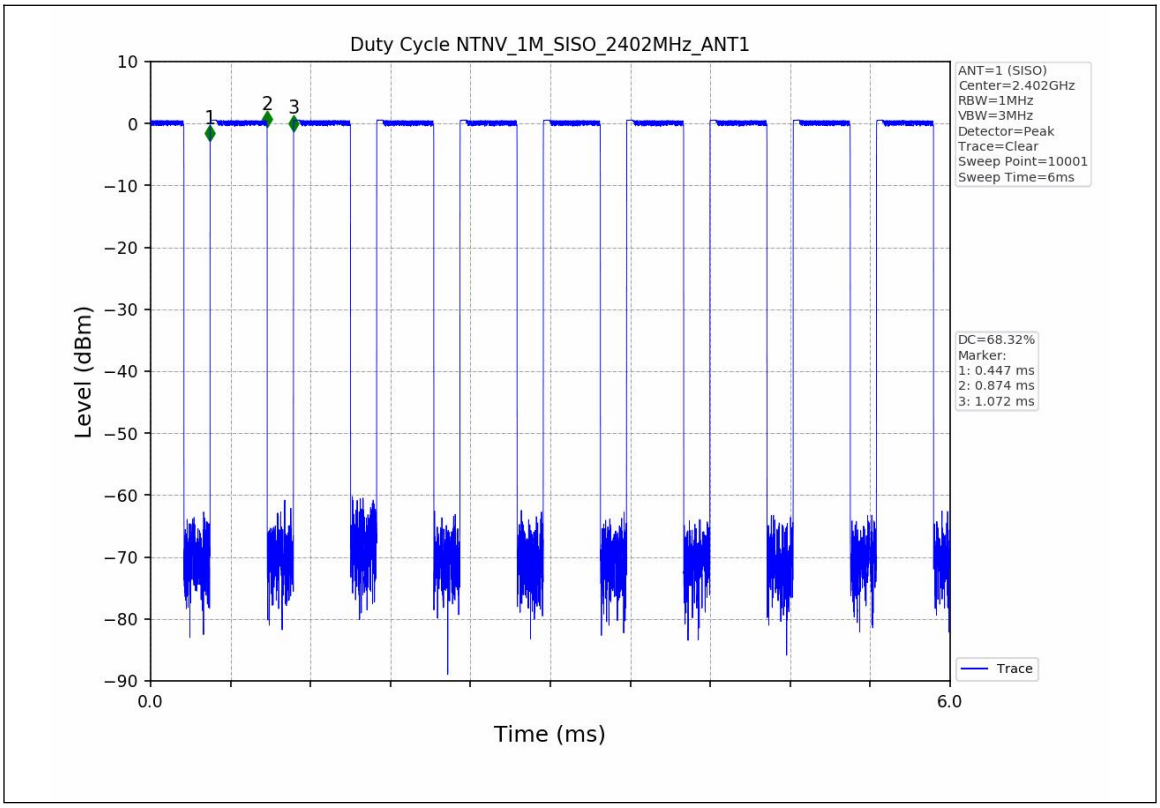
Appendix for 15.247

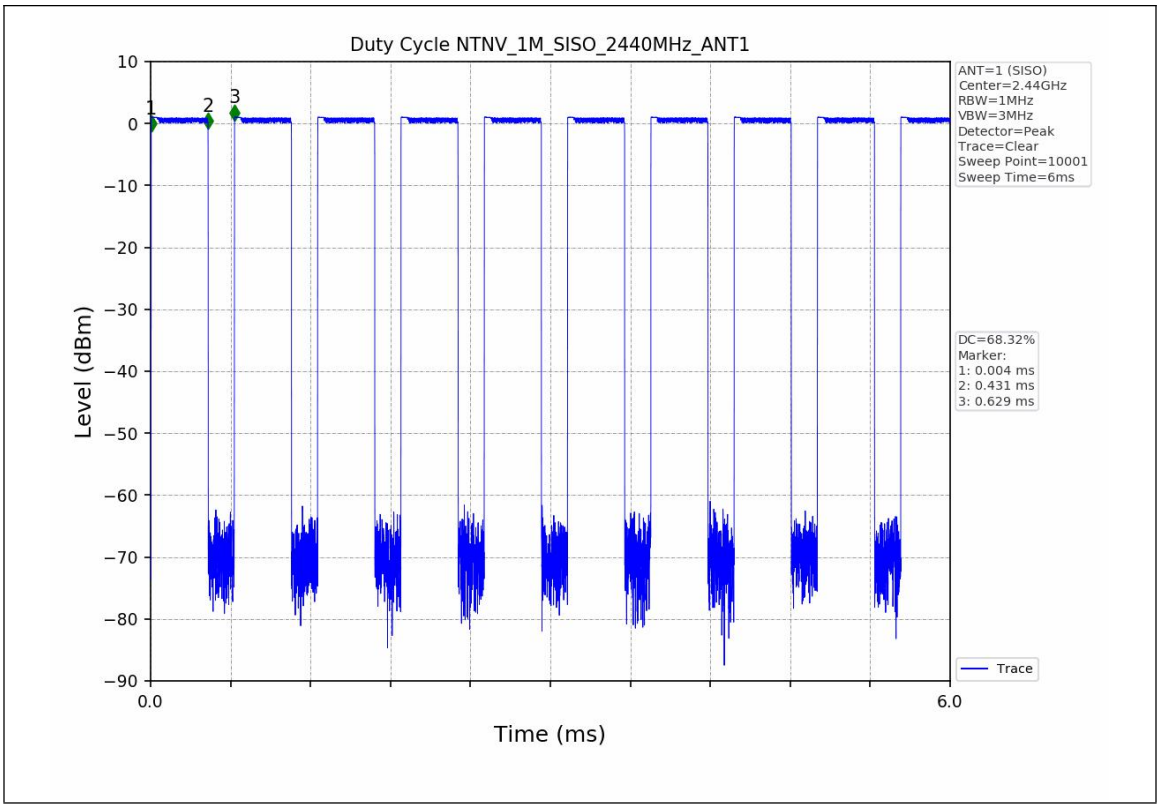
1. Duty Cycle

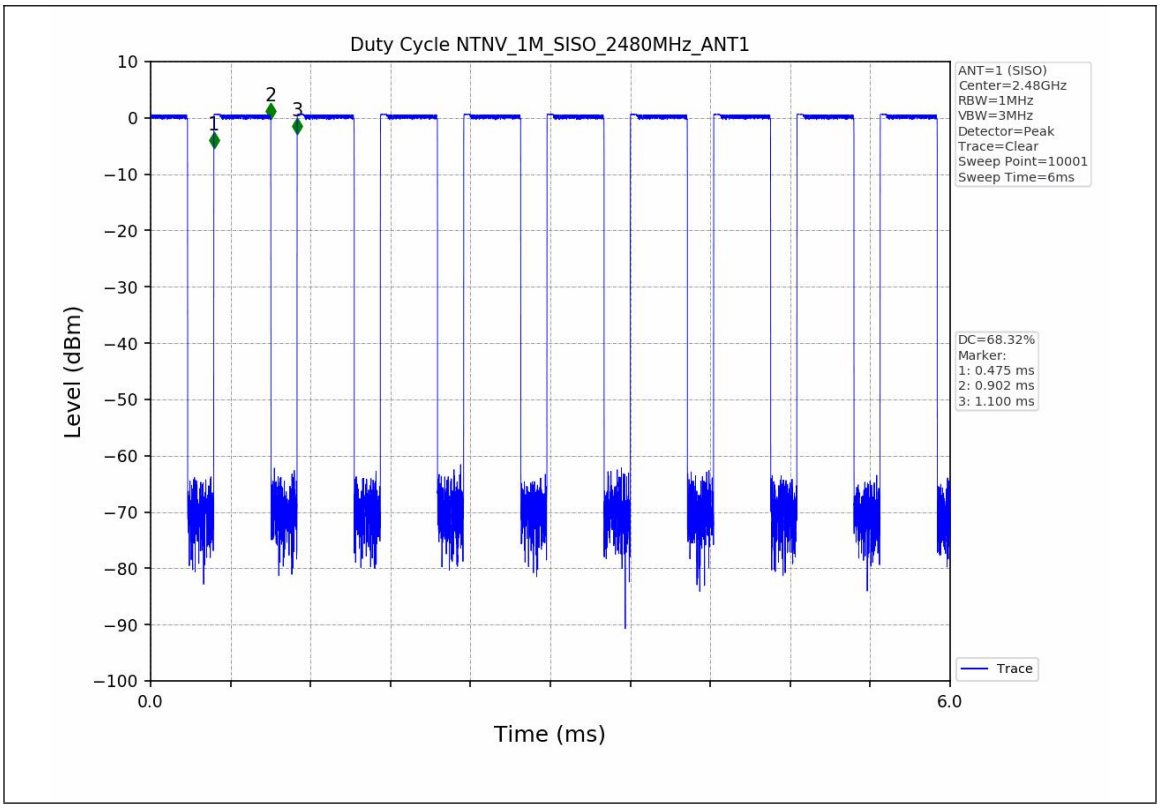
1.1 Test Result

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	0.427	0.625	68.32	1.65
	2440	SISO	1	0.427	0.625	68.32	1.65
	2480	SISO	1	0.427	0.625	68.32	1.65

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=68.32%
Marker:
1: 0.004 ms
2: 0.431 ms
3: 0.629 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=68.32%
Marker:
1: 0.475 ms
2: 0.902 ms
3: 1.100 ms
Trace
Level (dBm)
Time (ms)
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
−100
0.0
6.0
1
2
3

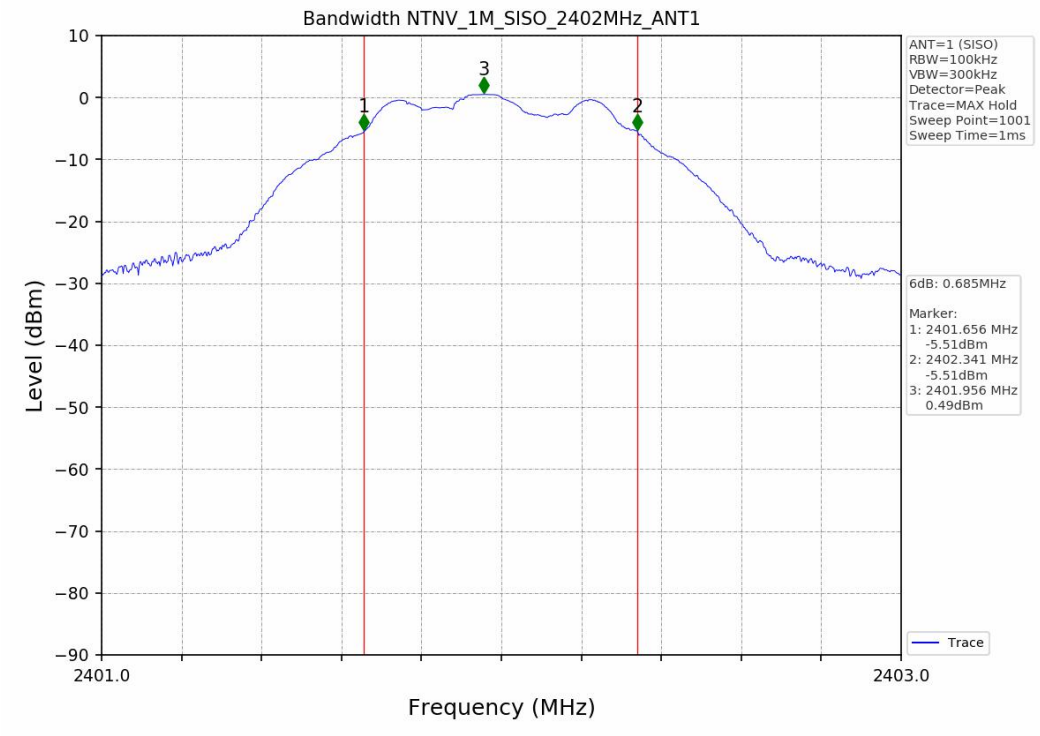
2. Bandwidth

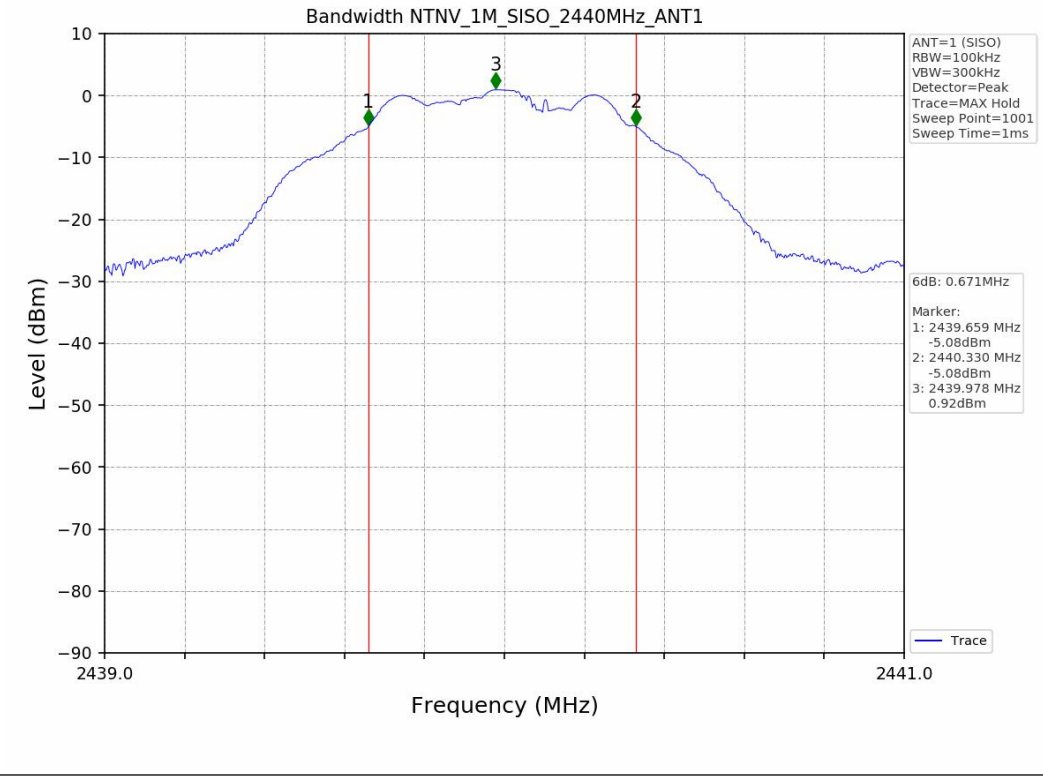
2.1 Test Result

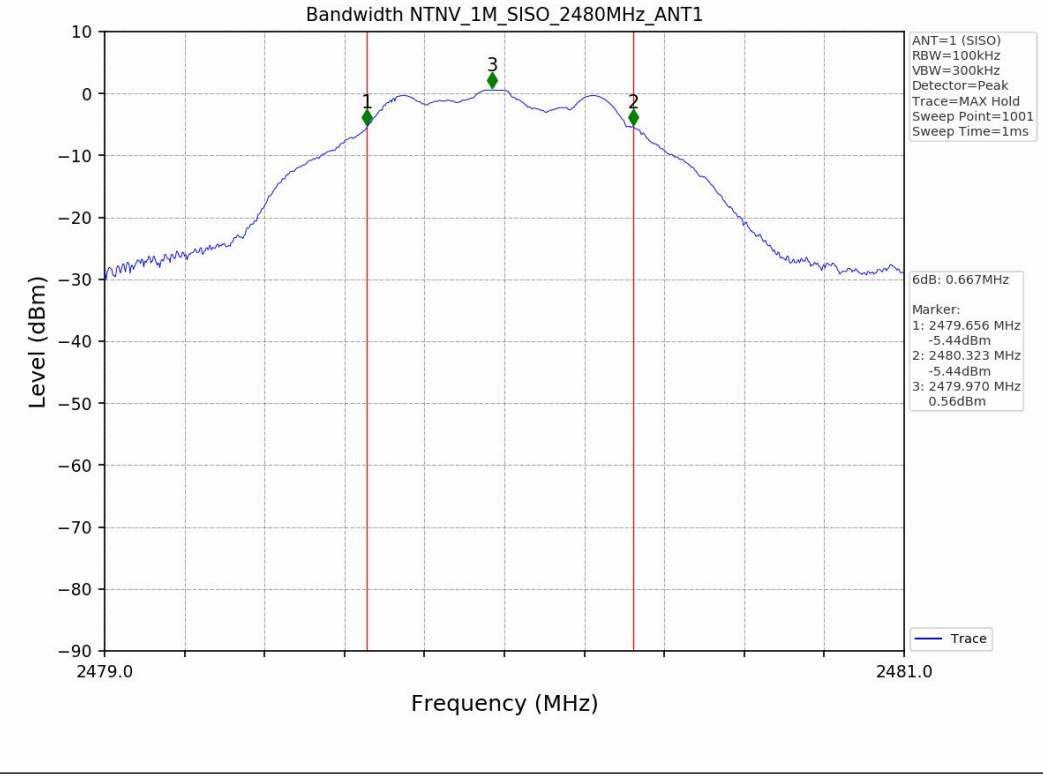
Test Mode	Frequency (MHz)	TX Type	ANT No.	6dB Bandwidth		Verdict
				Test Result (MHz)	Limits (MHz)	
1M	2402	SISO	1	0.685	≥0.5	PASS
	2440	SISO	1	0.671	≥0.5	PASS
	2480	SISO	1	0.667	≥0.5	PASS

Test Mode	Frequency (MHz)	TX Type	ANT No.	99% Occupied Bandwidth	
				Test Result (MHz)	
1M	2402	SISO	1	1.021	Only for Report Use
	2440	SISO	1	1.027	Only for Report Use
	2480	SISO	1	1.017	Only for Report Use

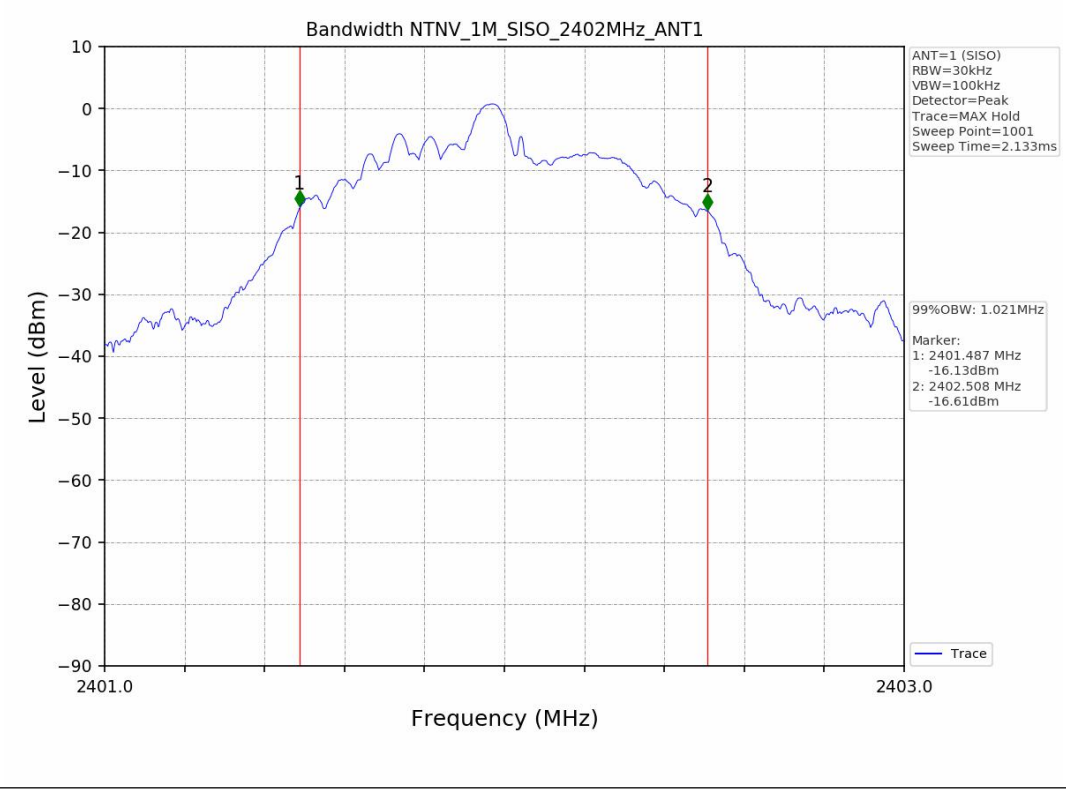
2.2 Test Graph - 6dB Bandwidth

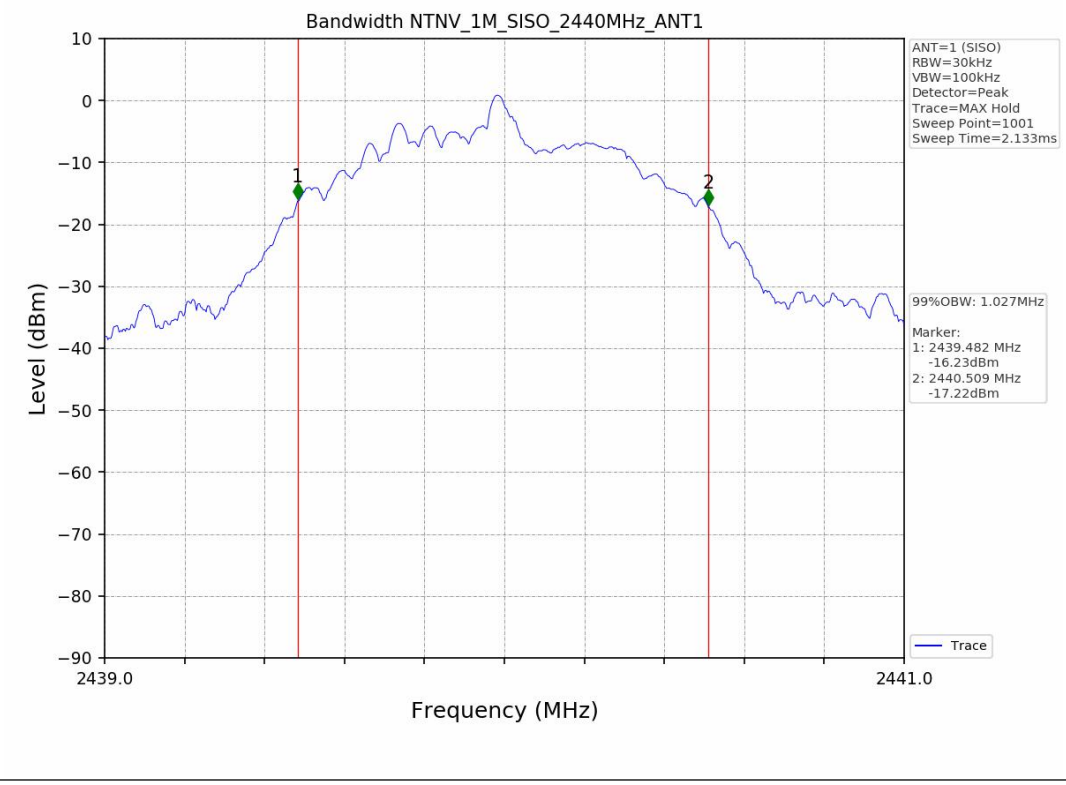


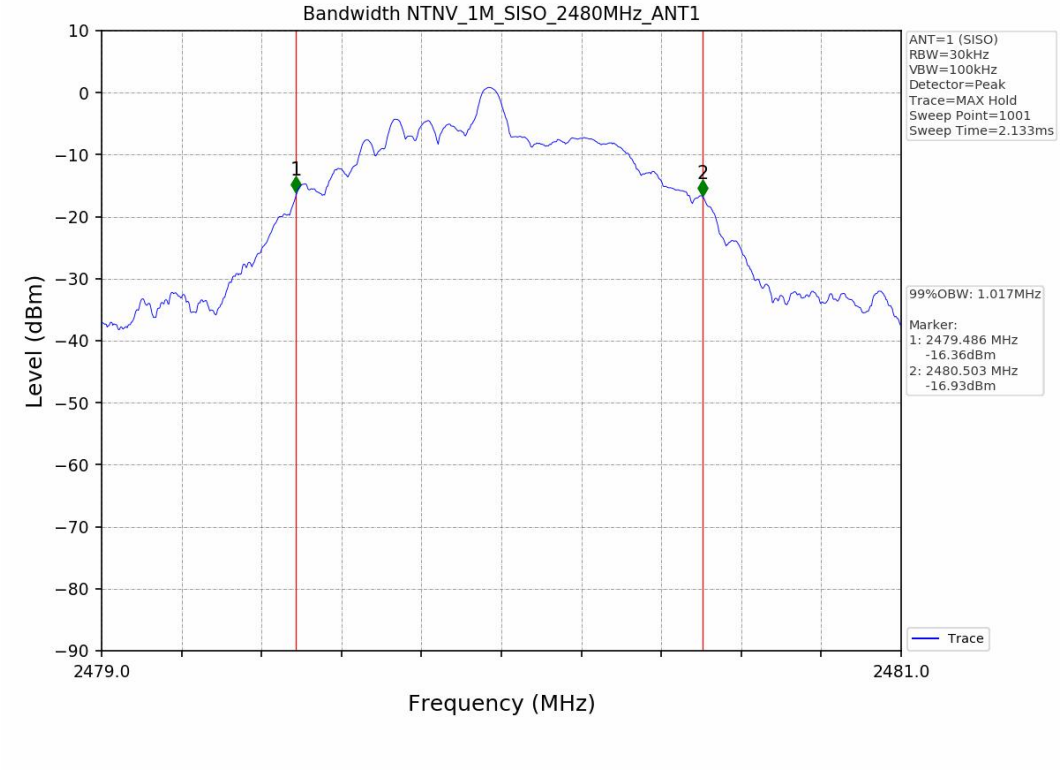

Bandwidth NTNV_1M_SISO_2440MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
6dB: 0.671MHz
Marker:
1: 2439.659 MHz
-5.08dBm
2: 2440.330 MHz
-5.08dBm
3: 2439.978 MHz
0.92dBm
Trace
Level (dBm)
Frequency (MHz)
2439.0
2441.0


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: 0.667MHz
Marker:
1: 2479.656 MHz
-5.44dBm
2: 2480.323 MHz
-5.44dBm
3: 2479.970 MHz
0.56dBm
Trace
Level (dBm)
Frequency (MHz)
2479.0
2481.0

2.3 Test Graph - 99% Occupied Bandwidth





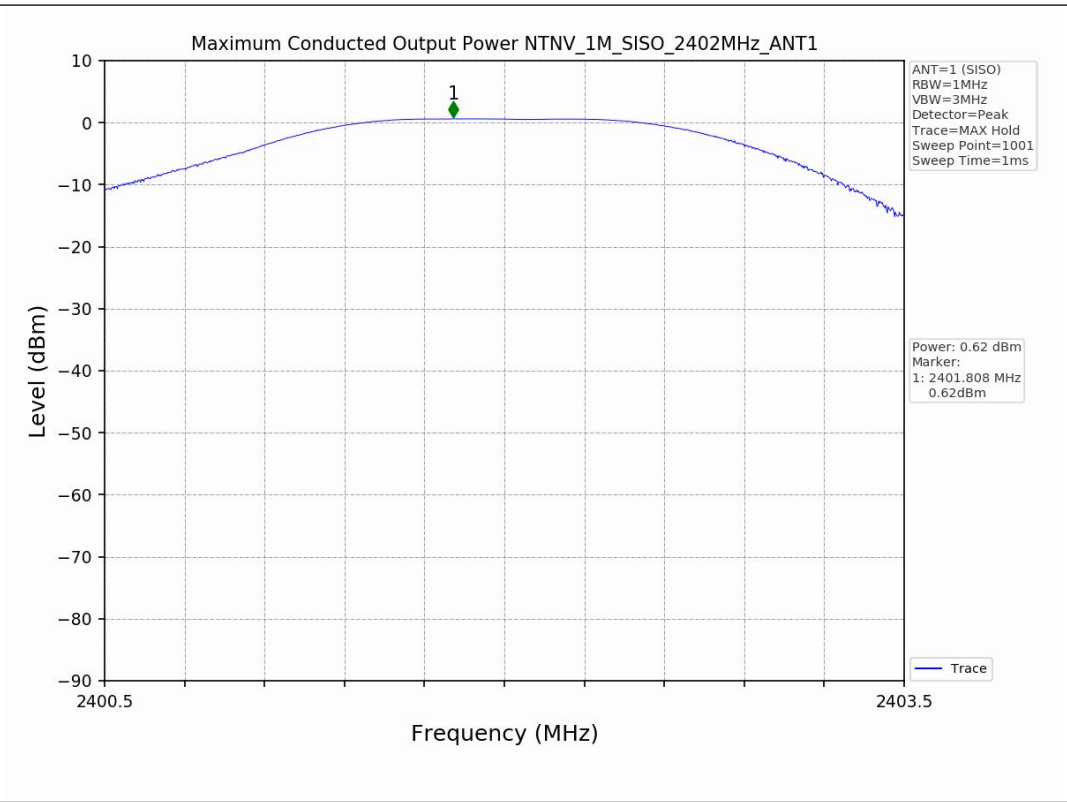

Bandwidth NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.133ms
99%OBW: 1.017MHz
Marker:
1: 2479.486 MHz
-16.36dBm
2: 2480.503 MHz
-16.93dBm
Trace
Level (dBm)
Frequency (MHz)
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
2479.0
2481.0
1
2

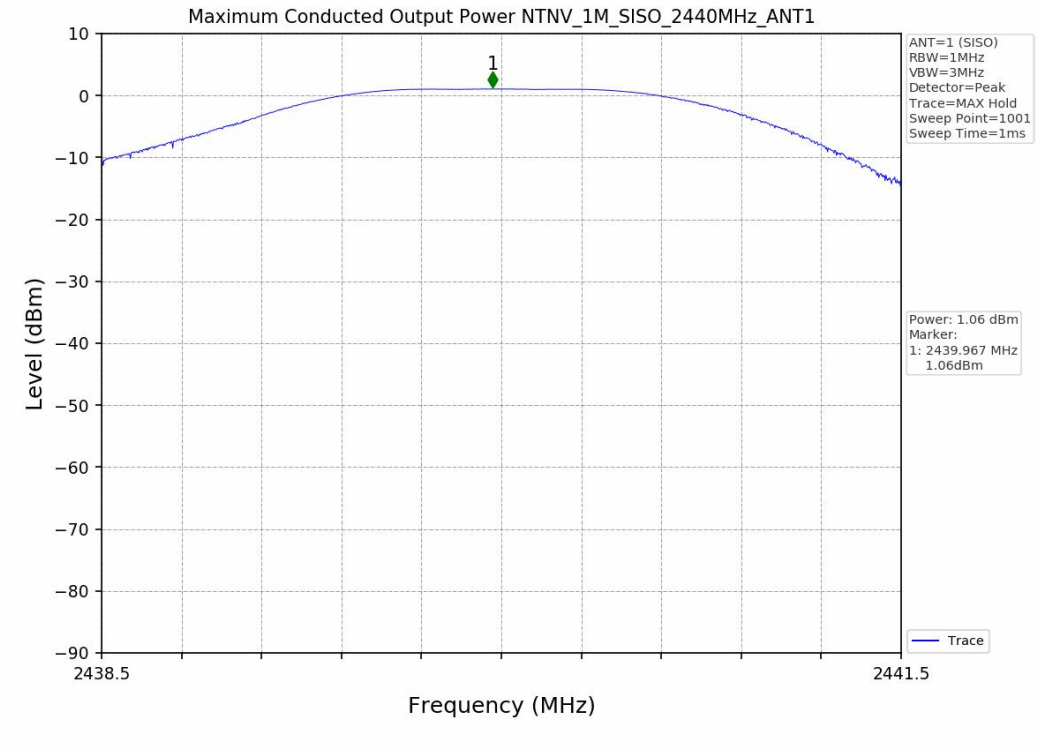
3. Maximum Conducted Output Power

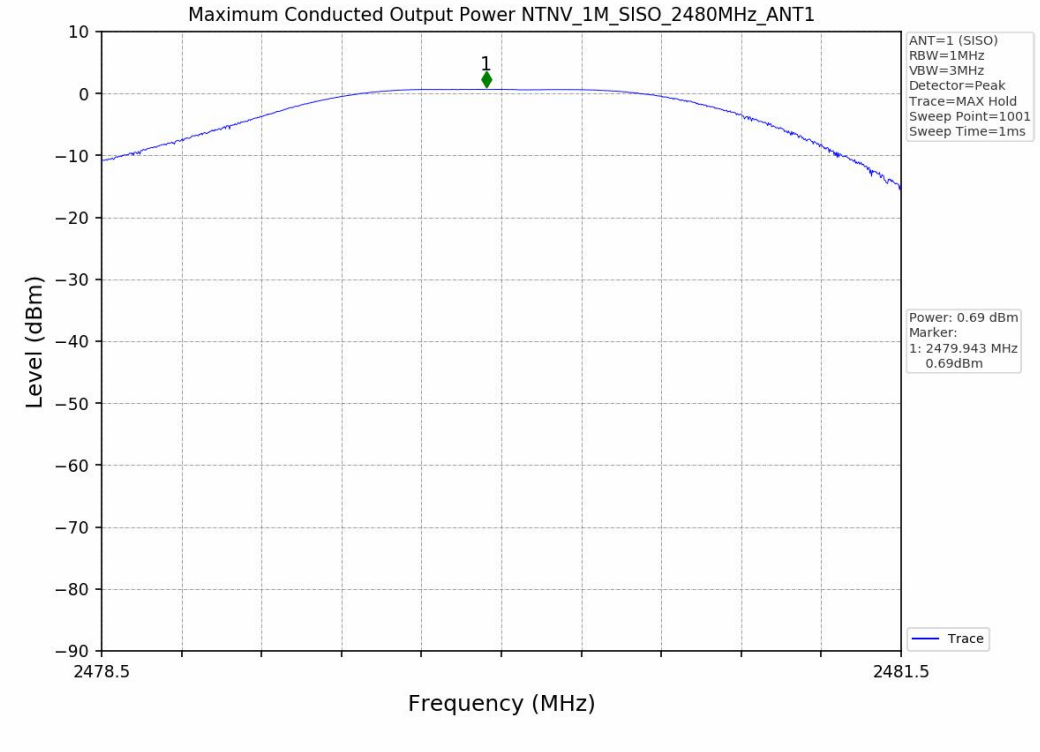
3.1 Test Result

Test Mode	Frequency (MHz)	Tx Type	Measured Peak Output Power (dBm)	Limits (dBm)	Verdict
			Ant 1		
1M	2402	SISO	0.62	30	PASS
	2440	SISO	1.06	30	PASS
	2480	SISO	0.69	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: 1.06 dBm
Marker:
1: 2439.967 MHz
1.06dBm
Trace
Level (dBm)
Frequency (MHz)
2438.5
2441.5

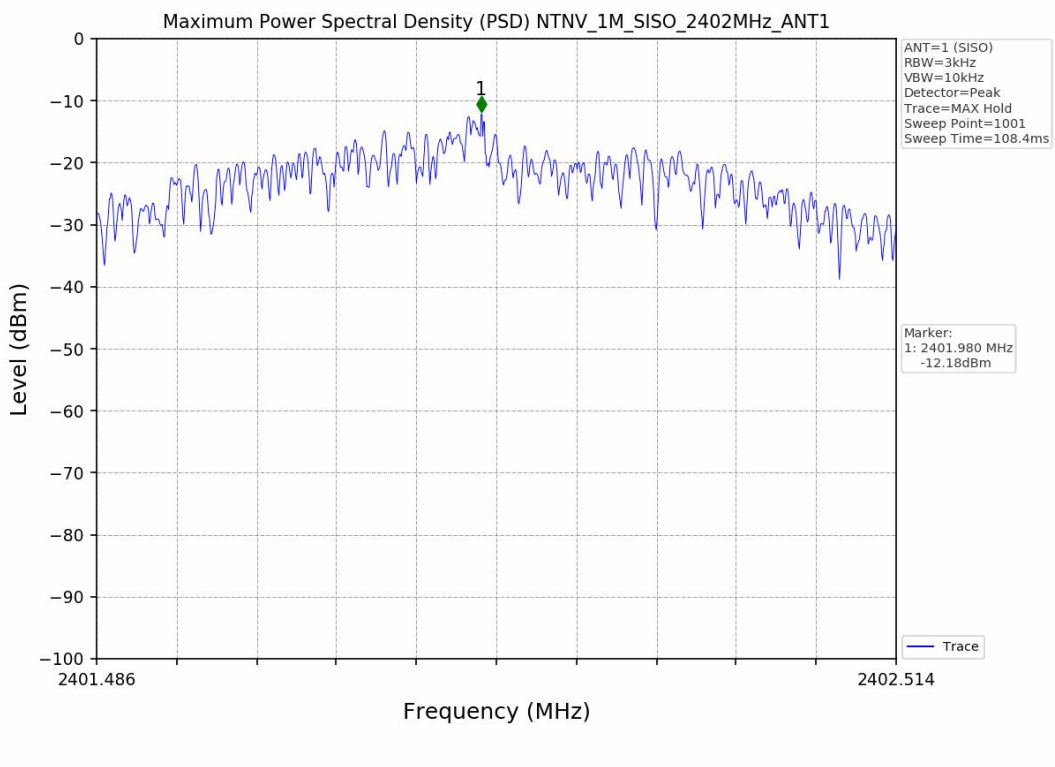

Maximum Conducted Output Power NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
RBW=1MHz
VBW=3MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Power: 0.69 dBm
Marker:
1: 2479.943 MHz
0.69dBm
Trace
Level (dBm)
Frequency (MHz)
2478.5
2481.5

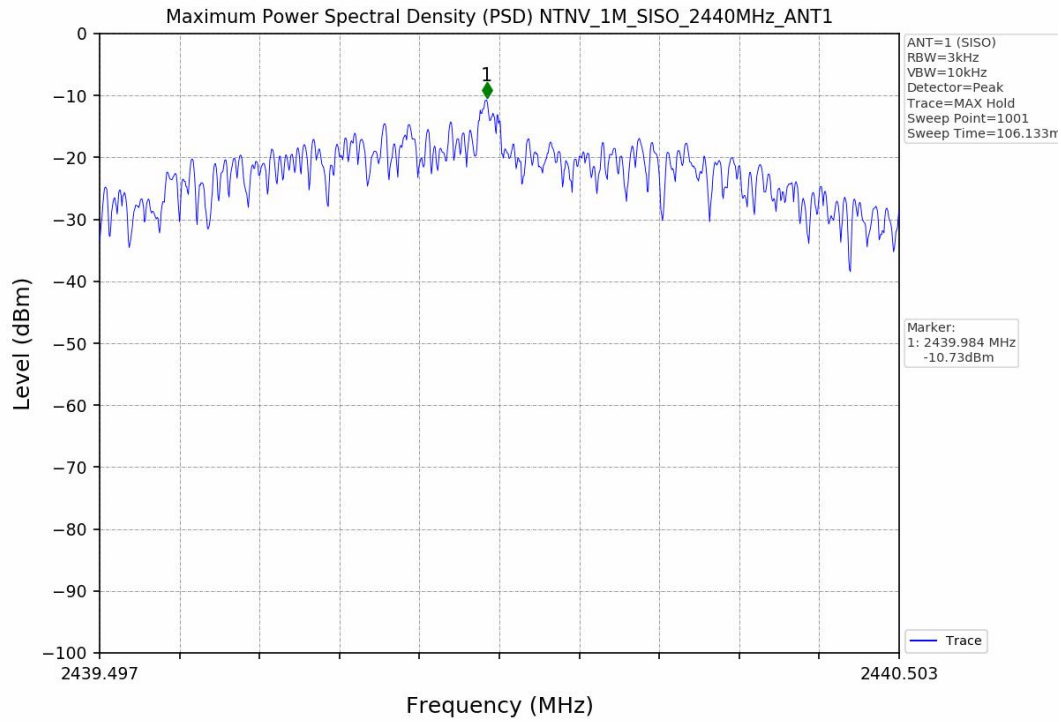
4. Maximum Power Spectral Density (PSD)

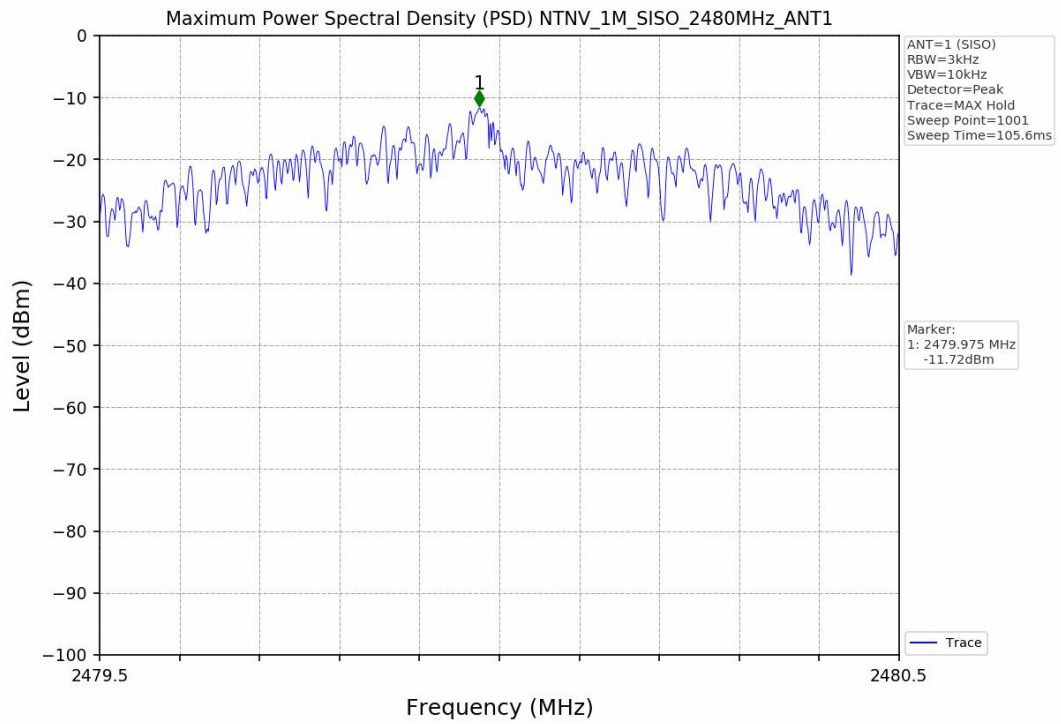
4.1 Test Result

Test Mode	Frequency (MHz)	Tx Type	Maximum Power Spectral Density (dBm/3KHz)	Limits (dBm/3kHz)	Verdict
			Ant 1		
1M	2402	SISO	-12.18	≤8	PASS
	2440	SISO	-10.73	≤8	PASS
	2480	SISO	-11.72	≤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=106.133m
Marker:
1: 2439.984 MHz
-10.73dBm
Trace
Level (dBm)
Frequency (MHz)
2439.497
2440.503

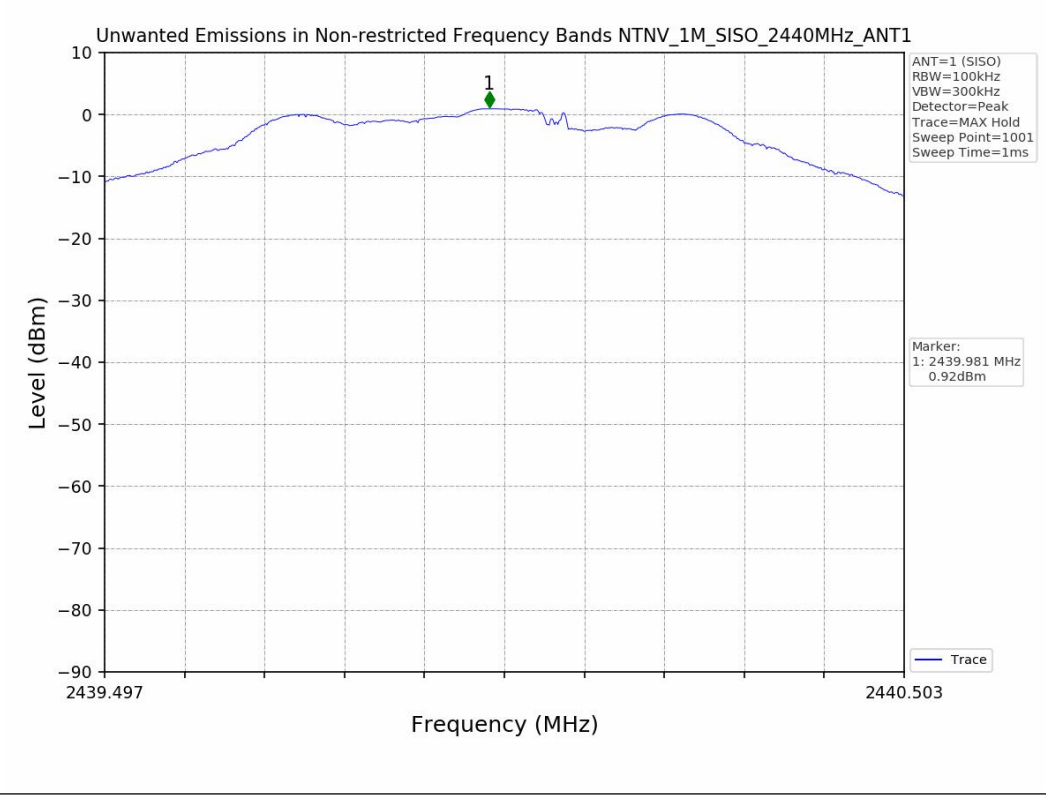

Maximum Power Spectral Density (PSD) NTNV_1M_SISO_2480MHz_ANT1
ANT=1 (SISO)
RBW=3kHz
VBW=10kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=105.6ms
Marker:
1: 2479.975 MHz
-11.72dBm
Trace
Level (dBm)
Frequency (MHz)
2479.5
2480.5

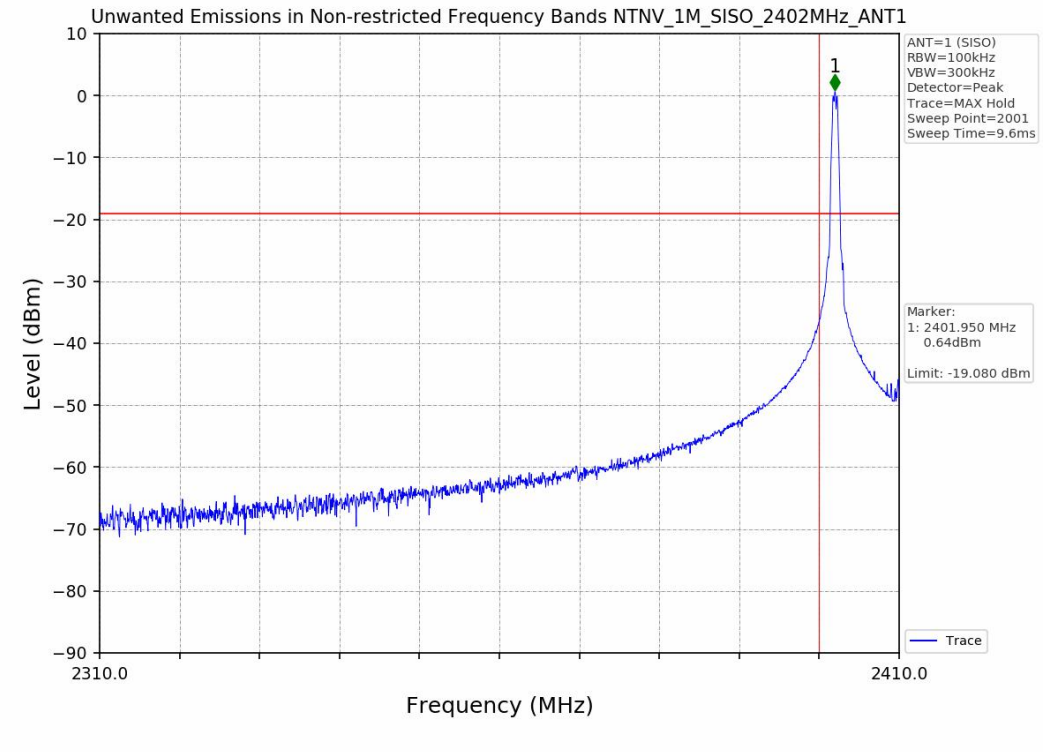
5. Unwanted Emissions in Non-restricted Frequency Bands

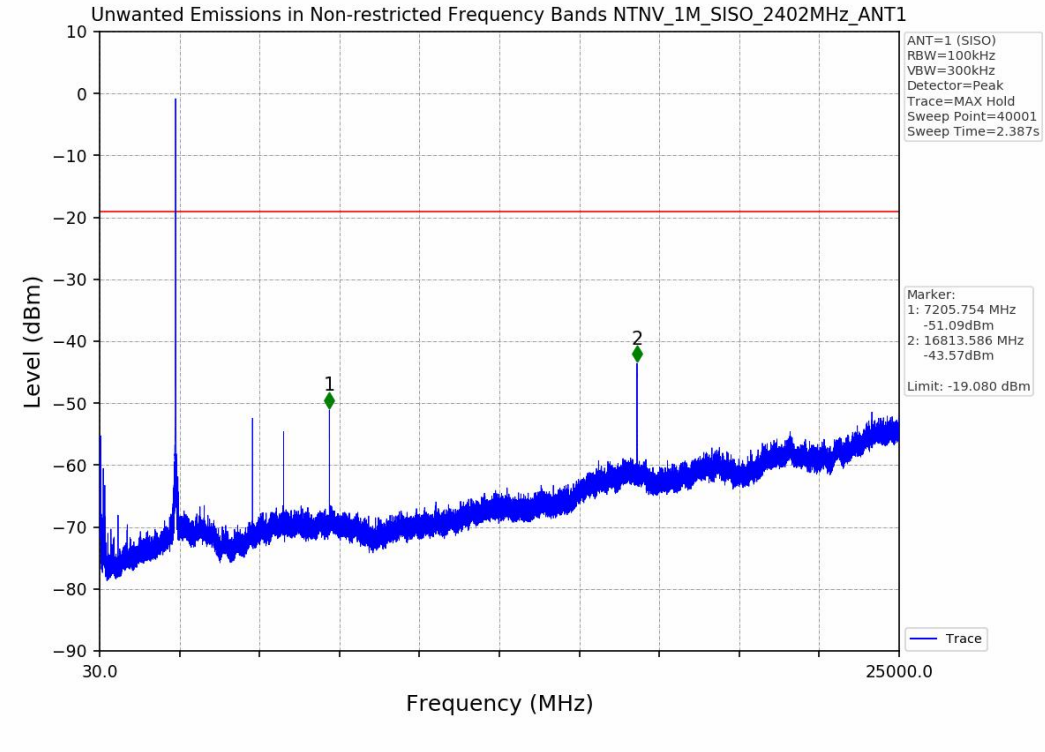
5.1 Test Result

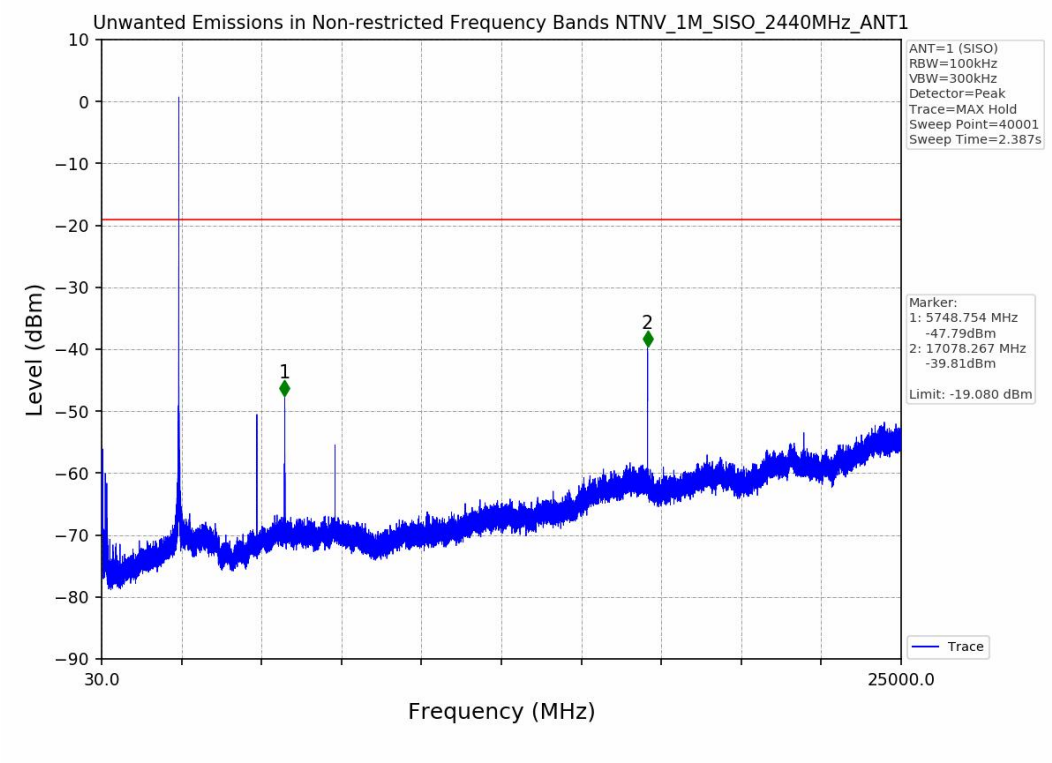
Test Mode	Frequency (MHz)	TX Type	ANT No.	Spurious Conducted Emission (dBm)	Limits (dBm)	Verdict
1M	2402	SISO	1	Refer to test graph	-19.08	PASS
	2440	SISO	1	Refer to test graph	-19.08	PASS
	2480	SISO	1	Refer to test graph	-19.08	PASS

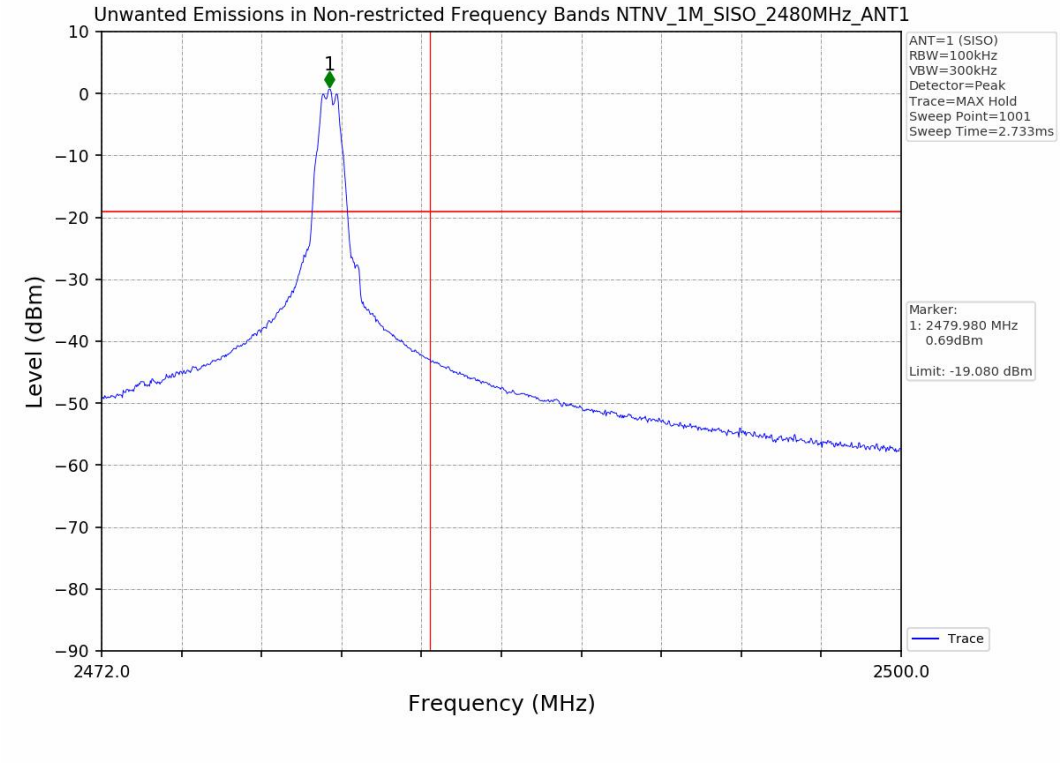
5.2 Test Graph

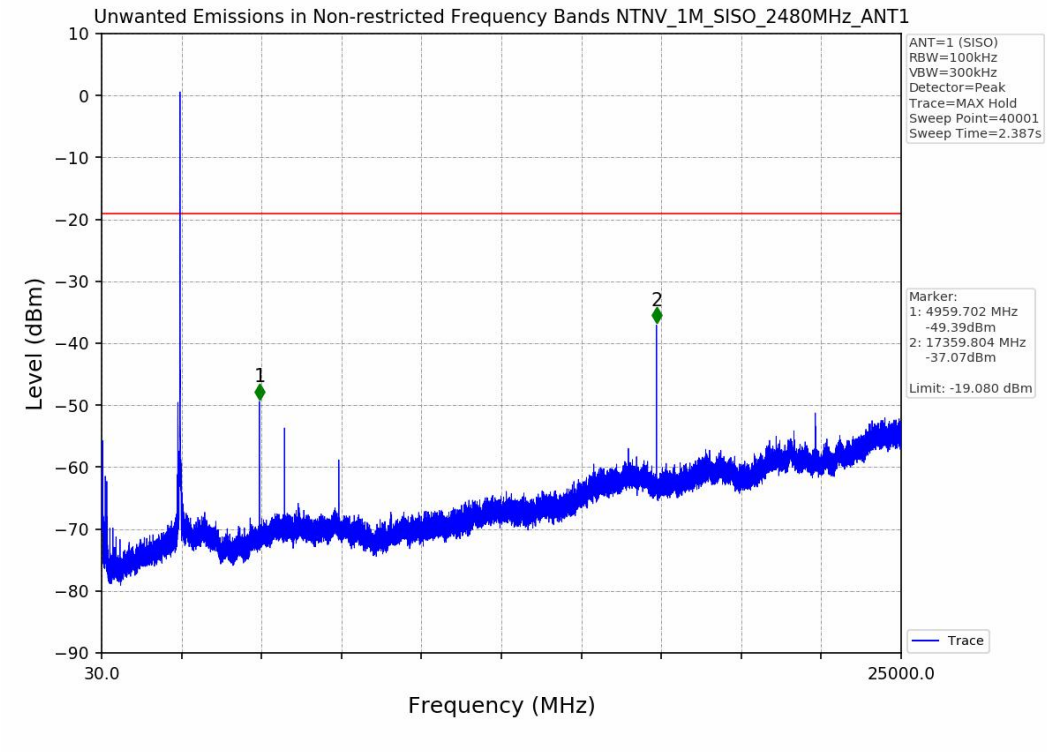



Unwanted Emissions in Non-restricted Frequency Bands NTNV_1M_SISO_2402MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=2001
Sweep Time=9.6ms
Marker:
1: 2401.950 MHz
0.64dBm
Limit: -19.080 dBm
Trace
Level (dBm)
Frequency (MHz)
2310.0
2410.0


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: 7205.754 MHz
-51.09dBm
2: 16813.586 MHz
-43.57dBm
Limit: -19.080 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: 5748.754 MHz
-47.79dBm
2: 17078.267 MHz
-39.81dBm
Limit: -19.080 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: 2479.980 MHz
0.69dBm
Limit: -19.080 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: 4959.702 MHz
-49.39dBm
2: 17359.804 MHz
-37.07dBm
Limit: -19.080 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
1
2