



Appendix for 15.247

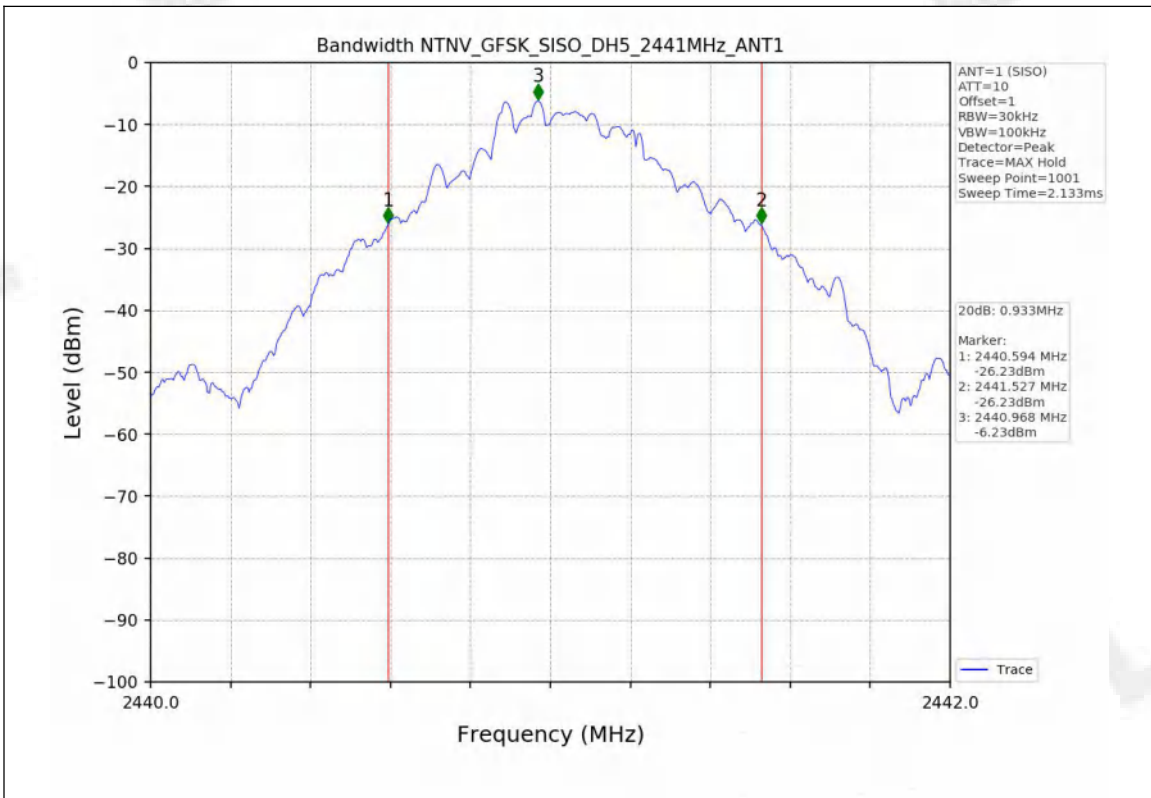
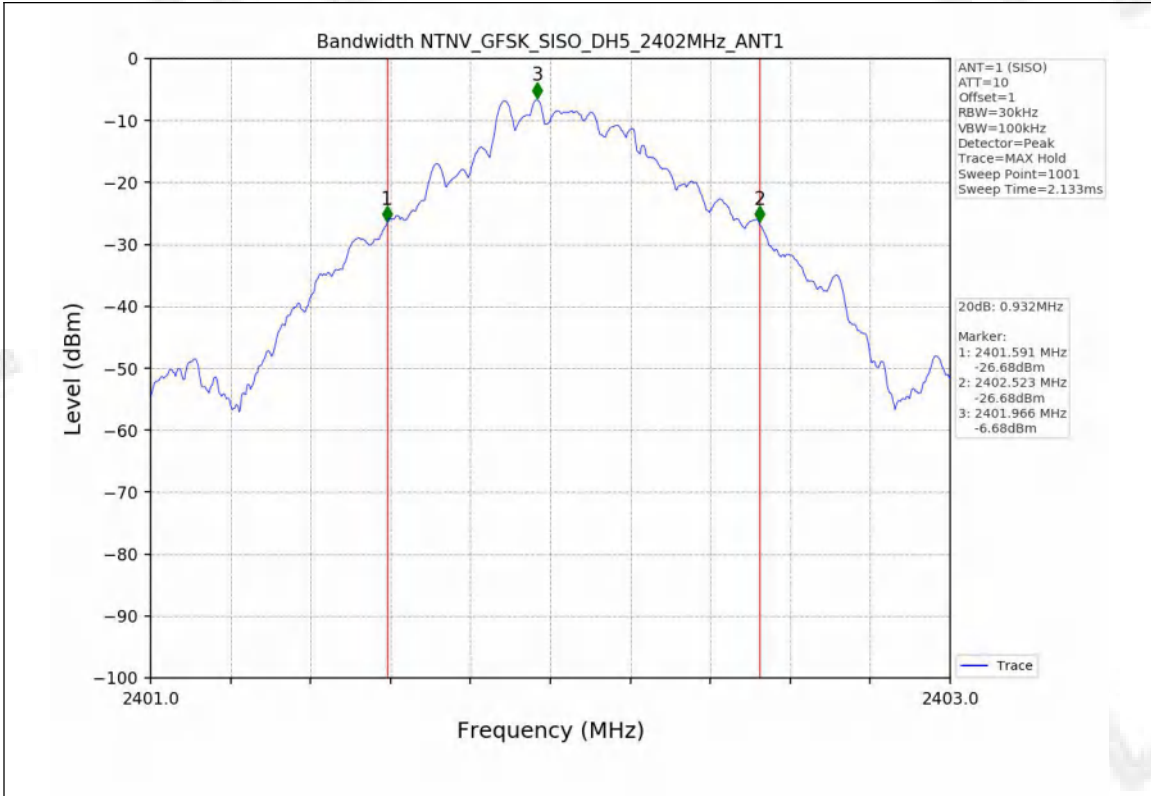
1. Bandwidth

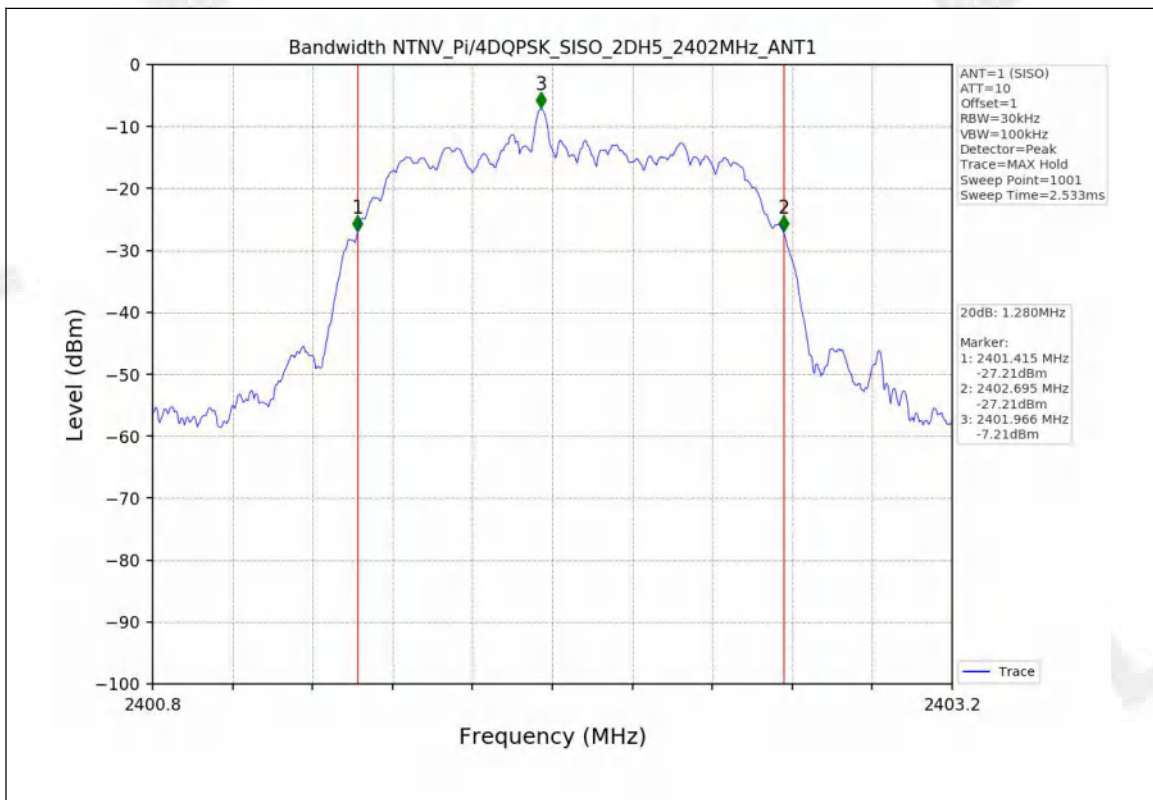
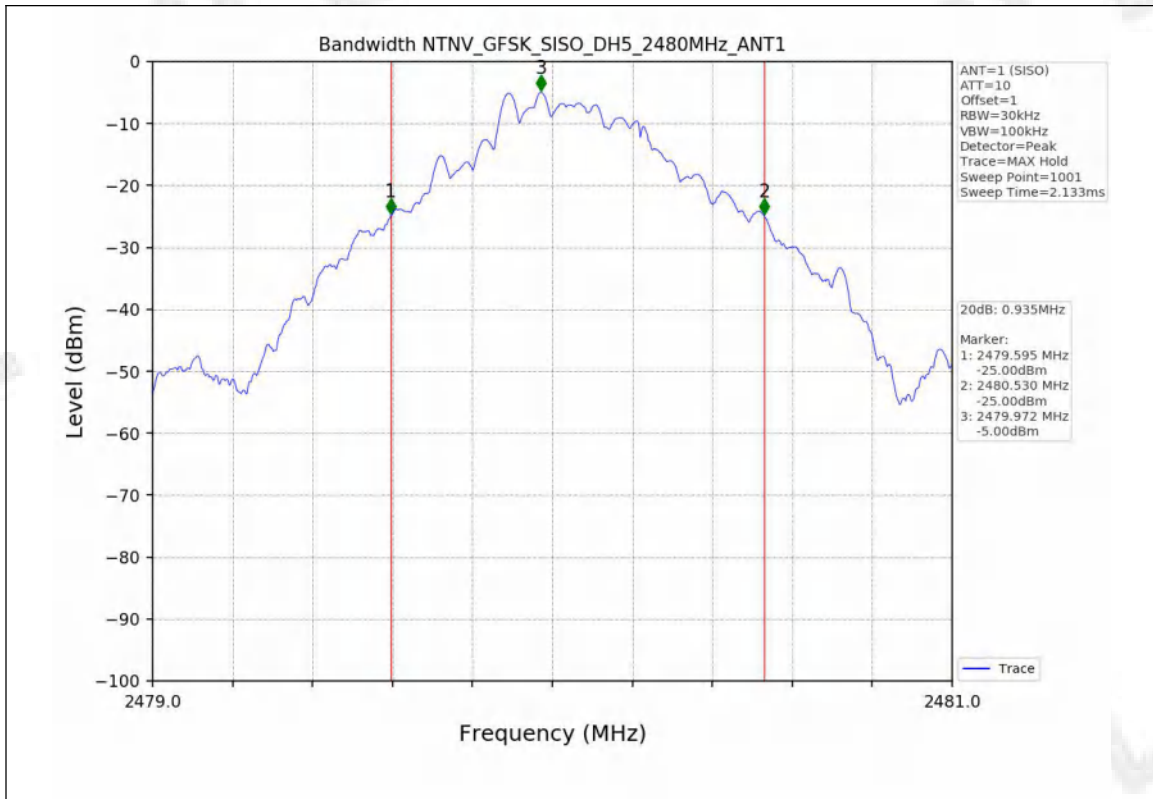
1.1 Test Result

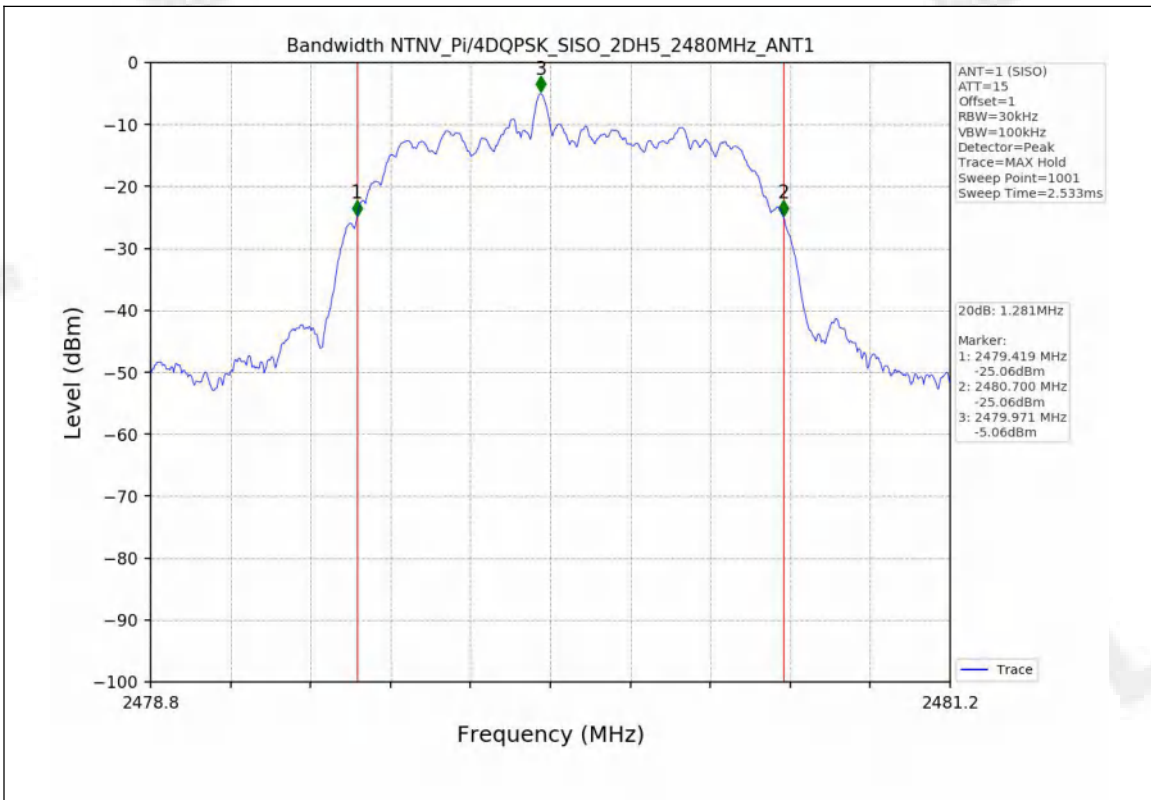
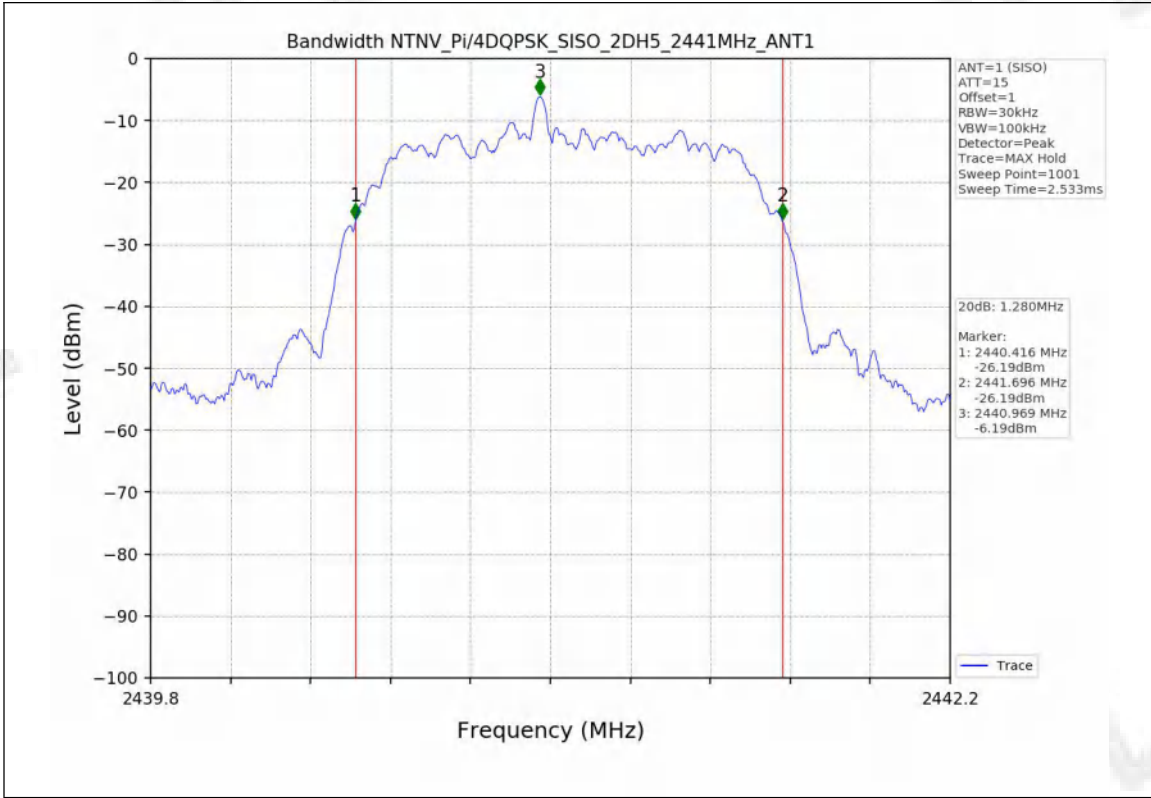
| Test Mode | Frequency (MHz) | TX Type | ANT No. | 20dB Bandwidth | Verdict |
|-----------|-----------------|---------|---------|-------------------|---------|
| | | | | Test Result (MHz) | |
| GFSK | 2402 | SISO | 1 | 0.932 | PASS |
| | 2441 | SISO | 1 | 0.933 | PASS |
| | 2480 | SISO | 1 | 0.935 | PASS |
| Pi/4DQPSK | 2402 | SISO | 1 | 1.280 | PASS |
| | 2441 | SISO | 1 | 1.280 | PASS |
| | 2480 | SISO | 1 | 1.281 | PASS |
| 8DPSK | 2402 | SISO | 1 | 1.294 | PASS |
| | 2441 | SISO | 1 | 1.292 | PASS |
| | 2480 | SISO | 1 | 1.289 | PASS |

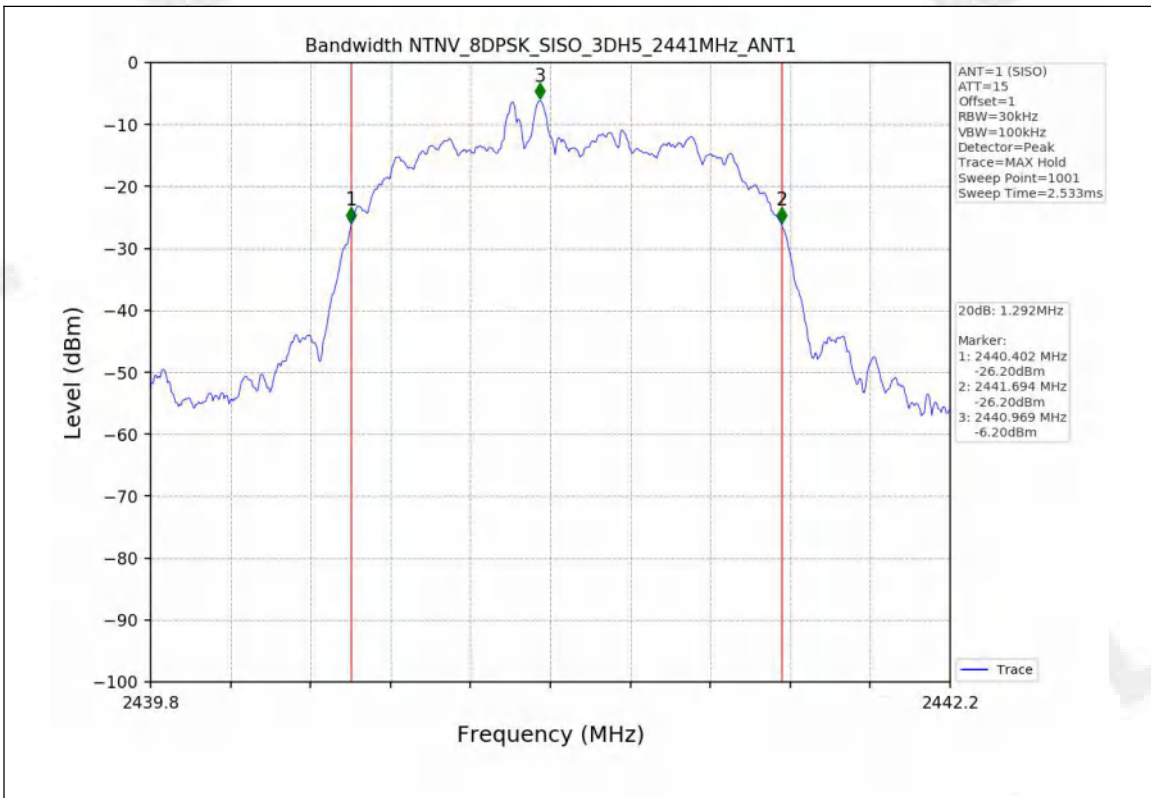
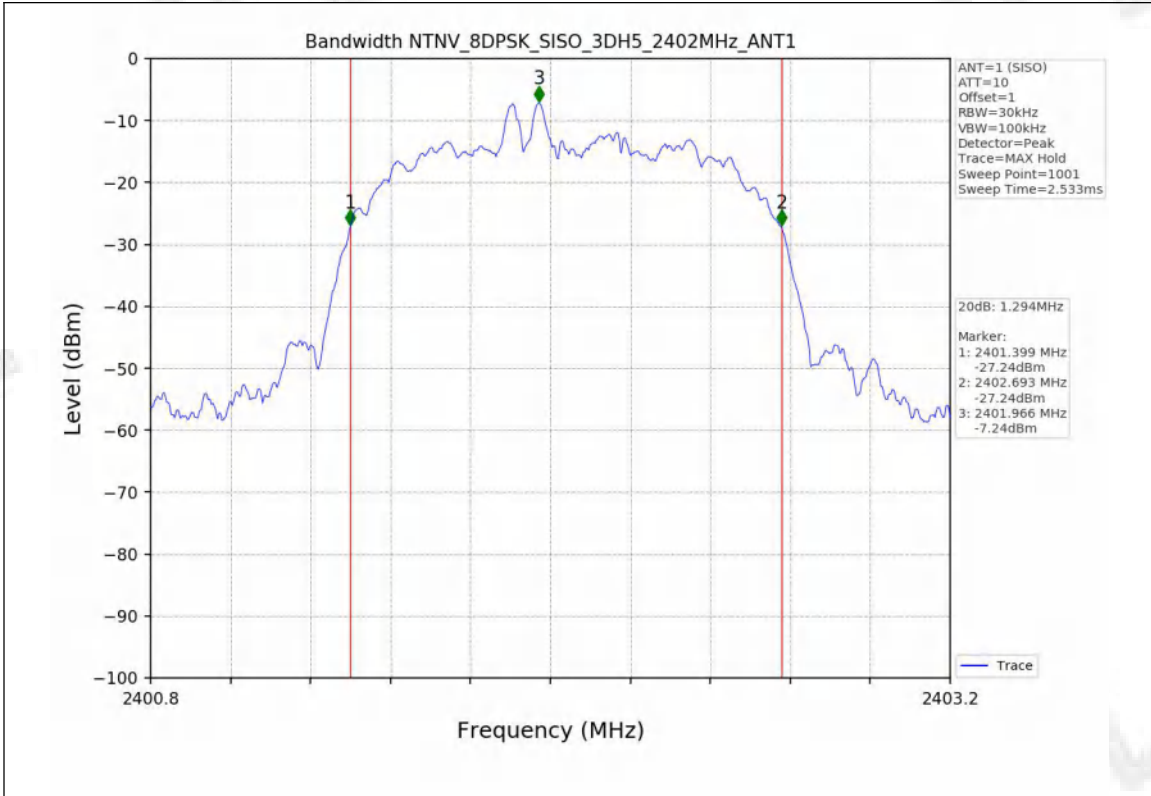
| Test Mode | Frequency (MHz) | TX Type | ANT No. | 99% Occupied Bandwidth | |
|-----------|-----------------|---------|---------|------------------------|---------------------|
| | | | | Test Result (MHz) | |
| GFSK | 2402 | SISO | 1 | 0.846 | Only for Report Use |
| | 2441 | SISO | 1 | 0.848 | Only for Report Use |
| | 2480 | SISO | 1 | 0.849 | Only for Report Use |
| Pi/4DQPSK | 2402 | SISO | 1 | 1.180 | Only for Report Use |
| | 2441 | SISO | 1 | 1.181 | Only for Report Use |
| | 2480 | SISO | 1 | 1.181 | Only for Report Use |
| 8DPSK | 2402 | SISO | 1 | 1.184 | Only for Report Use |
| | 2441 | SISO | 1 | 1.181 | Only for Report Use |
| | 2480 | SISO | 1 | 1.181 | Only for Report Use |

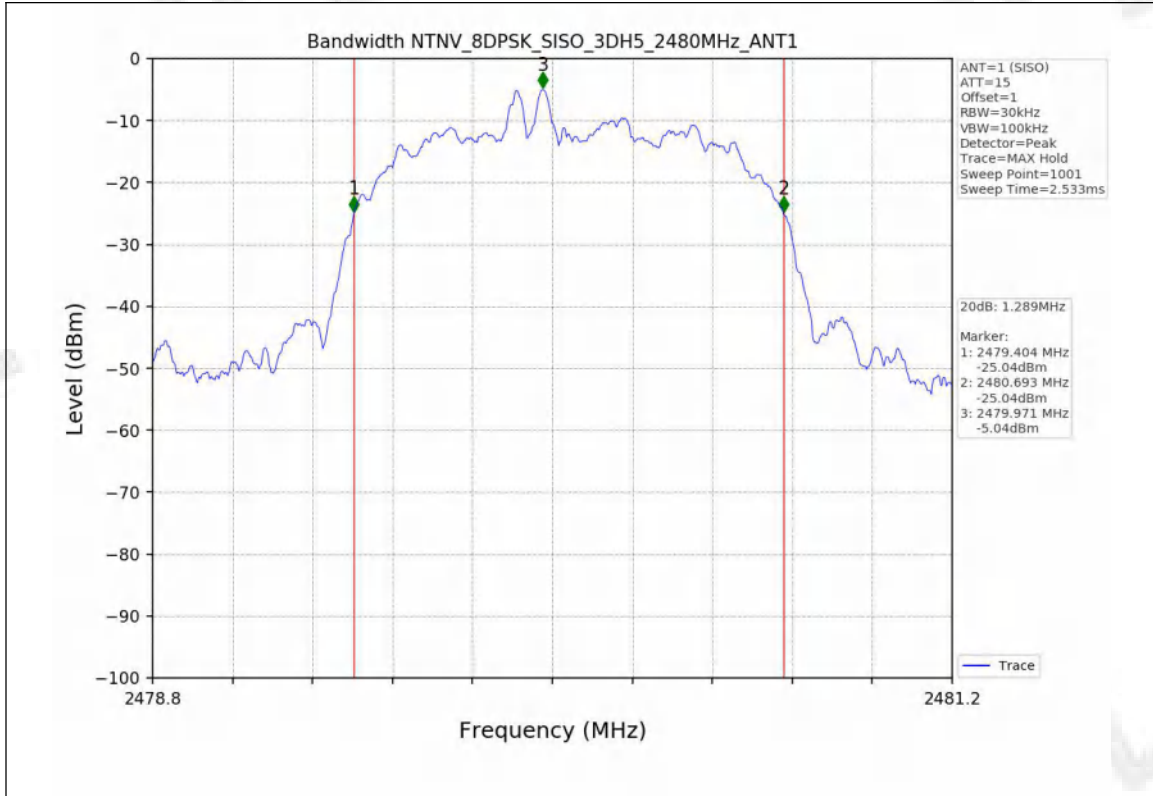
1.2 Test Graph - 20dB Bandwidth



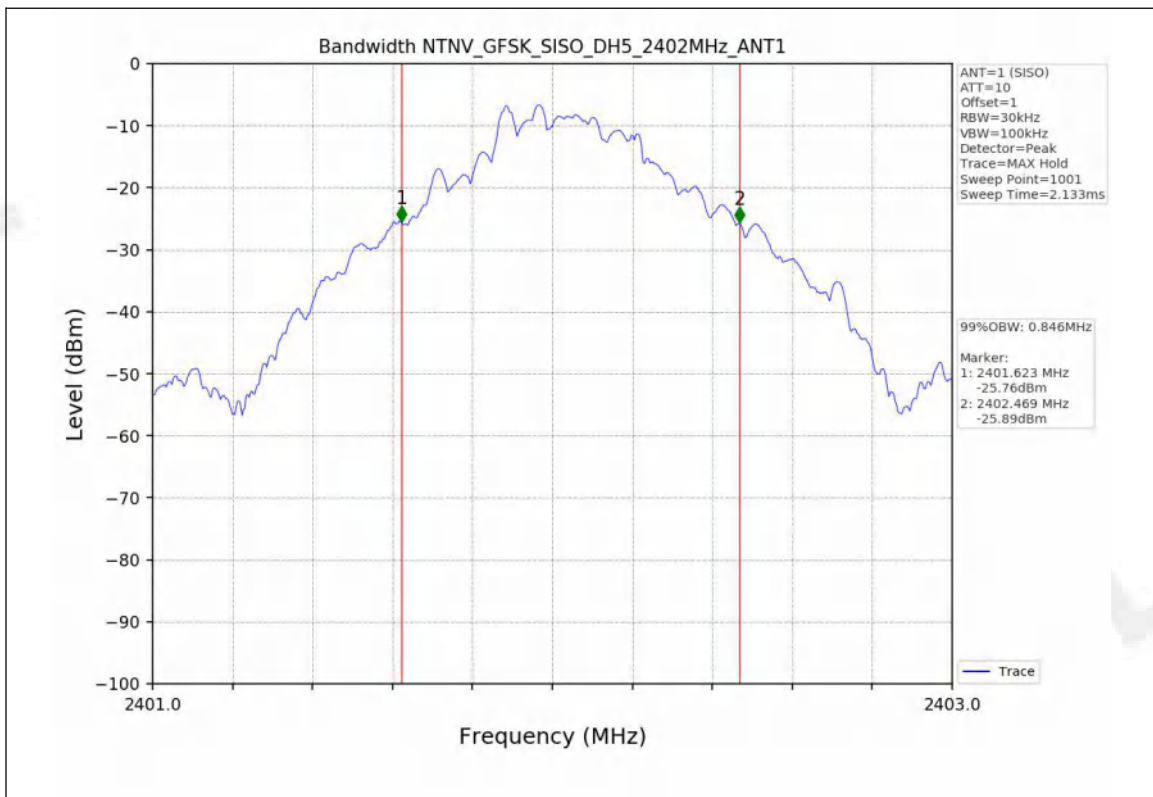


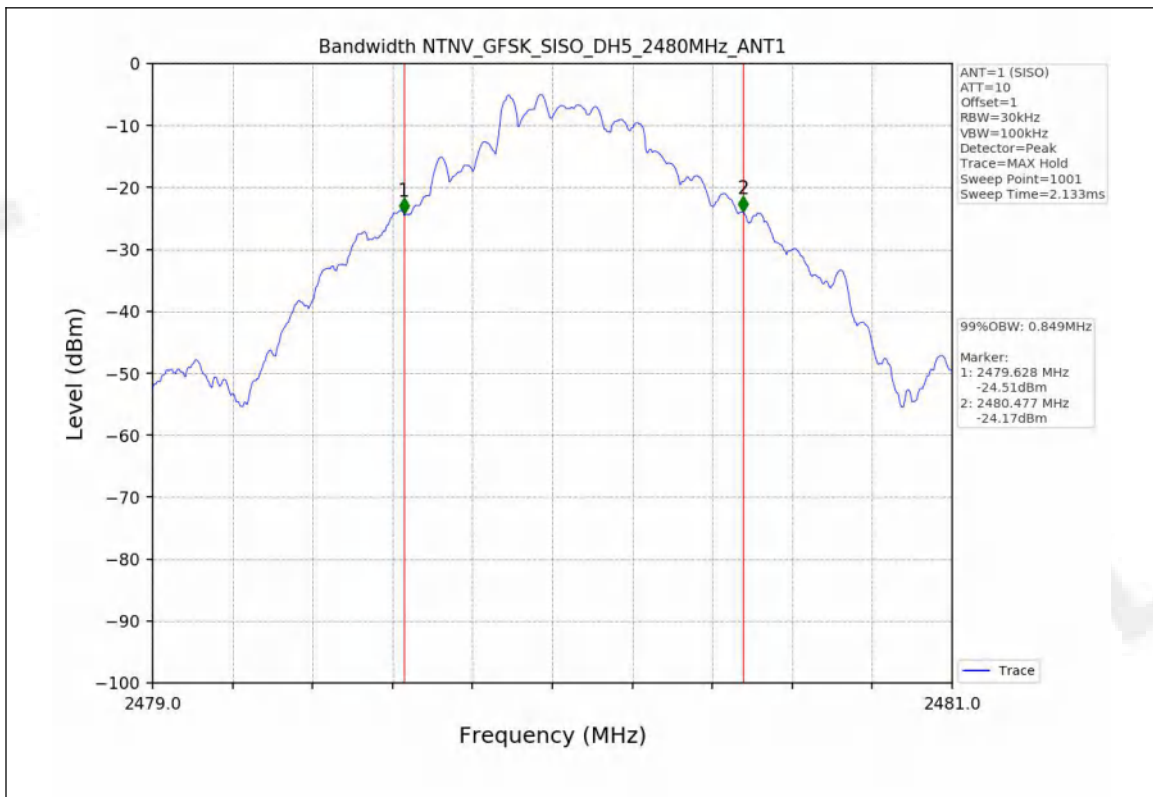
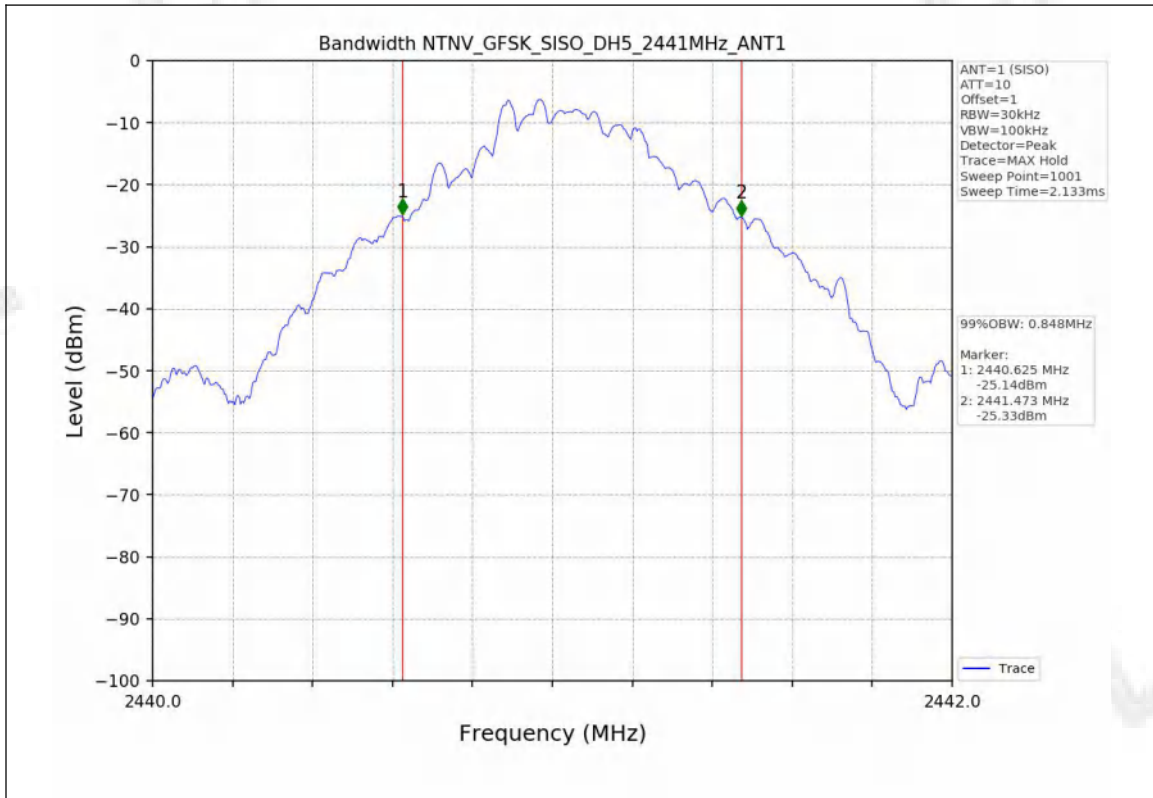


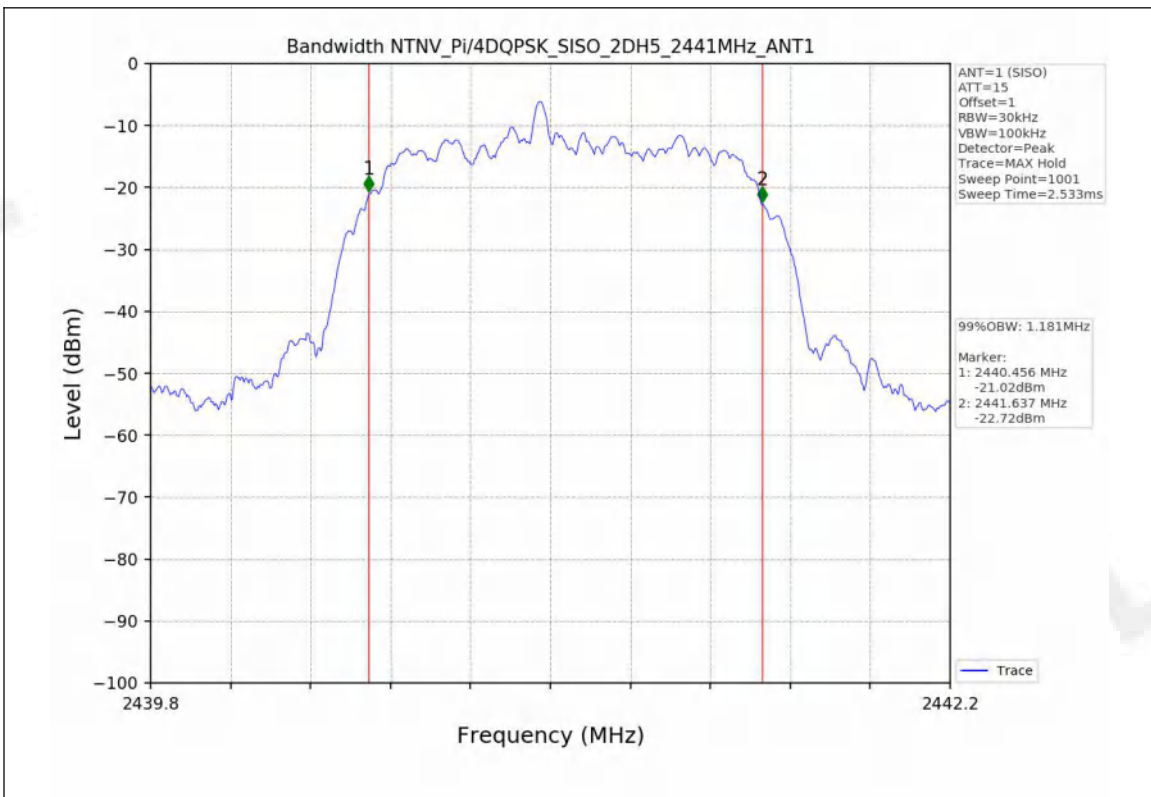
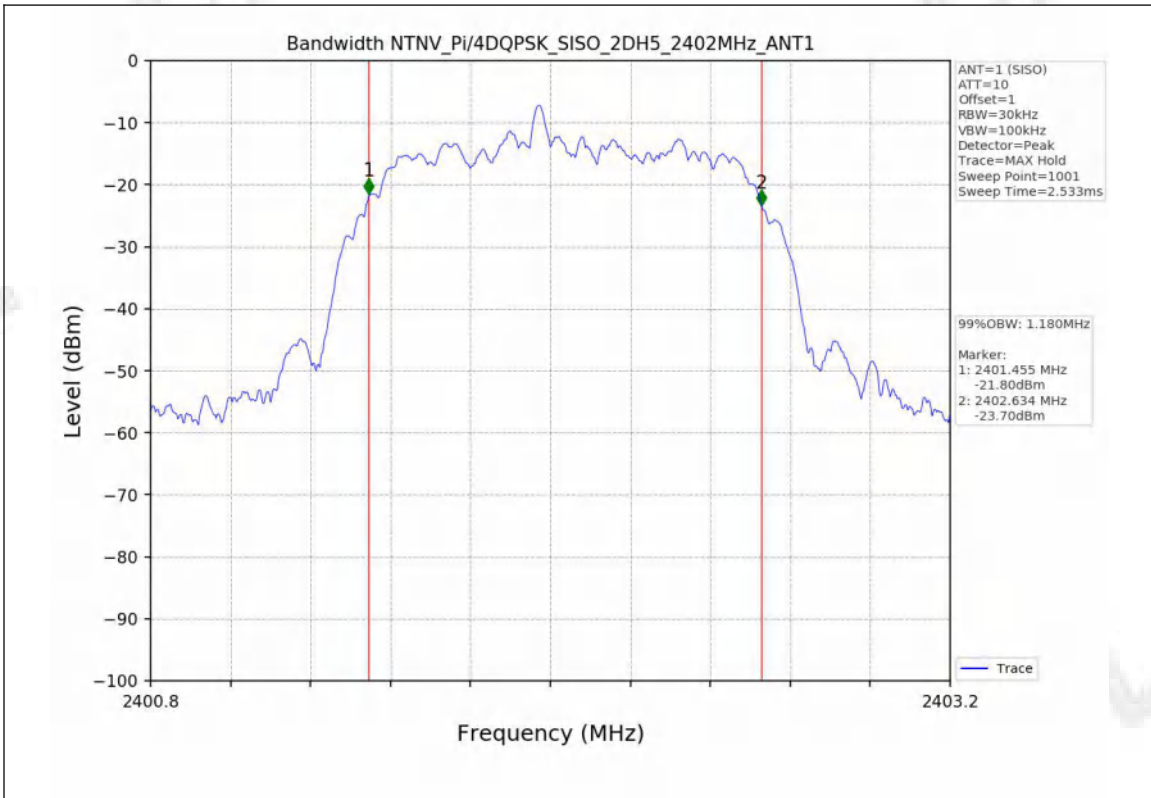


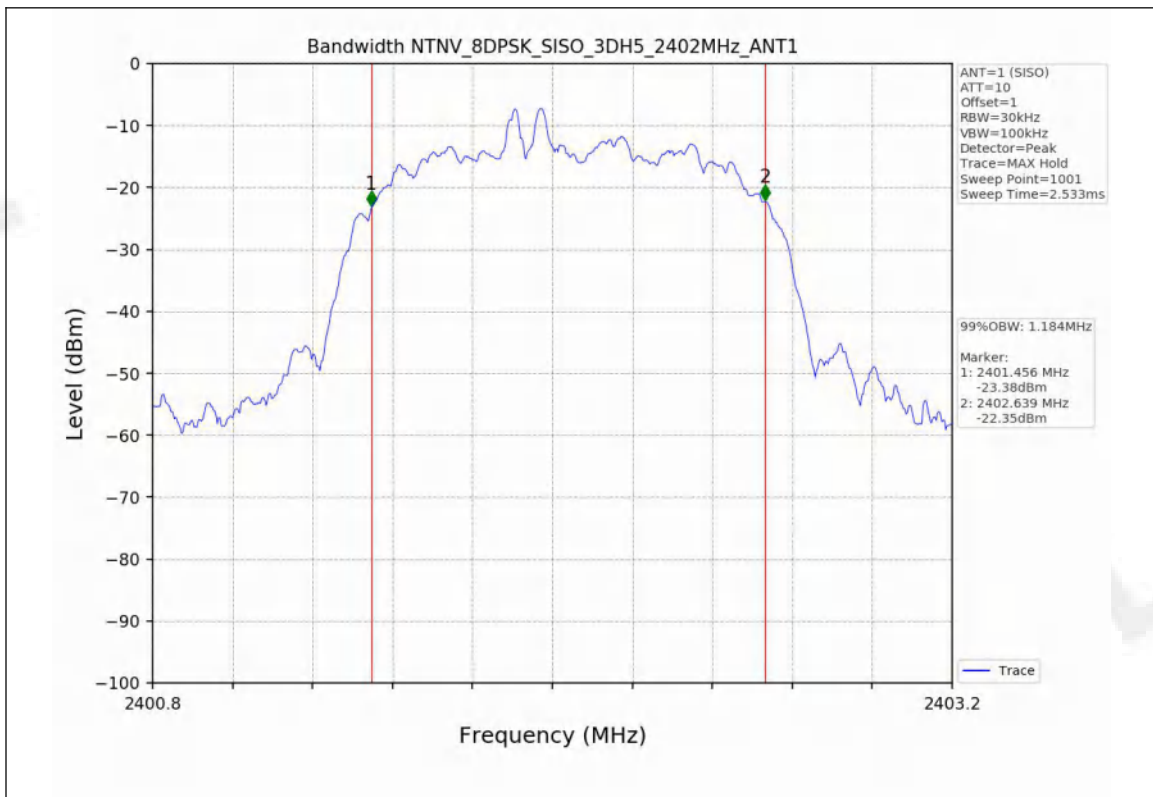
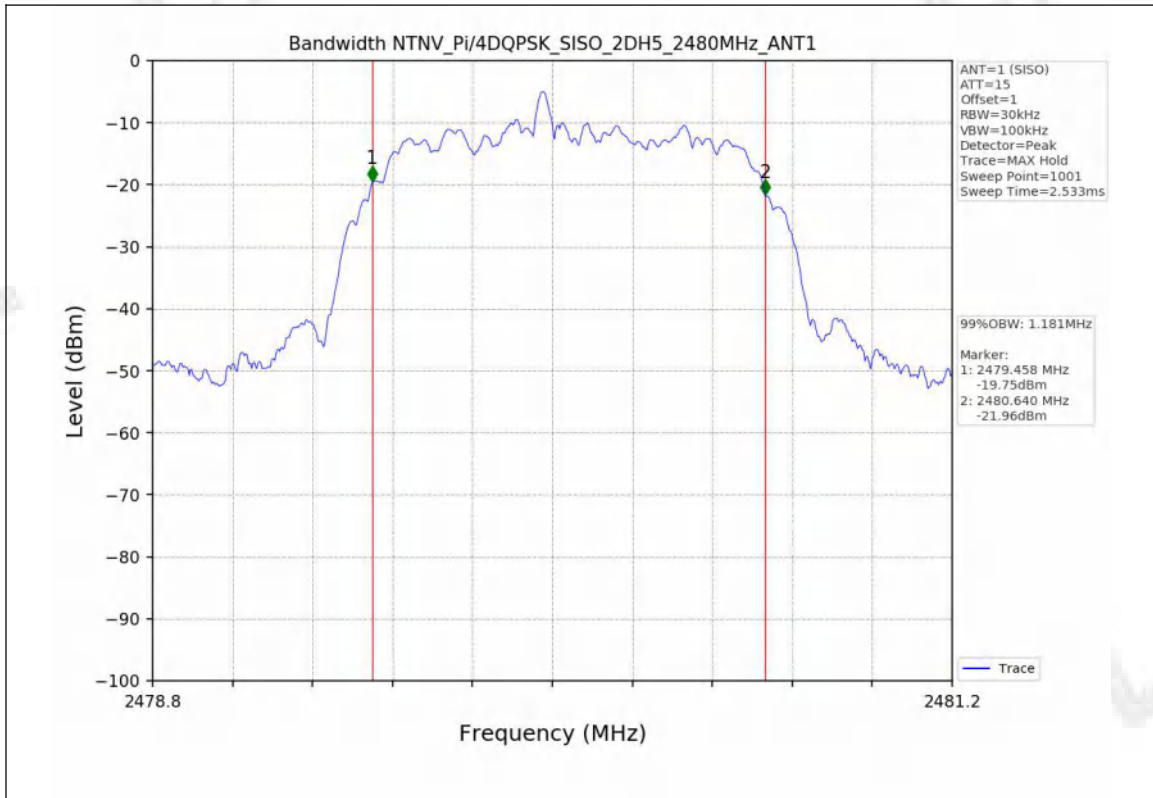


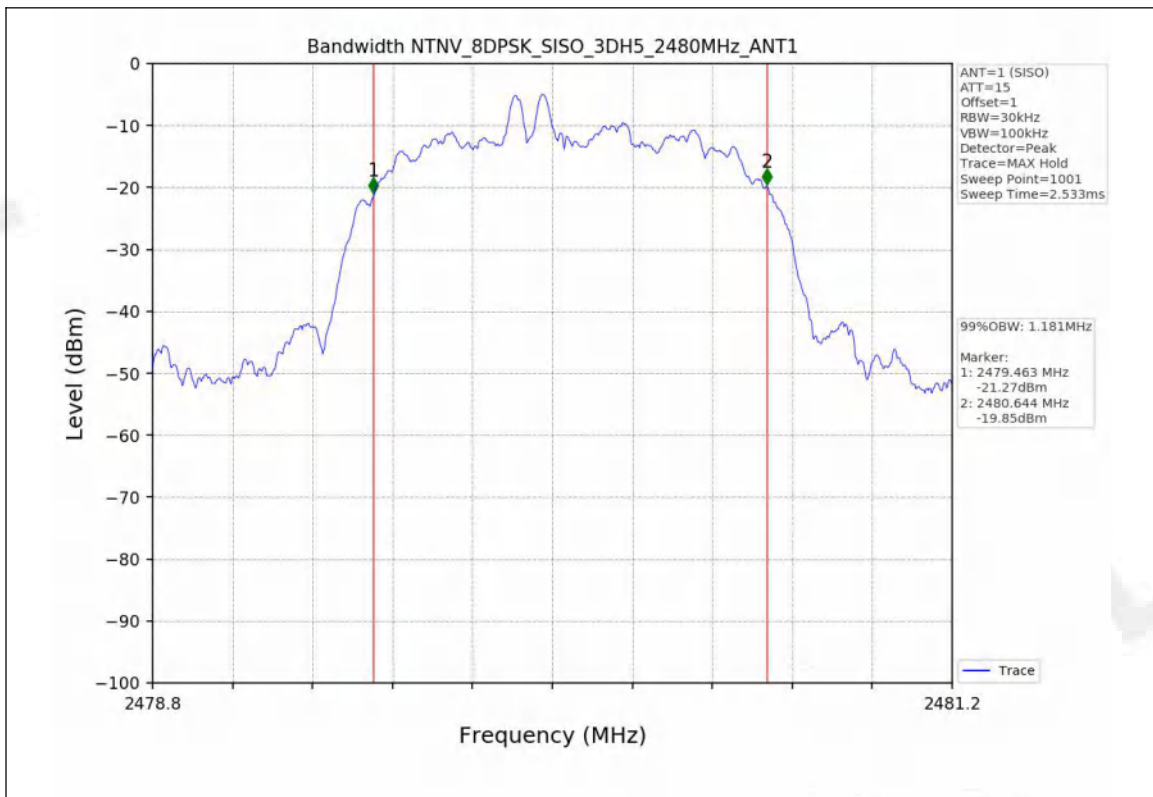
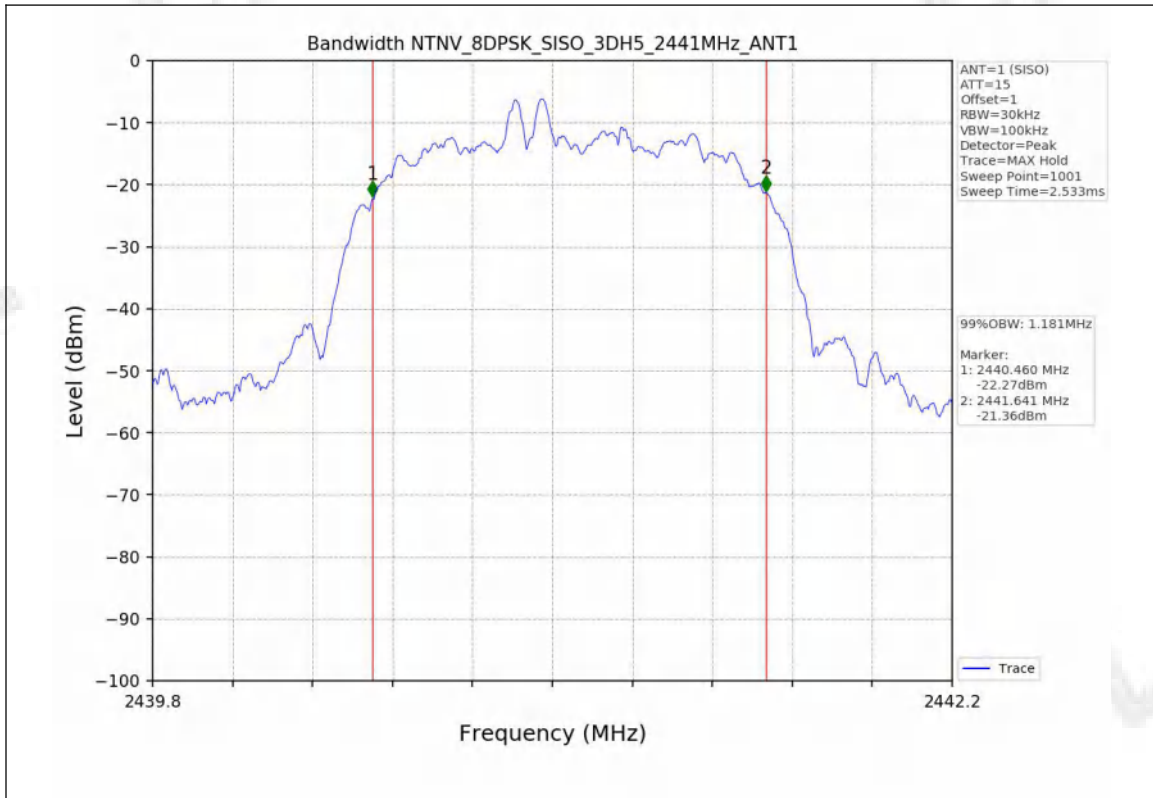
1.3 Test Graph - 99% Occupied Bandwidth









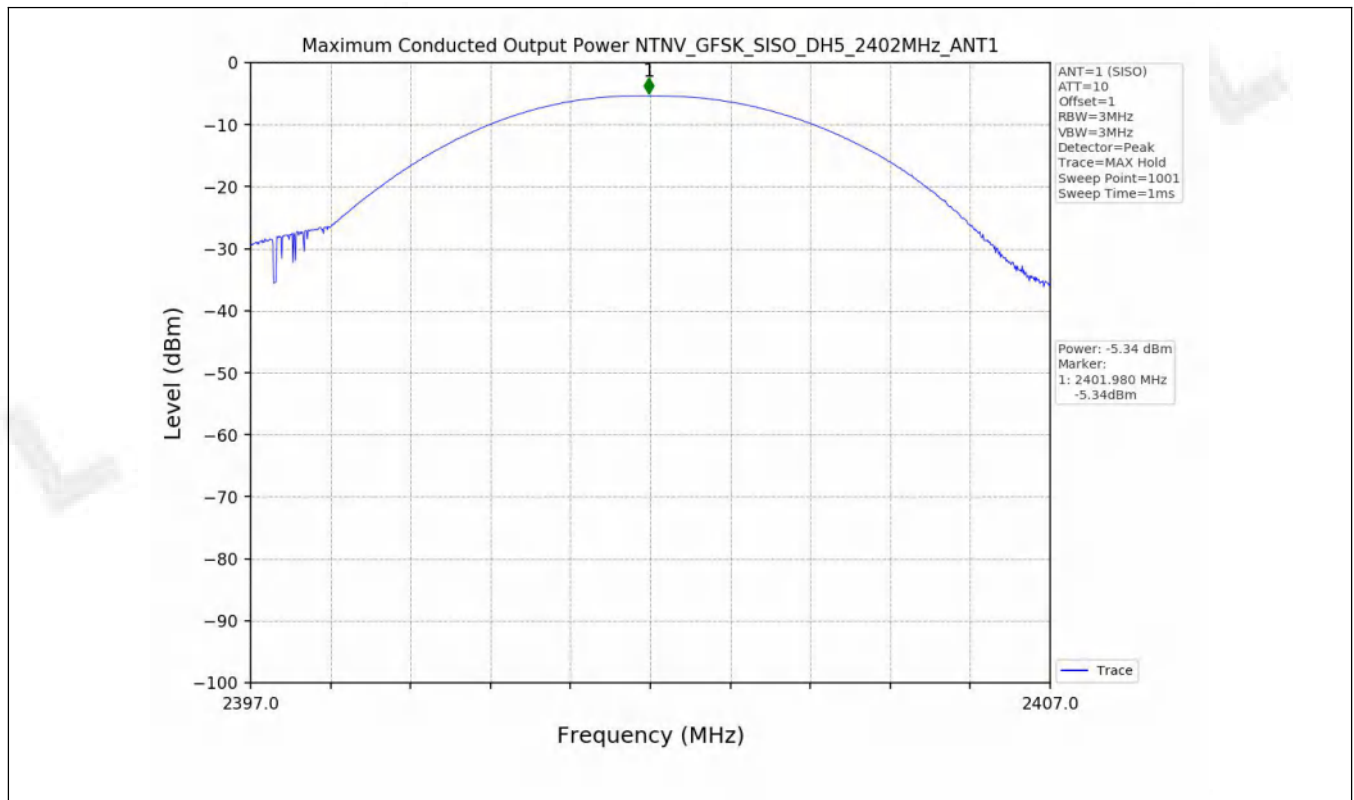


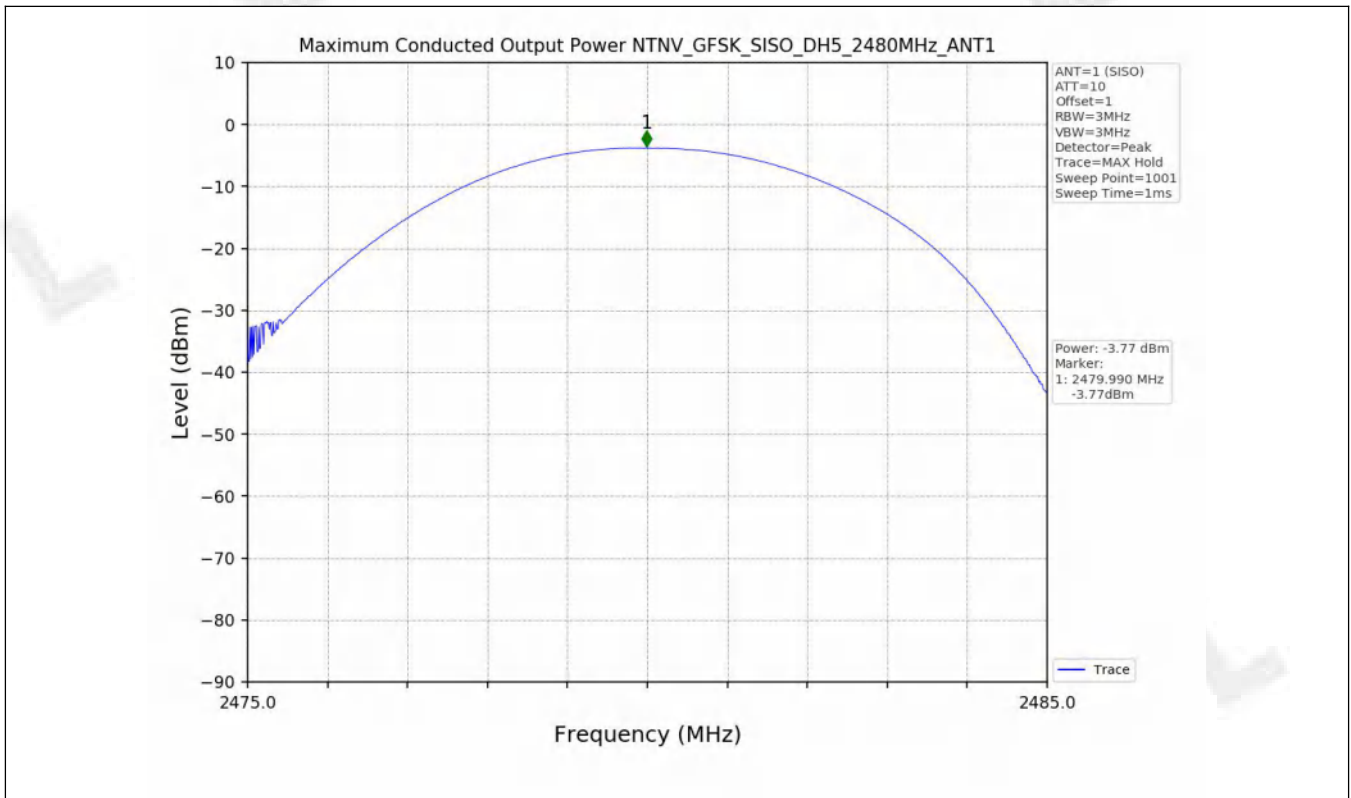
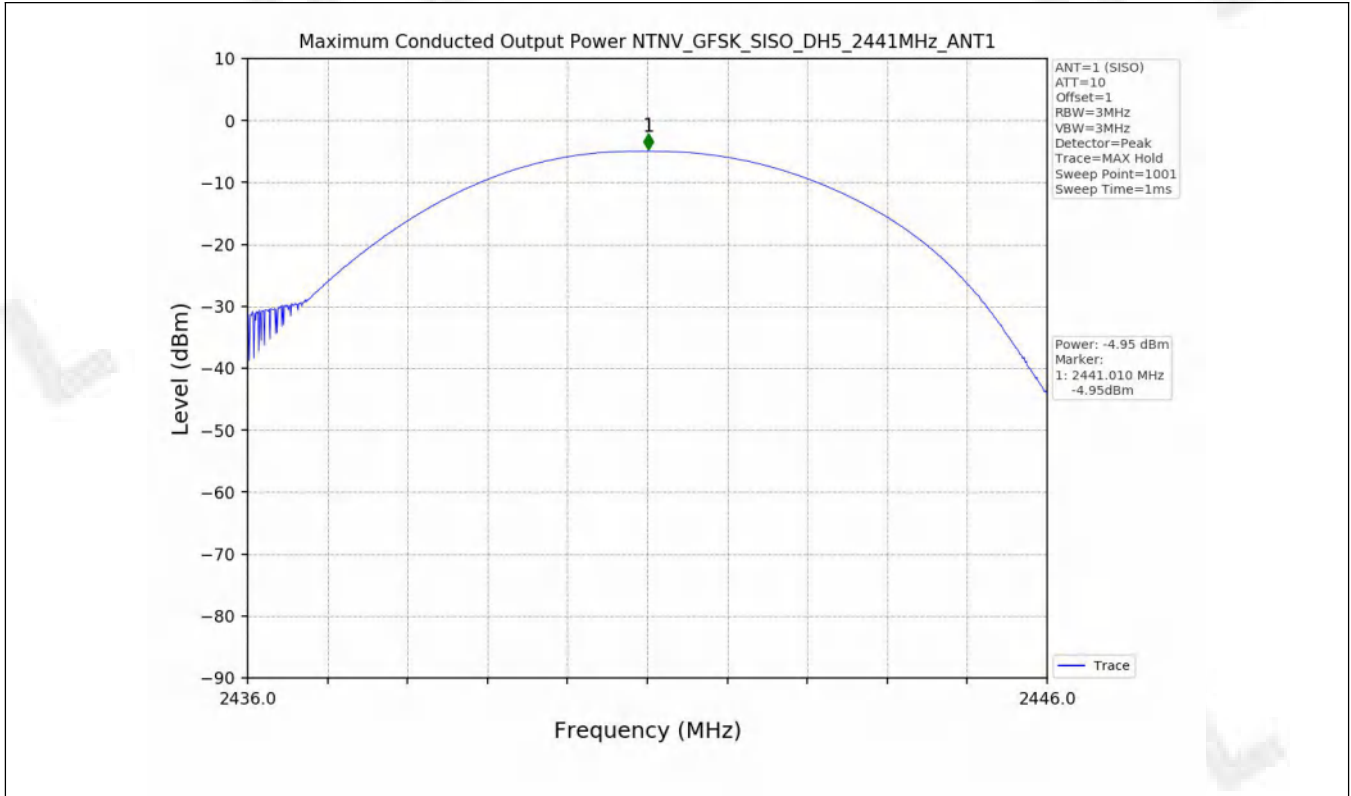
2. Maximum Conducted Output Power

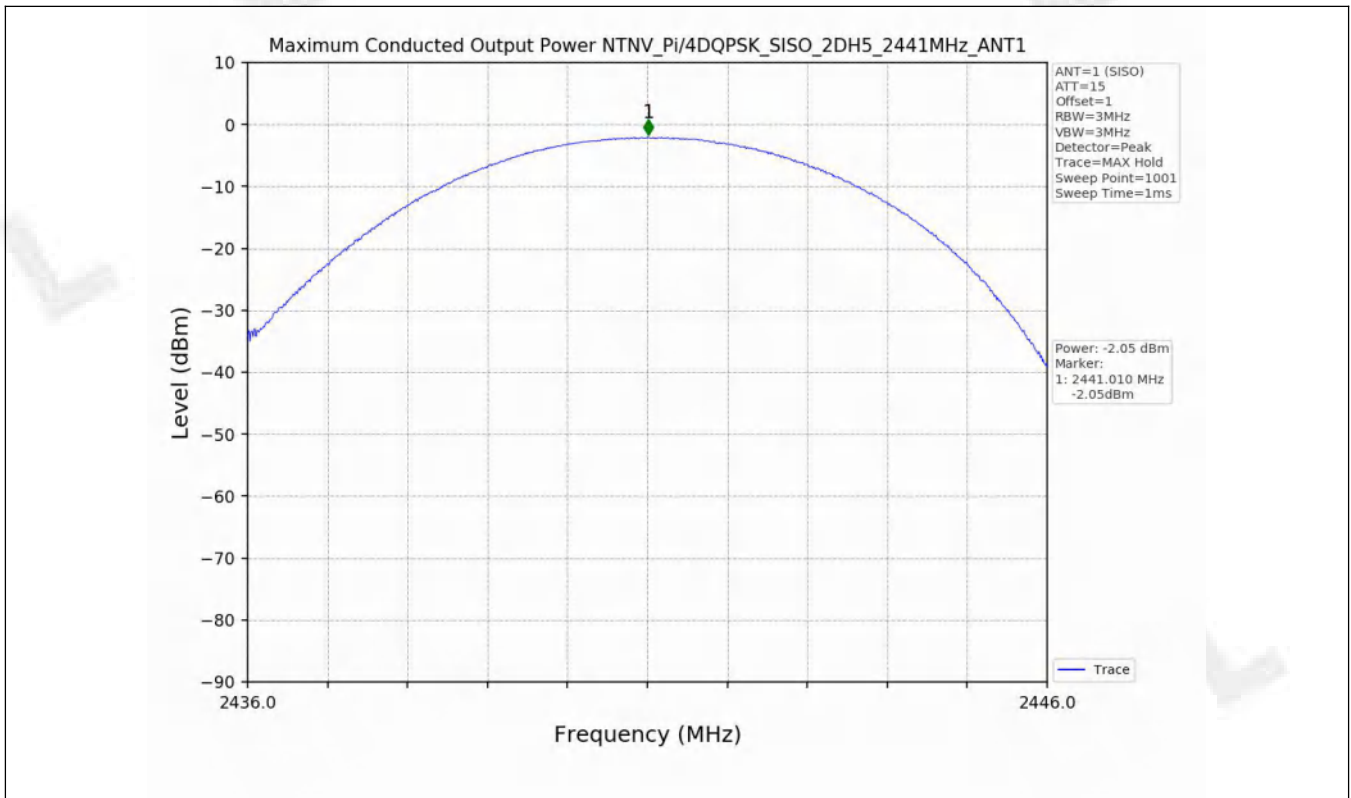
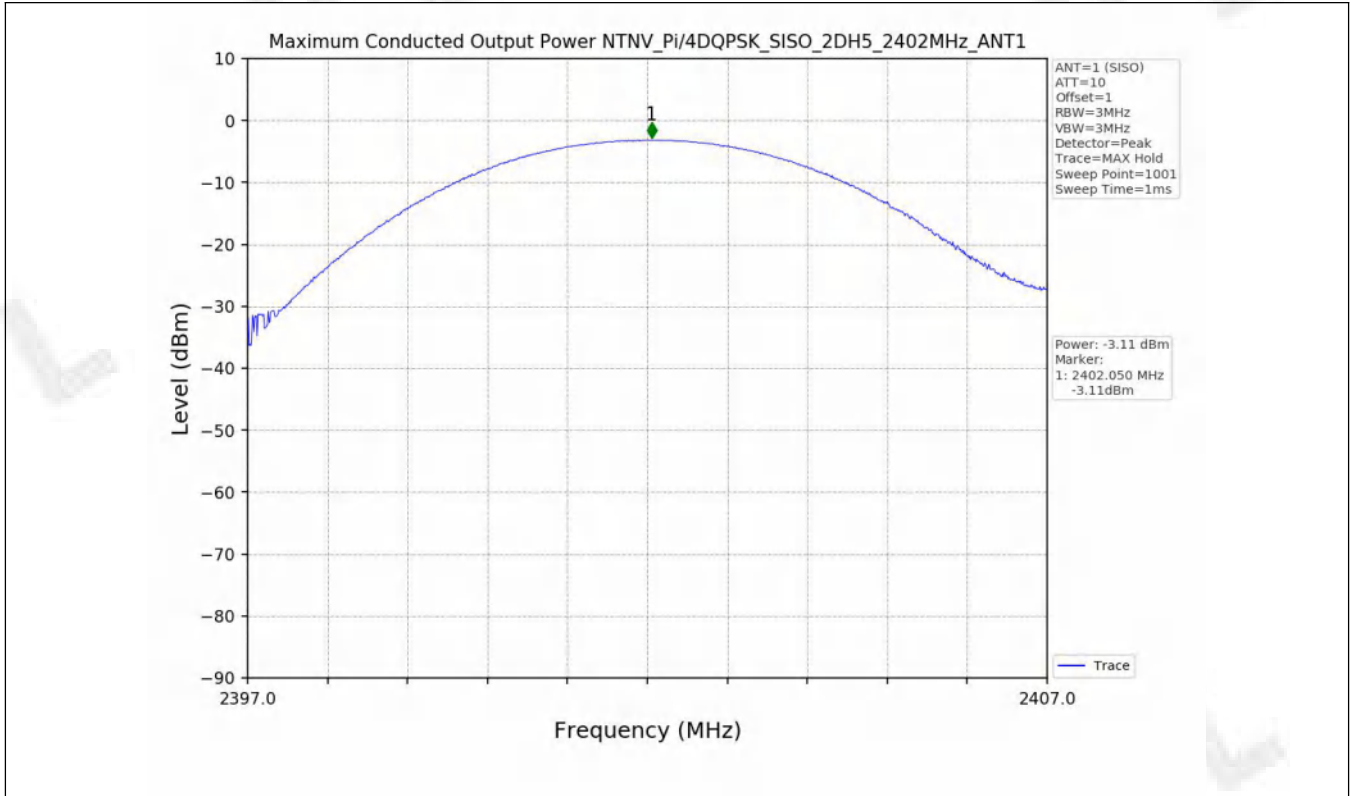
2.1 Test Result

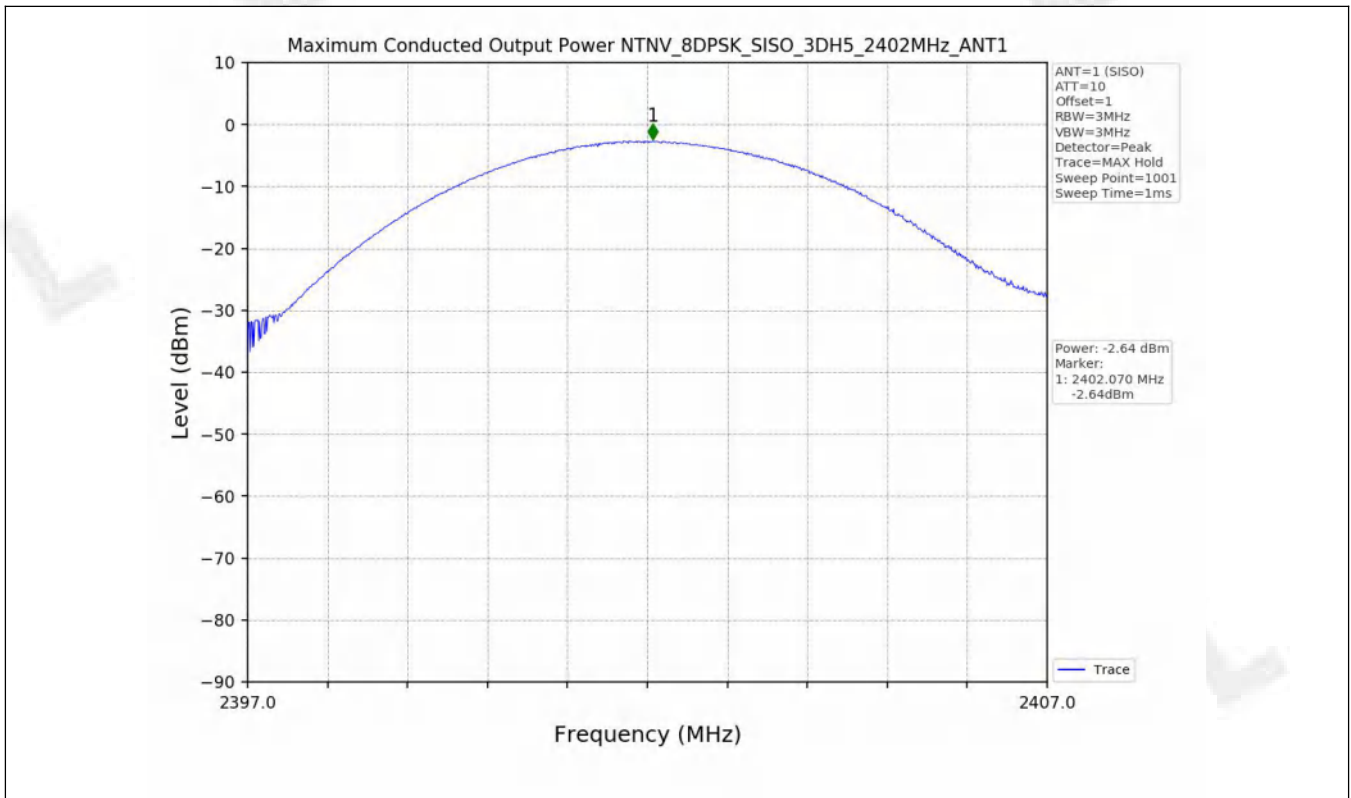
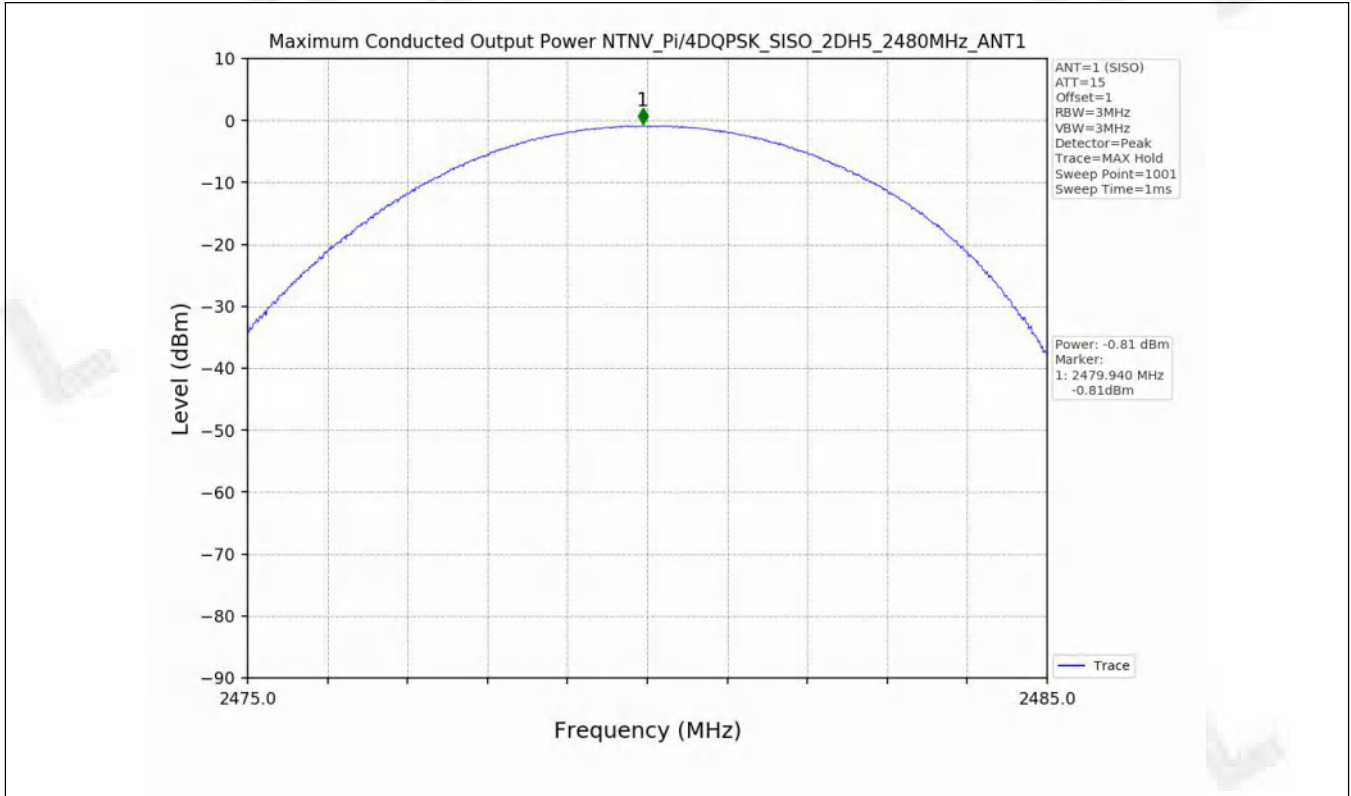
| Test Mode | Frequency (MHz) | Tx Type | Measured Peak Output Power (dBm) | Limits (dBm) | Verdict |
|-----------|-----------------|---------|----------------------------------|--------------|---------|
| | | | Ant 1 | | |
| GFSK | 2402 | SISO | -5.34 | 30 | PASS |
| | 2441 | SISO | -4.95 | 30 | PASS |
| | 2480 | SISO | -3.77 | 30 | PASS |
| Pi/4DQPSK | 2402 | SISO | -3.11 | 20.97 | PASS |
| | 2441 | SISO | -2.05 | 20.97 | PASS |
| | 2480 | SISO | -0.81 | 20.97 | PASS |
| 8DPSK | 2402 | SISO | -2.64 | 20.97 | PASS |
| | 2441 | SISO | -1.50 | 20.97 | PASS |
| | 2480 | SISO | -0.14 | 20.97 | PASS |

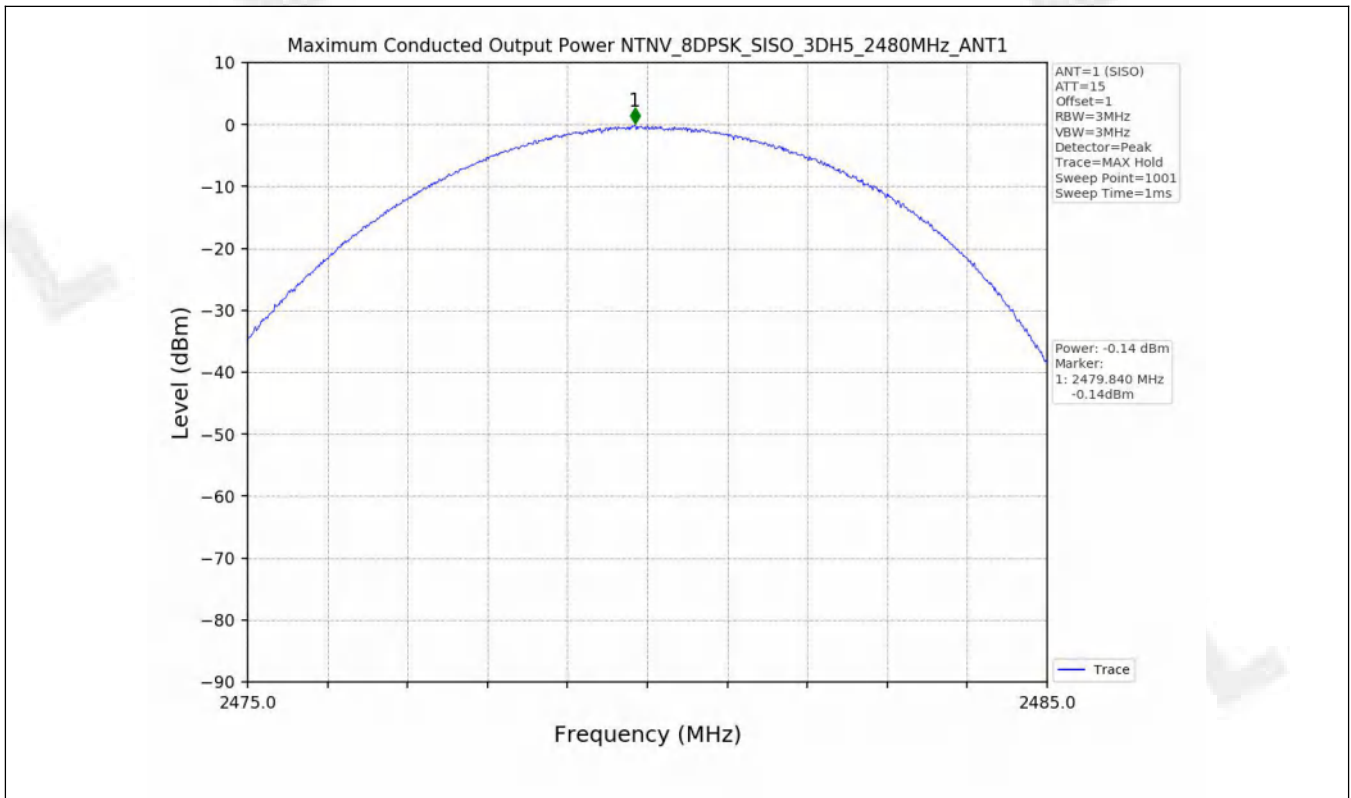
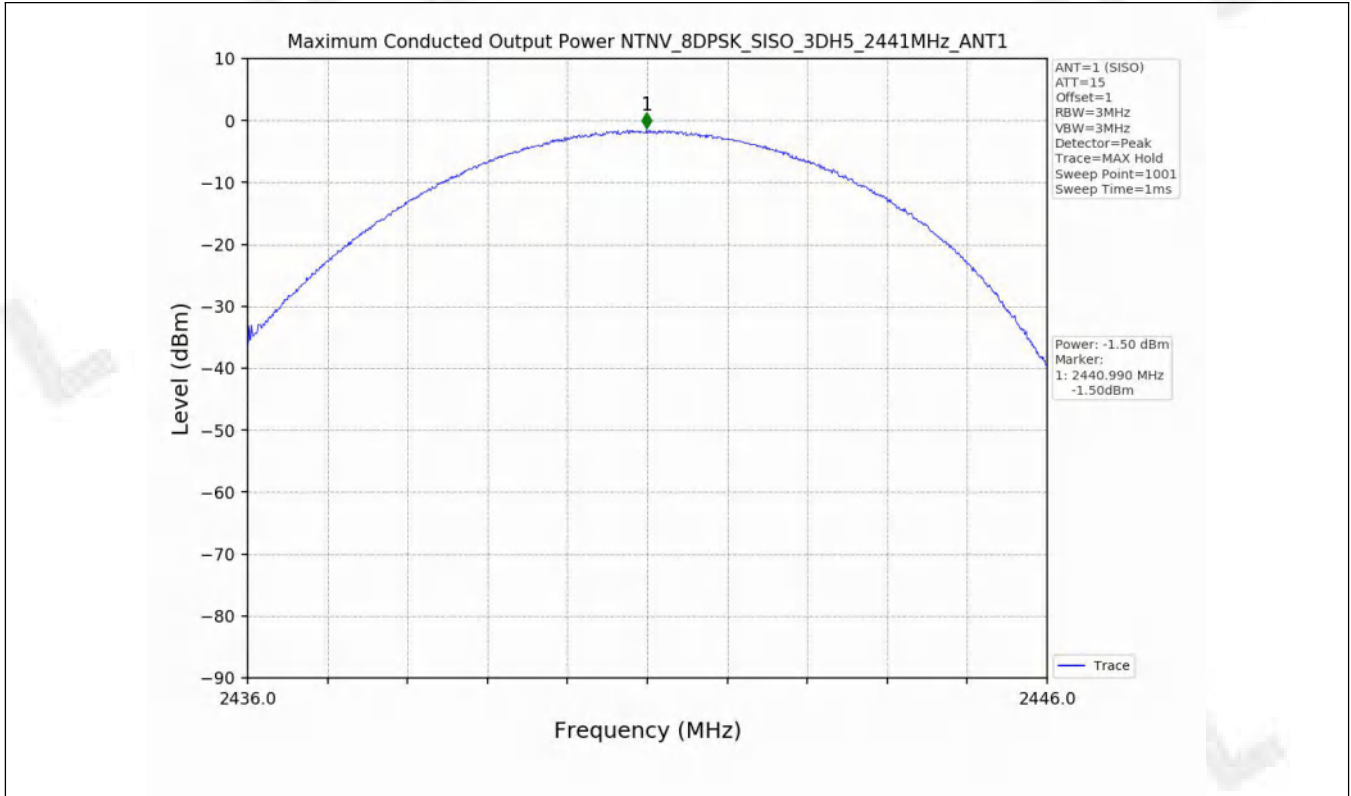
2.2 Test Graph









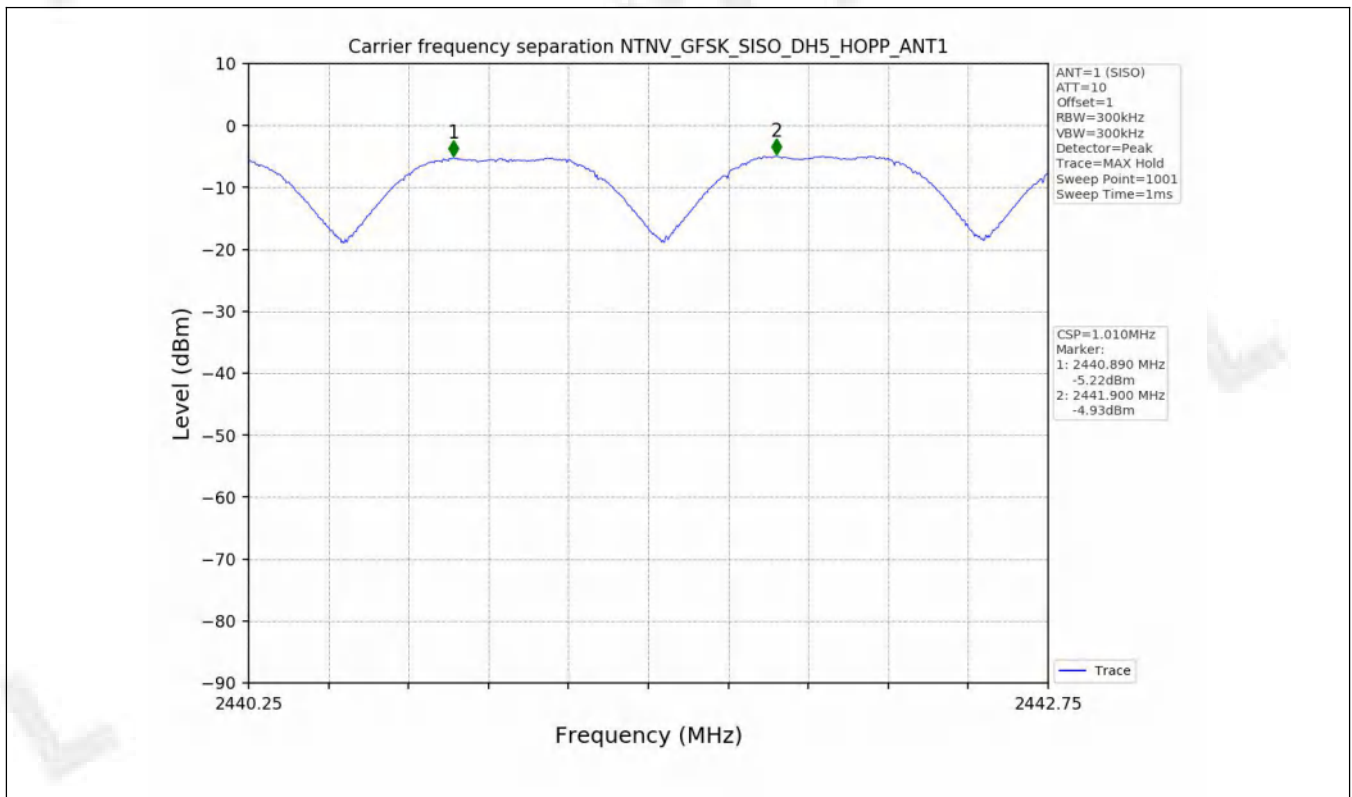


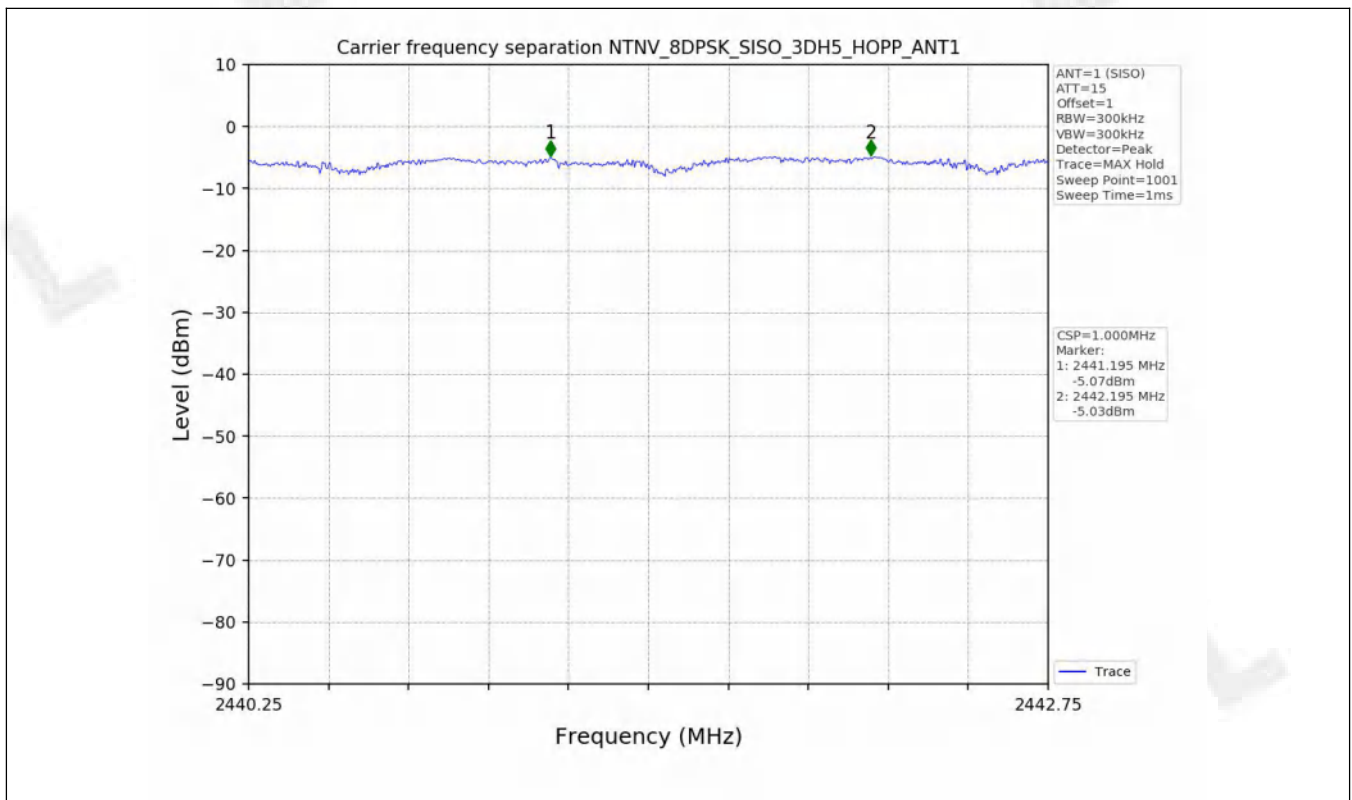
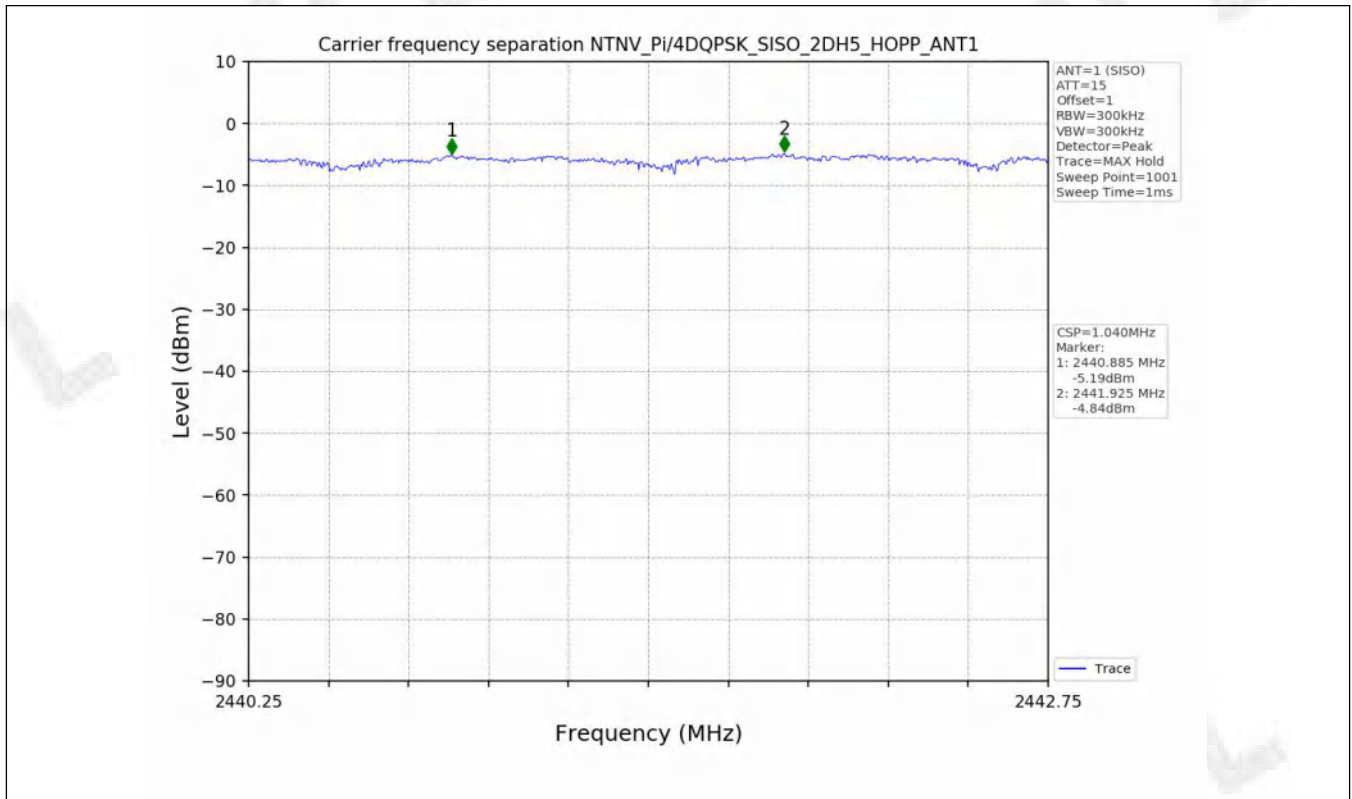
3. Carrier frequency separation

3.1 Test Result

| Test Mode | TX Type | ANT No. | Channel Separation (MHz) | 20dB Bandwidth (MHz) | Limits (MHz) | Verdict |
|-----------|---------|---------|--------------------------|----------------------|--------------|---------|
| GFSK | SISO | 1 | 1.010 | 0.935 | ≥0.935 | PASS |
| π/4DQPSK | SISO | 1 | 1.040 | 1.281 | ≥0.854 | PASS |
| 8DPSK | SISO | 1 | 1.000 | 1.294 | ≥0.863 | PASS |

3.2 Test Graph



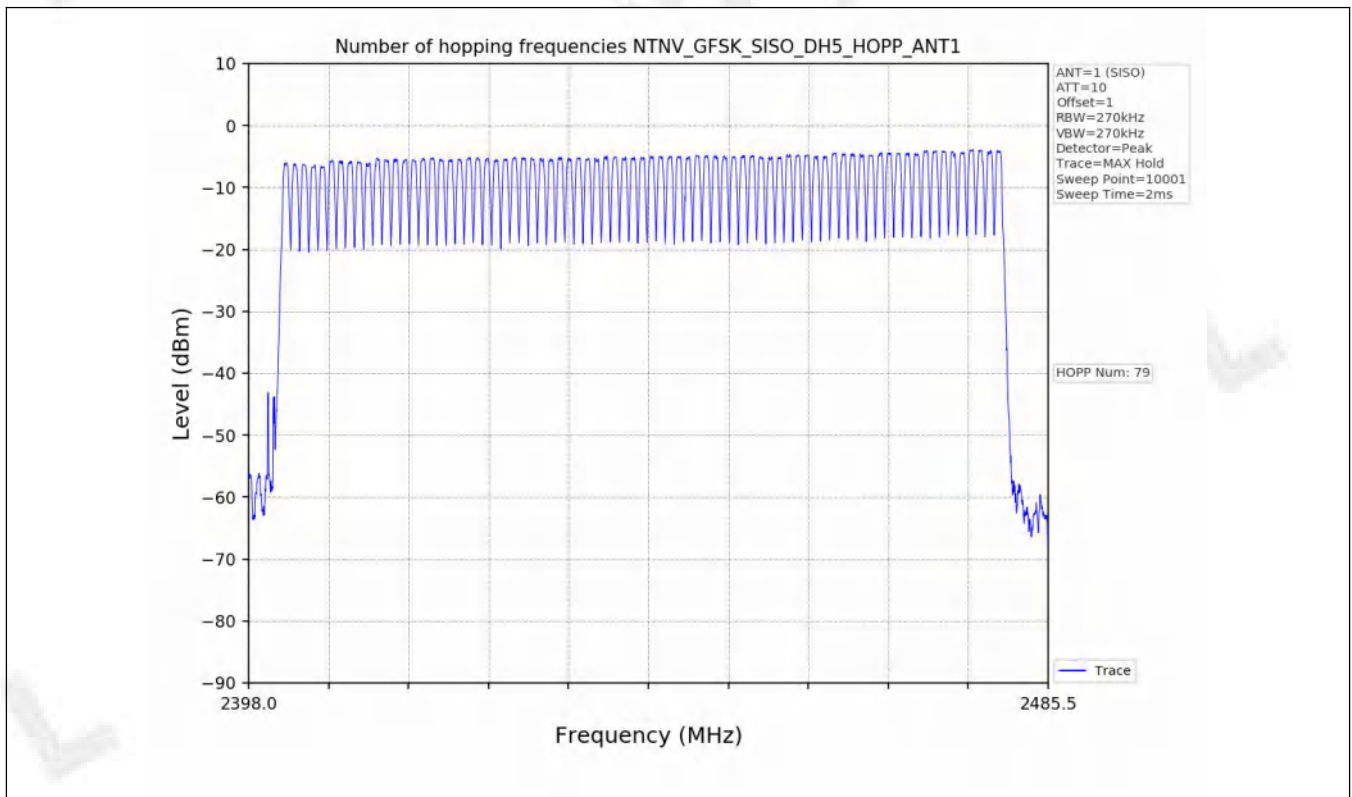


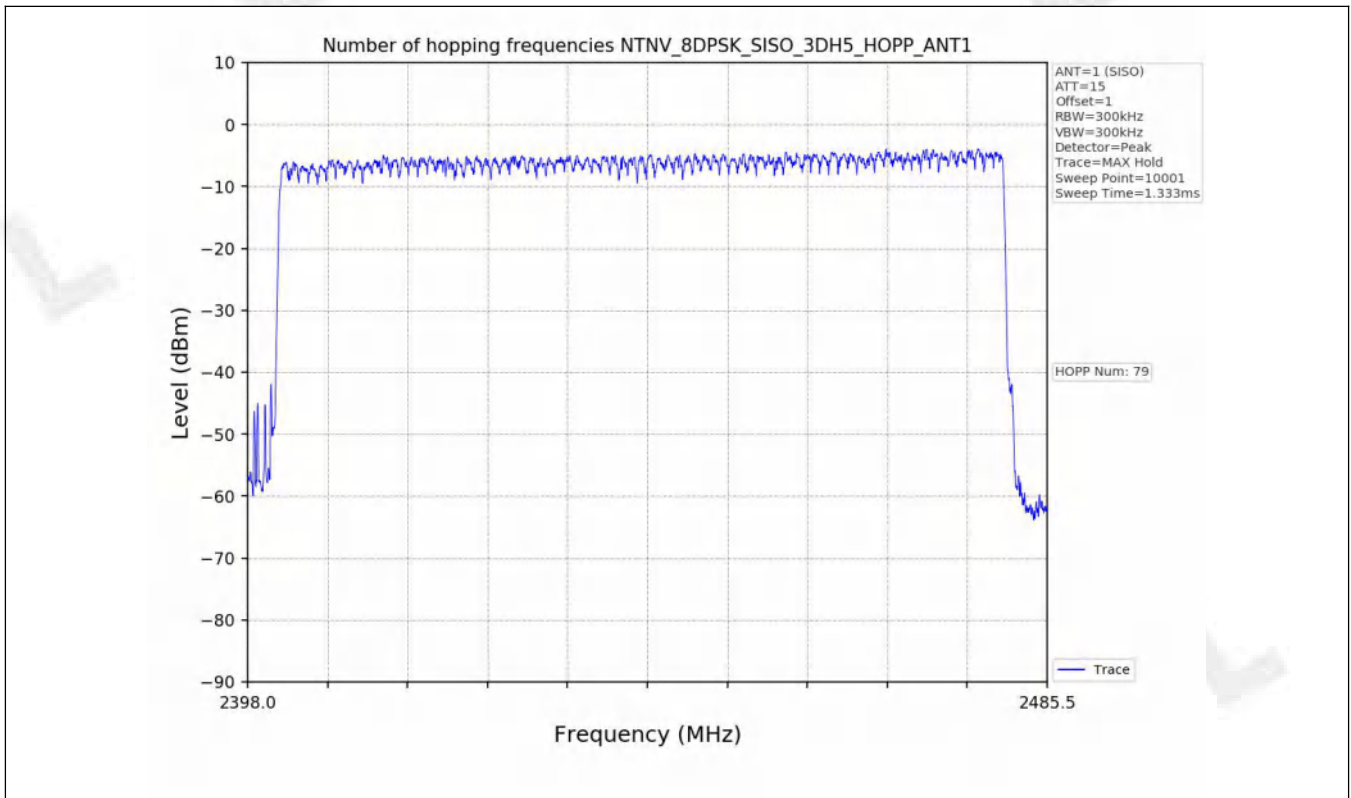
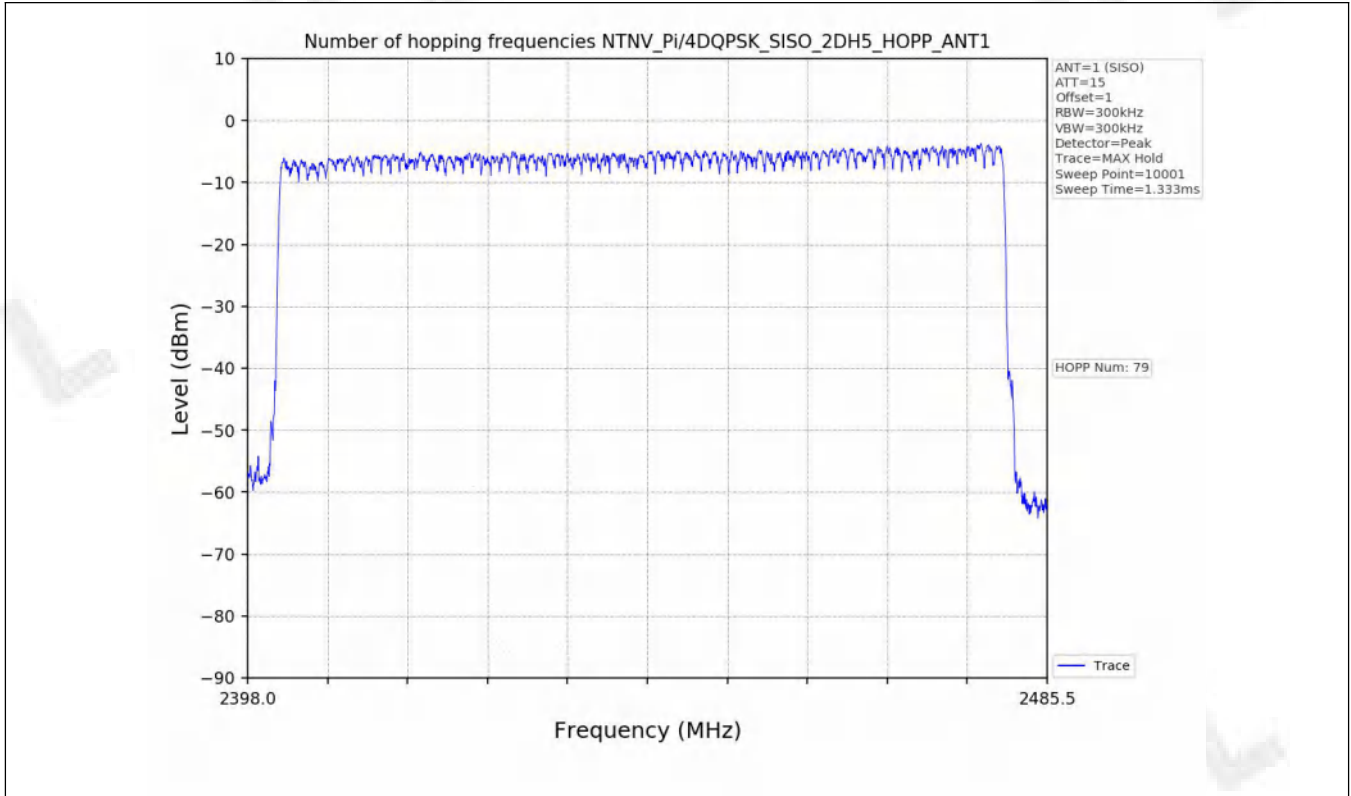
4. Number of hopping frequencies

4.1 Test Result

| Test Mode | TX Type | ANT No. | Num of Hopping Frequencies | Limits | Verdict |
|-----------|---------|---------|----------------------------|--------|---------|
| GFSK | SISO | 1 | 79 | ≥15 | PASS |
| π/4DQPSK | SISO | 1 | 79 | ≥15 | PASS |
| 8DPSK | SISO | 1 | 79 | ≥15 | PASS |

4.2 Test Graph



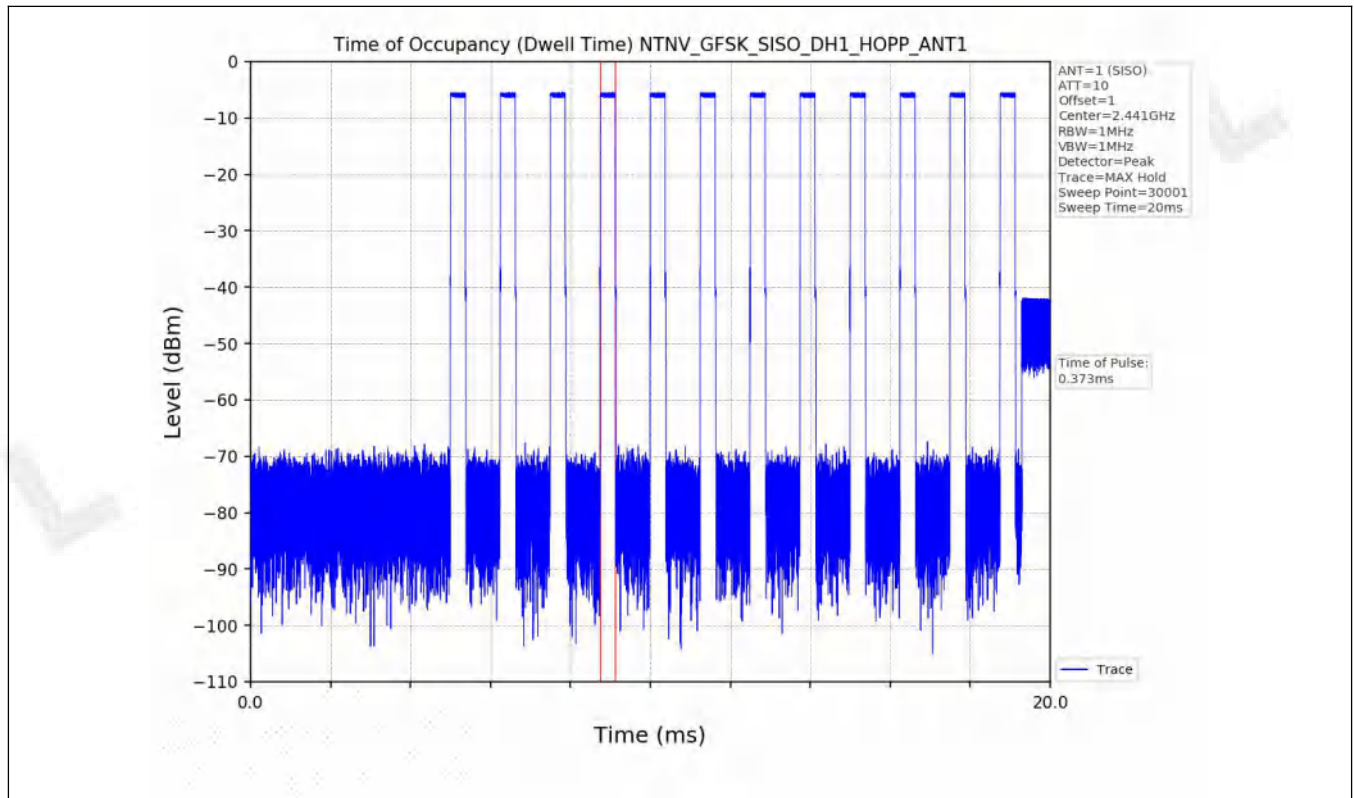


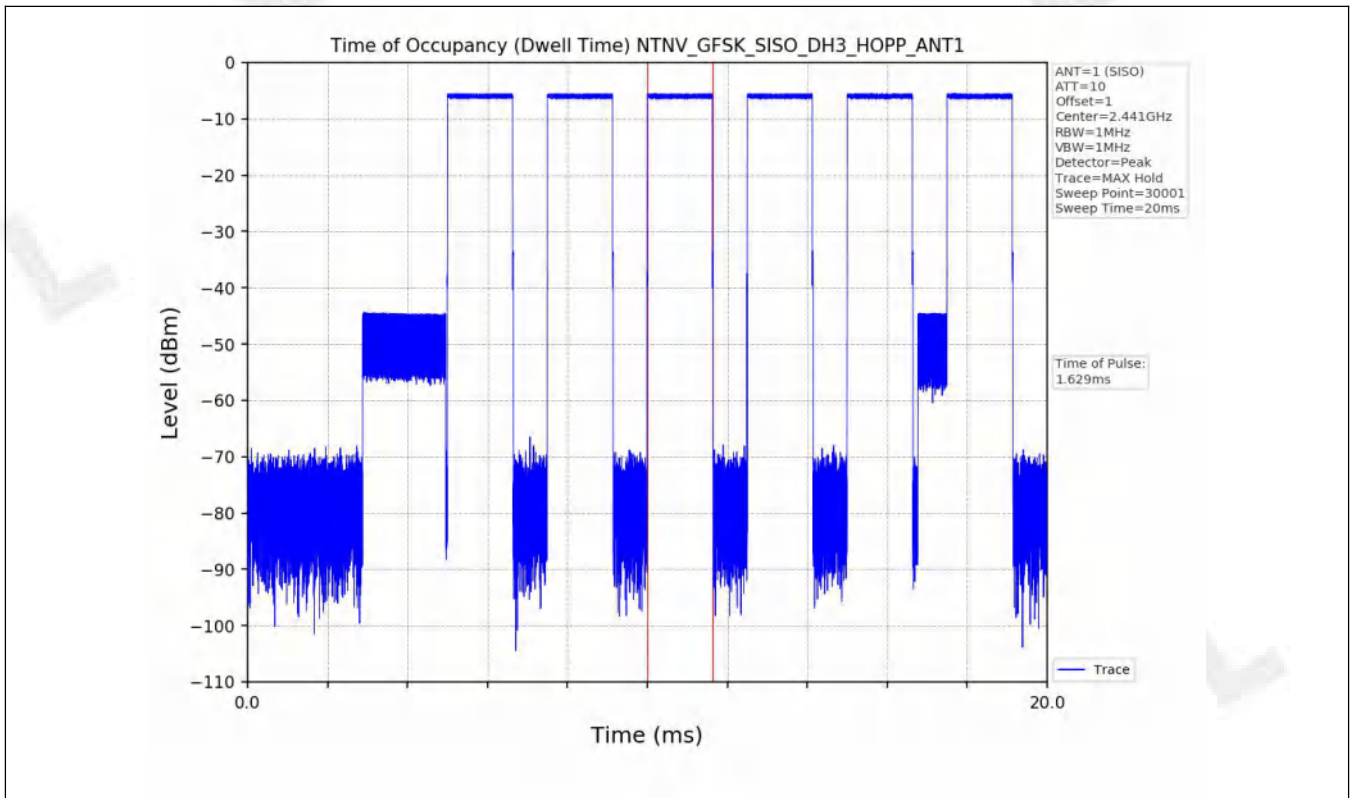
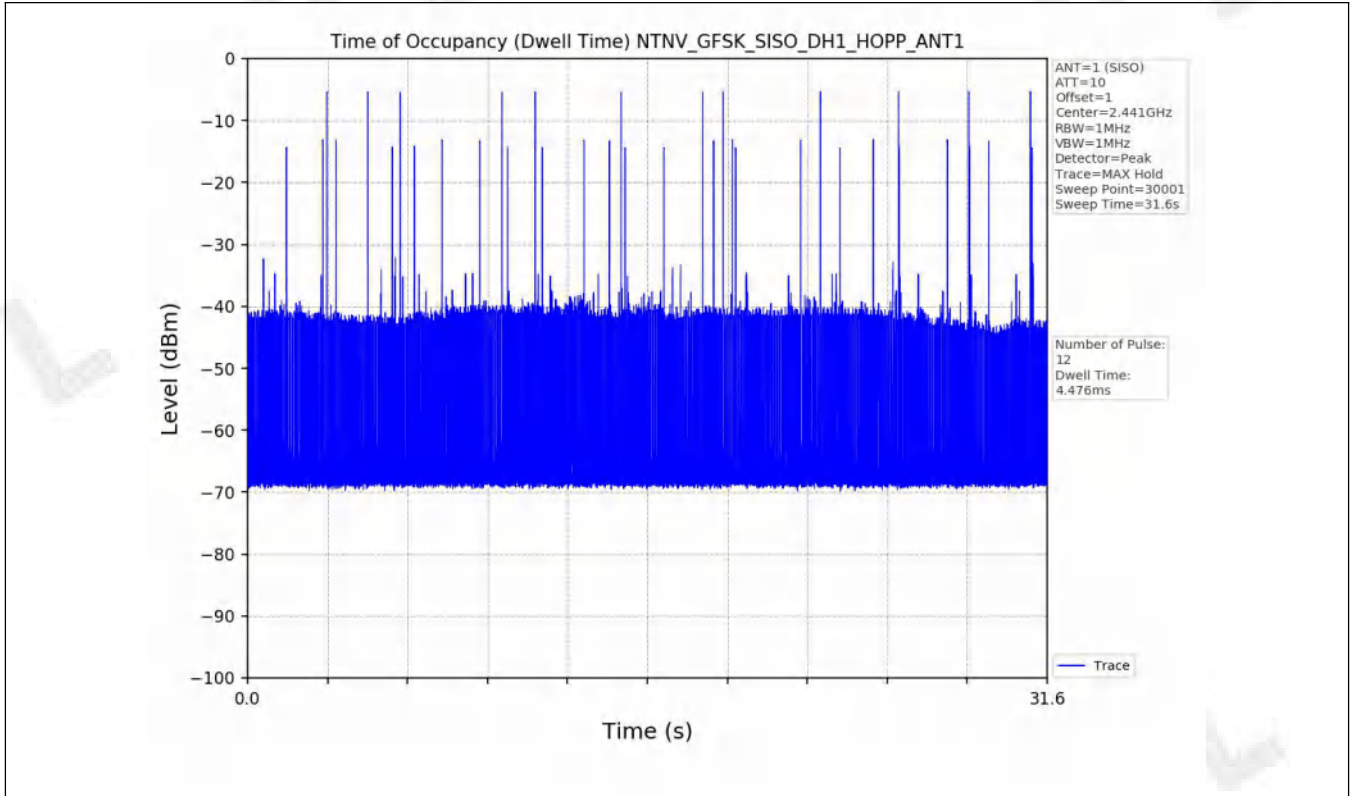
5. Time of Occupancy (Dwell Time)

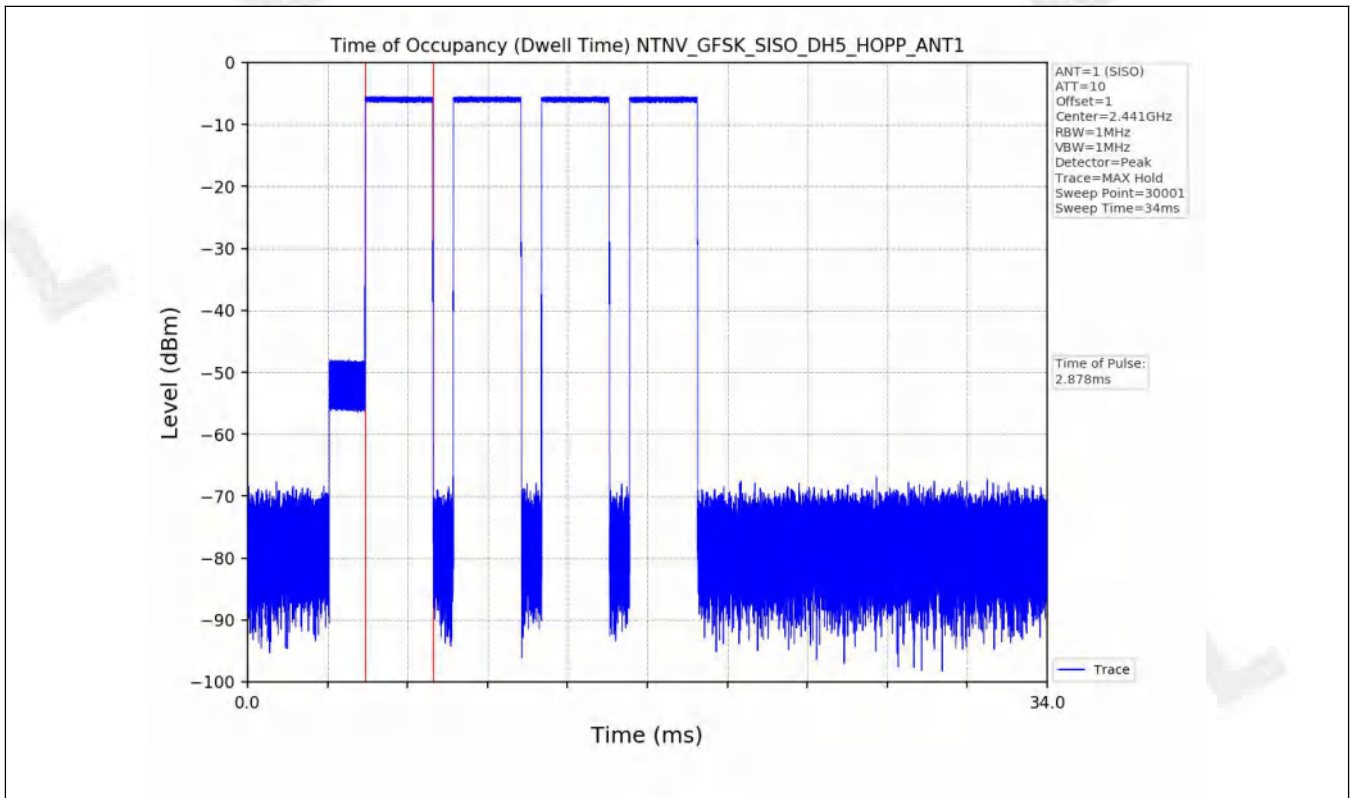
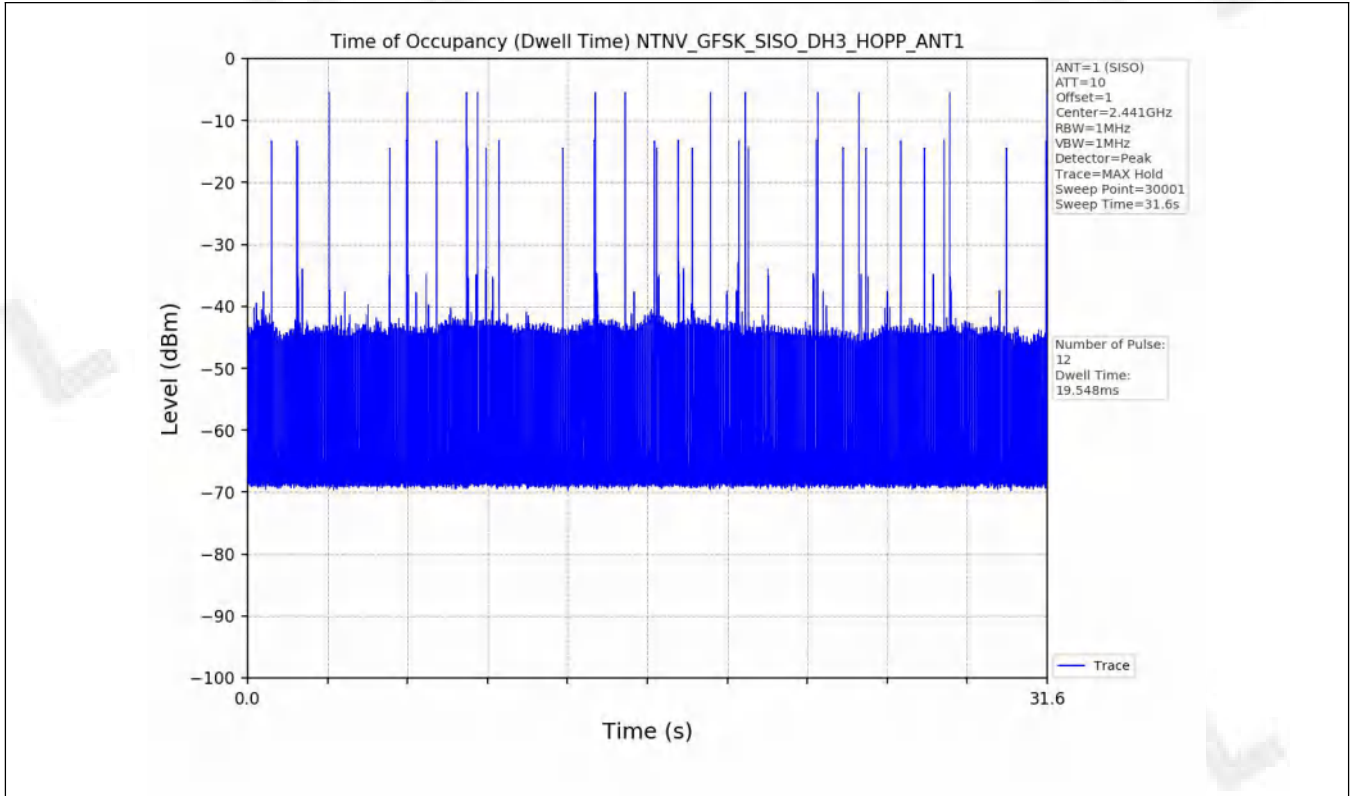
5.1 Test Result

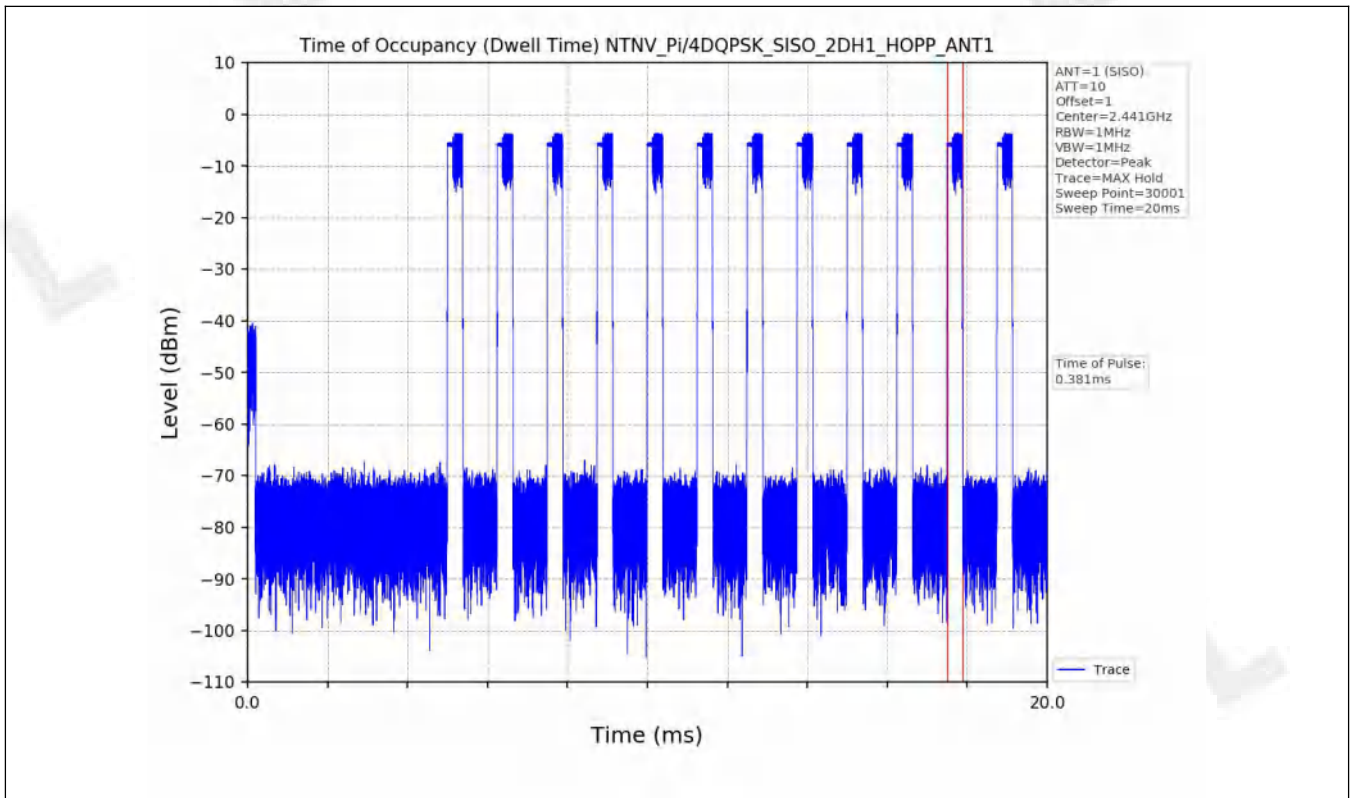
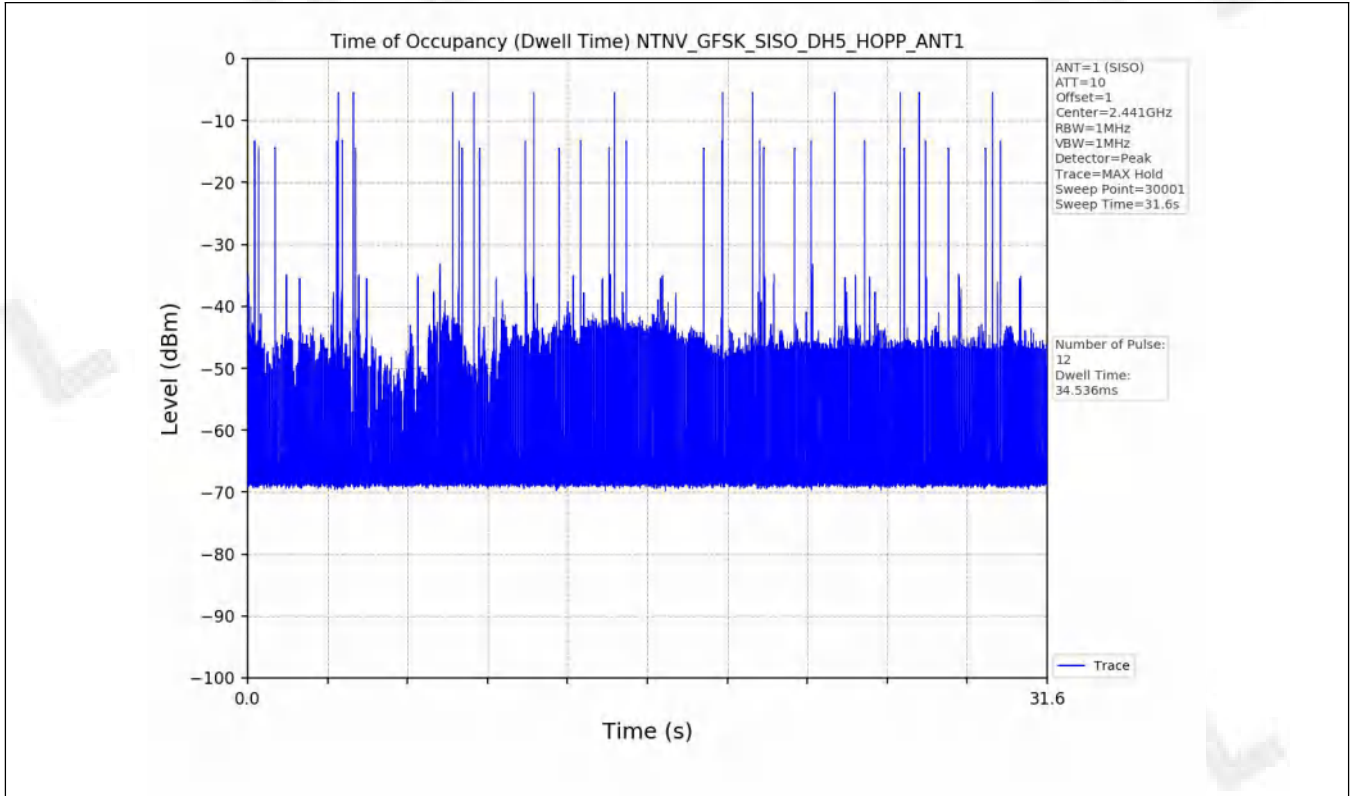
| Test Mode | Packet Type | TX Type | ANT No. | Duration of Single Pulse (ms) | Observation Period (s) | Num of Pulse in Observation Period | Dwell Time (ms) | Limits (ms) | Verdict |
|-----------|-------------|---------|---------|-------------------------------|------------------------|------------------------------------|-----------------|-------------|---------|
| GFSK | DH1 | SISO | 1 | 0.373 | 31.6 | 12 | 4.476 | ≤400 | PASS |
| | DH3 | SISO | 1 | 1.629 | 31.6 | 12 | 19.548 | ≤400 | PASS |
| | DH5 | SISO | 1 | 2.878 | 31.6 | 12 | 34.536 | ≤400 | PASS |
| Pi/4DQPSK | 2DH1 | SISO | 1 | 0.381 | 31.6 | 12 | 4.572 | ≤400 | PASS |
| | 2DH3 | SISO | 1 | 1.634 | 31.6 | 13 | 21.242 | ≤400 | PASS |
| | 2DH5 | SISO | 1 | 2.881 | 31.6 | 13 | 37.453 | ≤400 | PASS |
| 8DPSK | 3DH1 | SISO | 1 | 0.382 | 31.6 | 12 | 4.584 | ≤400 | PASS |
| | 3DH3 | SISO | 1 | 1.651 | 31.6 | 12 | 19.812 | ≤400 | PASS |
| | 3DH5 | SISO | 1 | 2.883 | 31.6 | 12 | 34.596 | ≤400 | PASS |

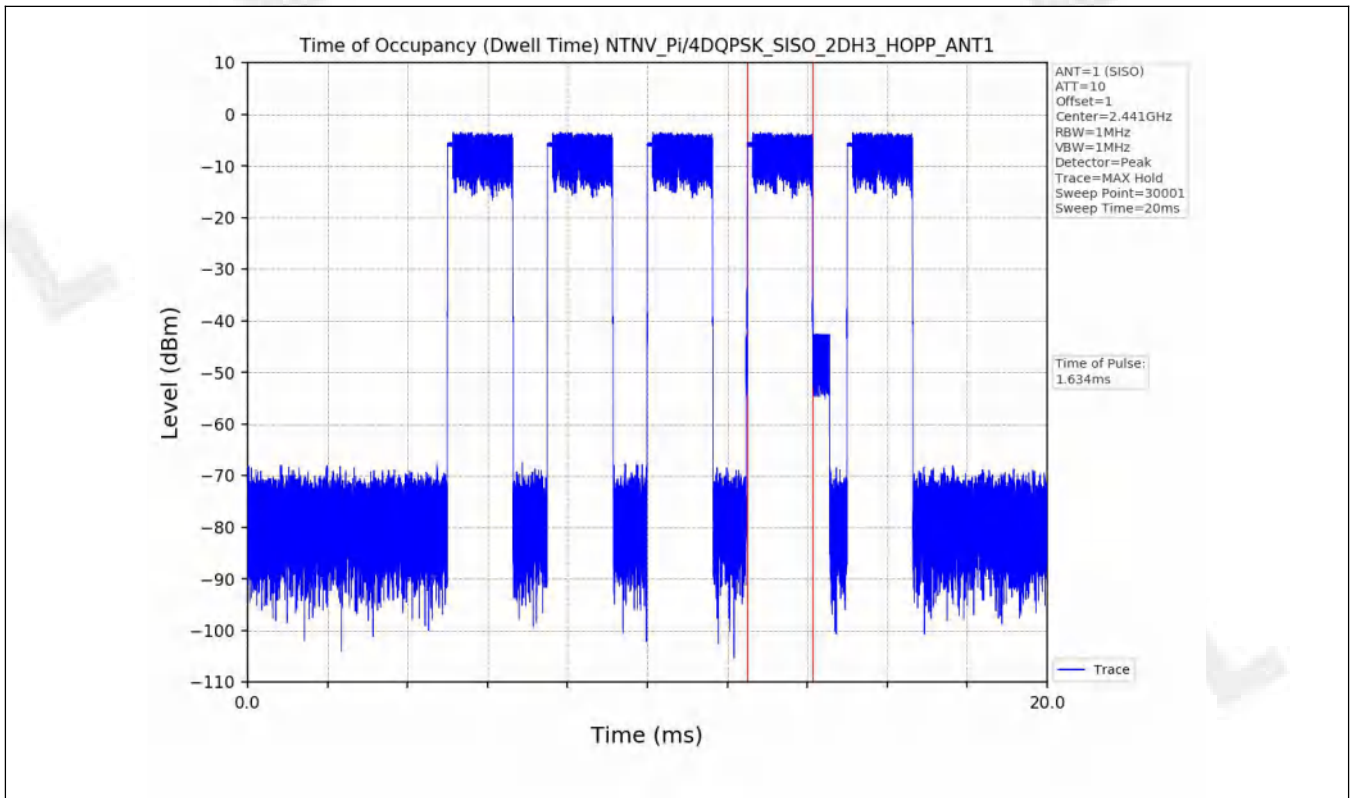
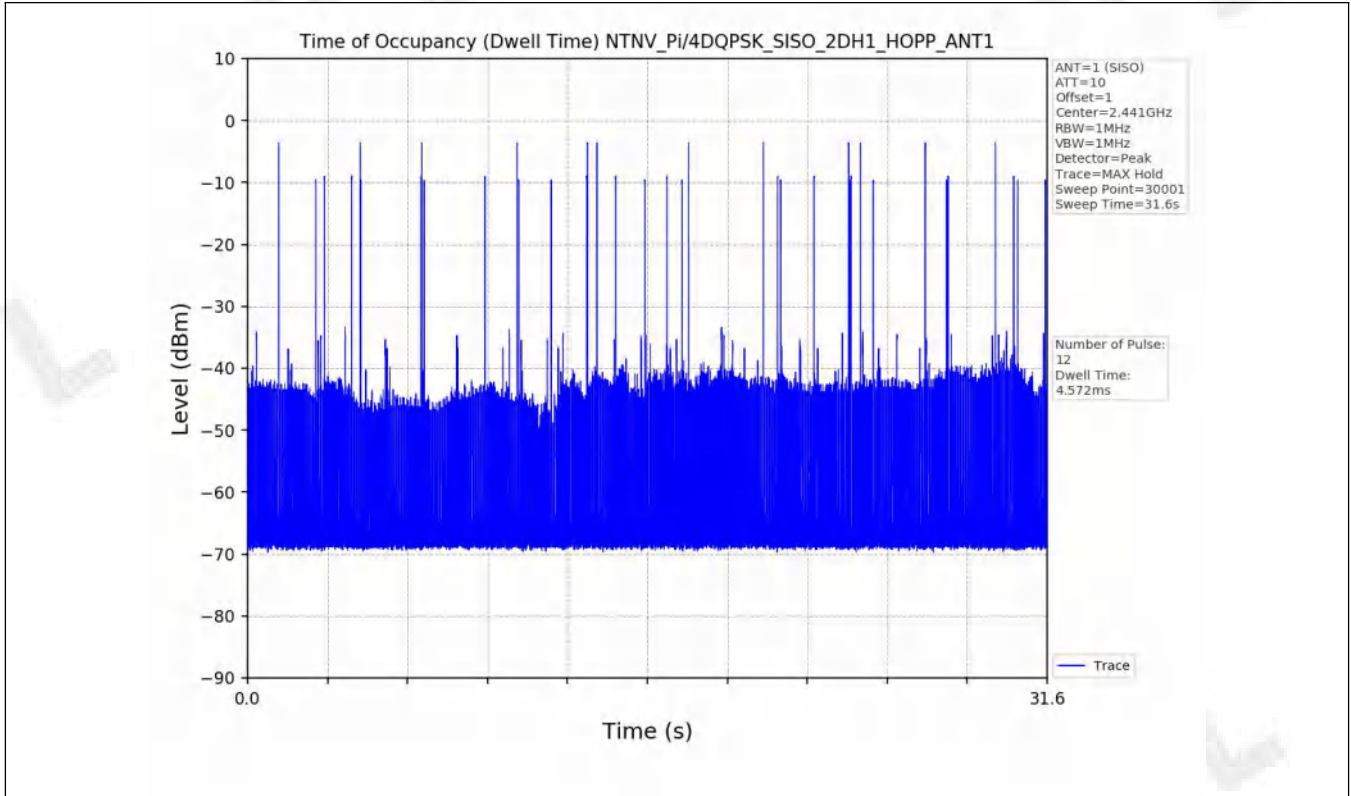
5.2 Test Graph

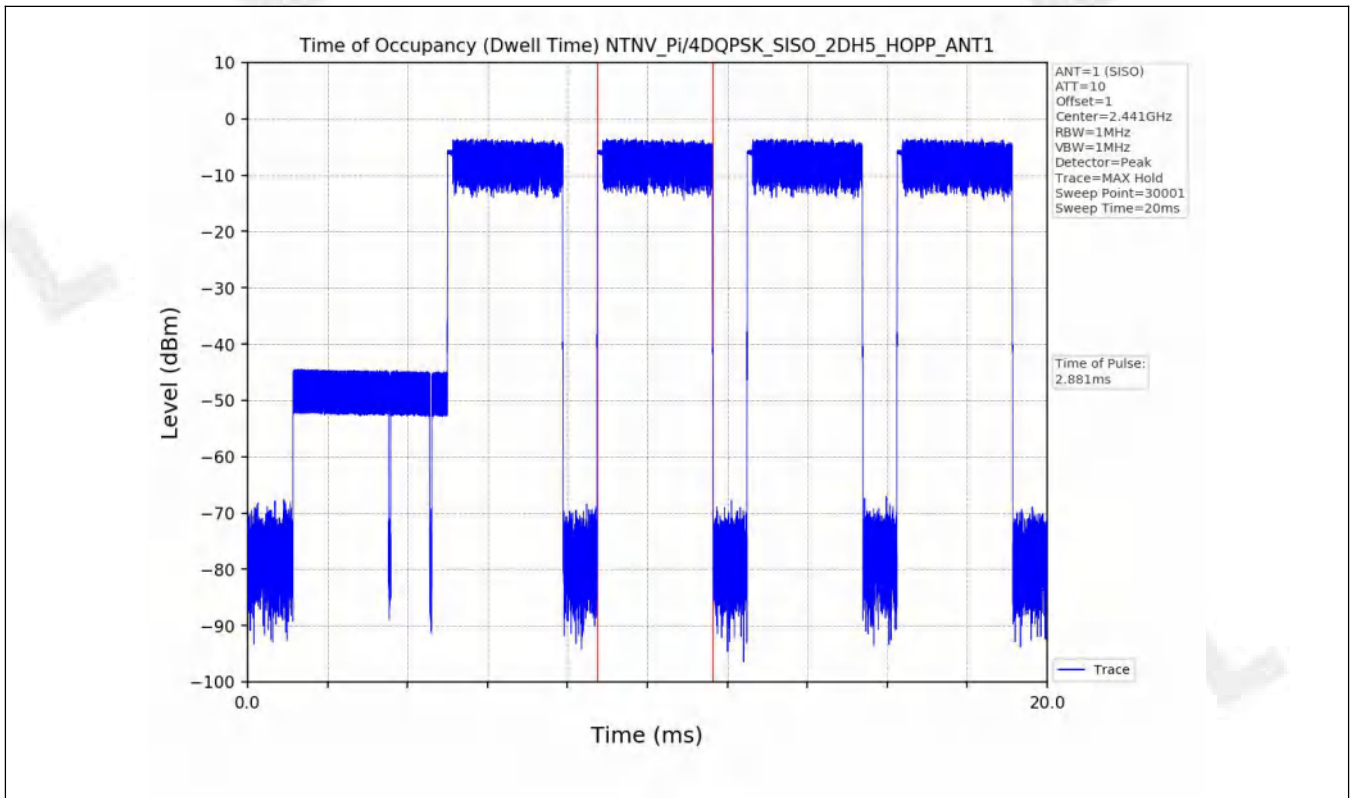
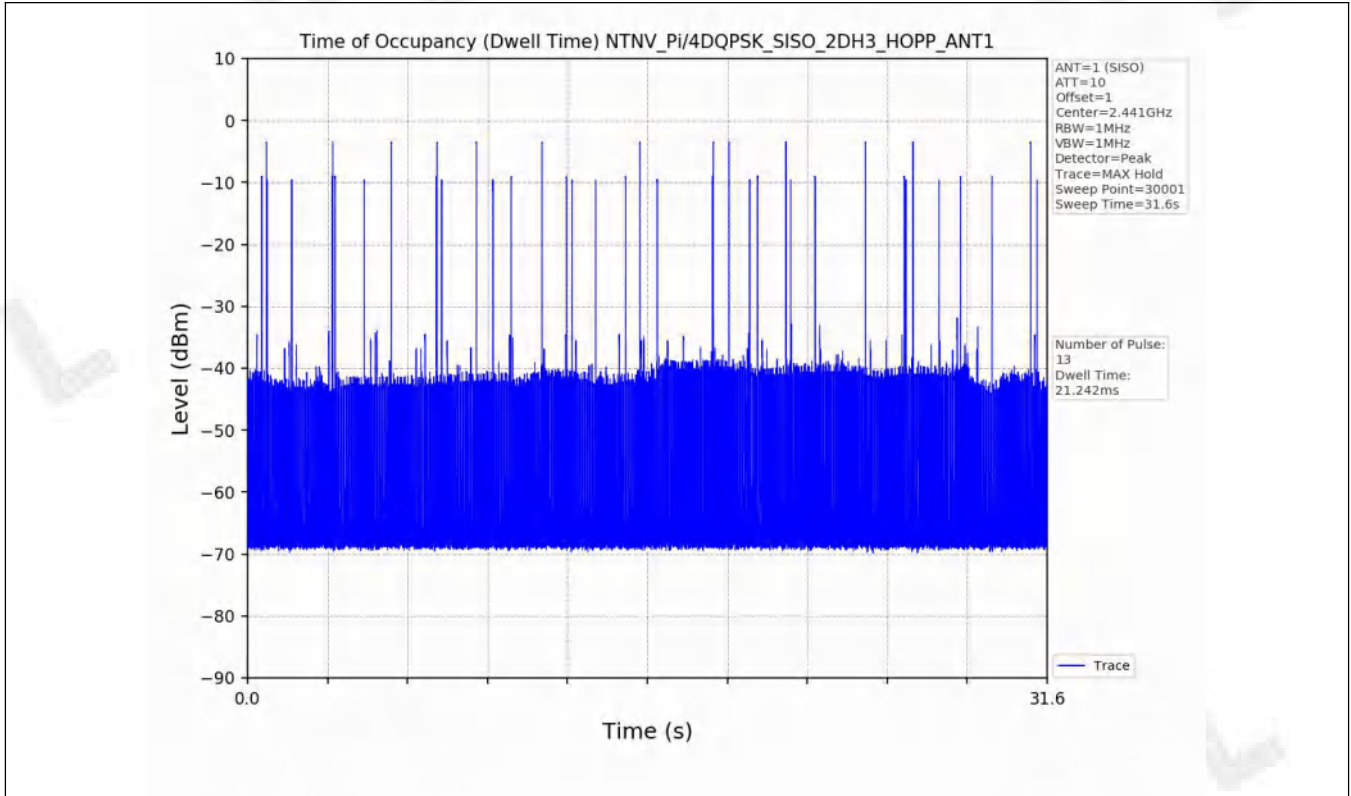


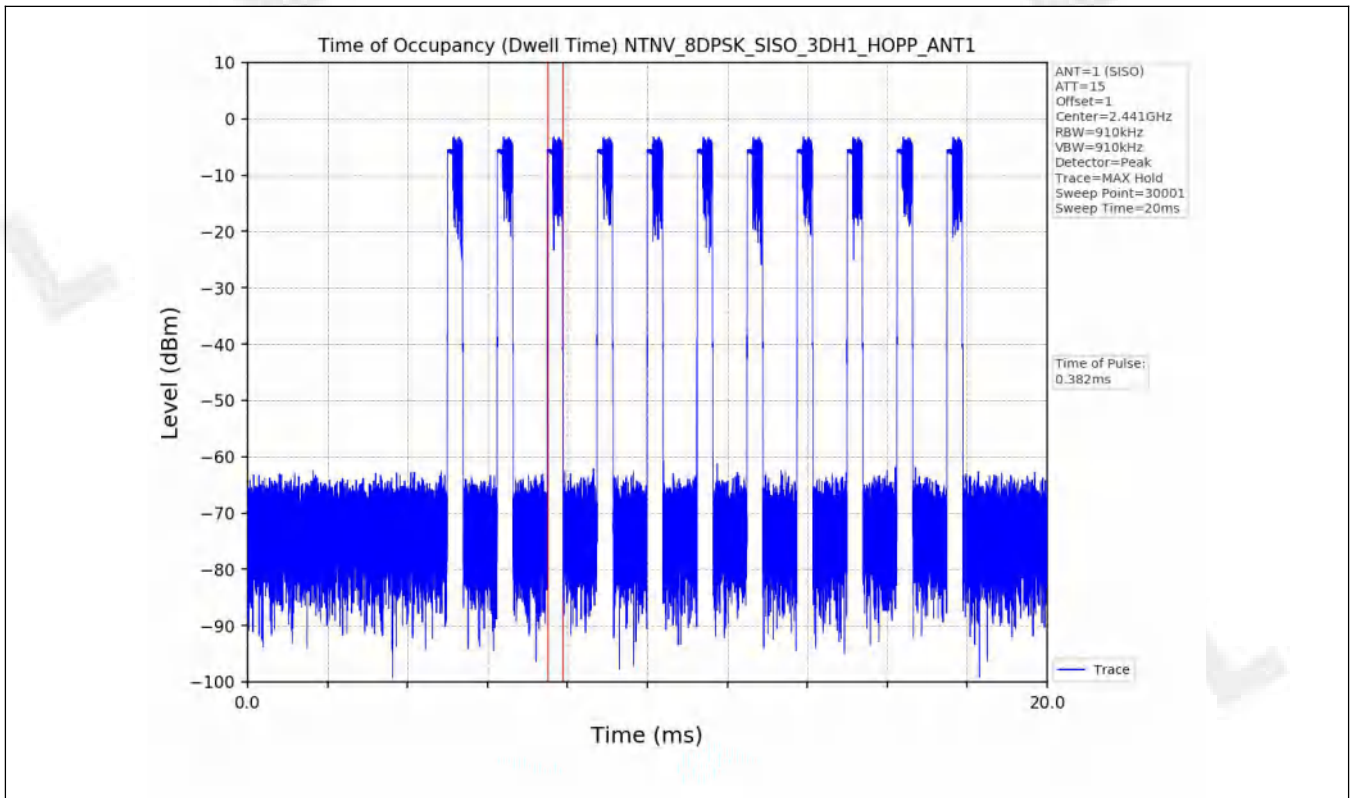
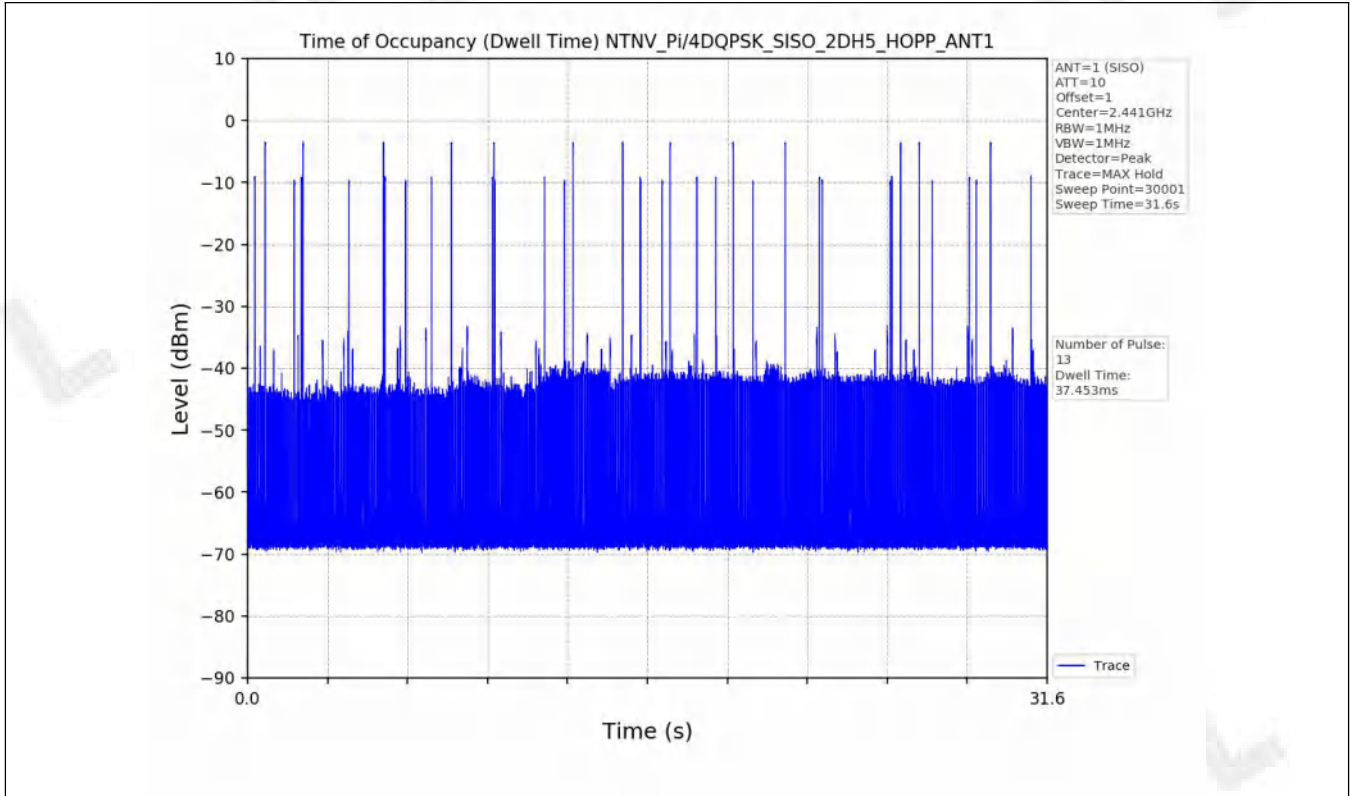


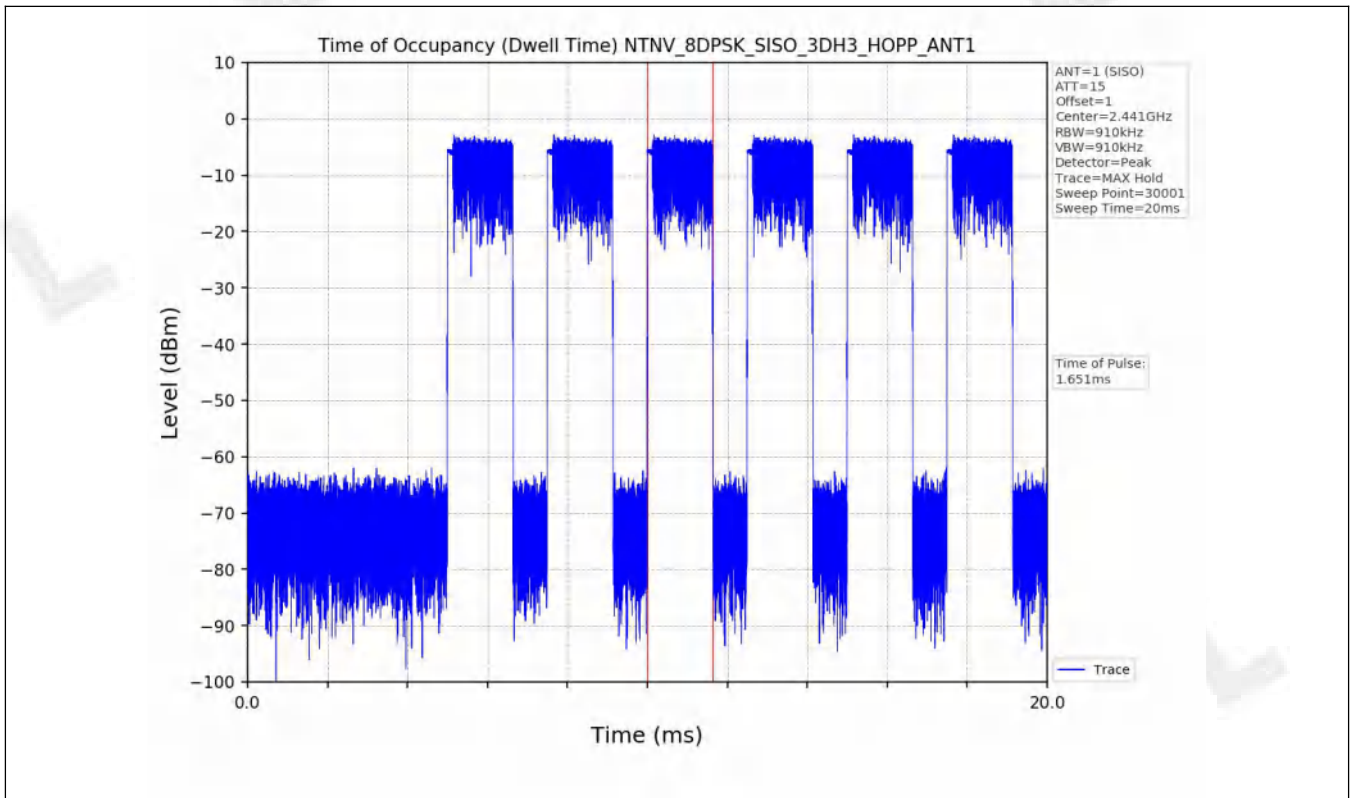
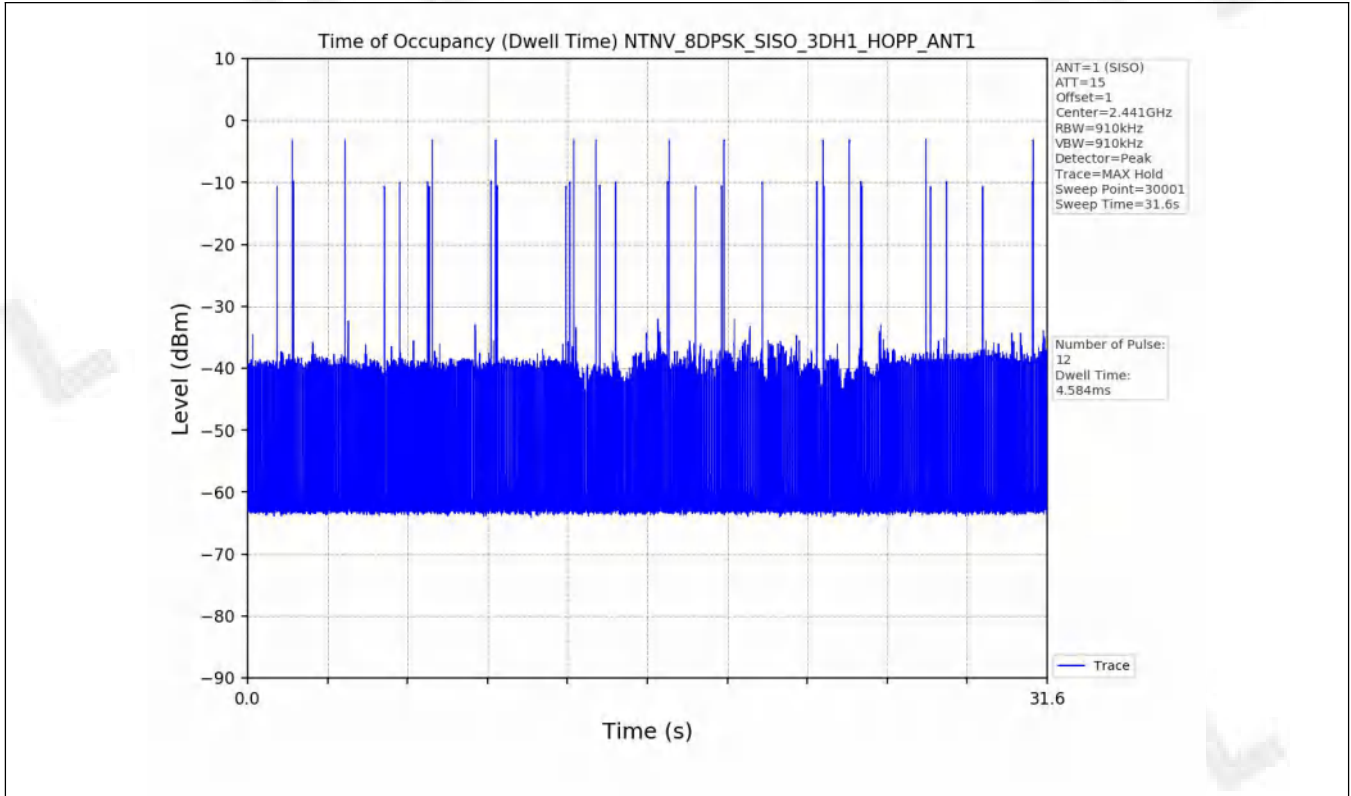


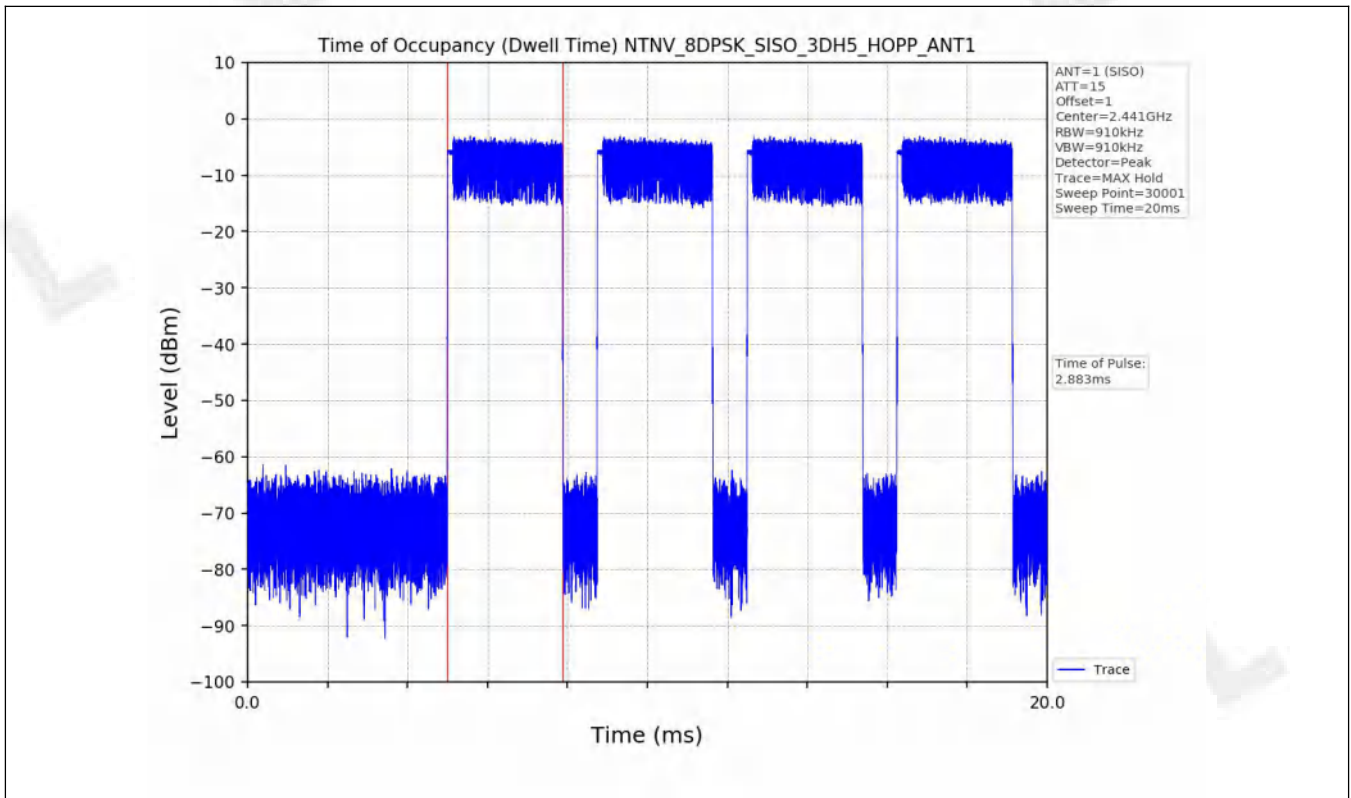
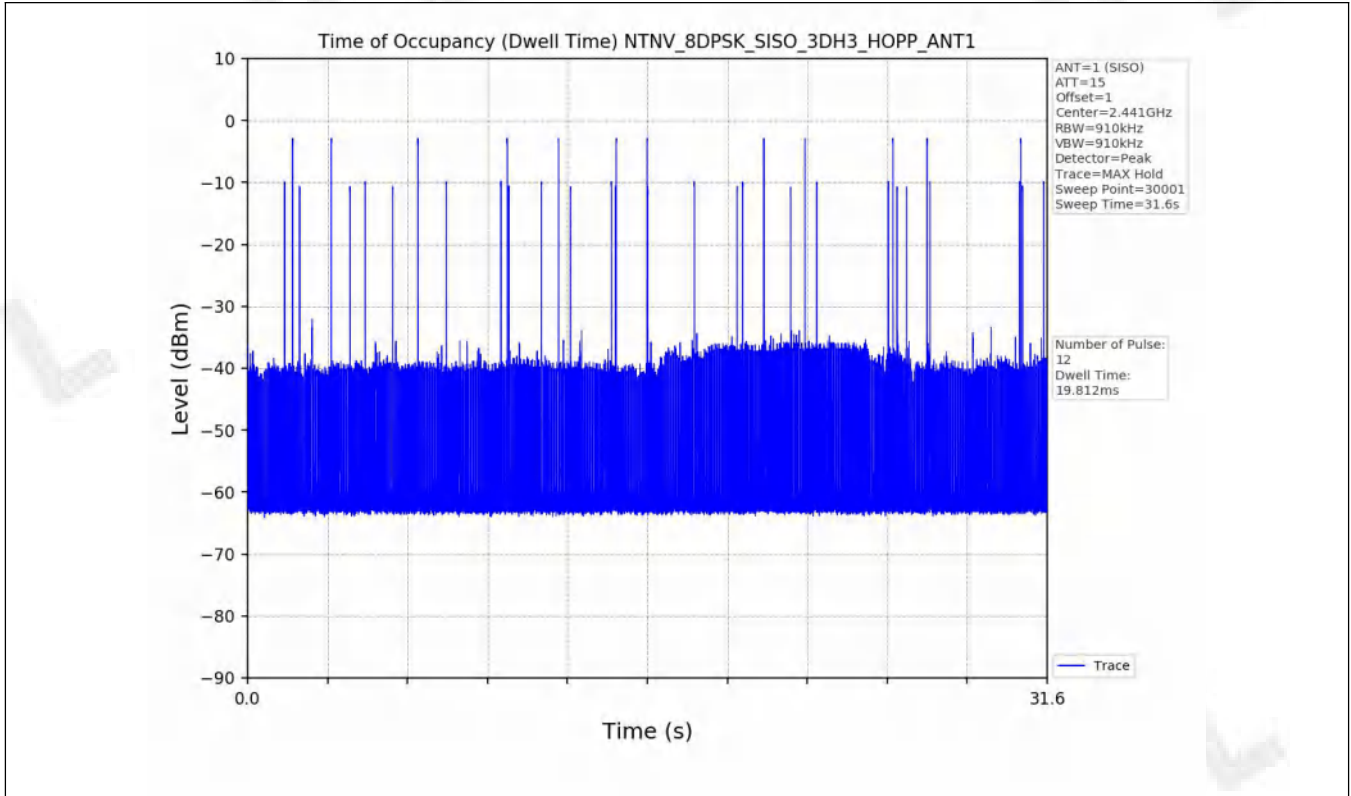


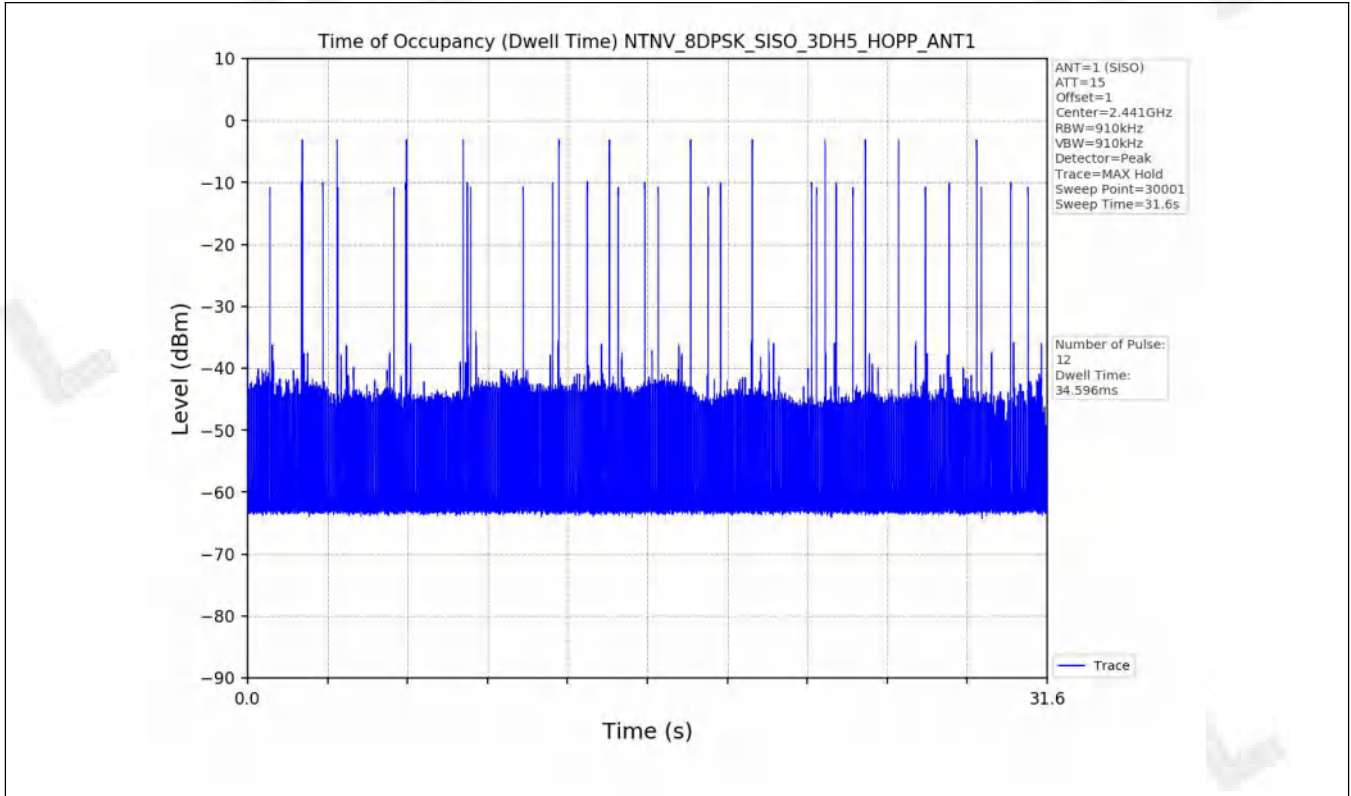












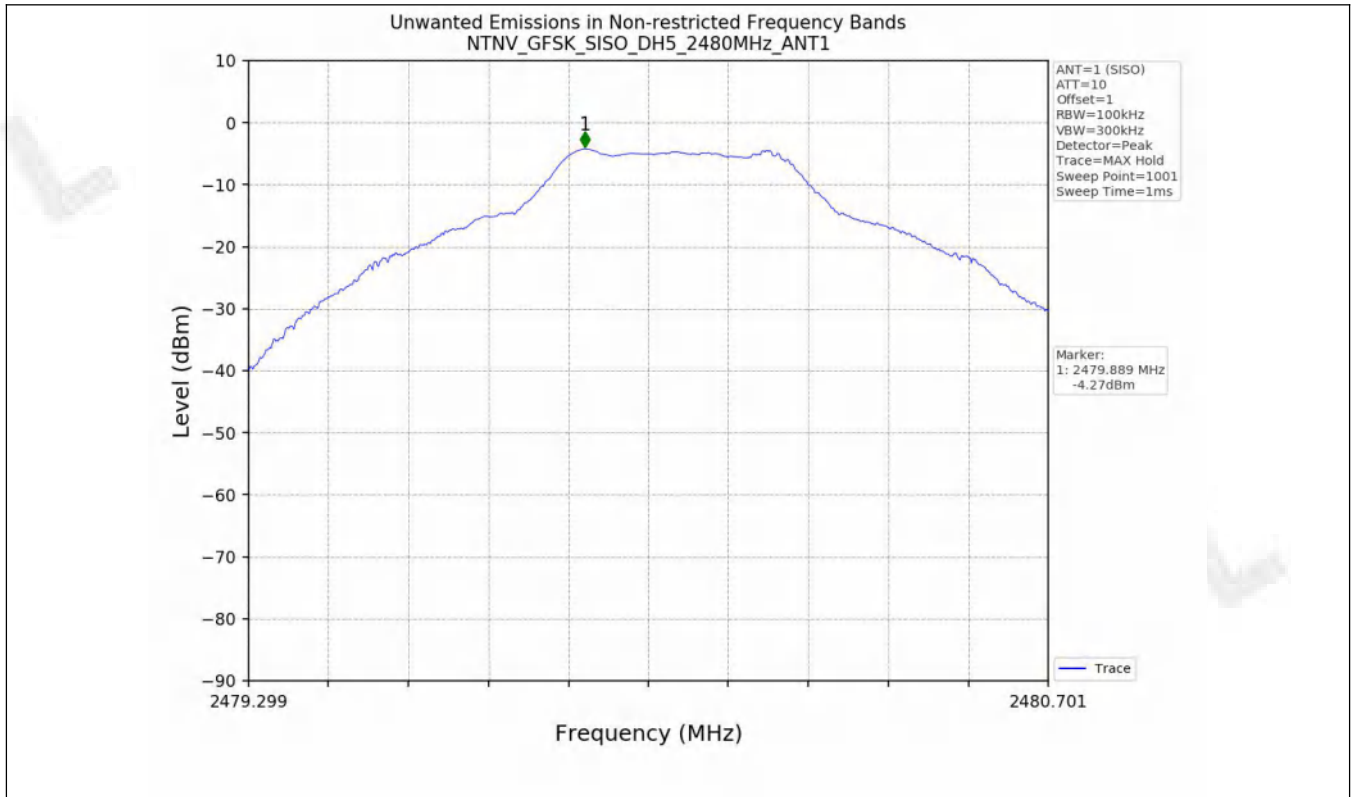
6. Unwanted Emissions in Non-restricted Frequency Bands

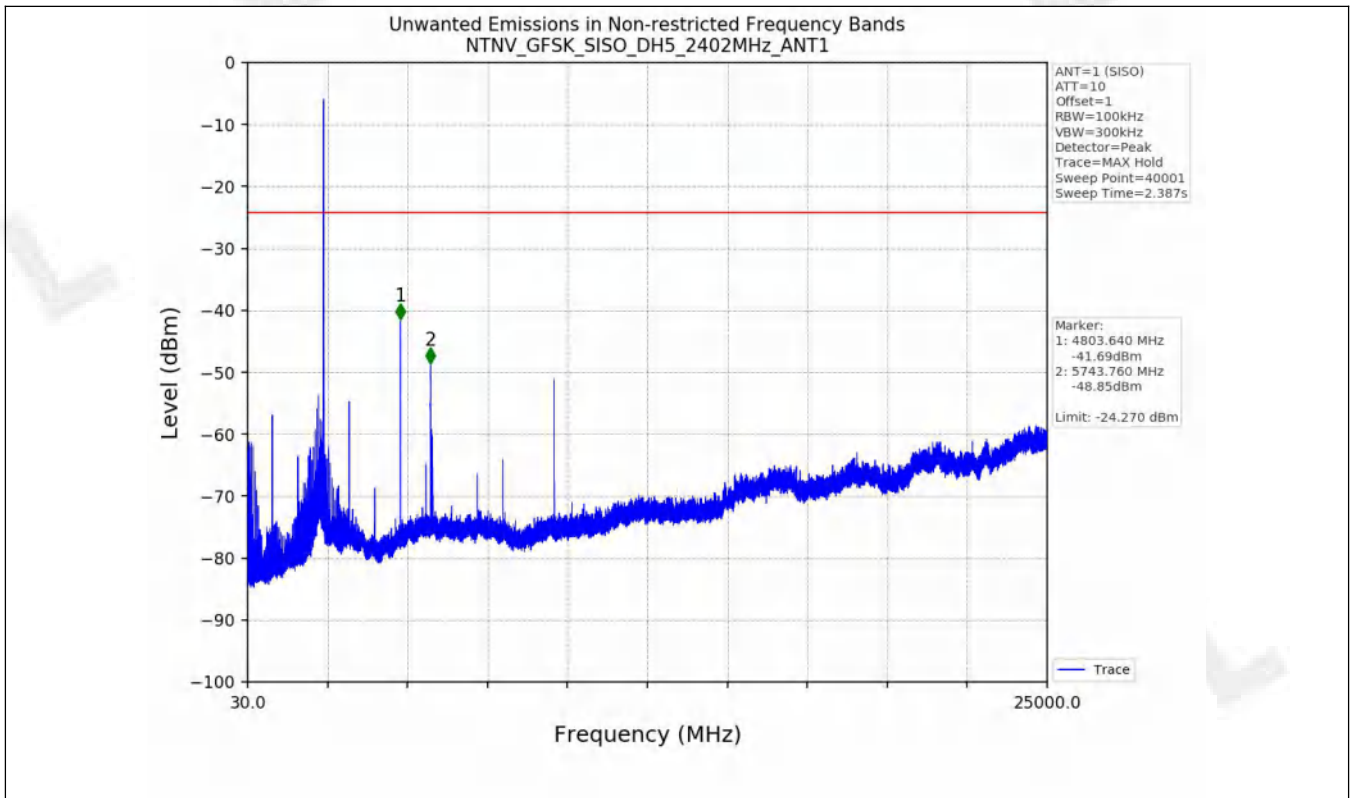
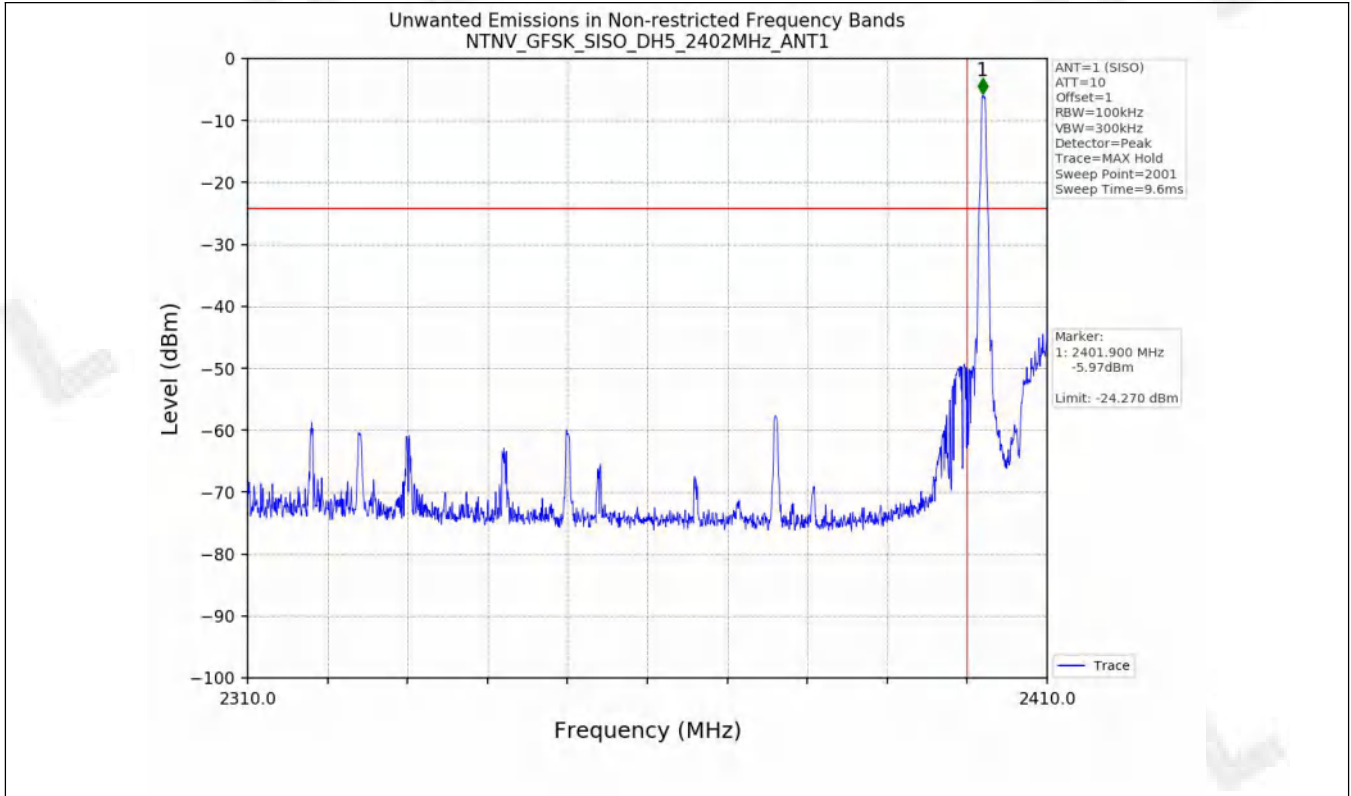
6.1 Test Result

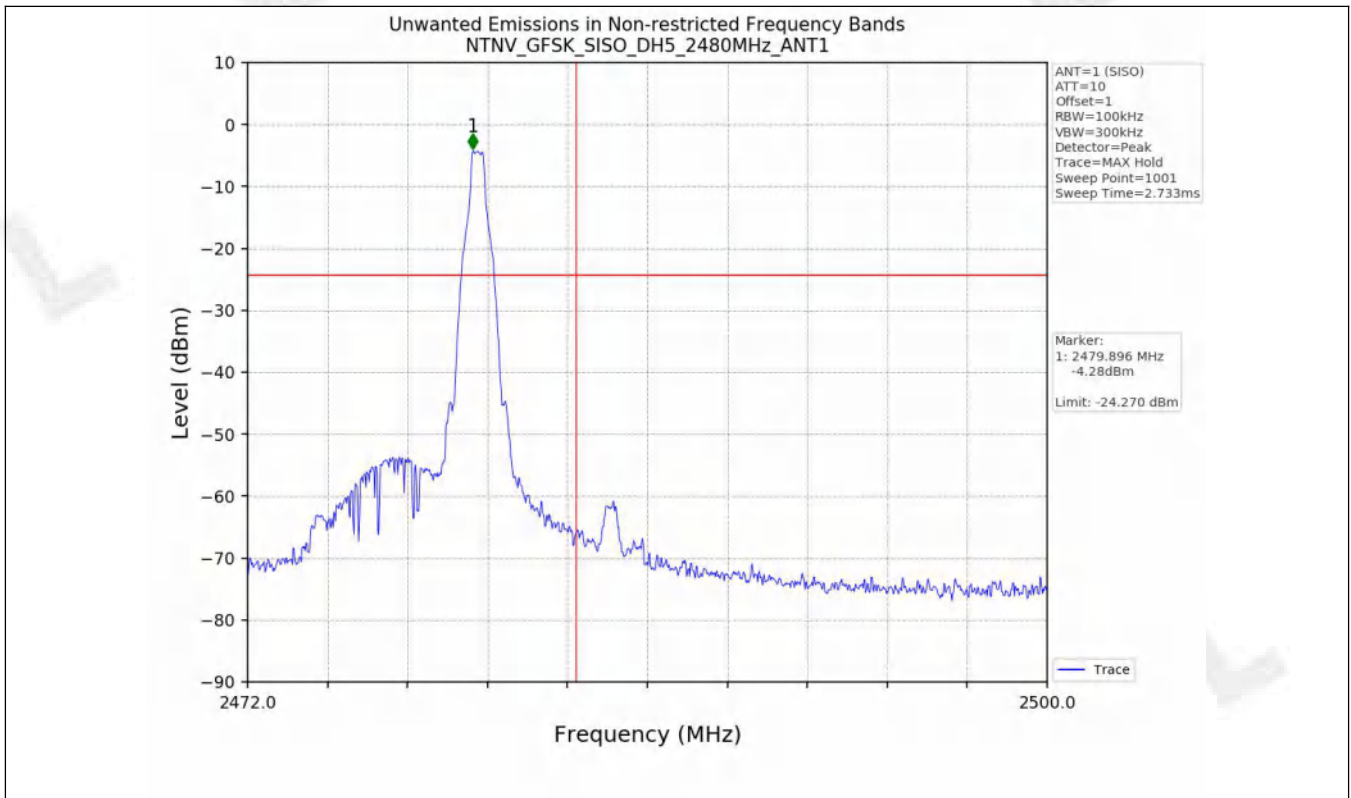
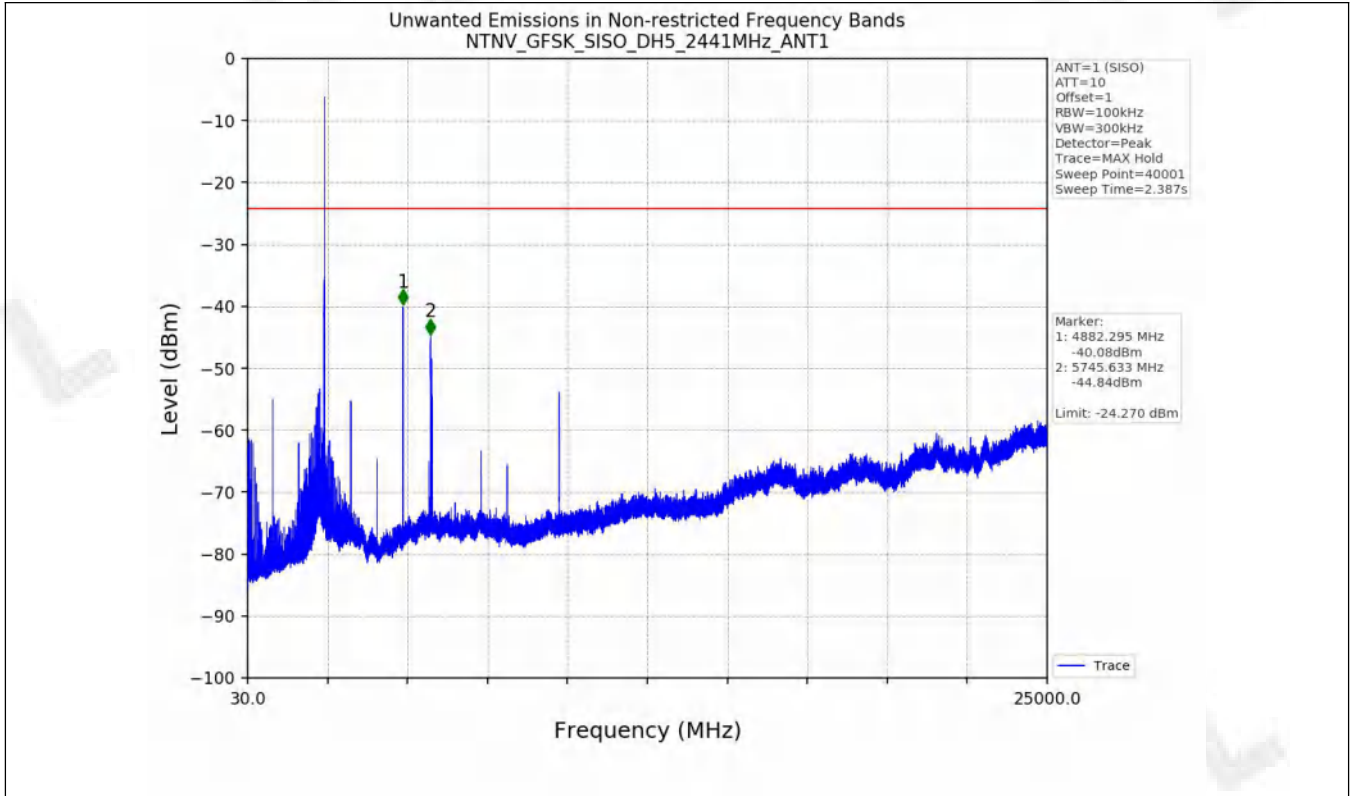
| Test Mode | Frequency (MHz) | TX Type | ANT No. | Spurious Conducted Emission (dBm) | Limits (dBm) | Verdict |
|-----------|-----------------|---------|---------|-----------------------------------|--------------|---------|
| GFSK | 2402 | SISO | 1 | Refer to test graph | -24.27 | PASS |
| | 2441 | SISO | 1 | Refer to test graph | -24.27 | PASS |
| | 2480 | SISO | 1 | Refer to test graph | -24.27 | PASS |
| | Hopping | SISO | 1 | Refer to test graph | -24.27 | PASS |
| Pi/4DQPSK | 2402 | SISO | 1 | Refer to test graph | -24.44 | PASS |
| | 2441 | SISO | 1 | Refer to test graph | -24.44 | PASS |
| | 2480 | SISO | 1 | Refer to test graph | -24.44 | PASS |
| | Hopping | SISO | 1 | Refer to test graph | -24.44 | PASS |
| 8DPSK | 2402 | SISO | 1 | Refer to test graph | -24.28 | PASS |
| | 2441 | SISO | 1 | Refer to test graph | -24.28 | PASS |
| | 2480 | SISO | 1 | Refer to test graph | -24.28 | PASS |

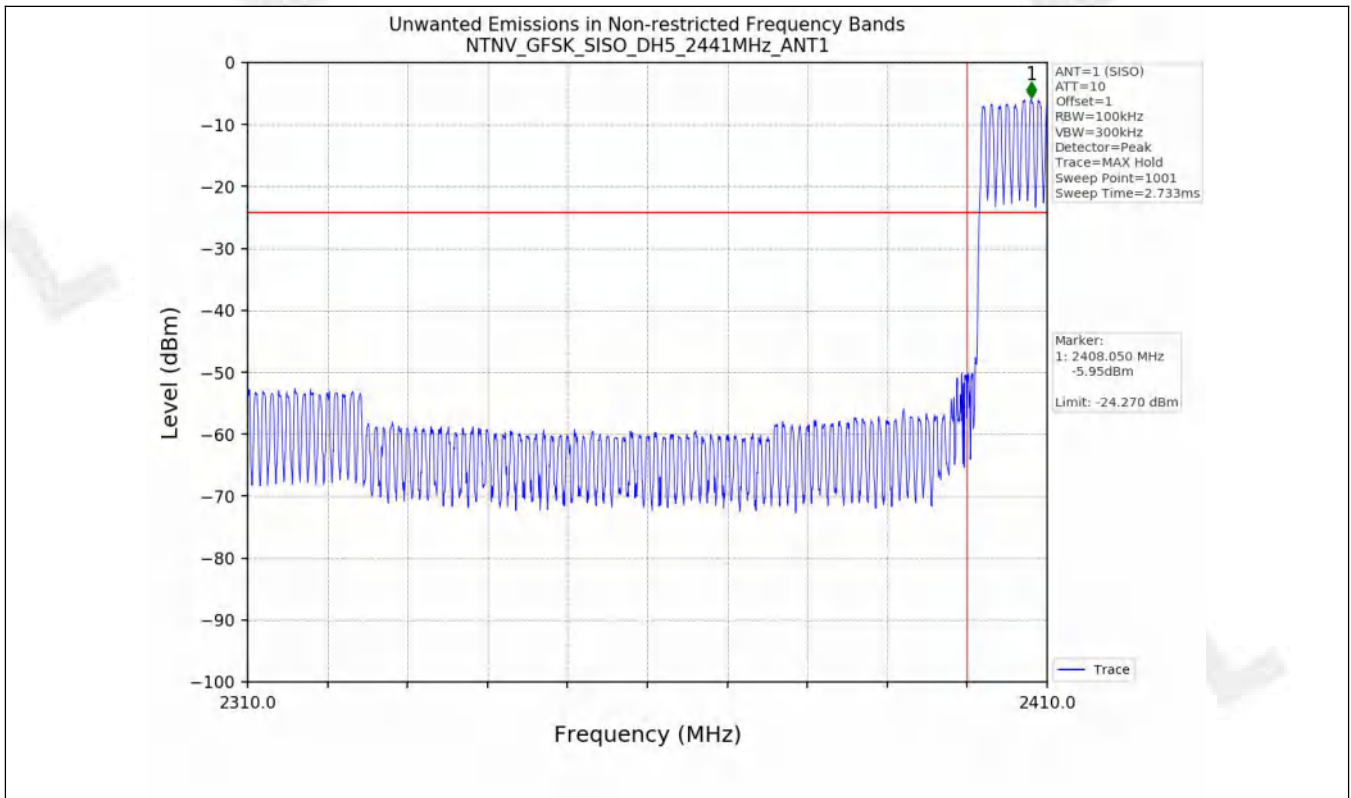
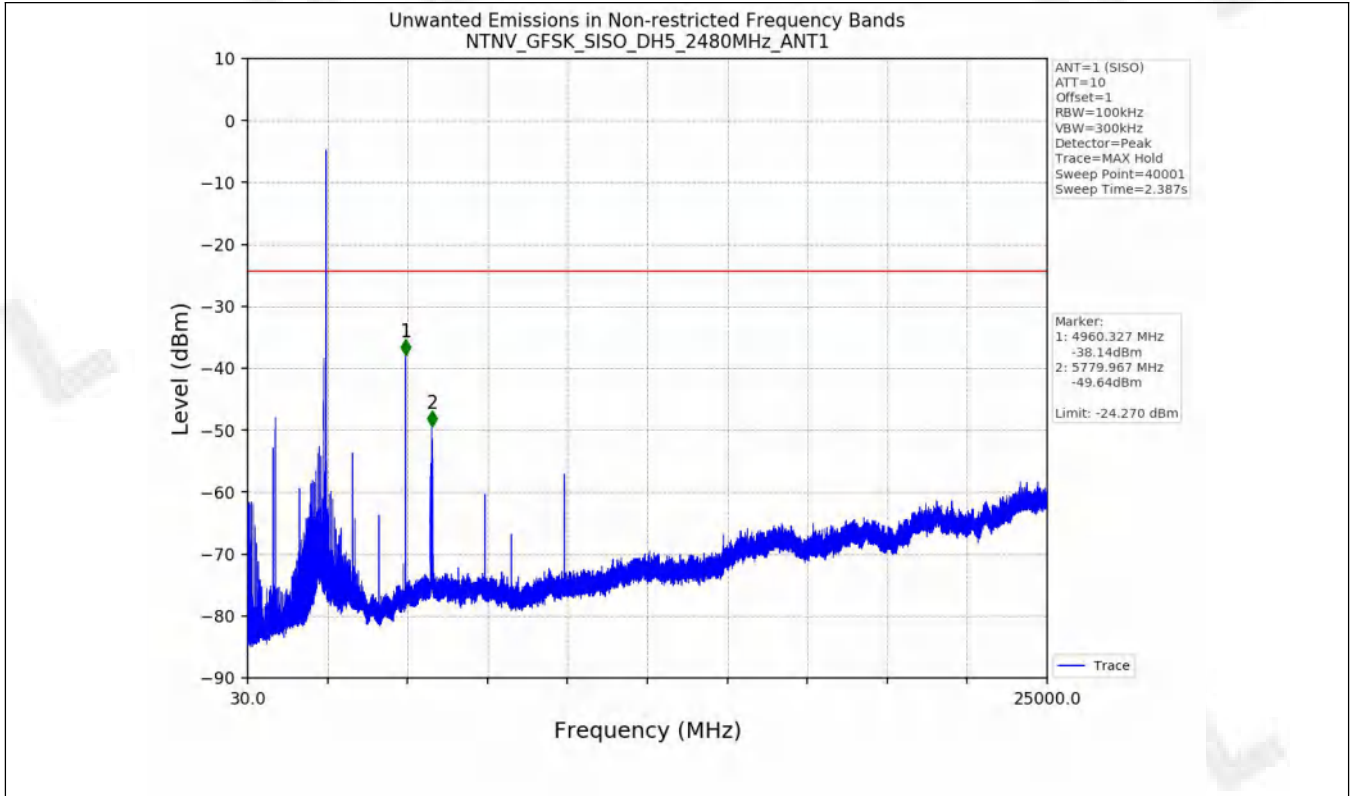
| | | | | | | |
|--|---------|------|---|---------------------|--------|------|
| | Hopping | SISO | 1 | Refer to test graph | -24.28 | PASS |
|--|---------|------|---|---------------------|--------|------|

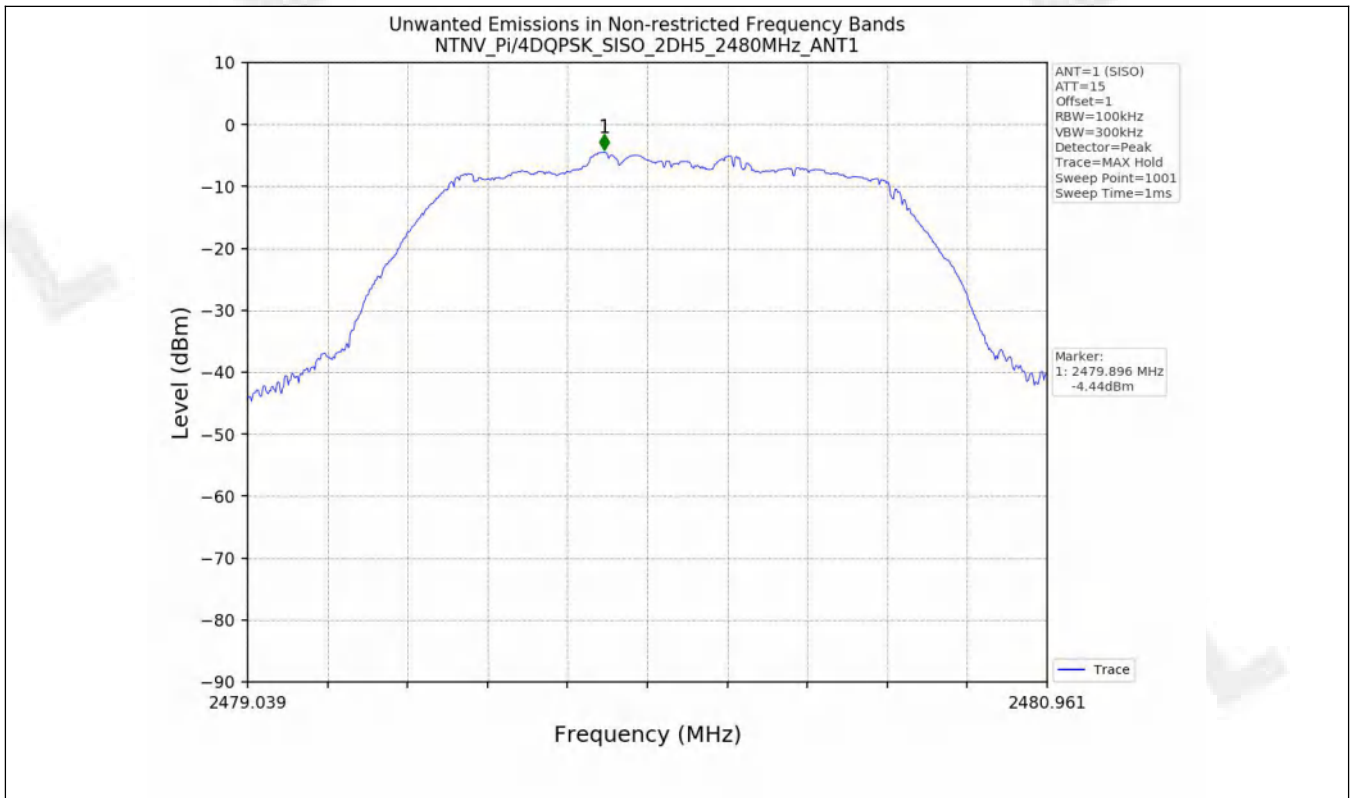
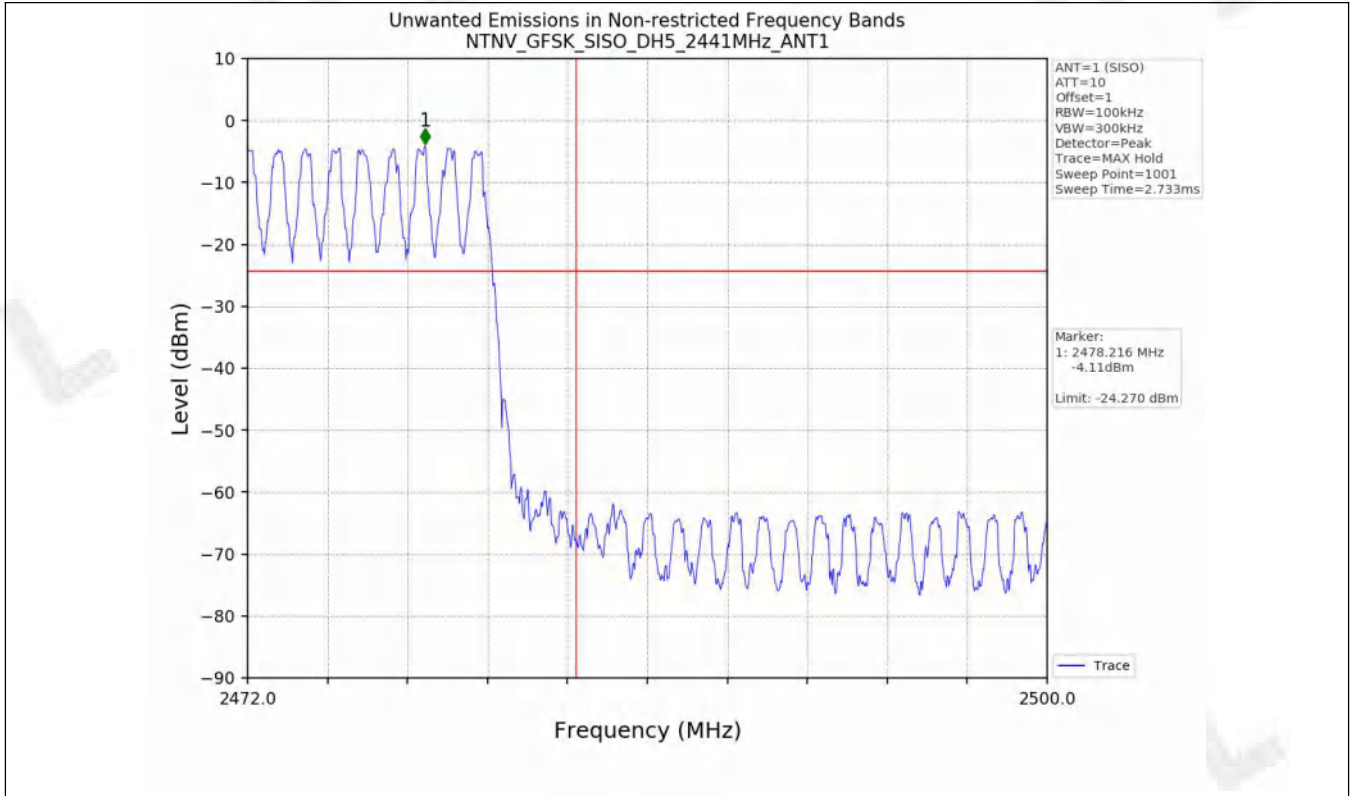
6.2 Test Graph

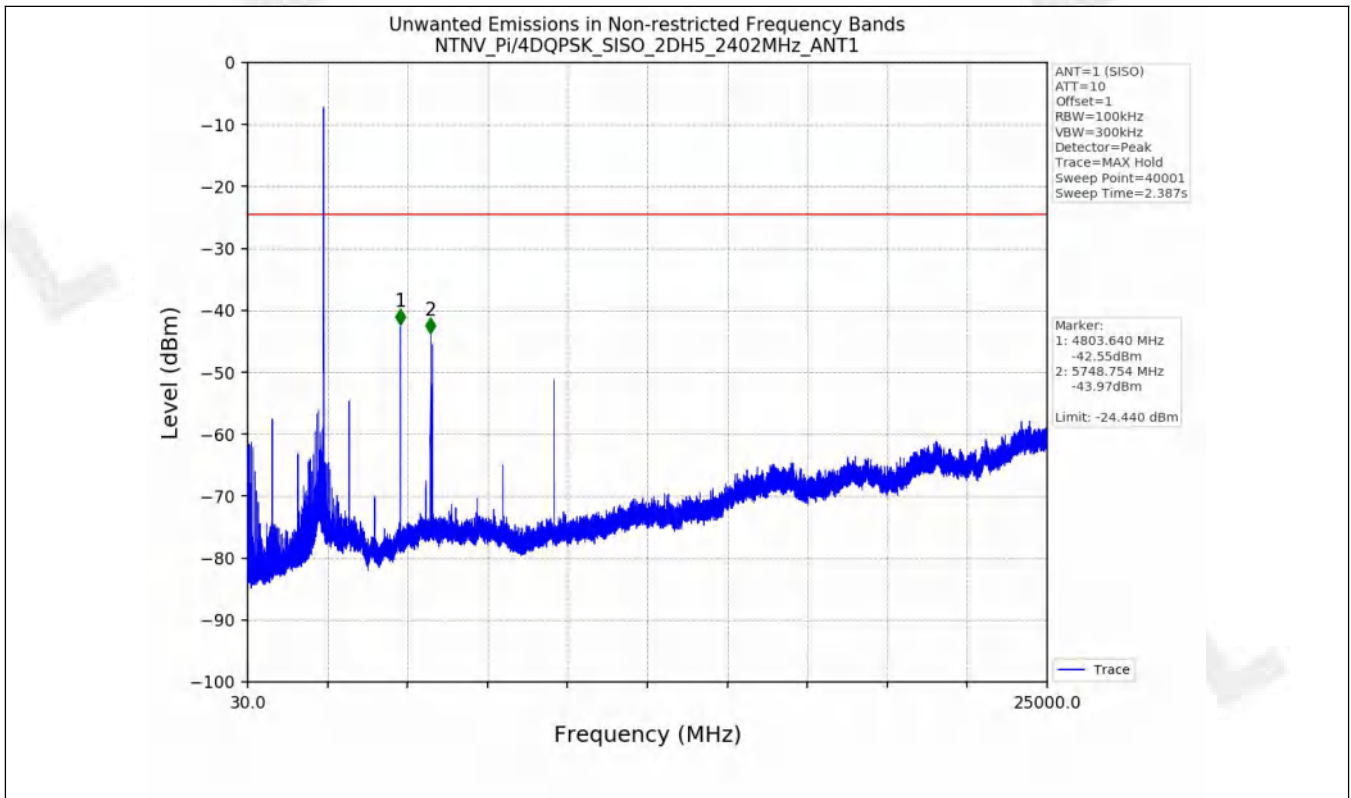
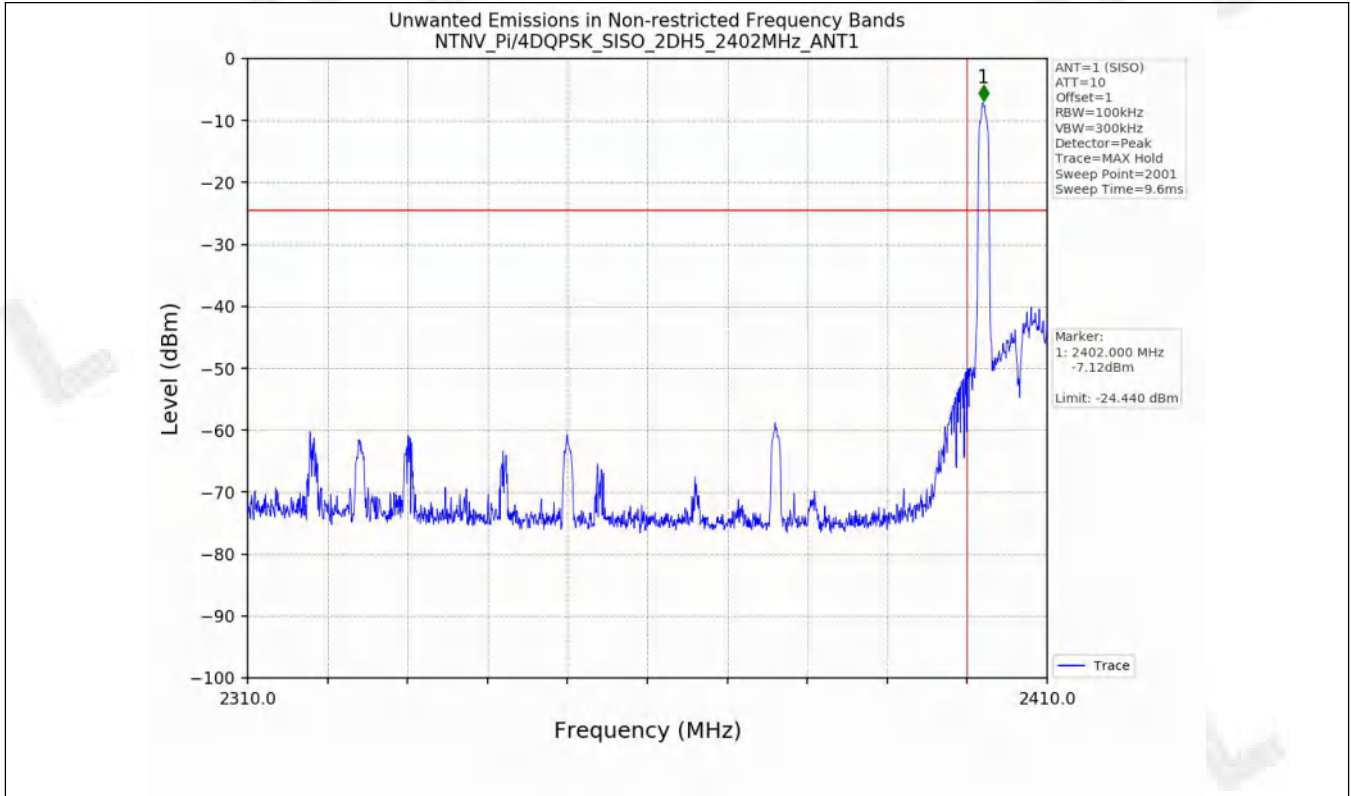


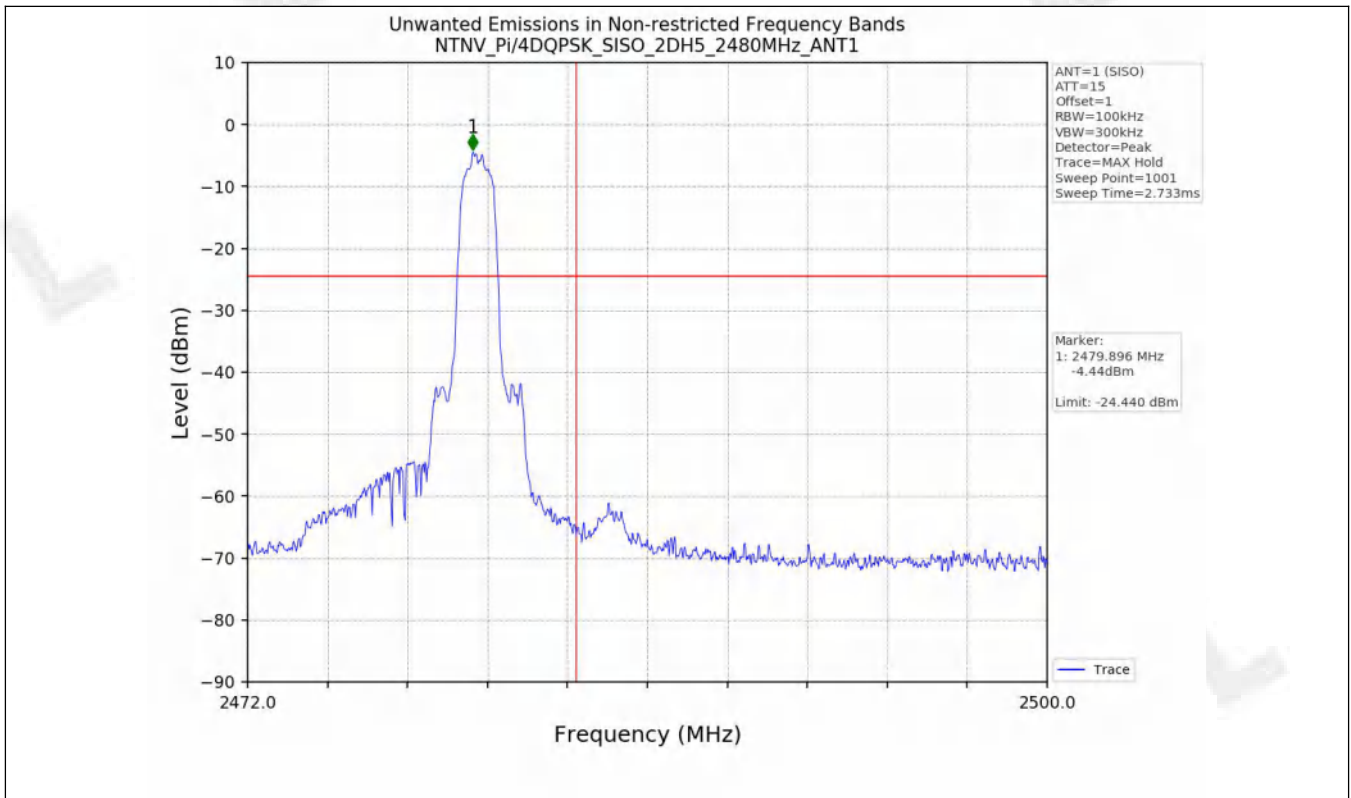
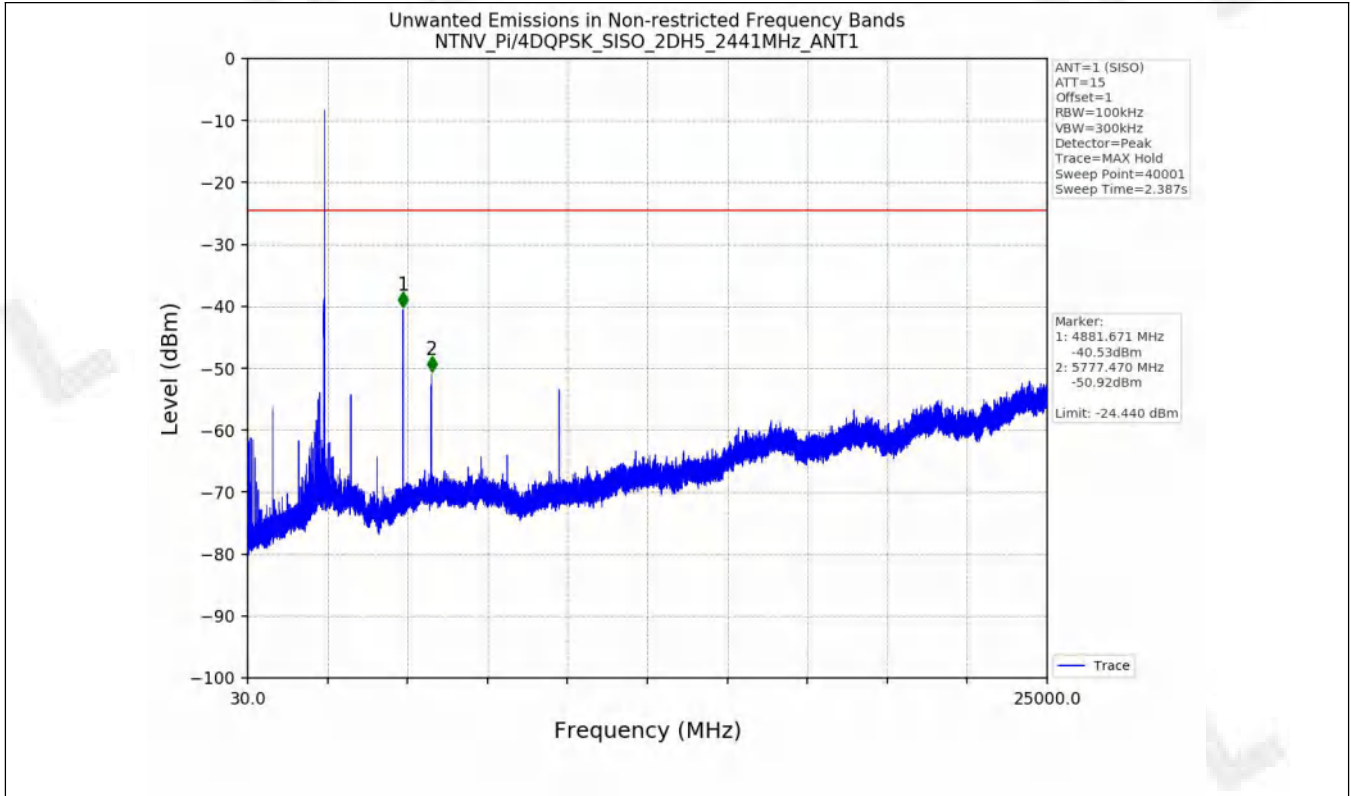


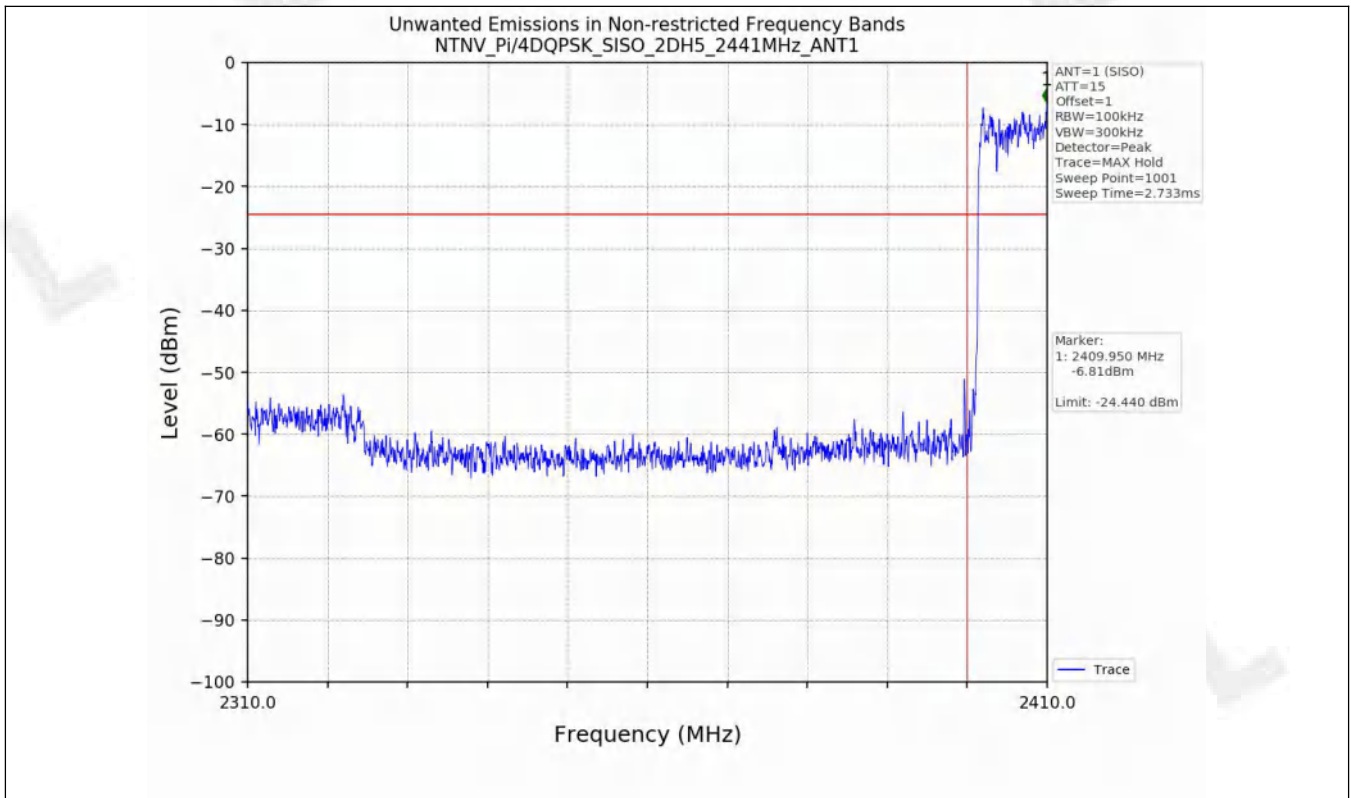
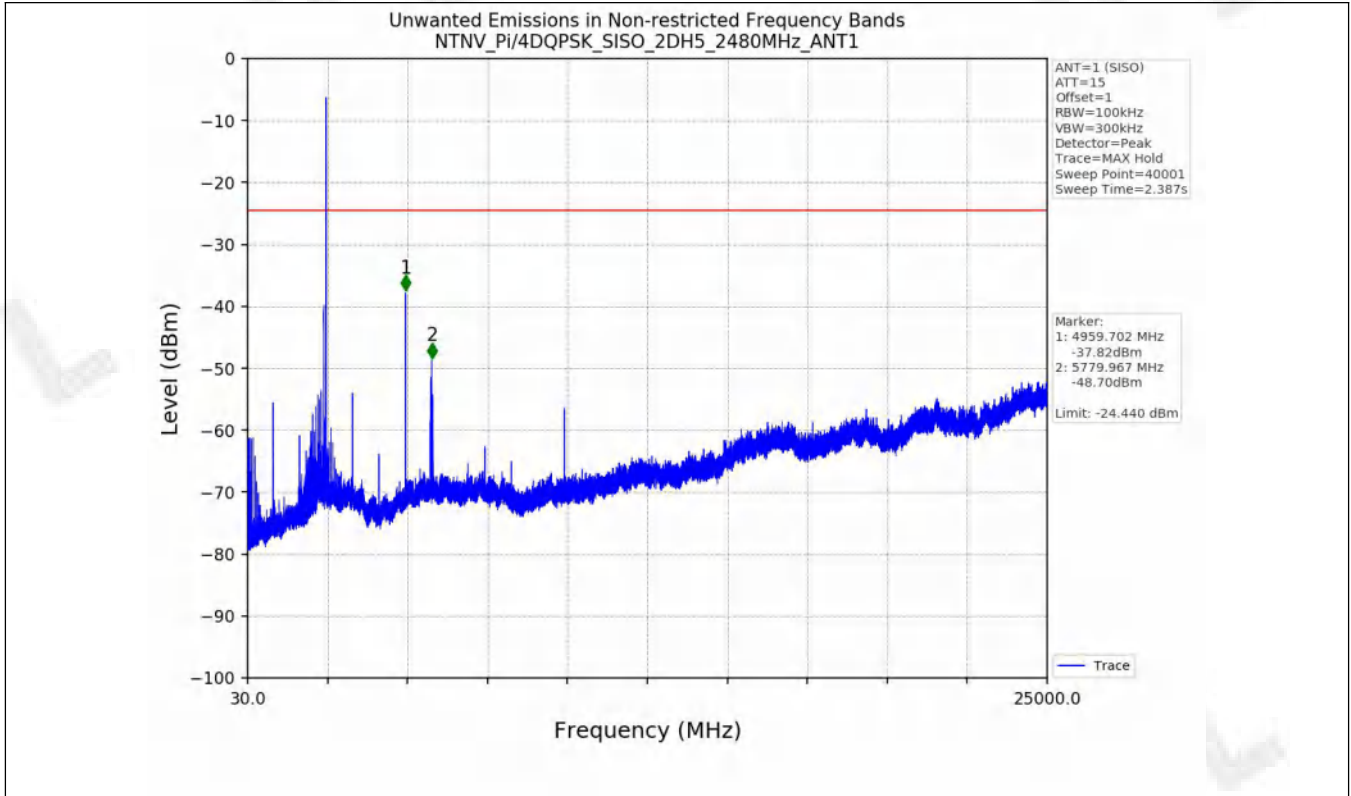


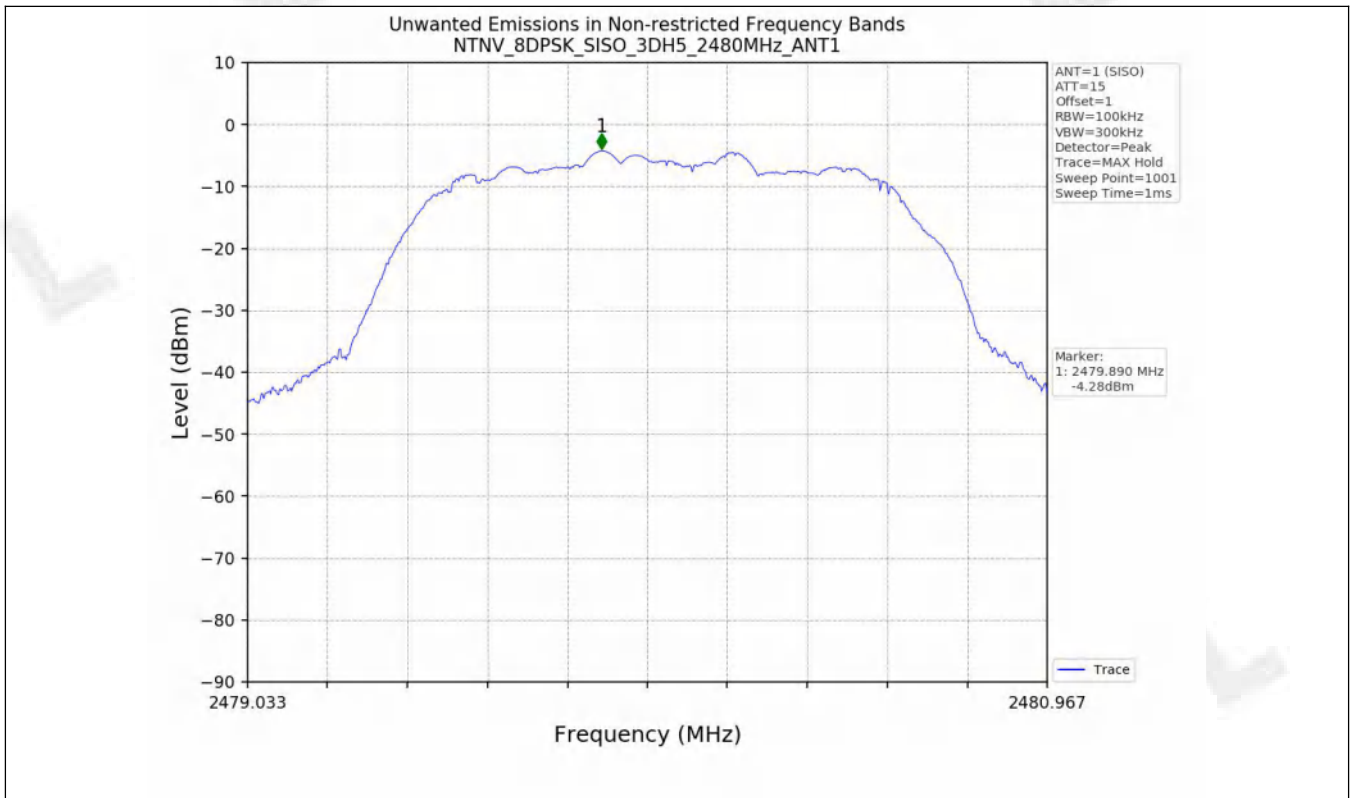
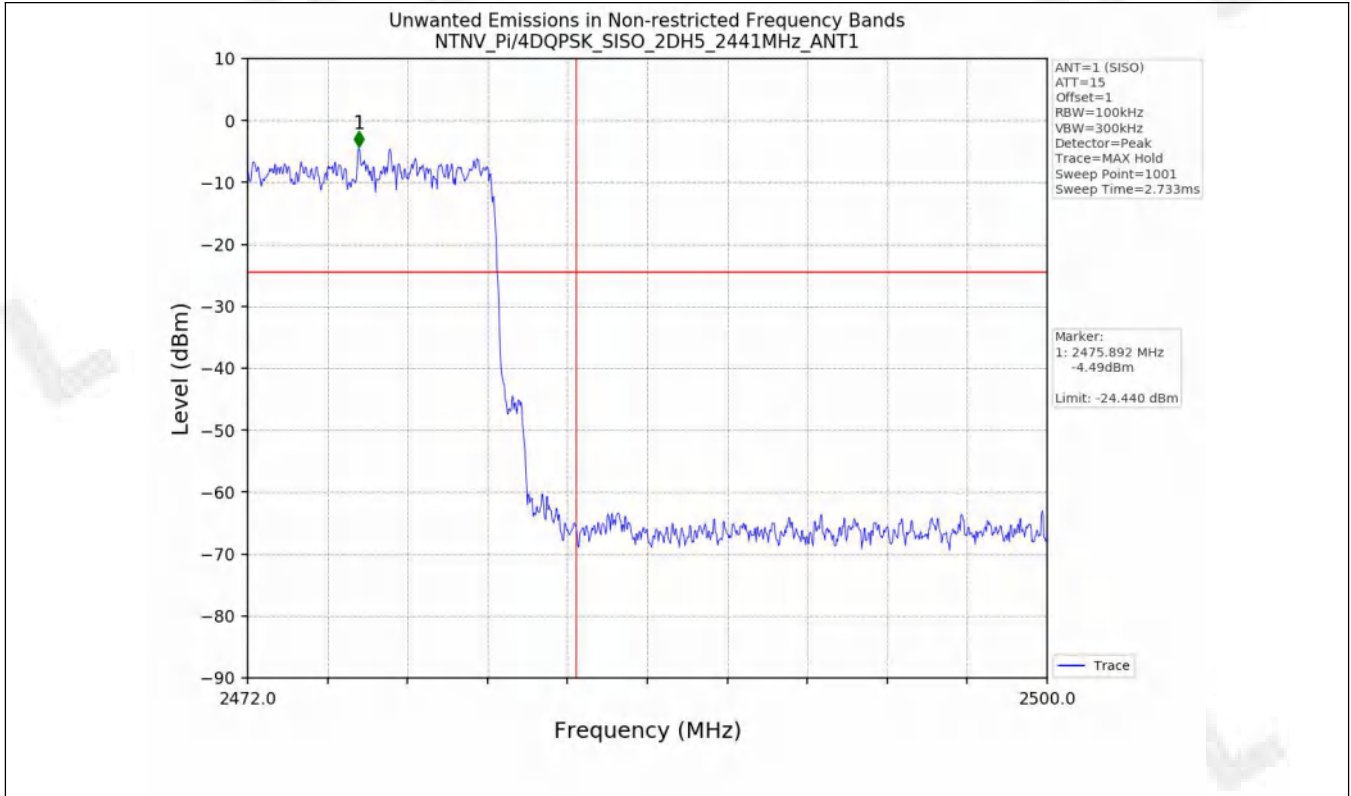


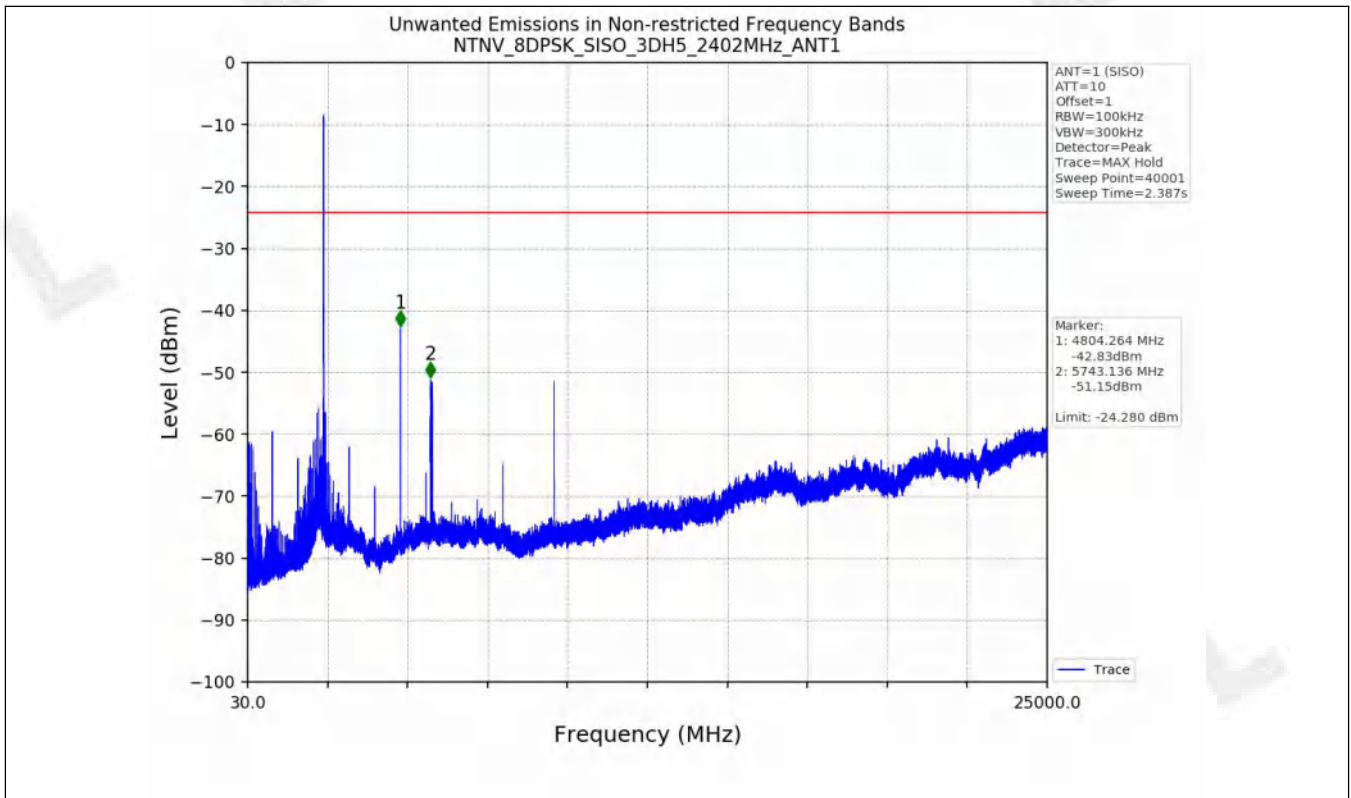
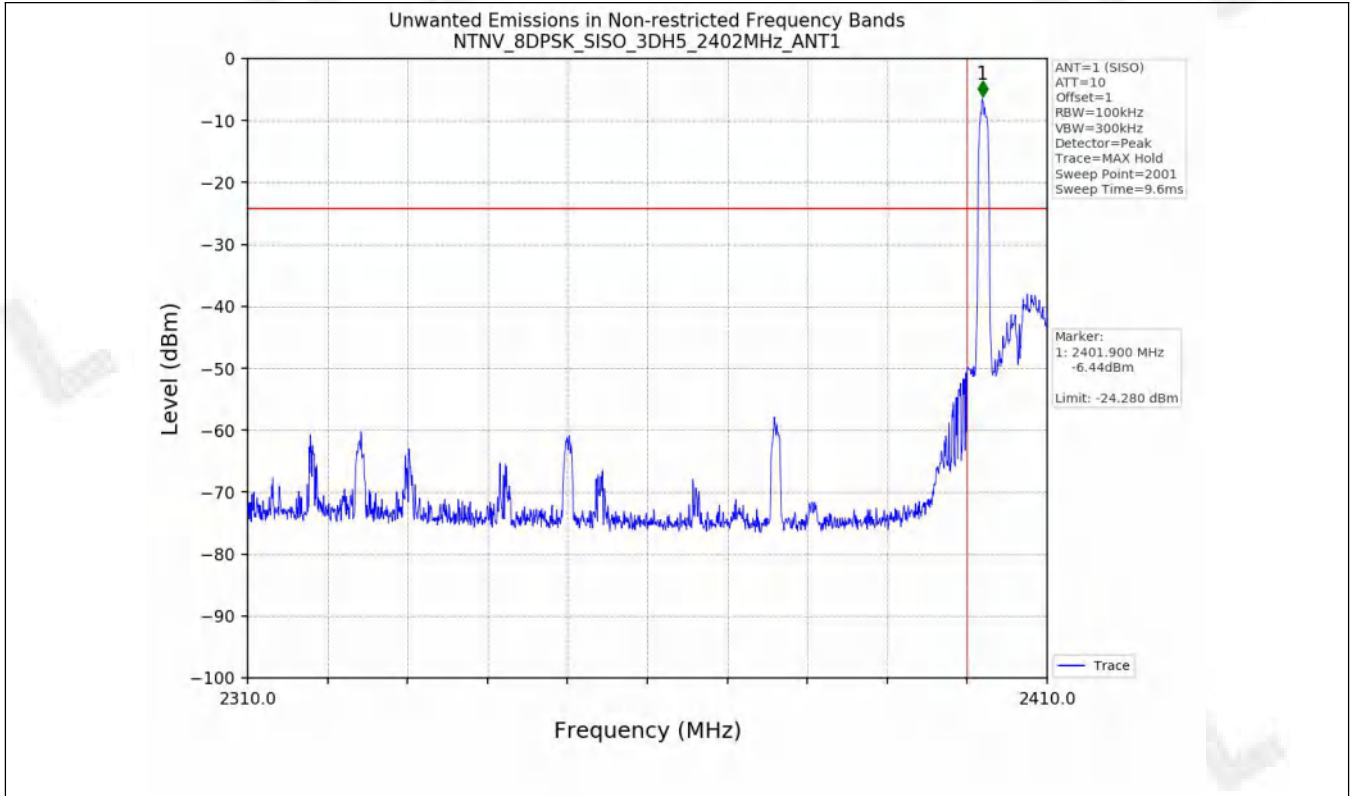


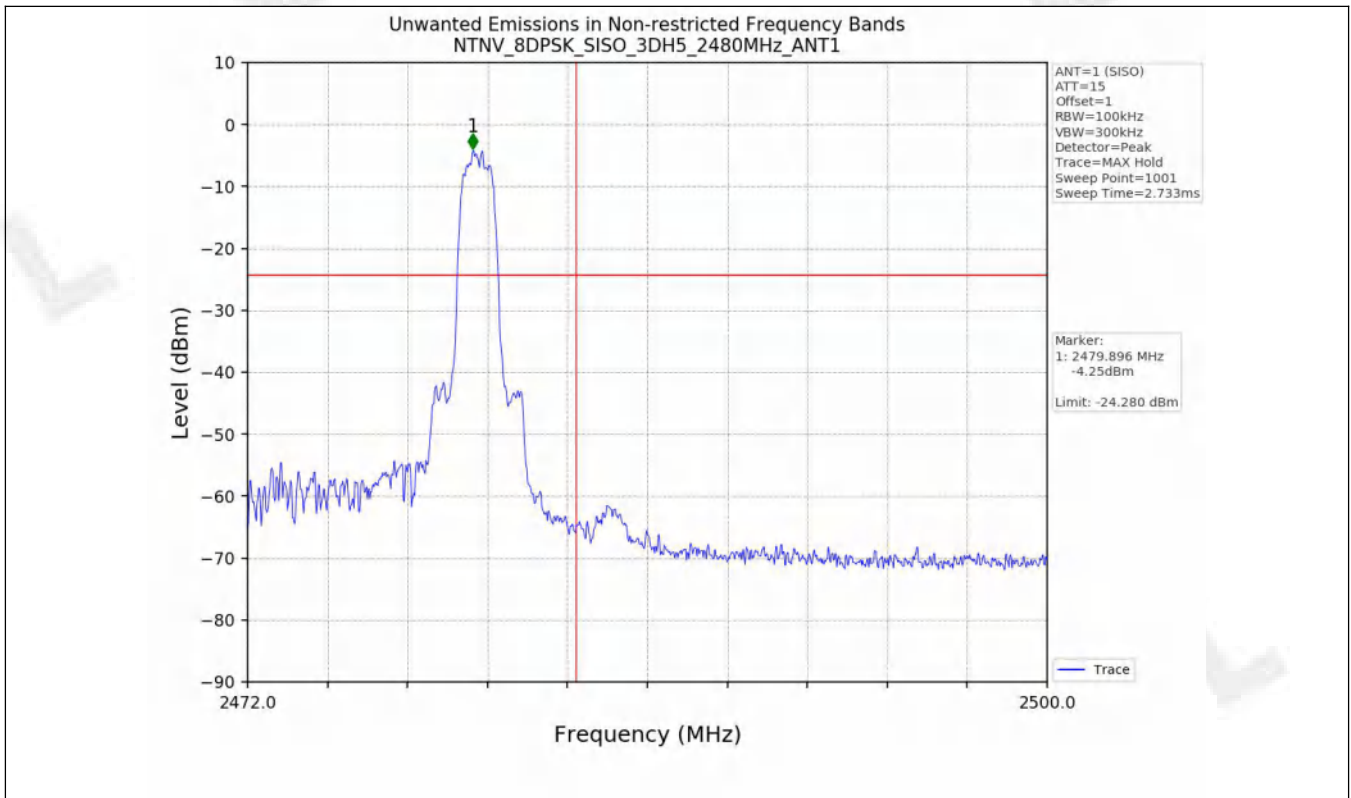
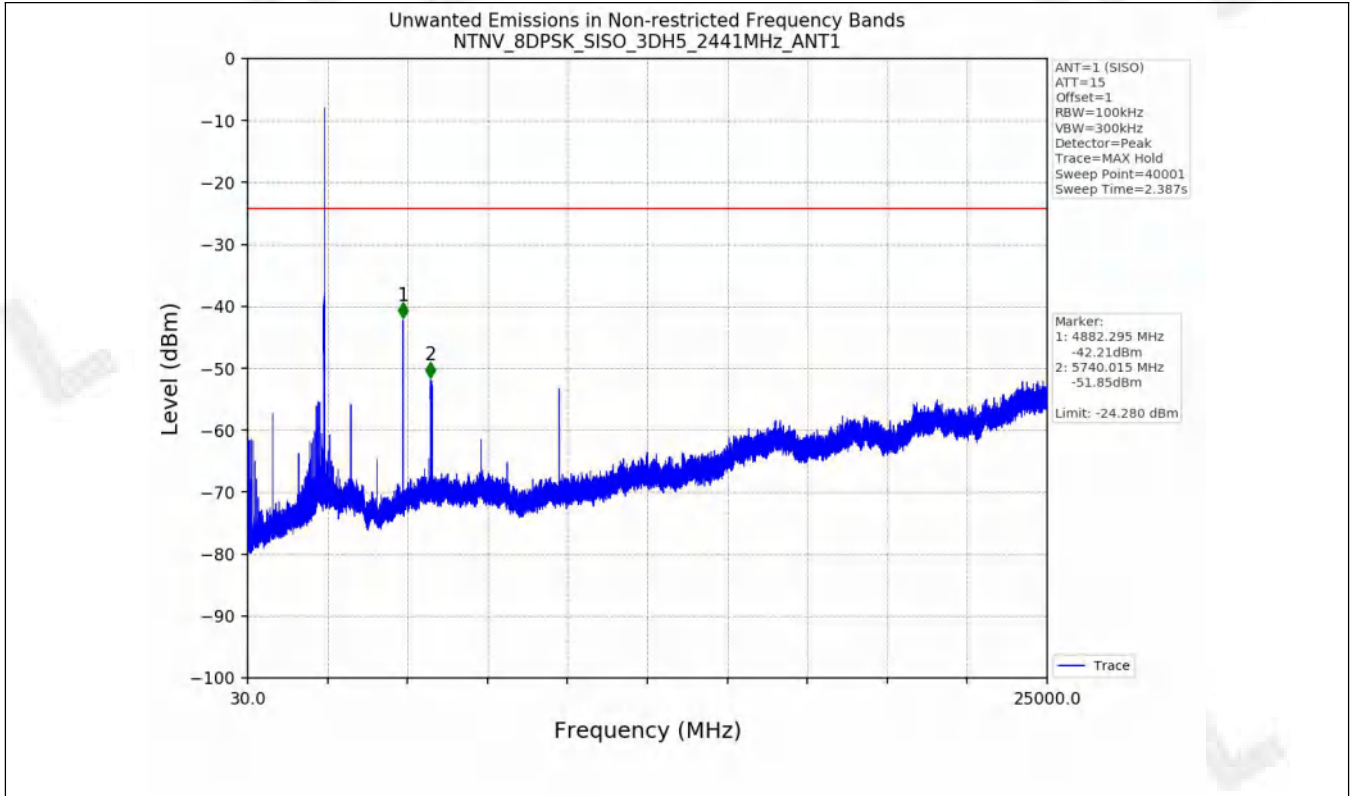


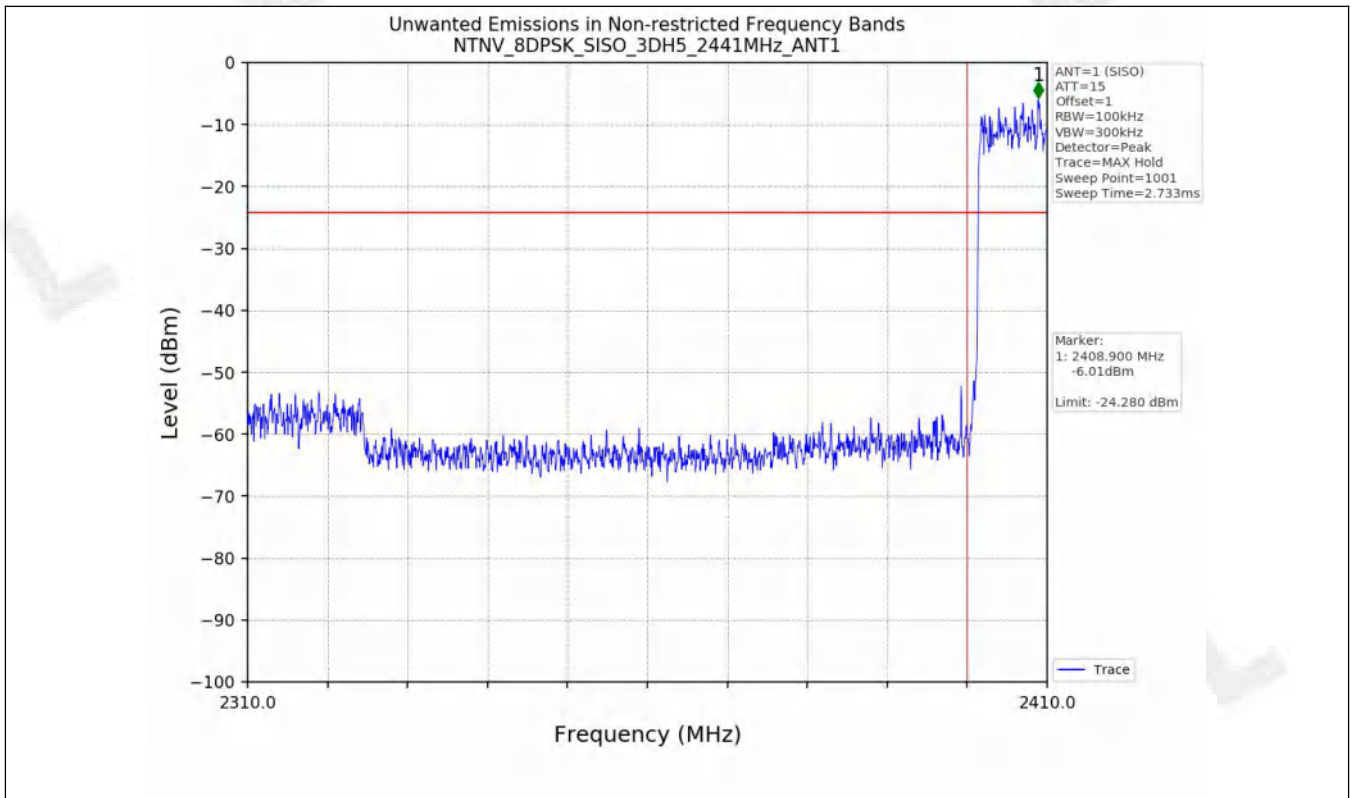
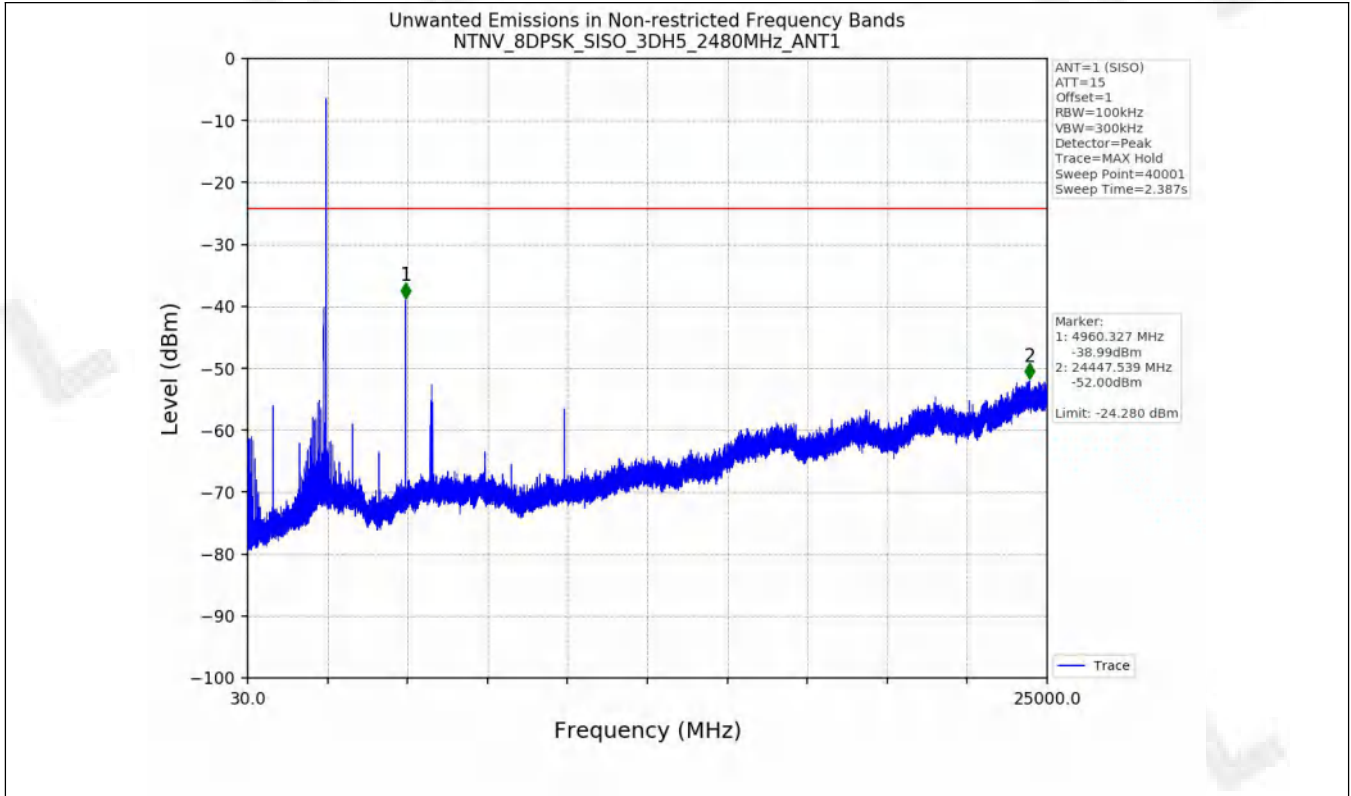


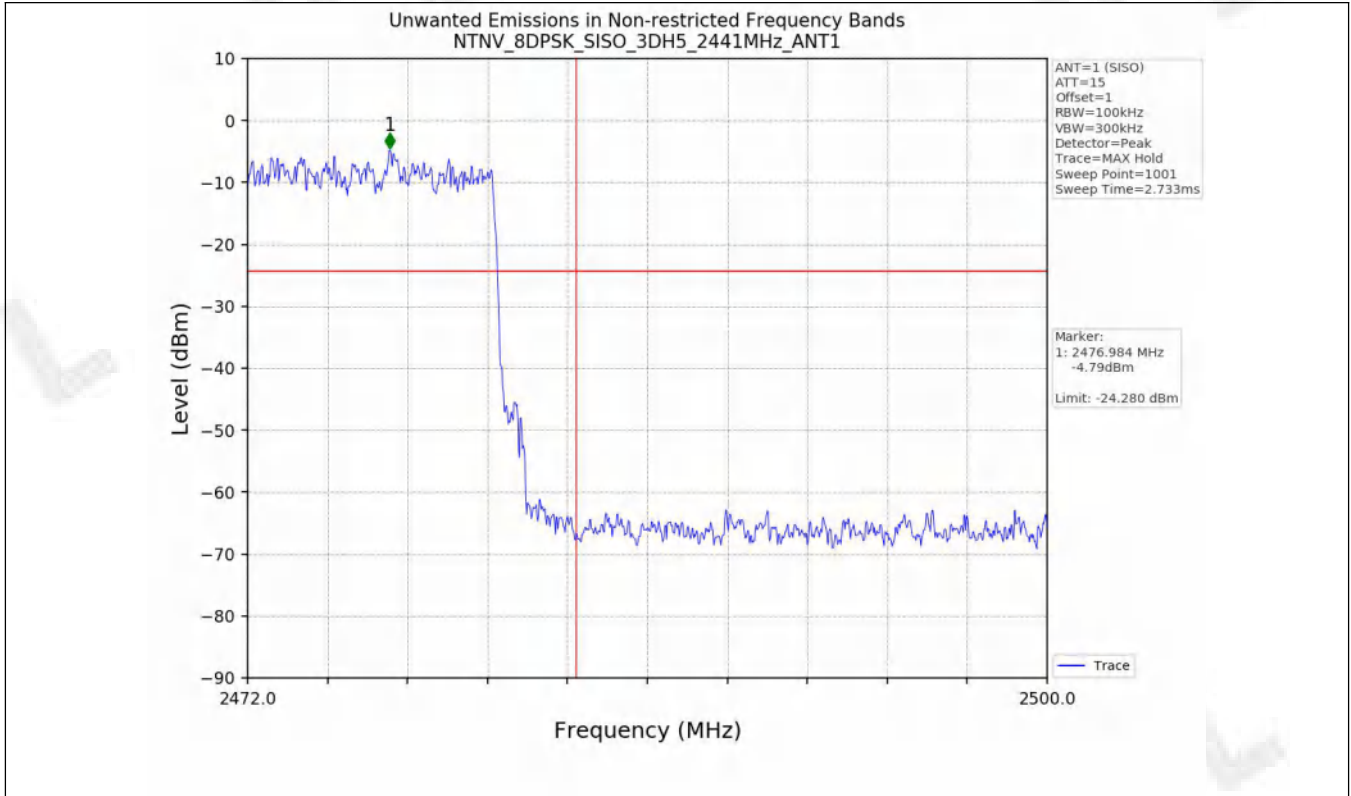












7. Frequency Error

7.1 Test Result

| Test Mode | Frequency (MHz) | TX Type | ANT | Measured Frequency (MHz) | | Verdict |
|-----------|-----------------|---------|-----|--------------------------|-------------|---------|
| | | | | Test Result | Limit | |
| GFSK | 2402 | SISO | 1 | 2402.05 | 2400-2483.5 | PASS |
| | 2441 | SISO | 1 | 2441.05 | 2400-2483.5 | PASS |
| | 2480 | SISO | 1 | 2480.05 | 2400-2483.5 | PASS |
| Pi/4DQPSK | 2402 | SISO | 1 | 2402.04 | 2400-2483.5 | PASS |
| | 2441 | SISO | 1 | 2441.05 | 2400-2483.5 | PASS |
| | 2480 | SISO | 1 | 2480.05 | 2400-2483.5 | PASS |

7.2 Test Graph

