



## Appendix for 15.247

## 1. Bandwidth

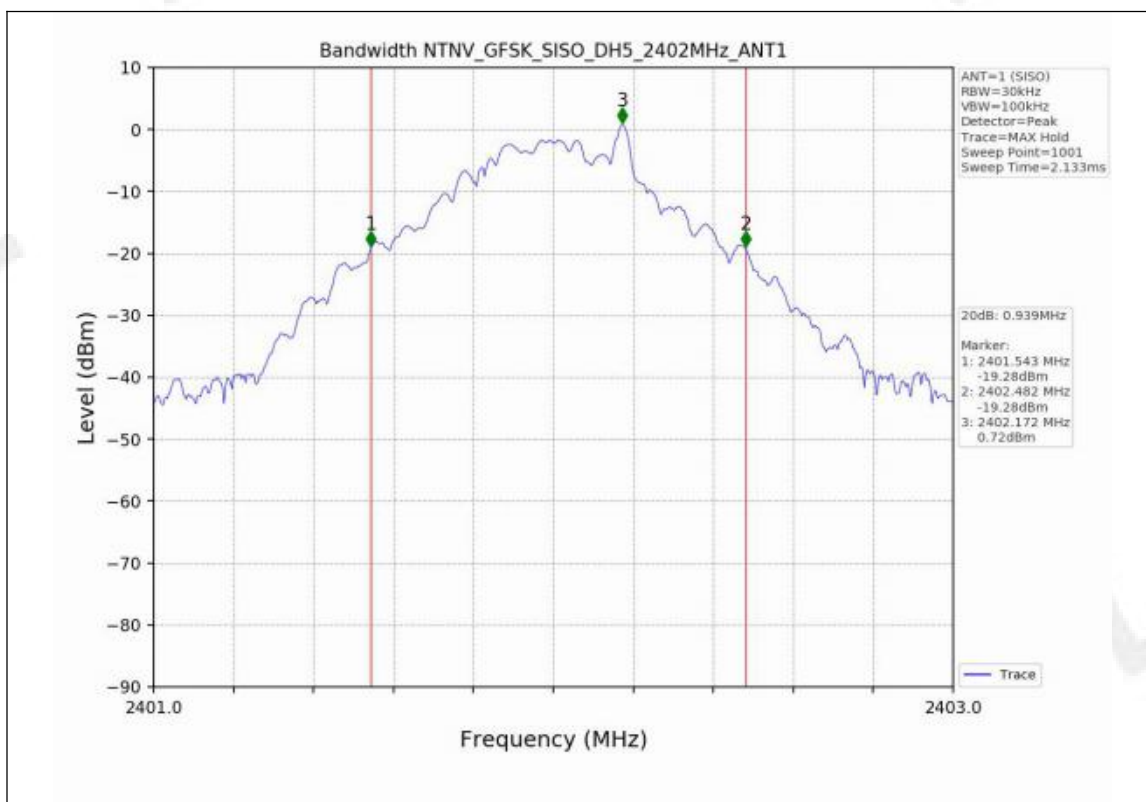
## 1.1 Test Result

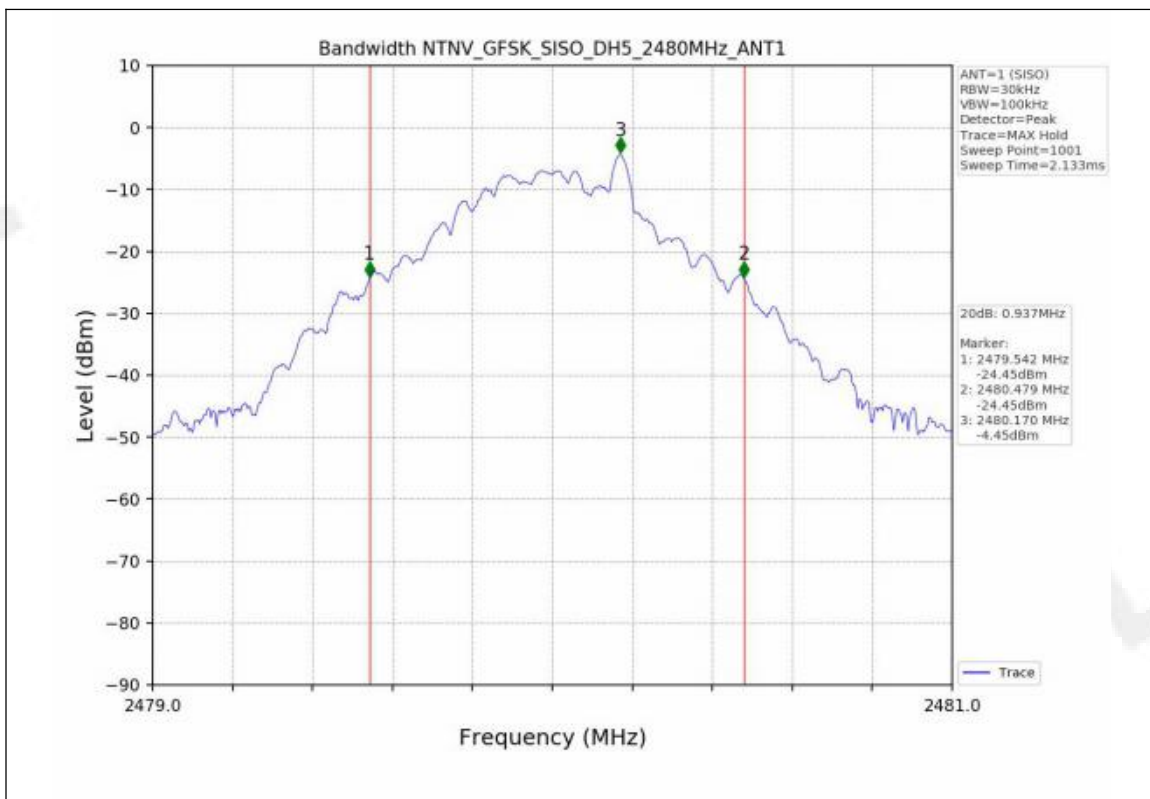
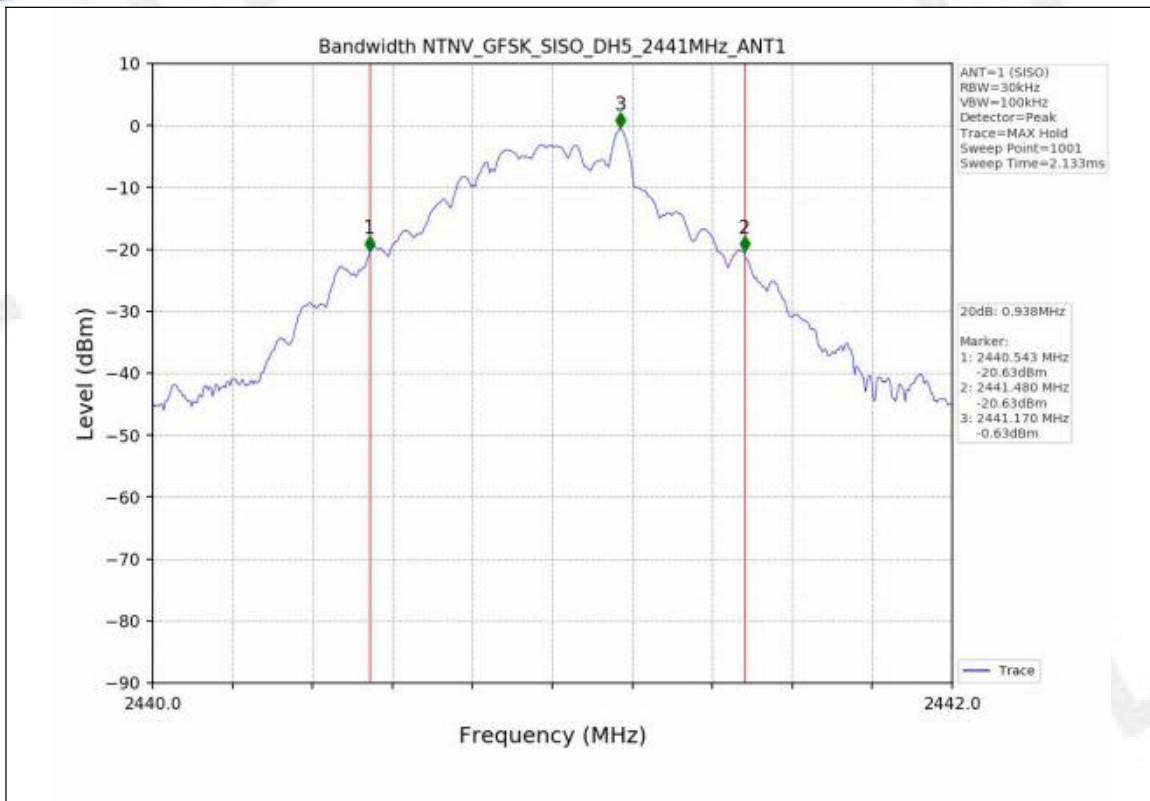
| Test Mode | Frequency (MHz) | TX Type | ANT No. | 20dB Bandwidth    | Verdict |
|-----------|-----------------|---------|---------|-------------------|---------|
|           |                 |         |         | Test Result (MHz) |         |
| GFSK      | 2402            | SISO    | 1       | 0.939             | PASS    |
|           | 2441            | SISO    | 1       | 0.938             | PASS    |
|           | 2480            | SISO    | 1       | 0.937             | PASS    |
| Pi/4DQPSK | 2402            | SISO    | 1       | 1.319             | PASS    |
|           | 2441            | SISO    | 1       | 1.319             | PASS    |
|           | 2480            | SISO    | 1       | 1.322             | PASS    |
| 8DPSK     | 2402            | SISO    | 1       | 1.310             | PASS    |
|           | 2441            | SISO    | 1       | 1.316             | PASS    |
|           | 2480            | SISO    | 1       | 1.317             | PASS    |

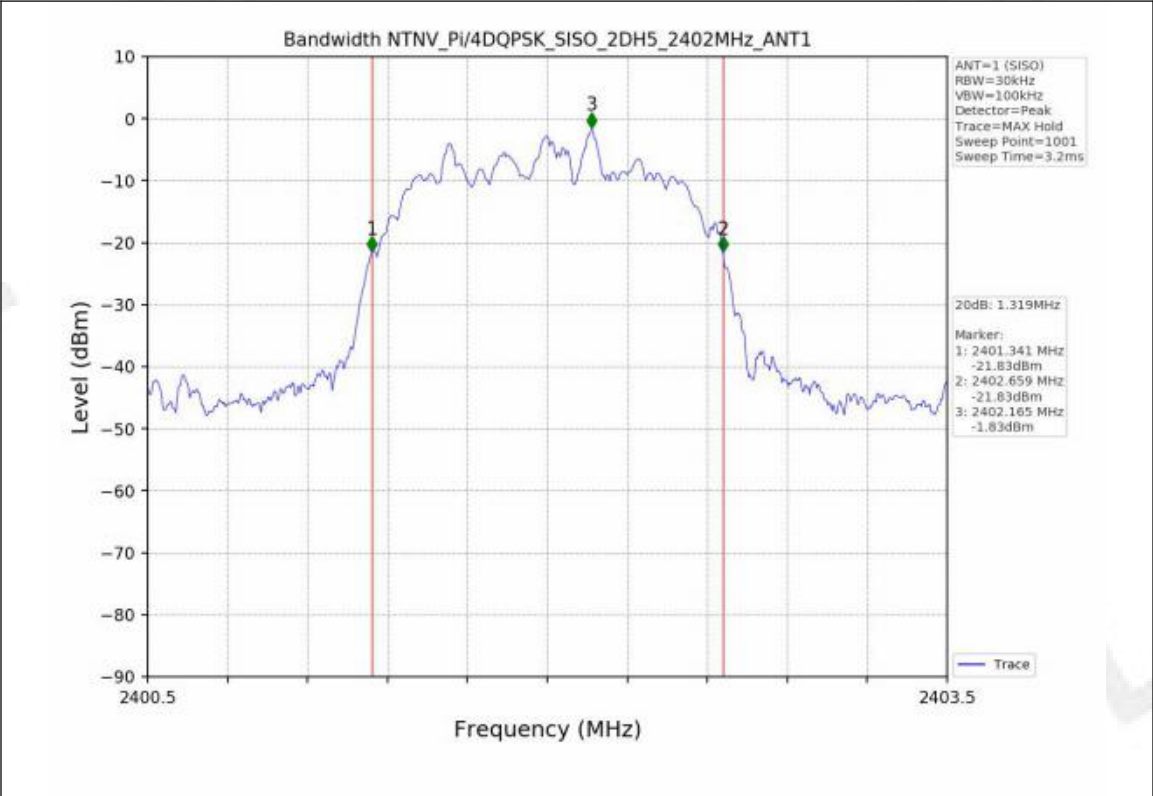
| Test Mode | Frequency (MHz) | TX Type | ANT No. | 99% Occupied Bandwidth |                     |
|-----------|-----------------|---------|---------|------------------------|---------------------|
|           |                 |         |         | Test Result (MHz)      |                     |
| GFSK      | 2402            | SISO    | 1       | 0.864                  | Only for Report Use |
|           | 2441            | SISO    | 1       | 0.867                  | Only for Report Use |
|           | 2480            | SISO    | 1       | 0.866                  | Only for Report Use |
| Pi/4DQPSK | 2402            | SISO    | 1       | 1.194                  | Only for Report Use |
|           | 2441            | SISO    | 1       | 1.188                  | Only for Report Use |
|           | 2480            | SISO    | 1       | 1.182                  | Only for Report Use |
| 8DPSK     | 2402            | SISO    | 1       | 1.187                  | Only for Report Use |
|           | 2441            | SISO    | 1       | 1.184                  | Only for Report Use |
|           | 2480            | SISO    | 1       | 1.184                  | Only for Report Use |

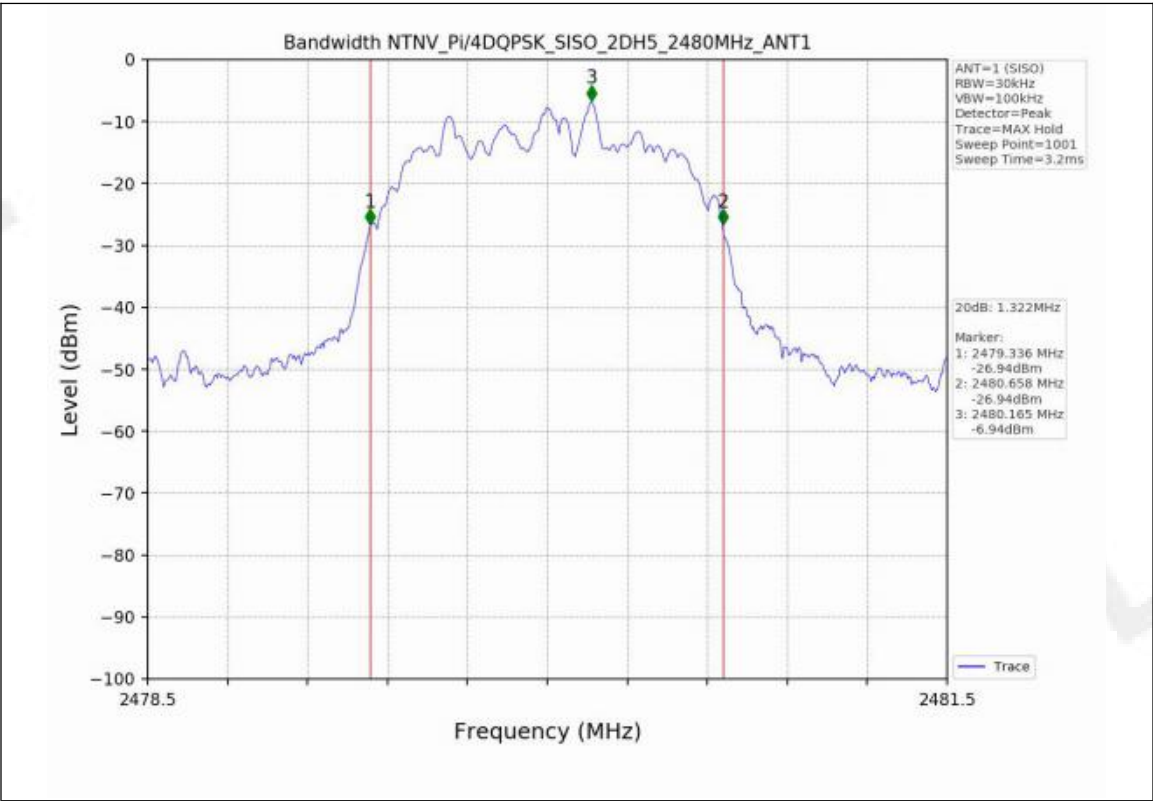
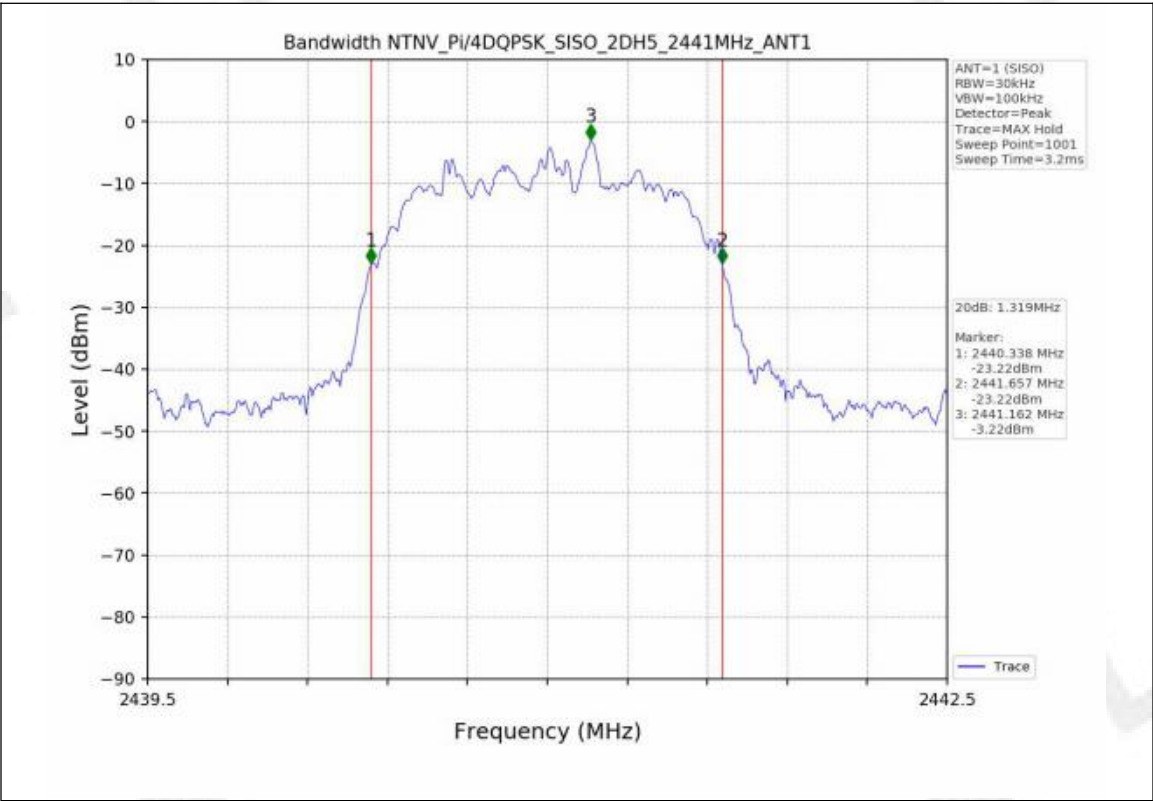


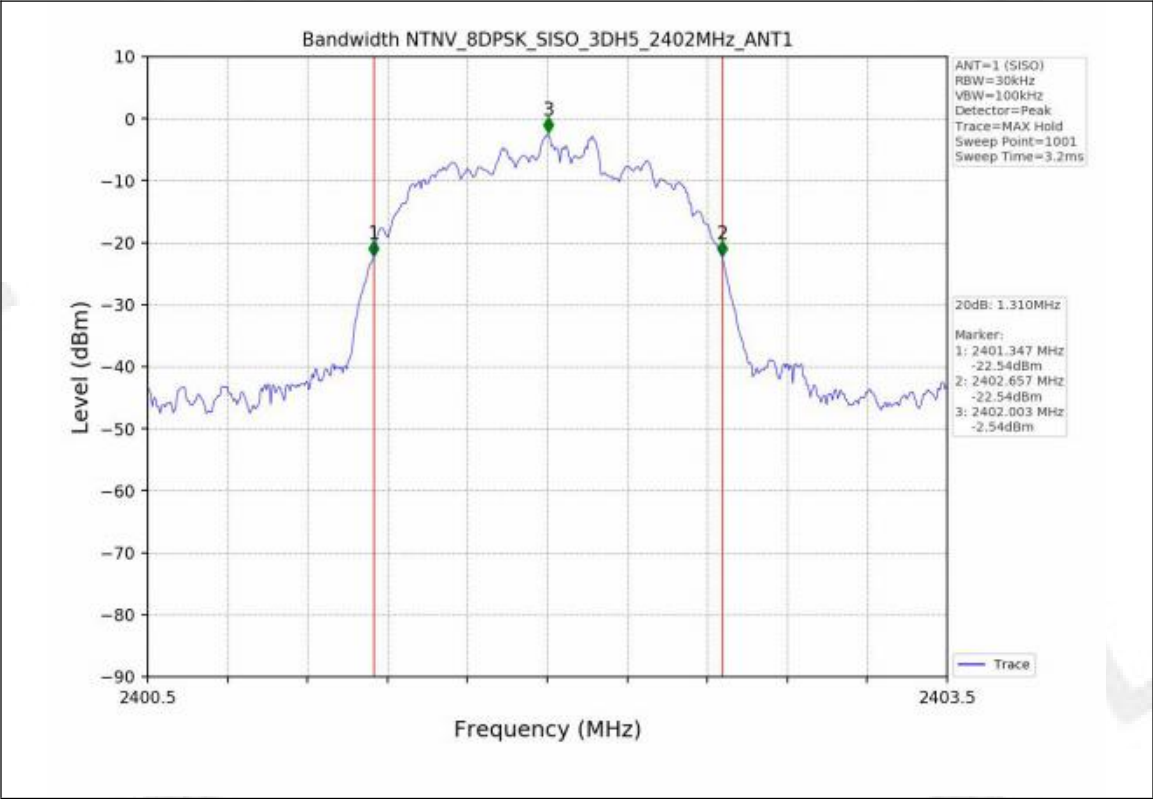
## 1.2 Test Graph - 20dB Bandwidth



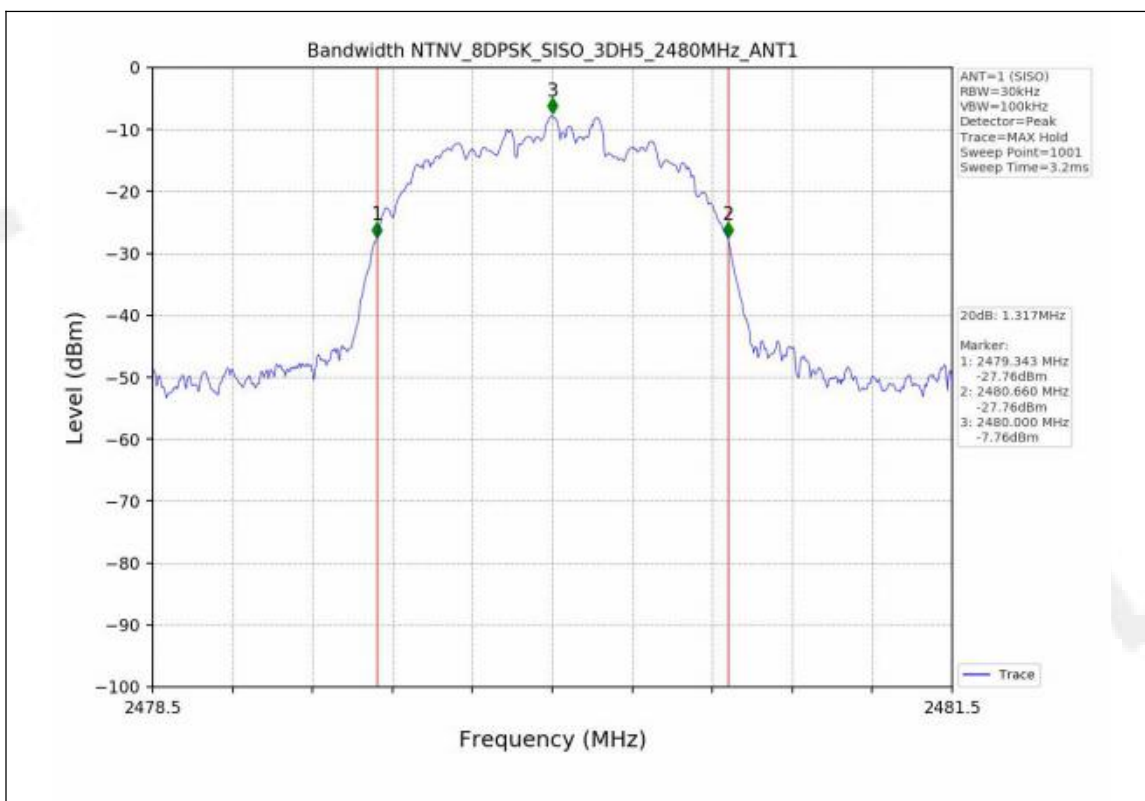
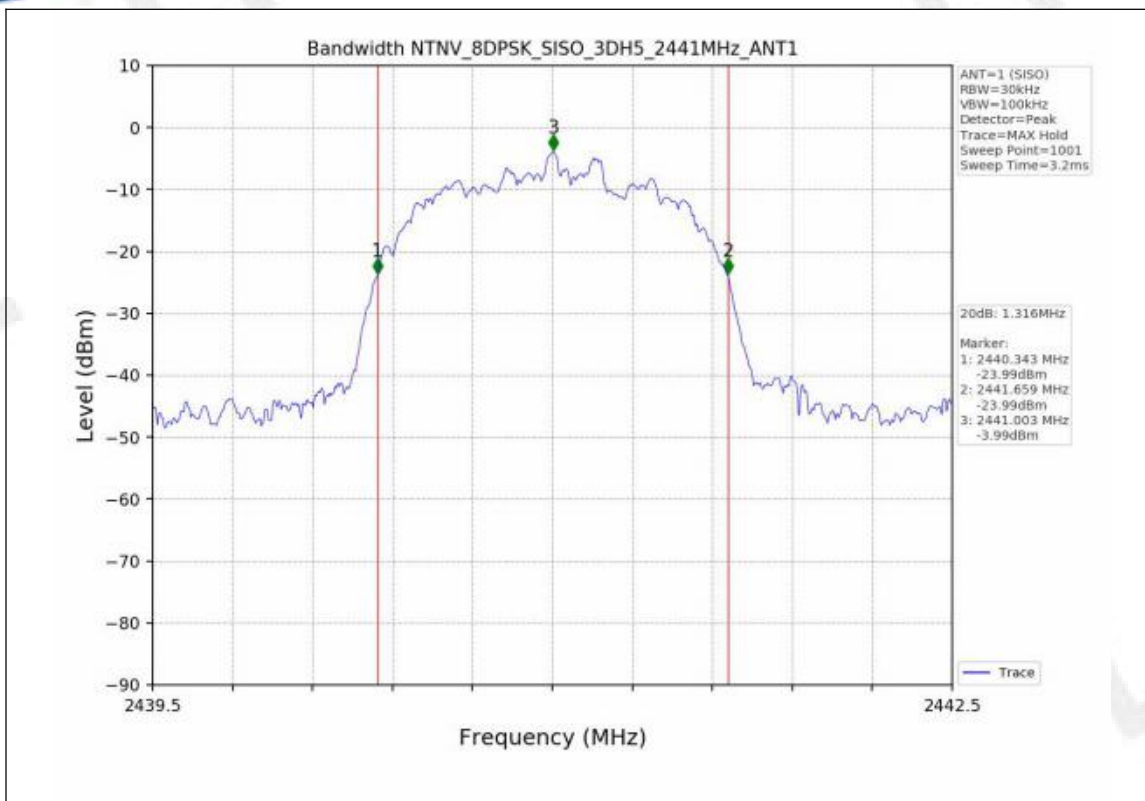






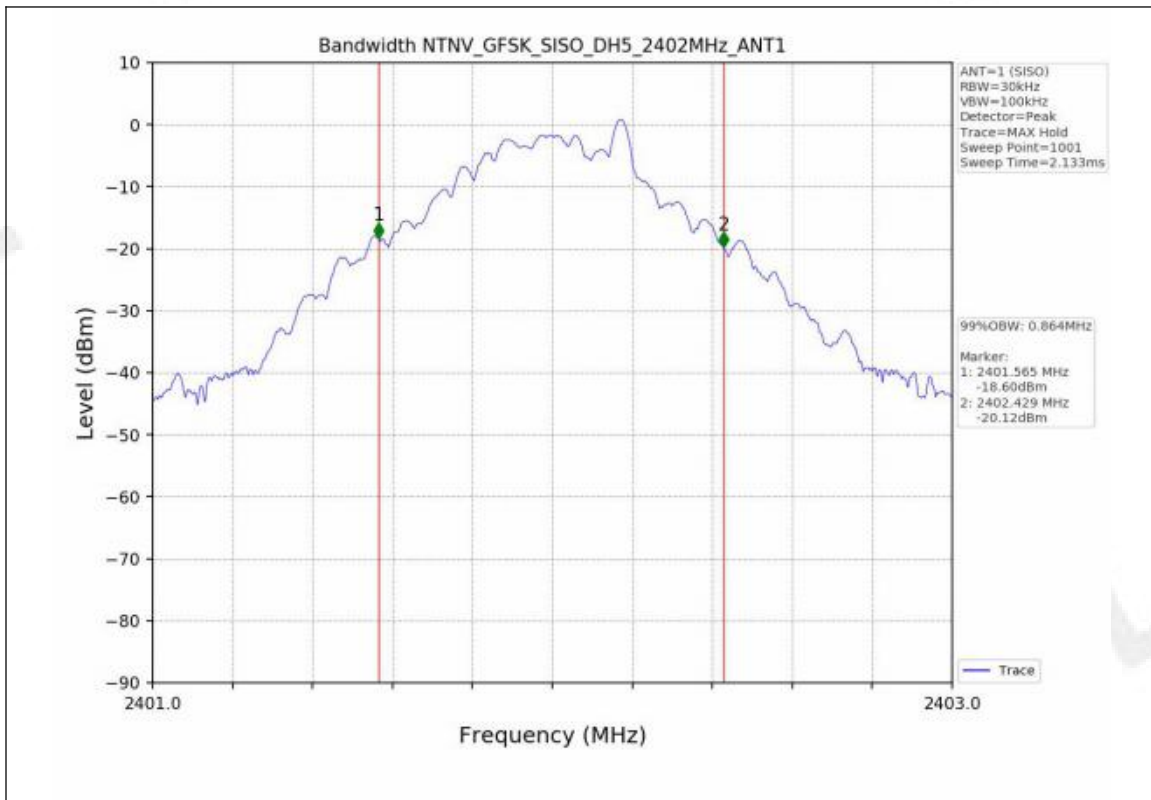




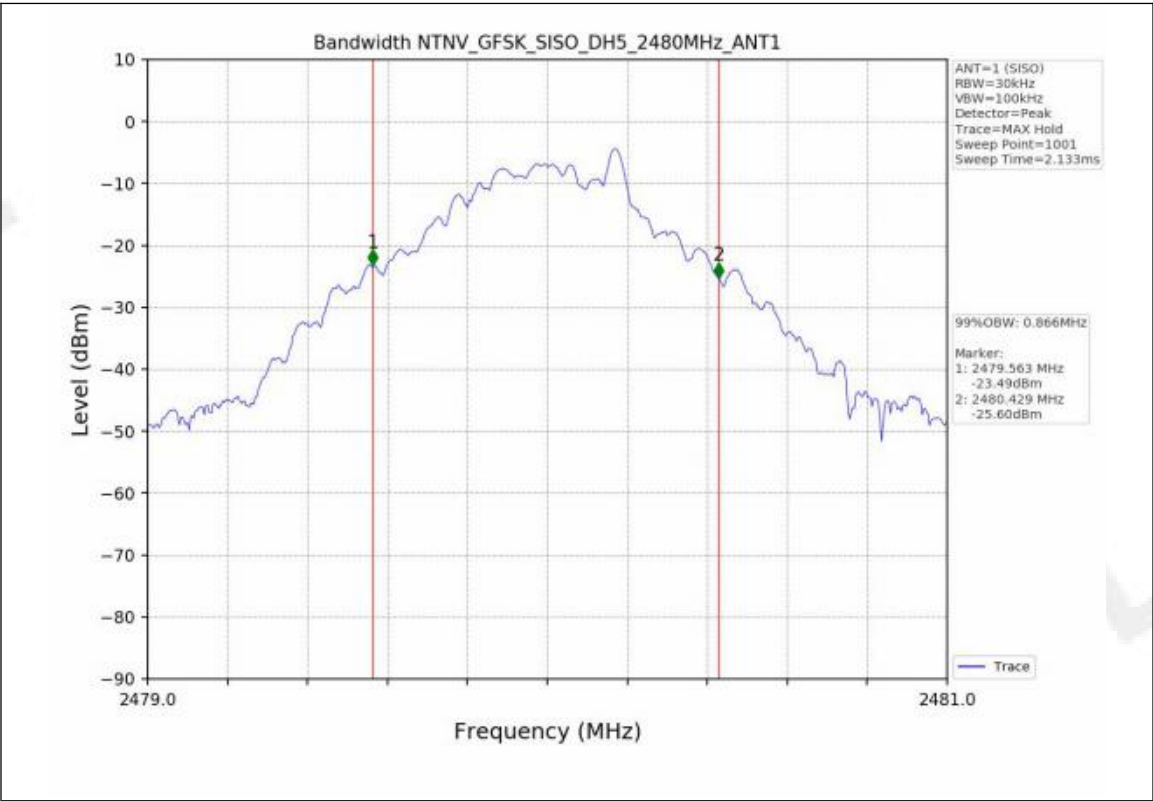
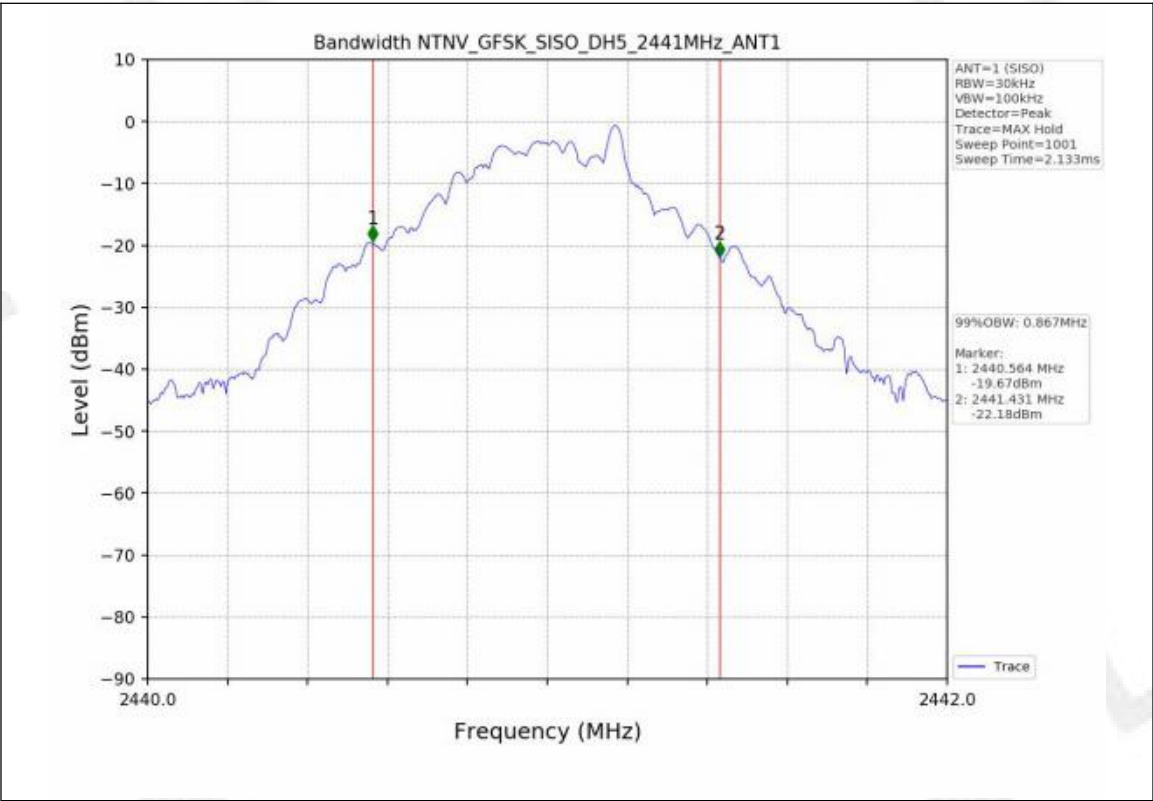


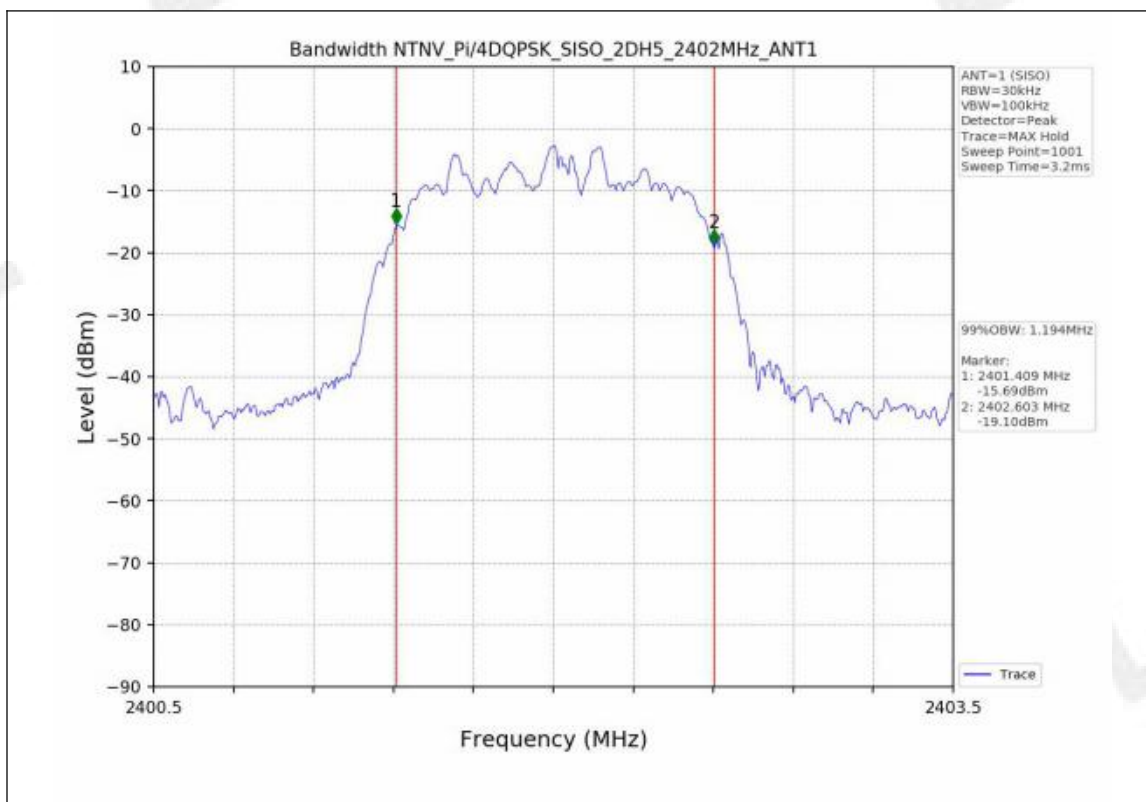


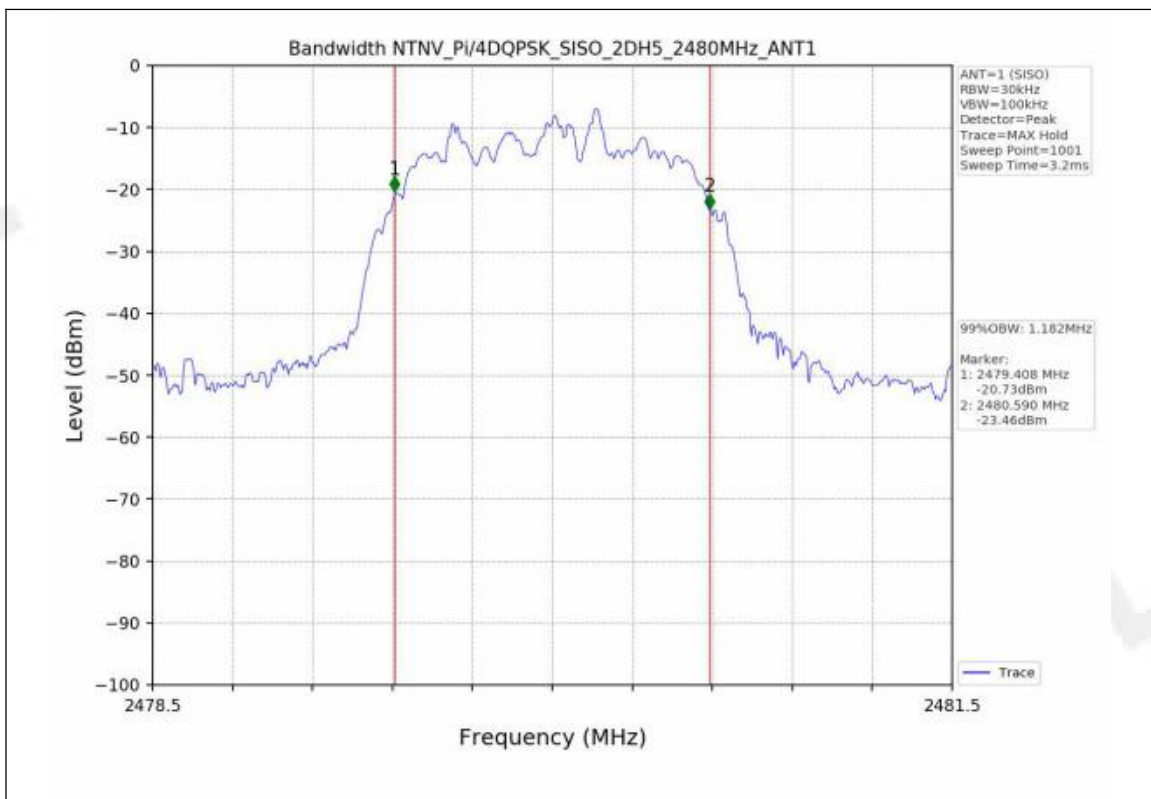
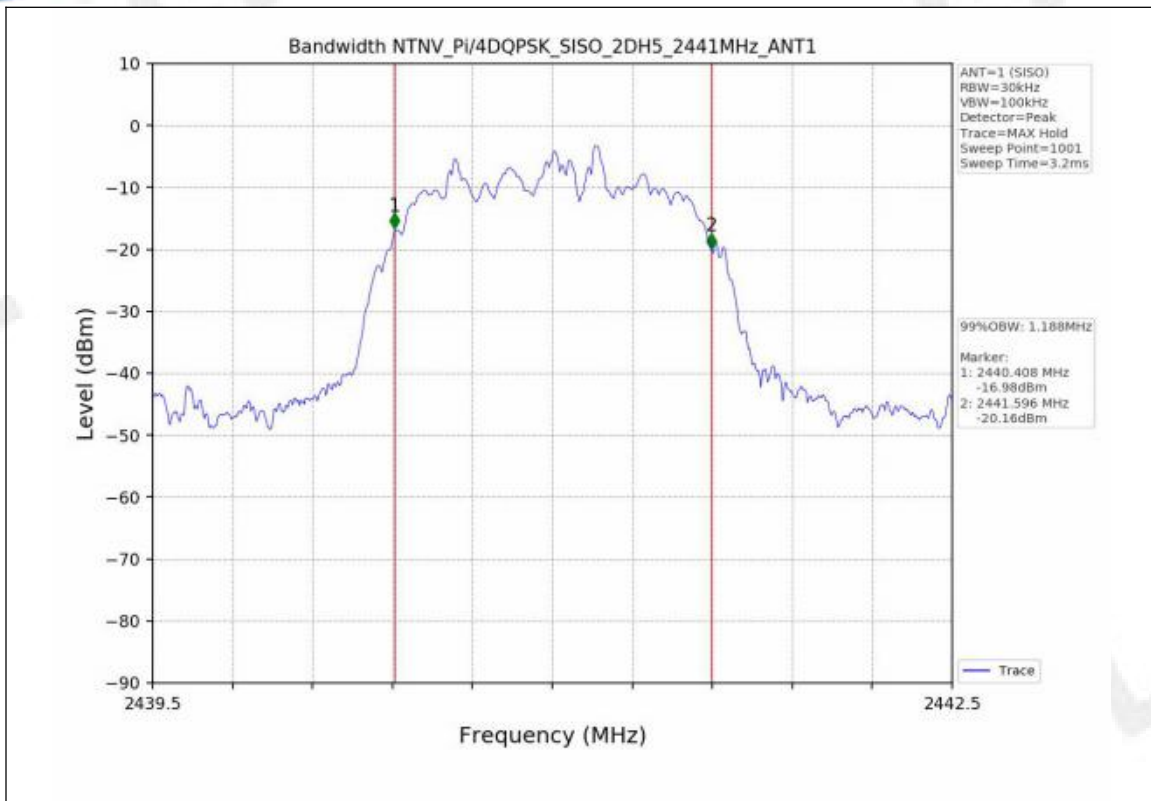
### 1.3 Test Graph - 99% Occupied Bandwidth

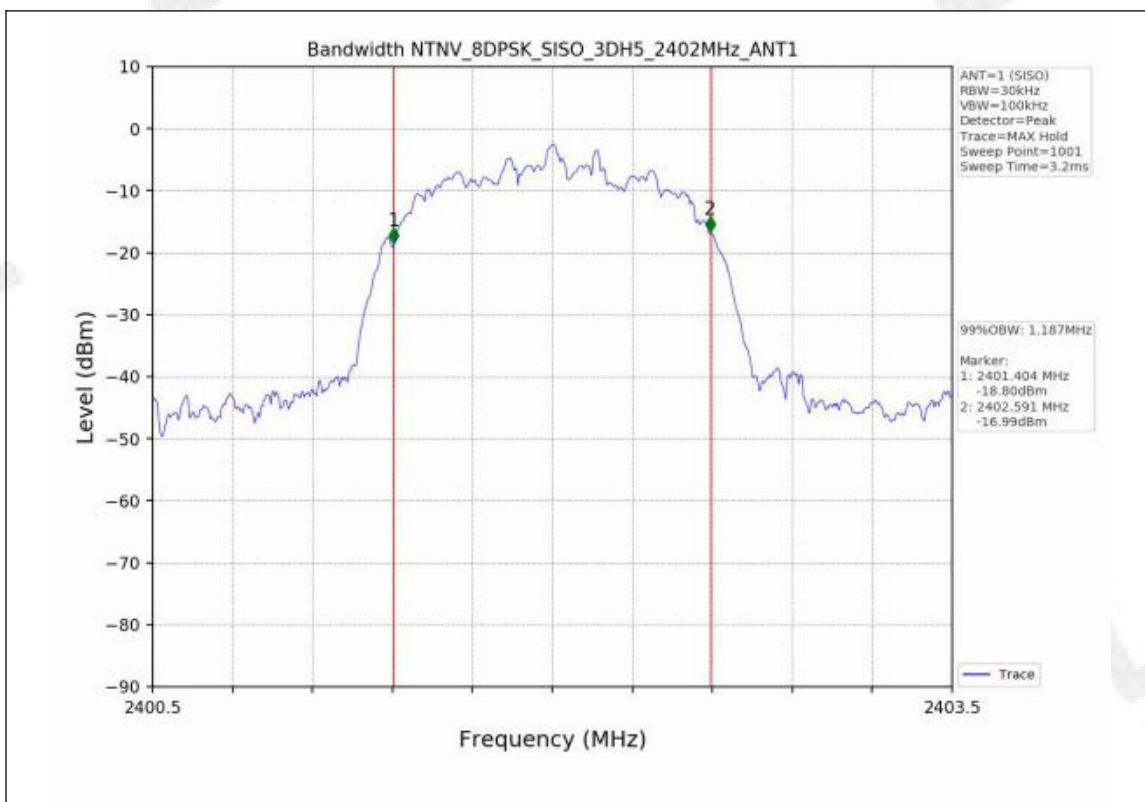


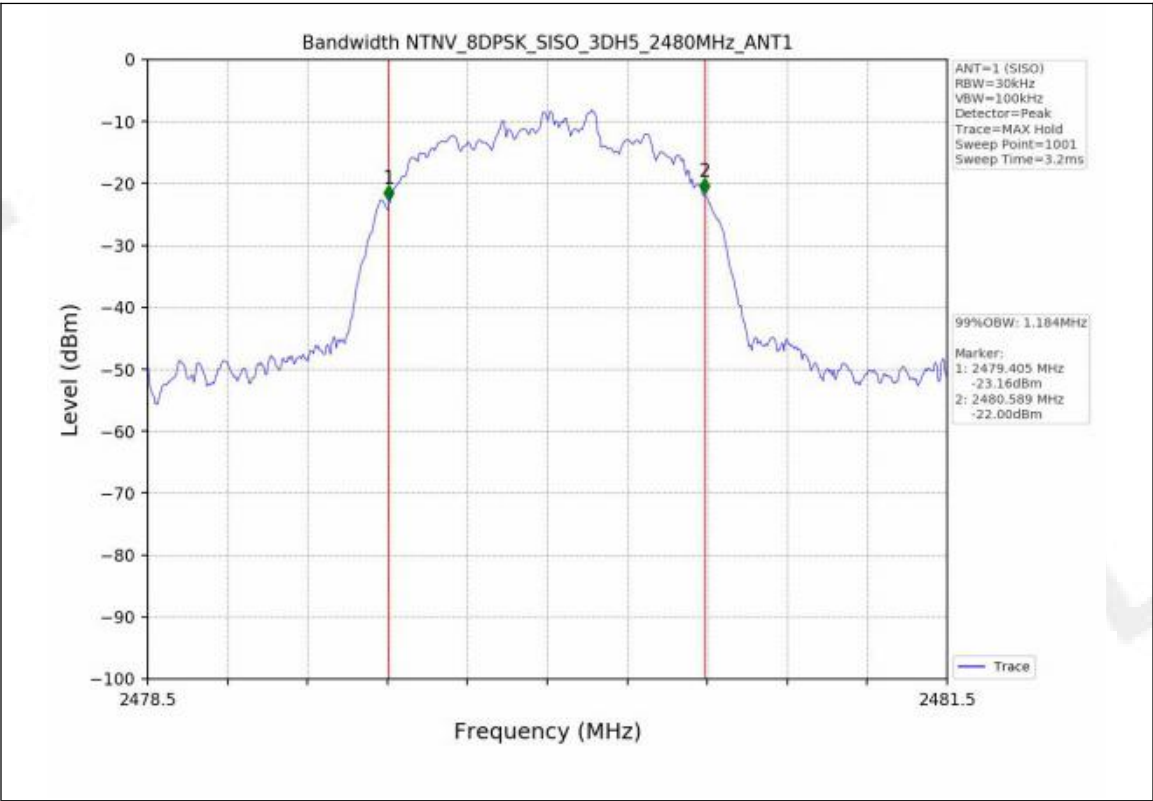
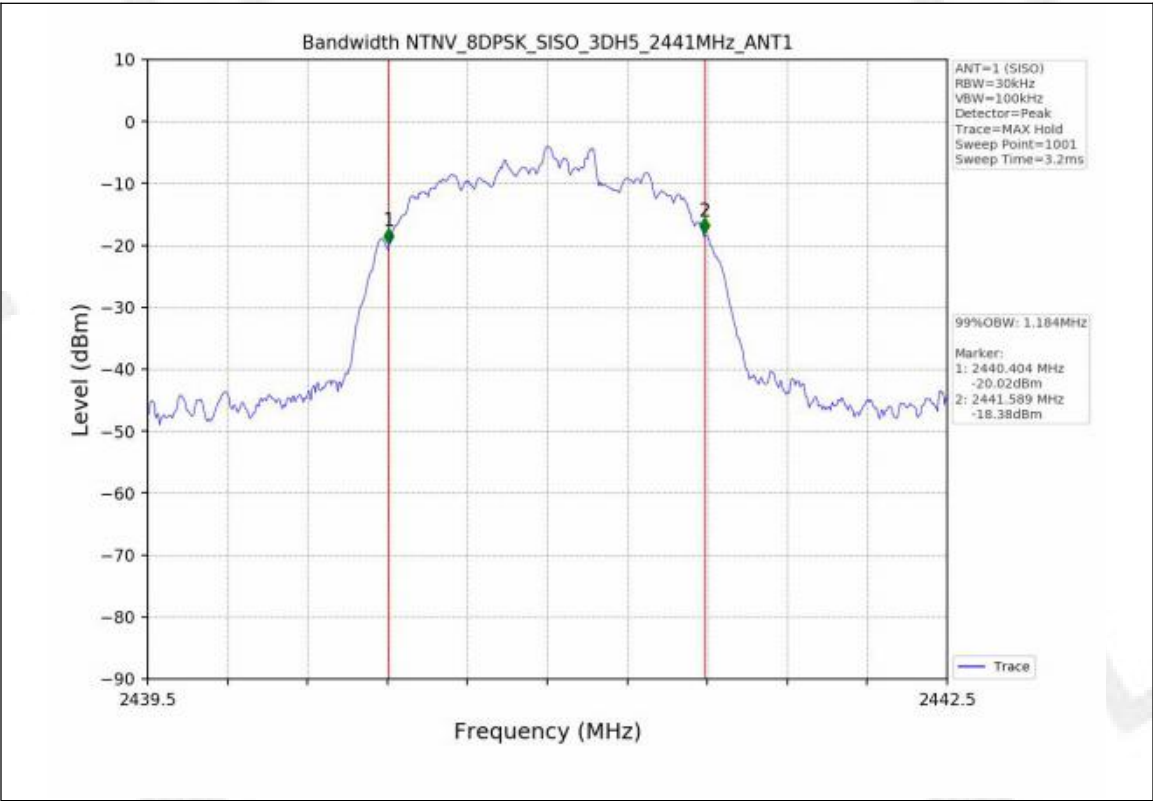












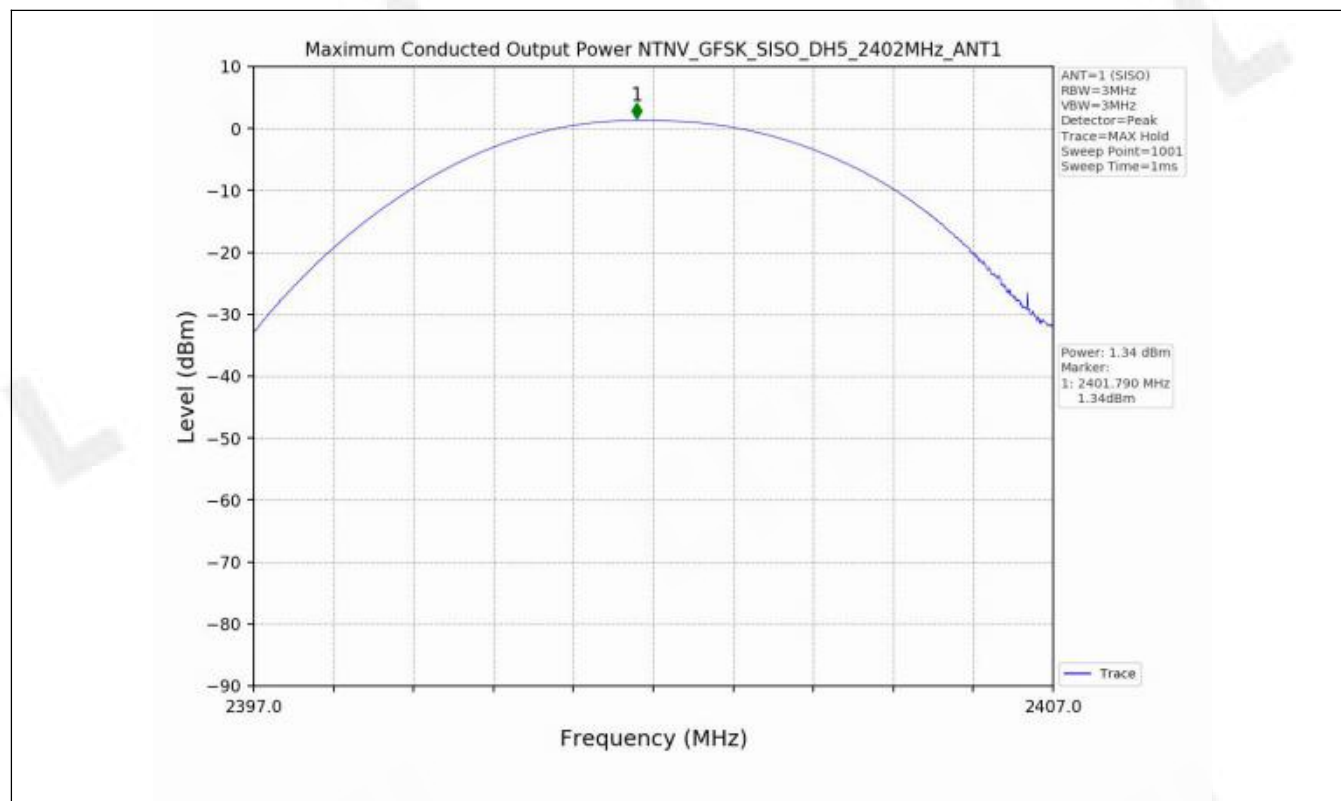


## 2. Maximum Conducted Output Power

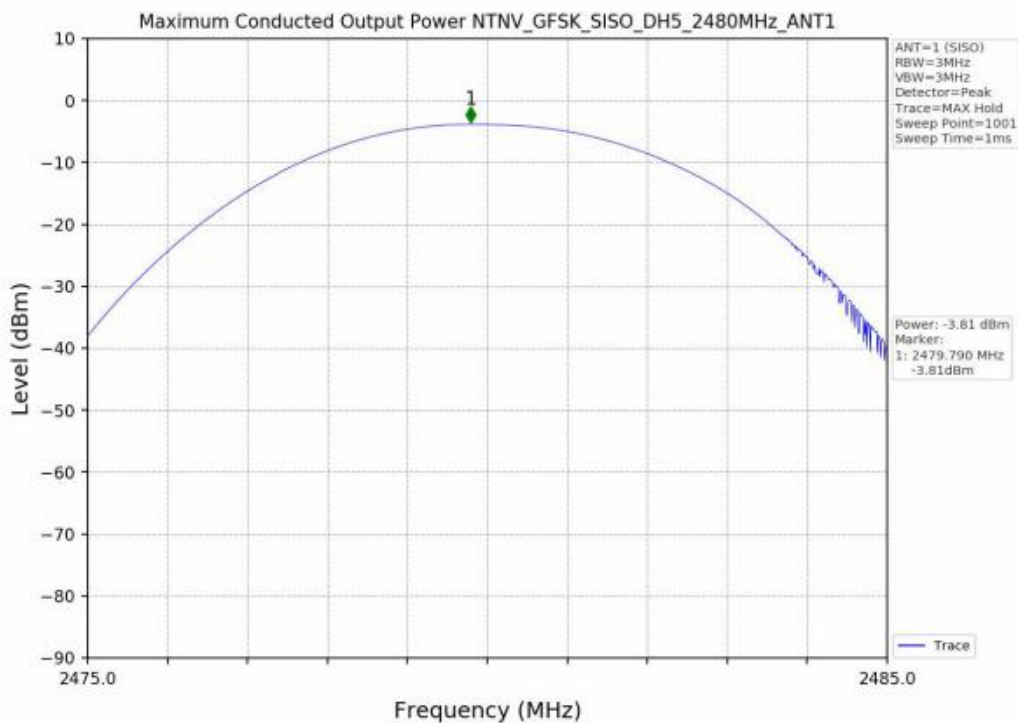
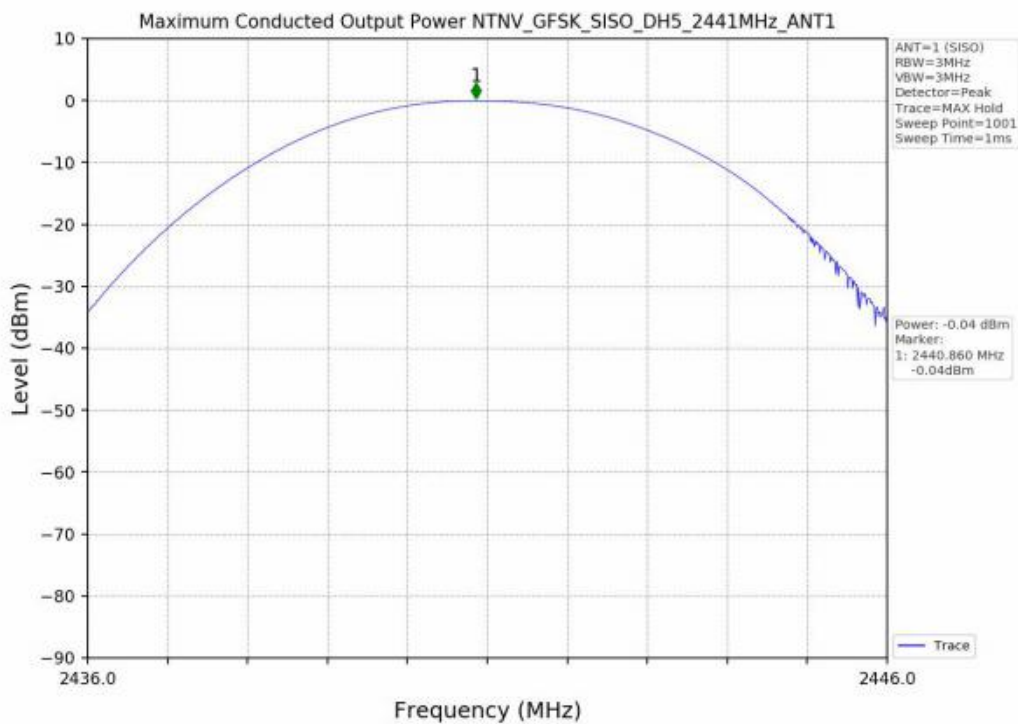
### 2.1 Test Result

| Test Mode | Frequency (MHz) | Tx Type | Measured Peak<br>Output Power (dBm) | Limits (dBm) | Verdict |
|-----------|-----------------|---------|-------------------------------------|--------------|---------|
|           |                 |         | Ant 1                               |              |         |
| GFSK      | 2402            | SISO    | 1.34                                | 30           | PASS    |
|           | 2441            | SISO    | -0.04                               | 30           | PASS    |
|           | 2480            | SISO    | -3.81                               | 30           | PASS    |
| Pi/4DQPSK | 2402            | SISO    | 2.60                                | 20.97        | PASS    |
|           | 2441            | SISO    | 1.24                                | 20.97        | PASS    |
|           | 2480            | SISO    | -2.51                               | 20.97        | PASS    |
| 8DPSK     | 2402            | SISO    | 3.12                                | 20.97        | PASS    |
|           | 2441            | SISO    | 1.70                                | 20.97        | PASS    |
|           | 2480            | SISO    | -1.99                               | 20.97        | PASS    |

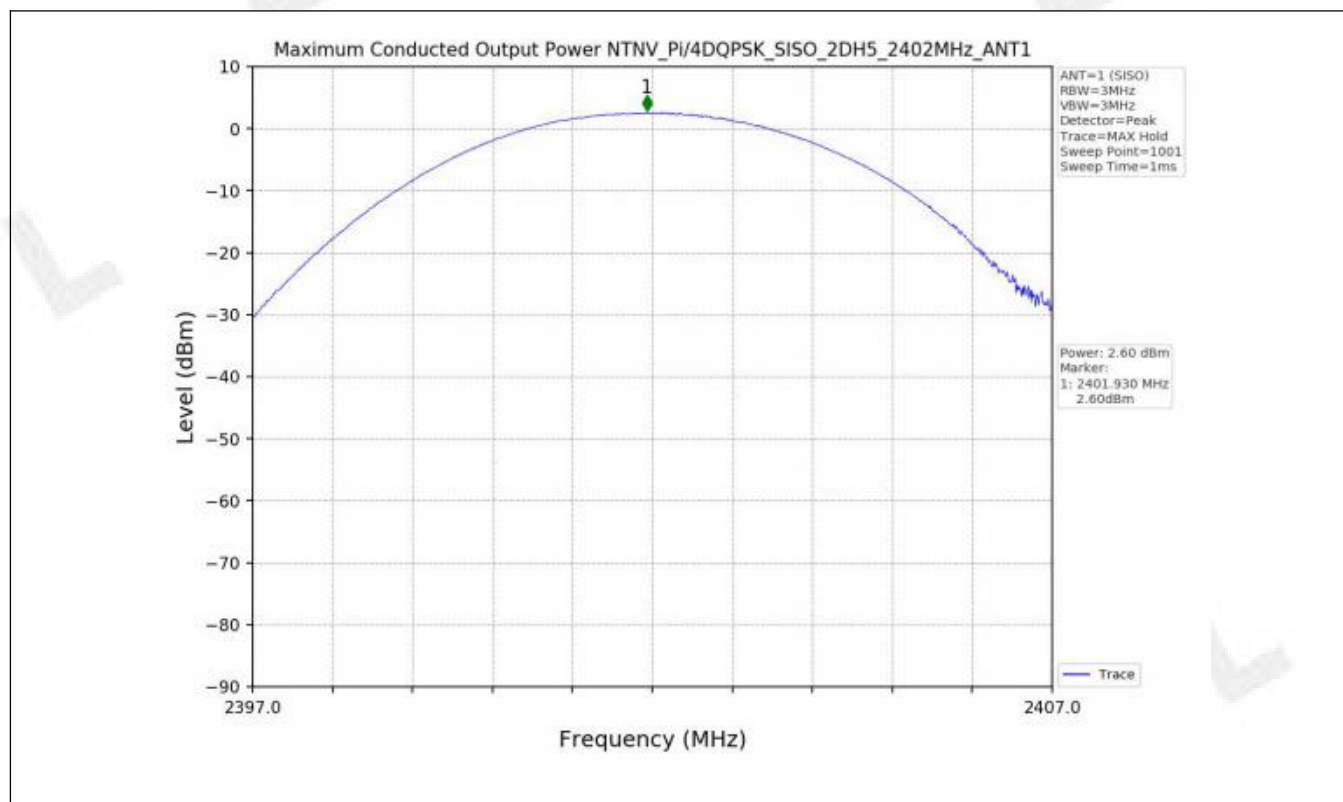
### 2.2 Test Graph

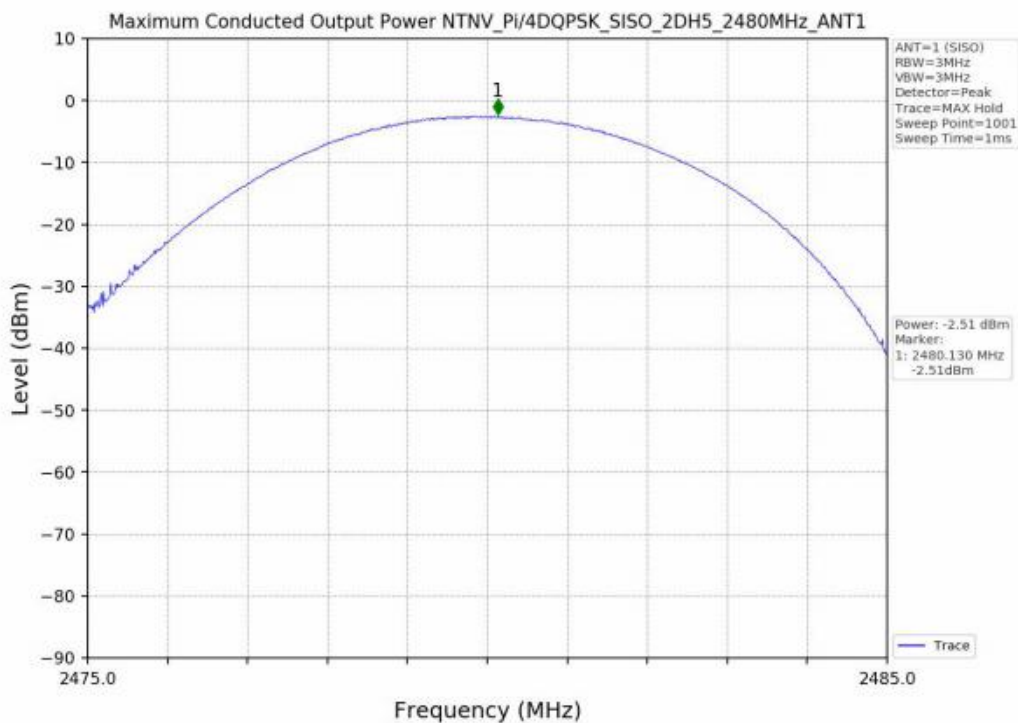
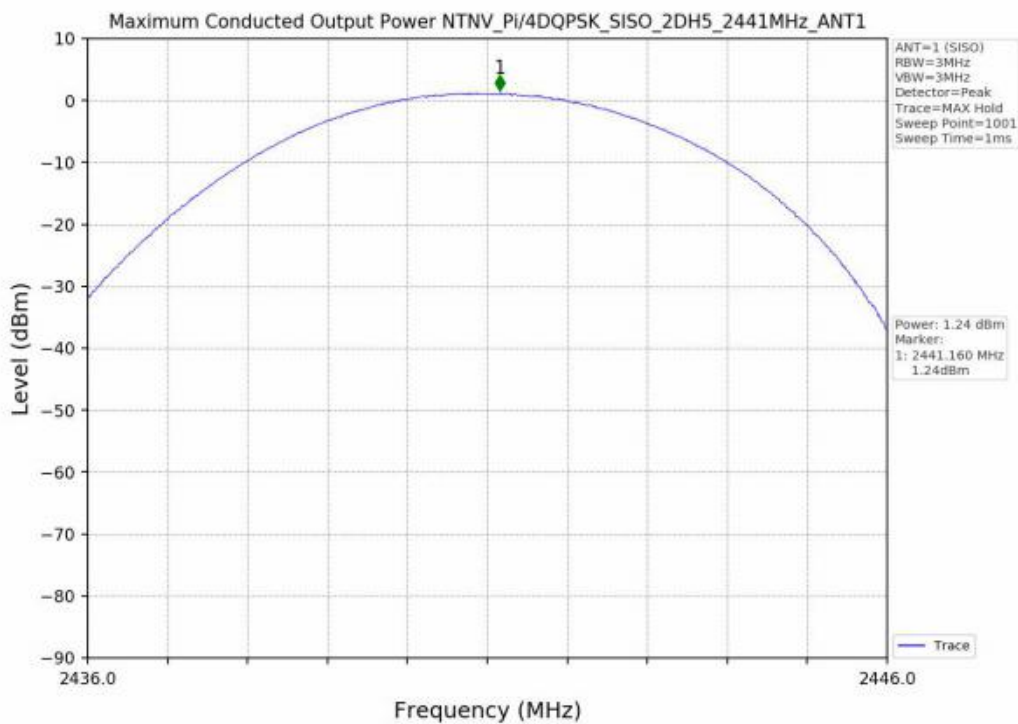




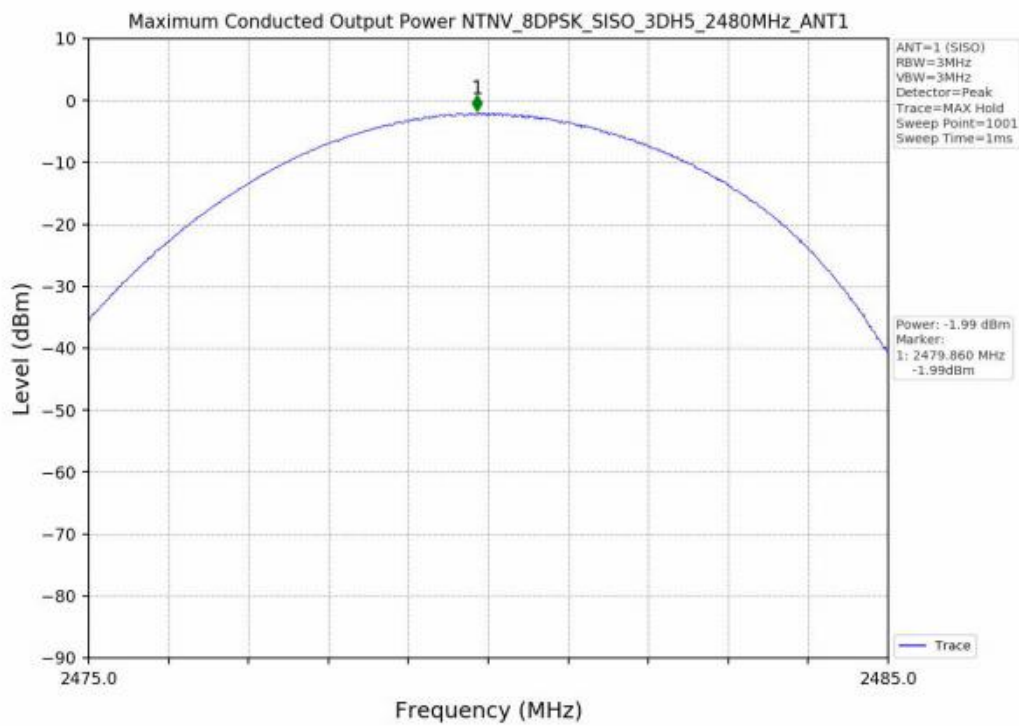












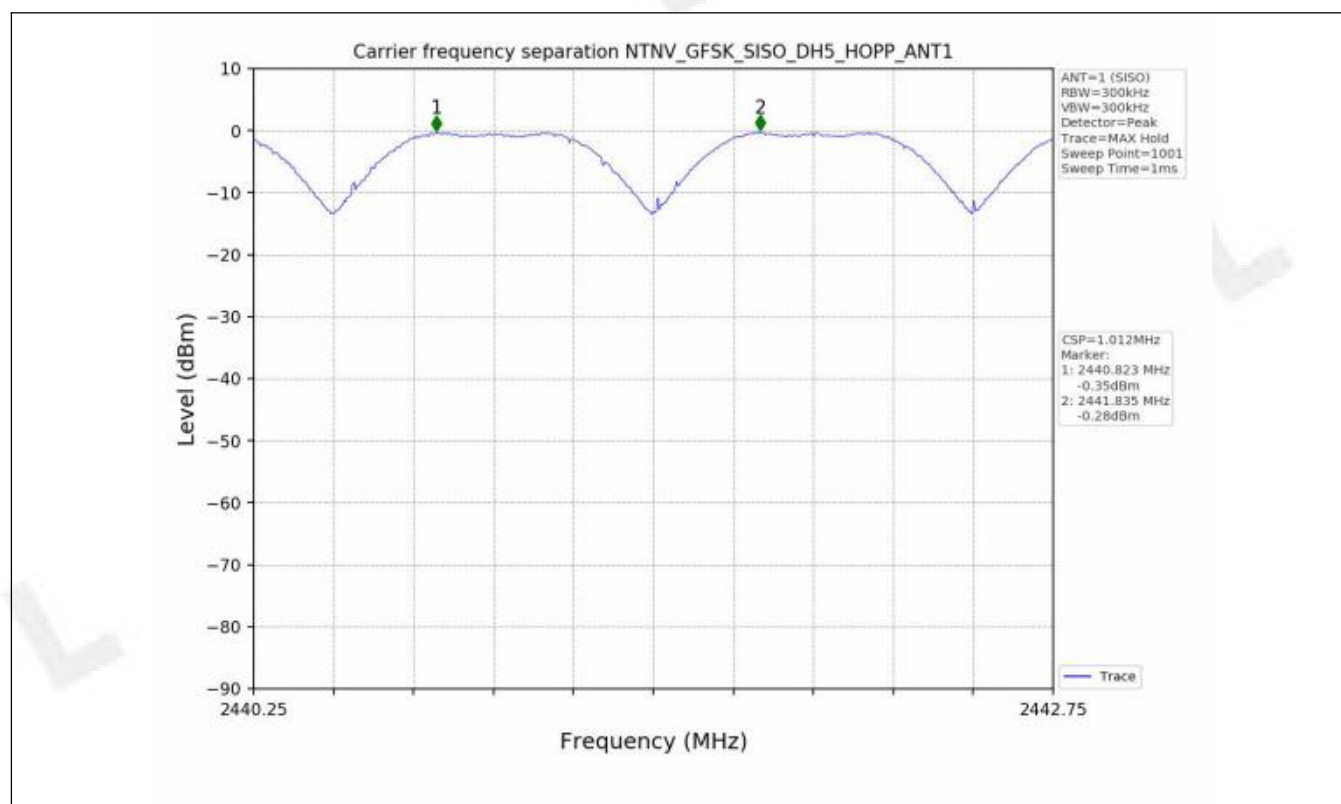


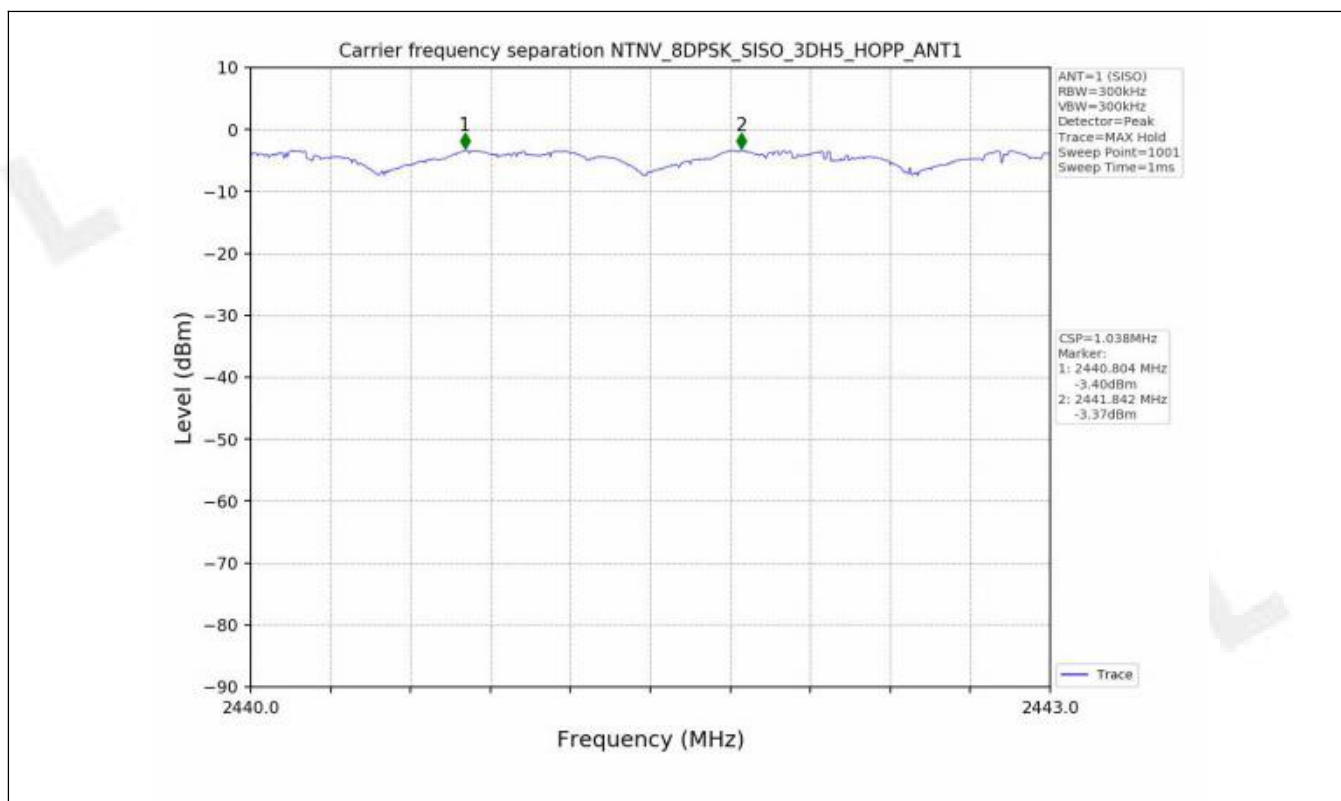
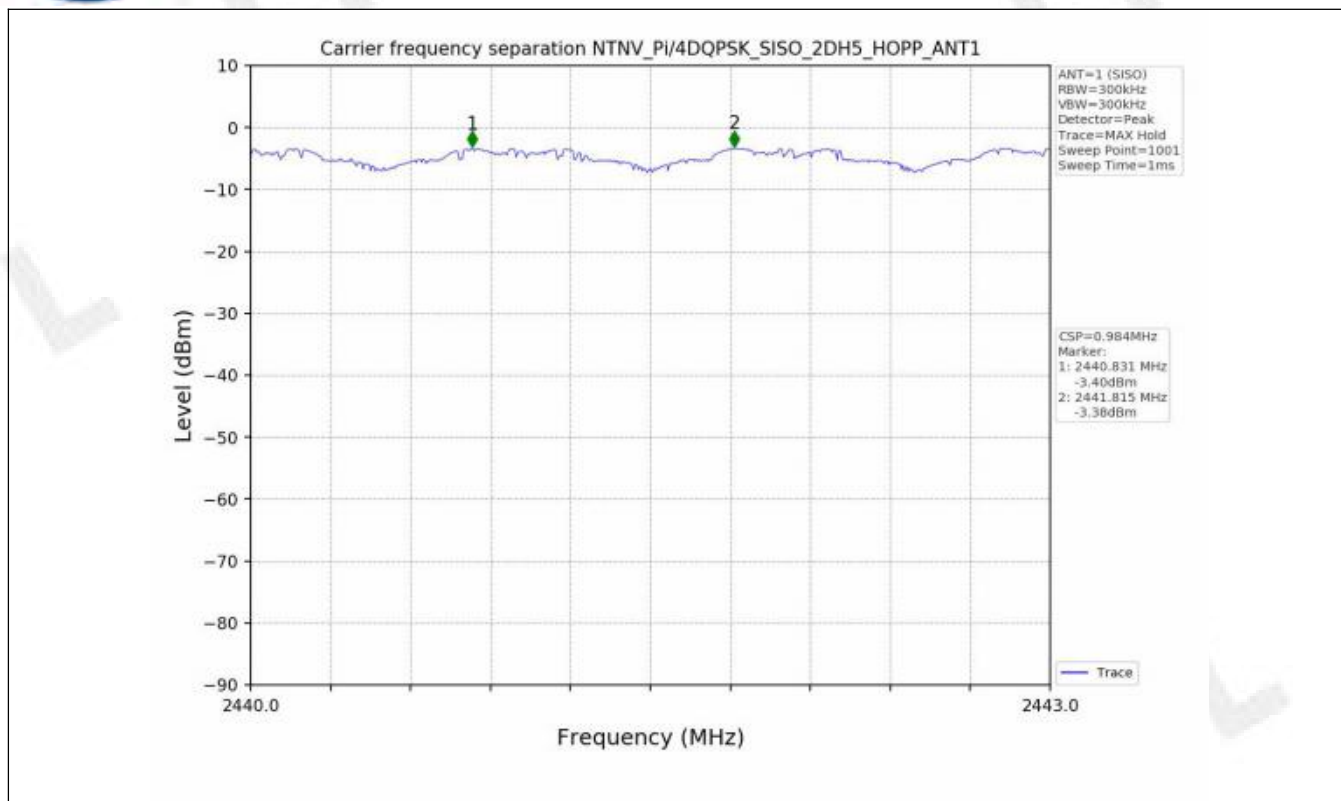
### 3. Carrier frequency separation

#### 3.1 Test Result

| Test Mode | TX Type | ANT No. | Channel Separation (MHz) | 20dB Bandwidth (MHz) | Limits (MHz) | Verdict |
|-----------|---------|---------|--------------------------|----------------------|--------------|---------|
| GFSK      | SISO    | 1       | 1.012                    | 0.939                | $\geq 0.939$ | PASS    |
| Pi/4DQPSK | SISO    | 1       | 0.984                    | 1.322                | $\geq 0.881$ | PASS    |
| 8DPSK     | SISO    | 1       | 1.038                    | 1.317                | $\geq 0.878$ | PASS    |

#### 3.2 Test Graph







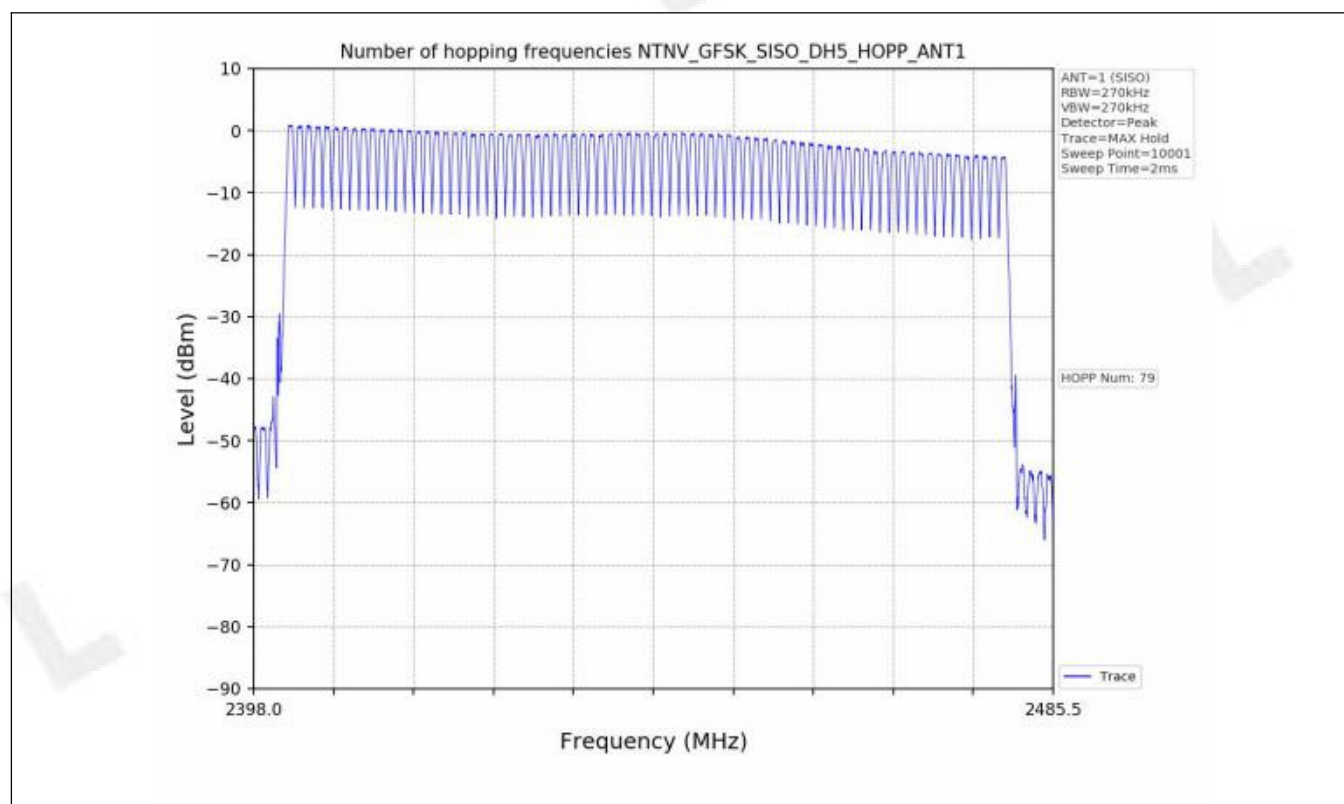


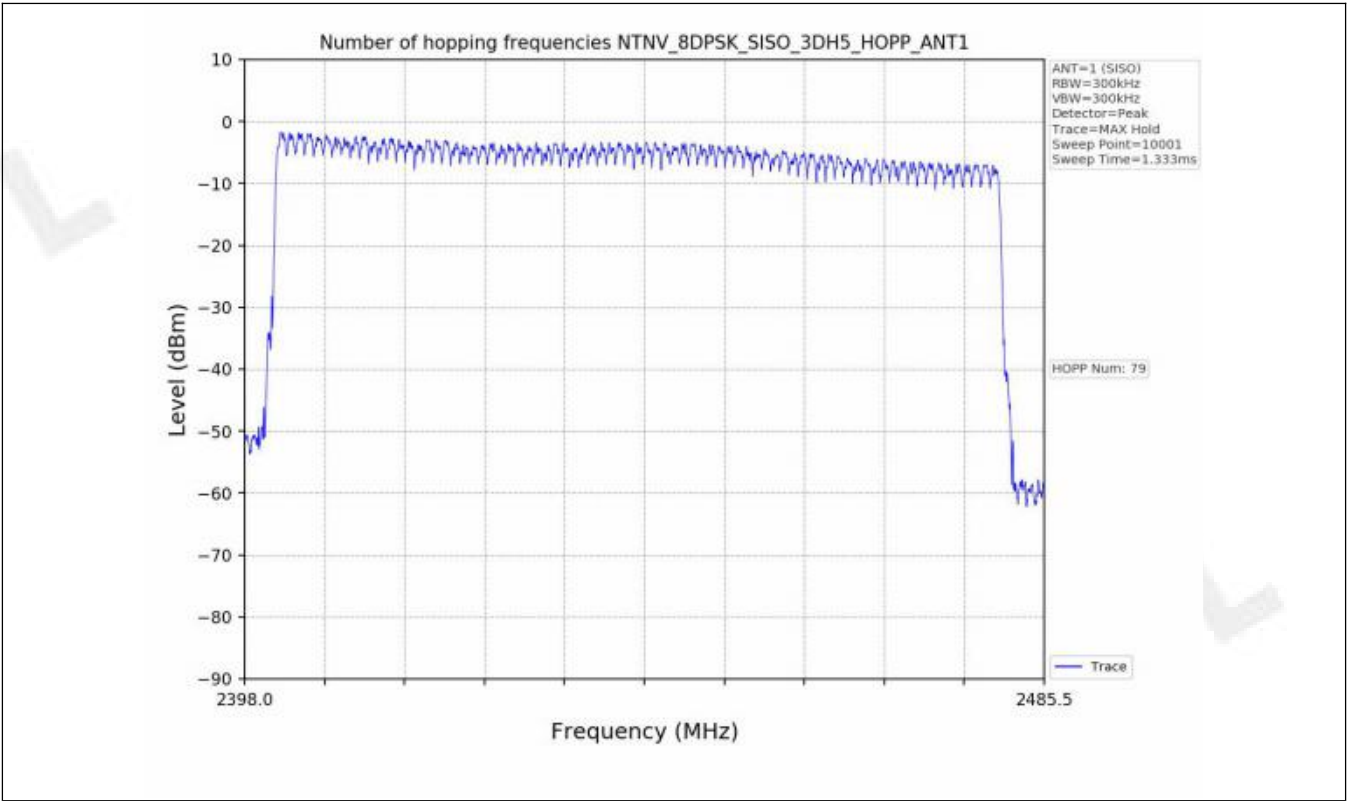
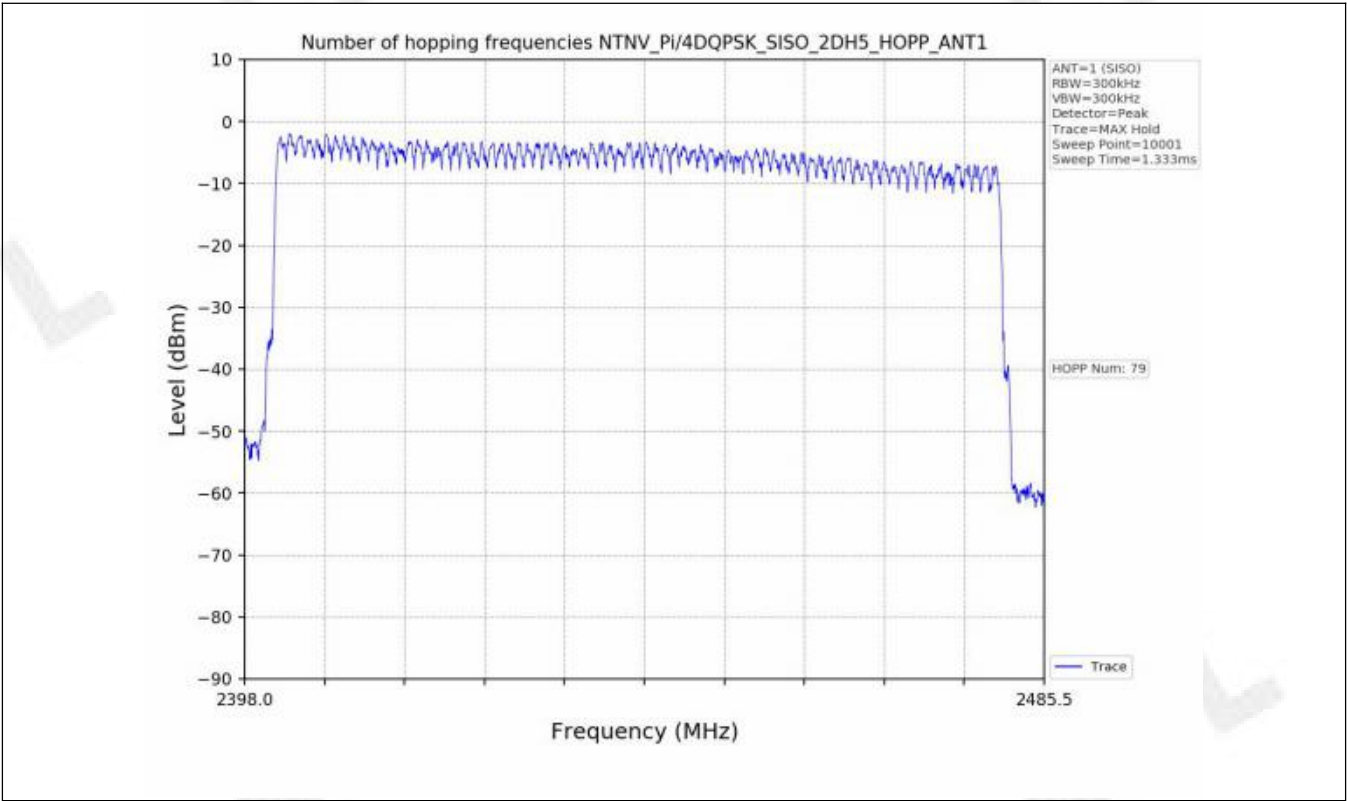
## 4. Number of hopping frequencies

### 4.1 Test Result

| Test Mode | TX Type | ANT No. | Num of Hopping Frequencies | Limits    | Verdict |
|-----------|---------|---------|----------------------------|-----------|---------|
| GFSK      | SISO    | 1       | 79                         | $\geq 15$ | PASS    |
| PSK4DQPSK | SISO    | 1       | 79                         | $\geq 15$ | PASS    |
| 8DPSK     | SISO    | 1       | 79                         | $\geq 15$ | PASS    |

### 4.2 Test Graph





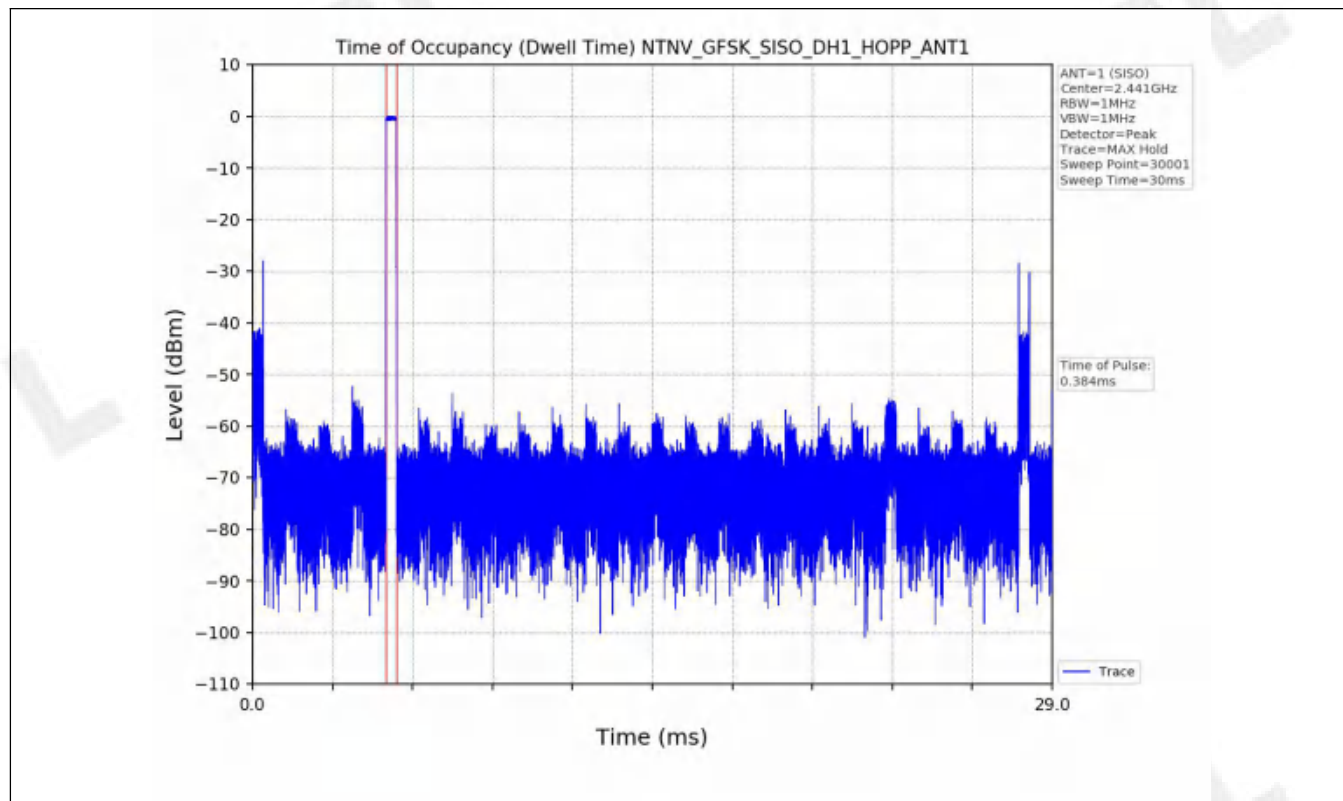


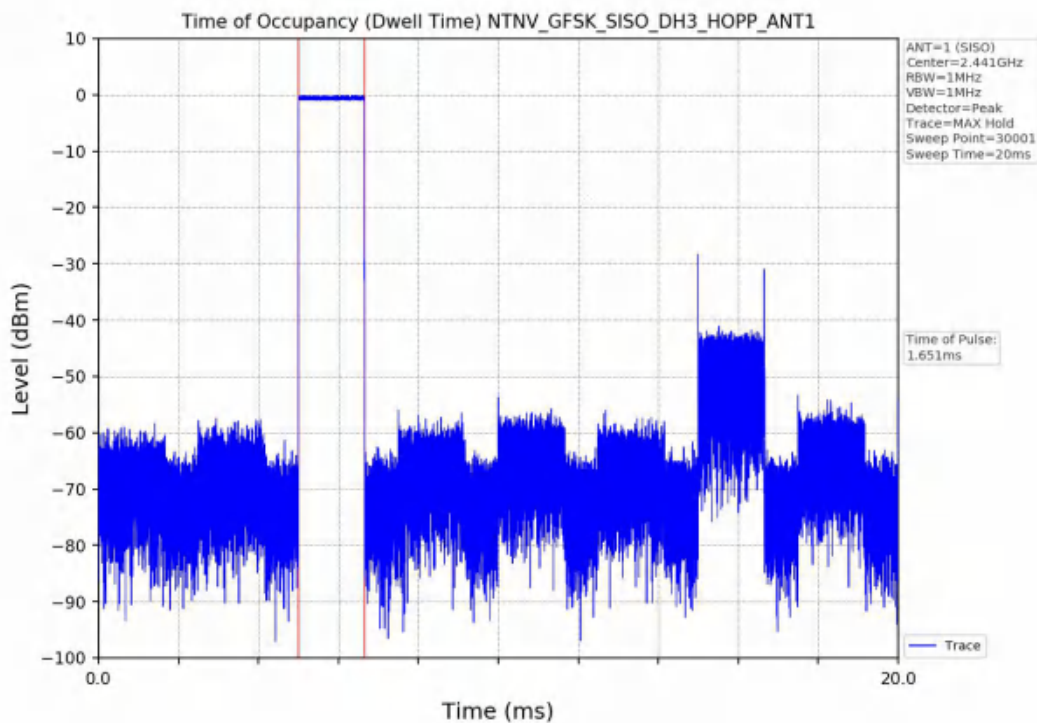
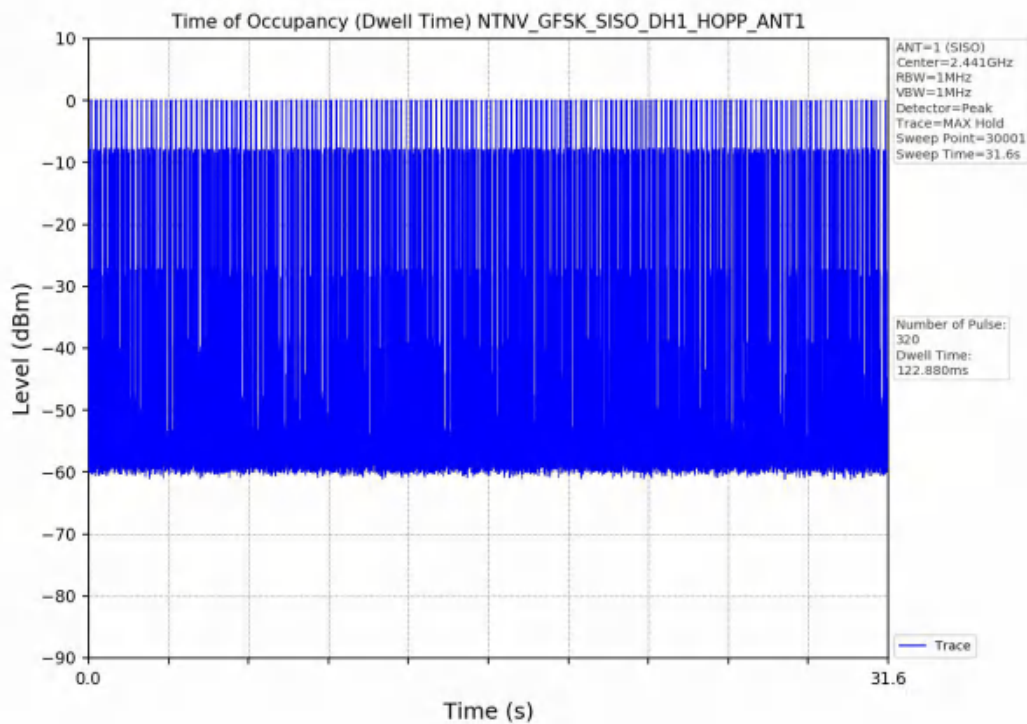
## 5. Time of Occupancy (Dwell Time)

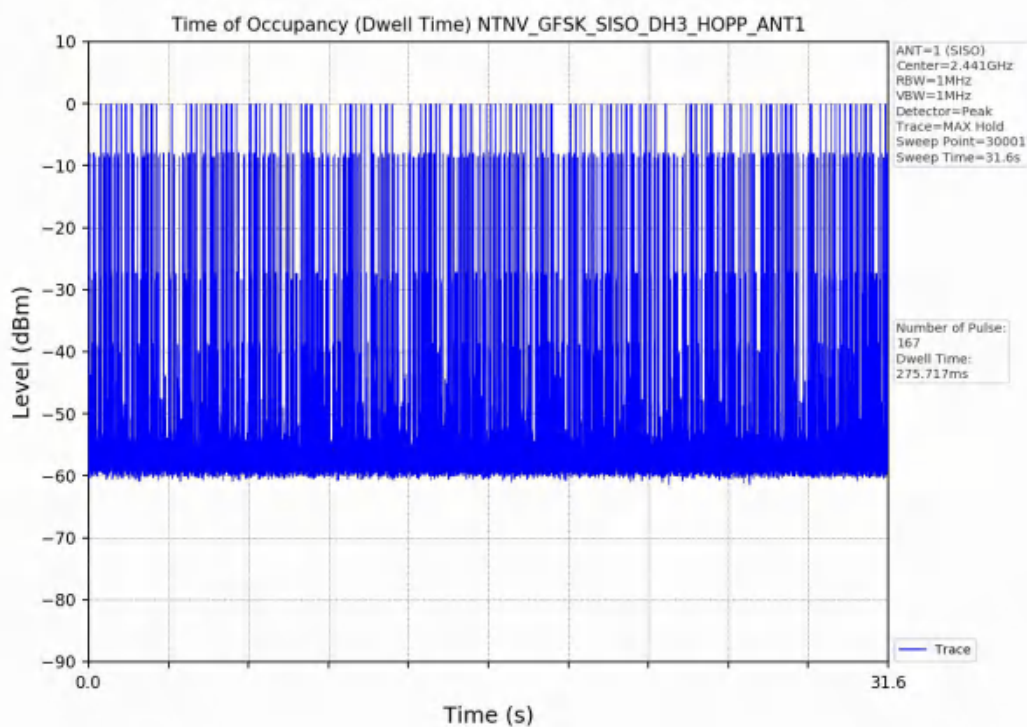
### 5.1 Test Result

| Test Mode | Packet Type | TX Type | ANT No. | Duration of Single Pulse (ms) | Observation Period (s) | Num of Pulse in Observation Period | Dwell Time (ms) | Limits (ms) | Verdict |
|-----------|-------------|---------|---------|-------------------------------|------------------------|------------------------------------|-----------------|-------------|---------|
| GFSK      | DH1         | SISO    | 1       | 0.384                         | 31.6                   | 320                                | 122.880         | ≤400        | PASS    |
|           | DH3         | SISO    | 1       | 1.651                         | 31.6                   | 167                                | 275.717         | ≤400        | PASS    |
|           | DH5         | SISO    | 1       | 2.899                         | 31.6                   | 95                                 | 275.405         | ≤400        | PASS    |
| Pi/4DQPSK | 2DH1        | SISO    | 1       | 0.405                         | 31.6                   | 320                                | 129.600         | ≤400        | PASS    |
|           | 2DH3        | SISO    | 1       | 1.657                         | 31.6                   | 154                                | 255.178         | ≤400        | PASS    |
|           | 2DH5        | SISO    | 1       | 2.905                         | 31.6                   | 105                                | 305.025         | ≤400        | PASS    |
| 8DPSK     | 3DH1        | SISO    | 1       | 0.417                         | 31.6                   | 320                                | 133.440         | ≤400        | PASS    |
|           | 3DH3        | SISO    | 1       | 1.655                         | 31.6                   | 158                                | 261.490         | ≤400        | PASS    |
|           | 3DH5        | SISO    | 1       | 2.908                         | 31.6                   | 103                                | 299.524         | ≤400        | PASS    |

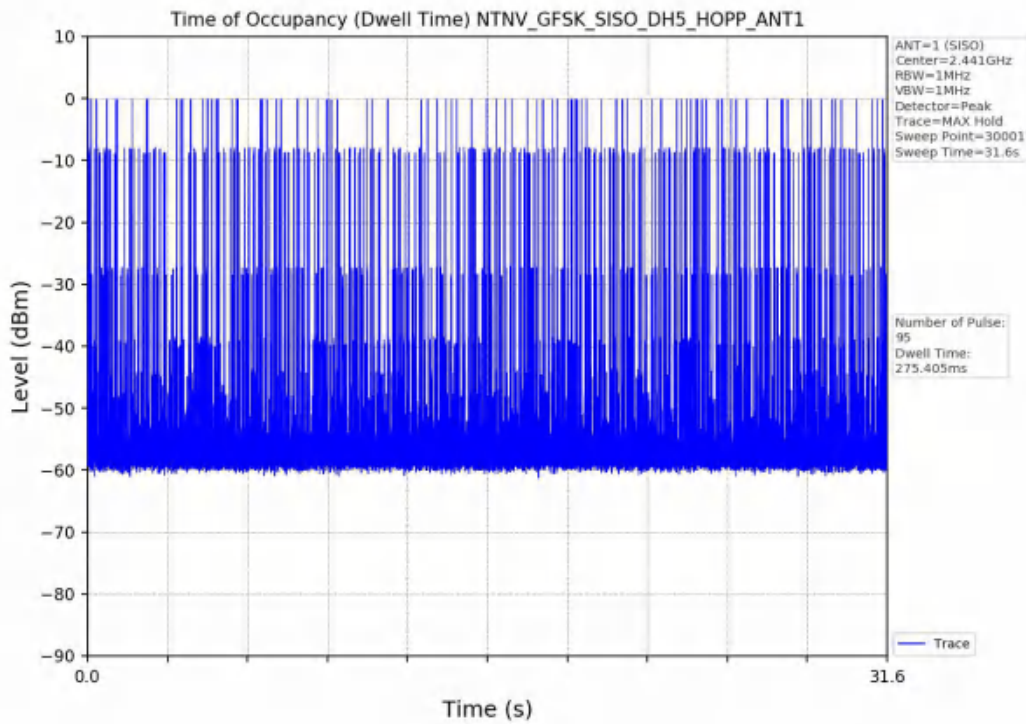
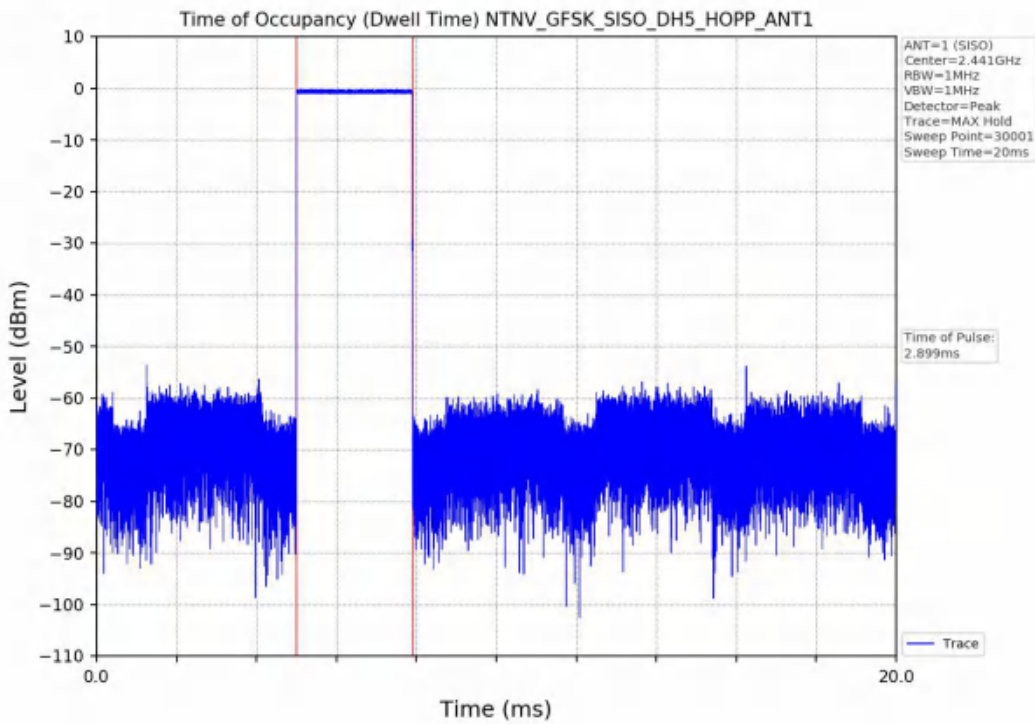
### 5.2 Test Graph



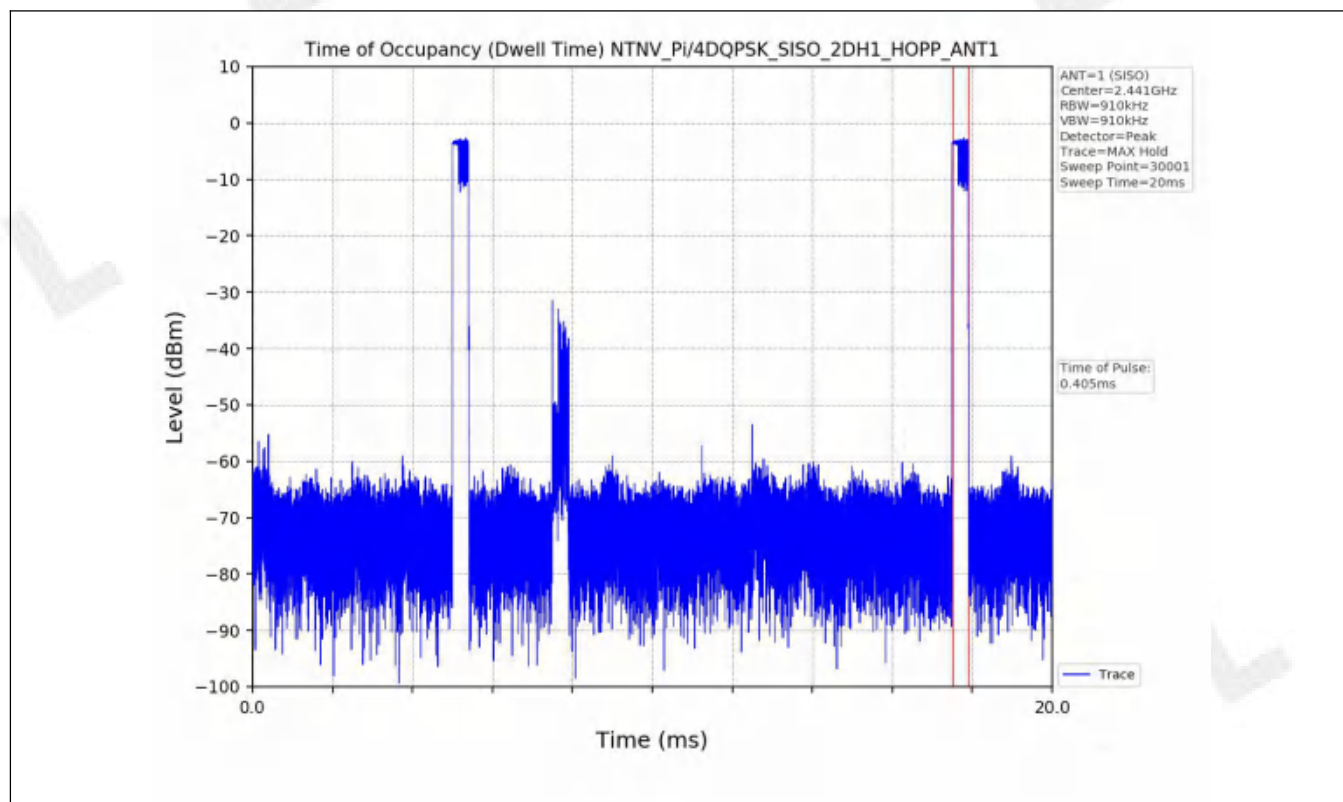


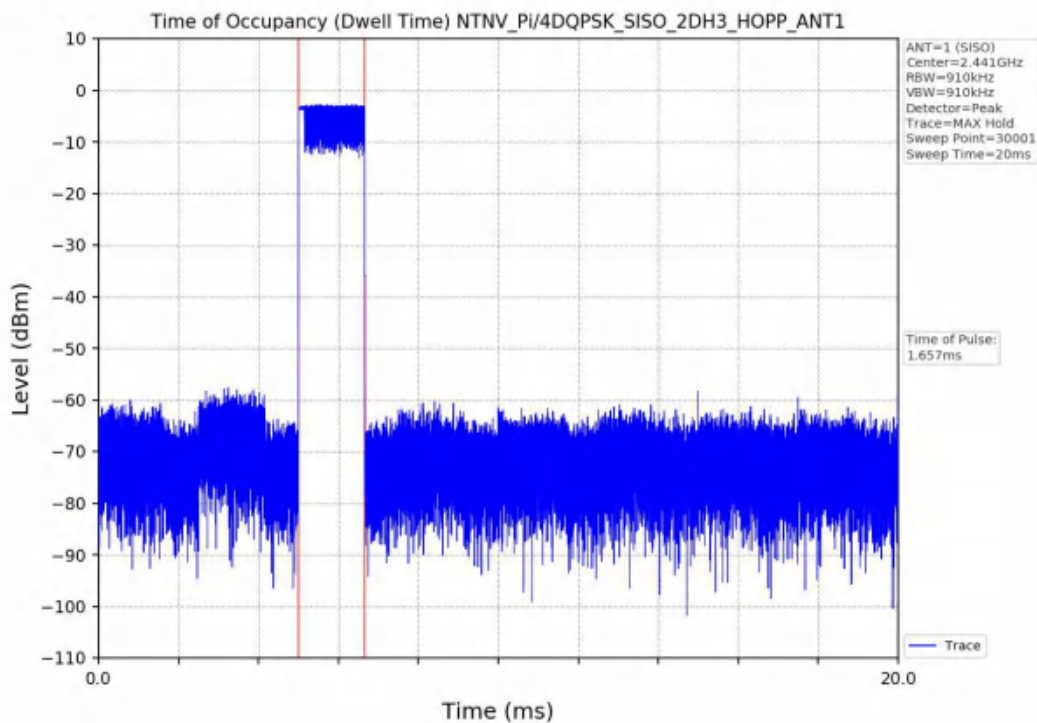
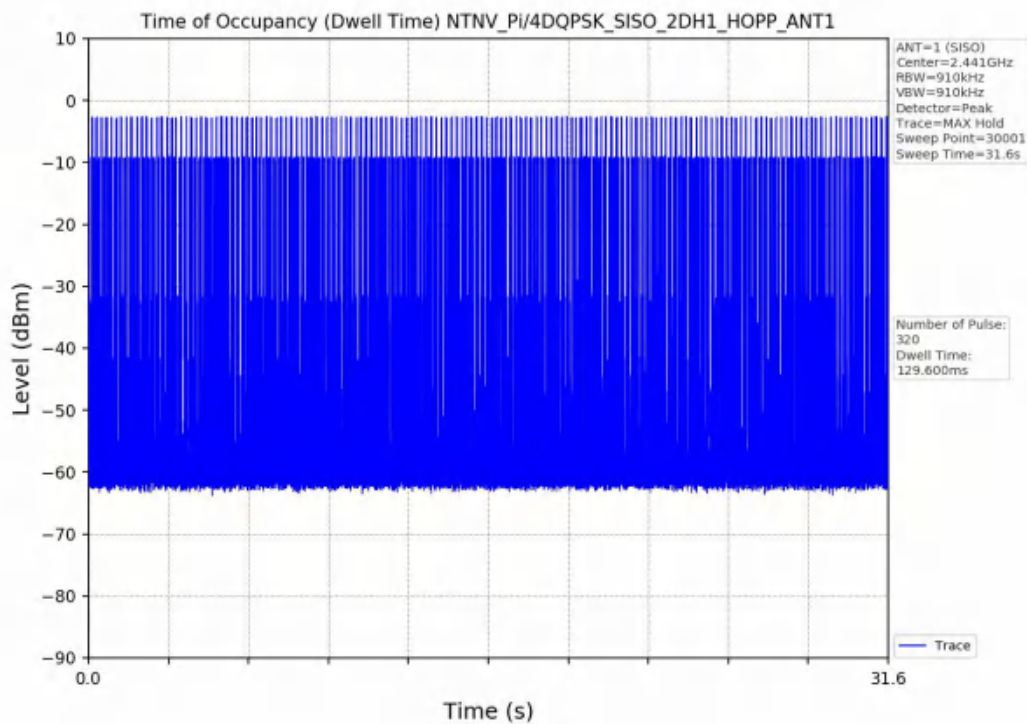


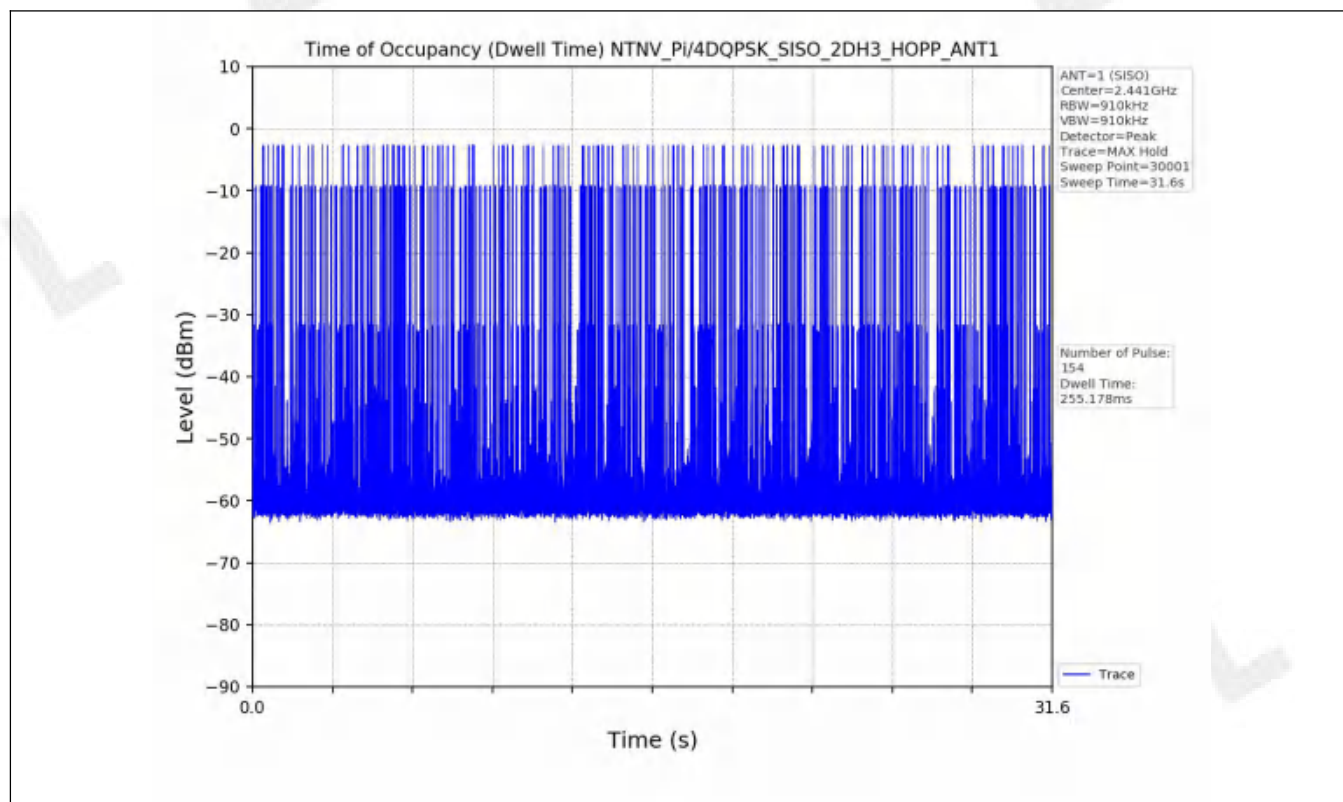


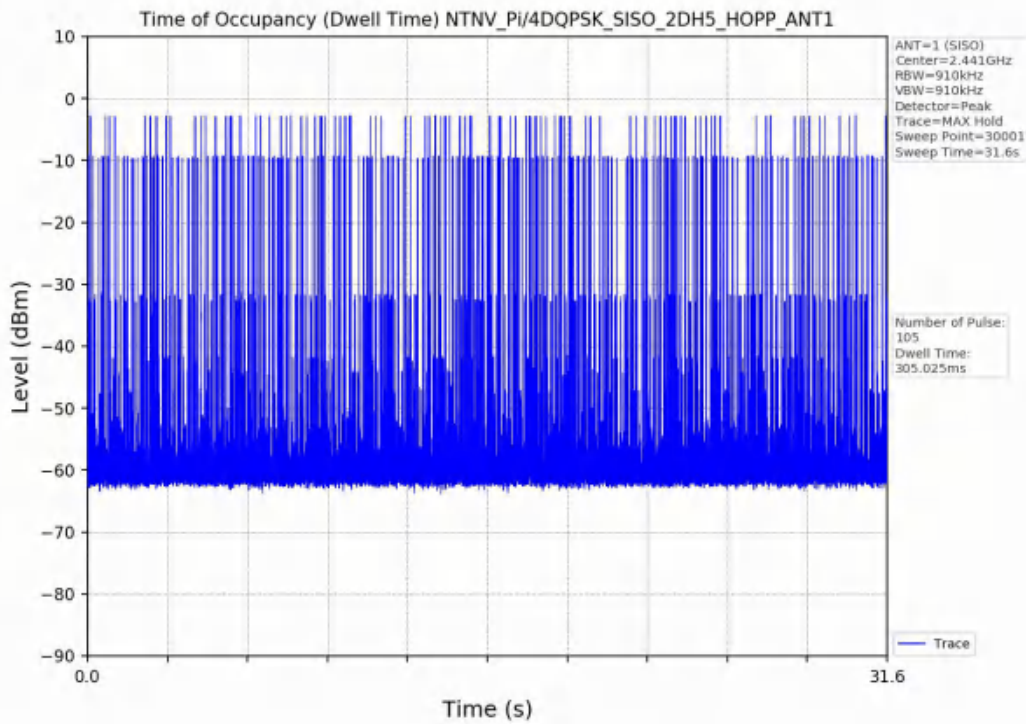
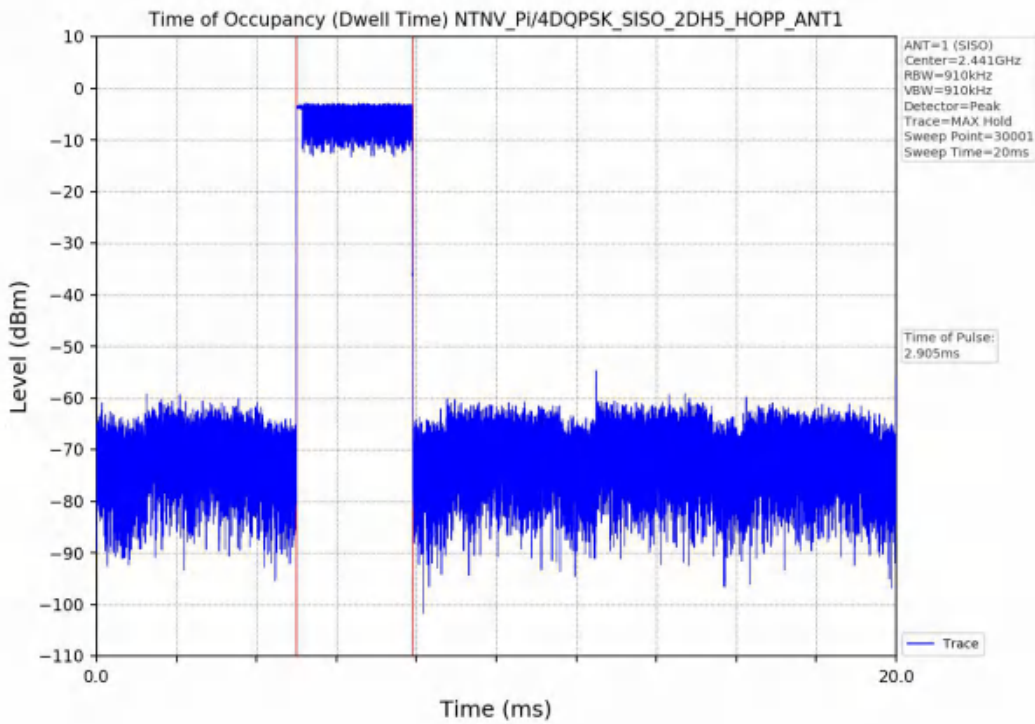


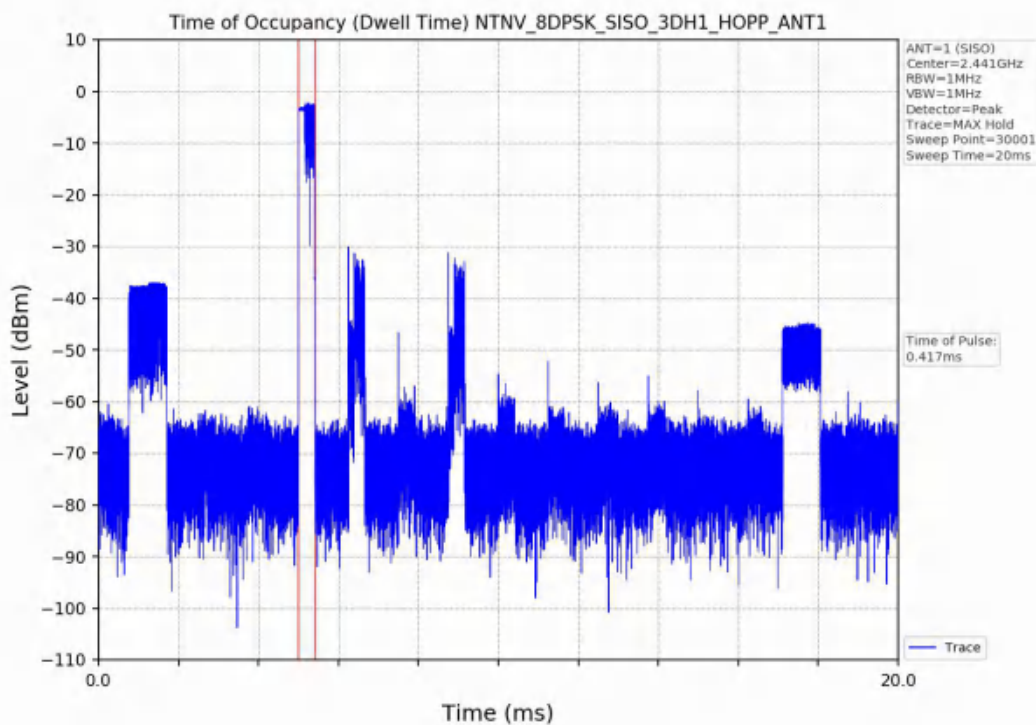




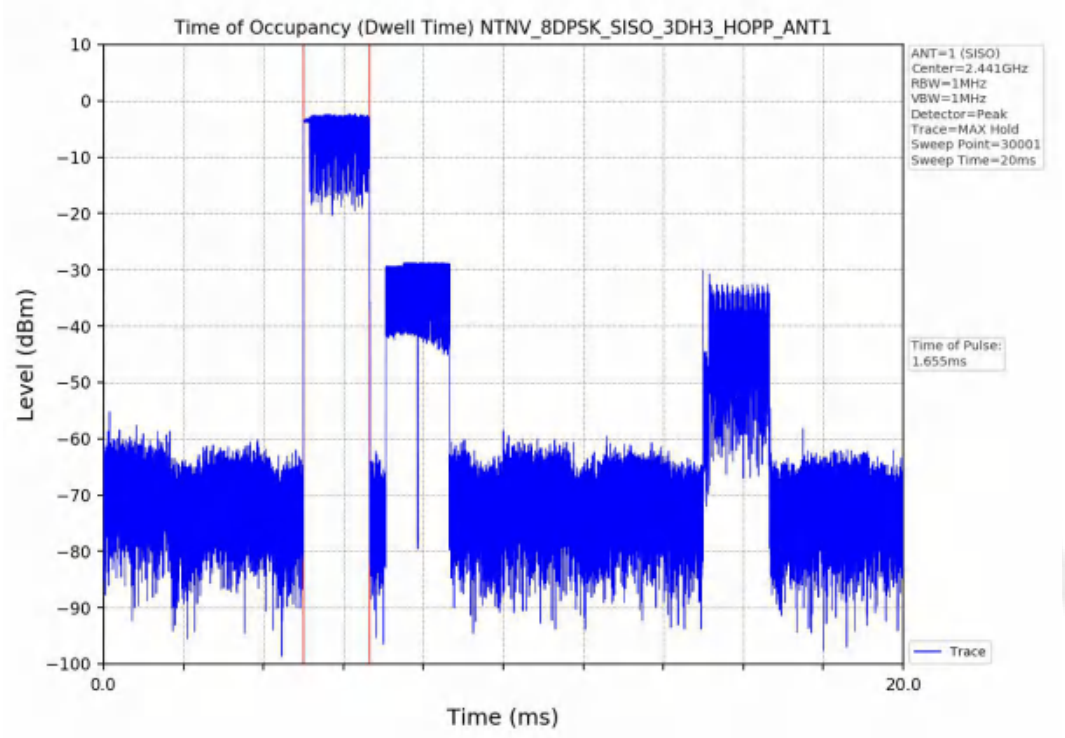
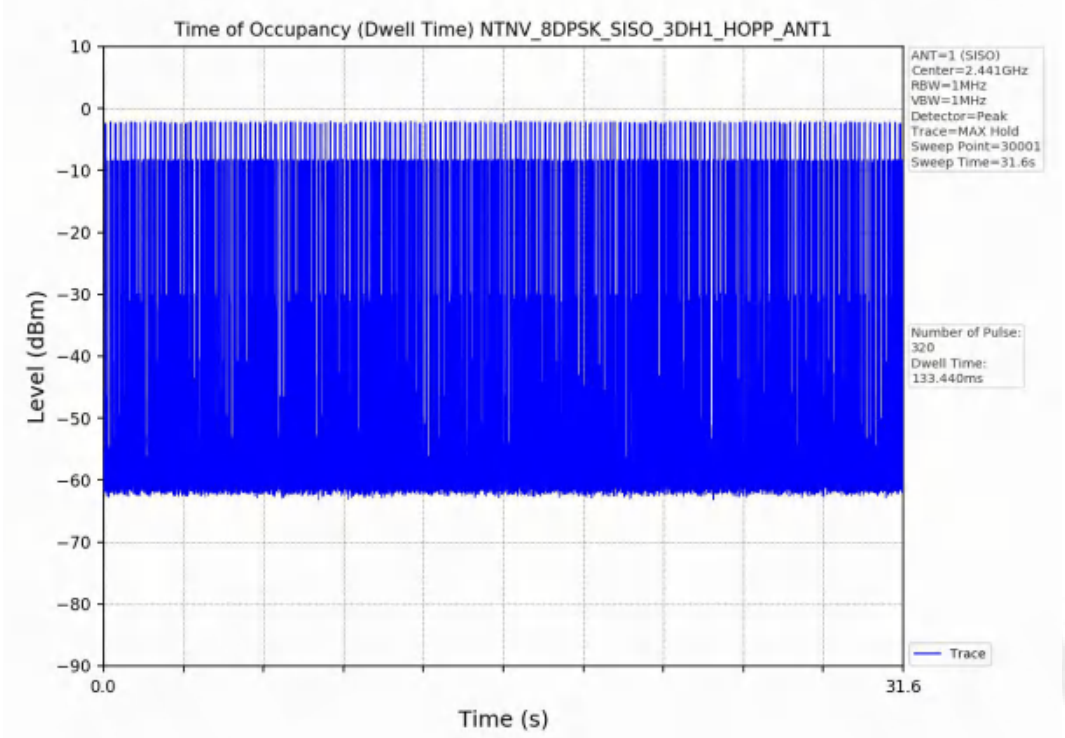




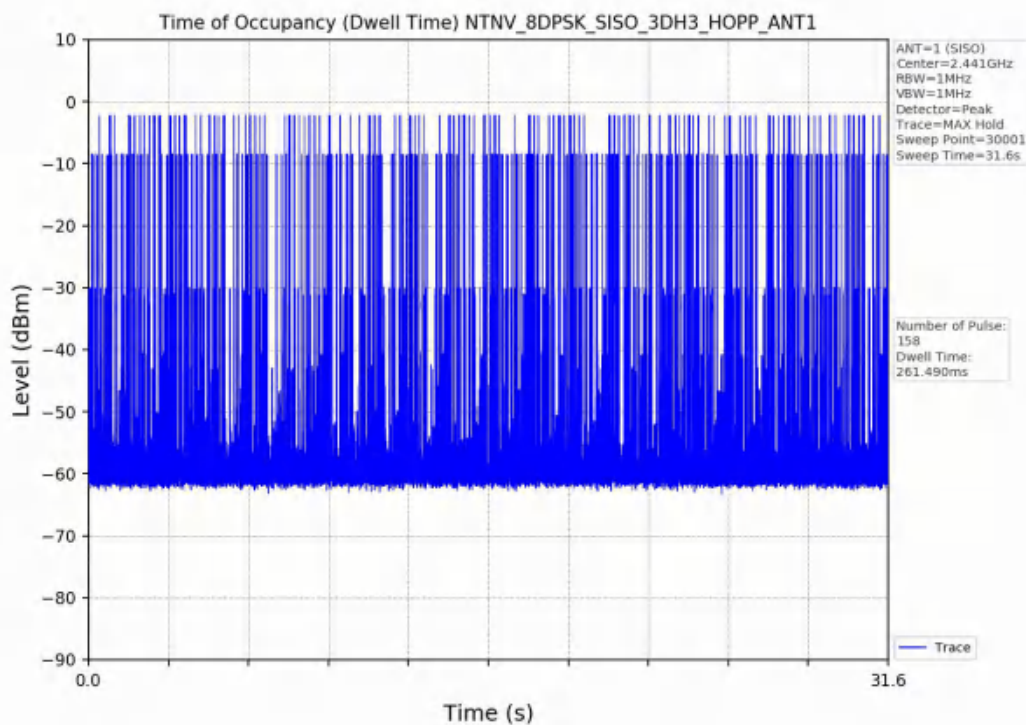


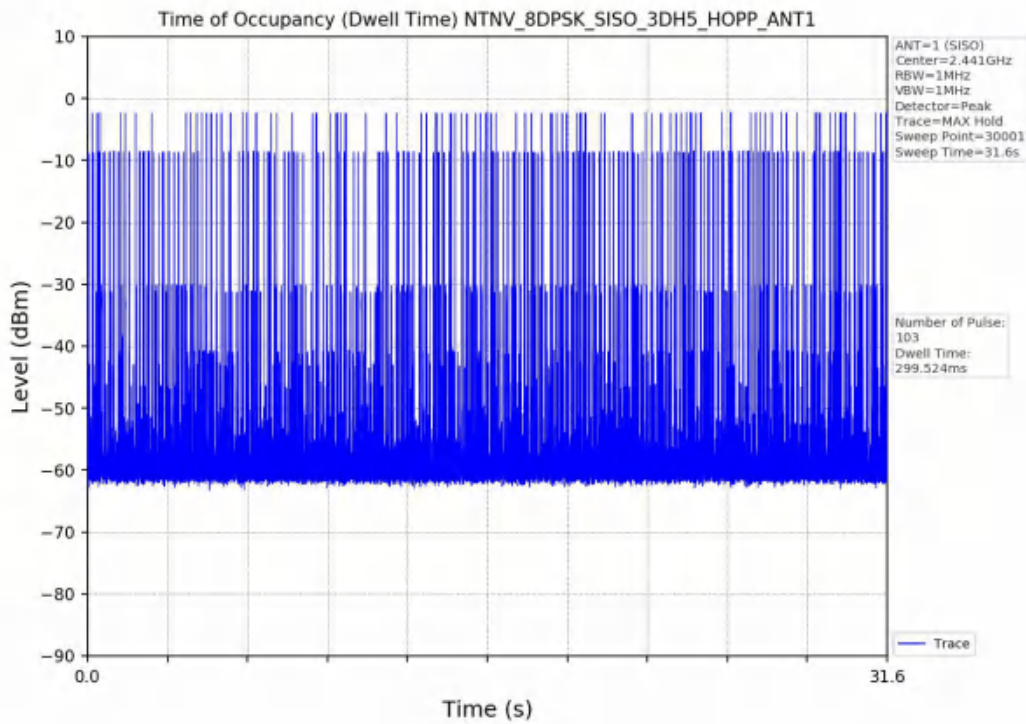
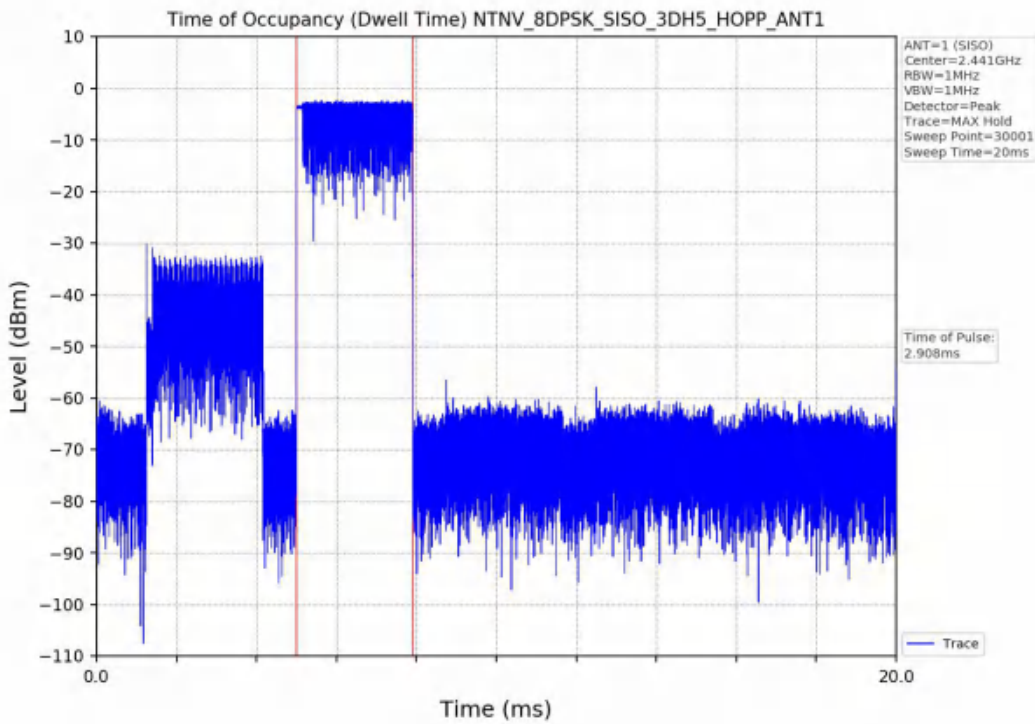














## 6. Unwanted Emissions in Non-restricted Frequency Bands

### 6.1 Test Result

| Test Mode | Frequency (MHz) | TX Type | ANT No. | Spurious Conducted Emission (dBm) | Limits (dBm) | Verdict |
|-----------|-----------------|---------|---------|-----------------------------------|--------------|---------|
| GFSK      | 2402            | SISO    | 1       | Refer to test graph               | -19.20       | PASS    |
|           | 2441            | SISO    | 1       | Refer to test graph               | -19.20       | PASS    |
|           | 2480            | SISO    | 1       | Refer to test graph               | -19.20       | PASS    |
|           | Hopping         | SISO    | 1       | Refer to test graph               | -19.20       | PASS    |
| Pi/4DQPSK | 2402            | SISO    | 1       | Refer to test graph               | -19.35       | PASS    |
|           | 2441            | SISO    | 1       | Refer to test graph               | -19.35       | PASS    |
|           | 2480            | SISO    | 1       | Refer to test graph               | -19.35       | PASS    |
|           | Hopping         | SISO    | 1       | Refer to test graph               | -19.35       | PASS    |
| 8DPSK     | 2402            | SISO    | 1       | Refer to test graph               | -19.27       | PASS    |
|           | 2441            | SISO    | 1       | Refer to test graph               | -19.27       | PASS    |
|           | 2480            | SISO    | 1       | Refer to test graph               | -19.27       | PASS    |
|           | Hopping         | SISO    | 1       | Refer to test graph               | -19.27       | PASS    |

### 6.2 Test Graph

