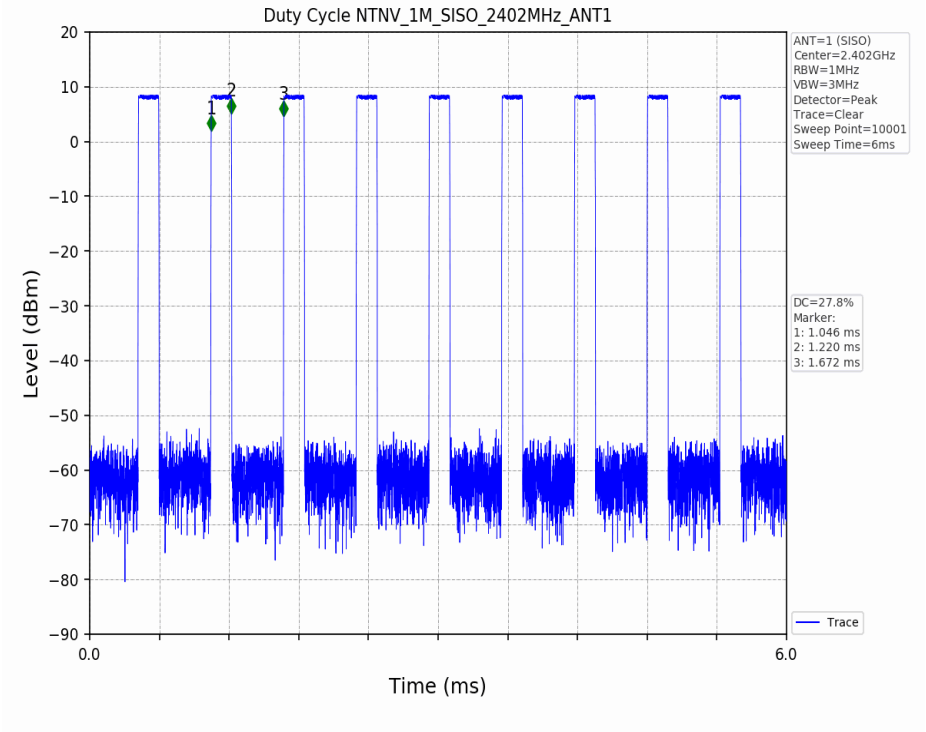
Appendix for 15.247

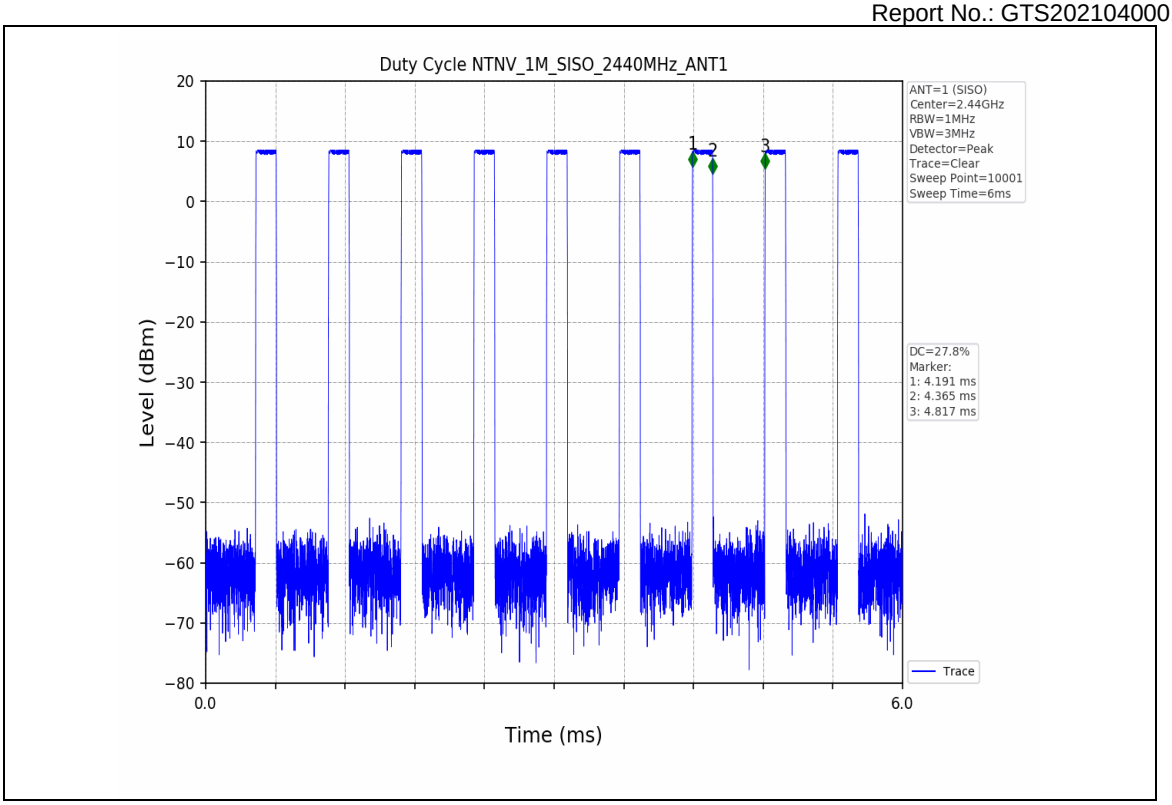
1. Duty Cycle

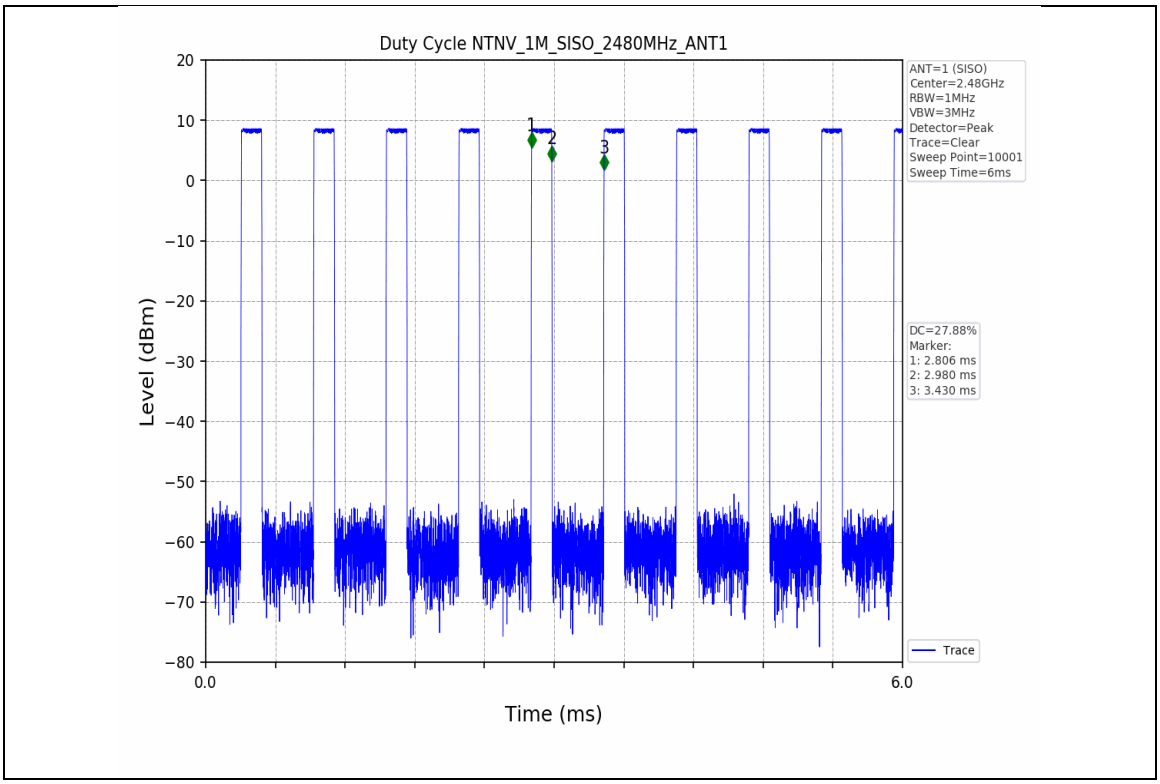
1.1 Test Result

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	0.174	0.626	27.80	5.56
	2440	SISO	1	0.174	0.626	27.80	5.56
	2480	SISO	1	0.174	0.624	27.88	5.55

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=27.8%
Marker:
1: 4.191 ms
2: 4.365 ms
3: 4.817 ms
Trace
Level (dBm)
Time (ms)
0.0
6.0
20
10
0
−10
−20
−30
−40
−50
−60
−70
−80
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=27.88%
Marker:
1: 2.806 ms
2: 2.980 ms
3: 3.430 ms
Trace
Level (dBm)
Time (ms)
0.0
6.0
20
10
0
−10
−20
−30
−40
−50
−60
−70
−80
1
2
3

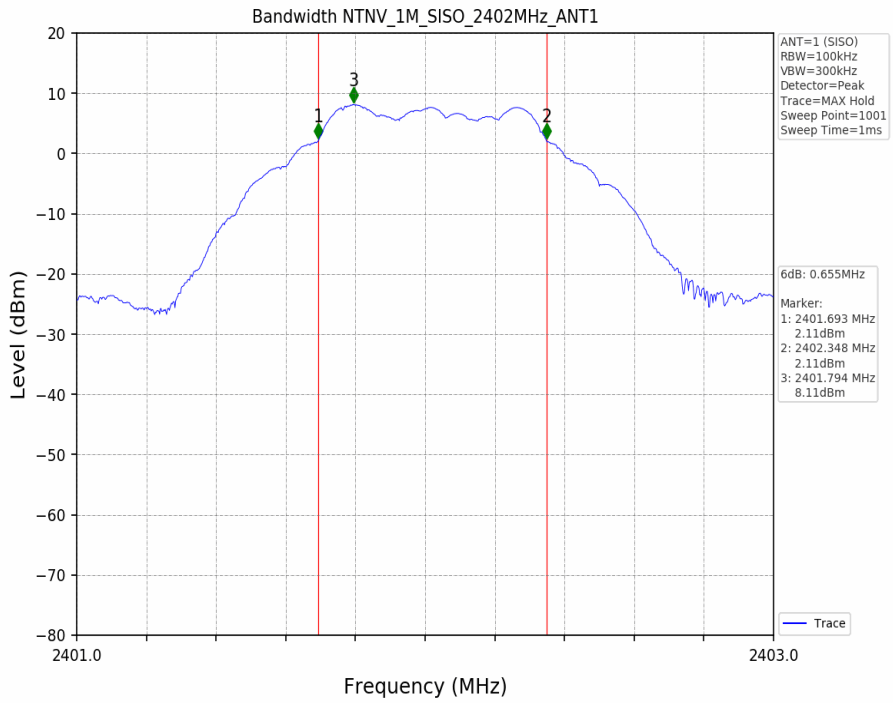
2. Bandwidth

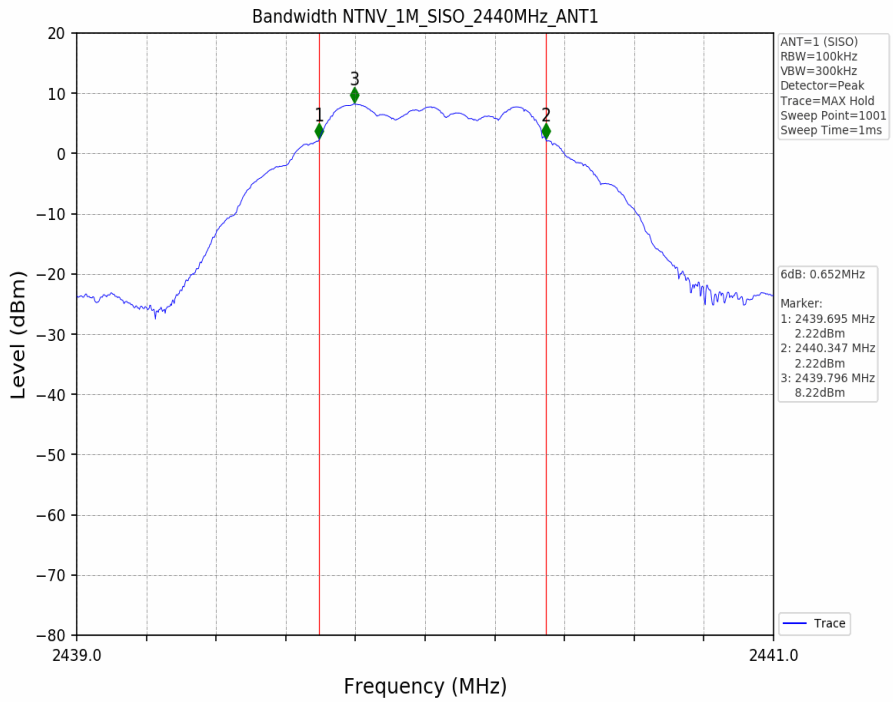
2.1 Test Result

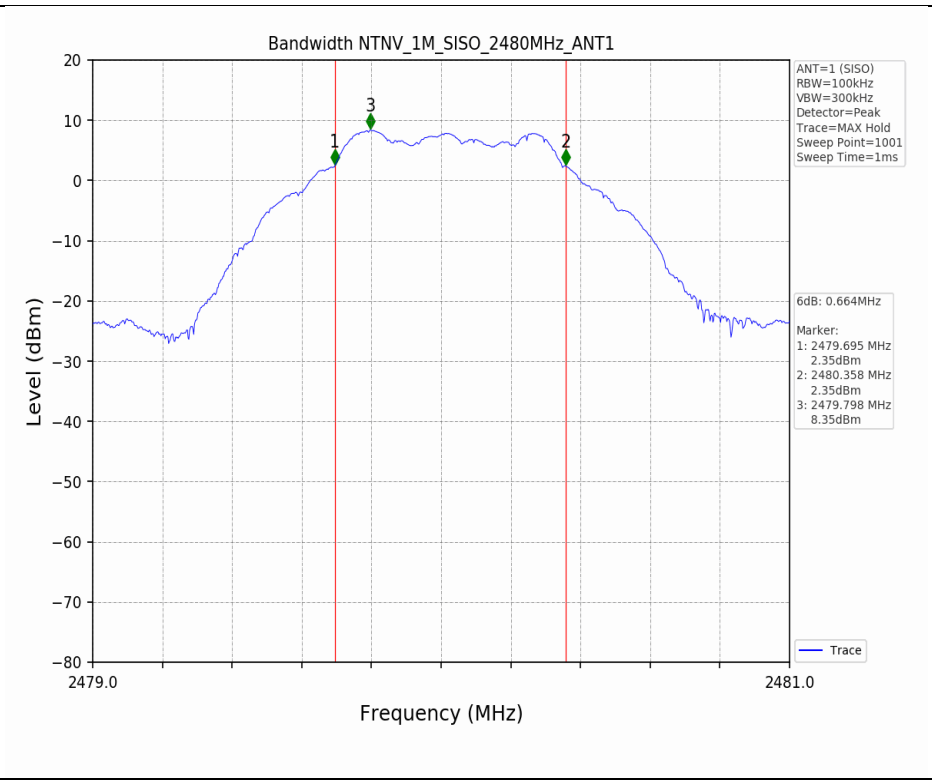
Test Mode	Frequency (MHz)	TX Type	ANT No.	6dB Bandwidth		Verdict
				Test Result (MHz)	Limits (MHz)	
1M	2402	SISO	1	0.655	≥0.5	PASS
	2440	SISO	1	0.652	≥0.5	PASS
	2480	SISO	1	0.664	≥0.5	PASS

Test Mode	Frequency (MHz)	TX Type	ANT No.	99% Occupied Bandwidth	
				Test Result (MHz)	
1M	2402	SISO	1	1.018	Only for Report Use
	2440	SISO	1	1.018	Only for Report Use
	2480	SISO	1	1.018	Only for Report Use

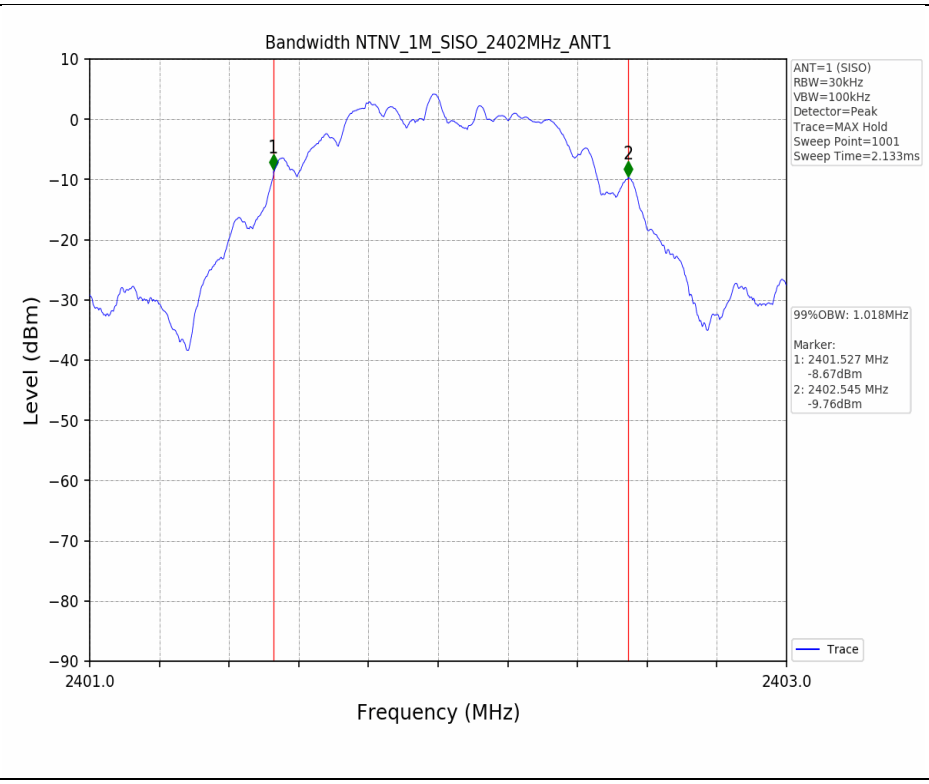
2.2 Test Graph - 6dB Bandwidth

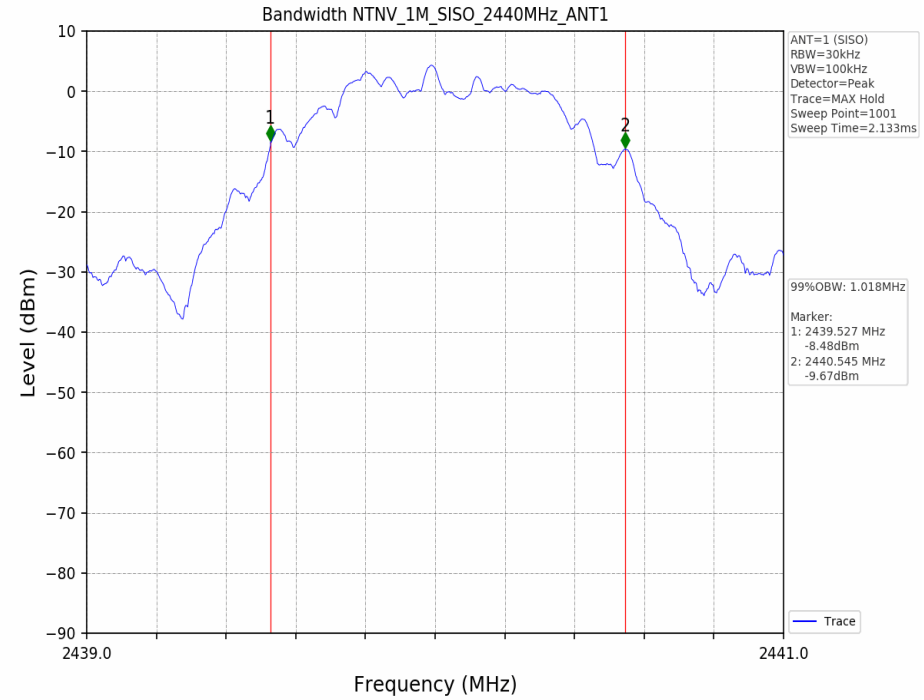


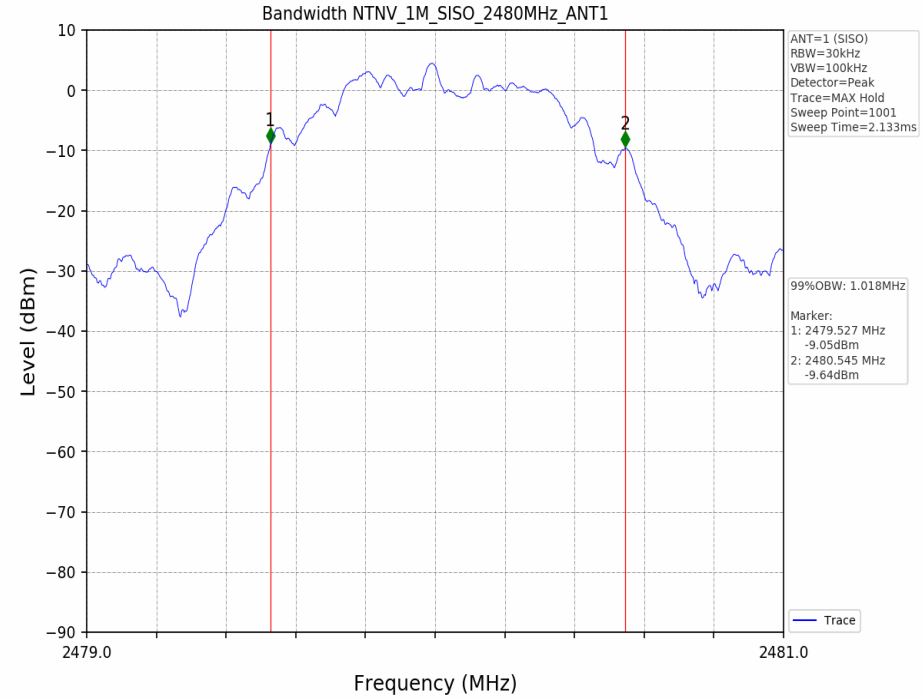

Bandwidth NTNV_1M_SISO_2440MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
6dB: 0.652MHz
Marker:
1: 2439.695 MHz
2.22dBm
2: 2440.347 MHz
2.22dBm
3: 2439.796 MHz
8.22dBm
Trace
Level (dBm)
Frequency (MHz)
2439.0
2441.0


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: 0.664MHz
Marker:
1: 2479.695 MHz
2.35dBm
2: 2480.358 MHz
2.35dBm
3: 2479.798 MHz
8.35dBm
Trace
Level (dBm)
Frequency (MHz)
2479.0
2481.0

2.3 Test Graph - 99% Occupied Bandwidth




Bandwidth NTNV_1M_SISO_2440MHz_ANT1
ANT=1 (SISO)
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.133ms
99%OBW: 1.018MHz
Marker:
1: 2439.527 MHz
-8.48dBm
2: 2440.545 MHz
-9.67dBm
Trace
Level (dBm)
Frequency (MHz)
2439.0
2441.0

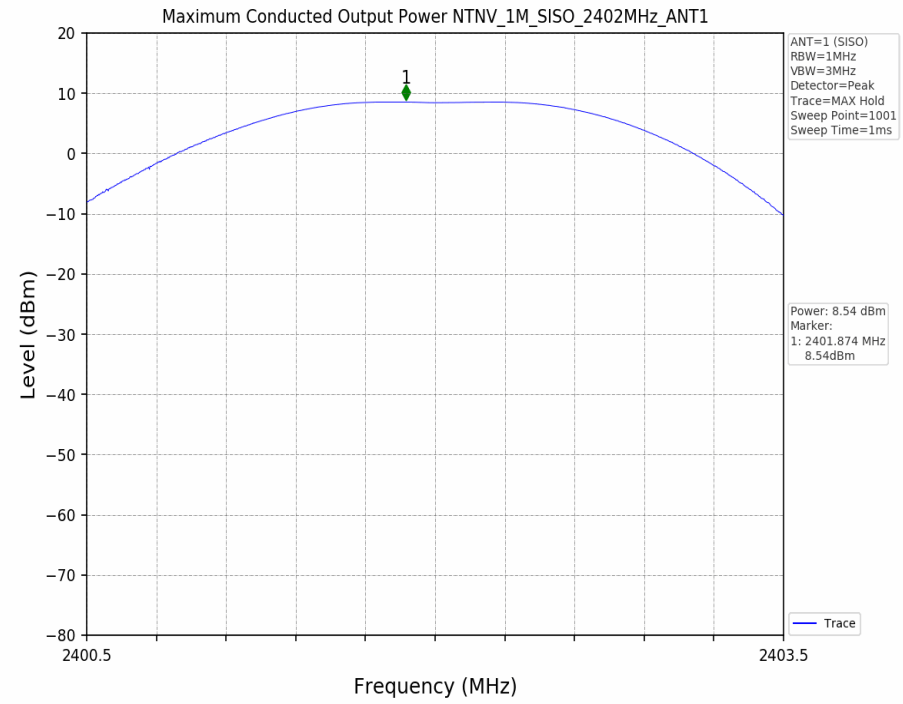

Bandwidth NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.133ms
99%OBW: 1.018MHz
Marker:
1: 2479.527 MHz
-9.05dBm
2: 2480.545 MHz
-9.64dBm
Trace
Level (dBm)
Frequency (MHz)
2479.0
2481.0

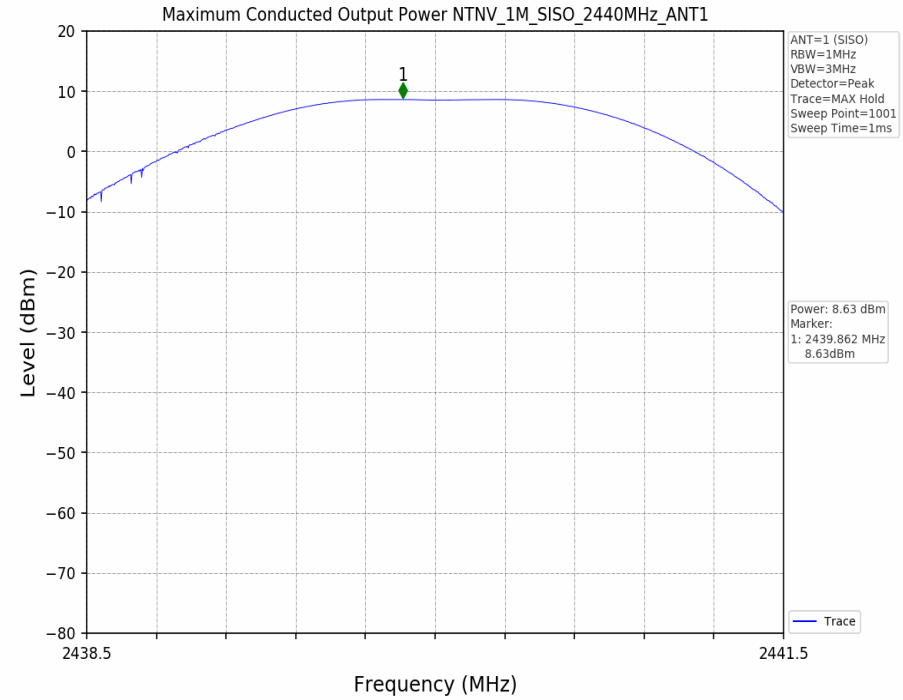
3. Maximum Conducted Output Power

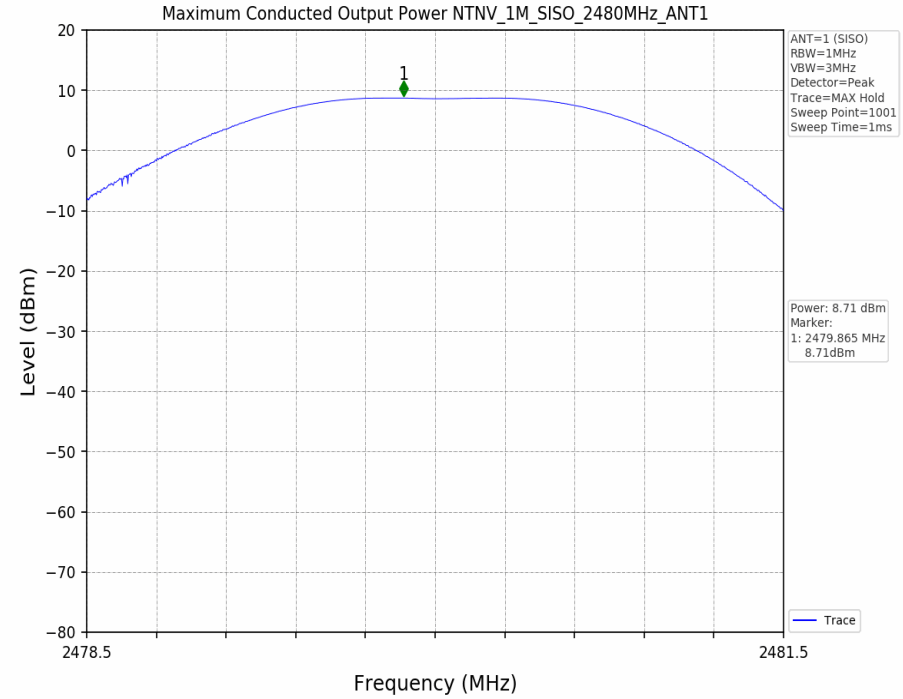
3.1 Test Result

Test Mode	Frequency (MHz)	Tx Type	Measured Peak Output Power (dBm)	Limits (dBm)	Verdict
			Ant 1		
1M	2402	SISO	8.54	30	PASS
	2440	SISO	8.63	30	PASS
	2480	SISO	8.71	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: 8.63 dBm
Marker:
1: 2439.862 MHz
8.63dBm
Trace
Level (dBm)
Frequency (MHz)
2438.5
2441.5

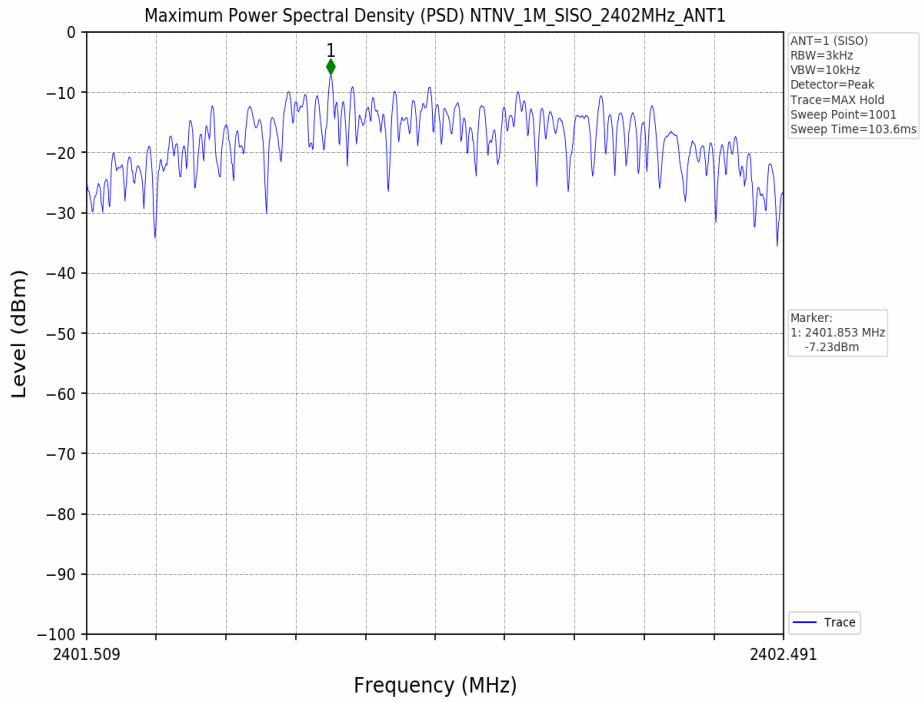

Maximum Conducted Output Power NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
RBW=1MHz
VBW=3MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Power: 8.71 dBm
Marker:
1: 2479.865 MHz
8.71dBm
Trace
Level (dBm)
Frequency (MHz)
2478.5
2481.5

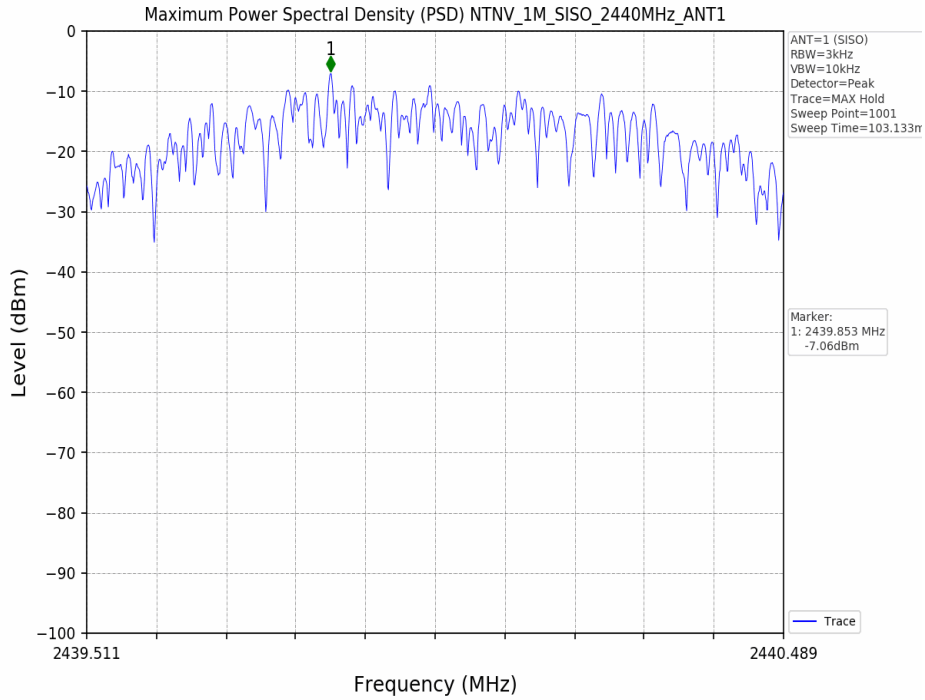
4. Maximum Power Spectral Density (PSD)

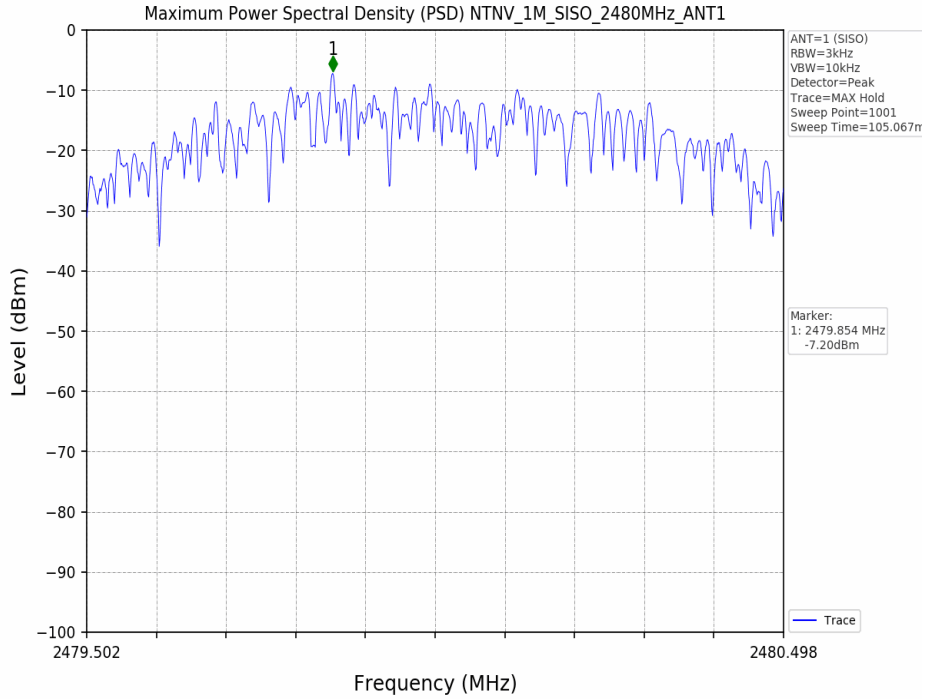
4.1 Test Result

Test Mode	Frequency (MHz)	Tx Type	Maximum Power Spectral Density (dBm/3KHz)	Limits (dBm/3kHz)	Verdict
			Ant 1		
1M	2402	SISO	-7.23	≤8	PASS
	2440	SISO	-7.06	≤8	PASS
	2480	SISO	-7.20	≤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=103.133m
Marker:
1: 2439.853 MHz
-7.06dBm
Trace
Level (dBm)
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
−100
2439.511
2440.489
Frequency (MHz)

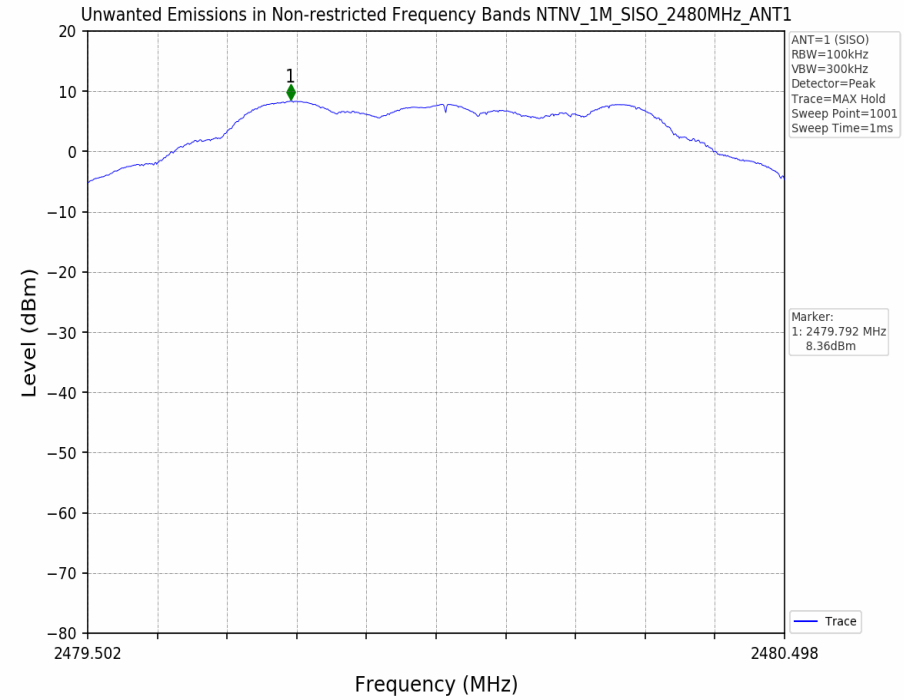

Maximum Power Spectral Density (PSD) NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
RBW=3kHz
VBW=10kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=105.067m
Marker:
1: 2479.854 MHz
-7.20dBm
Trace
Level (dBm)
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
−100
2479.502
2480.498
Frequency (MHz)

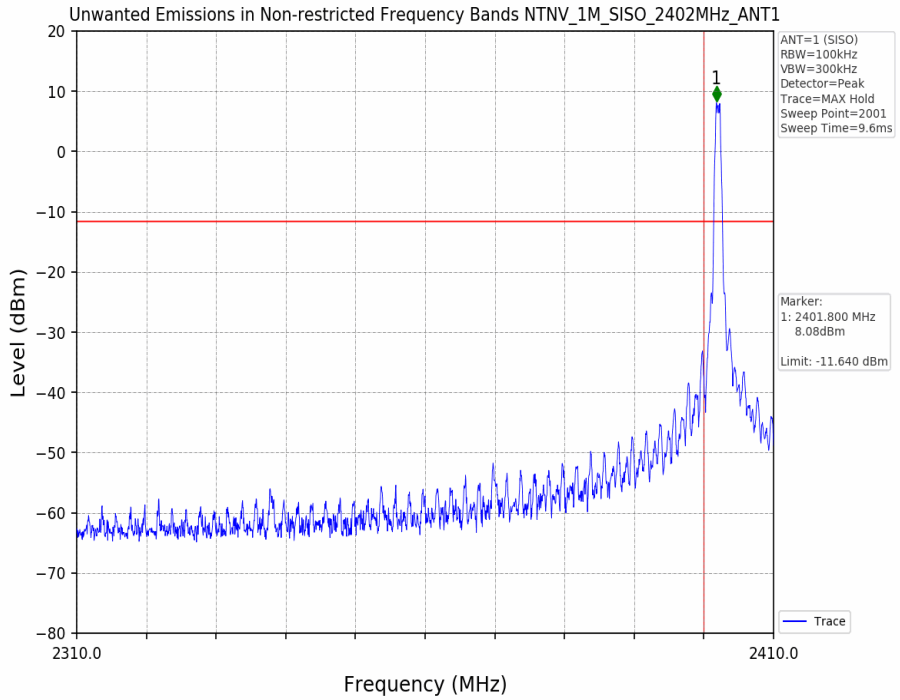
5. Unwanted Emissions in Non-restricted Frequency Bands

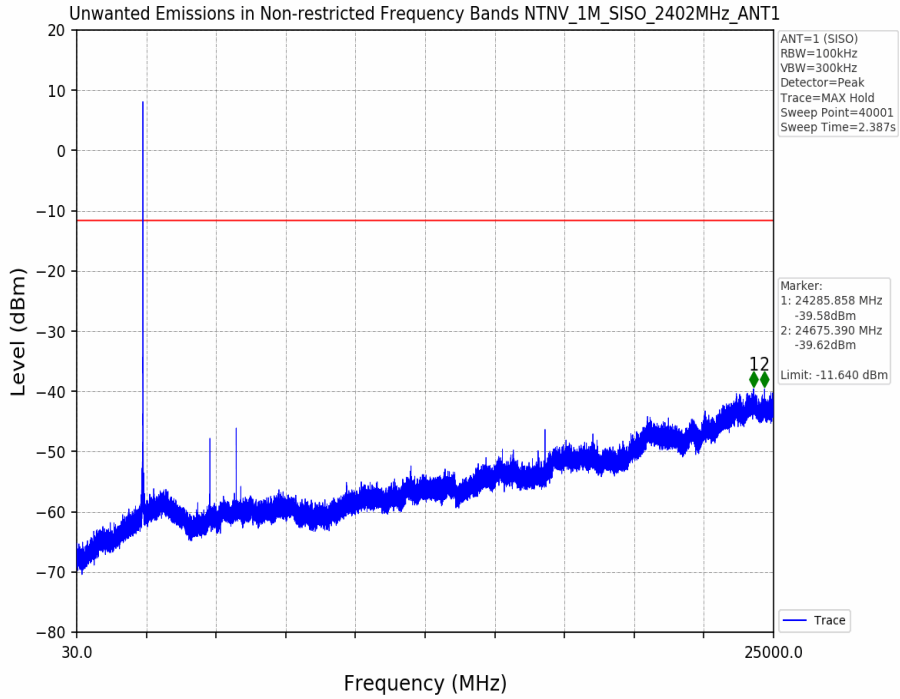
5.1 Test Result

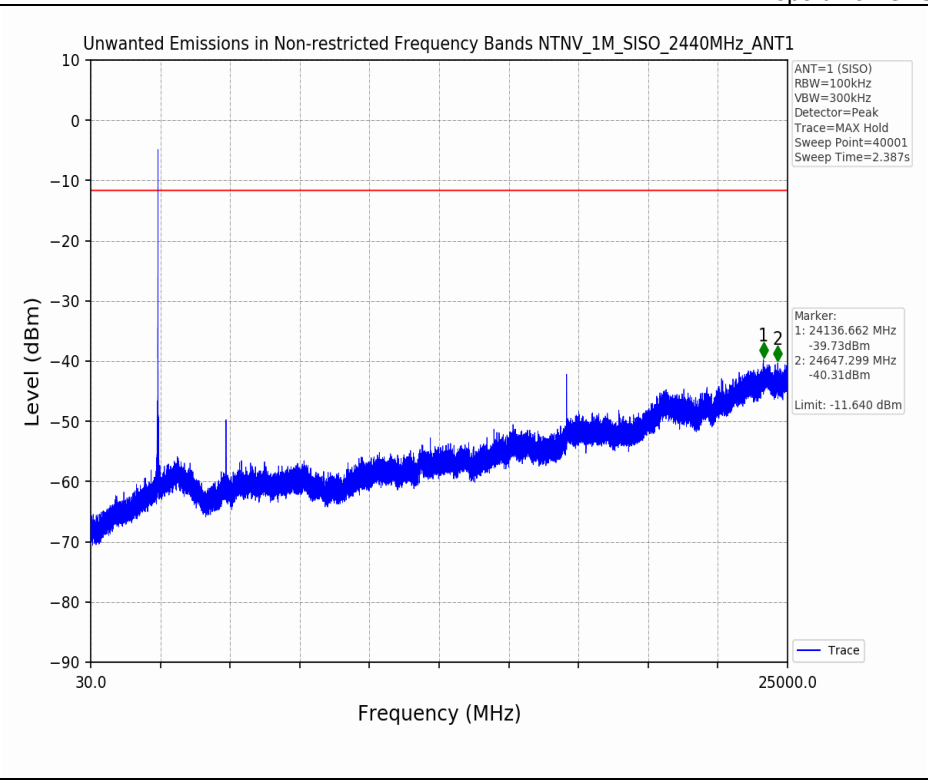
Test Mode	Frequency (MHz)	TX Type	ANT No.	Spurious Conducted Emission (dBm)	Limits (dBm)	Verdict
1M	2402	SISO	1	Refer to test graph	-11.64	PASS
	2440	SISO	1	Refer to test graph	-11.64	PASS
	2480	SISO	1	Refer to test graph	-11.64	PASS

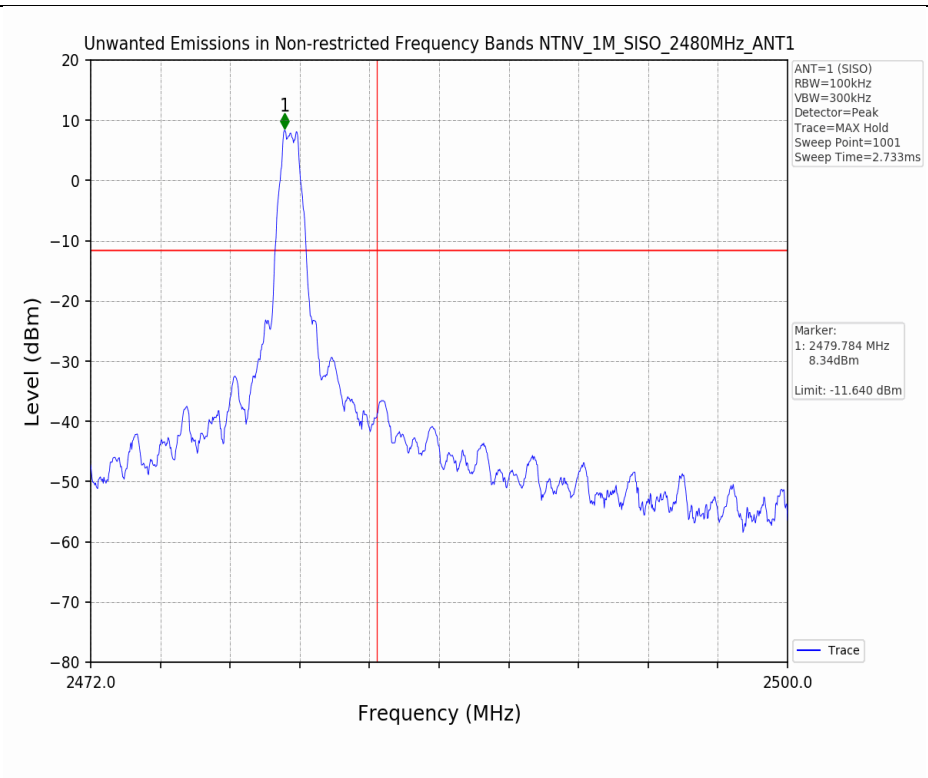
5.2 Test Graph

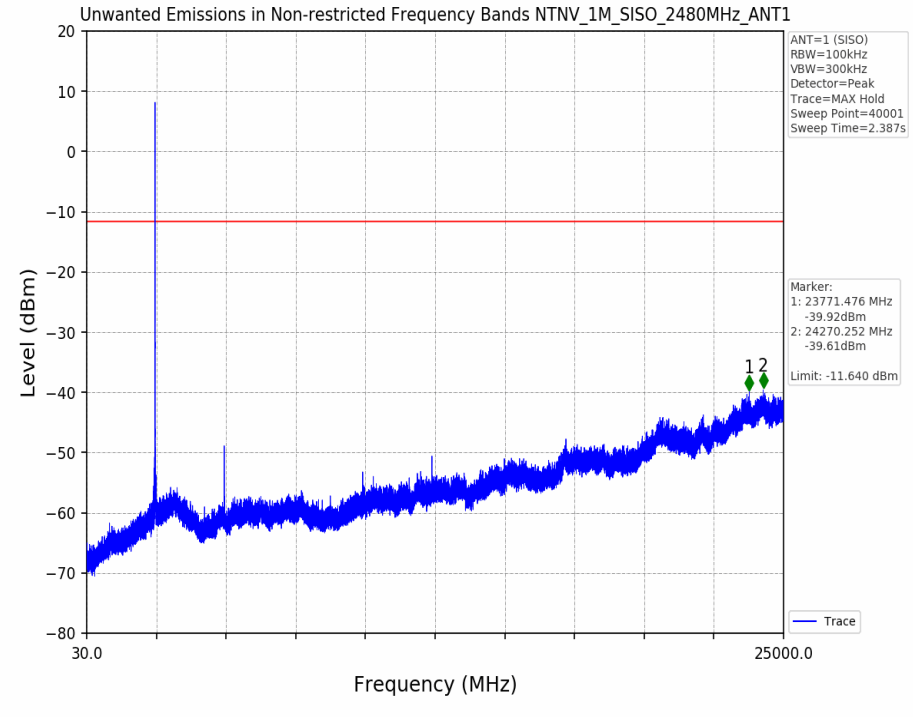



Unwanted Emissions in Non-restricted Frequency Bands NTNV_1M_SISO_2402MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=2001
Sweep Time=9.6ms
Marker:
1: 2401.800 MHz
8.08dBm
Limit: -11.640 dBm
Trace
Level (dBm)
Frequency (MHz)
2310.0
2410.0


Unwanted Emissions in Non-restricted Frequency Bands NTNV_1M_SISO_2402MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=40001
Sweep Time=2.387s
Marker:
1: 24285.858 MHz
-39.58dBm
2: 24675.390 MHz
-39.62dBm
Limit: -11.640 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: 24136.662 MHz
-39.73dBm
2: 24647.299 MHz
-40.31dBm
Limit: -11.640 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: 2479.784 MHz
8.34dBm
Limit: -11.640 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: 23771.476 MHz
-39.92dBm
2: 24270.252 MHz
-39.61dBm
Limit: -11.640 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0
20
10
0
−10
−20
−30
−40
−50
−60
−70
−80
1 2