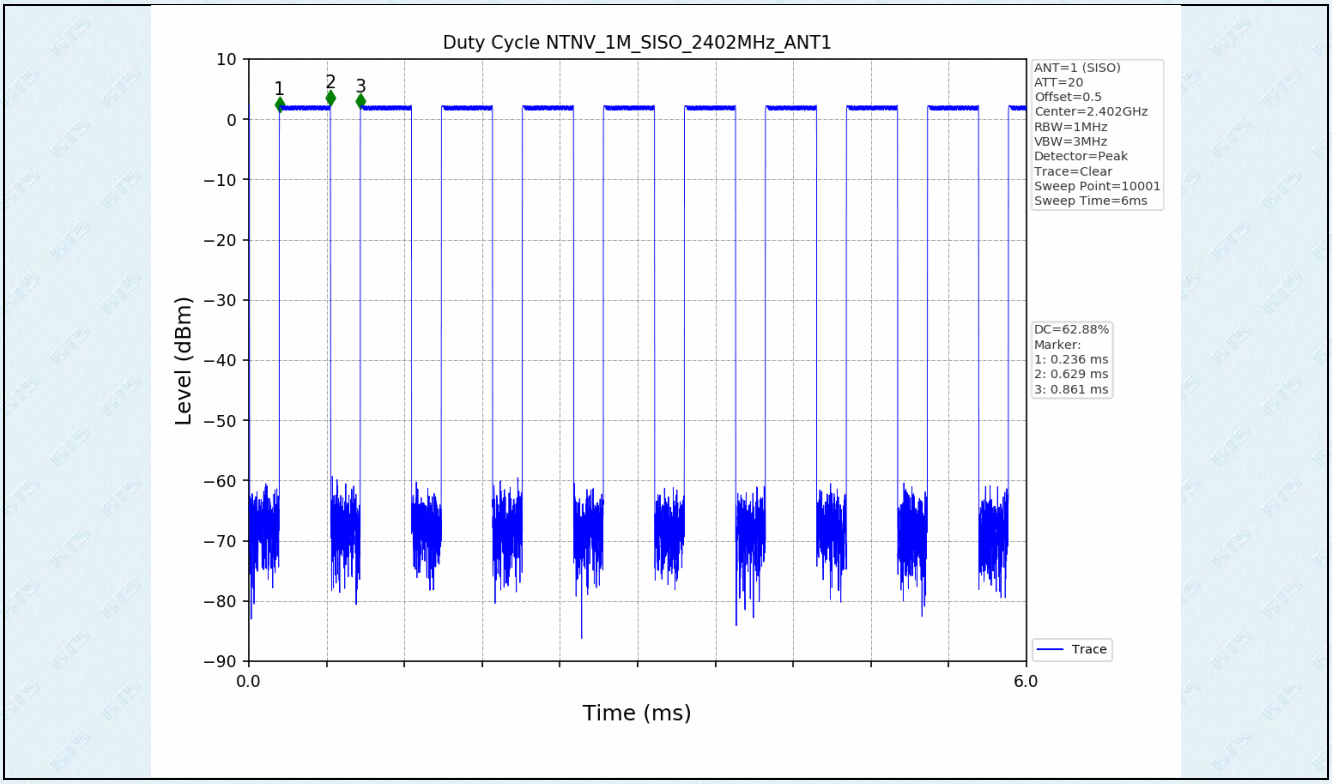
# Appendix for 15.247

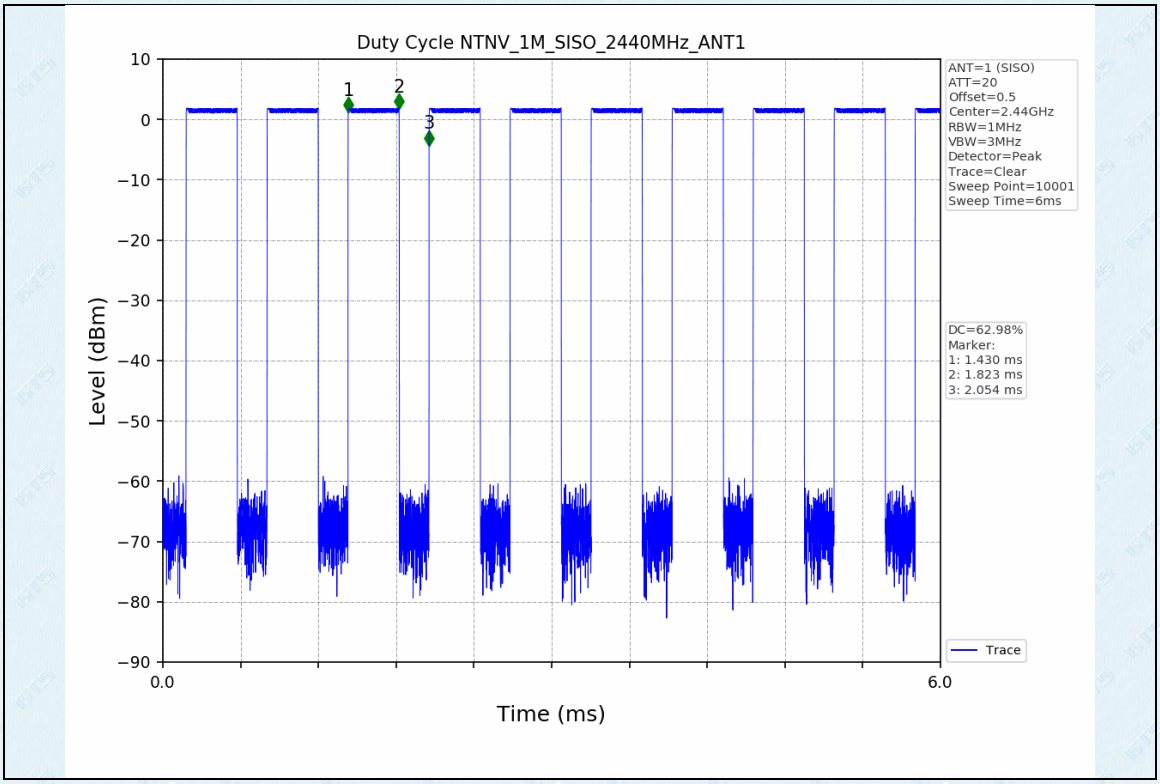
## 1. Duty Cycle

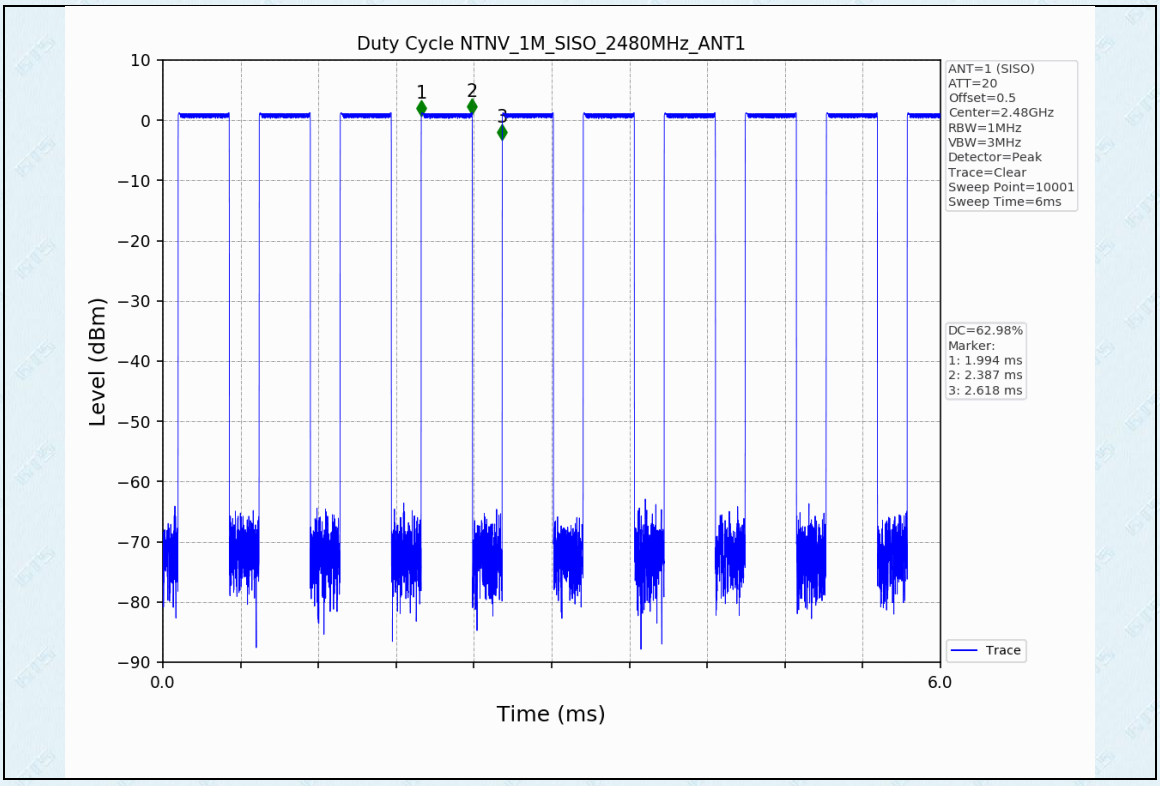
### 1.1 Test Result

| Test Mode | Channel Frequency(MHz) | TX Type | ANT No. | T_on (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle Correction Factor (dB) |
|---|---|---|---|---|---|---|---|
| 1M | 2402 | SISO | 1 | 0.393 | 0.625 | 62.88 | 2.01 |
| | 2440 | SISO | 1 | 0.393 | 0.624 | 62.98 | 2.01 |
| | 2480 | SISO | 1 | 0.393 | 0.624 | 62.98 | 2.01 |

### 1.2 Test Graph




Duty Cycle NTNV_1M_SISO_2440MHz_ANT1
Level (dBm)
Time (ms)
ANT=1 (SISO)
ATT=20
Offset=0.5
Center=2.44GHz
RBW=1MHz
VBW=3MHz
Detector=Peak
Trace=Clear
Sweep Point=10001
Sweep Time=6ms
DC=62.98%
Marker:
1: 1.430 ms
2: 1.823 ms
3: 2.054 ms
Trace


Duty Cycle NTNV_1M_SISO_2480MHz_ANT1
Level (dBm)
Time (ms)
ANT=1 (SISO)
ATT=20
Offset=0.5
Center=2.48GHz
RBW=1MHz
VBW=3MHz
Detector=Peak
Trace=Clear
Sweep Point=10001
Sweep Time=6ms
DC=62.98%
Marker:
1: 1.994 ms
2: 2.387 ms
3: 2.618 ms
Trace

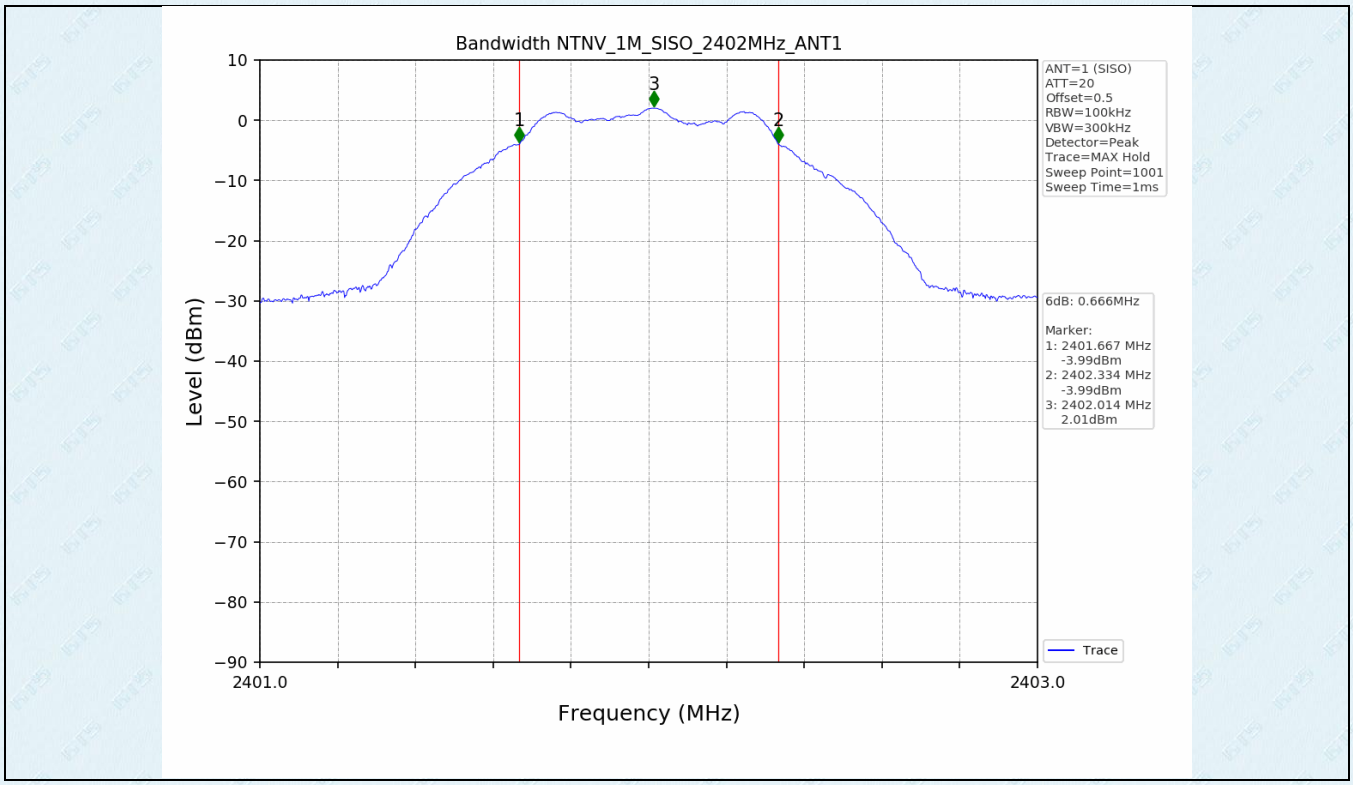
## 2. Bandwidth

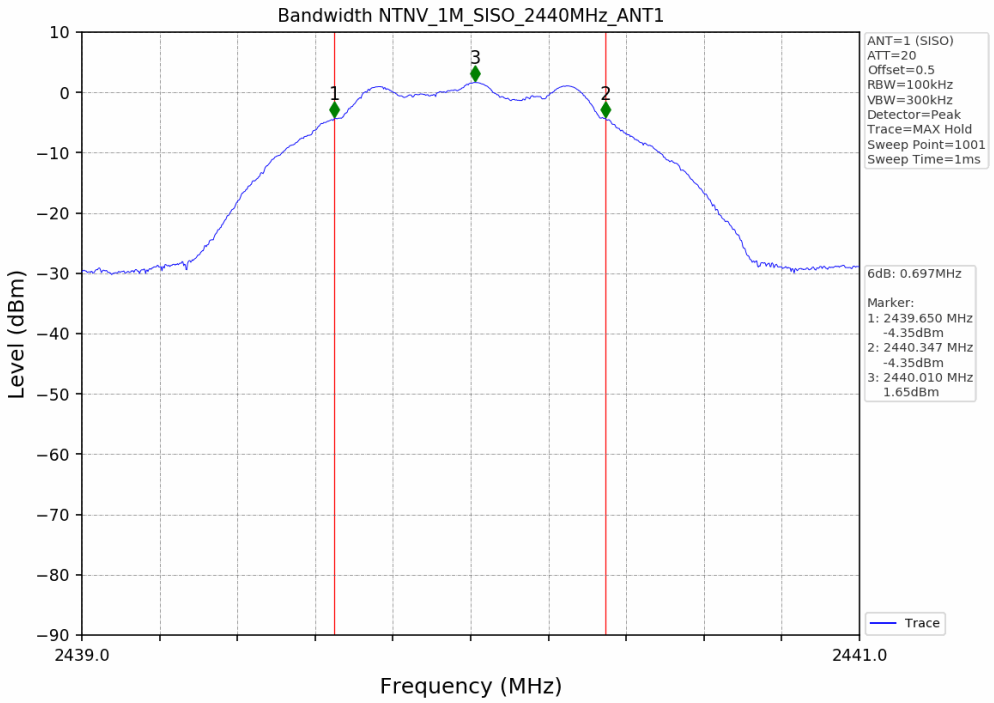
### 2.1 Test Result

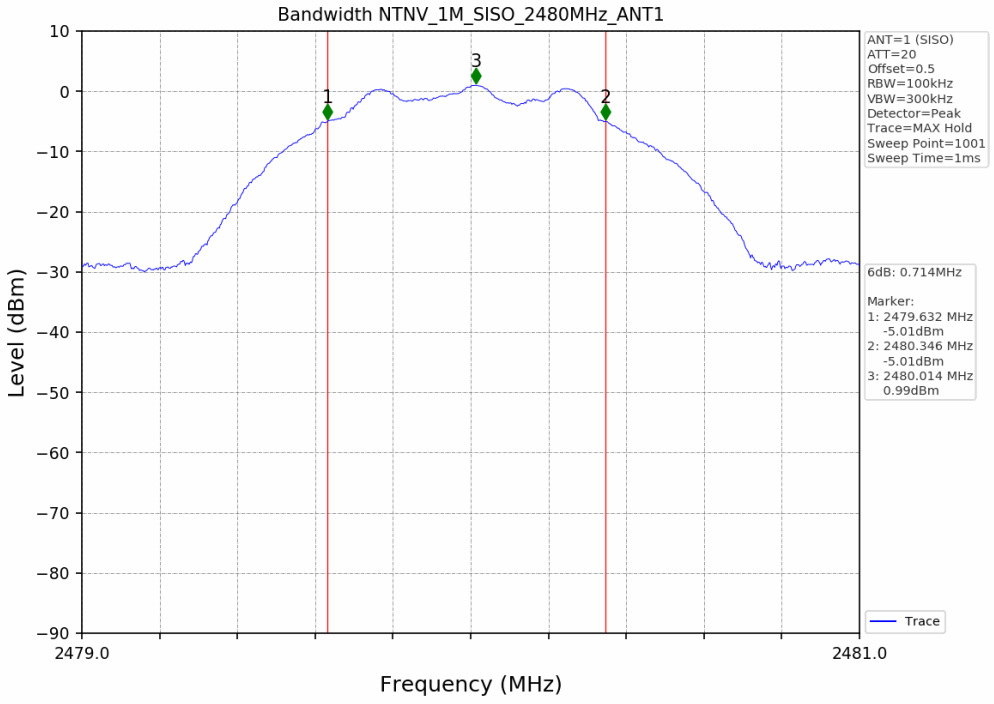
| Test Mode | Frequency (MHz) | TX Type | ANT No. | 6dB Bandwidth | | Verdict |
|---|---|---|---|---|---|---|
| | | | | Test Result (MHz) | Limits (MHz) | |
| 1M | 2402 | SISO | 1 | 0.666 | ≥0.5 | PASS |
| | 2440 | SISO | 1 | 0.697 | ≥0.5 | PASS |
| | 2480 | SISO | 1 | 0.714 | ≥0.5 | PASS |

| Test Mode | Frequency (MHz) | TX Type | ANT No. | 99% Occupied Bandwidth | |
|---|---|---|---|---|---|
| | | | | Test Result (MHz) | |
| 1M | 2402 | SISO | 1 | 1.035 | Only for Report Use |
| | 2440 | SISO | 1 | 1.049 | Only for Report Use |
| | 2480 | SISO | 1 | 1.070 | Only for Report Use |

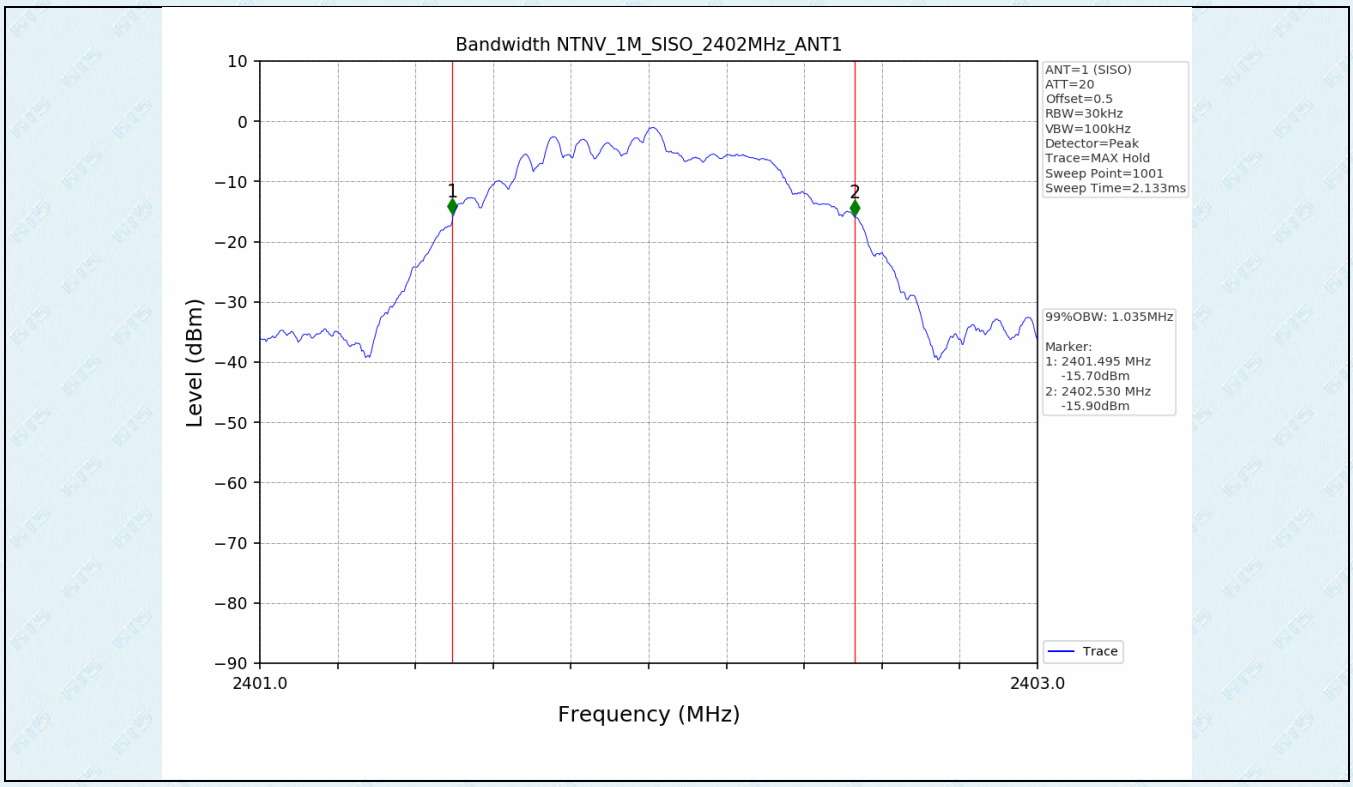
### 2.2 Test Graph - 6dB Bandwidth

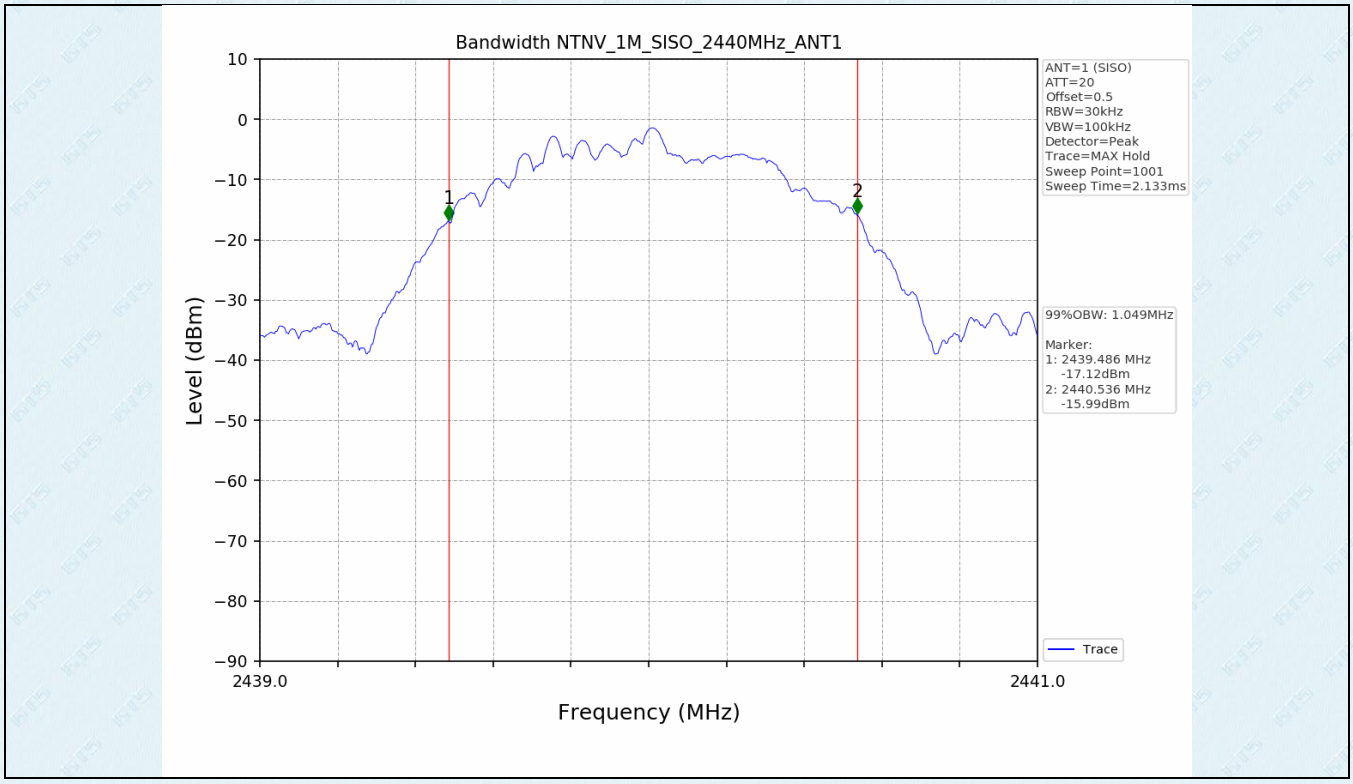


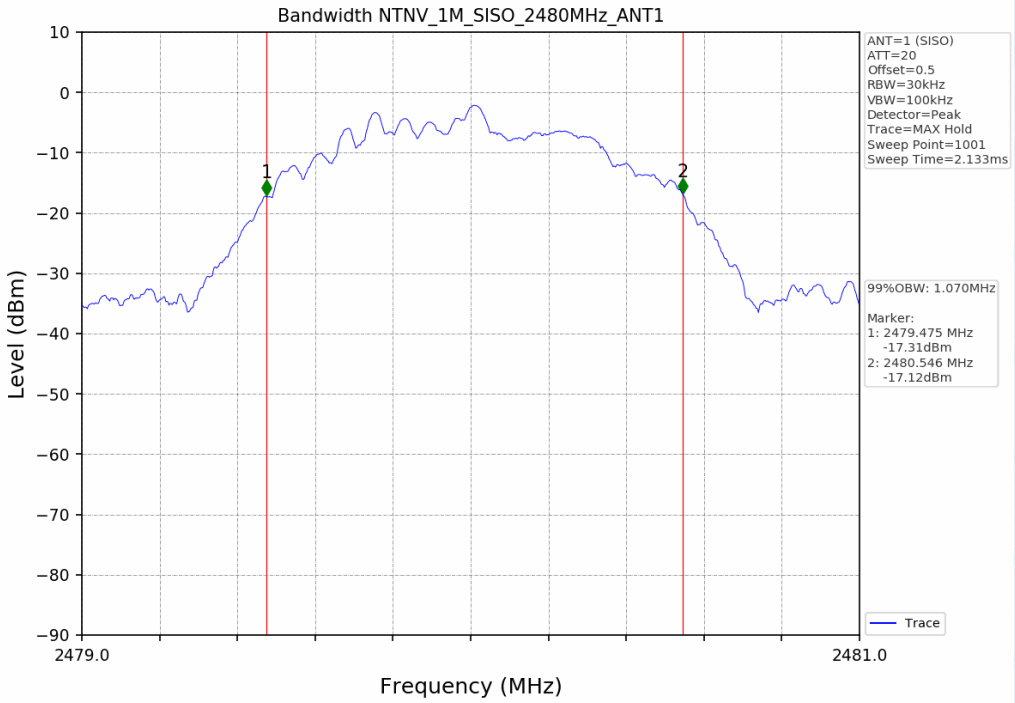

Bandwidth NTNV_1M_SISO_2440MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
6dB: 0.697MHz
Marker:
1: 2439.650 MHz
-4.35dBm
2: 2440.347 MHz
-4.35dBm
3: 2440.010 MHz
1.65dBm
Trace
Level (dBm)
Frequency (MHz)
2439.0
2441.0


Bandwidth NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
6dB: 0.714MHz
Marker:
1: 2479.632 MHz
-5.01dBm
2: 2480.346 MHz
-5.01dBm
3: 2480.014 MHz
0.99dBm
Trace
Level (dBm)
Frequency (MHz)
2479.0
2481.0

### 2.3 Test Graph - 99% Occupied Bandwidth



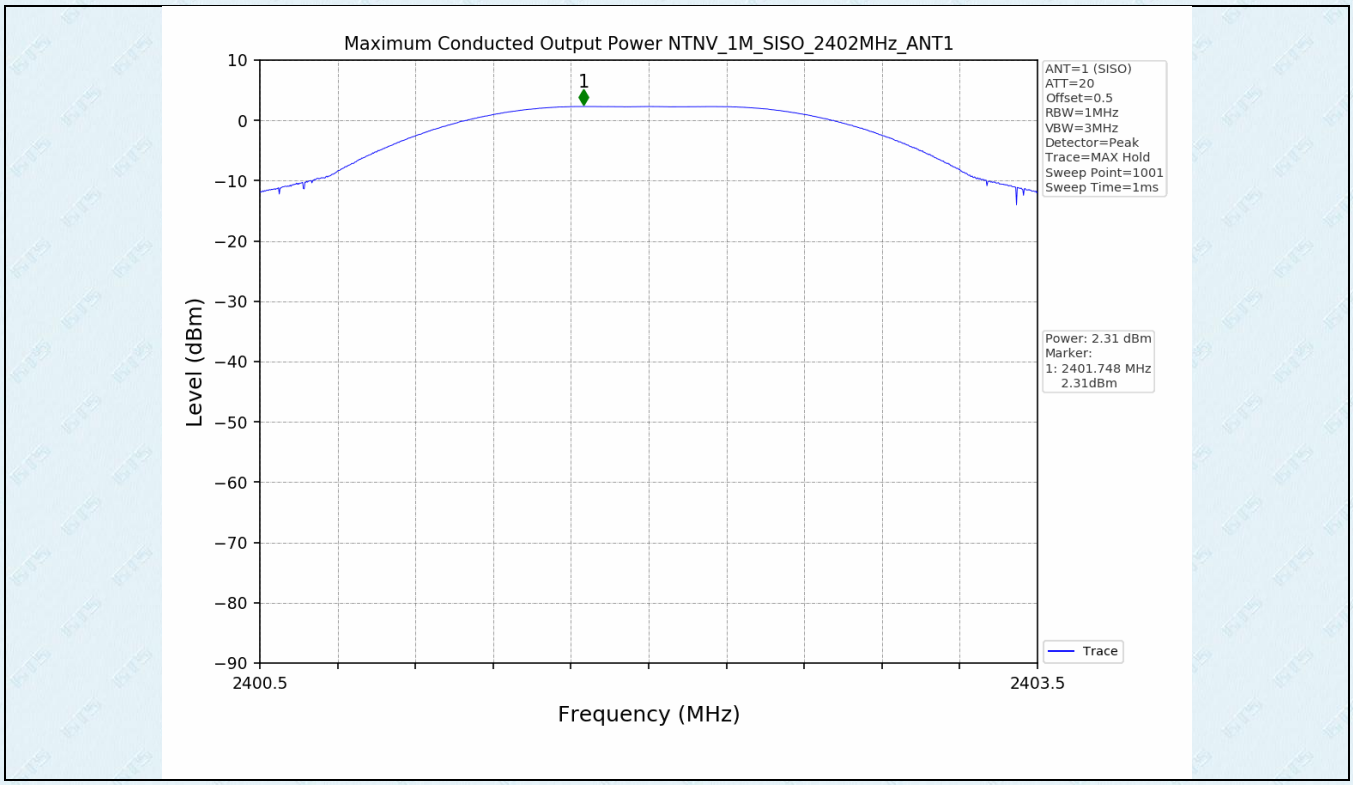

Bandwidth NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.133ms
99%OBW: 1.070MHz
Marker:
1: 2479.475 MHz
-17.31dBm
2: 2480.546 MHz
-17.12dBm
Trace
Level (dBm)
Frequency (MHz)
2479.0
2481.0

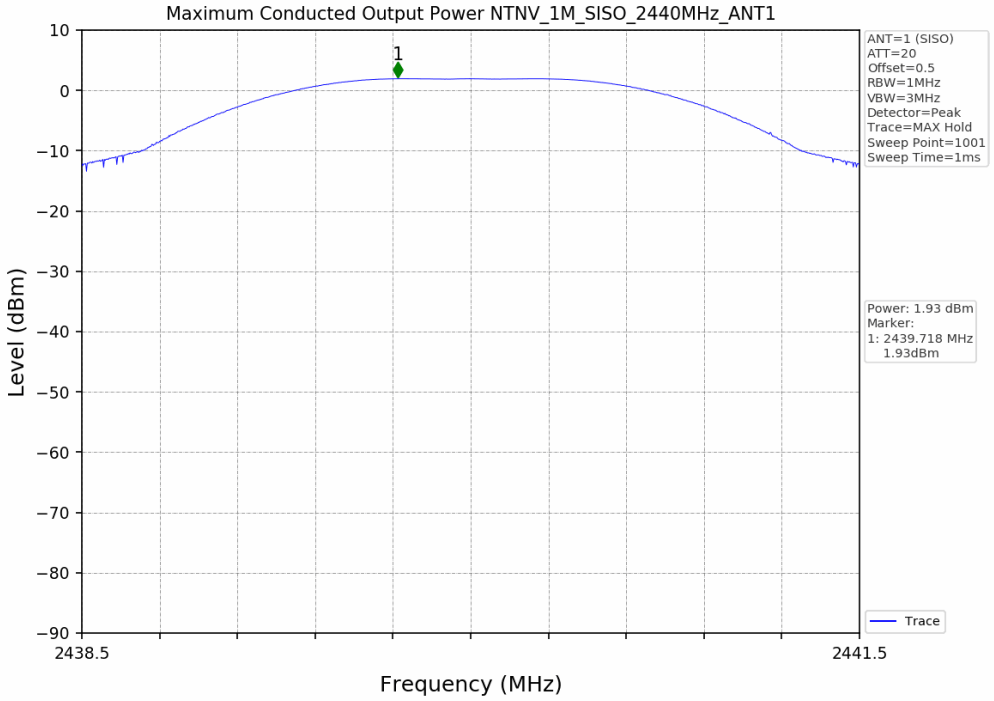
# 3. Maximum Conducted Output Power

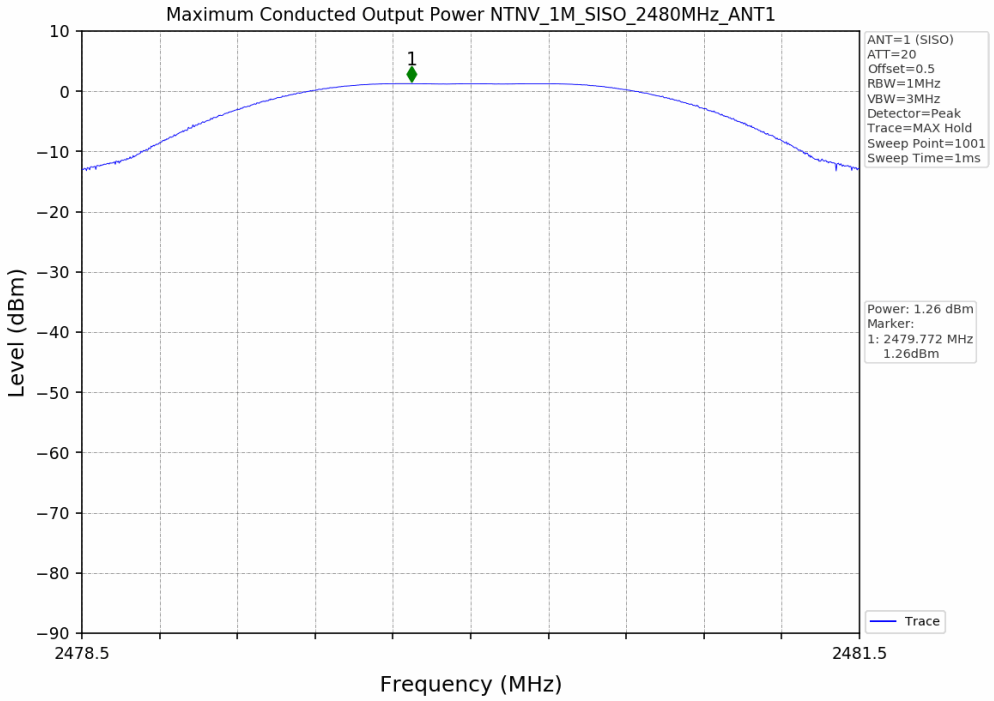
## 3.1 Test Result

| Test Mode | Frequency (MHz) | Tx Type | Measured Peak Output Power (dBm) | Limits (dBm) | Verdict |
|---|---|---|---|---|---|
| | | | Ant 1 | | |
| 1M | 2402 | SISO | 2.31 | 30 | PASS |
| | 2440 | SISO | 1.93 | 30 | PASS |
| | 2480 | SISO | 1.26 | 30 | PASS |

## 3.2 Test Graph




Maximum Conducted Output Power NTNV_1M_SISO_2440MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=1MHz
VBW=3MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Power: 1.93 dBm
Marker:
1: 2439.718 MHz
1.93dBm
Trace
Level (dBm)
Frequency (MHz)
2438.5
2441.5

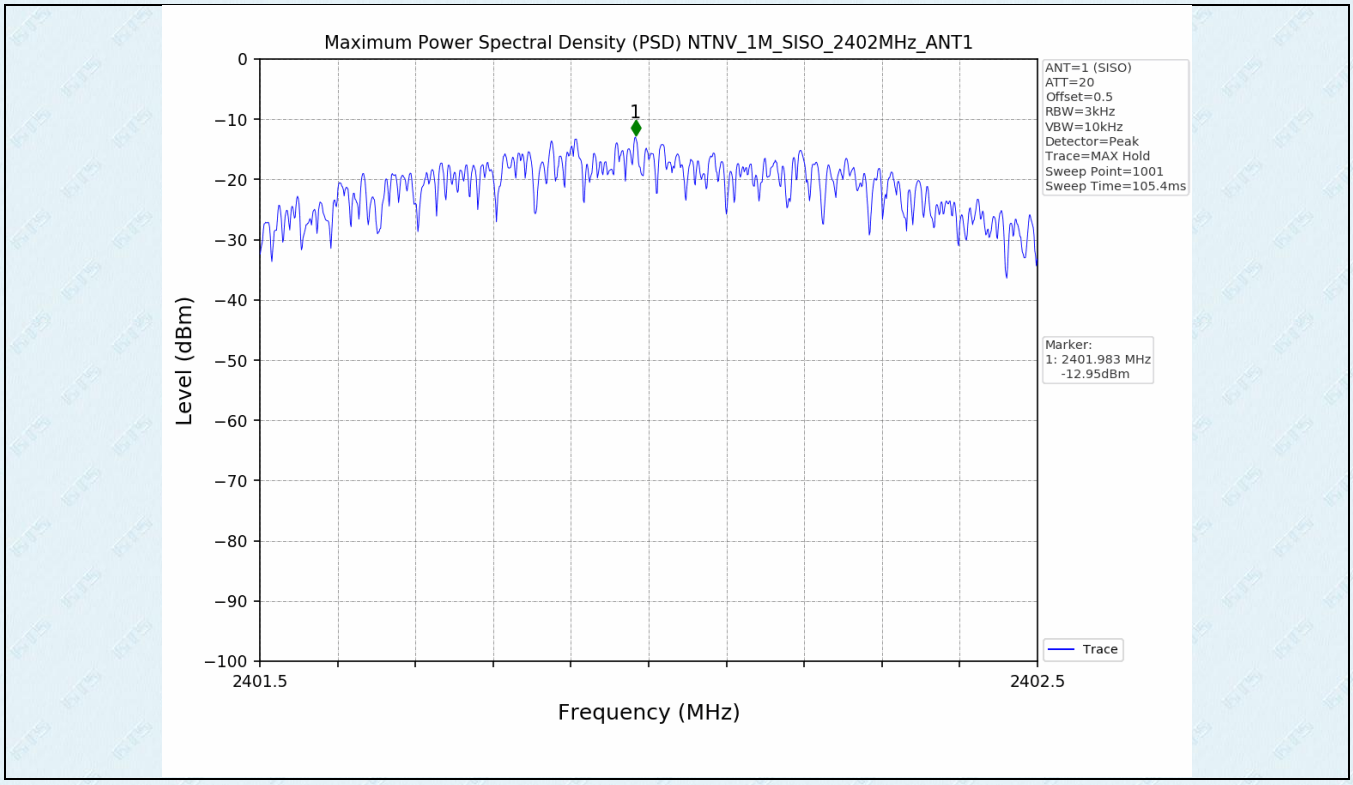

Maximum Conducted Output Power NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=1MHz
VBW=3MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Power: 1.26 dBm
Marker:
1: 2479.772 MHz
1.26dBm
Trace
Level (dBm)
Frequency (MHz)
2478.5
2481.5

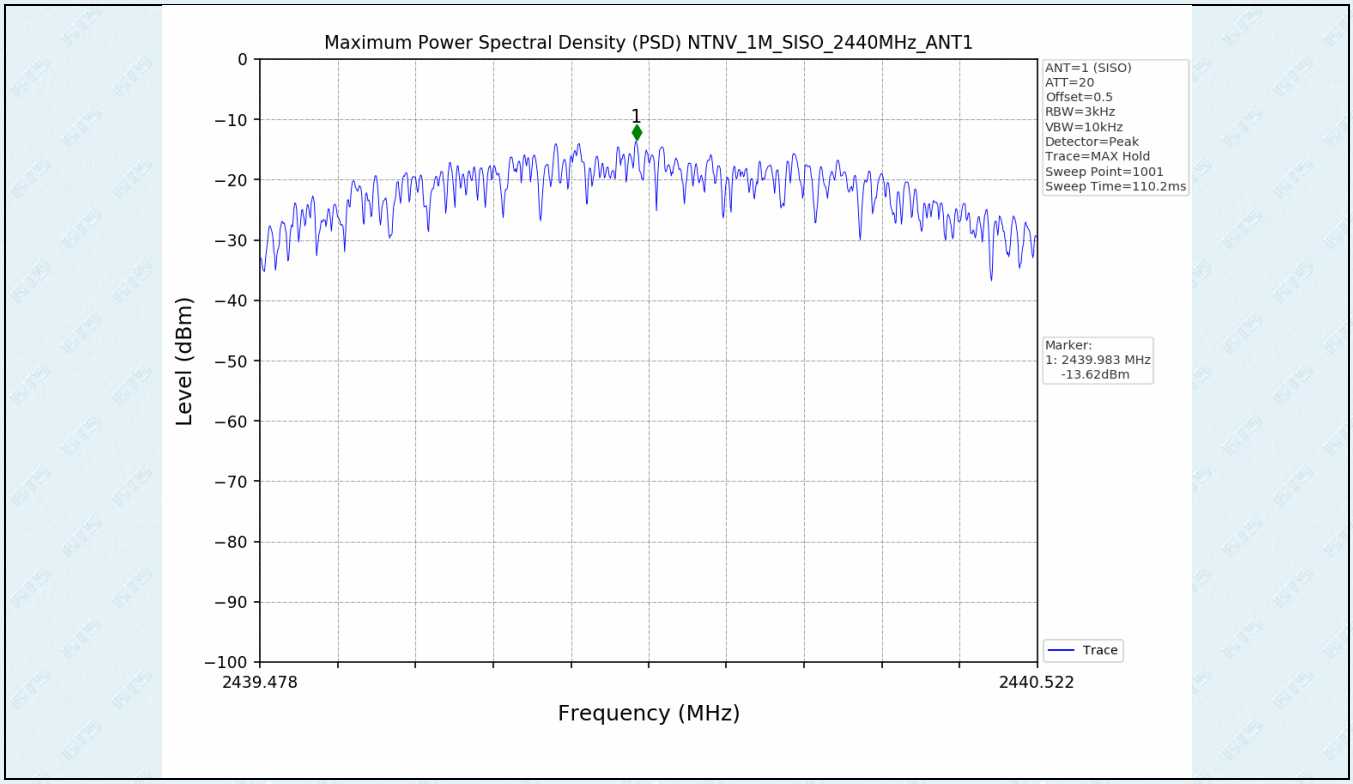
# 4. Maximum Power Spectral Density (PSD)

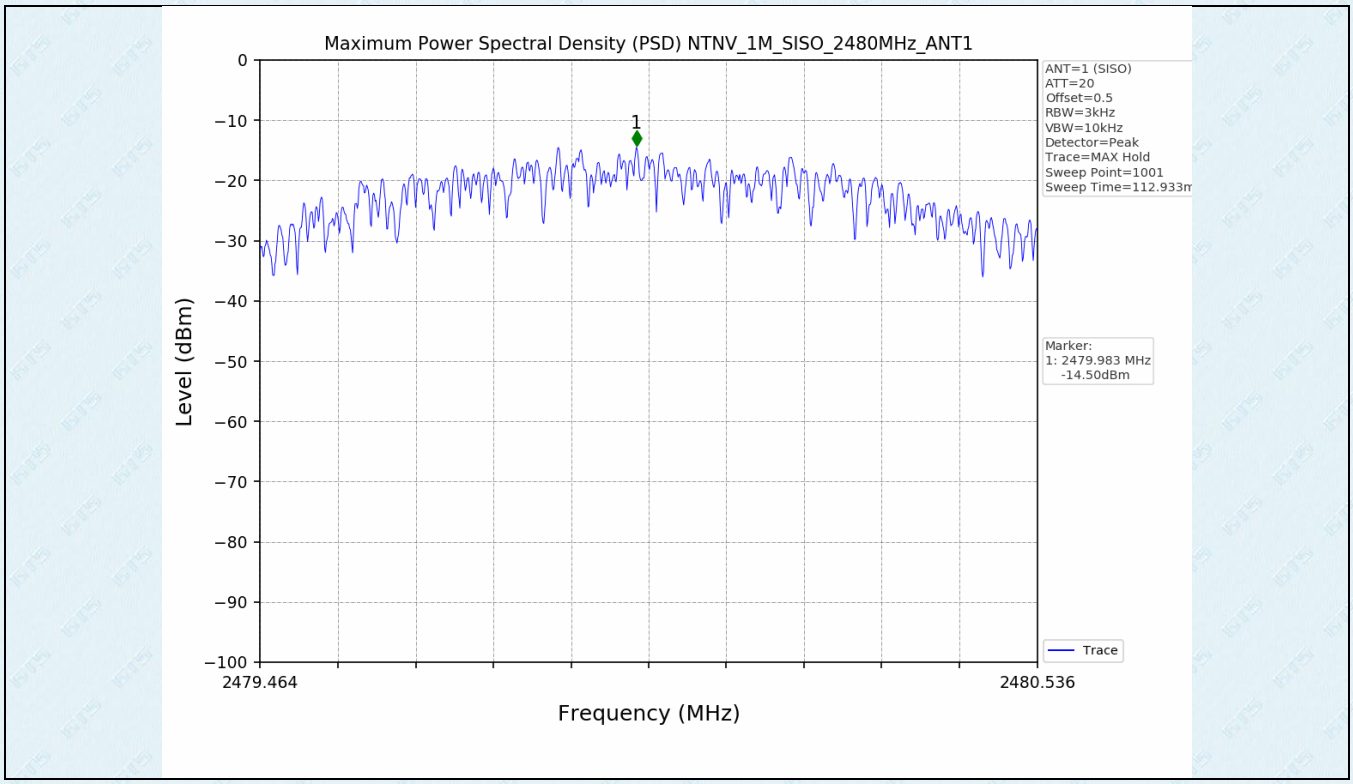
## 4.1 Test Result

| Test Mode | Frequency (MHz) | Tx Type | Maximum Power Spectral Density (dBm/3KHz) | Limits (dBm/3kHz) | Verdict |
|---|---|---|---|---|---|
| | | | Ant 1 | | |
| 1M | 2402 | SISO | -12.95 | ≤8 | PASS |
| | 2440 | SISO | -13.62 | ≤8 | PASS |
| | 2480 | SISO | -14.50 | ≤8 | PASS |

## 4.2 Test Graph




Maximum Power Spectral Density (PSD) NTNV_1M_SISO_2440MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=3kHz
VBW=10kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=110.2ms
Marker:
1: 2439.983 MHz
-13.62dBm
Trace
Level (dBm)
Frequency (MHz)
2439.478
2440.522

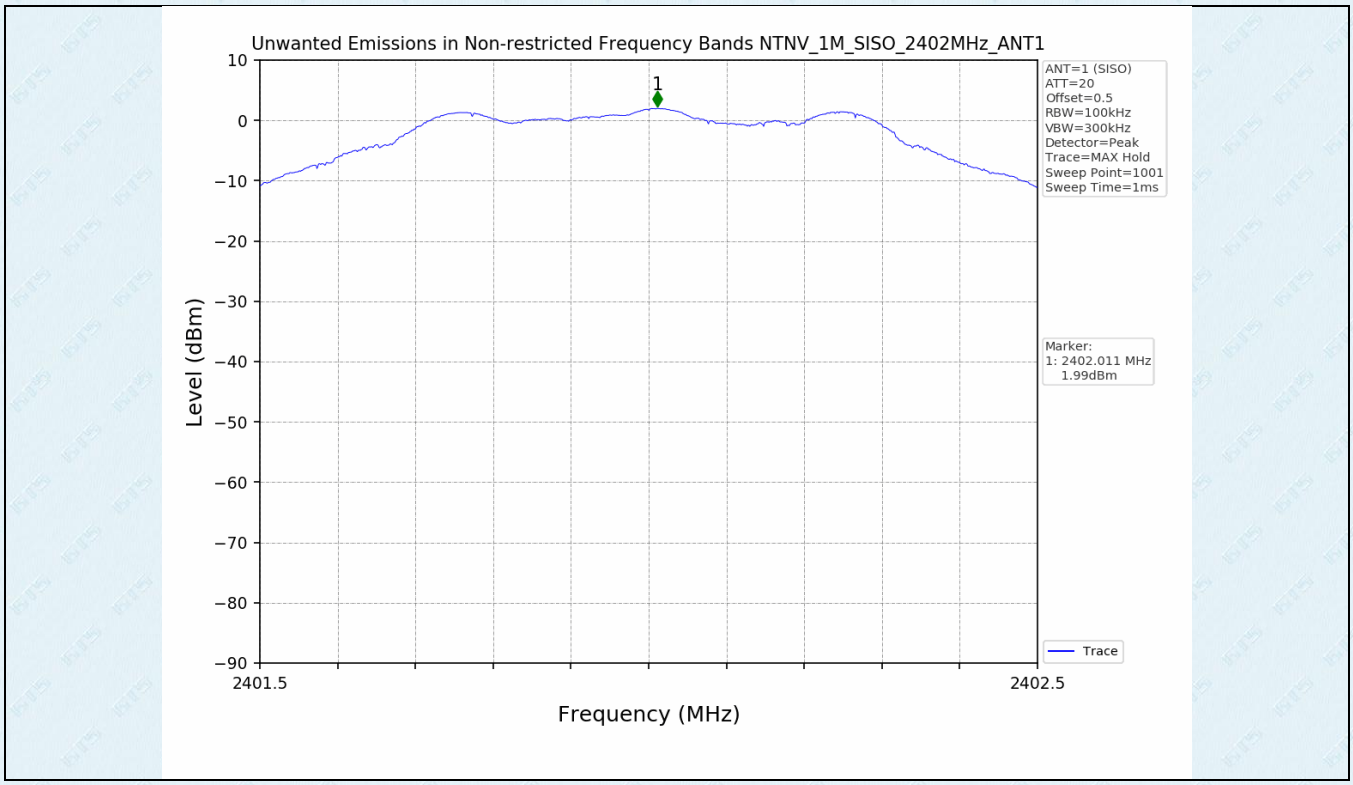

Maximum Power Spectral Density (PSD) NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=3kHz
VBW=10kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=112.933m
Marker:
1: 2479.983 MHz
-14.50dBm
Trace
Level (dBm)
Frequency (MHz)
2479.464
2480.536

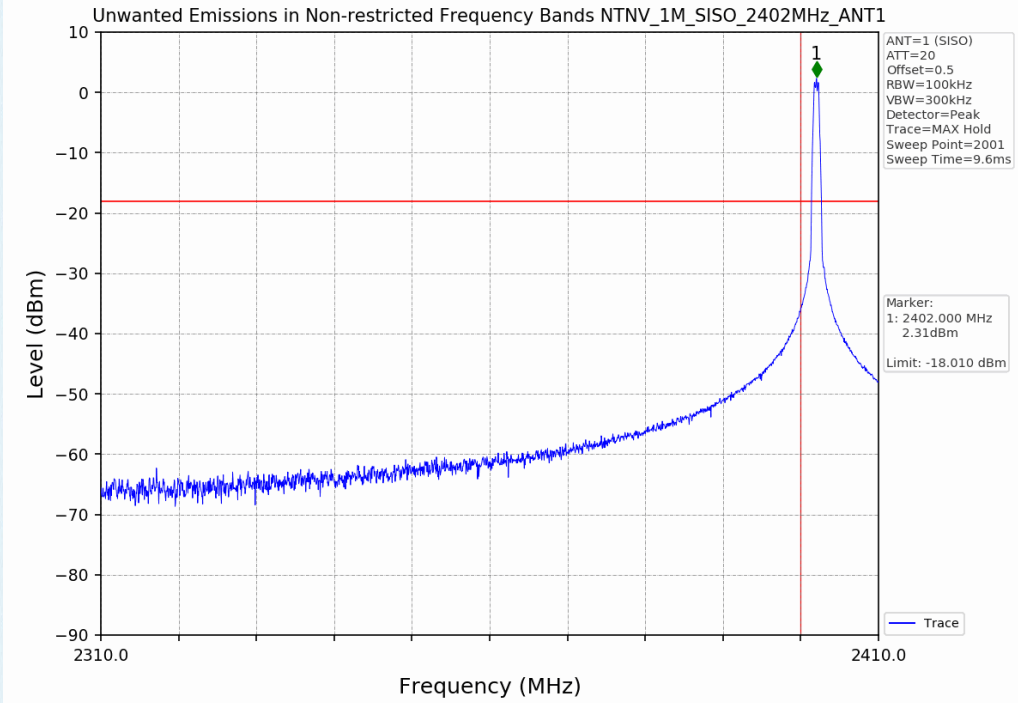
# 5. Unwanted Emissions in Non-restricted Frequency Bands

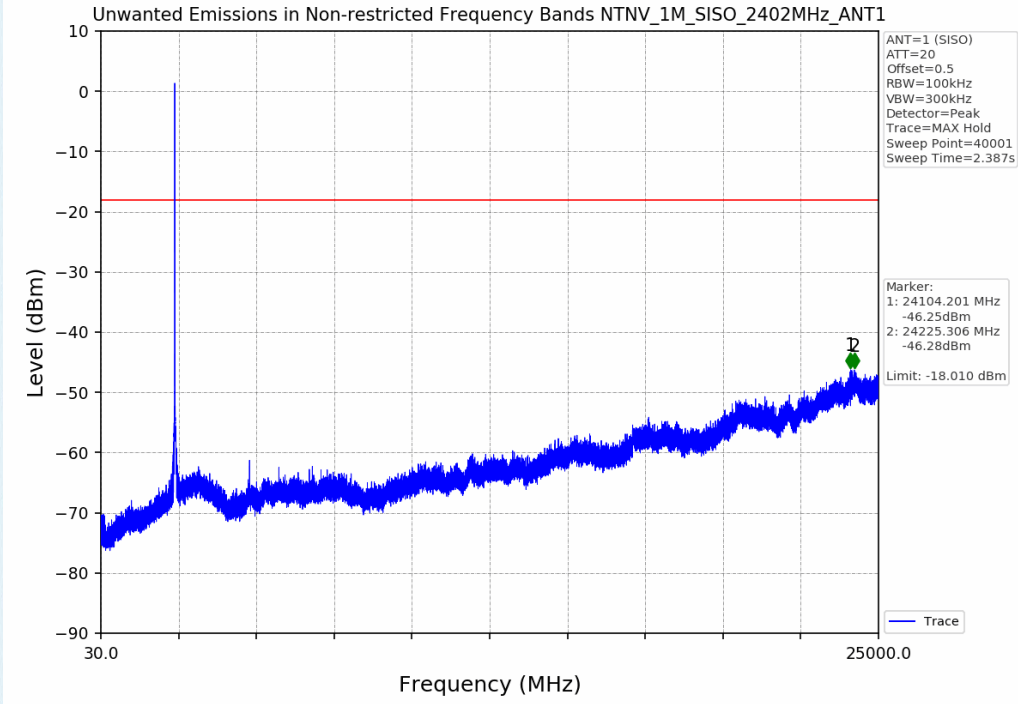
## 5.1 Test Result

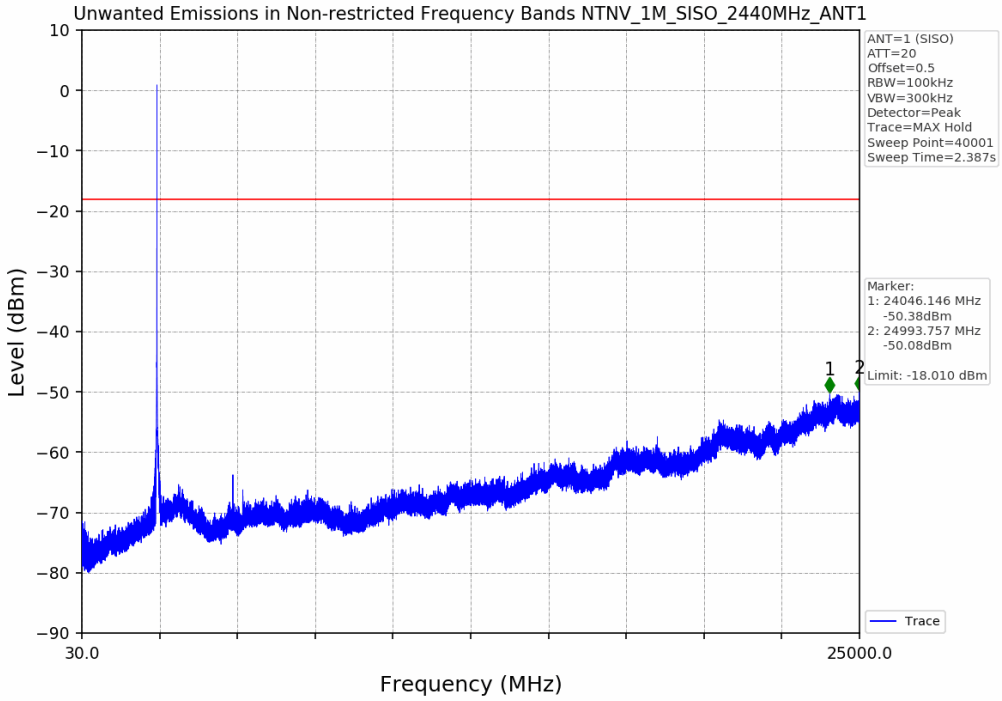
| Test Mode | Frequency (MHz) | TX Type | ANT No. | Spurious Conducted Emission (dBm) | Limits (dBm) | Verdict |
|---|---|---|---|---|---|---|
| 1M | 2402 | SISO | 1 | Refer to test graph | -18.01 | PASS |
| | 2440 | SISO | 1 | Refer to test graph | -18.01 | PASS |
| | 2480 | SISO | 1 | Refer to test graph | -18.01 | PASS |

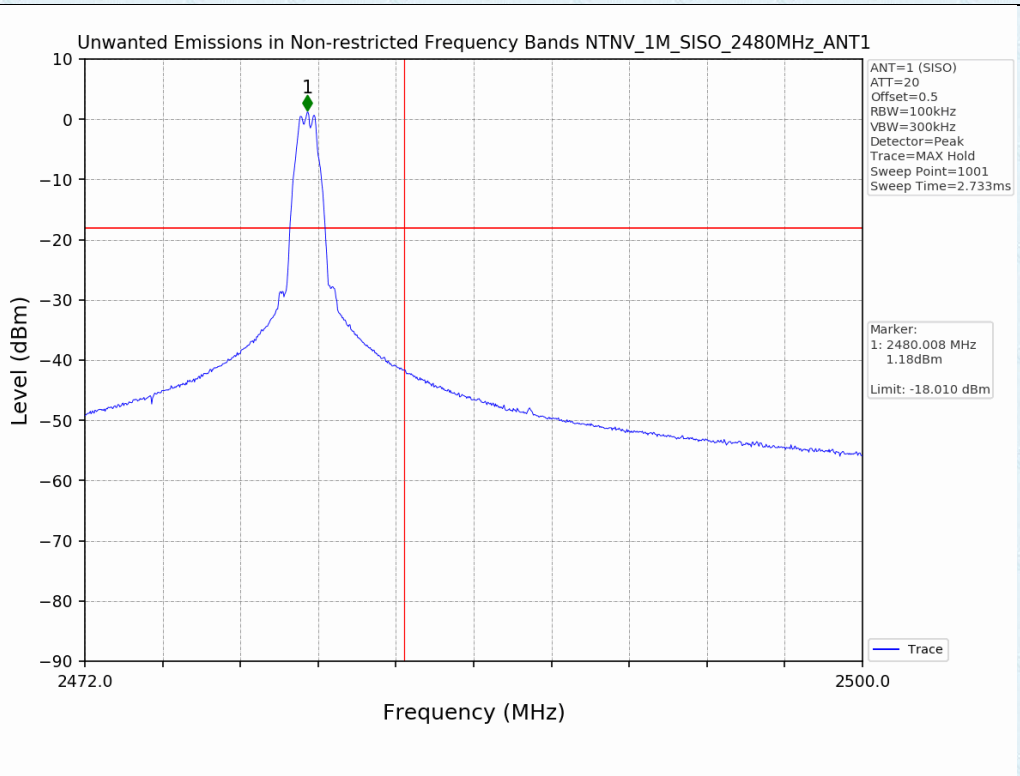
## 5.2 Test Graph

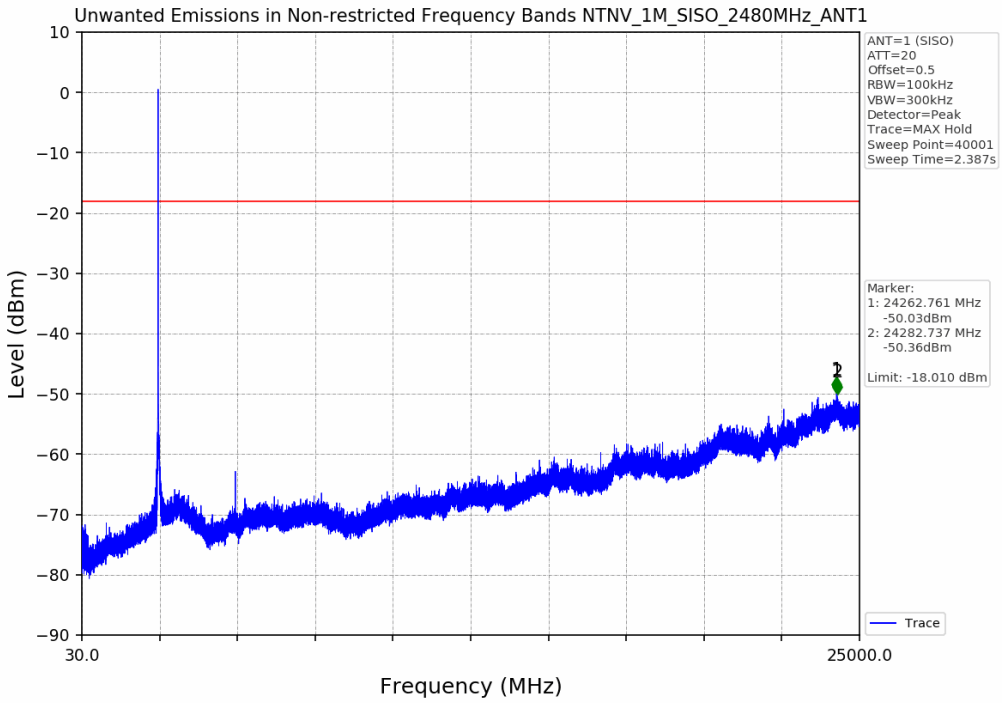



Unwanted Emissions in Non-restricted Frequency Bands NTNV_1M_SISO_2402MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=2001
Sweep Time=9.6ms
Marker:
1: 2402.000 MHz
2.31dBm
Limit: -18.010 dBm
Trace
Level (dBm)
Frequency (MHz)
2310.0
2410.0


Unwanted Emissions in Non-restricted Frequency Bands NTNV_1M_SISO_2402MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=40001
Sweep Time=2.387s
Marker:
1: 24104.201 MHz
-46.25dBm
2: 24225.306 MHz
-46.28dBm
Limit: -18.010 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0


Unwanted Emissions in Non-restricted Frequency Bands NTNV_1M_SISO_2440MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=40001
Sweep Time=2.387s
Marker:
1: 24046.146 MHz
-50.38dBm
2: 24993.757 MHz
-50.08dBm
Limit: -18.010 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0


Unwanted Emissions in Non-restricted Frequency Bands NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.733ms
Marker:
1: 2480.008 MHz
1.18dBm
Limit: -18.010 dBm
Trace
Level (dBm)
Frequency (MHz)
2472.0
2500.0


Unwanted Emissions in Non-restricted Frequency Bands NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=40001
Sweep Time=2.387s
Marker:
1: 24262.761 MHz
-50.03dBm
2: 24282.737 MHz
-50.36dBm
Limit: -18.010 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

------End------