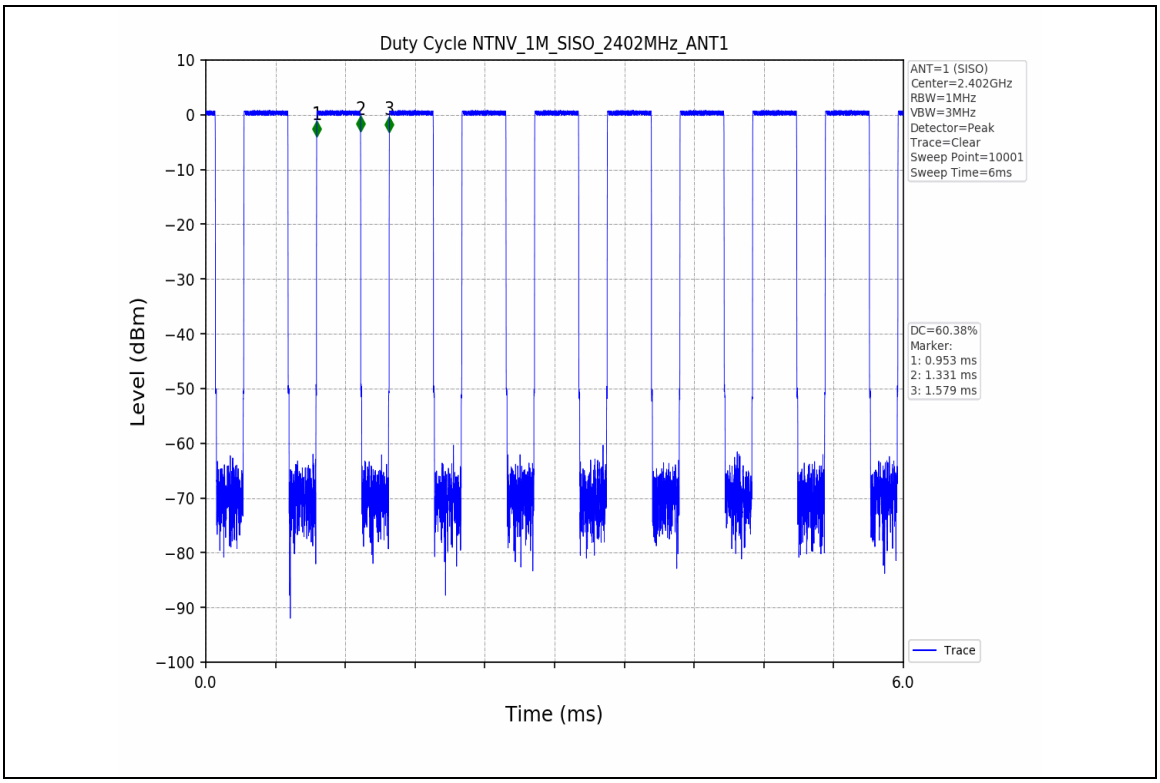
Appendix for 15.247

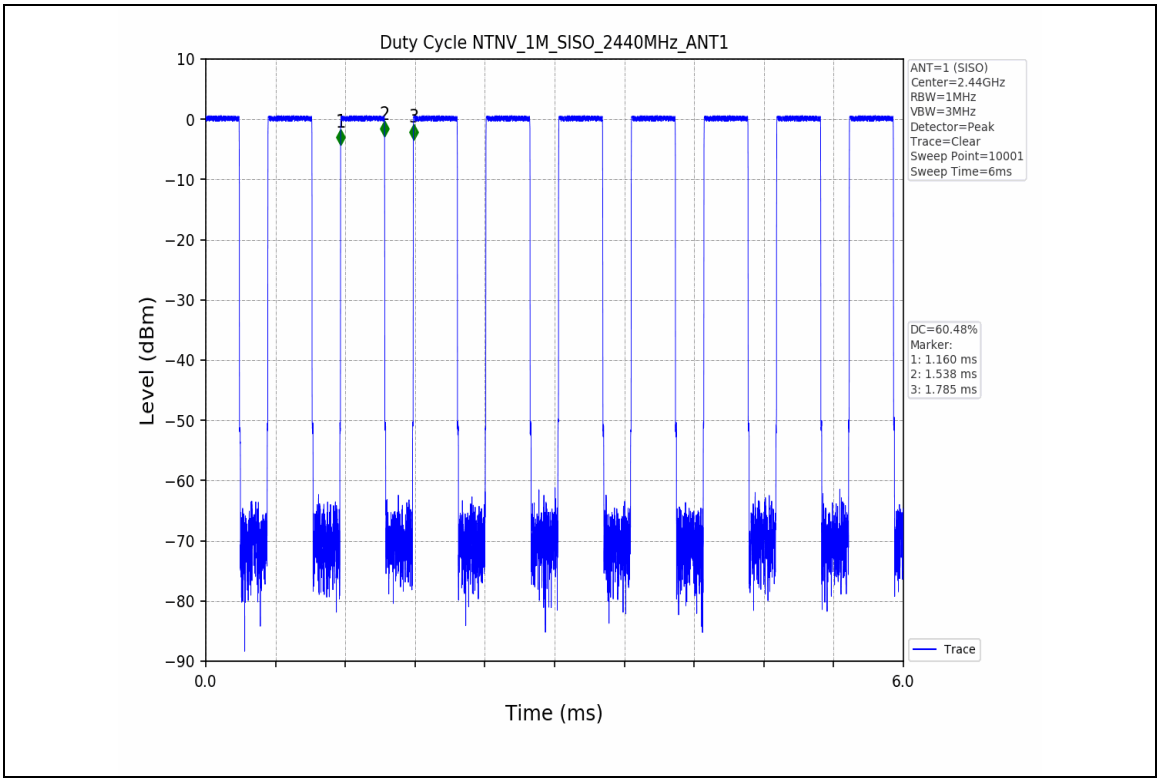
1. Duty Cycle

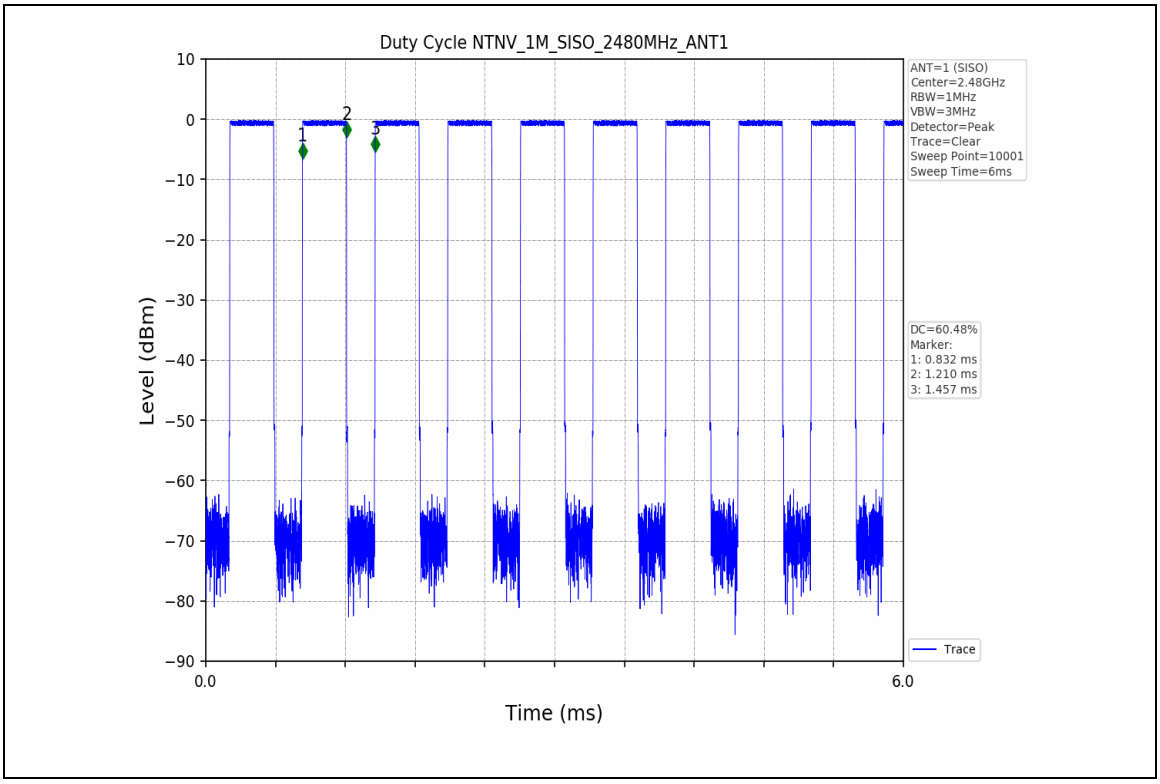
1.1 Test Result

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	0.378	0.626	60.38	2.19
	2440	SISO	1	0.378	0.625	60.48	2.18
	2480	SISO	1	0.378	0.625	60.48	2.18

1.2 Test Graph




Duty Cycle NTNV_1M_SISO_2440MHz_ANT1
ANT=1 (SISO)
Center=2.44GHz
RBW=1MHz
VBW=3MHz
Detector=Peak
Trace=Clear
Sweep Point=10001
Sweep Time=6ms
DC=60.48%
Marker:
1: 1.160 ms
2: 1.538 ms
3: 1.785 ms
Trace
Level (dBm)
Time (ms)
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
0.0
6.0
1
2
3


Duty Cycle NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
Center=2.48GHz
RBW=1MHz
VBW=3MHz
Detector=Peak
Trace=Clear
Sweep Point=10001
Sweep Time=6ms
DC=60.48%
Marker:
1: 0.832 ms
2: 1.210 ms
3: 1.457 ms
Trace
Level (dBm)
Time (ms)
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
0.0
6.0
1
2
3

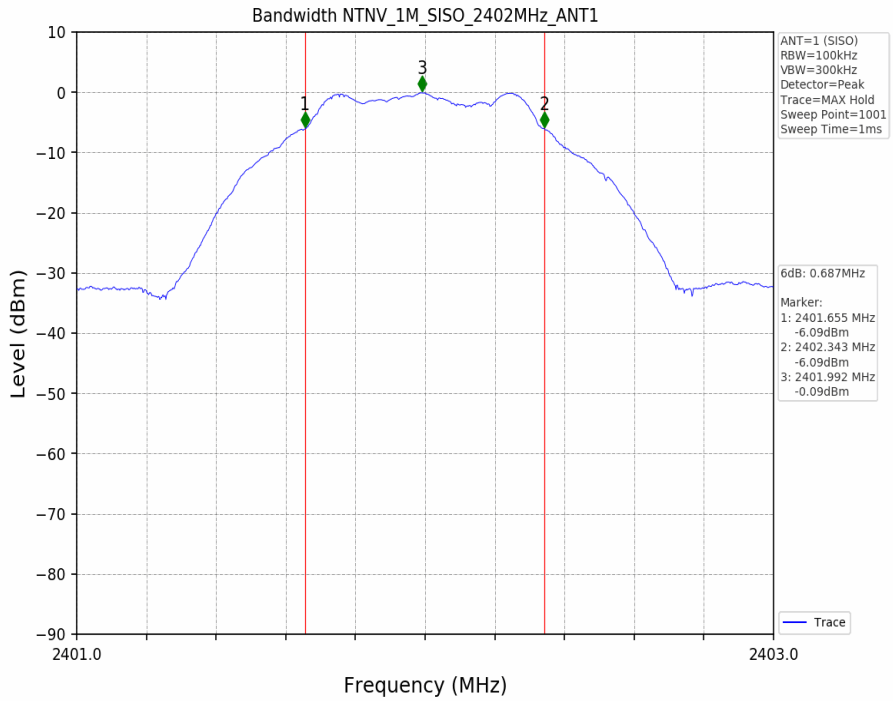
2. Bandwidth

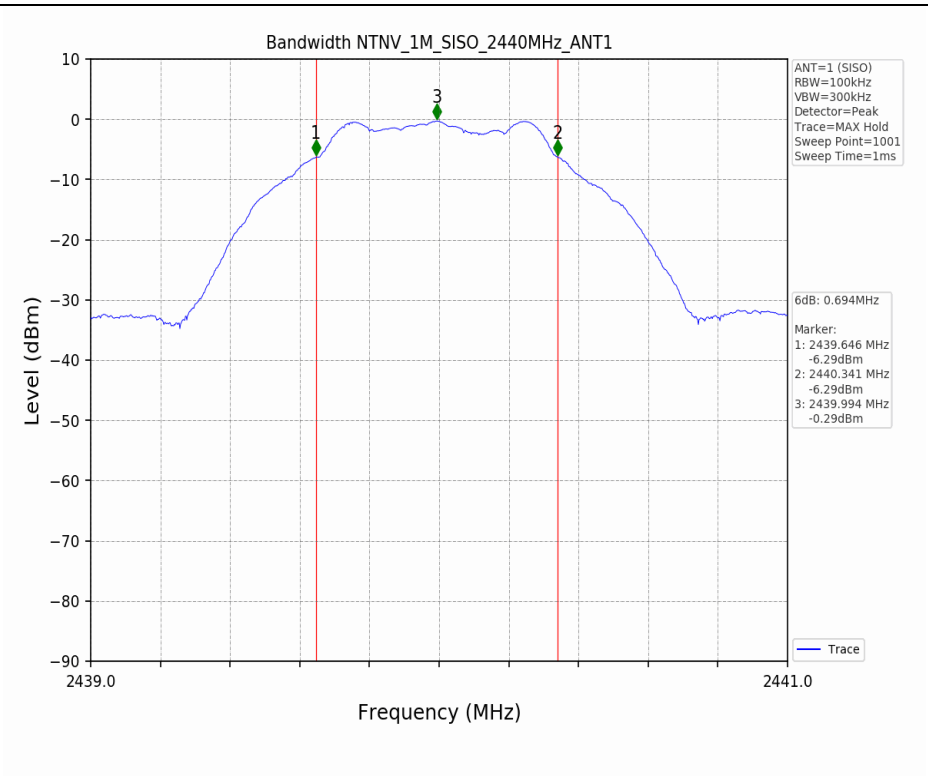
2.1 Test Result

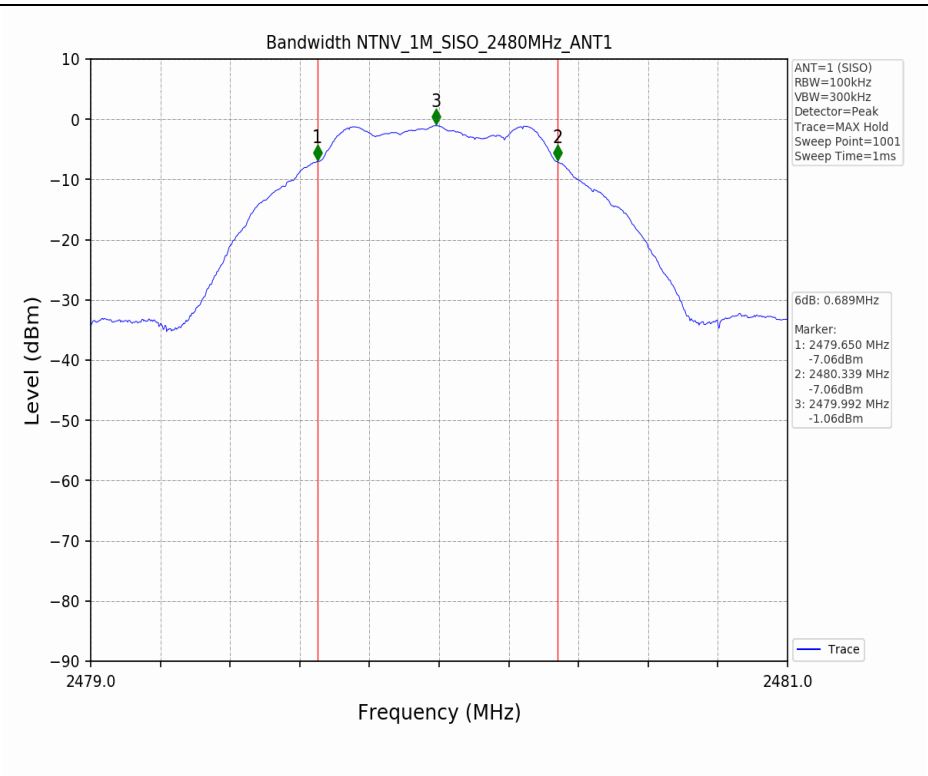
Test Mode	Frequency (MHz)	TX Type	ANT No.	6dB Bandwidth		Verdict
				Test Result (MHz)	Limits (MHz)	
1M	2402	SISO	1	0.687	≥0.5	PASS
	2440	SISO	1	0.694	≥0.5	PASS
	2480	SISO	1	0.689	≥0.5	PASS

Test Mode	Frequency (MHz)	TX Type	ANT No.	99% Occupied Bandwidth	
				Test Result (MHz)	
1M	2402	SISO	1	1.020	Only for Report Use
	2440	SISO	1	1.020	Only for Report Use
	2480	SISO	1	1.019	Only for Report Use

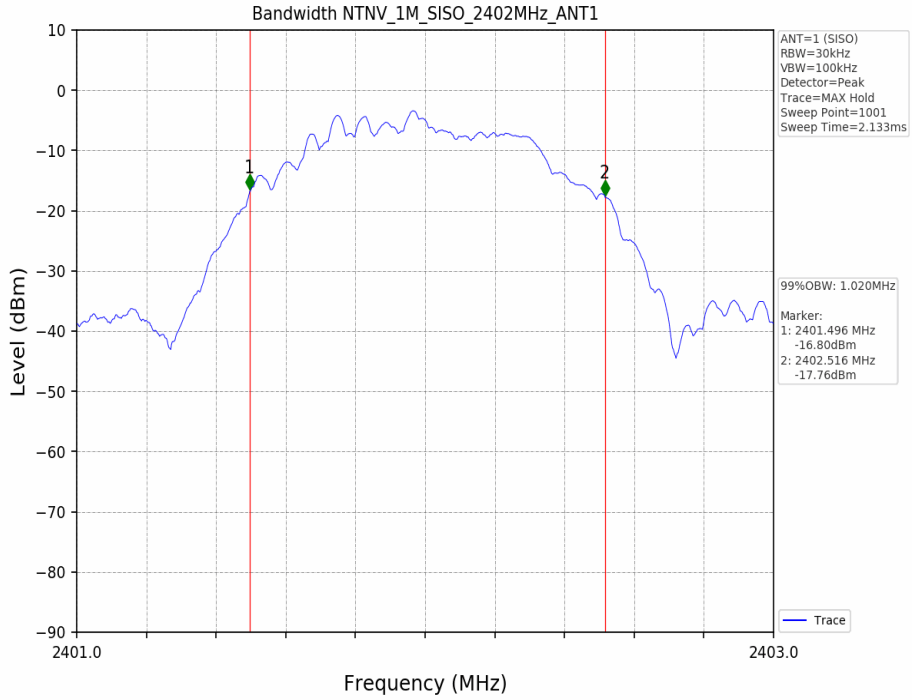
2.2 Test Graph - 6dB Bandwidth

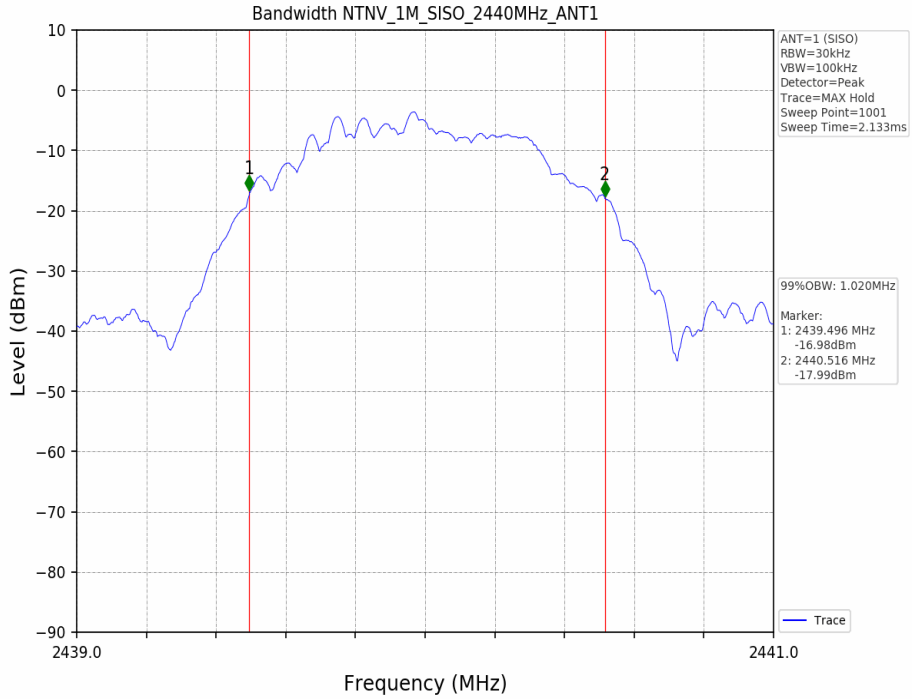


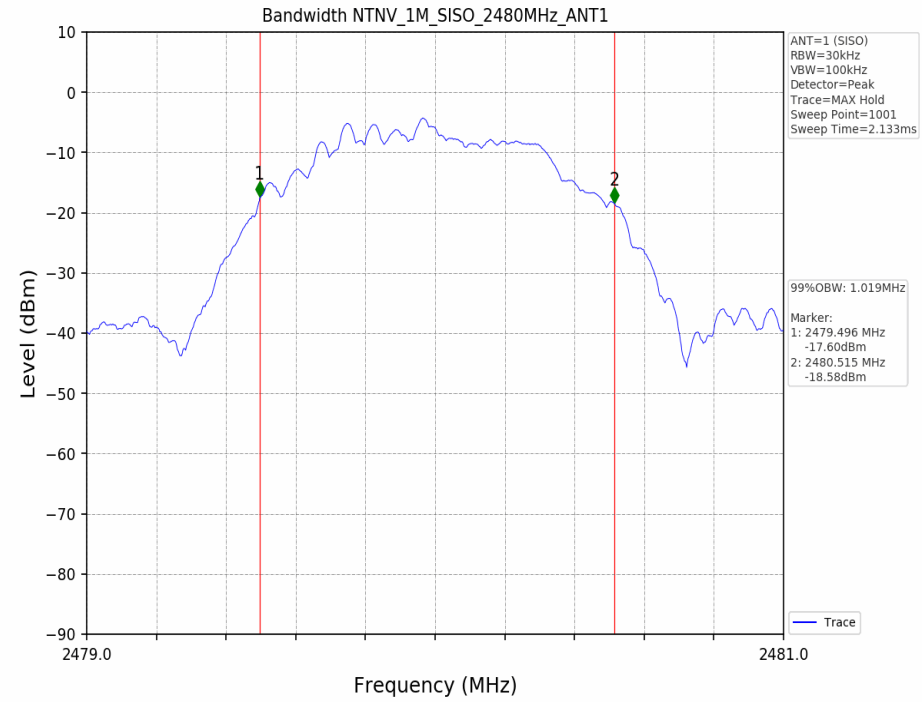

Bandwidth NTNV_1M_SISO_2440MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
6dB: 0.694MHz
Marker:
1: 2439.646 MHz
-6.29dBm
2: 2440.341 MHz
-6.29dBm
3: 2439.994 MHz
-0.29dBm
Trace
Level (dBm)
Frequency (MHz)
2439.0
2441.0


Bandwidth NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
6dB: 0.689MHz
Marker:
1: 2479.650 MHz
-7.06dBm
2: 2480.339 MHz
-7.06dBm
3: 2479.992 MHz
-1.06dBm
Trace
Level (dBm)
Frequency (MHz)
2479.0
2481.0

2.3 Test Graph - 99% Occupied Bandwidth





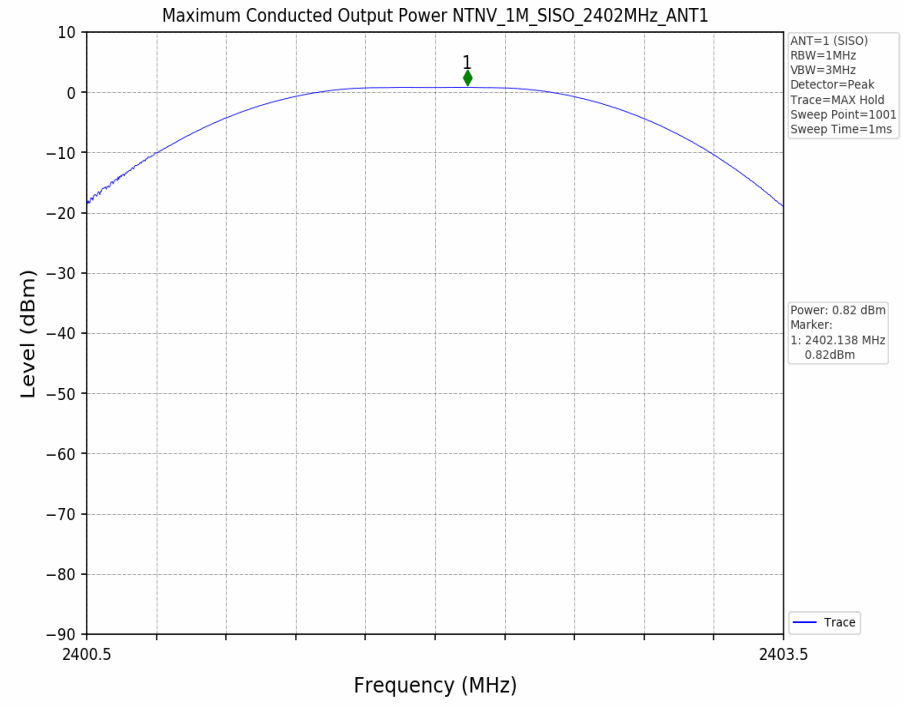

Bandwidth NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.133ms
99%OBW: 1.019MHz
Marker:
1: 2479.496 MHz
-17.60dBm
2: 2480.515 MHz
-18.58dBm
Trace
Level (dBm)
Frequency (MHz)
2479.0
2481.0
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
1
2

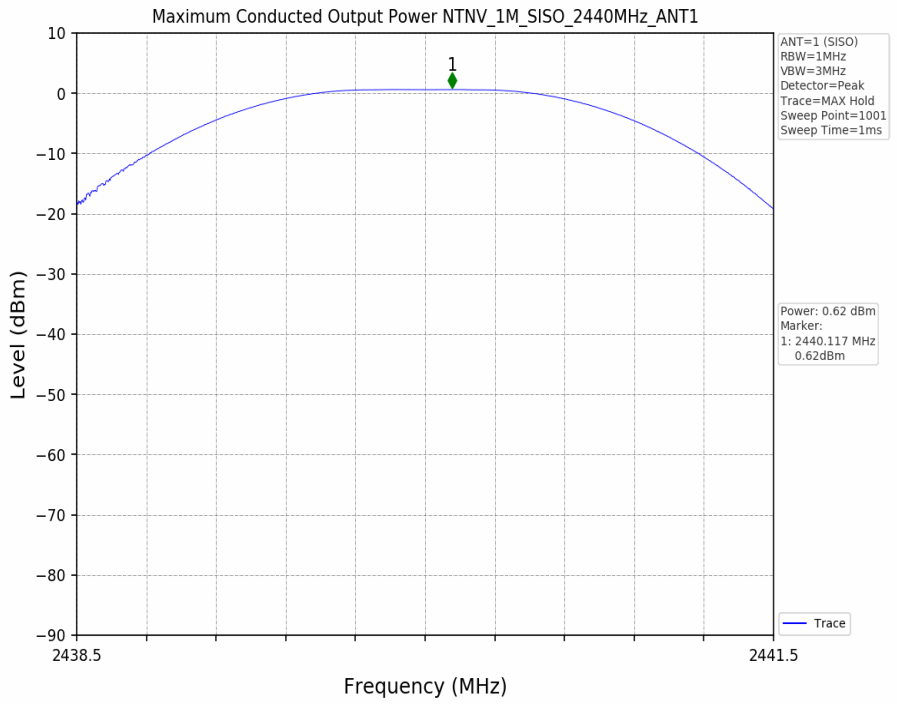
3. Maximum Conducted Output Power

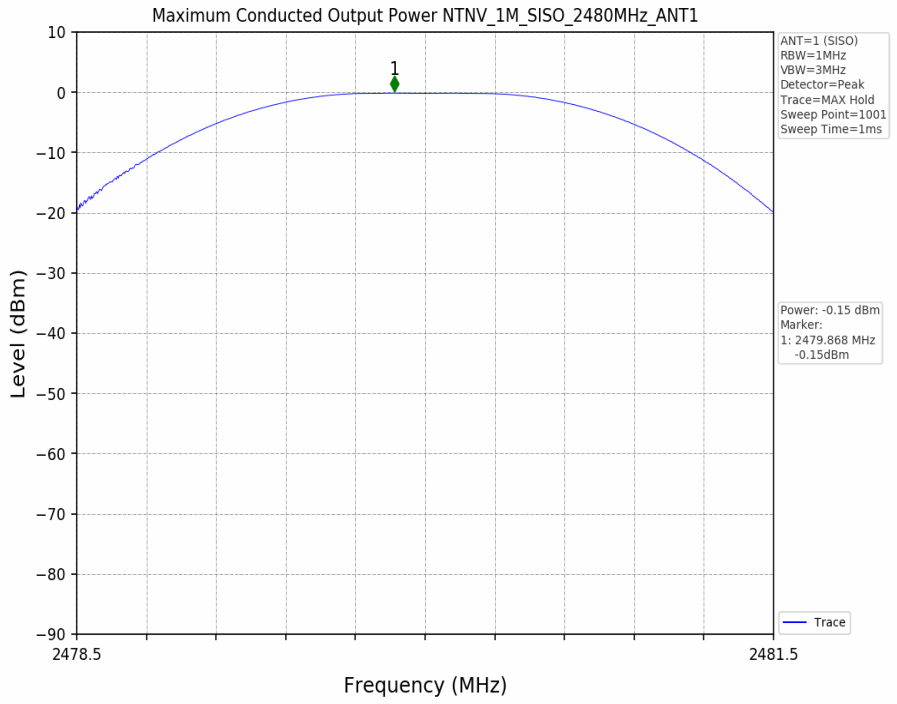
3.1 Test Result

Test Mode	Frequency (MHz)	Tx Type	Measured Peak Output Power (dBm)	Limits (dBm)	Verdict
			Ant 1		
1M	2402	SISO	0.82	30	PASS
	2440	SISO	0.62	30	PASS
	2480	SISO	-0.15	30	PASS

3.2 Test Graph




Maximum Conducted Output Power NTNV_1M_SISO_2440MHz_ANT1
ANT=1 (SISO)
RBW=1MHz
VBW=3MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Power: 0.62 dBm
Marker:
1: 2440.117 MHz
0.62dBm
Trace
Level (dBm)
Frequency (MHz)
2438.5
2441.5

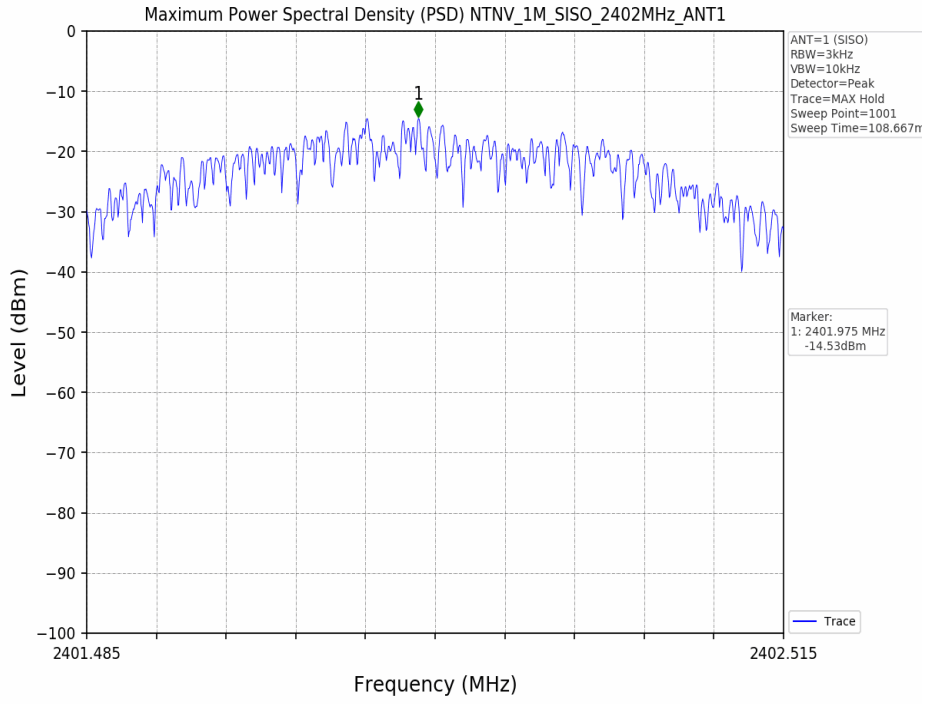

Maximum Conducted Output Power NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
RBW=1MHz
VBW=3MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Power: -0.15 dBm
Marker:
1: 2479.868 MHz
-0.15dBm
Trace
Level (dBm)
Frequency (MHz)
2478.5
2481.5

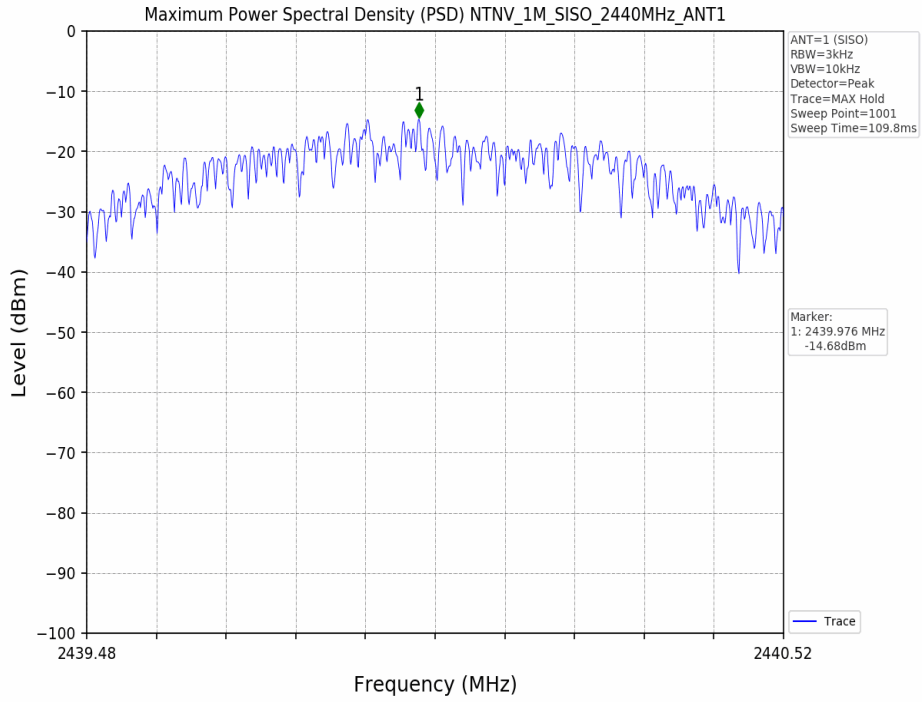
4. Maximum Power Spectral Density (PSD)

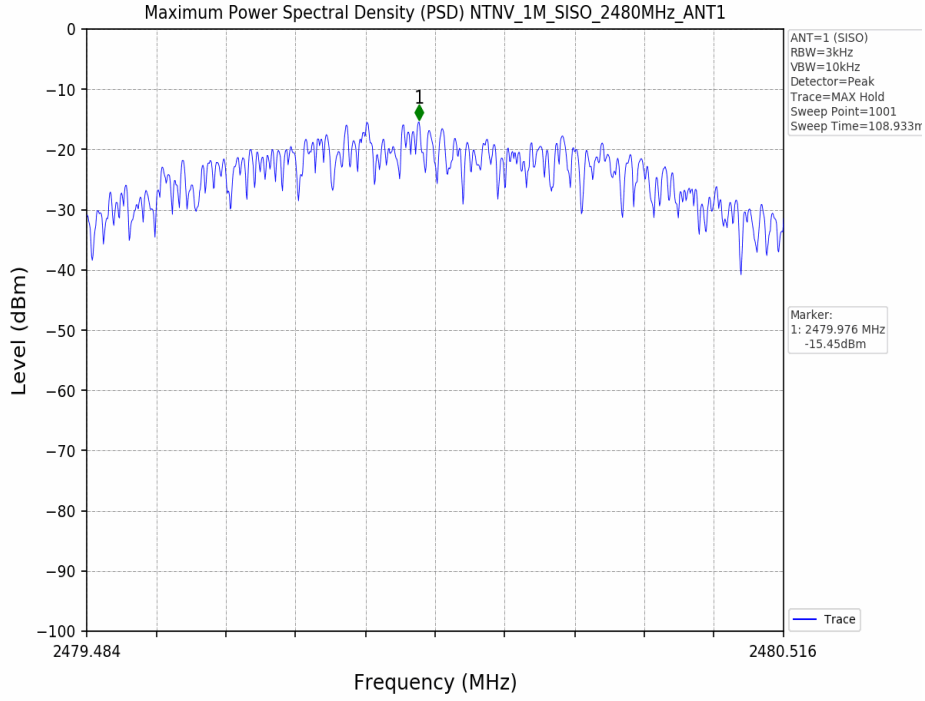
4.1 Test Result

Test Mode	Frequency (MHz)	Tx Type	Maximum Power Spectral Density (dBm/3KHz)	Limits (dBm/3kHz)	Verdict
			Ant 1		
1M	2402	SISO	-14.53	≤8	PASS
	2440	SISO	-14.68	≤8	PASS
	2480	SISO	-15.45	≤8	PASS

4.2 Test Graph




Maximum Power Spectral Density (PSD) NTNV_1M_SISO_2440MHz_ANT1
ANT=1 (SISO)
RBW=3kHz
VBW=10kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=109.8ms
Marker:
1: 2439.976 MHz
-14.68dBm
Trace
Level (dBm)
Frequency (MHz)
2439.48
2440.52

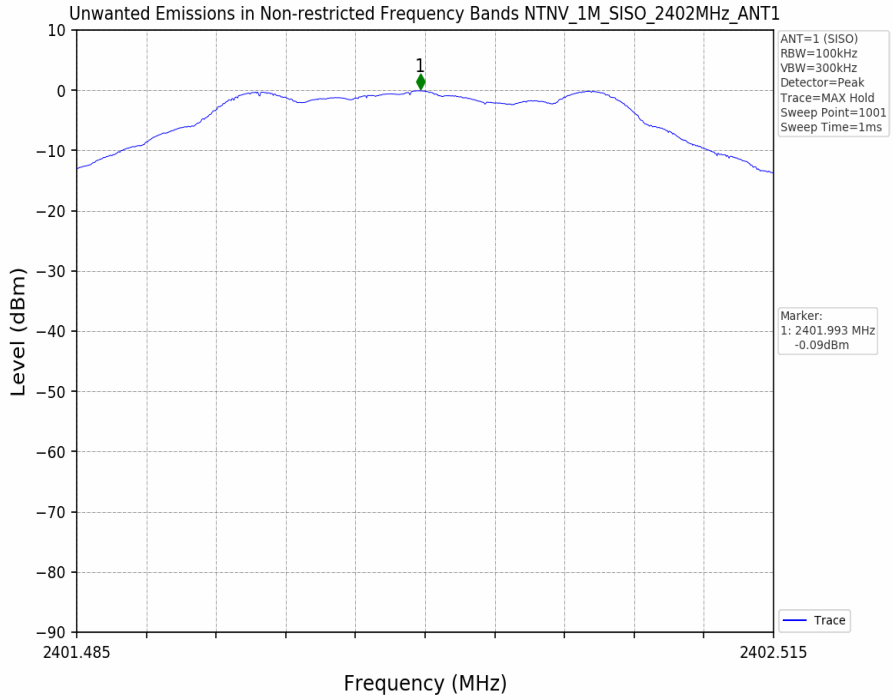

Maximum Power Spectral Density (PSD) NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
RBW=3kHz
VBW=10kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=108.933m
Marker:
1: 2479.976 MHz
-15.45dBm
Trace
Level (dBm)
Frequency (MHz)
2479.484
2480.516

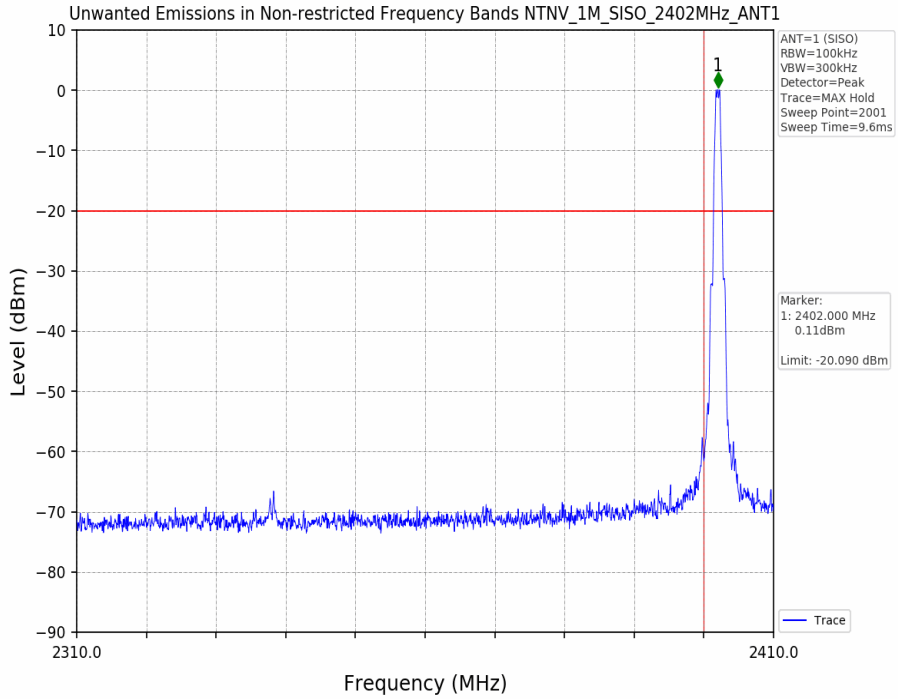
5. Unwanted Emissions in Non-restricted Frequency Bands

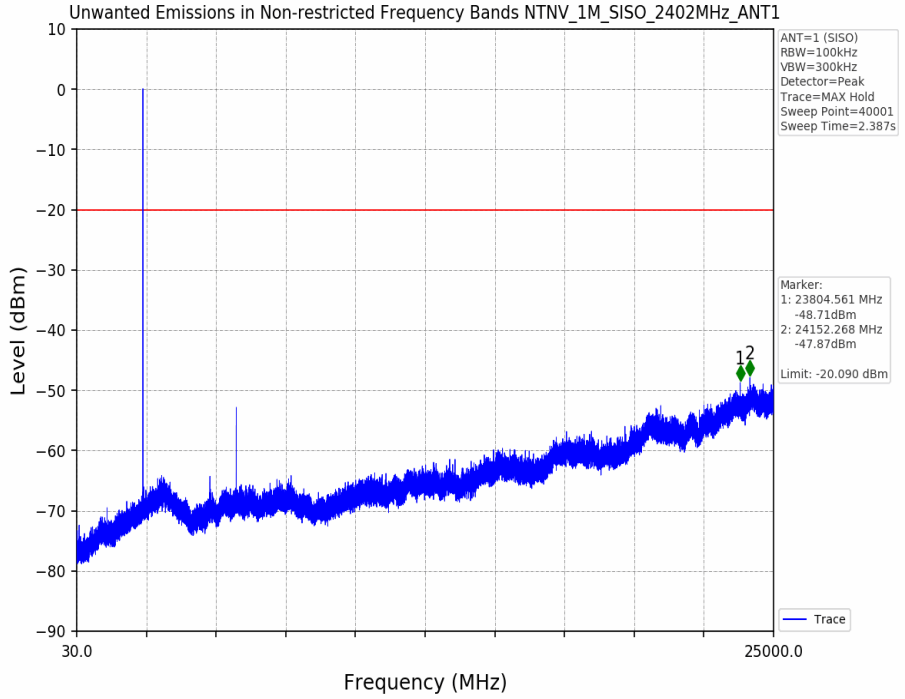
5.1 Test Result

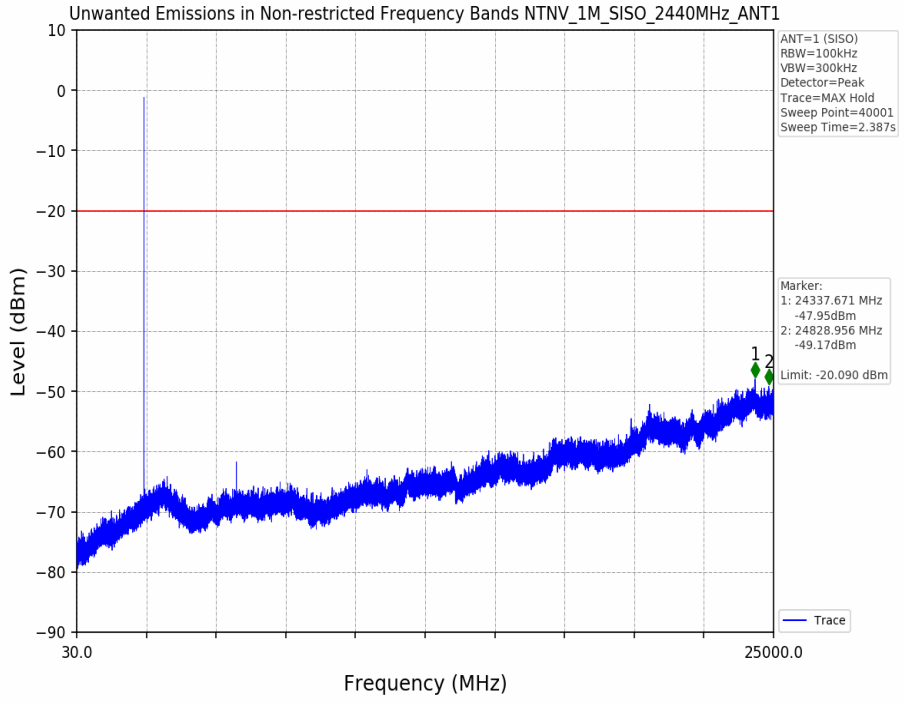
Test Mode	Frequency (MHz)	TX Type	ANT No.	Spurious Conducted Emission (dBm)	Limits (dBm)	Verdict
1M	2402	SISO	1	Refer to test graph	-20.09	PASS
	2440	SISO	1	Refer to test graph	-20.09	PASS
	2480	SISO	1	Refer to test graph	-20.09	PASS

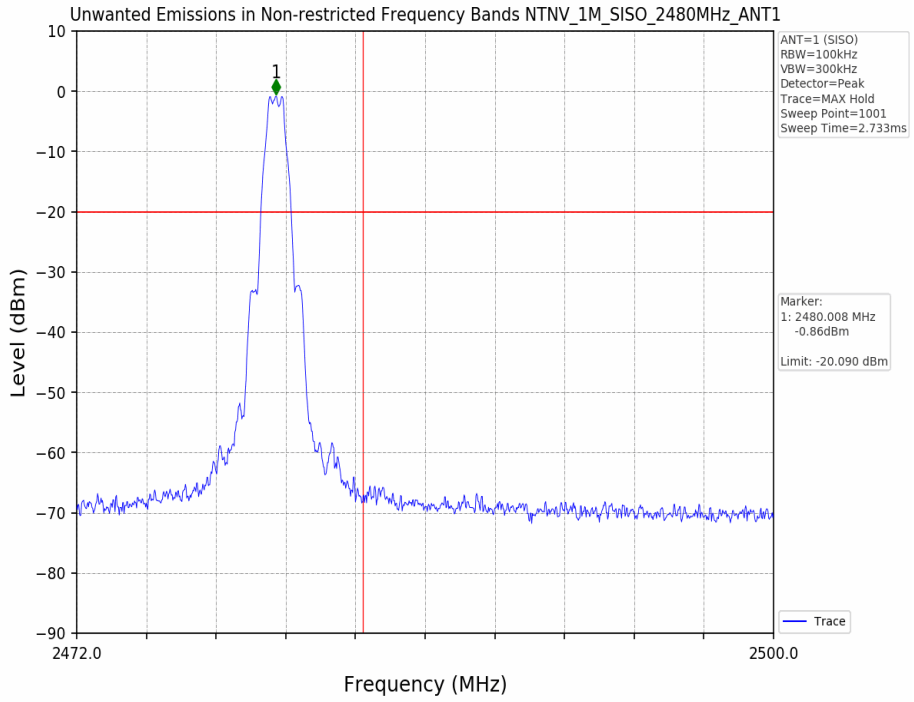
5.2 Test Graph

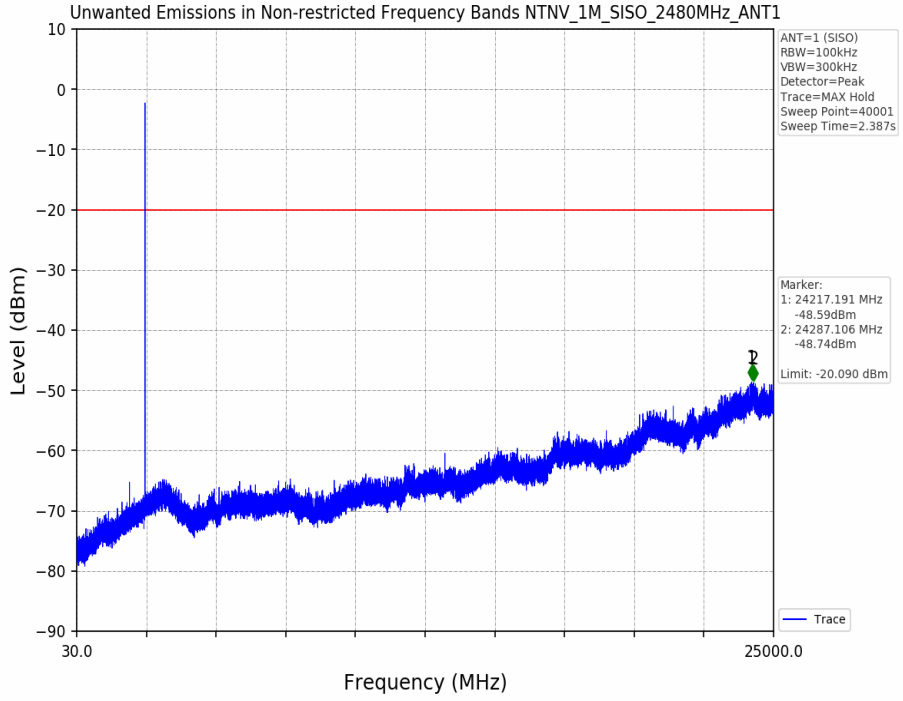





Unwanted Emissions in Non-restricted Frequency Bands NTNV_1M_SISO_2402MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=40001
Sweep Time=2.387s
Marker:
1: 23804.561 MHz
-48.71dBm
2: 24152.268 MHz
-47.87dBm
Limit: -20.090 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0


Unwanted Emissions in Non-restricted Frequency Bands NTNV_1M_SISO_2440MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=40001
Sweep Time=2.387s
Marker:
1: 24337.671 MHz
-47.95dBm
2: 24828.956 MHz
-49.17dBm
Limit: -20.090 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)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.733ms
Marker:
1: 2480.008 MHz
-0.86dBm
Limit: -20.090 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)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=40001
Sweep Time=2.387s
Marker:
1: 24217.191 MHz
-48.59dBm
2: 24287.106 MHz
-48.74dBm
Limit: -20.090 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

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