

## **Appendix RF Test Data for 2.4G WIFI**

**Company:** : Shenzhen Tianyuan Huitong Technology Co., Ltd

**EUT** : AI Printer

**FCC ID:** : 2BDRZ-Q19

**Model Number** : Q19

**Report No.** : HTT202606232F01

**Reviewed By** : Heber He

## 1. Duty Cycle

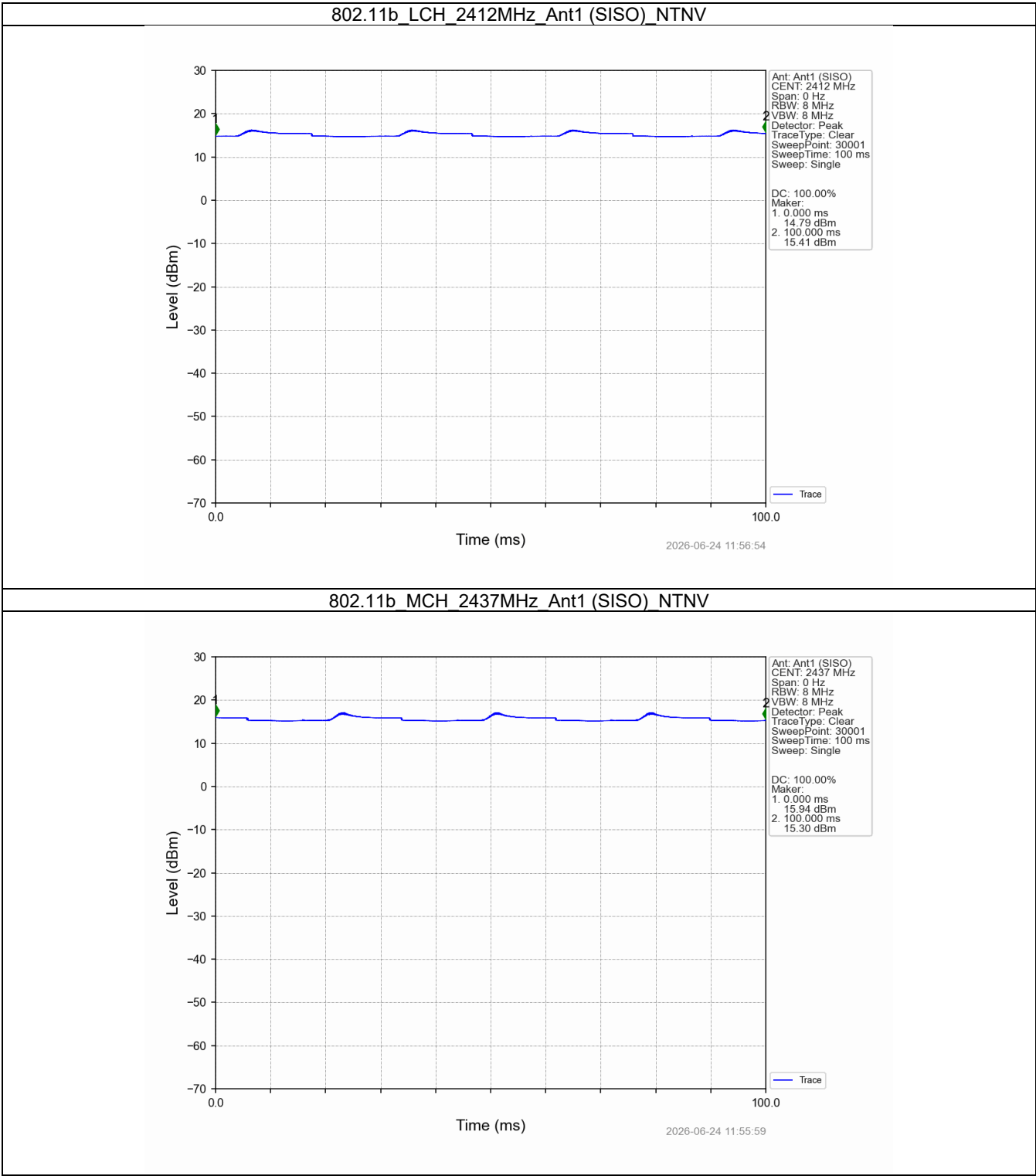
### 1.1 Test Result

#### 1.1.1 Ant1

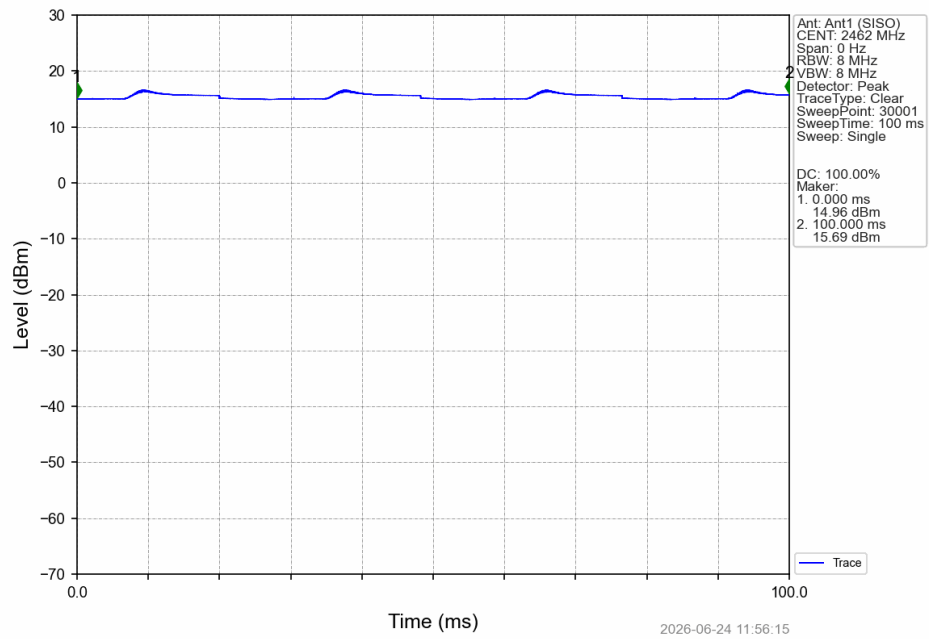
| Ant1           |         |                 |           |             |                |                                   |                       |
|----------------|---------|-----------------|-----------|-------------|----------------|-----------------------------------|-----------------------|
| Mode           | TX Type | Frequency (MHz) | T_on (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle Correction Factor (dB) | Max. DC Variation (%) |
| 802.11b        | SISO    | 2412            | 100.000   | 100.000     | 100.00         | 0.00                              | 0.00                  |
|                |         | 2437            | 100.000   | 100.000     | 100.00         | 0.00                              | 0.00                  |
|                |         | 2462            | 100.000   | 100.000     | 100.00         | 0.00                              | 0.00                  |
| 802.11g        | SISO    | 2412            | 100.000   | 100.000     | 100.00         | 0.00                              | 0.00                  |
|                |         | 2437            | 100.000   | 100.000     | 100.00         | 0.00                              | 0.00                  |
|                |         | 2462            | 100.000   | 100.000     | 100.00         | 0.00                              | 0.00                  |
| 802.11n (HT20) | SISO    | 2412            | 100.000   | 100.000     | 100.00         | 0.00                              | 0.00                  |
|                |         | 2437            | 100.000   | 100.000     | 100.00         | 0.00                              | 0.00                  |
|                |         | 2462            | 100.000   | 100.000     | 100.00         | 0.00                              | 0.00                  |

# 1.2 Test Graph

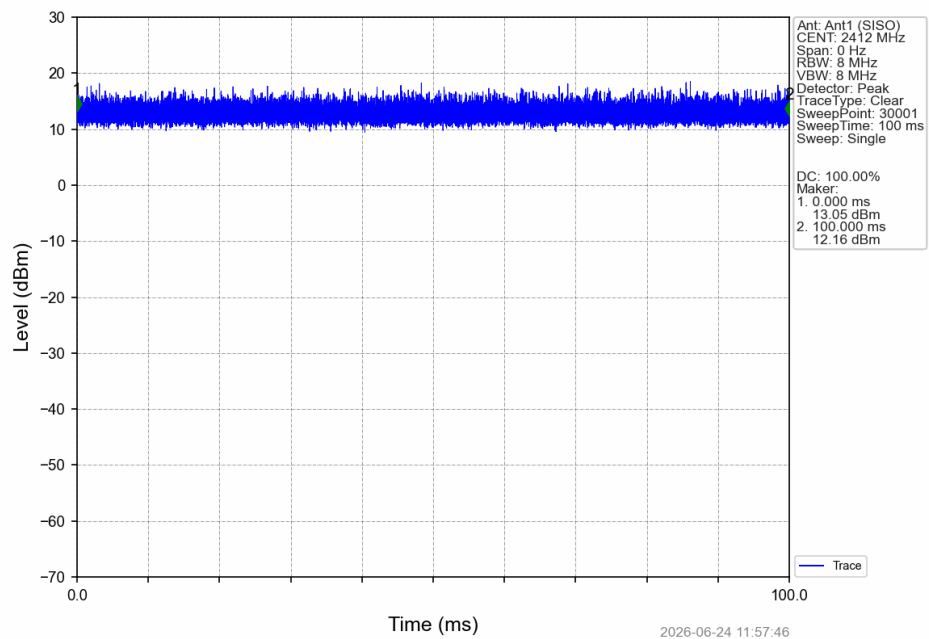
## 1.2.1 Ant1



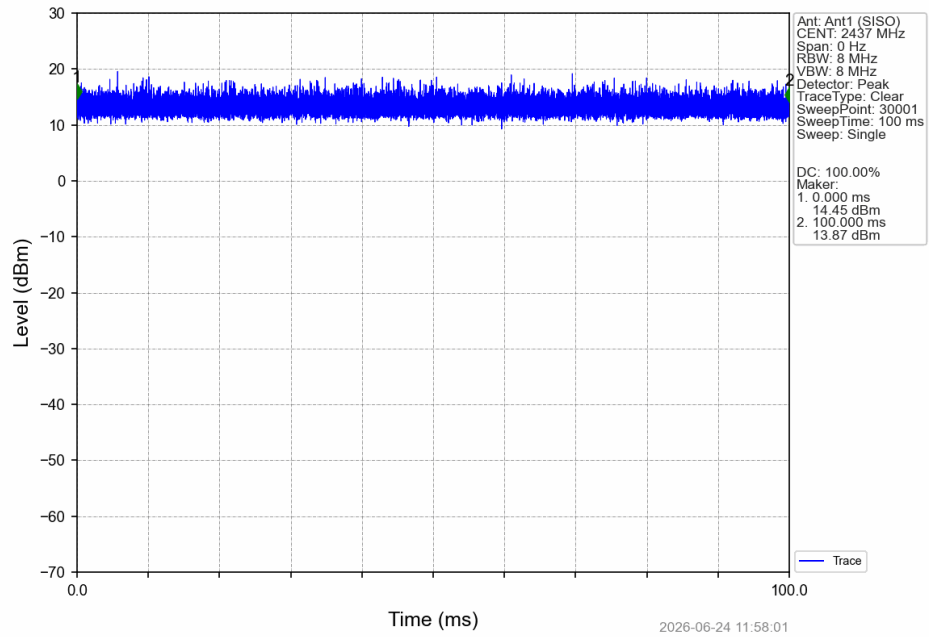
### 802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



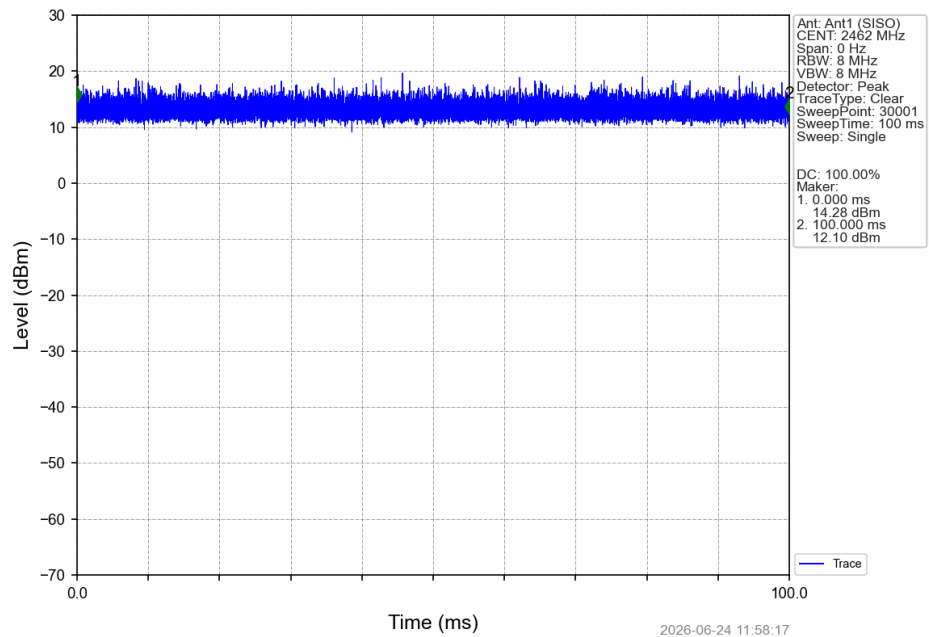
### 802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



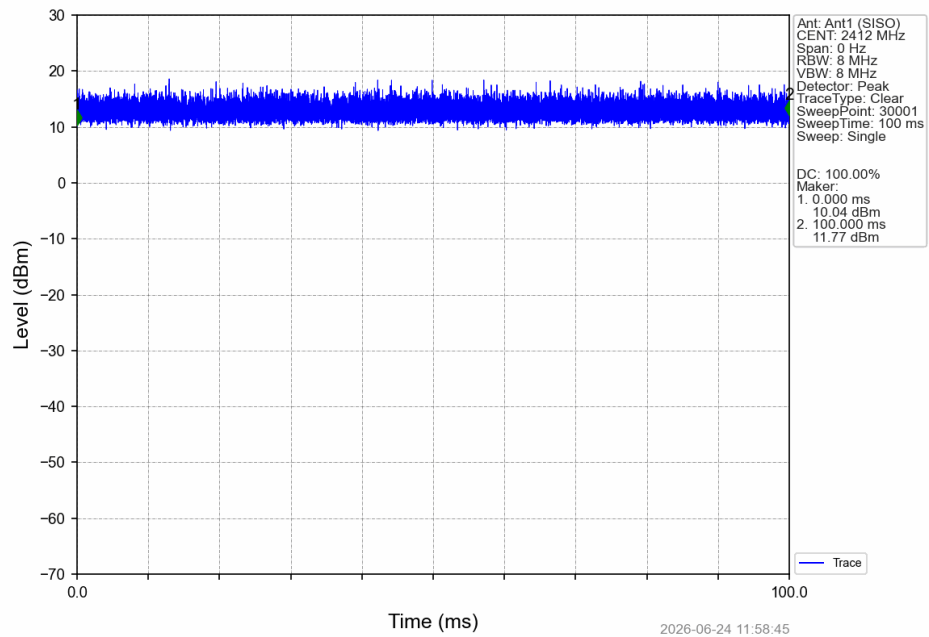
### 802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



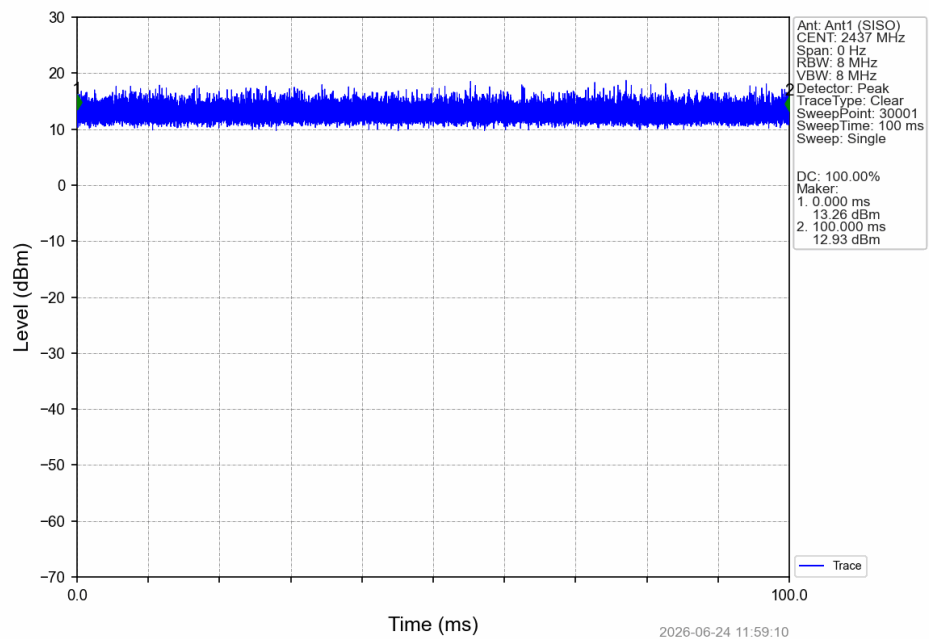
### 802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



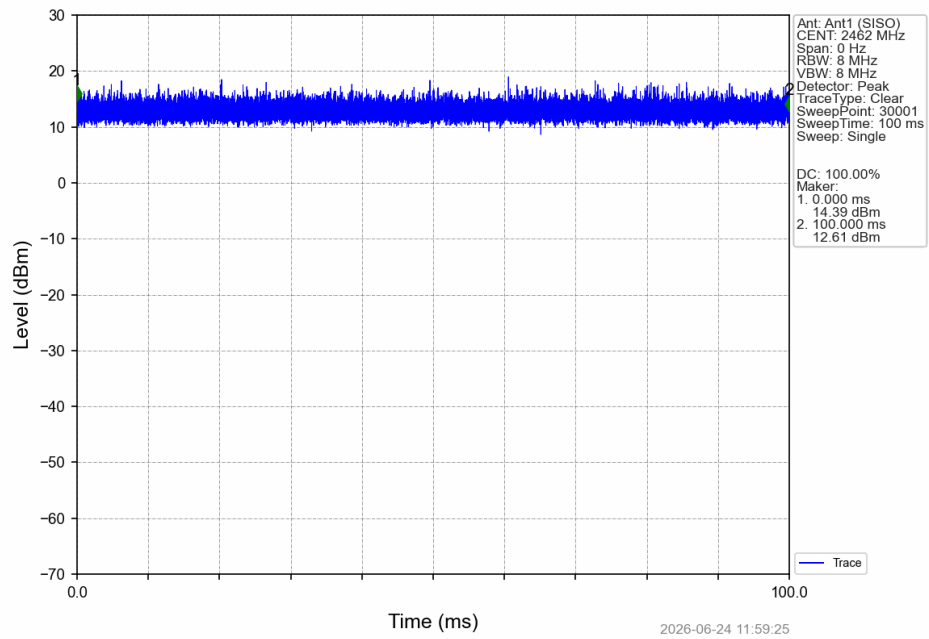
# 802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



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



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



## 2. Bandwidth

### 2.1 Test Result

#### 2.1.1 OBW

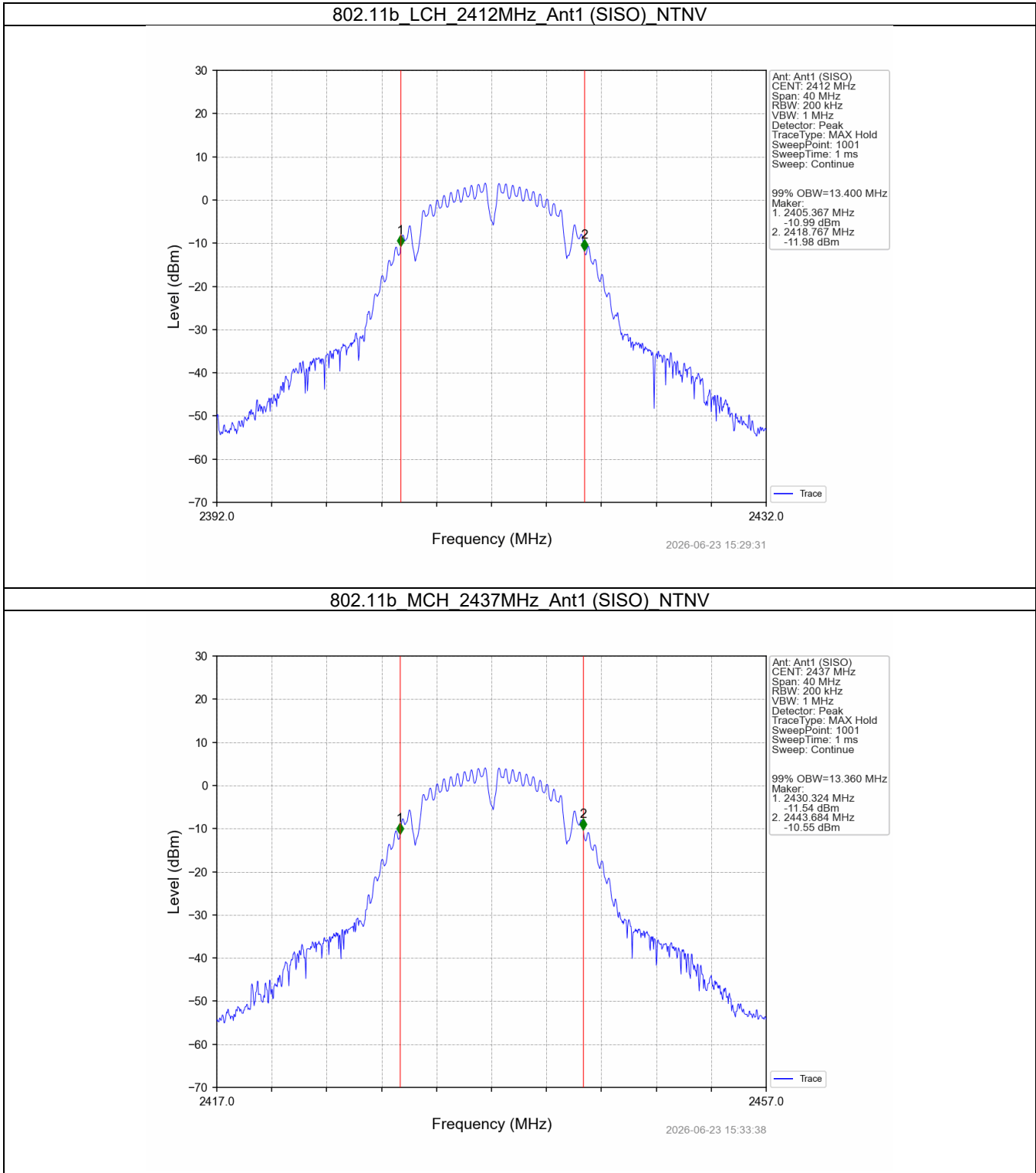
| Mode           | TX Type | Frequency (MHz) | ANT | 99% Occupied Bandwidth (MHz) |       | Verdict |
|----------------|---------|-----------------|-----|------------------------------|-------|---------|
|                |         |                 |     | Result                       | Limit |         |
| 802.11b        | SISO    | 2412            | 1   | 13.400                       | /     | Pass    |
|                |         | 2437            | 1   | 13.360                       | /     | Pass    |
|                |         | 2462            | 1   | 13.377                       | /     | Pass    |
| 802.11g        | SISO    | 2412            | 1   | 16.753                       | /     | Pass    |
|                |         | 2437            | 1   | 16.717                       | /     | Pass    |
|                |         | 2462            | 1   | 16.715                       | /     | Pass    |
| 802.11n (HT20) | SISO    | 2412            | 1   | 17.624                       | /     | Pass    |
|                |         | 2437            | 1   | 17.580                       | /     | Pass    |
|                |         | 2462            | 1   | 17.592                       | /     | Pass    |

#### 2.1.2 6dB BW

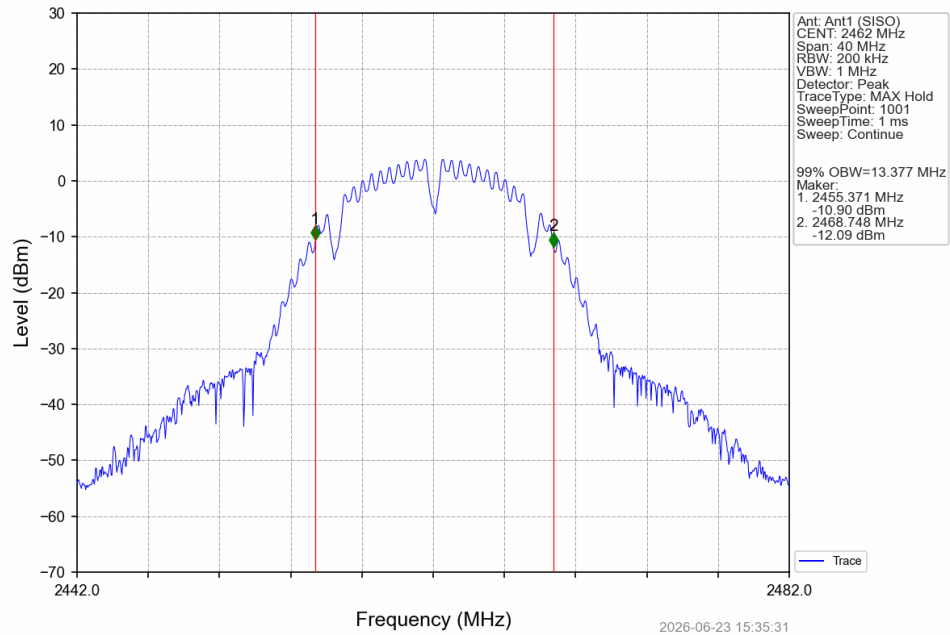
| Mode           | TX Type | Frequency (MHz) | ANT | 6dB Bandwidth (MHz) |            | Verdict |
|----------------|---------|-----------------|-----|---------------------|------------|---------|
|                |         |                 |     | Result              | Limit      |         |
| 802.11b        | SISO    | 2412            | 1   | 9.209               | $\geq 0.5$ | Pass    |
|                |         | 2437            | 1   | 9.197               | $\geq 0.5$ | Pass    |
|                |         | 2462            | 1   | 9.209               | $\geq 0.5$ | Pass    |
| 802.11g        | SISO    | 2412            | 1   | 16.595              | $\geq 0.5$ | Pass    |
|                |         | 2437            | 1   | 16.513              | $\geq 0.5$ | Pass    |
|                |         | 2462            | 1   | 16.471              | $\geq 0.5$ | Pass    |
| 802.11n (HT20) | SISO    | 2412            | 1   | 17.538              | $\geq 0.5$ | Pass    |
|                |         | 2437            | 1   | 17.594              | $\geq 0.5$ | Pass    |
|                |         | 2462            | 1   | 17.559              | $\geq 0.5$ | Pass    |

2.2 Test Graph

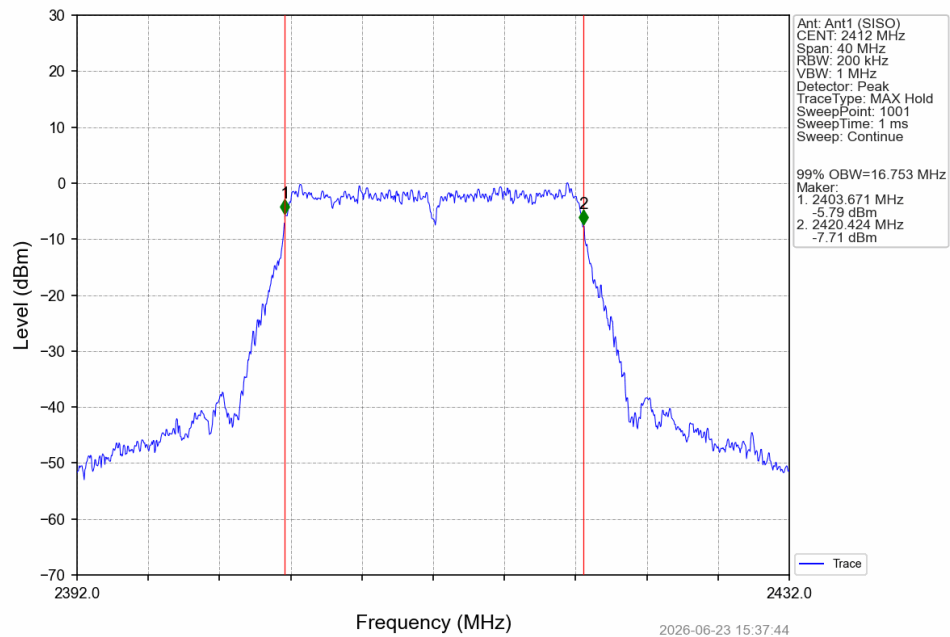
2.2.1 OBW



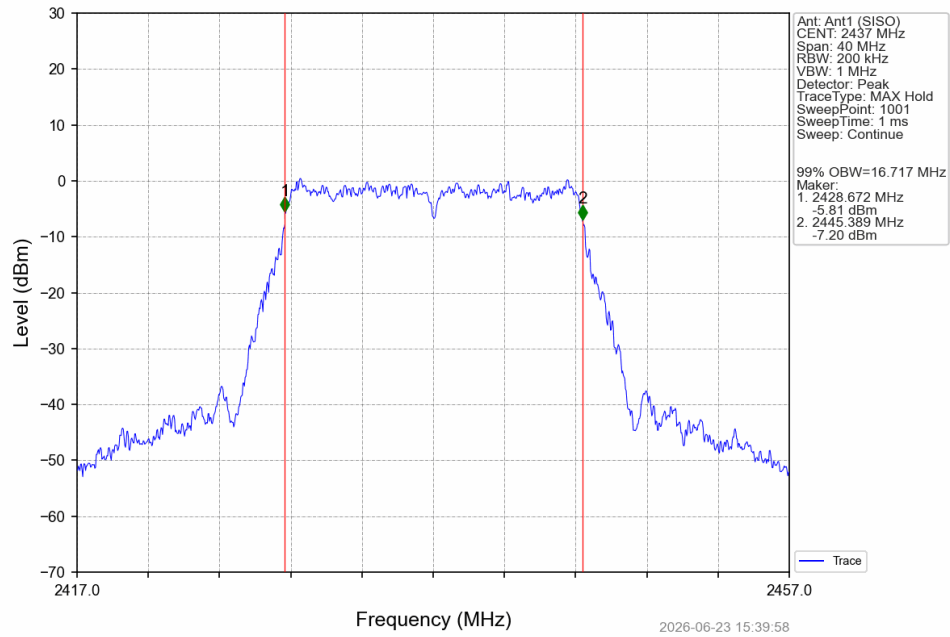
### 802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



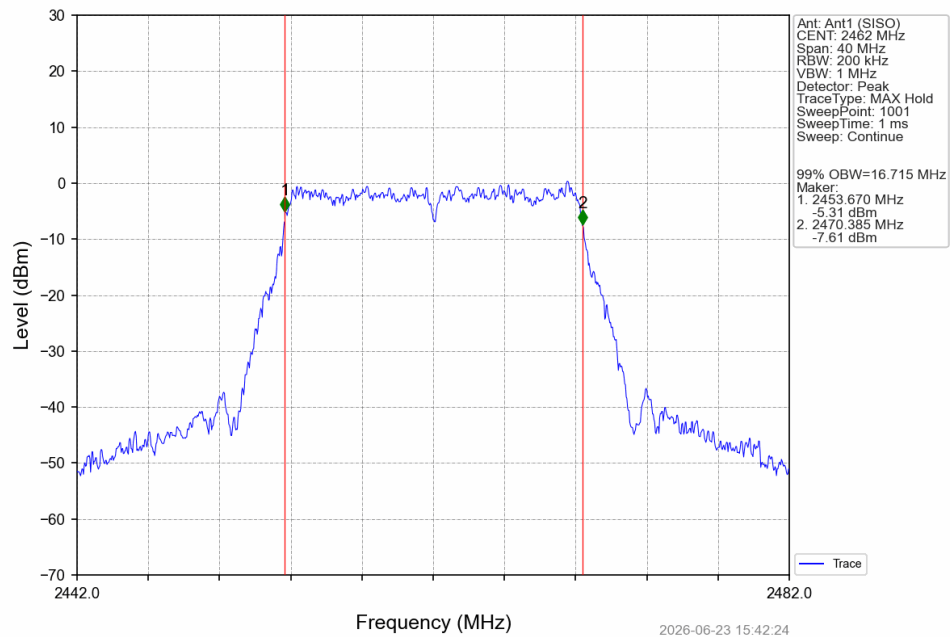
### 802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



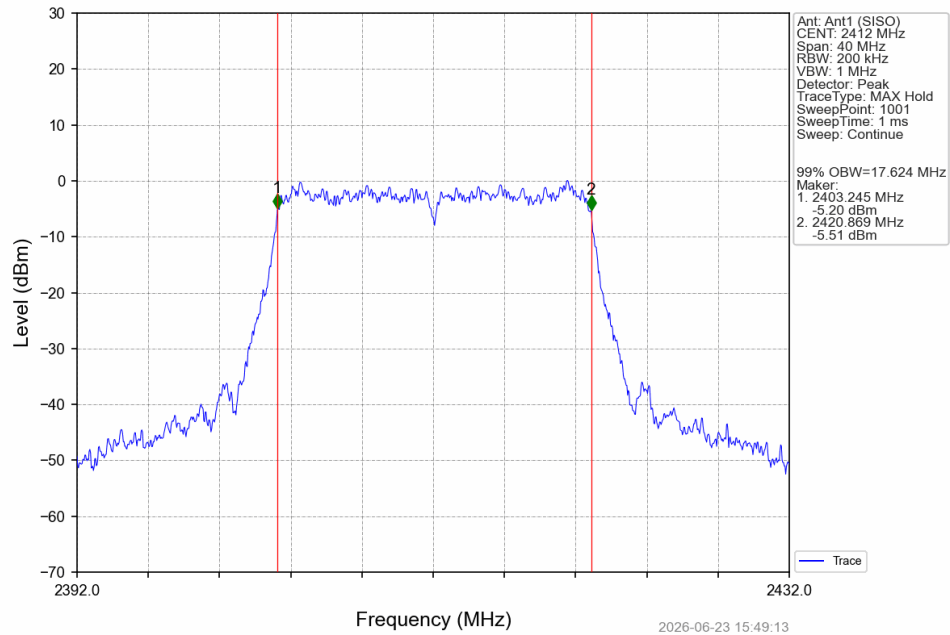
### 802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



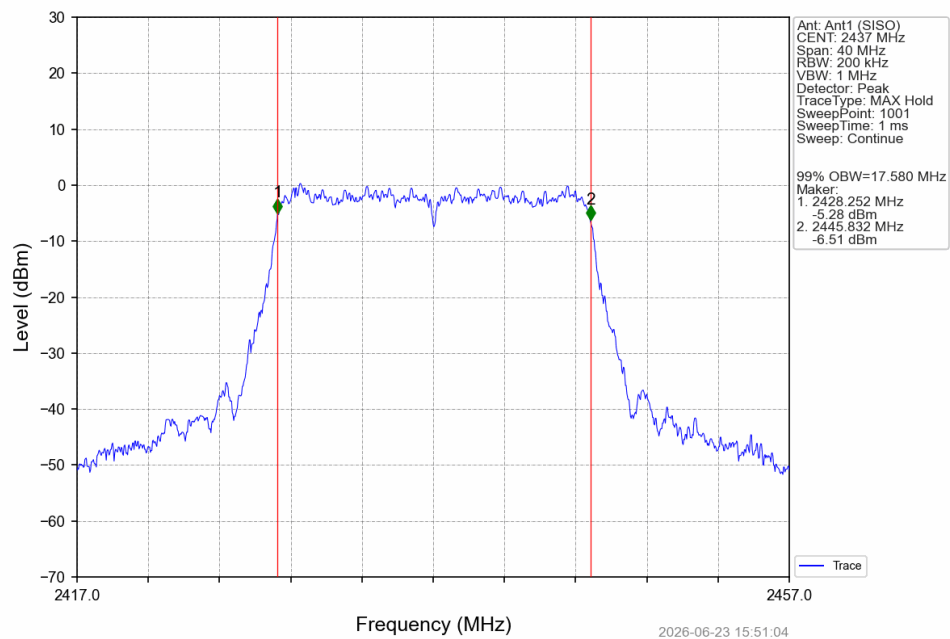
### 802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



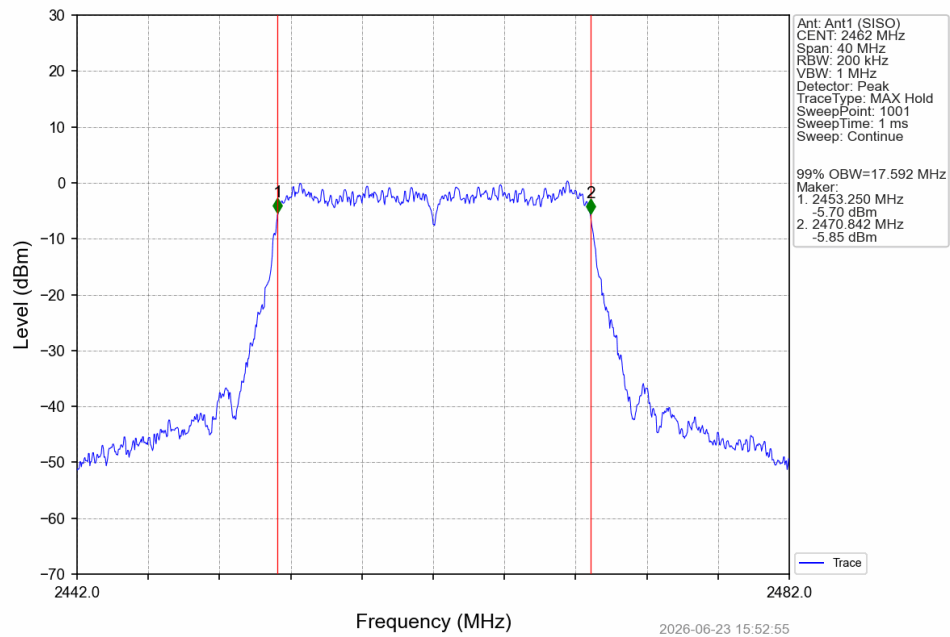
### 802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



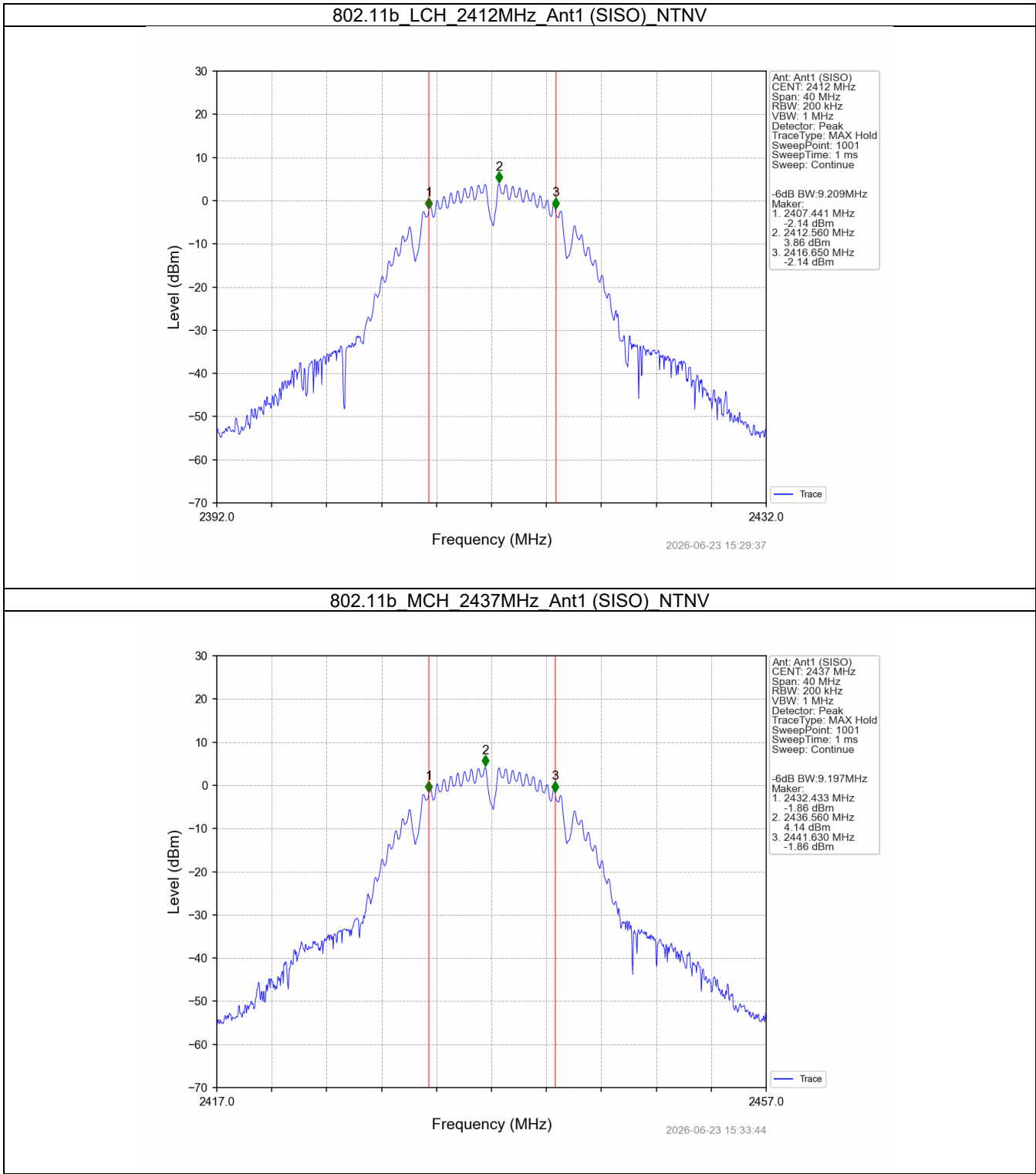
### 802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



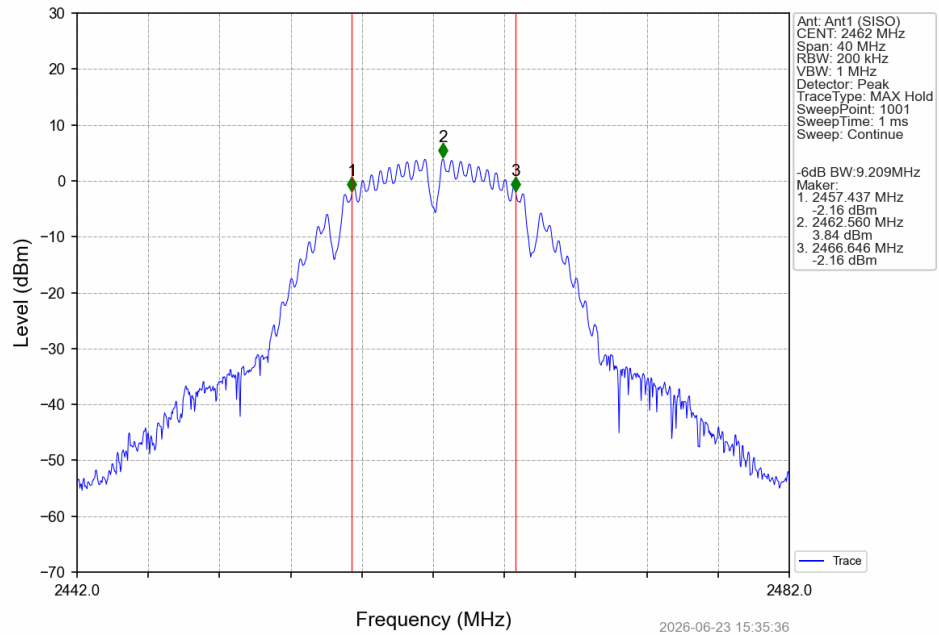
802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



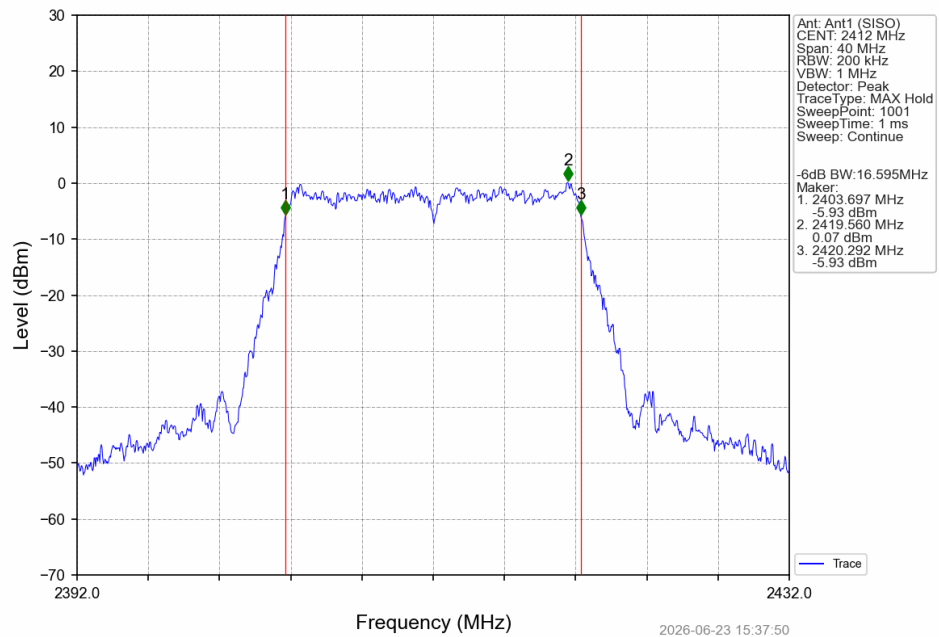
2.2.2 6dB BW



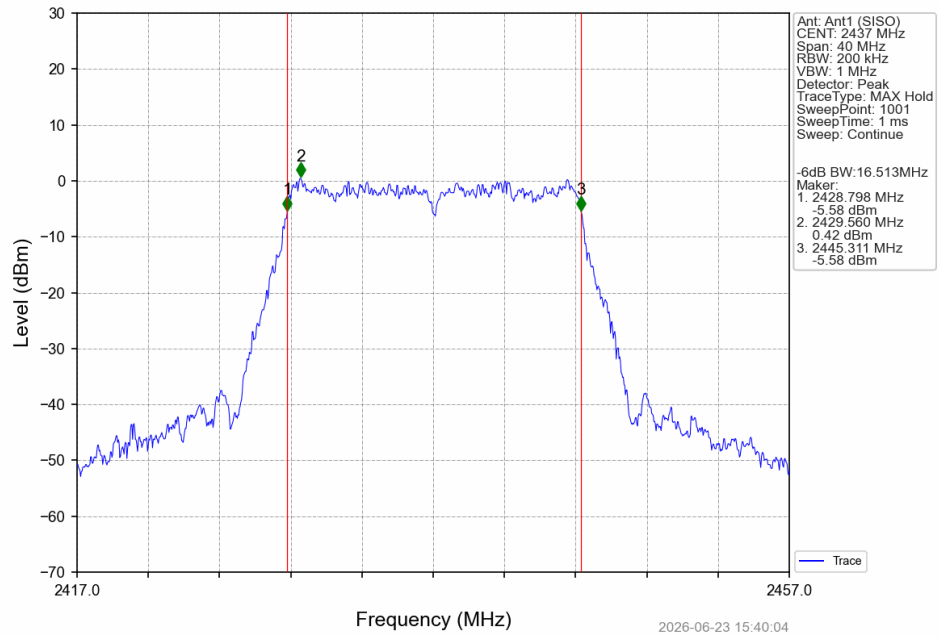
### 802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



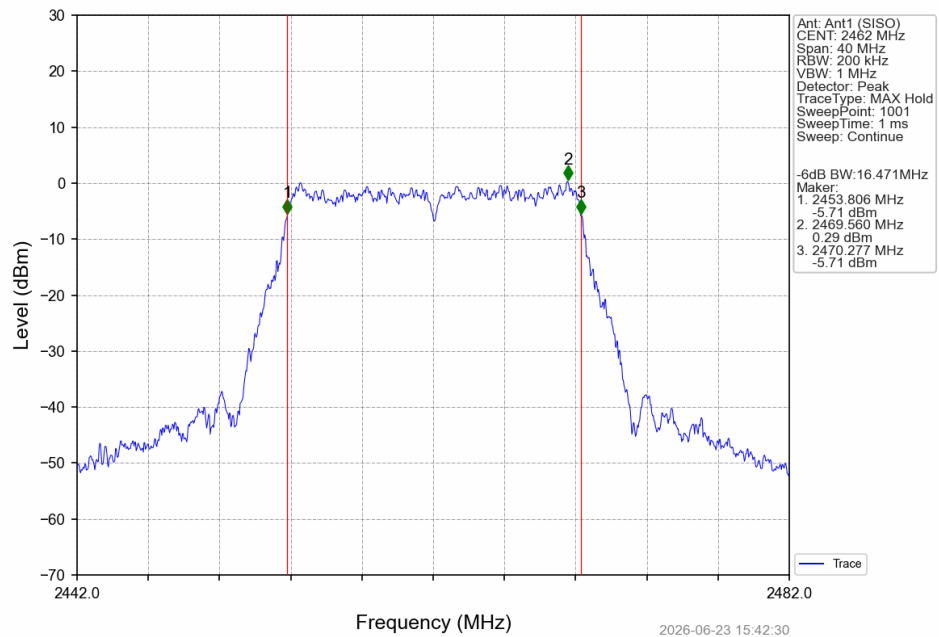
### 802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



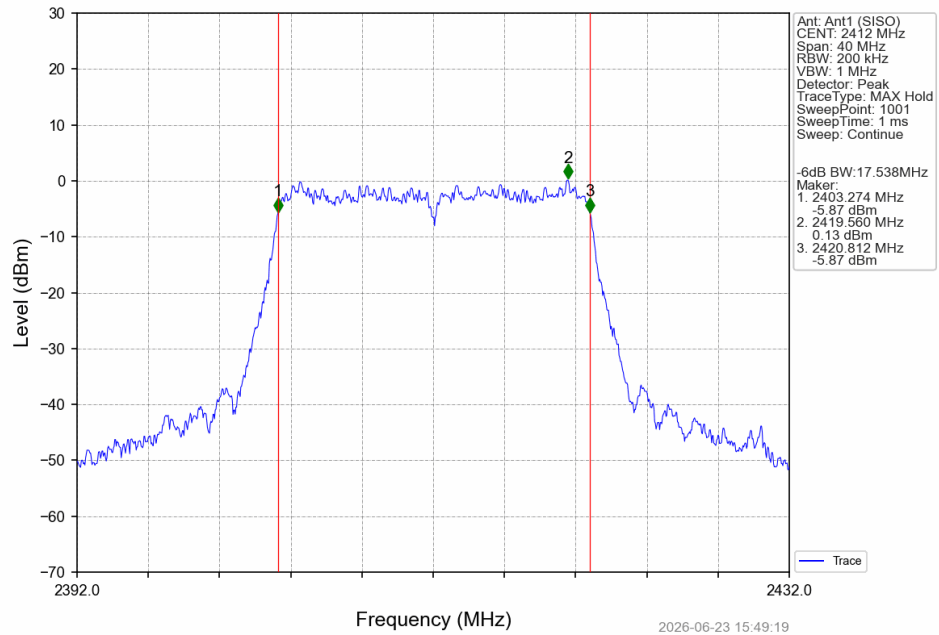
### 802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



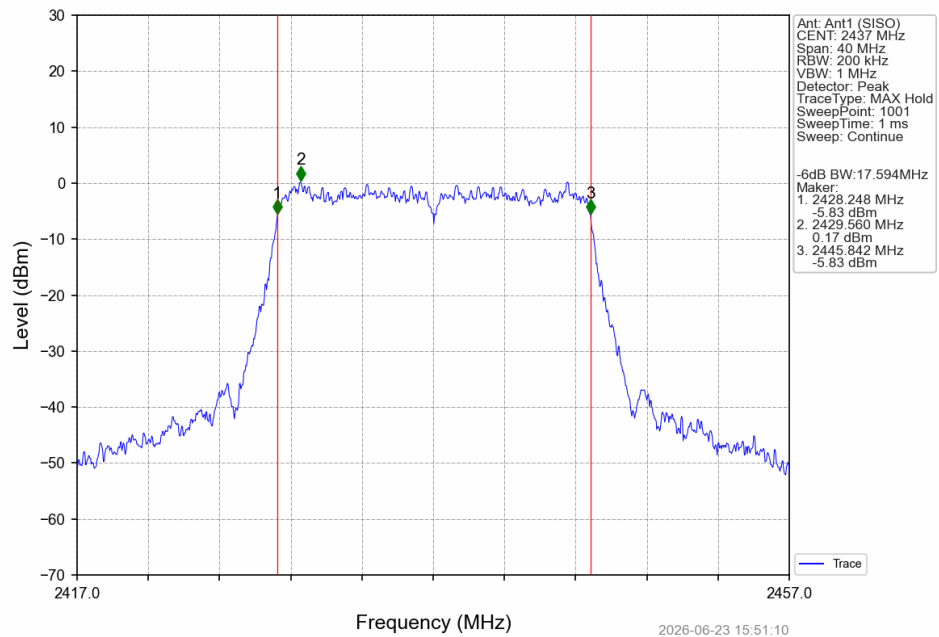
### 802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



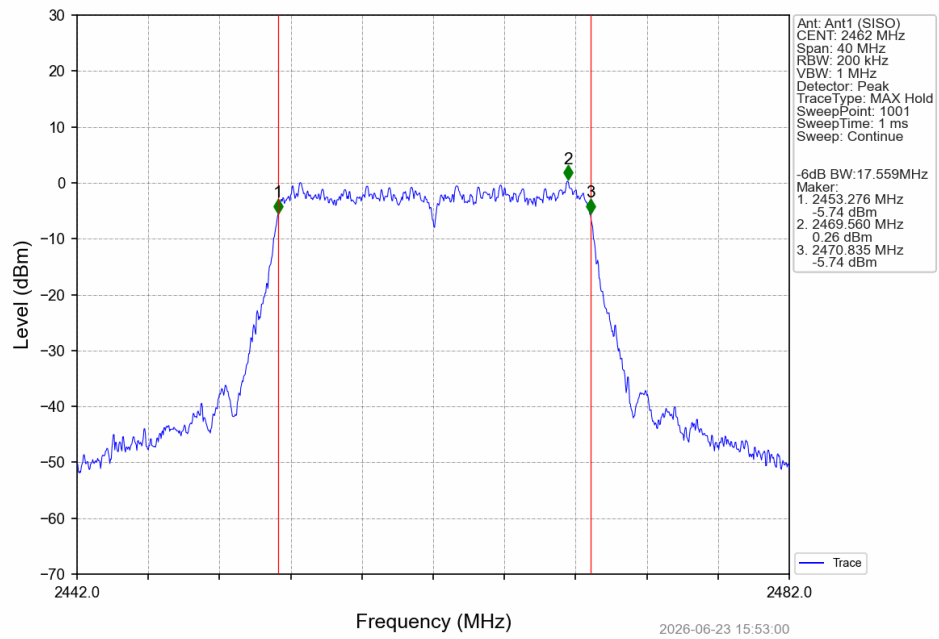
# 802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



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



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



### 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            | 7.11                                      | <=30  | Pass    |
|                |         | 2437            | 7.97                                      | <=30  | Pass    |
|                |         | 2462            | 7.51                                      | <=30  | Pass    |
| 802.11g        | SISO    | 2412            | 7.1                                       | <=30  | Pass    |
|                |         | 2437            | 7.96                                      | <=30  | Pass    |
|                |         | 2462            | 7.45                                      | <=30  | Pass    |
| 802.11n (HT20) | SISO    | 2412            | 7.11                                      | <=30  | Pass    |
|                |         | 2437            | 7.84                                      | <=30  | Pass    |
|                |         | 2462            | 7.44                                      | <=30  | Pass    |

## 4. Maximum Power Spectral Density

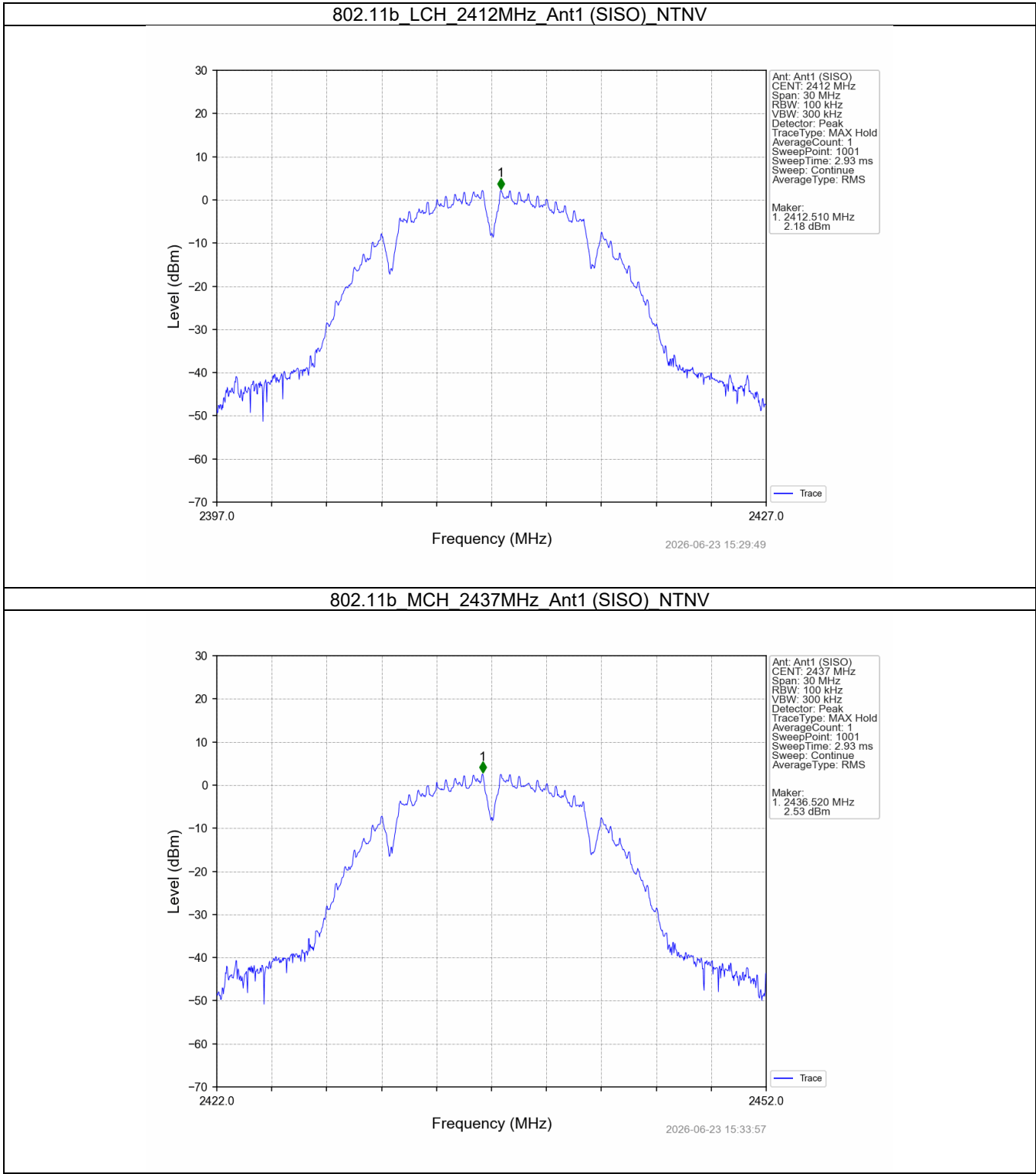
### 4.1 Test Result

#### 4.1.1 PSD

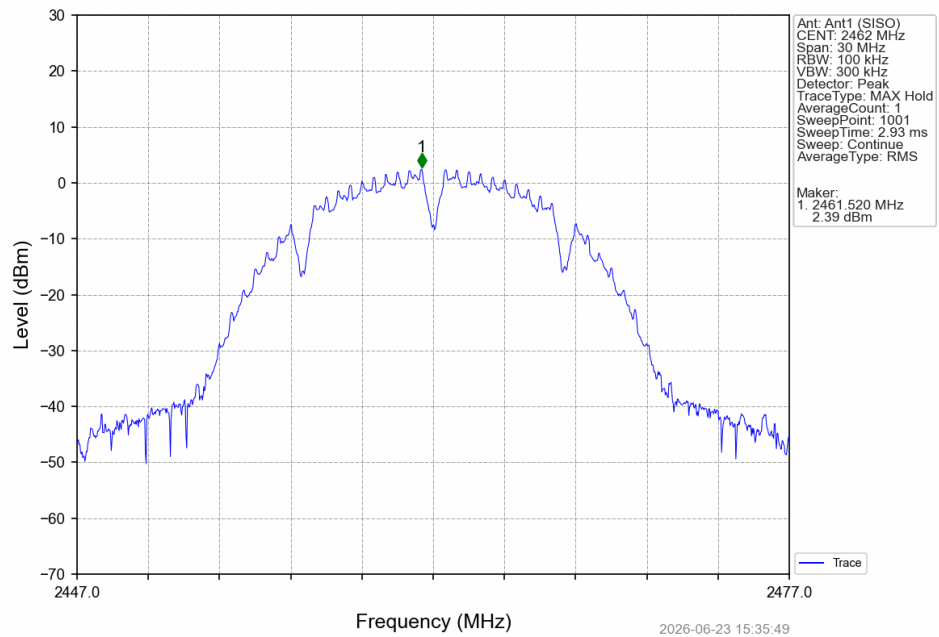
| Mode           | TX Type | Frequency (MHz) | Maximum PSD (dBm) |                 | Verdict |
|----------------|---------|-----------------|-------------------|-----------------|---------|
|                |         |                 | ANT1              | Limit(dBm/3kHz) |         |
| 802.11b        | SISO    | 2412            | 2.18dBm/100kHz    | <=8             | Pass    |
|                |         | 2437            | 2.53dBm/100kHz    | <=8             | Pass    |
|                |         | 2462            | 2.39dBm/100kHz    | <=8             | Pass    |
| 802.11g        | SISO    | 2412            | -0.84dBm/100kHz   | <=8             | Pass    |
|                |         | 2437            | -0.47dBm/100kHz   | <=8             | Pass    |
|                |         | 2462            | -0.65dBm/100kHz   | <=8             | Pass    |
| 802.11n (HT20) | SISO    | 2412            | -0.86dBm/100kHz   | <=8             | Pass    |
|                |         | 2437            | -0.42dBm/100kHz   | <=8             | Pass    |
|                |         | 2462            | -0.75dBm/100kHz   | <=8             | Pass    |

4.2 Test Graph

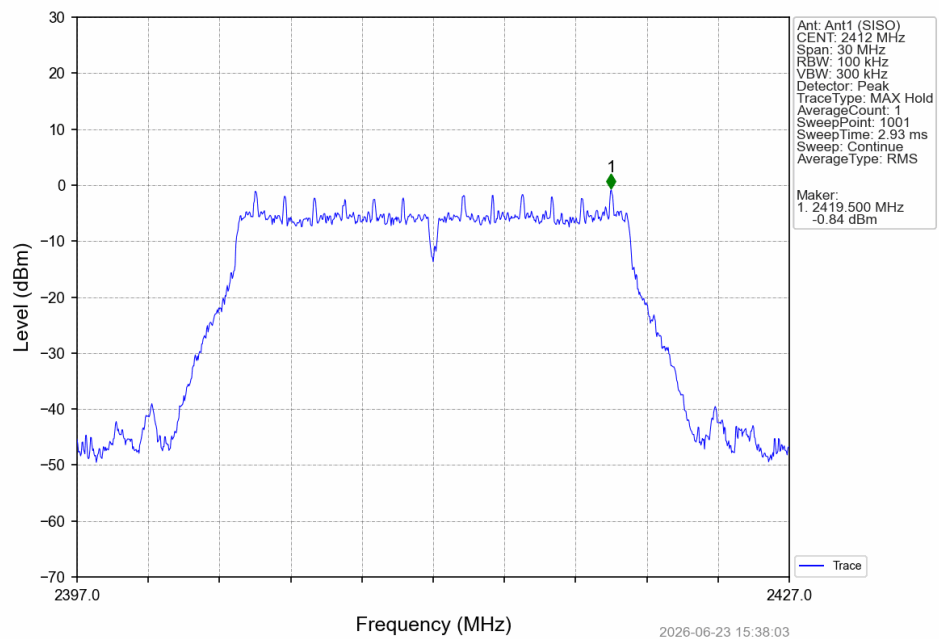
4.2.1 PSD



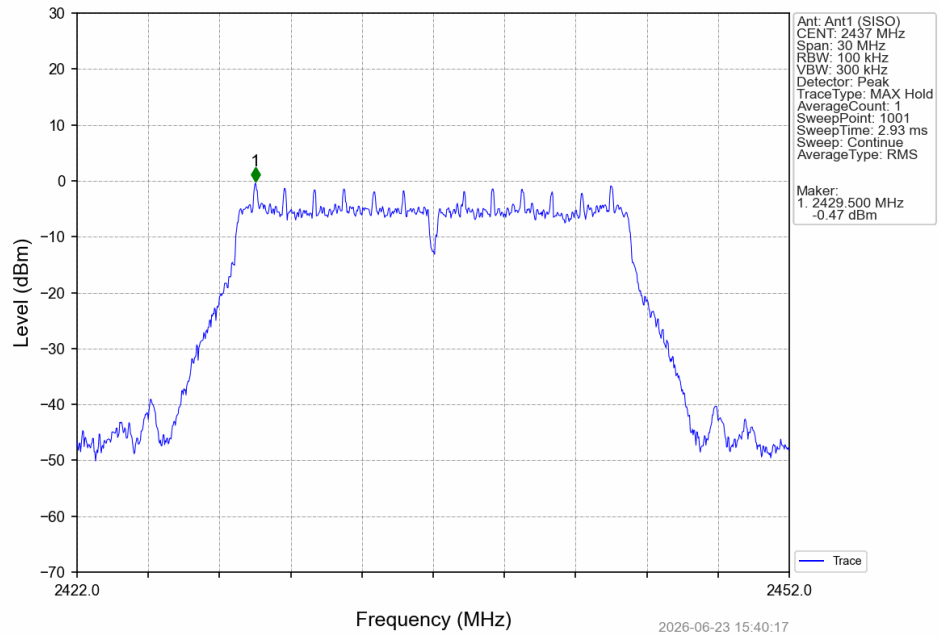
### 802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



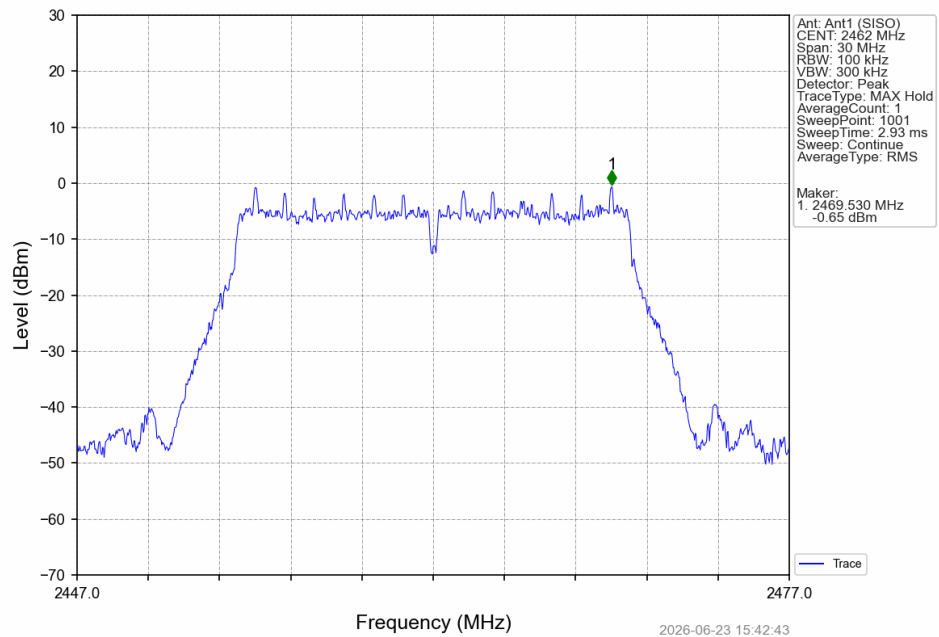
### 802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



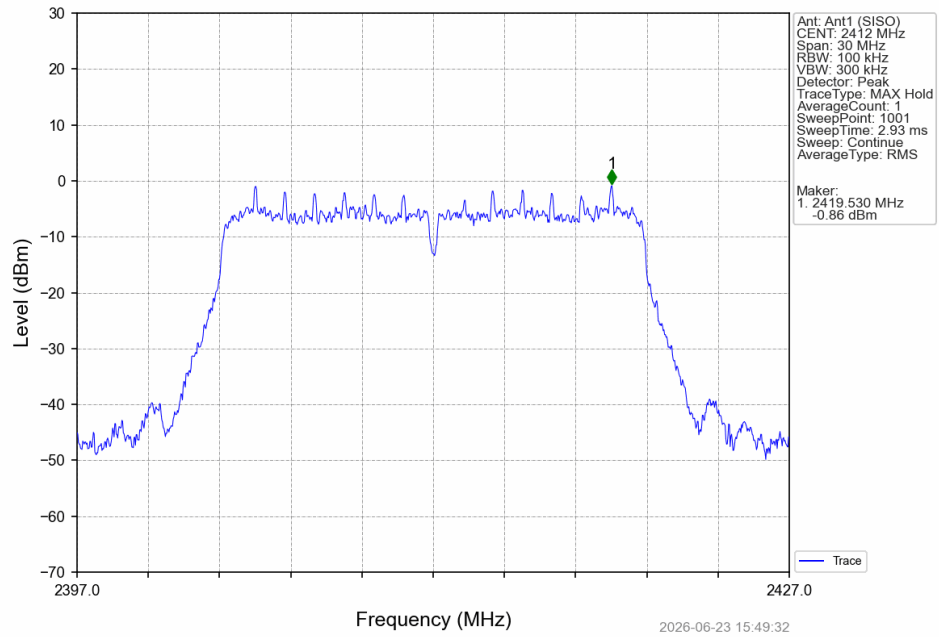
### 802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



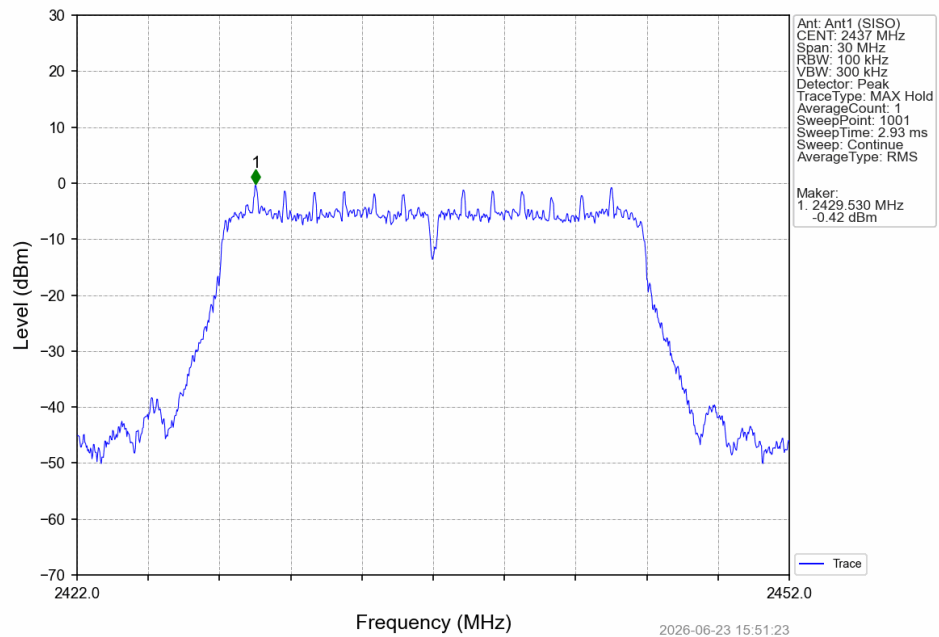
### 802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



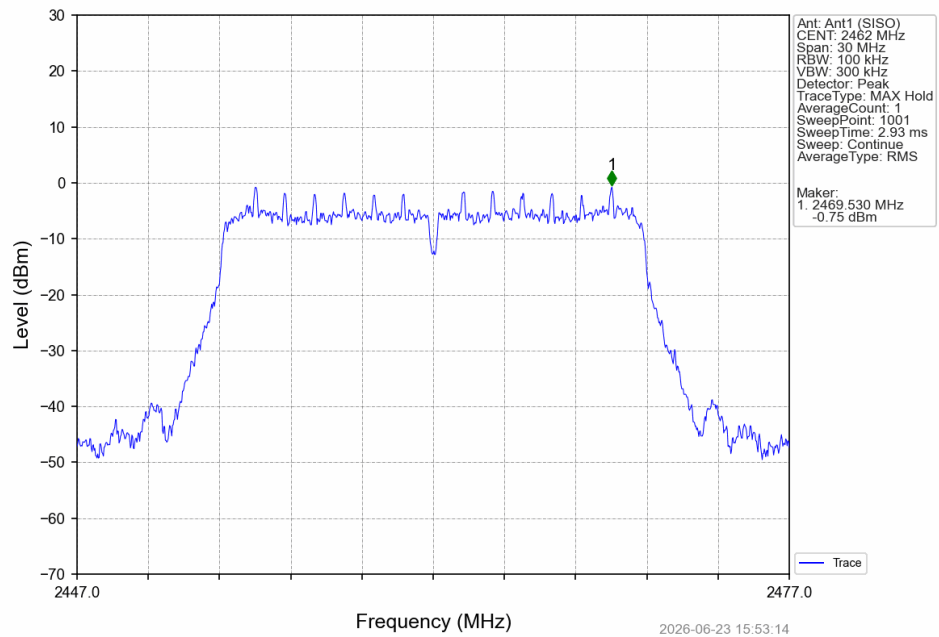
# 802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



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



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



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

### 5.1 Test Result

#### 5.1.1 Ref

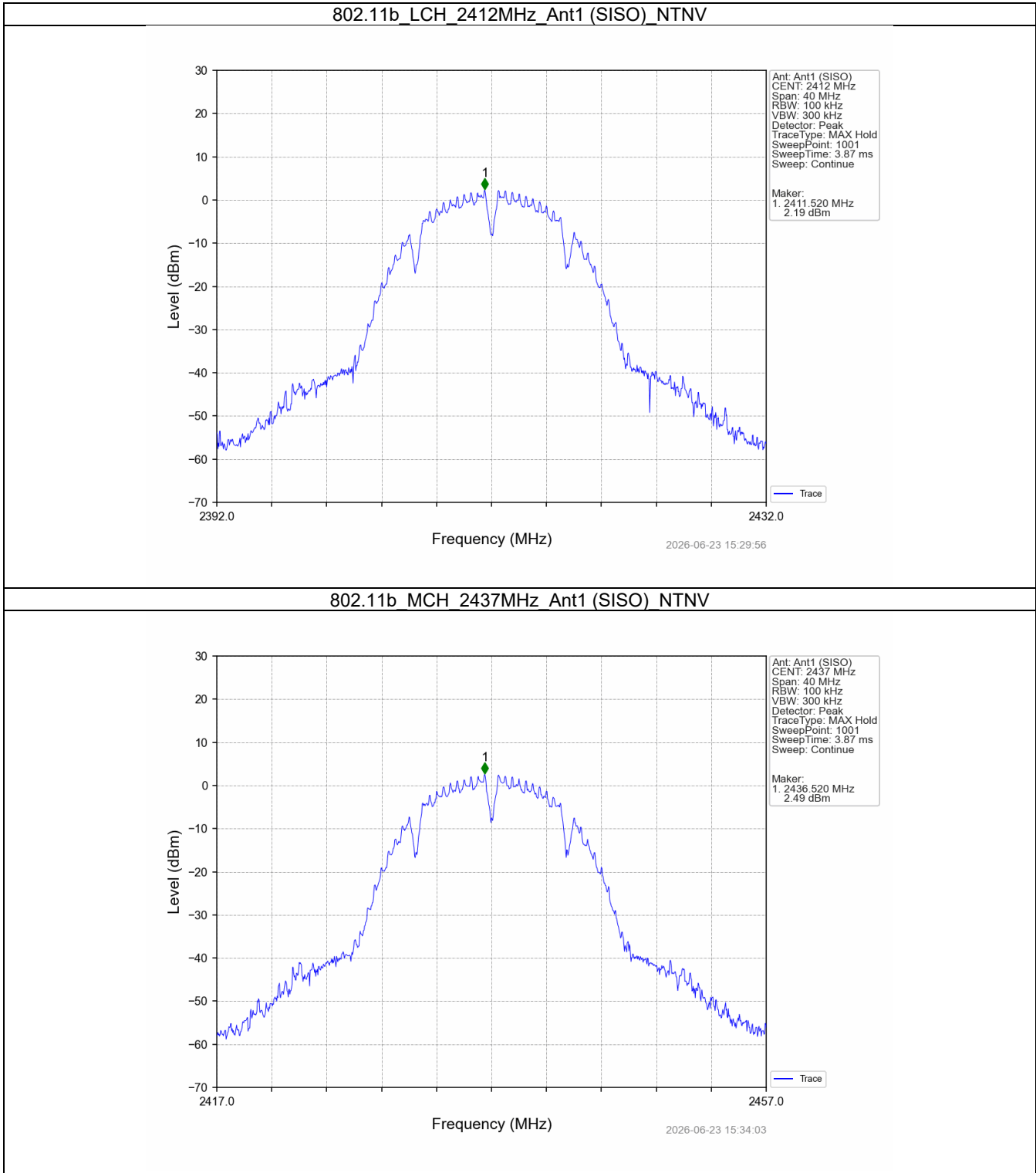
| Mode           | TX Type | Frequency (MHz) | ANT | Level of Reference (dBm) |
|----------------|---------|-----------------|-----|--------------------------|
| 802.11b        | SISO    | 2412            | 1   | 2.19                     |
|                |         | 2437            | 1   | 2.49                     |
|                |         | 2462            | 1   | 2.37                     |
| 802.11g        | SISO    | 2412            | 1   | -0.73                    |
|                |         | 2437            | 1   | -0.39                    |
|                |         | 2462            | 1   | -0.82                    |
| 802.11n (HT20) | SISO    | 2412            | 1   | -0.95                    |
|                |         | 2437            | 1   | -0.42                    |
|                |         | 2462            | 1   | -0.54                    |

#### 5.1.2 CSE

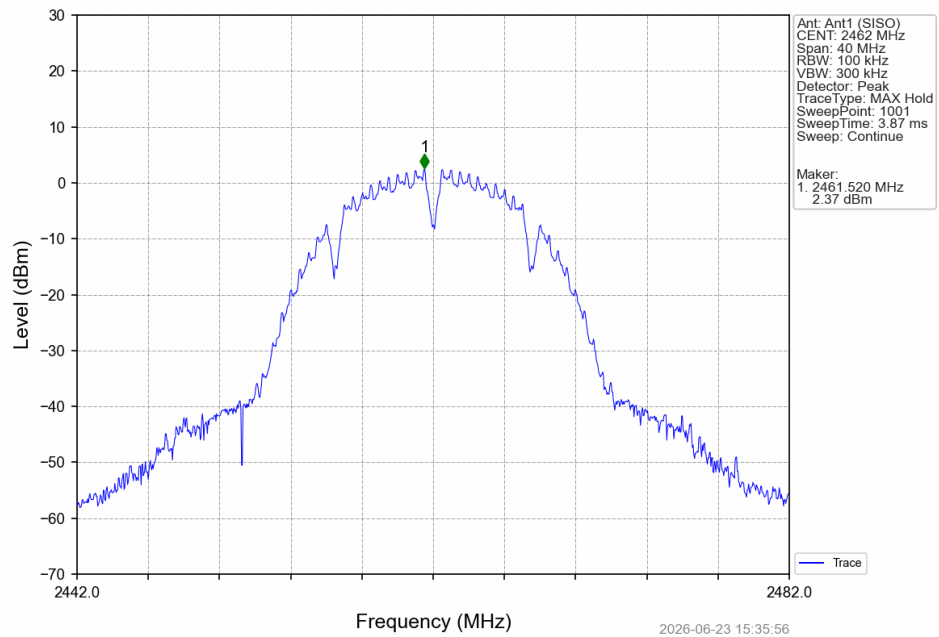
| Mode           | TX Type | Frequency (MHz) | ANT | Level of Reference (dBm) | Limit (dBm) | Verdict |
|----------------|---------|-----------------|-----|--------------------------|-------------|---------|
| 802.11b        | SISO    | 2412            | 1   | 2.19                     | -17.81      | Pass    |
|                |         | 2437            | 1   | 2.49                     | -17.51      | Pass    |
|                |         | 2462            | 1   | 2.37                     | -17.63      | Pass    |
| 802.11g        | SISO    | 2412            | 1   | -0.73                    | -20.73      | Pass    |
|                |         | 2437            | 1   | -0.39                    | -20.39      | Pass    |
|                |         | 2462            | 1   | -0.82                    | -20.82      | Pass    |
| 802.11n (HT20) | SISO    | 2412            | 1   | -0.95                    | -20.95      | Pass    |
|                |         | 2437            | 1   | -0.42                    | -20.42      | Pass    |
|                |         | 2462            | 1   | -0.54                    | -20.54      | Pass    |

5.2 Test Graph

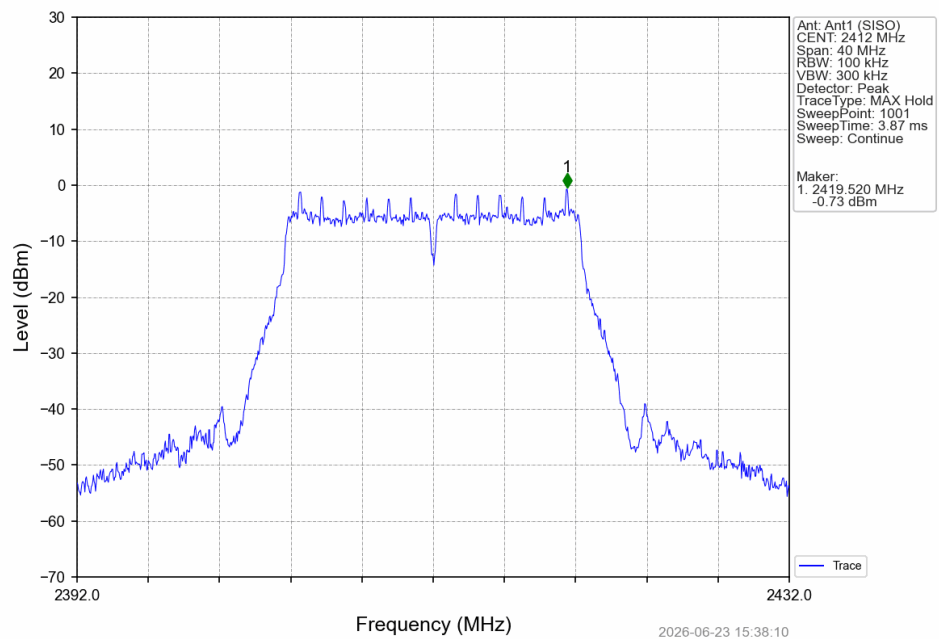
5.2.1 Ref



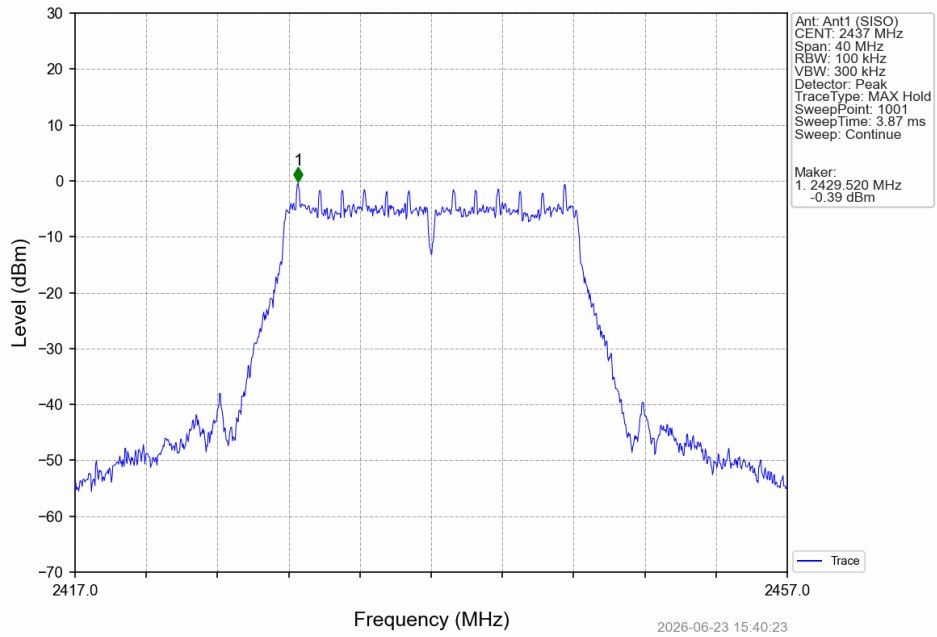
### 802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



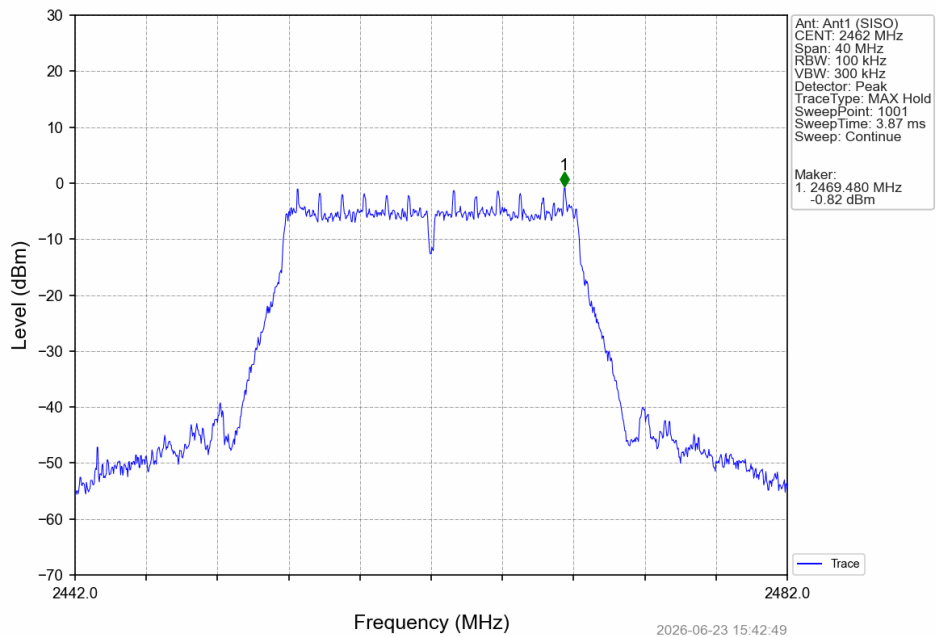
### 802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



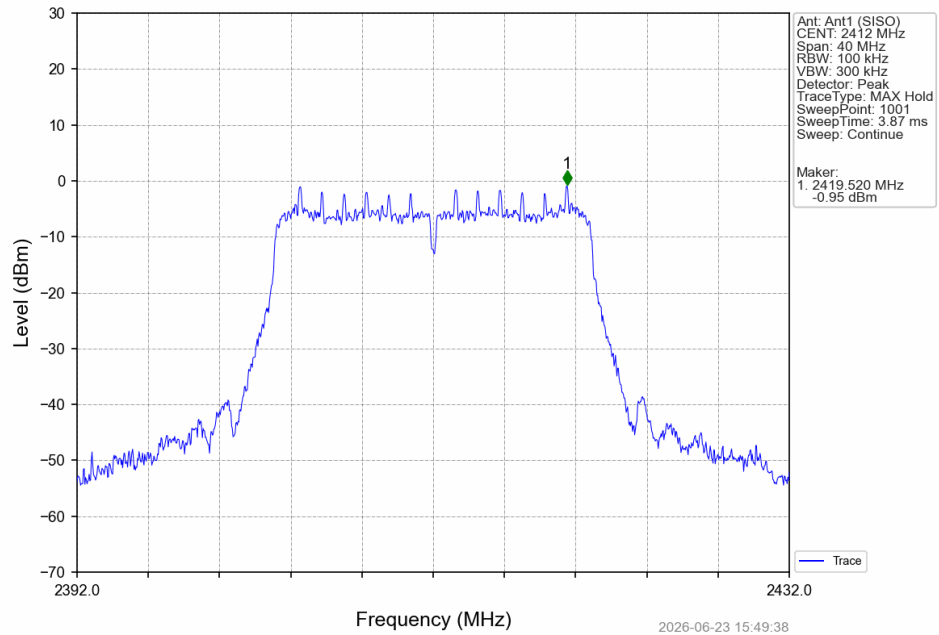
### 802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



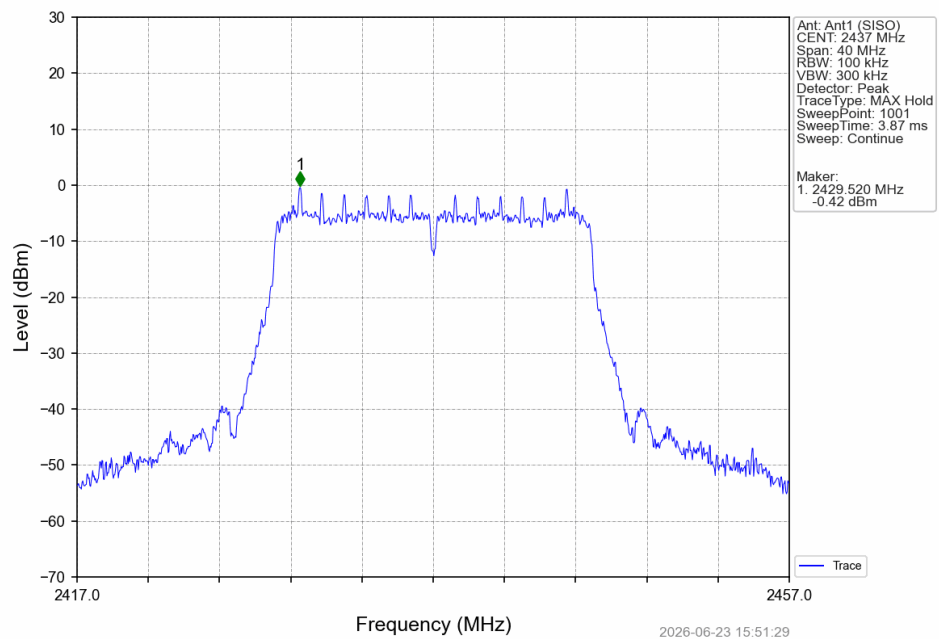
### 802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



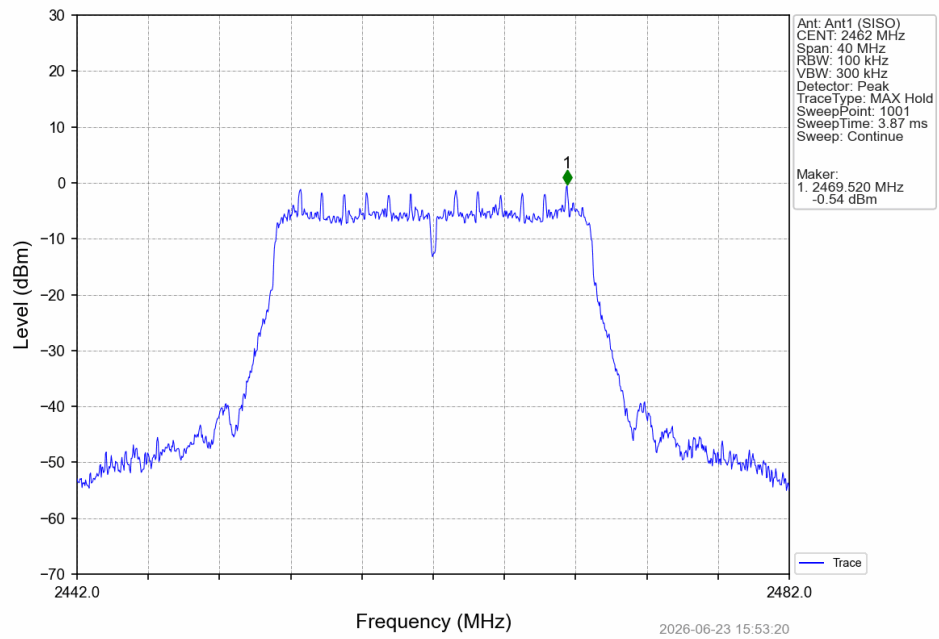
# 802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



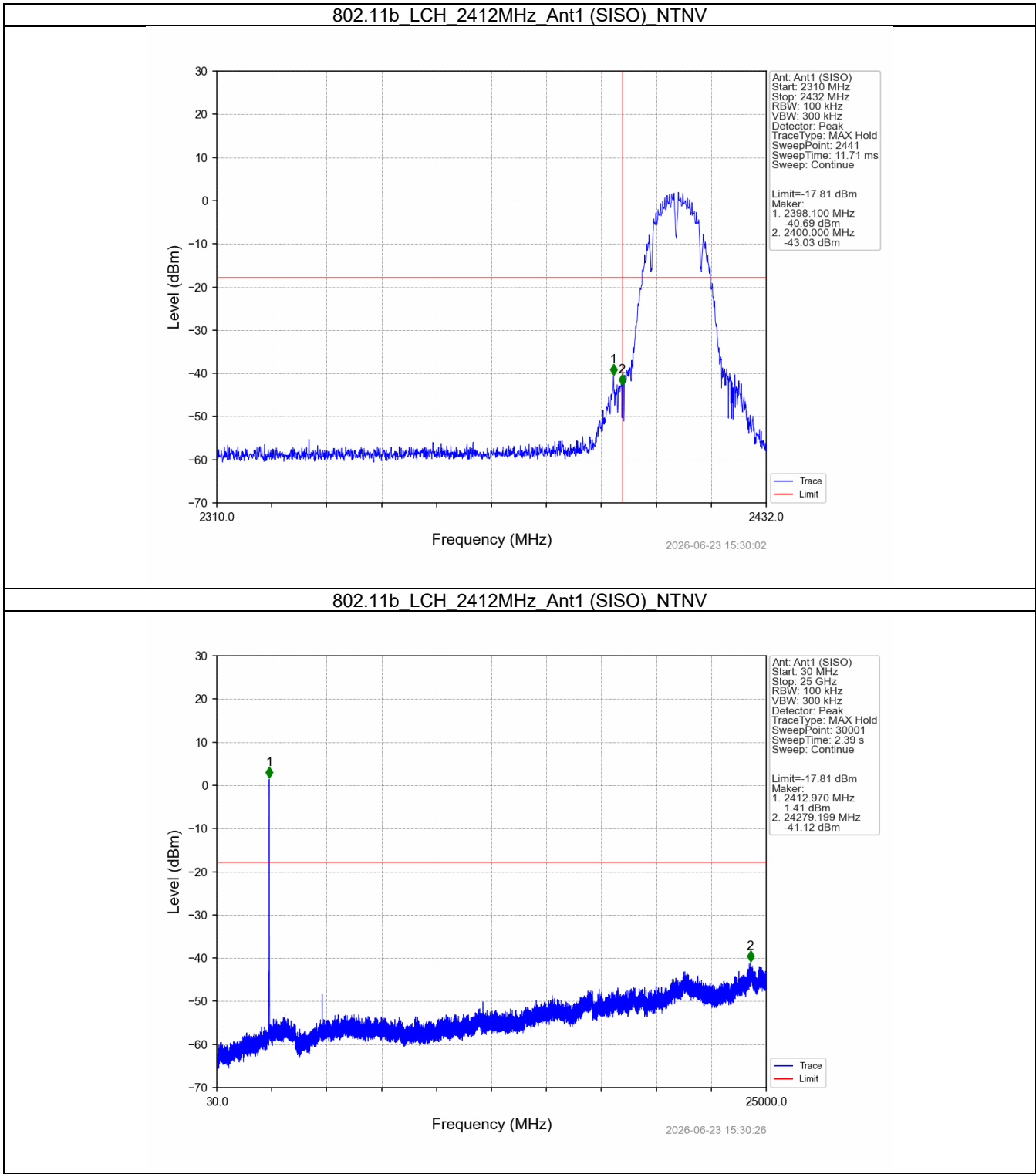
# 802.11n(HT20)\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



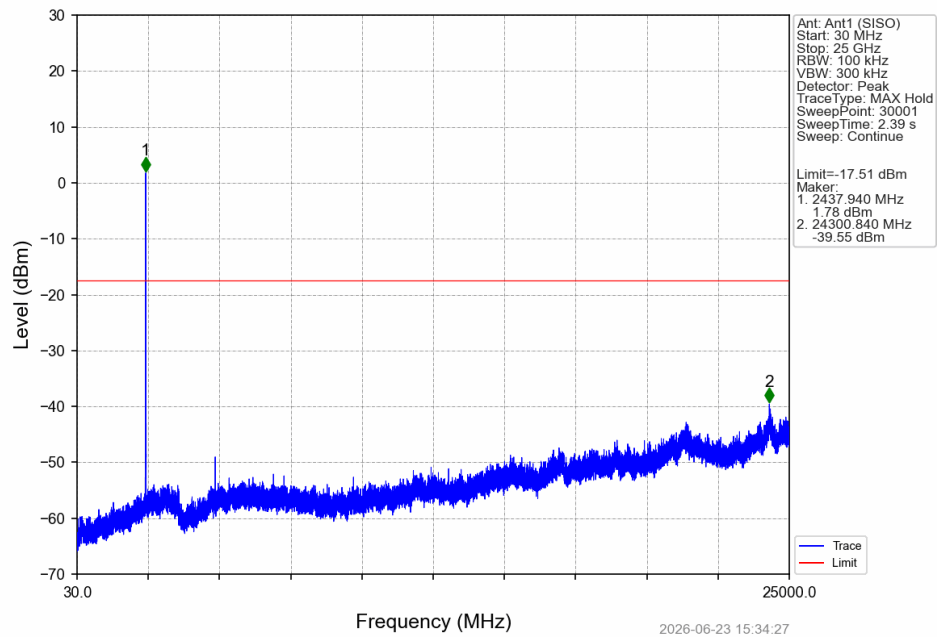
802.11n(HT20)\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



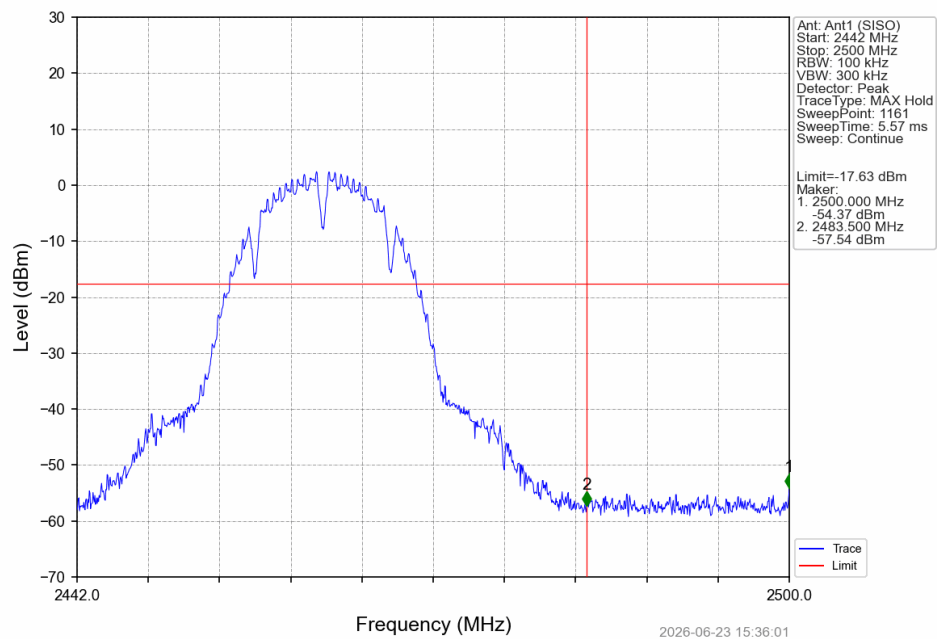
5.2.2 CSE



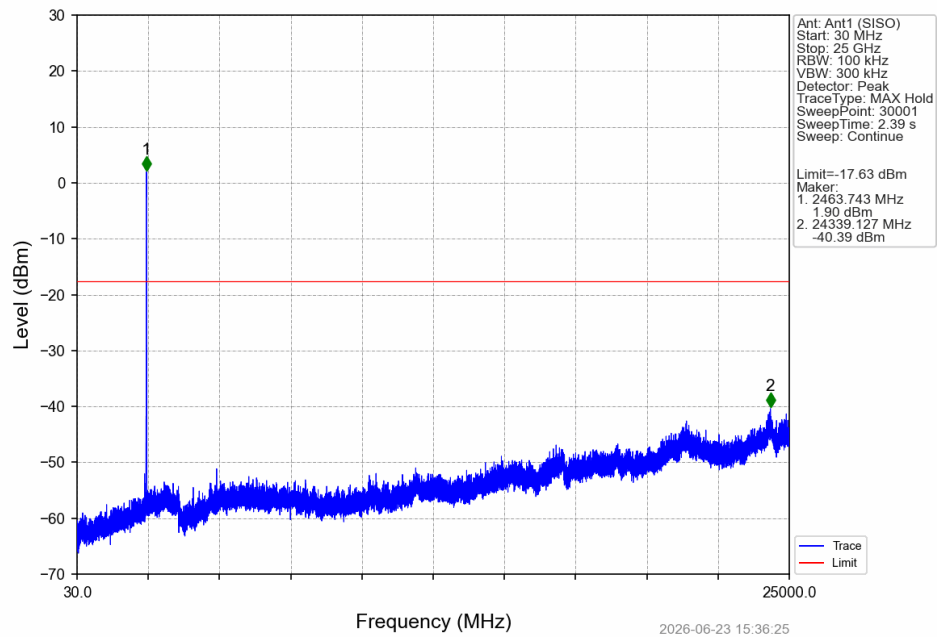
### 802.11b\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



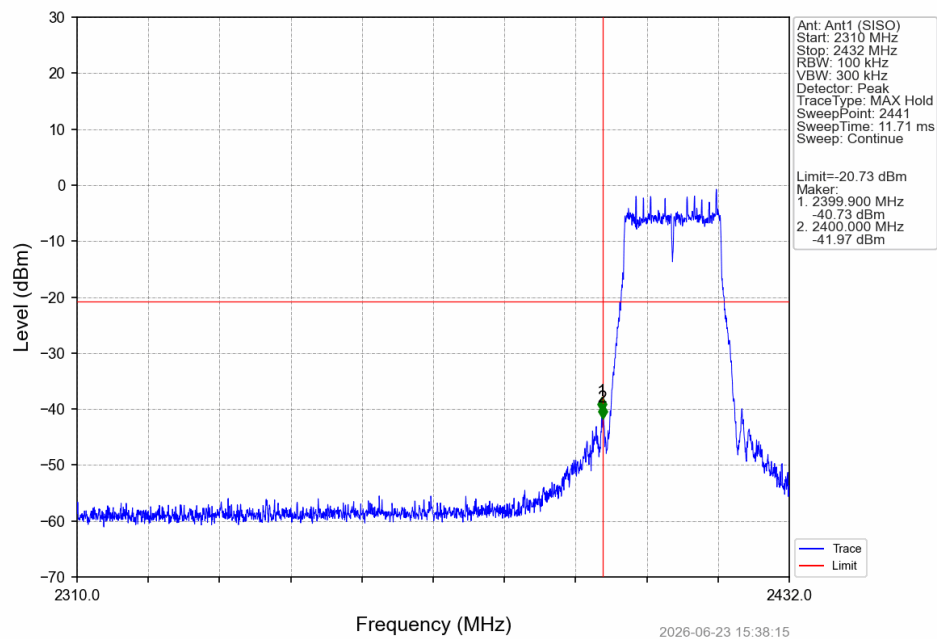
### 802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



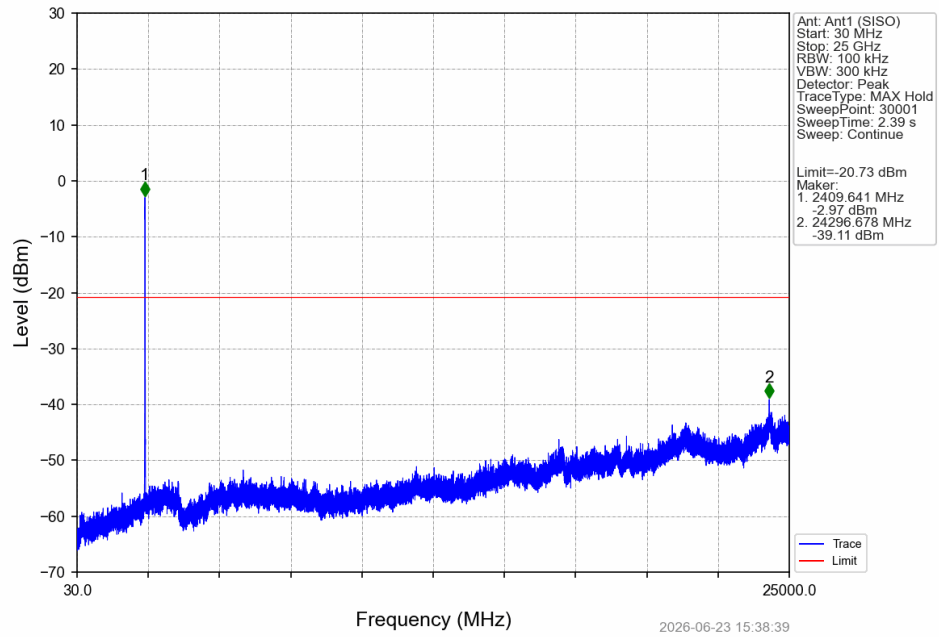
### 802.11b\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



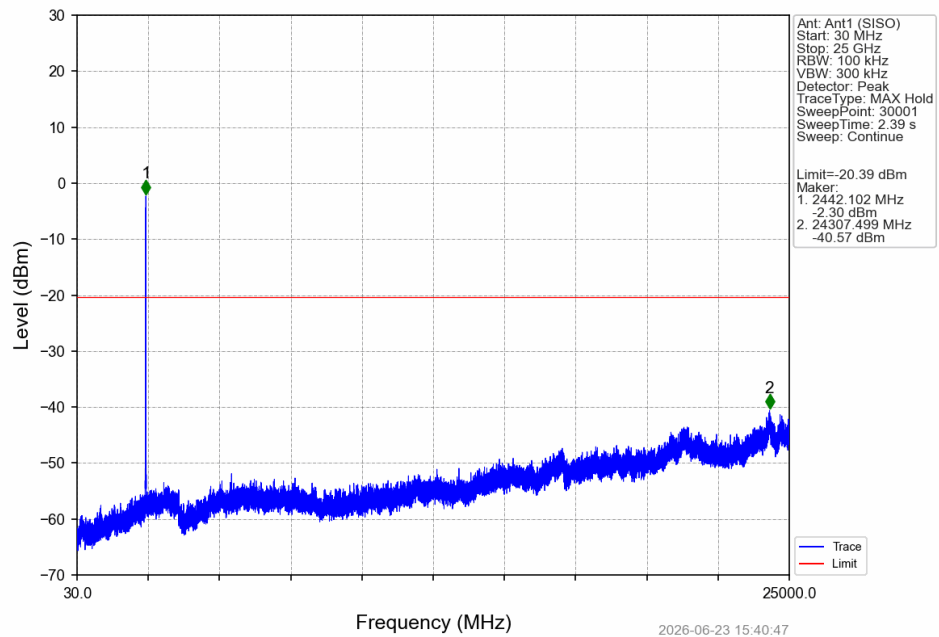
### 802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



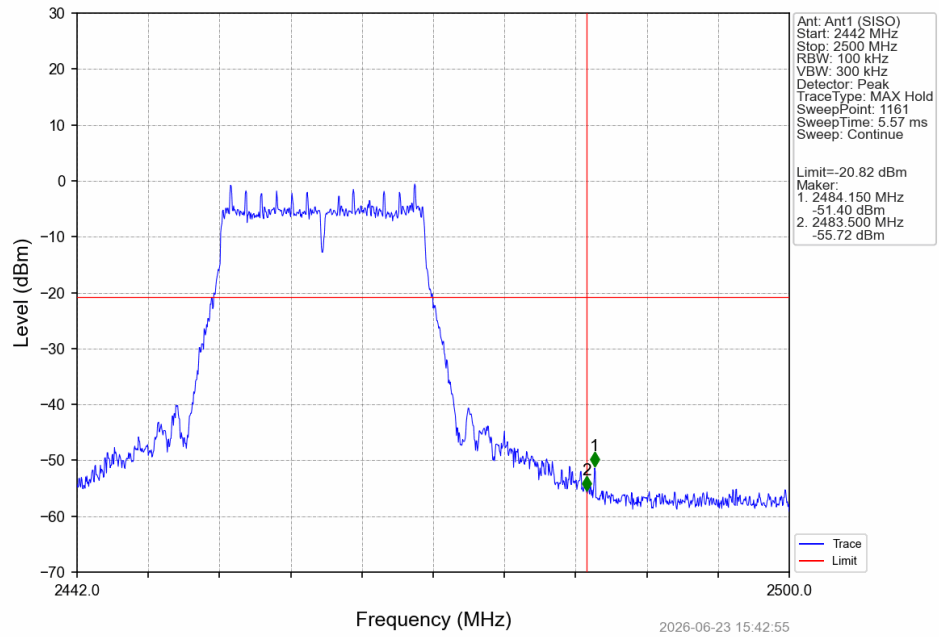
### 802.11g\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



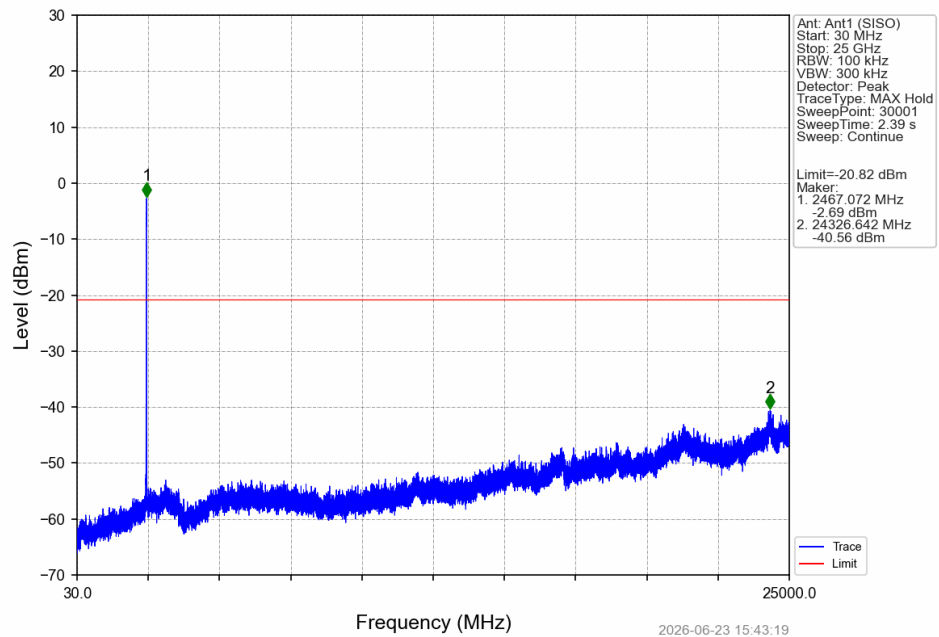
### 802.11g\_MCH\_2437MHz\_Ant1 (SISO)\_NTNV



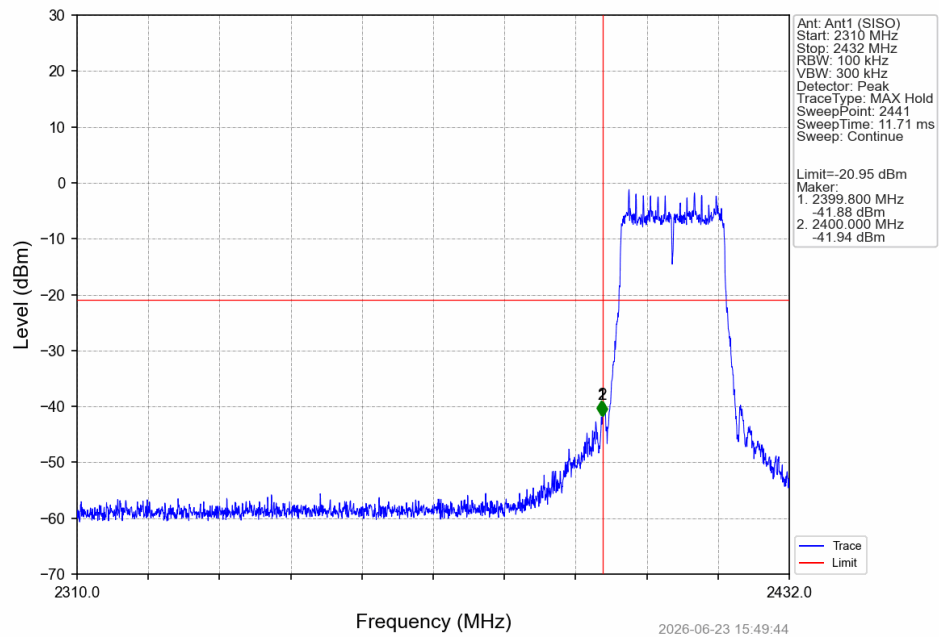
### 802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



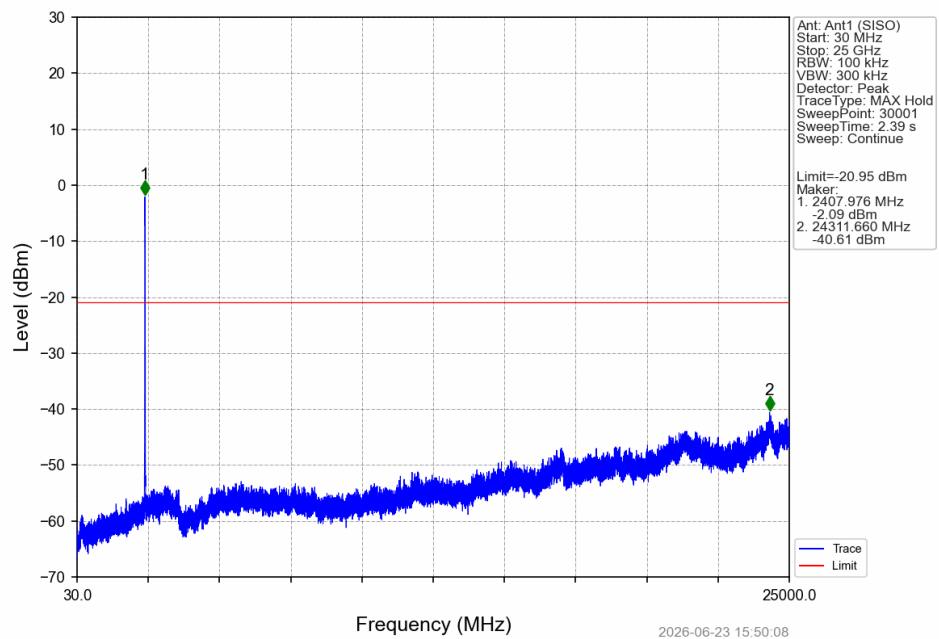
### 802.11g\_HCH\_2462MHz\_Ant1 (SISO)\_NTNV



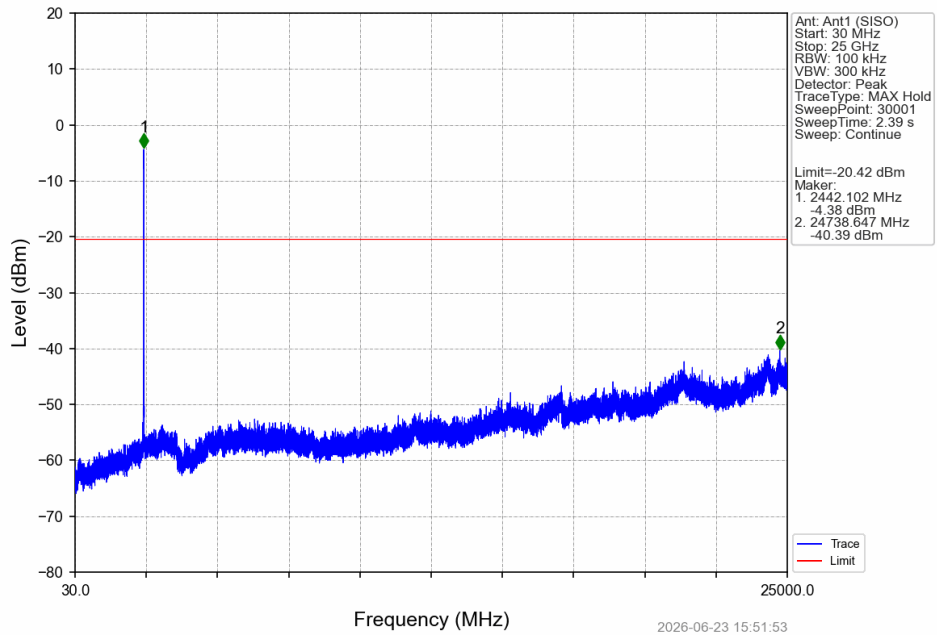
# 802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



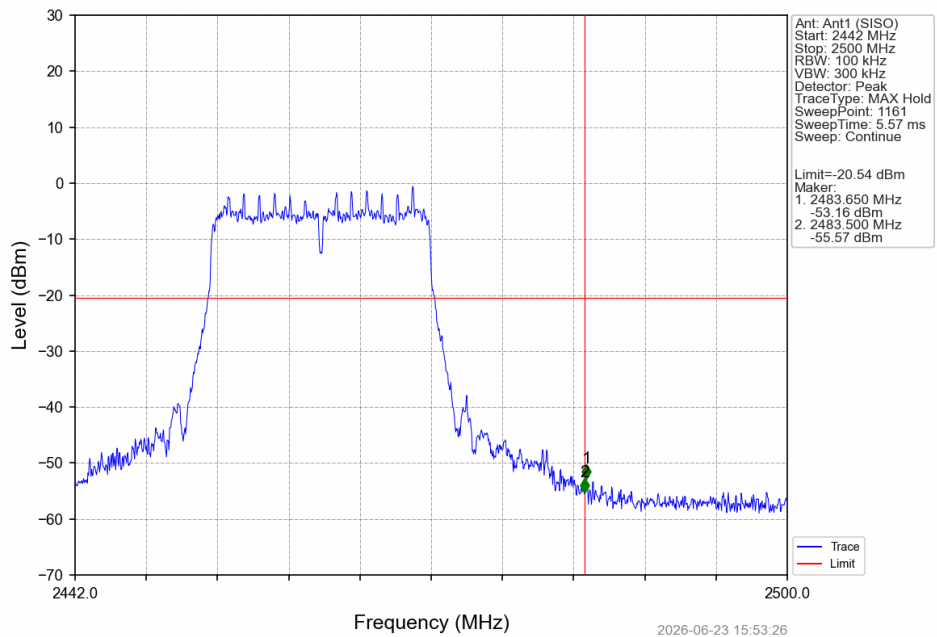
# 802.11n(HT20)\_LCH\_2412MHz\_Ant1 (SISO)\_NTNV



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



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



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

