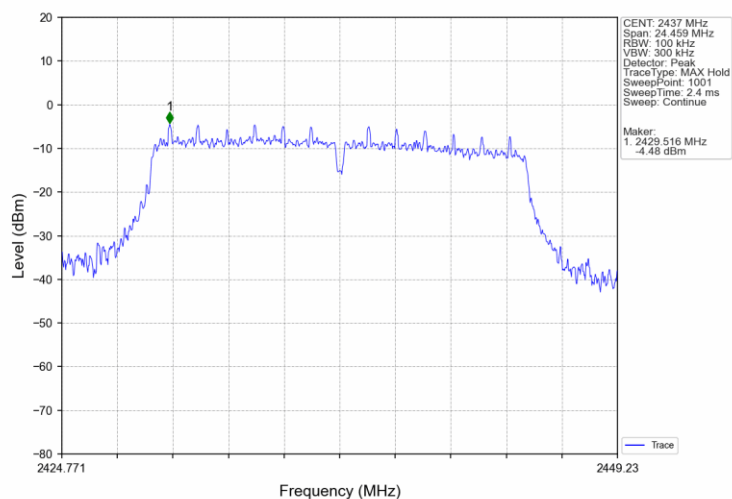
## 802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



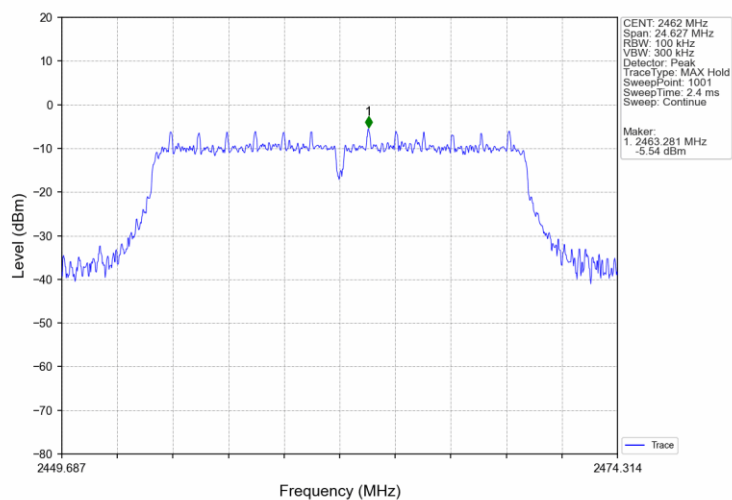
## 802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



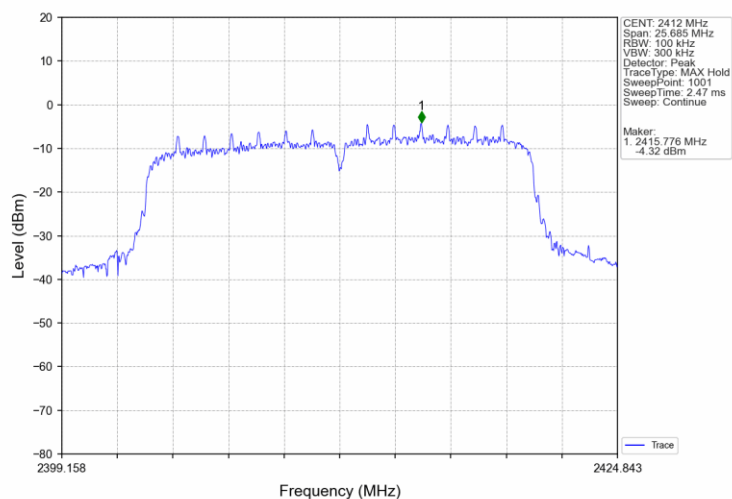
## 802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



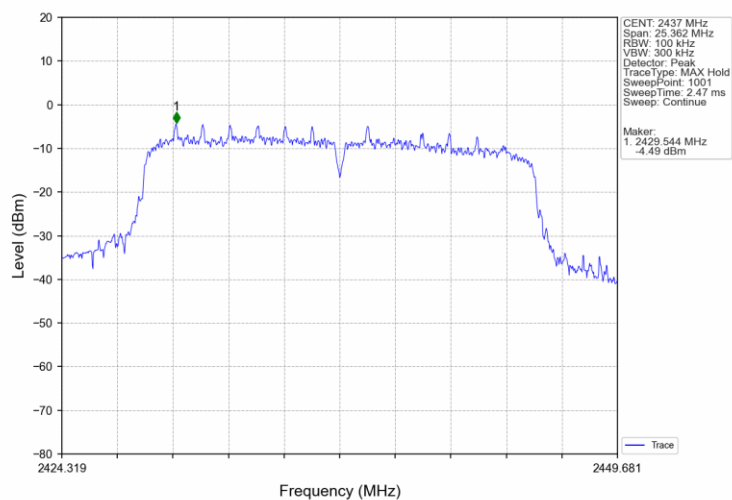
## 802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



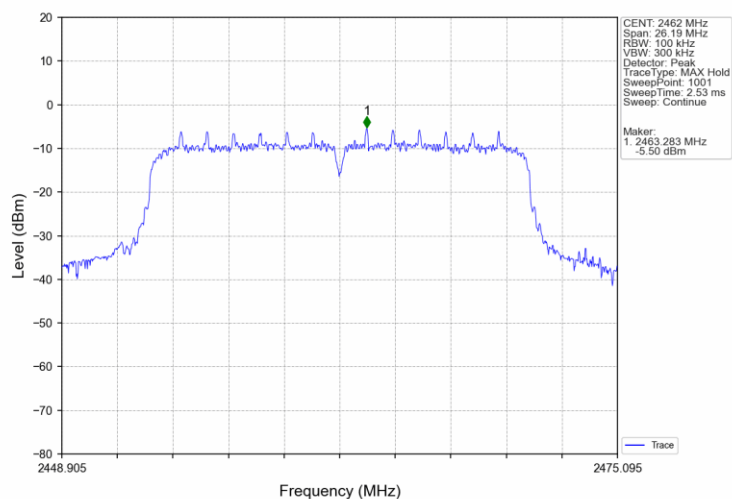
## 802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



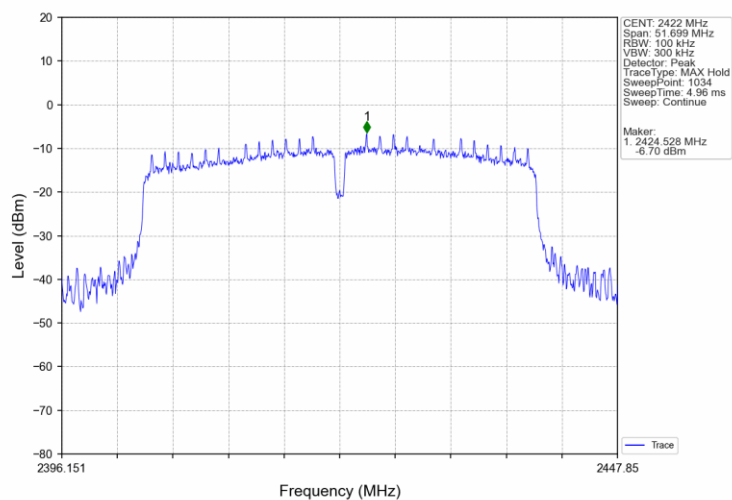
## 802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



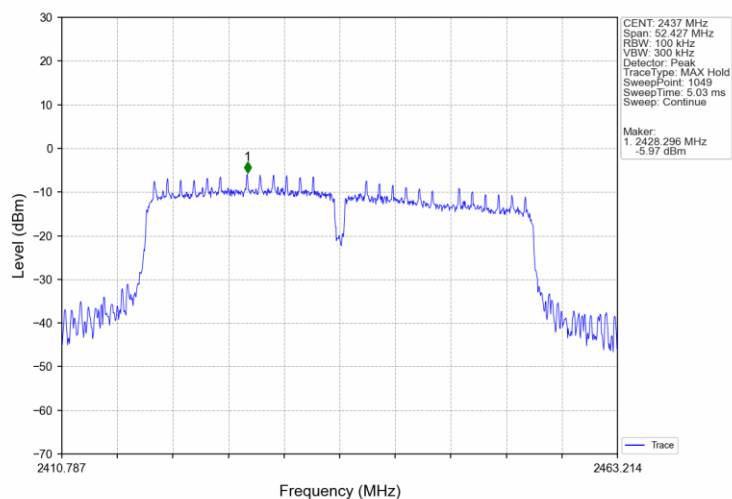
## 802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



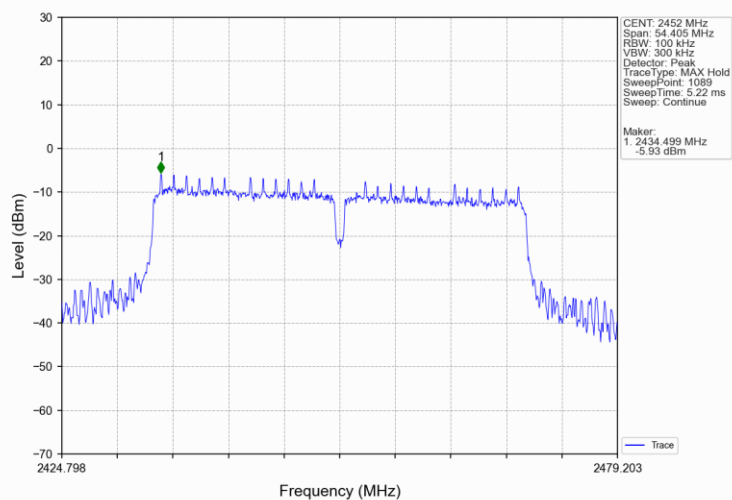
## 802.11n(HT40)\_LCH\_2422MHz\_Ant1 (SISO)\_NTNV



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

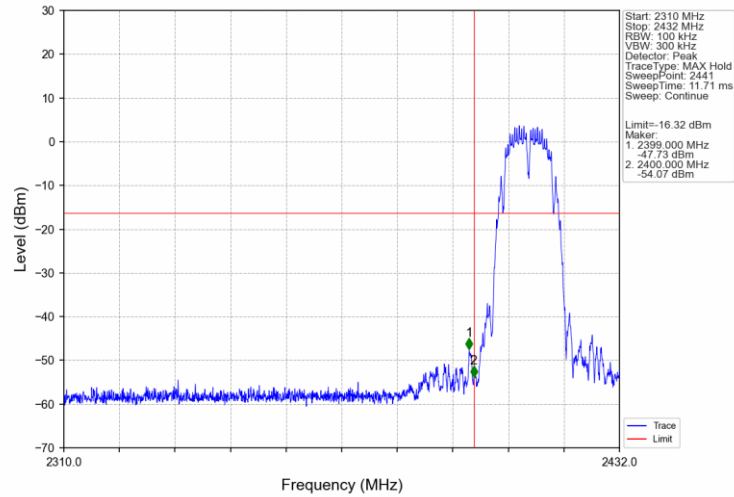


## 802.11n(HT40)\_HCH\_2452MHz\_Ant1 (SISO)\_NTNV



## 5.2.2 CSE

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



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

