Appendix for 15.247

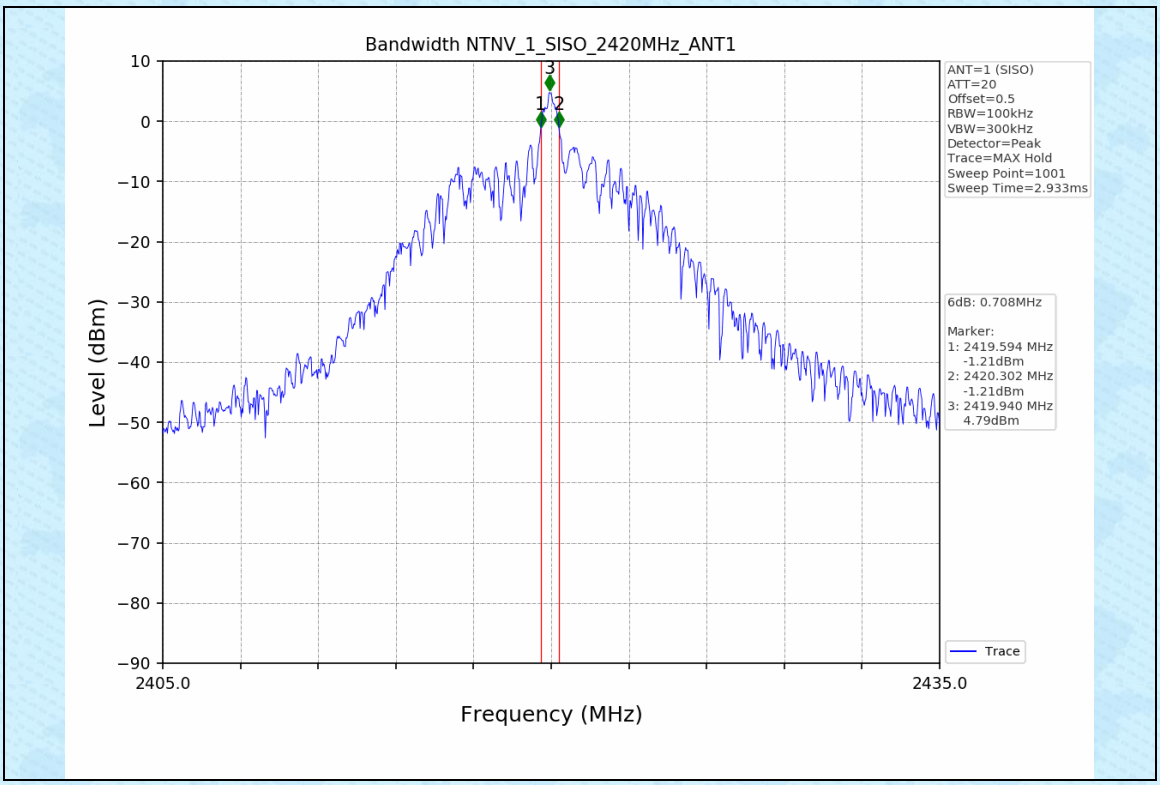
1. Bandwidth

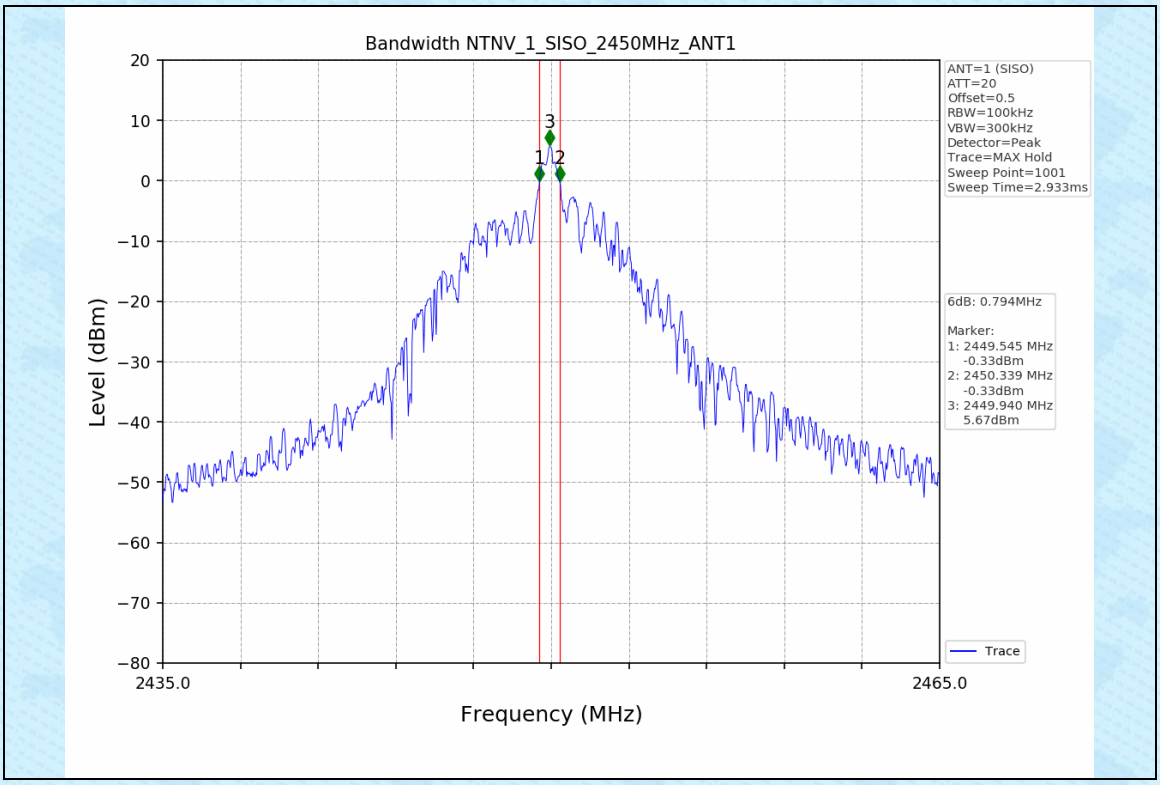
1.1 Test Result

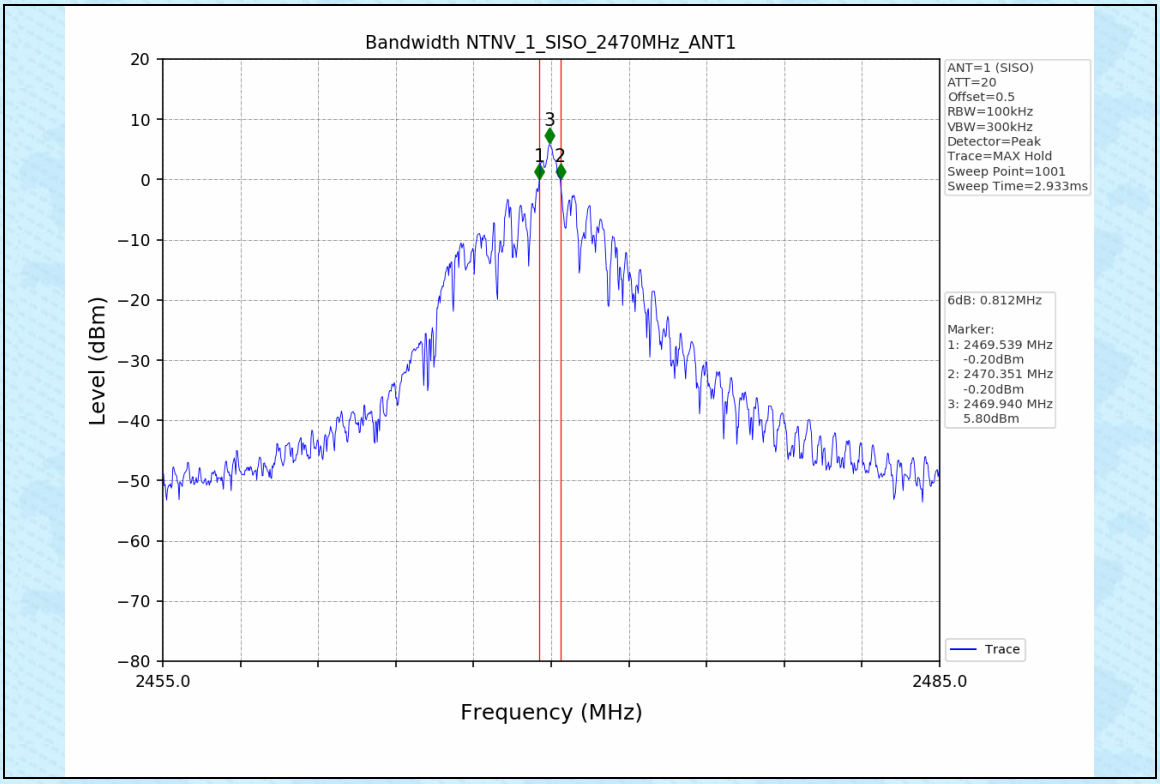
Test Mode	Frequency (MHz)	TX Type	ANT No.	6dB Bandwidth		Verdict
				Test Result (MHz)	Limits (MHz)	
GFSK	2420	SISO	1	0.708	≥0.5	PASS
	2450	SISO	1	0.794	≥0.5	PASS
	2470	SISO	1	0.812	≥0.5	PASS

Test Mode	Frequency (MHz)	TX Type	ANT No.	99% Occupied Bandwidth	
				Test Result (MHz)	
GFSK	2420	SISO	1	10.823	Only for Report Use
	2450	SISO	1	9.396	Only for Report Use
	2470	SISO	1	8.267	Only for Report Use

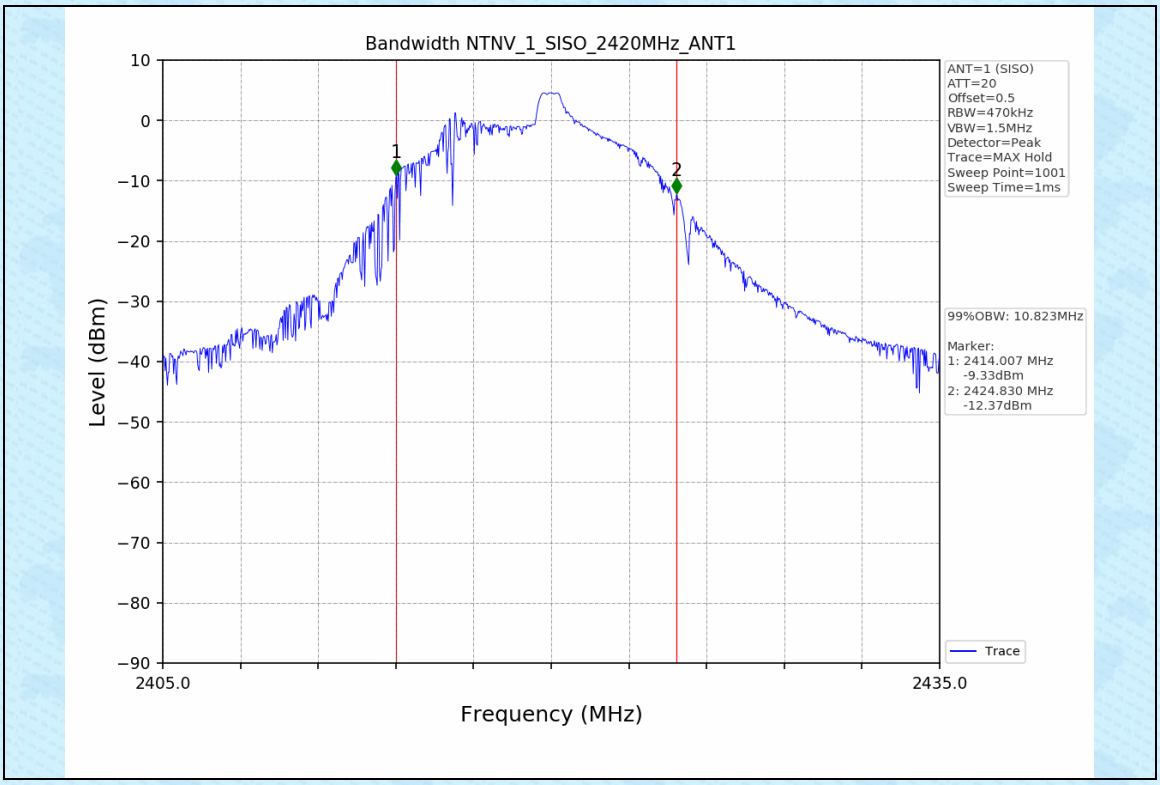
1.2 Test Graph - 6dB Bandwidth

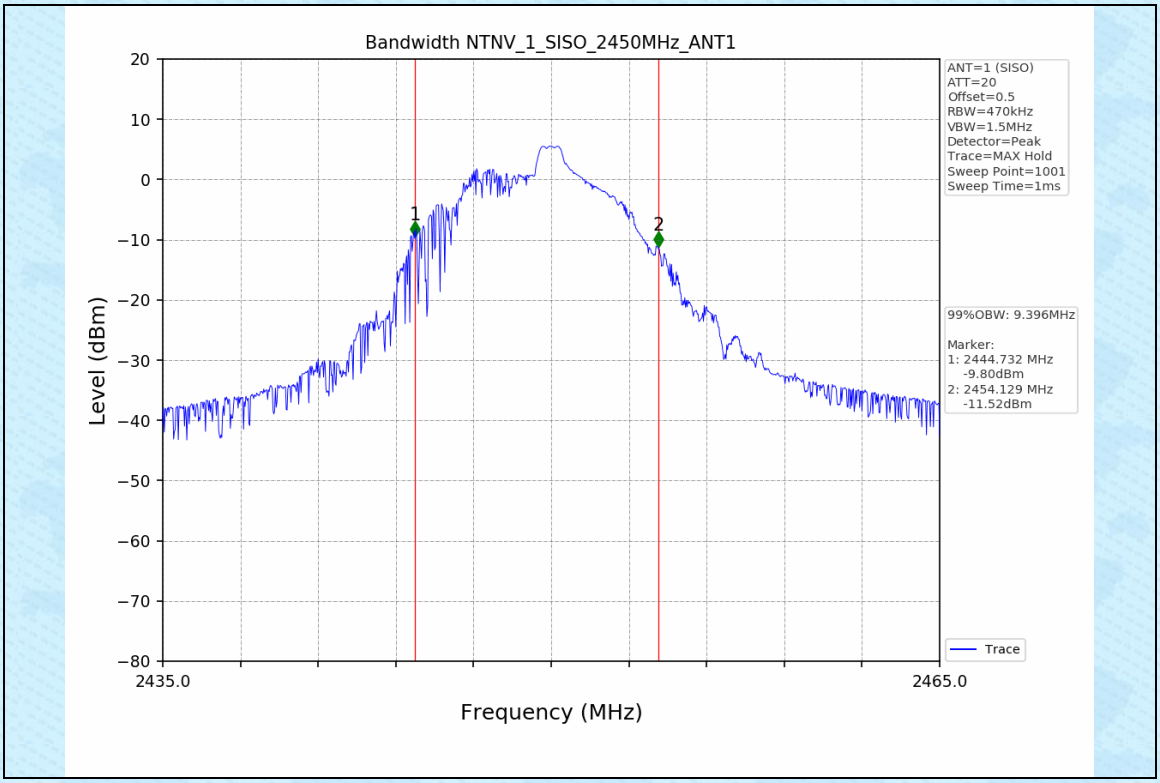


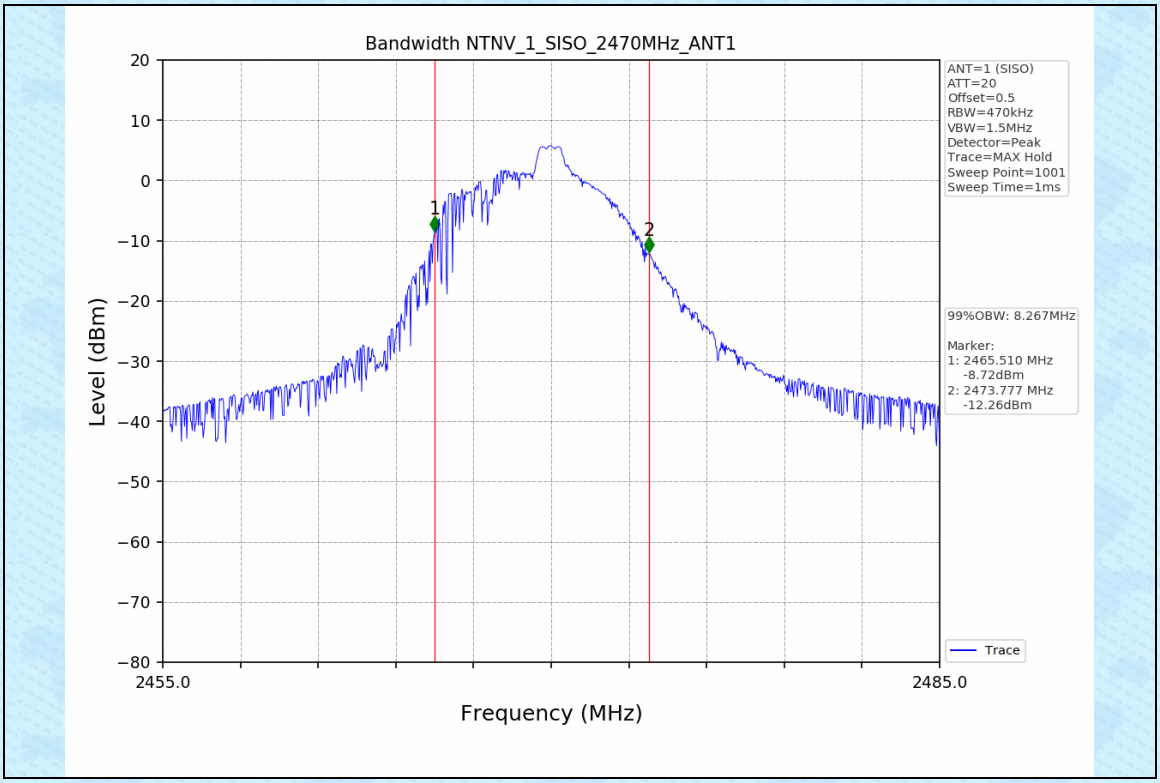




1.3 Test Graph - 99% Occupied Bandwidth




Bandwidth NTNV_1_SISO_2450MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=470kHz
VBW=1.5MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
99%OBW: 9.396MHz
Marker:
1: 2444.732 MHz
-9.80dBm
2: 2454.129 MHz
-11.52dBm
Trace
Level (dBm)
Frequency (MHz)
2435.0
2465.0

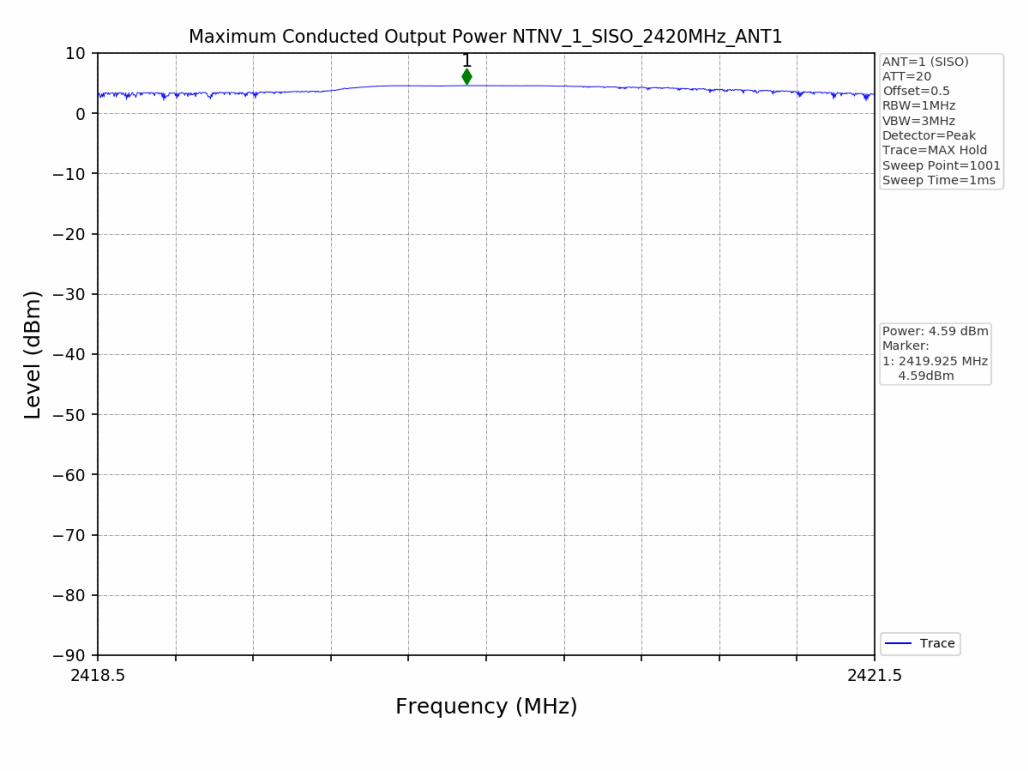

Bandwidth NTNV_1_SISO_2470MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=470kHz
VBW=1.5MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
99%OBW: 8.267MHz
Marker:
1: 2465.510 MHz
-8.72dBm
2: 2473.777 MHz
-12.26dBm
Trace
Level (dBm)
Frequency (MHz)
2455.0
2485.0

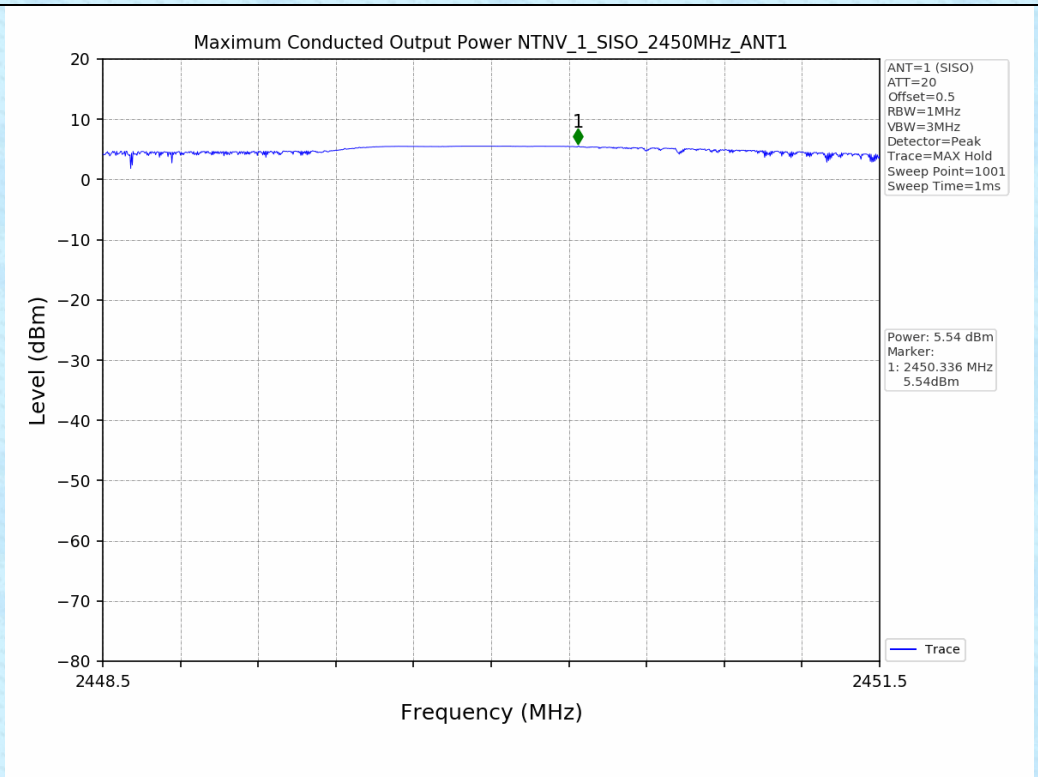
2. Maximum Conducted Output Power

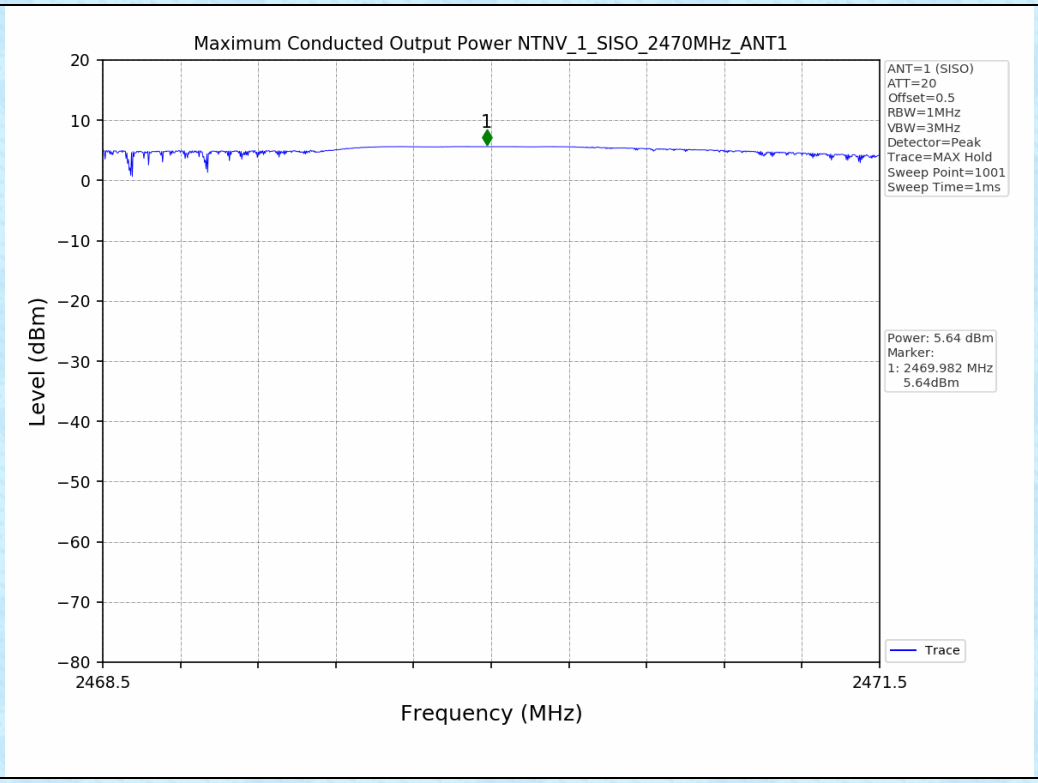
2.1 Test Result

Test Mode	Frequency (MHz)	Tx Type	Measured Peak Output Power (dBm)	Limits (dBm)	Verdict
			Ant 1		
GFSK	2420	SISO	4.59	30	PASS
	2450	SISO	5.54	30	PASS
	2470	SISO	5.64	30	PASS

2.2 Test Graph




Maximum Conducted Output Power NTNV_1_SISO_2450MHz_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: 5.54 dBm
Marker:
1: 2450.336 MHz
5.54dBm
Trace
Level (dBm)
Frequency (MHz)
2448.5
2451.5

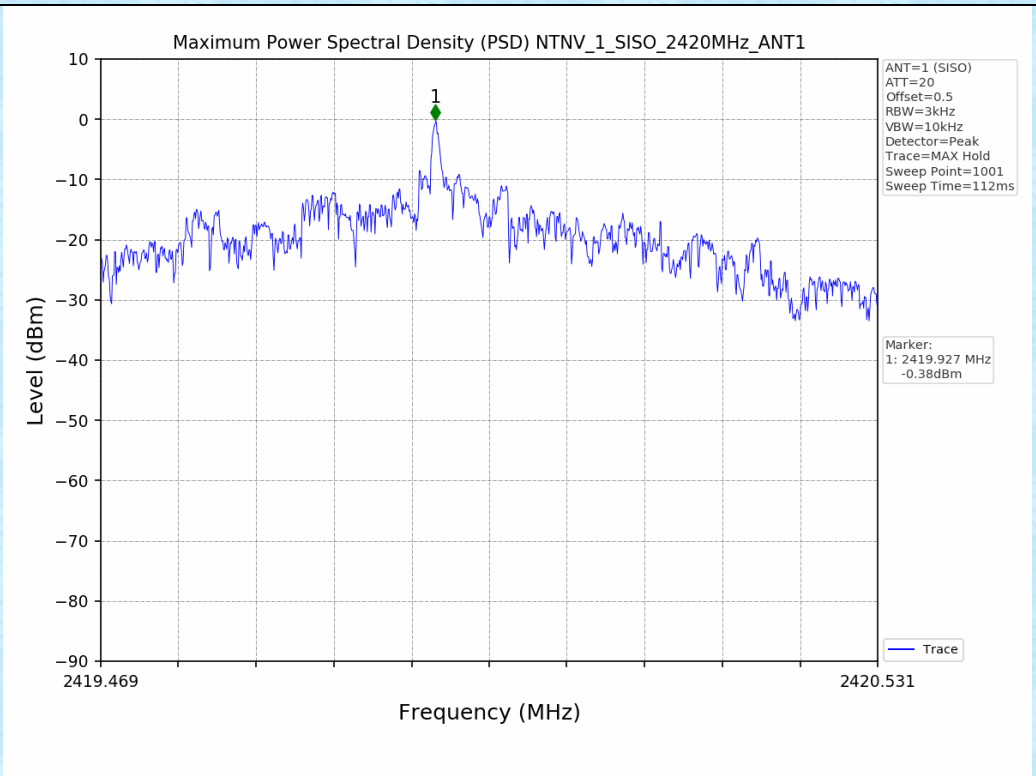

Maximum Conducted Output Power NTNV_1_SISO_2470MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=1MHz
VBW=3MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Power: 5.64 dBm
Marker:
1: 2469.982 MHz
5.64dBm
Trace
Level (dBm)
Frequency (MHz)
2468.5
2471.5

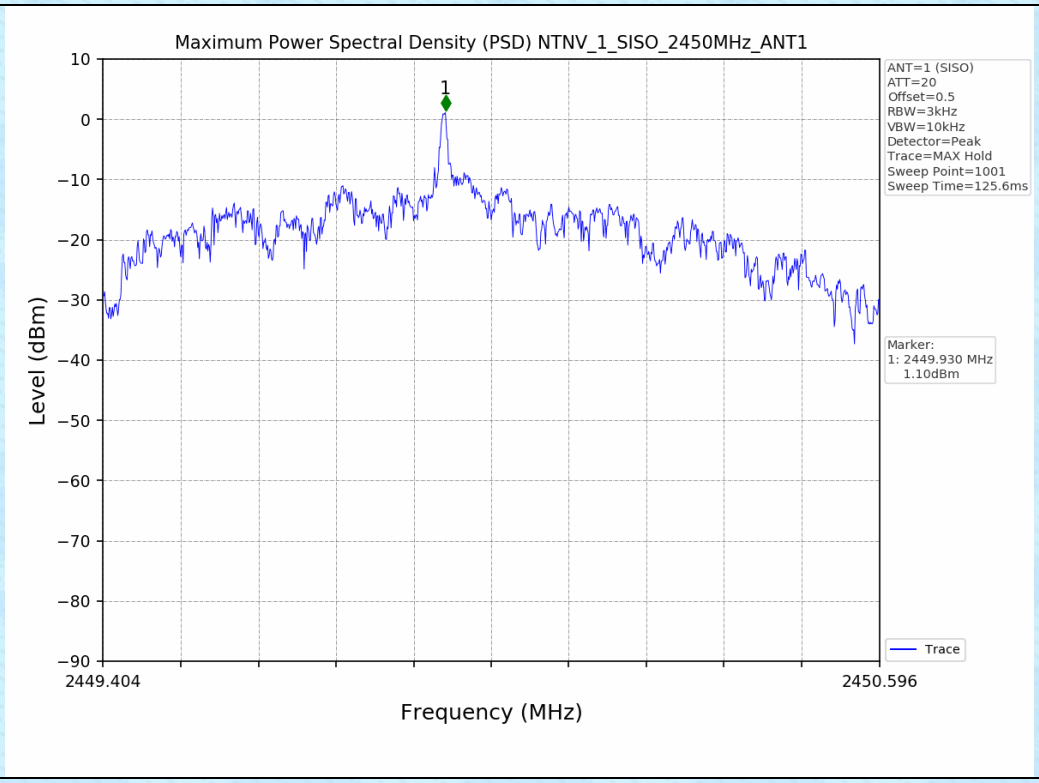
3. Maximum Power Spectral Density (PSD)

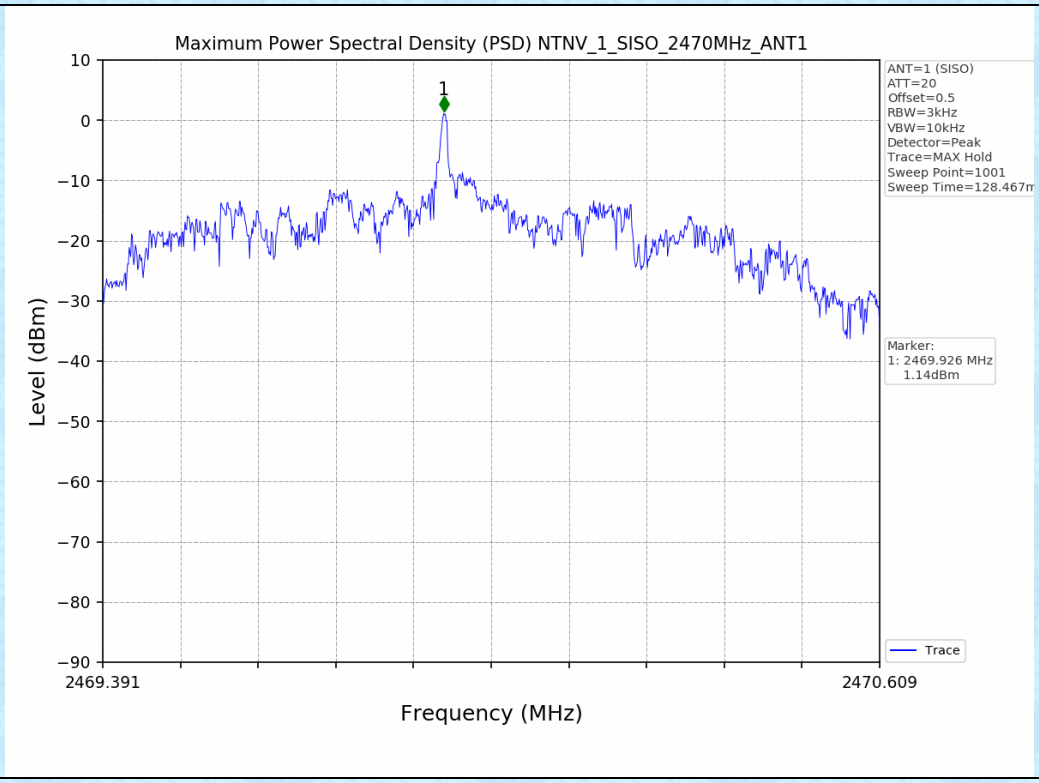
3.1 Test Result

Test Mode	Frequency (MHz)	Tx Type	Maximum Power Spectral Density (dBm/3KHz)	Limits (dBm/3kHz)	Verdict
			Ant 1		
GFSK	2420	SISO	-0.38	≤8	PASS
	2450	SISO	1.10	≤8	PASS
	2470	SISO	1.14	≤8	PASS

3.2 Test Graph




Maximum Power Spectral Density (PSD) NTNV_1_SISO_2450MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=3kHz
VBW=10kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=125.6ms
Marker:
1: 2449.930 MHz
1.10dBm
Trace
Level (dBm)
Frequency (MHz)
2449.404
2450.596

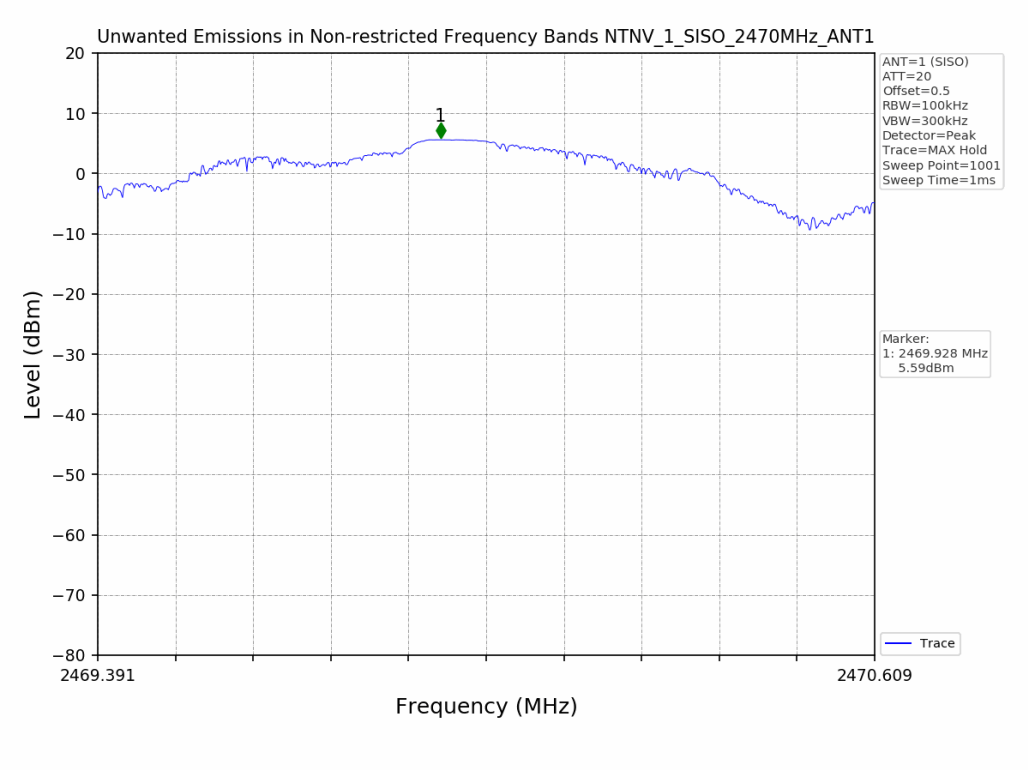

Maximum Power Spectral Density (PSD) NTNV_1_SISO_2470MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=3kHz
VBW=10kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=128.467m
Marker:
1: 2469.926 MHz
1.14dBm
Trace
Level (dBm)
Frequency (MHz)
2469.391
2470.609

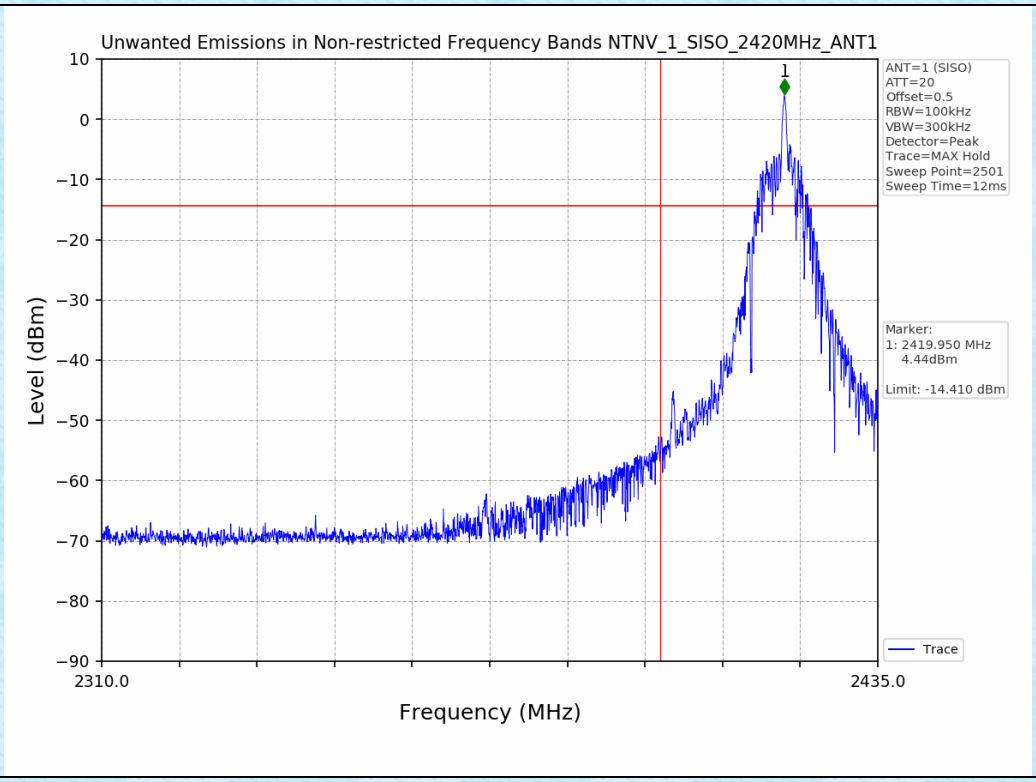
4. Unwanted Emissions in Non-restricted Frequency Bands

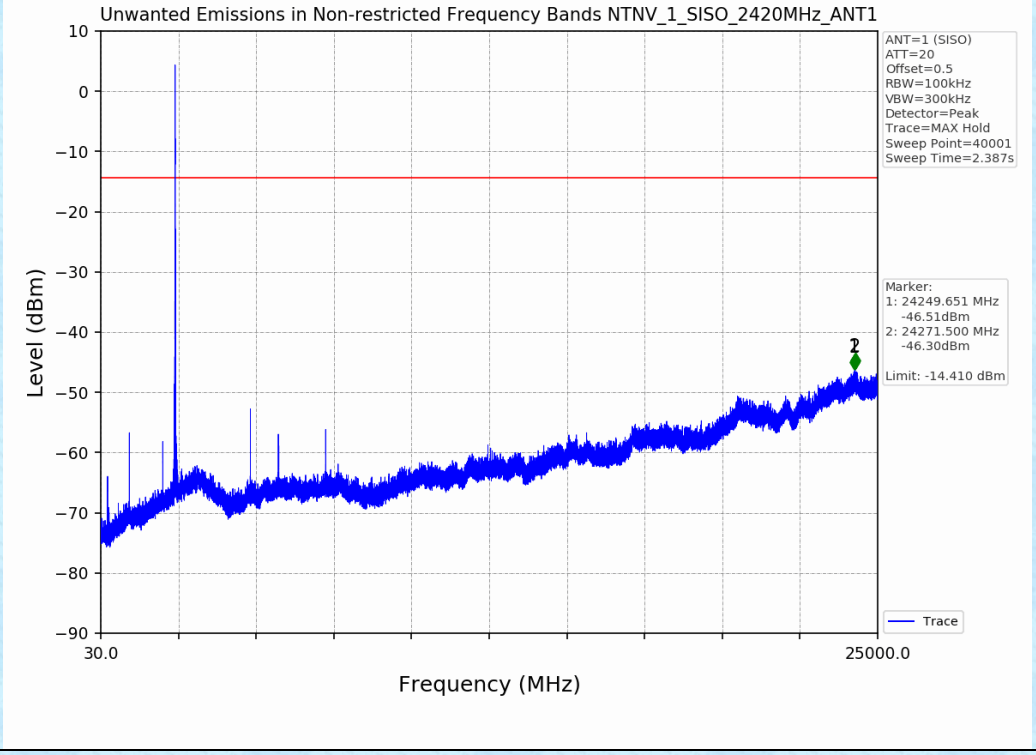
4.1 Test Result

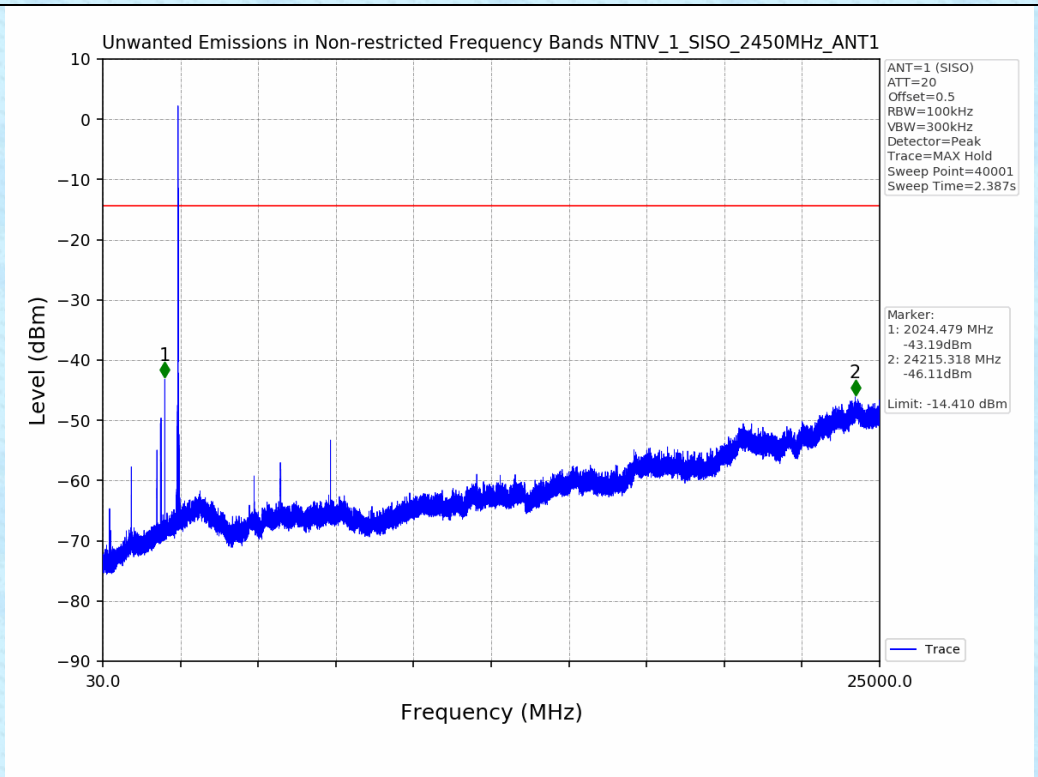
Test Mode	Frequency (MHz)	TX Type	ANT No.	Spurious Conducted Emission (dBm)	Limits (dBm)	Verdict
GFSK	2420	SISO	1	Refer to test graph	-14.41	PASS
	2450	SISO	1	Refer to test graph	-14.41	PASS
	2470	SISO	1	Refer to test graph	-14.41	PASS

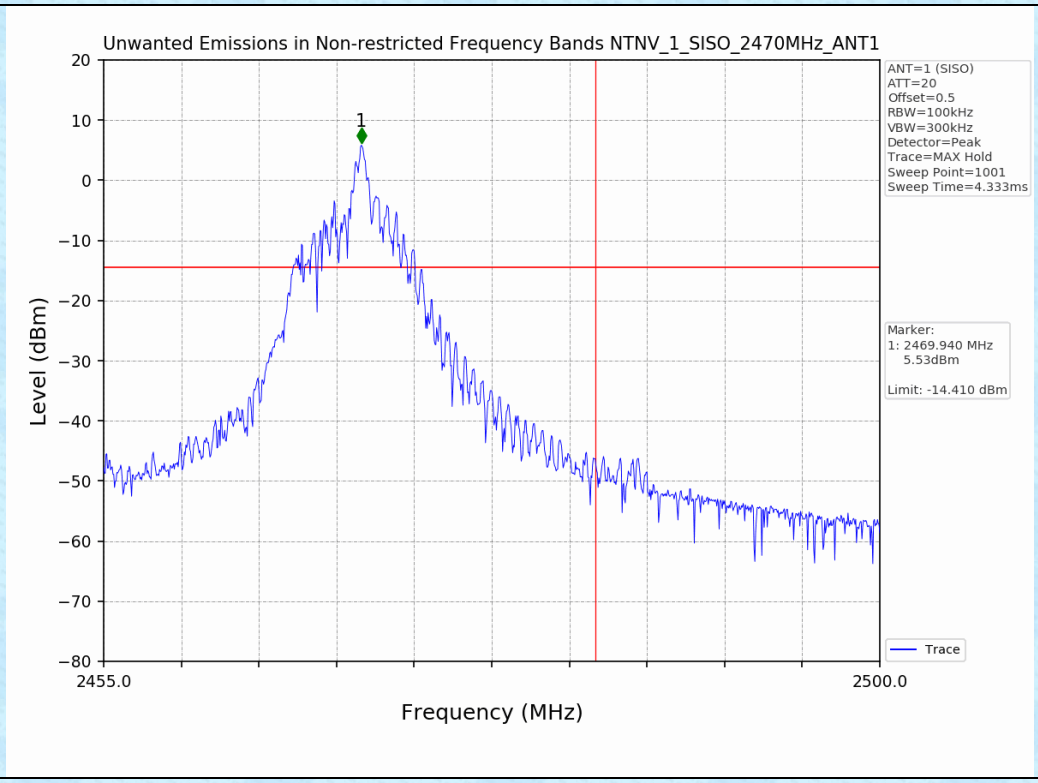
4.2 Test Graph

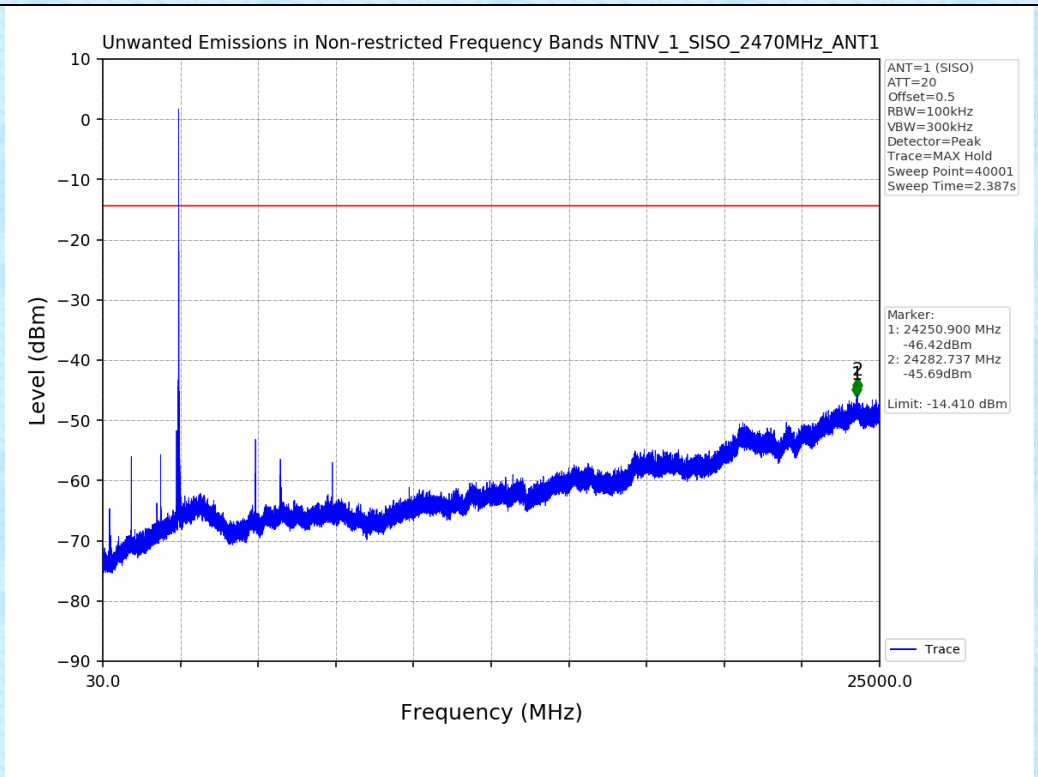



Unwanted Emissions in Non-restricted Frequency Bands NTNV_1_SISO_2420MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=2501
Sweep Time=12ms
Marker:
1: 2419.950 MHz
4.44dBm
Limit: -14.410 dBm
Trace
Level (dBm)
Frequency (MHz)
2310.0
2435.0


Unwanted Emissions in Non-restricted Frequency Bands NTNV_1_SISO_2420MHz_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: 24249.651 MHz
-46.51dBm
2: 24271.500 MHz
-46.30dBm
Limit: -14.410 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0


Unwanted Emissions in Non-restricted Frequency Bands NTNV_1_SISO_2450MHz_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: 2024.479 MHz
-43.19dBm
2: 24215.318 MHz
-46.11dBm
Limit: -14.410 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0


Unwanted Emissions in Non-restricted Frequency Bands NTNV_1_SISO_2470MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=4.333ms
Marker:
1: 2469.940 MHz
5.53dBm
Limit: -14.410 dBm
Trace
Level (dBm)
Frequency (MHz)
2455.0
2500.0


Unwanted Emissions in Non-restricted Frequency Bands NTNV_1_SISO_2470MHz_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: 24250.900 MHz
-46.42dBm
2: 24282.737 MHz
-45.69dBm
Limit: -14.410 dBm
Trace
Level (dBm)
Frequency (MHz)
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
30.0
25000.0

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