Appendix for 15.247

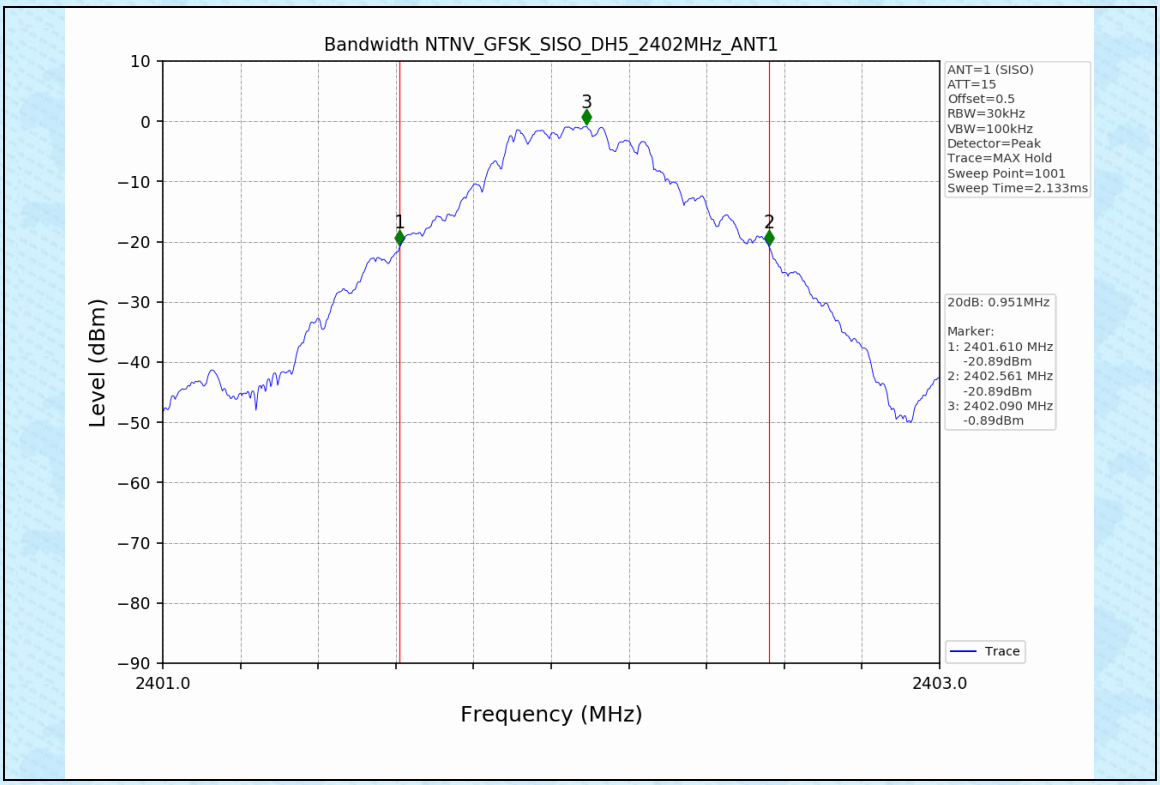
1. Bandwidth

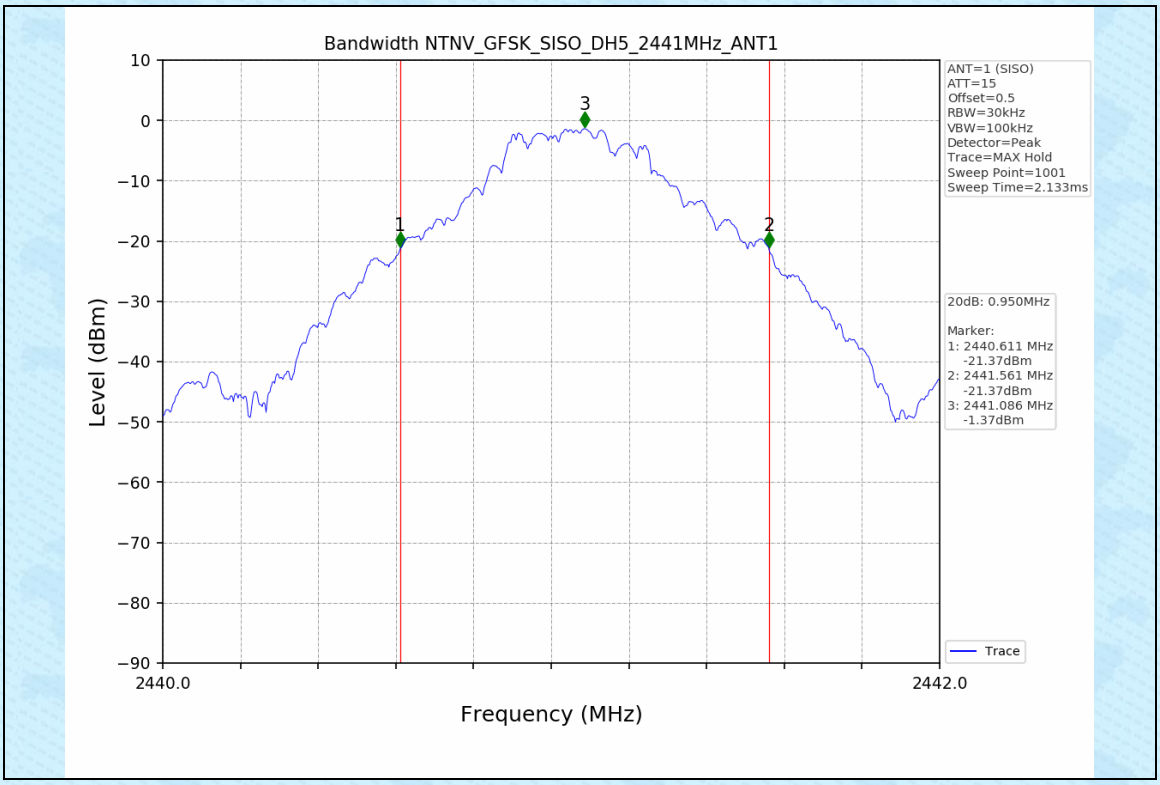
1.1 Test Result

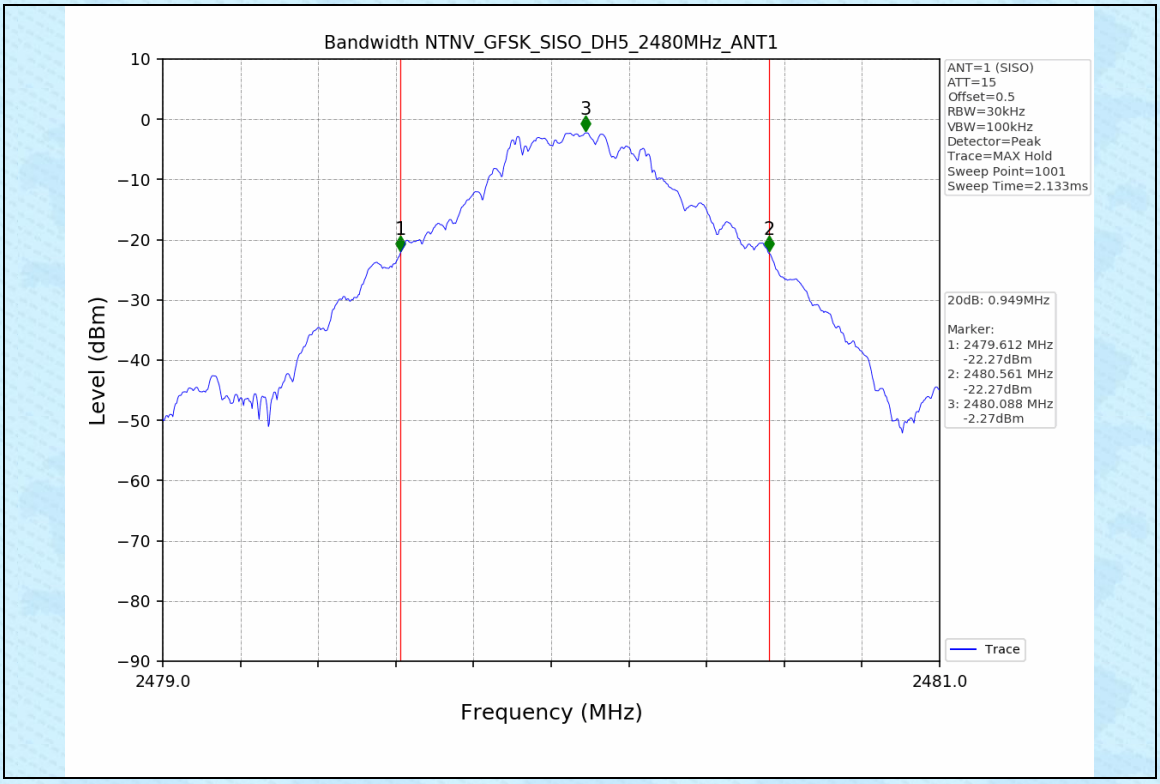
Test Mode	Frequency (MHz)	TX Type	ANT No.	20dB Bandwidth Test Result (MHz)	Verdict
GFSK	2402	SISO	ANT1	0.951	PASS
	2441	SISO	ANT1	0.950	PASS
	2480	SISO	ANT1	0.949	PASS
π/4-DQPSK	2402	SISO	ANT1	1.317	PASS
	2441	SISO	ANT1	1.317	PASS
	2480	SISO	ANT1	1.314	PASS
8-DPSK	2402	SISO	ANT1	1.307	PASS
	2441	SISO	ANT1	1.309	PASS
	2480	SISO	ANT1	1.307	PASS

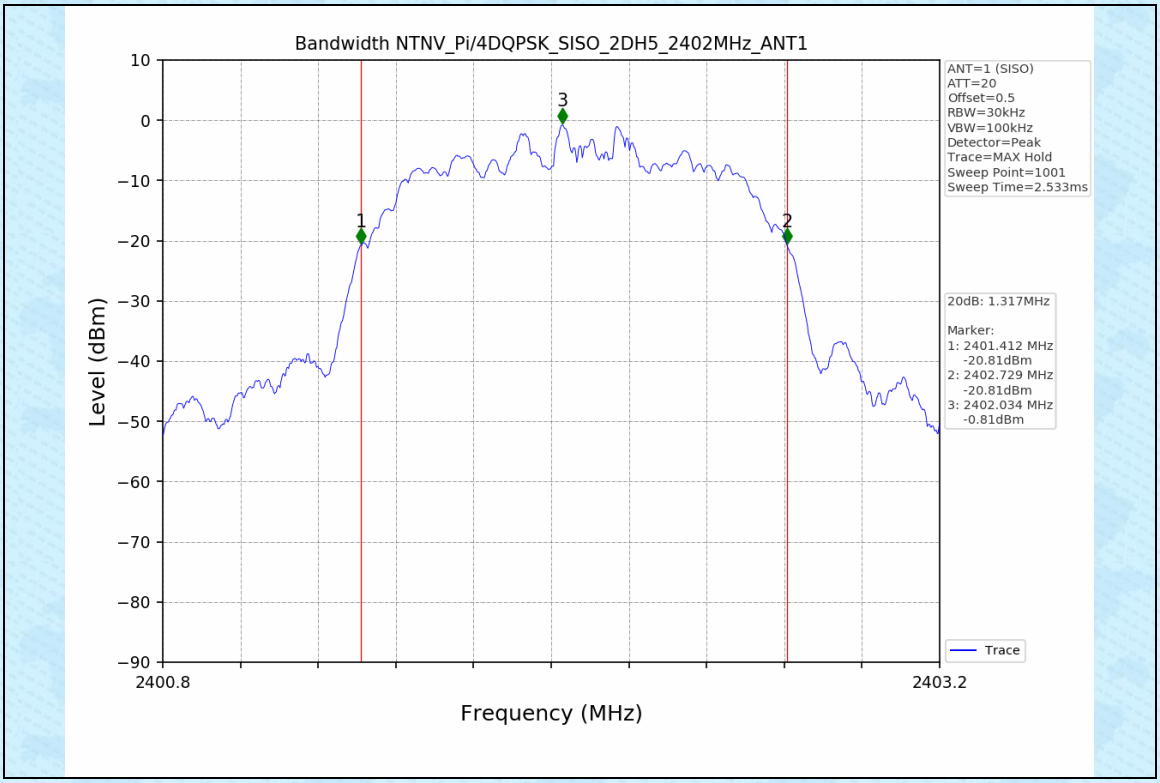
Test Mode	Frequency (MHz)	TX Type	ANT No.	99% Occupied Bandwidth Test Result (MHz)	
GFSK	2402	SISO	1	0.833	Only for Report Use
	2441	SISO	1	0.829	Only for Report Use
	2480	SISO	1	0.833	Only for Report Use
π/4-DQPSK	2402	SISO	1	1.173	Only for Report Use
	2441	SISO	1	1.174	Only for Report Use
	2480	SISO	1	1.173	Only for Report Use
8-DPSK	2402	SISO	1	1.172	Only for Report Use
	2441	SISO	1	1.175	Only for Report Use
	2480	SISO	1	1.171	Only for Report Use

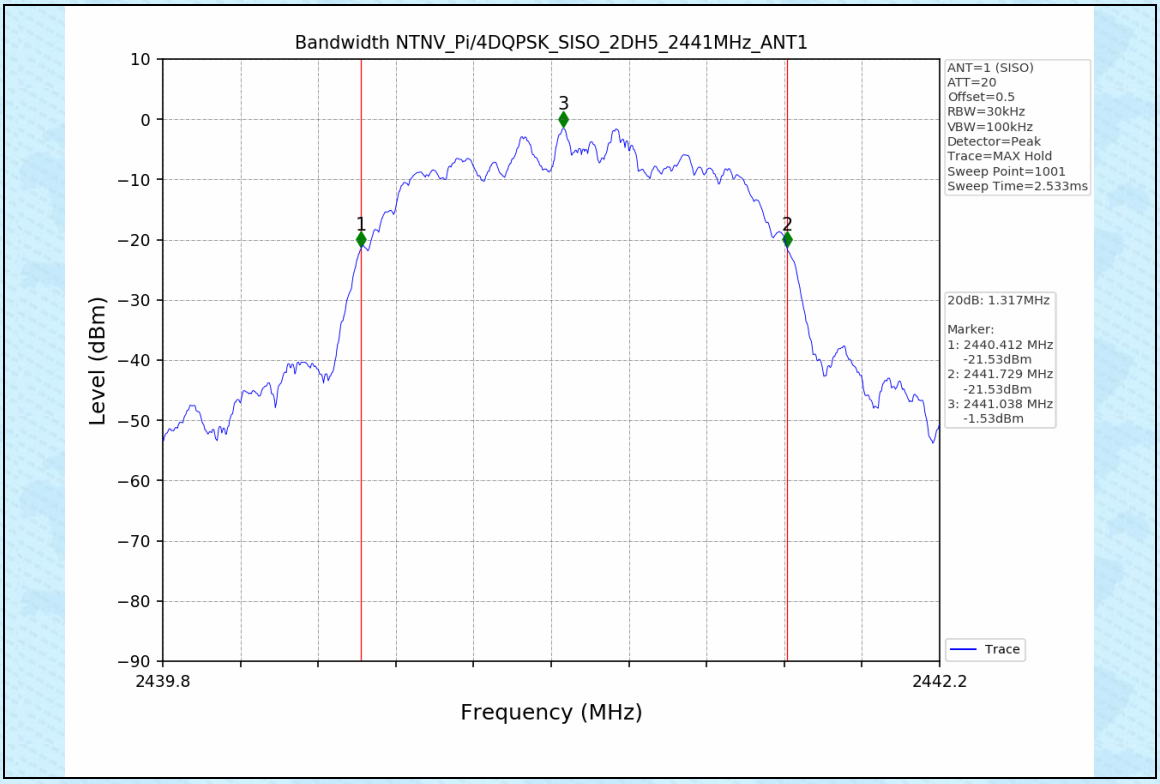
1.2 Test Graph - 20dB Bandwidth

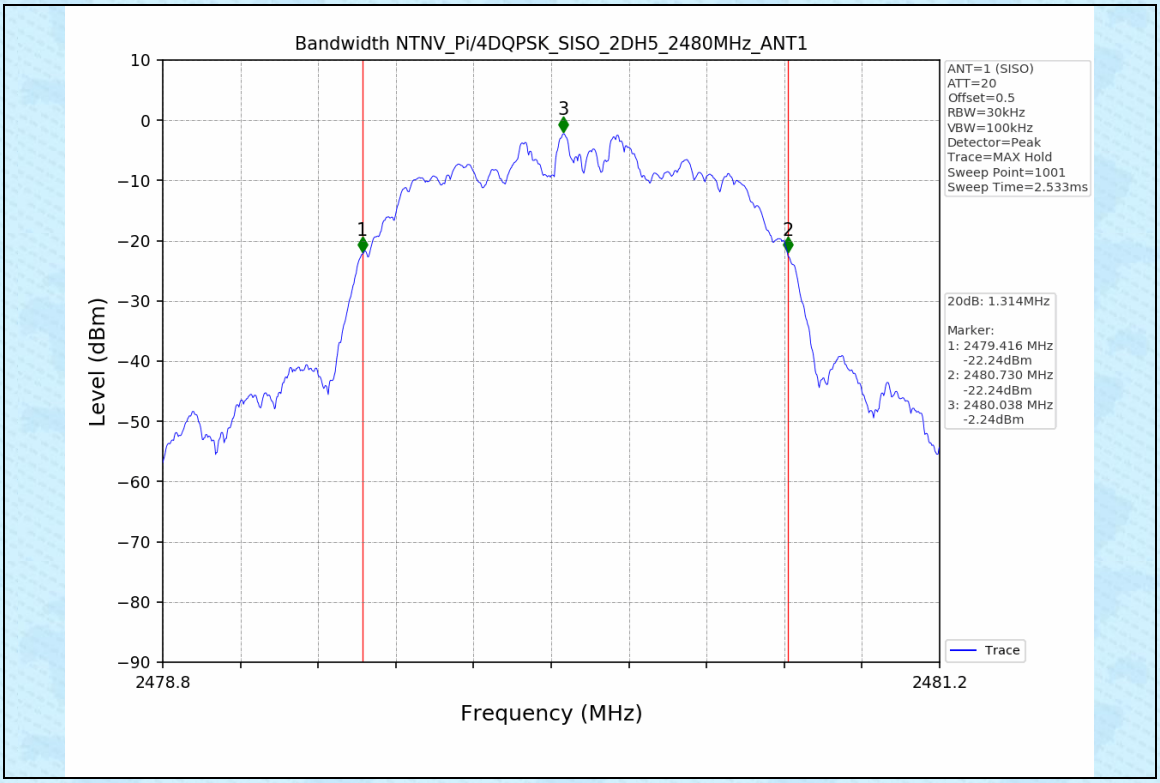


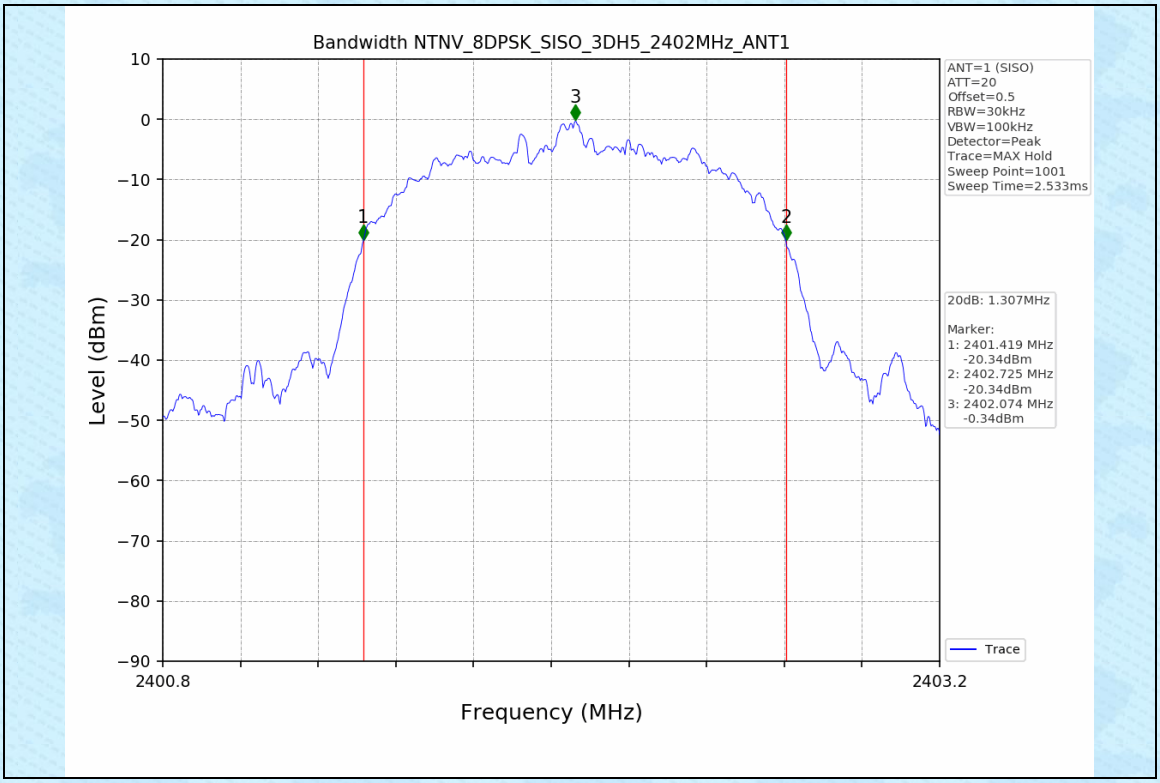


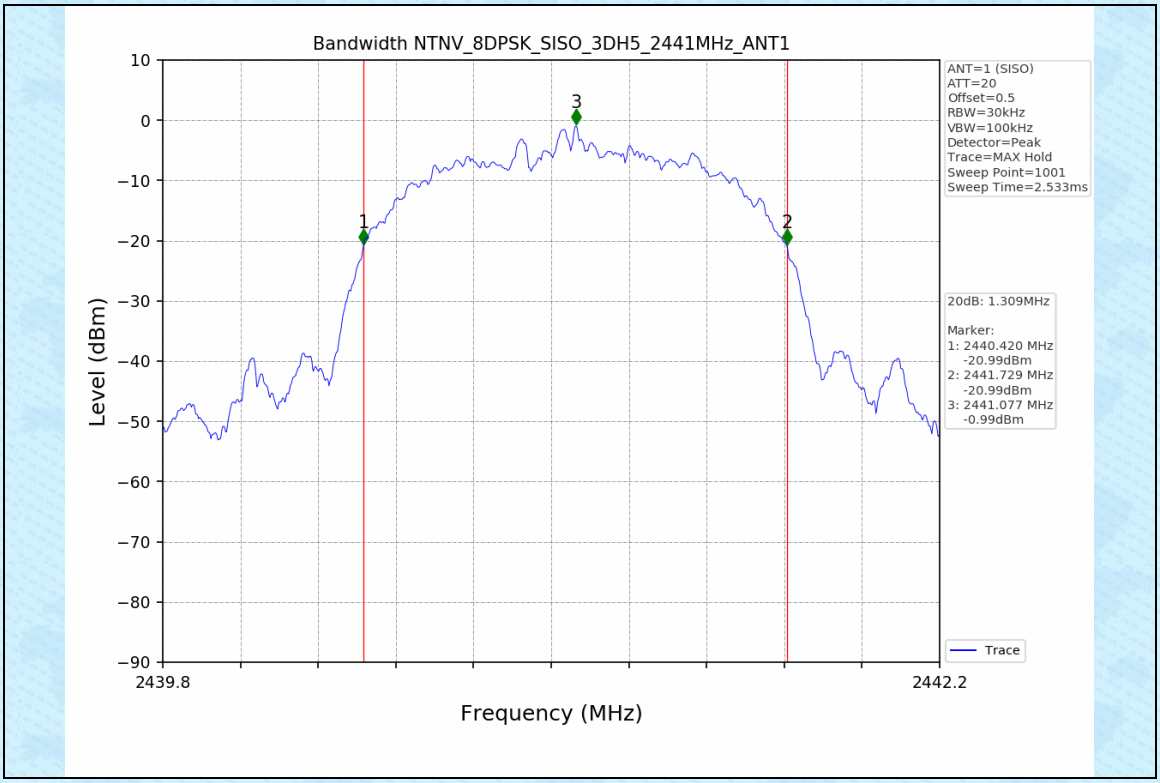

Bandwidth NTNV_GFSK_SISO_DH5_2480MHz_ANT1
ANT=1 (SISO)
ATT=15
Offset=0.5
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.133ms
20dB: 0.949MHz
Marker:
1: 2479.612 MHz
-22.27dBm
2: 2480.561 MHz
-22.27dBm
3: 2480.088 MHz
-2.27dBm
Trace
Level (dBm)
Frequency (MHz)
2479.0
2481.0

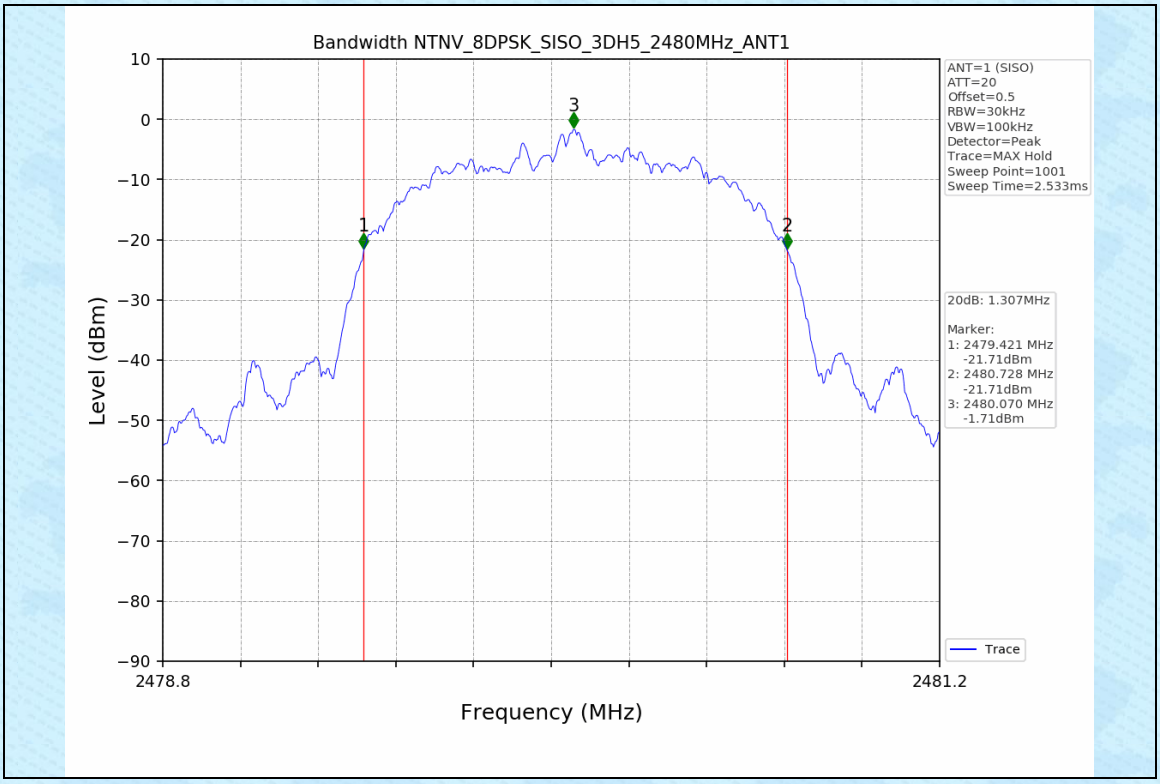

Bandwidth NTNV_Pi/4DQPSK_SISO_2DH5_2402MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.533ms
20dB: 1.317MHz
Marker:
1: 2401.412 MHz
-20.81dBm
2: 2402.729 MHz
-20.81dBm
3: 2402.034 MHz
-0.81dBm
Trace
Level (dBm)
Frequency (MHz)
2400.8
2403.2


Bandwidth NTNV_Pi/4DQPSK_SISO_2DH5_2441MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.533ms
20dB: 1.317MHz
Marker:
1: 2440.412 MHz
-21.53dBm
2: 2441.729 MHz
-21.53dBm
3: 2441.038 MHz
-1.53dBm
Trace
Level (dBm)
Frequency (MHz)
2439.8
2442.2

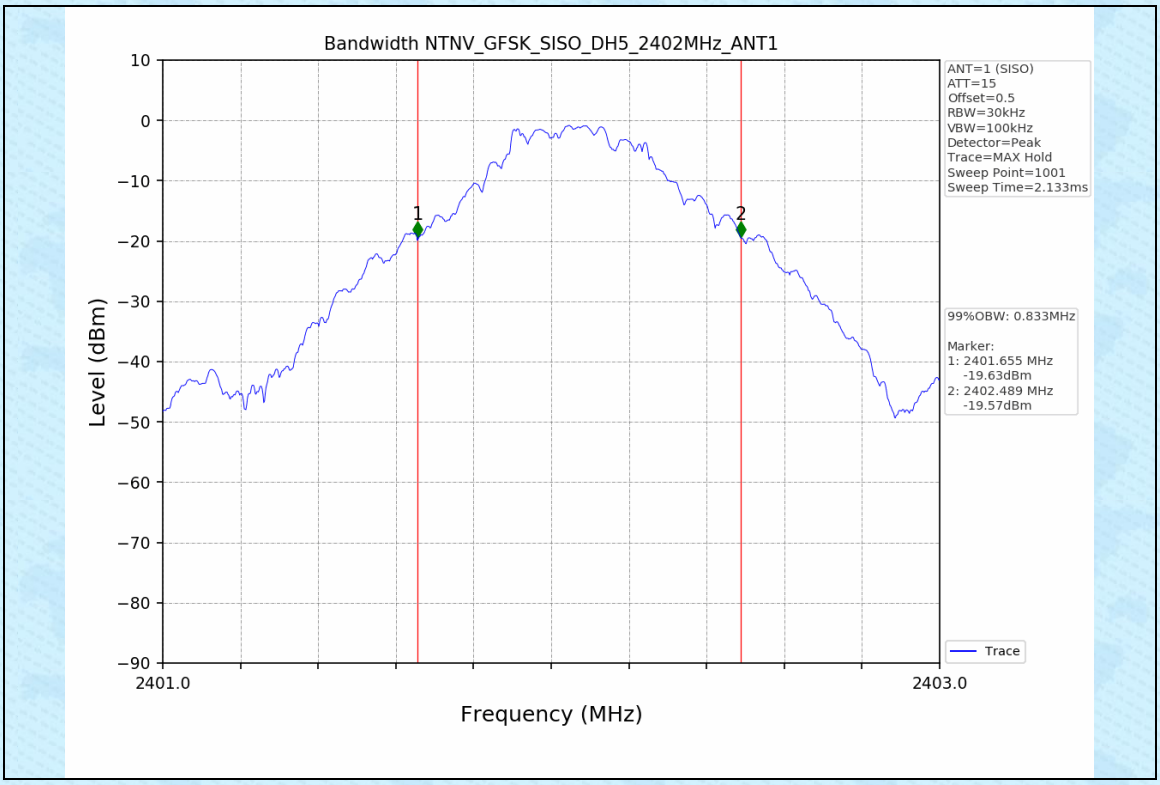

Bandwidth NTNV_Pi/4DQPSK_SISO_2DH5_2480MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.533ms
20dB: 1.314MHz
Marker:
1: 2479.416 MHz
-22.24dBm
2: 2480.730 MHz
-22.24dBm
3: 2480.038 MHz
-2.24dBm
Trace
Level (dBm)
Frequency (MHz)
2478.8
2481.2

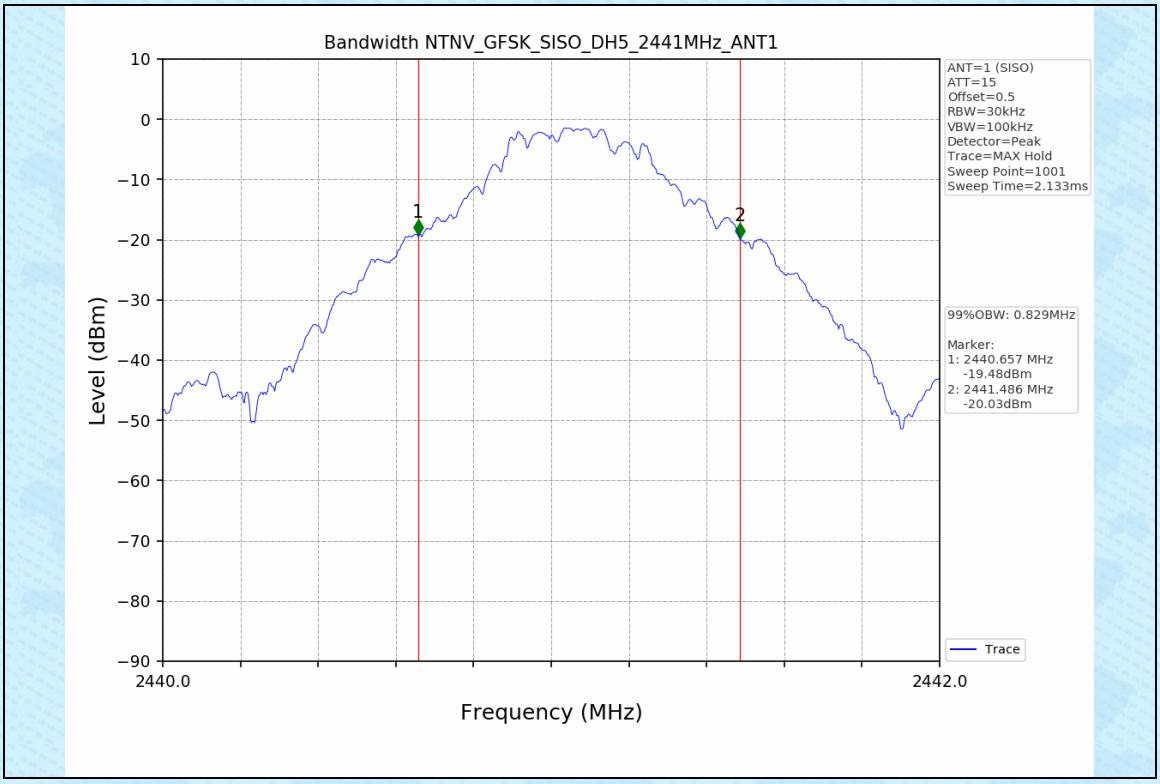

Bandwidth NTNV_8DPSK_SISO_3DH5_2402MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.533ms
20dB: 1.307MHz
Marker:
1: 2401.419 MHz
-20.34dBm
2: 2402.725 MHz
-20.34dBm
3: 2402.074 MHz
-0.34dBm
Trace
Level (dBm)
Frequency (MHz)
2400.8
2403.2

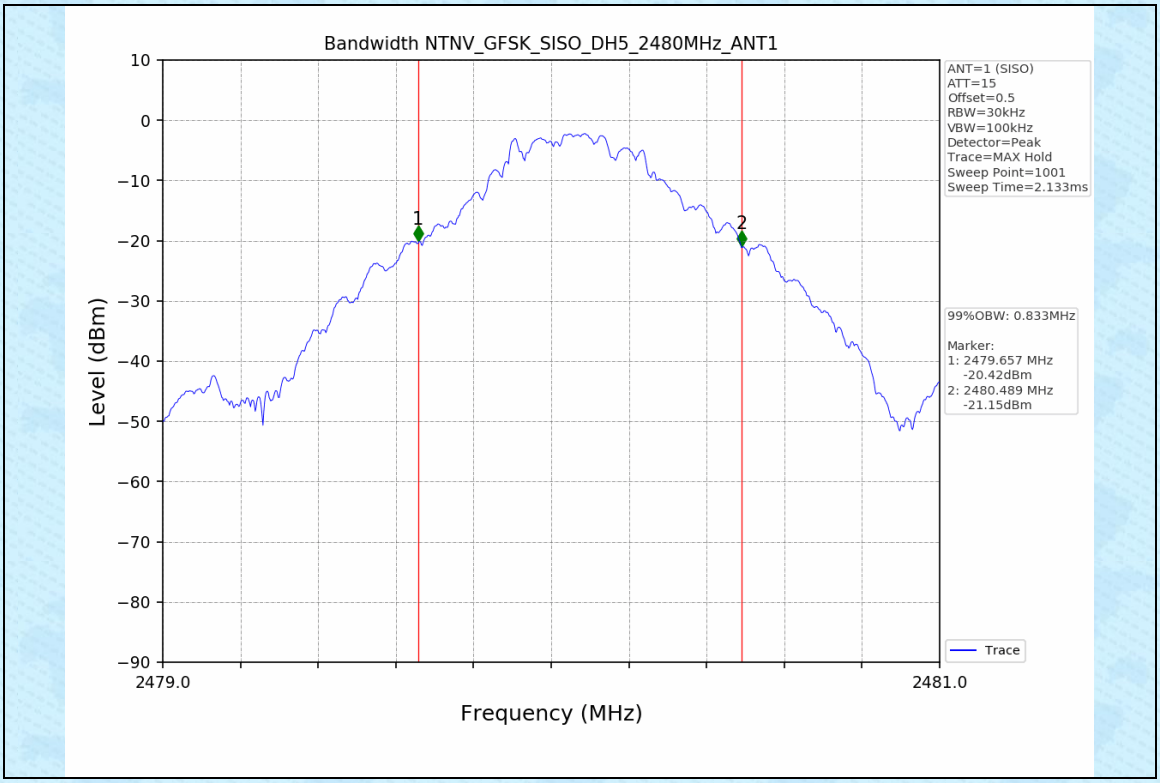

Bandwidth NTNV_8DPSK_SISO_3DH5_2441MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.533ms
20dB: 1.309MHz
Marker:
1: 2440.420 MHz
-20.99dBm
2: 2441.729 MHz
-20.99dBm
3: 2441.077 MHz
-0.99dBm
Trace
Level (dBm)
Frequency (MHz)
2439.8
2442.2

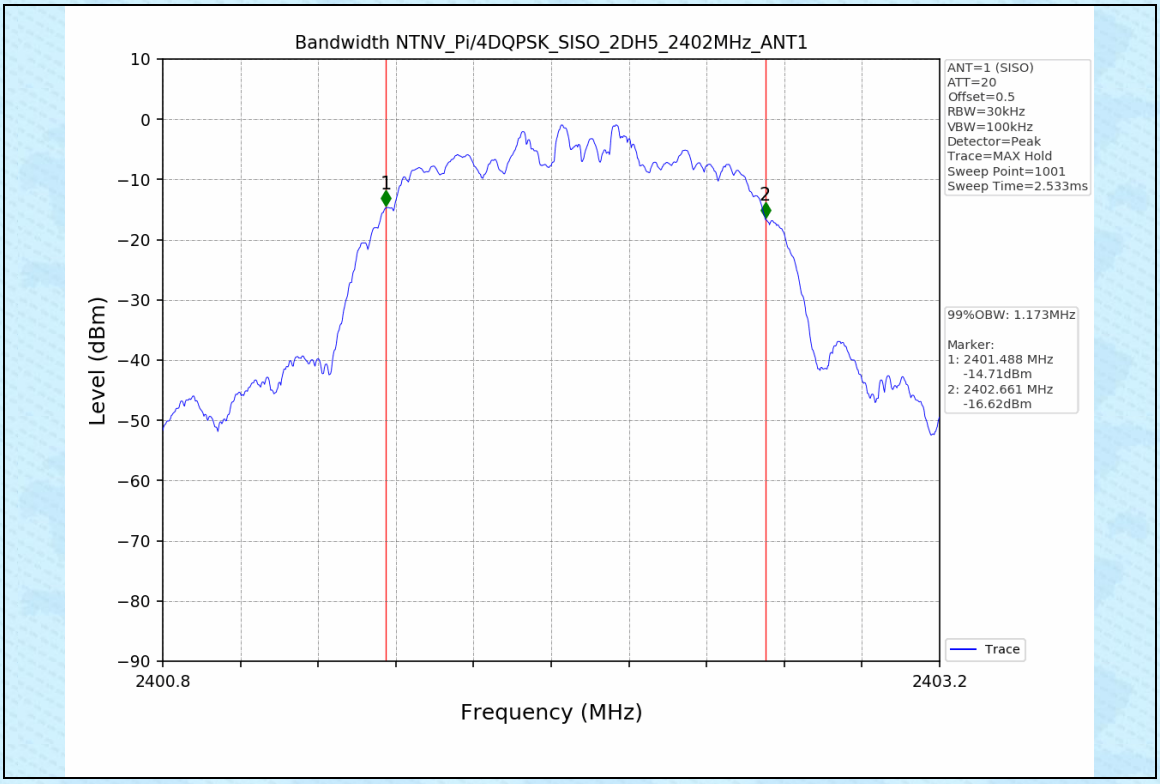


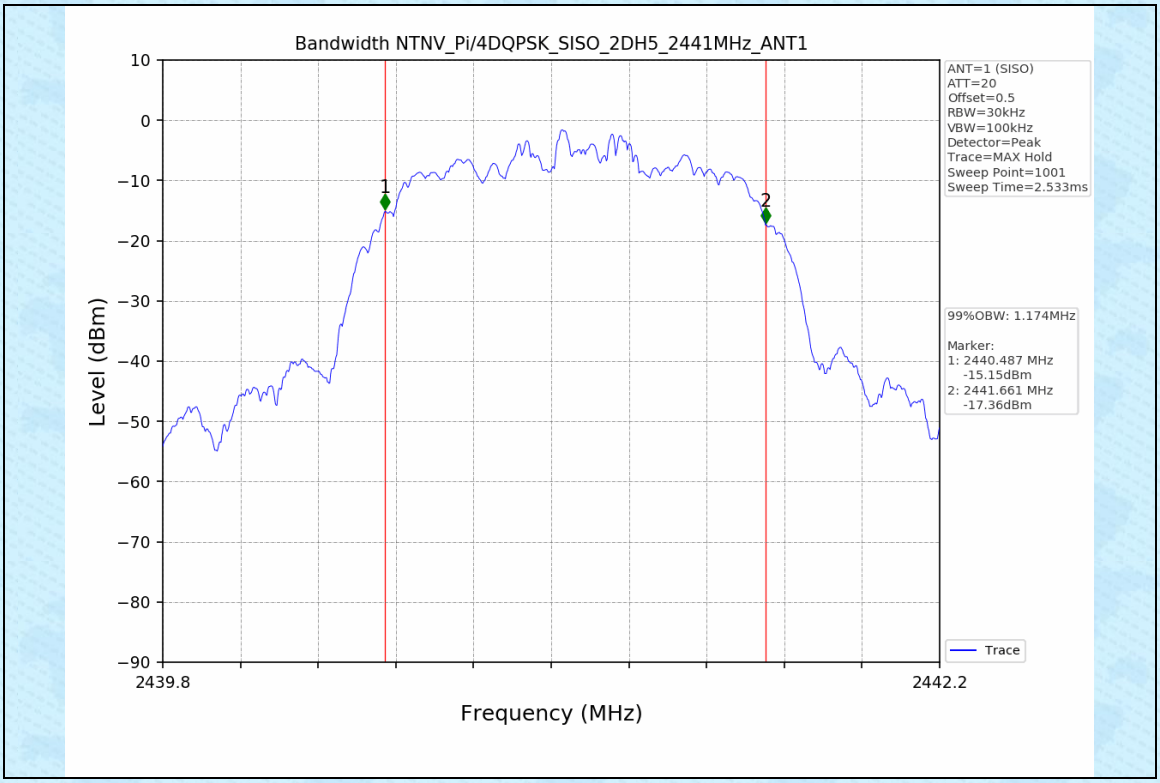
1.3 Test Graph - 99% Occupied Bandwidth

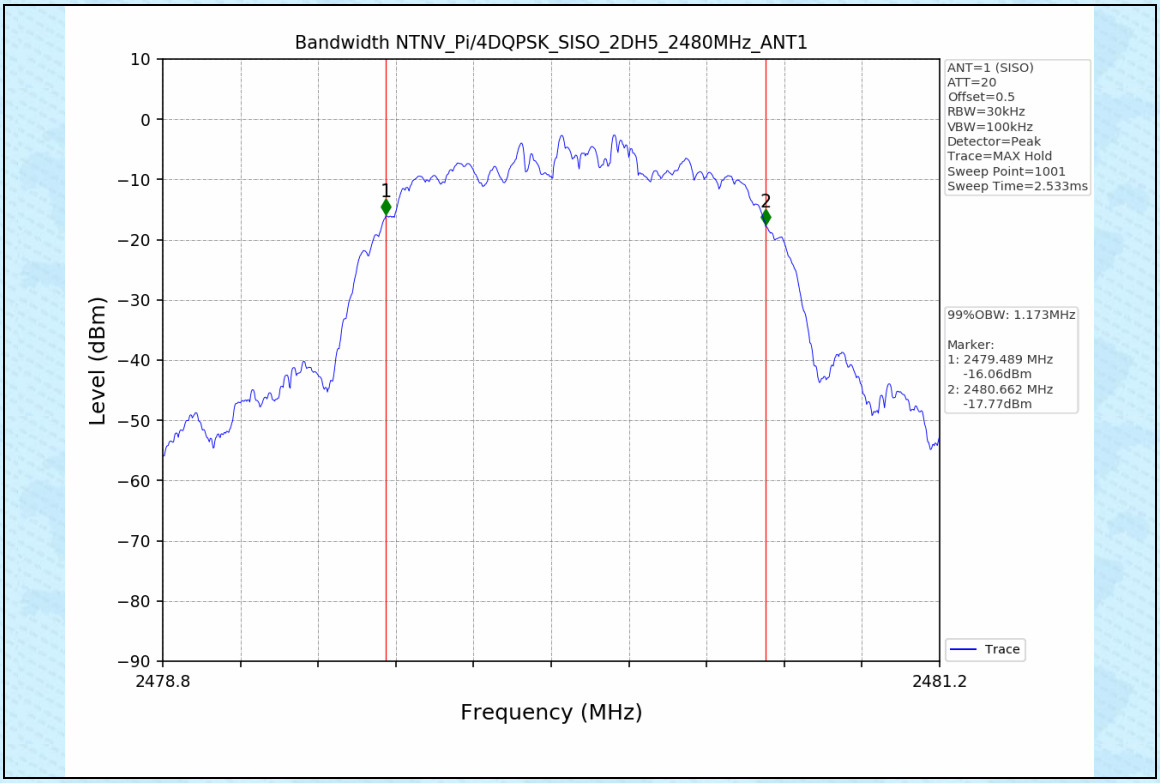


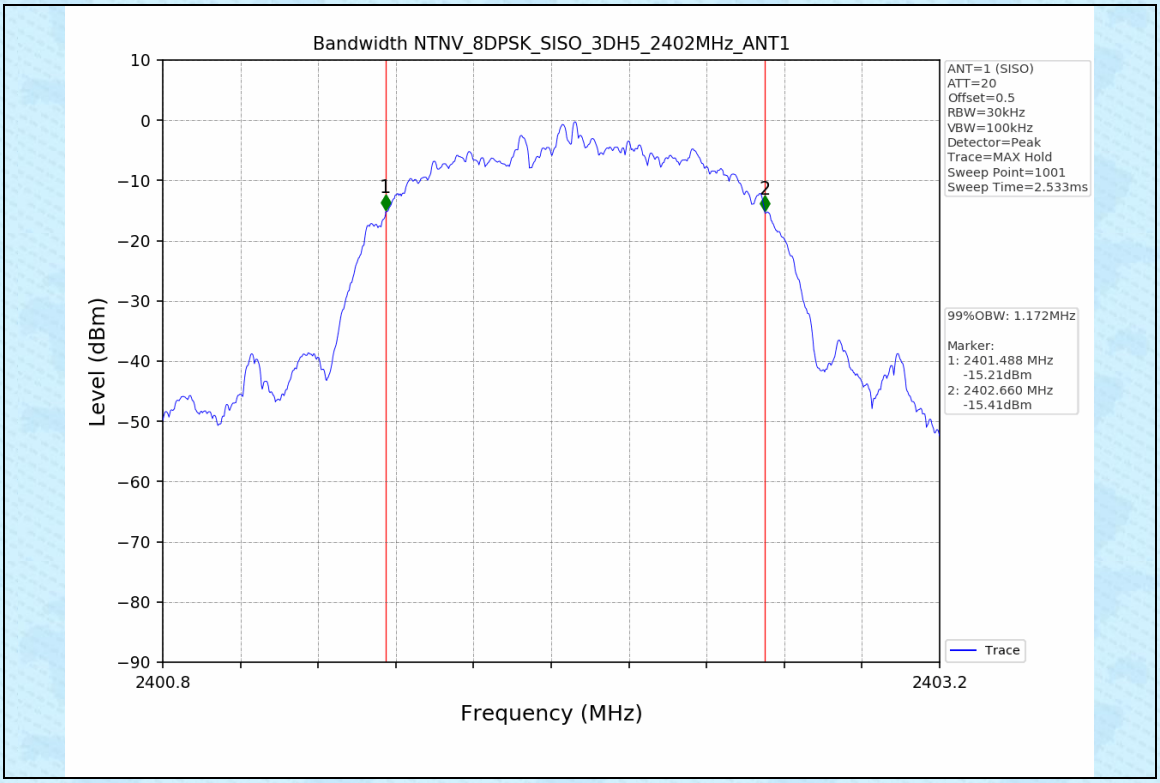

Bandwidth NTNV_GFSK_SISO_DH5_2441MHz_ANT1
ANT=1 (SISO)
ATT=15
Offset=0.5
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.133ms
99%OBW: 0.829MHz
Marker:
1: 2440.657 MHz
-19.48dBm
2: 2441.486 MHz
-20.03dBm
Trace
Level (dBm)
Frequency (MHz)
2440.0
2442.0

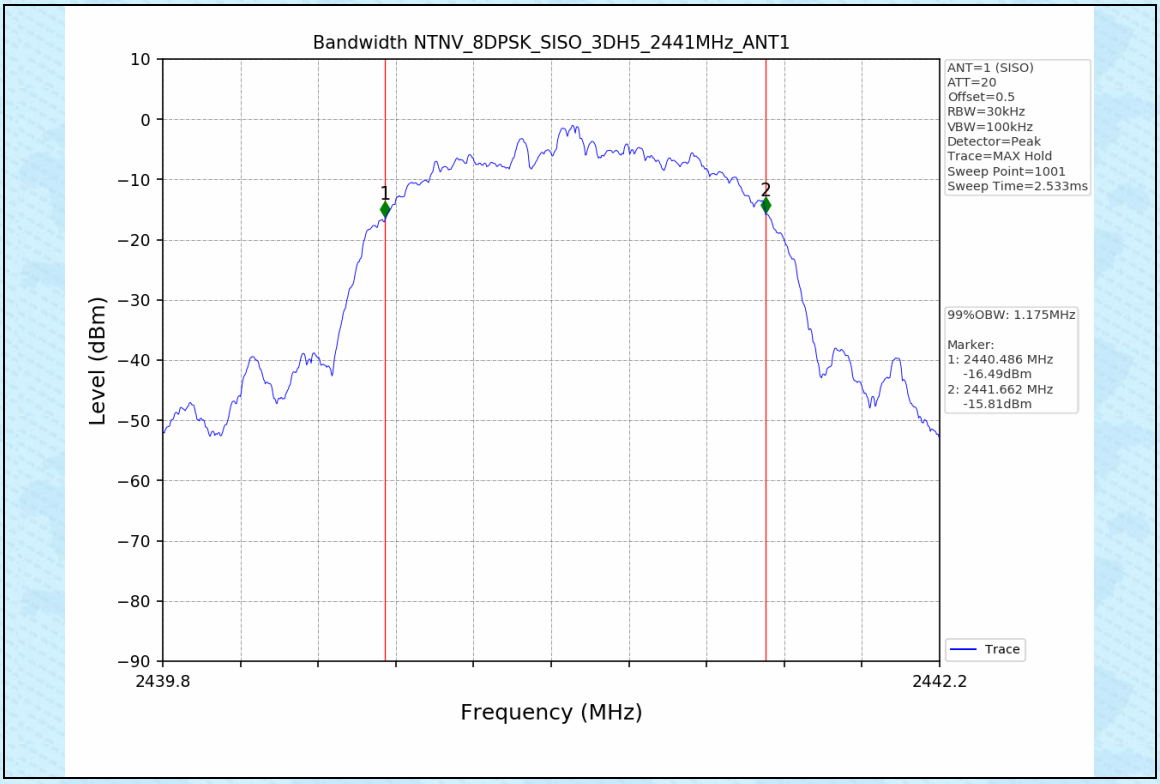

Bandwidth NTNV_GFSK_SISO_DH5_2480MHz_ANT1
ANT=1 (SISO)
ATT=15
Offset=0.5
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.133ms
99%OBW: 0.833MHz
Marker:
1: 2479.657 MHz
-20.42dBm
2: 2480.489 MHz
-21.15dBm
Trace
Level (dBm)
Frequency (MHz)
2479.0
2481.0

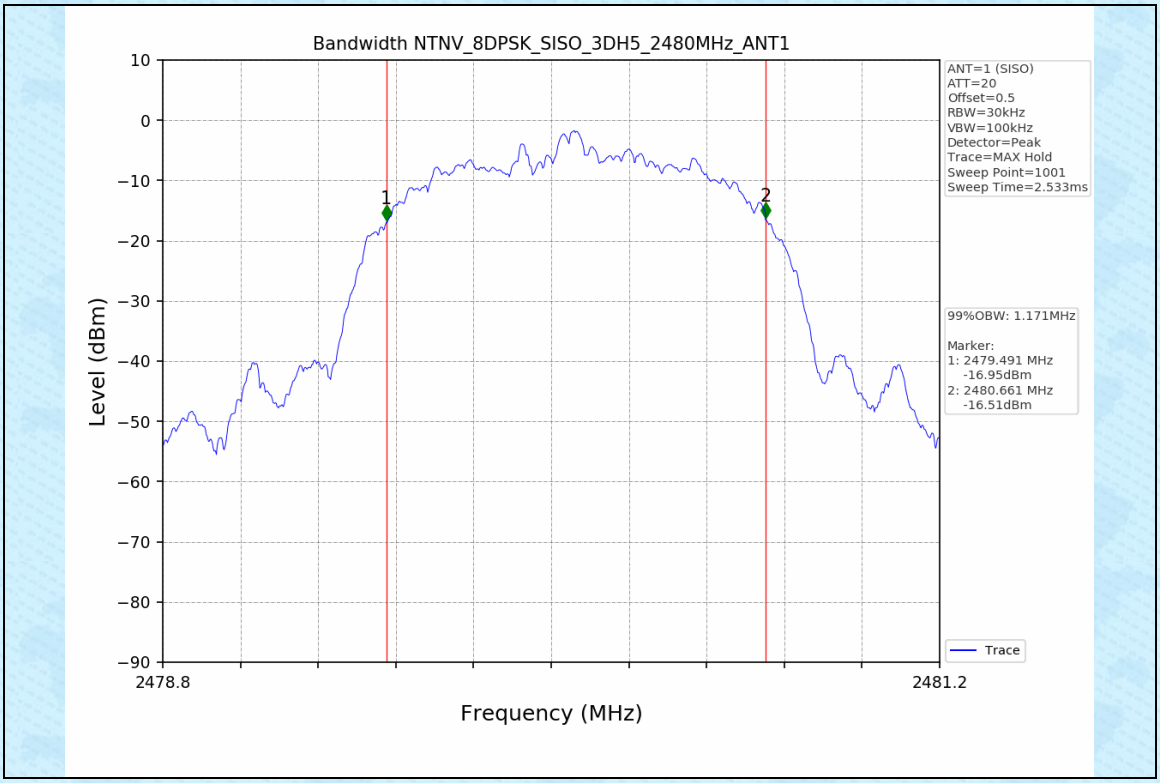

Bandwidth NTNV_Pi/4DQPSK_SISO_2DH5_2402MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.533ms
99%OBW: 1.173MHz
Marker:
1: 2401.488 MHz
-14.71dBm
2: 2402.661 MHz
-16.62dBm
Trace
Level (dBm)
Frequency (MHz)
2400.8
2403.2


Bandwidth NTNV_Pi/4DQPSK_SISO_2DH5_2441MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.533ms
99%OBW: 1.174MHz
Marker:
1: 2440.487 MHz
-15.15dBm
2: 2441.661 MHz
-17.36dBm
Trace
Level (dBm)
Frequency (MHz)
2439.8
2442.2


Bandwidth NTNV_Pi/4DQPSK_SISO_2DH5_2480MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.533ms
99%OBW: 1.173MHz
Marker:
1: 2479.489 MHz
-16.06dBm
2: 2480.662 MHz
-17.77dBm
Trace
Level (dBm)
Frequency (MHz)
2478.8
2481.2


Bandwidth NTNV_8DPSK_SISO_3DH5_2402MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.533ms
99%OBW: 1.172MHz
Marker:
1: 2401.488 MHz
-15.21dBm
2: 2402.660 MHz
-15.41dBm
Trace
Level (dBm)
Frequency (MHz)
2400.8
2403.2


Bandwidth NTNV_8DPSK_SISO_3DH5_2441MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.533ms
99%OBW: 1.175MHz
Marker:
1: 2440.486 MHz
-16.49dBm
2: 2441.662 MHz
-15.81dBm
Trace
Level (dBm)
Frequency (MHz)
2439.8
2442.2

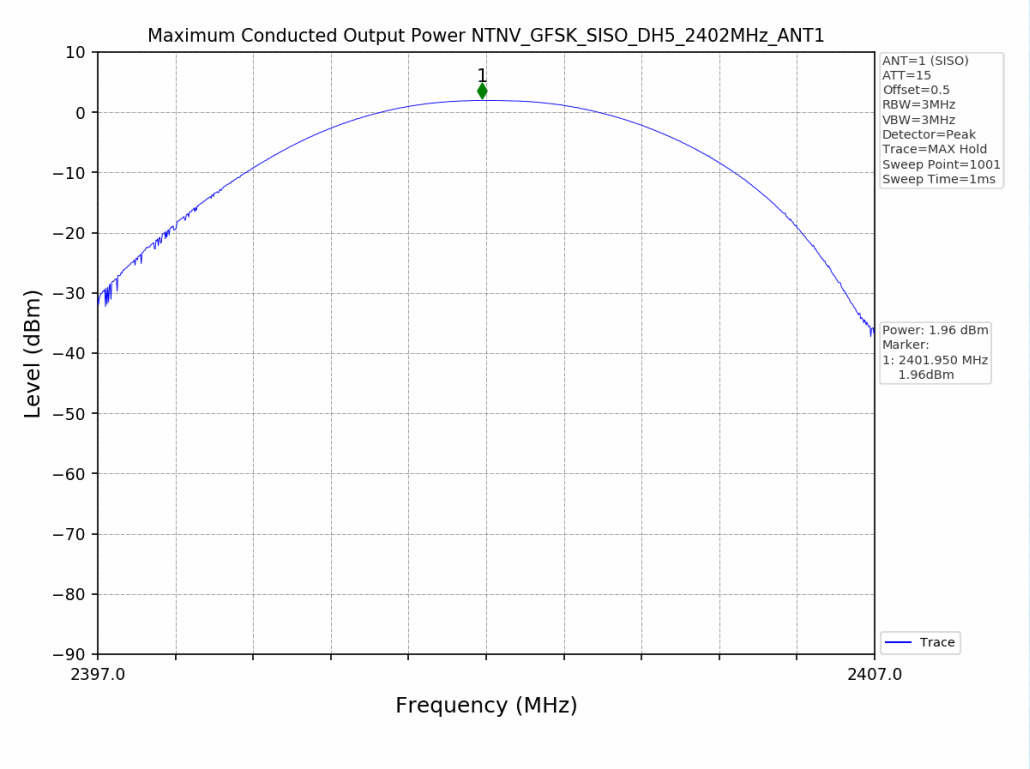

Bandwidth NTNV_8DPSK_SISO_3DH5_2480MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=30kHz
VBW=100kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.533ms
99%OBW: 1.171MHz
Marker:
1: 2479.491 MHz
-16.95dBm
2: 2480.661 MHz
-16.51dBm
Trace
Level (dBm)
Frequency (MHz)
2478.8
2481.2

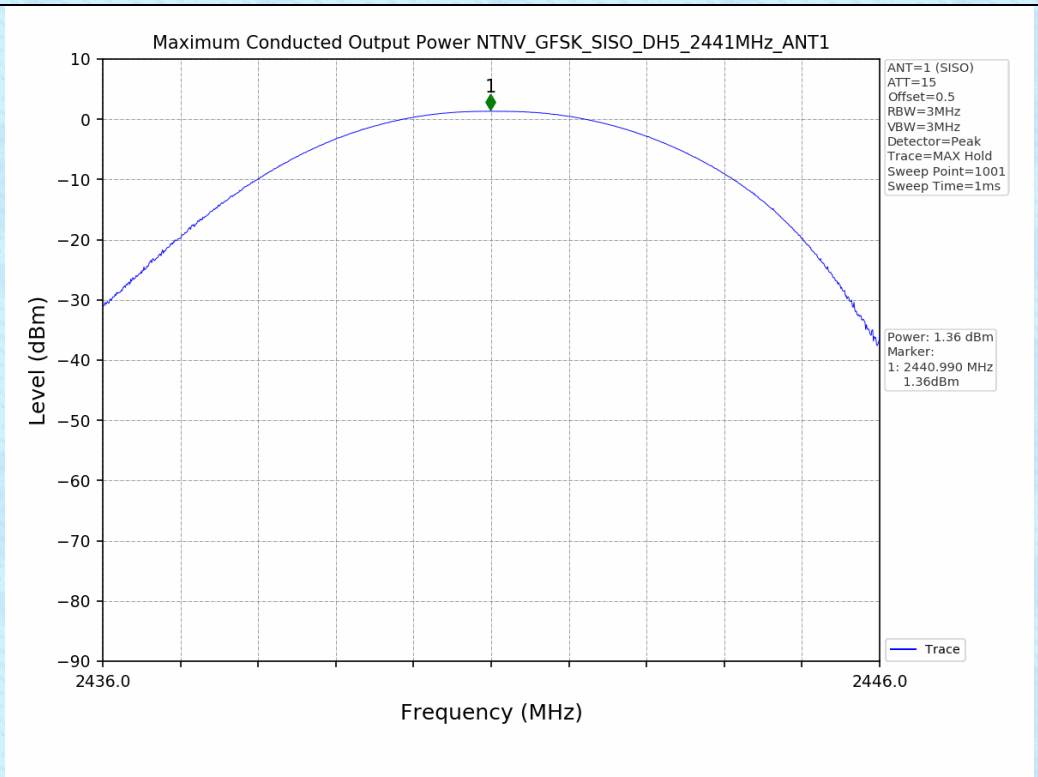
2. Maximum Conducted Output Power

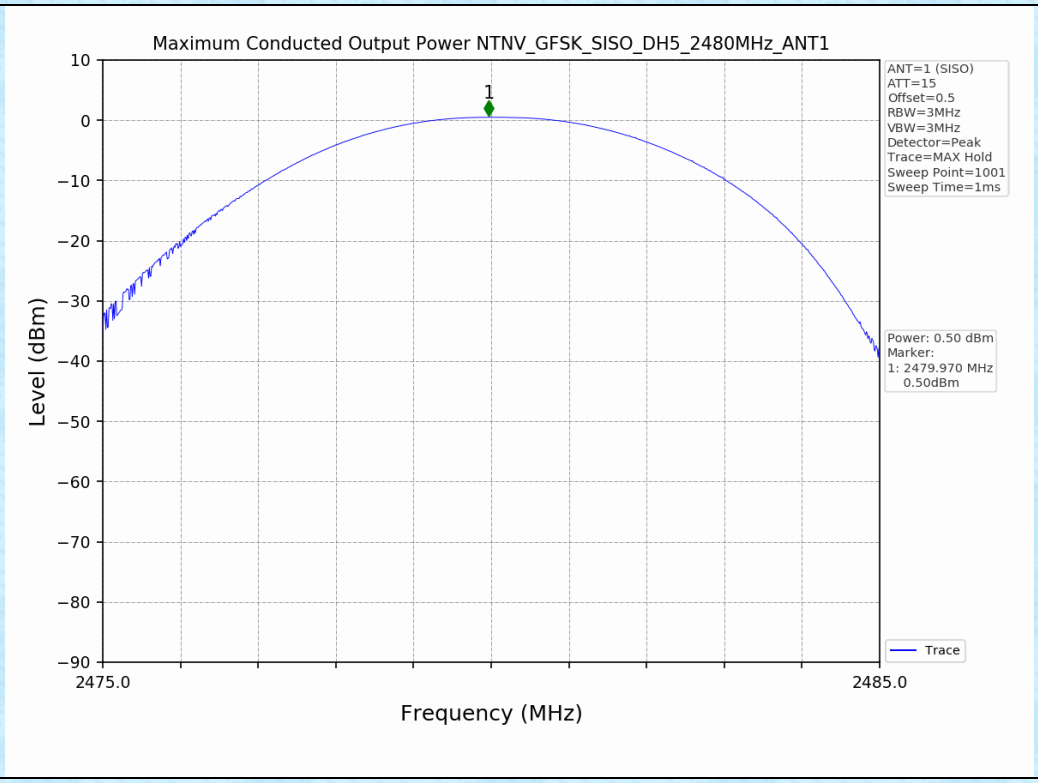
2.1 Test Result

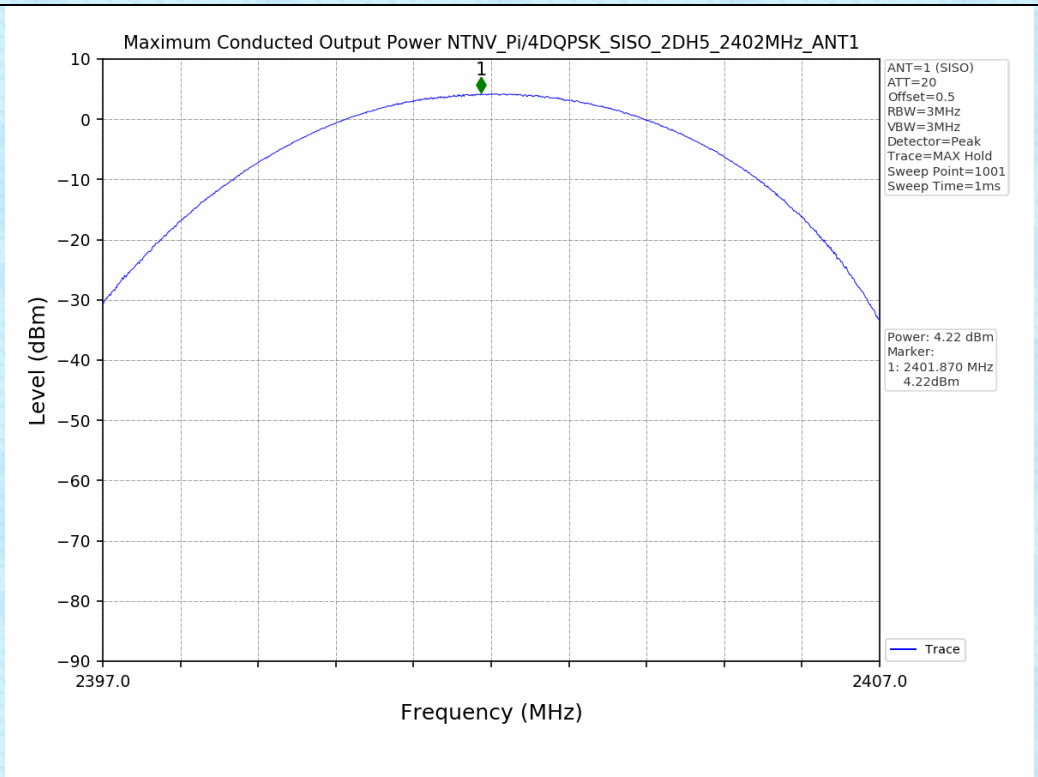
Test Mode	Frequency (MHz)	Tx Type	Measured Peak Output Power (dBm)	Limits (dBm)	Verdict
			Ant 1		
GFSK	2402	SISO	1.96	30	PASS
	2441	SISO	1.36	30	PASS
	2480	SISO	0.50	30	PASS
π/4-DQPSK	2402	SISO	4.22	20.97	PASS
	2441	SISO	3.57	20.97	PASS
	2480	SISO	2.78	20.97	PASS
8-DPSK	2402	SISO	4.65	20.97	PASS
	2441	SISO	4.02	20.97	PASS
	2480	SISO	3.23	20.97	PASS

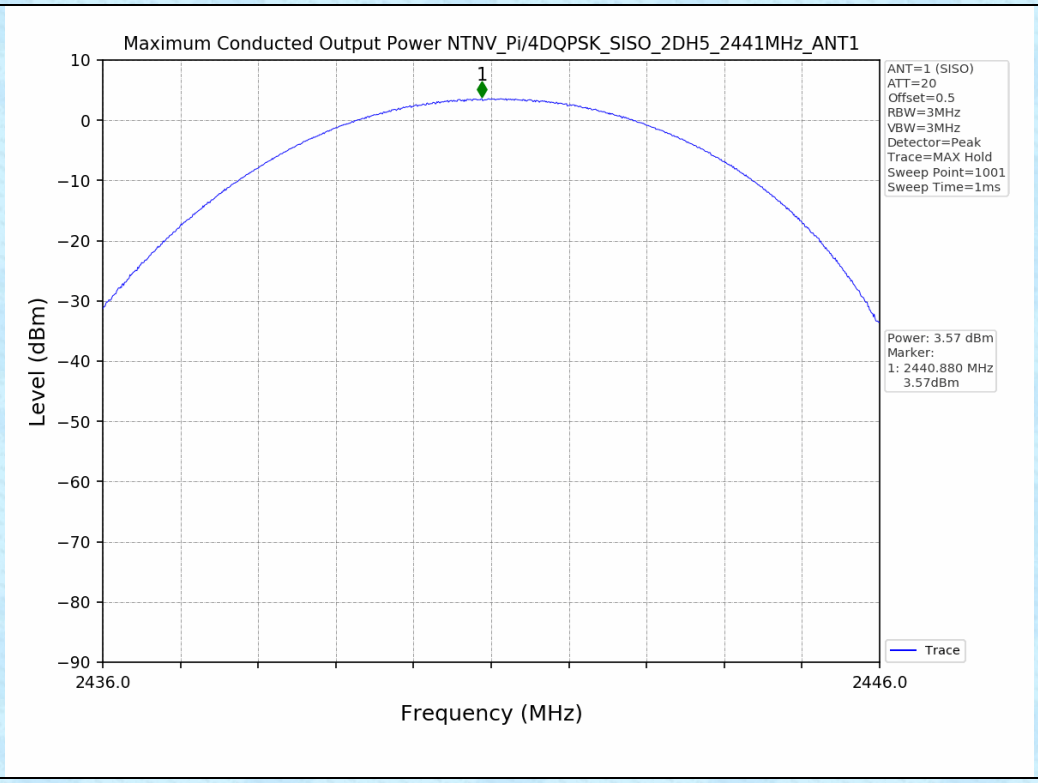
2.2 Test Graph

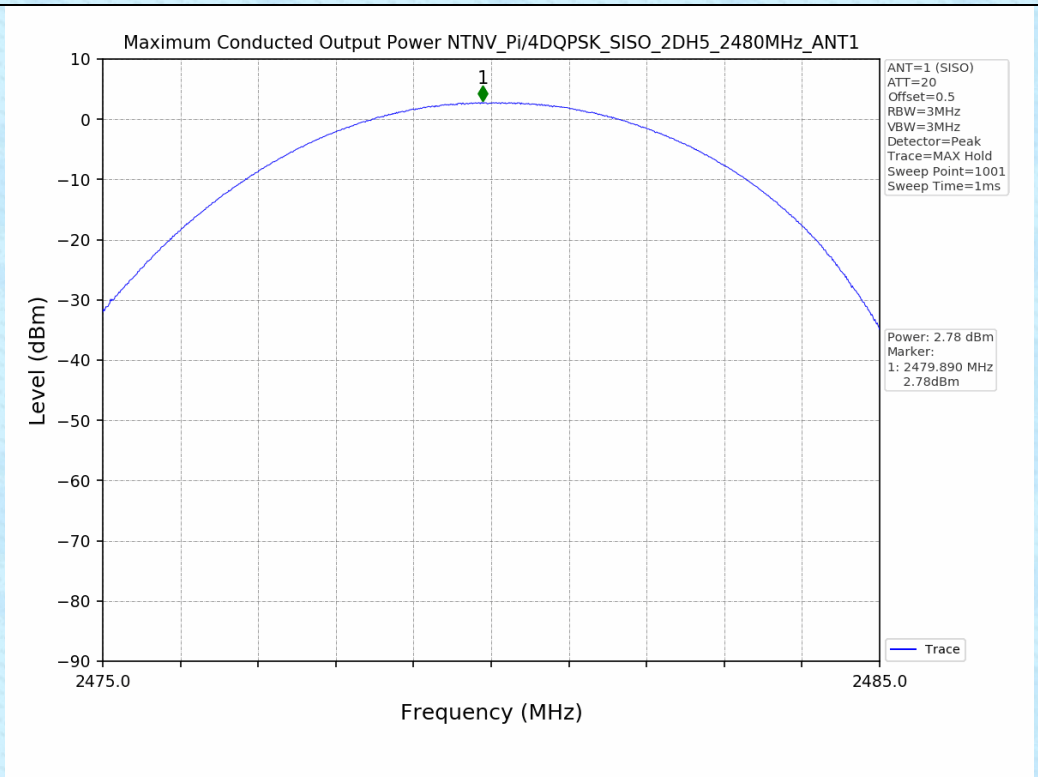


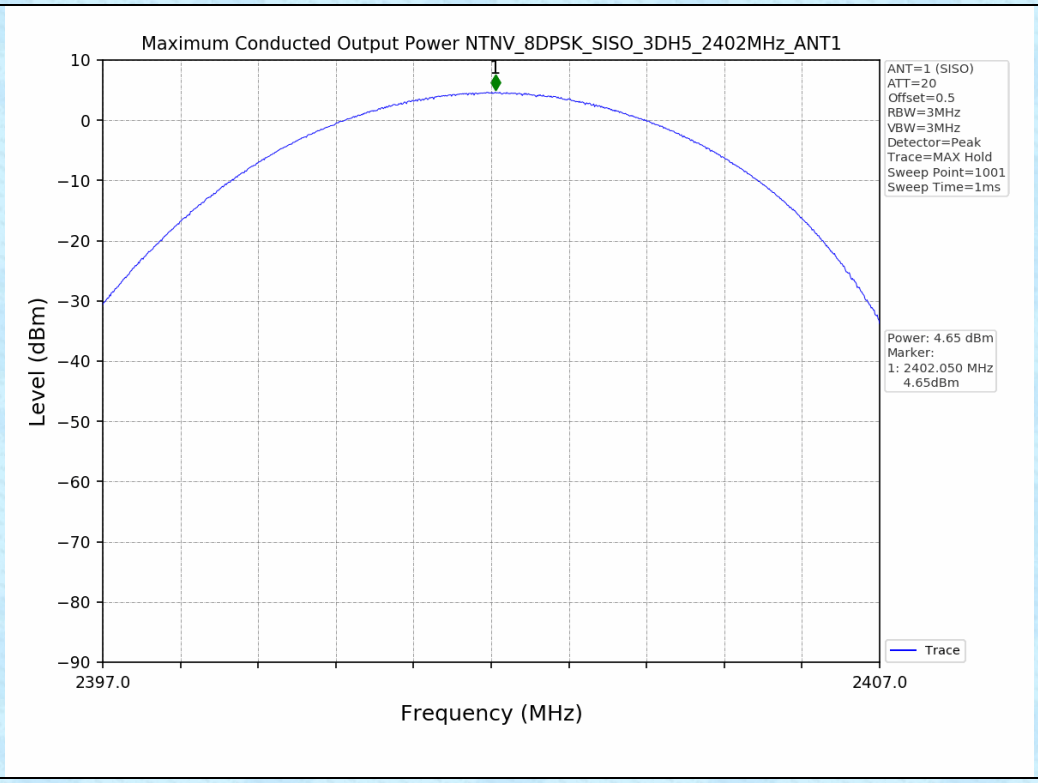

Maximum Conducted Output Power NTNV_GFSK_SISO_DH5_2441MHz_ANT1
ANT=1 (SISO)
ATT=15
Offset=0.5
RBW=3MHz
VBW=3MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Power: 1.36 dBm
Marker:
1: 2440.990 MHz
1.36dBm
Trace
Level (dBm)
Frequency (MHz)
2436.0
2446.0

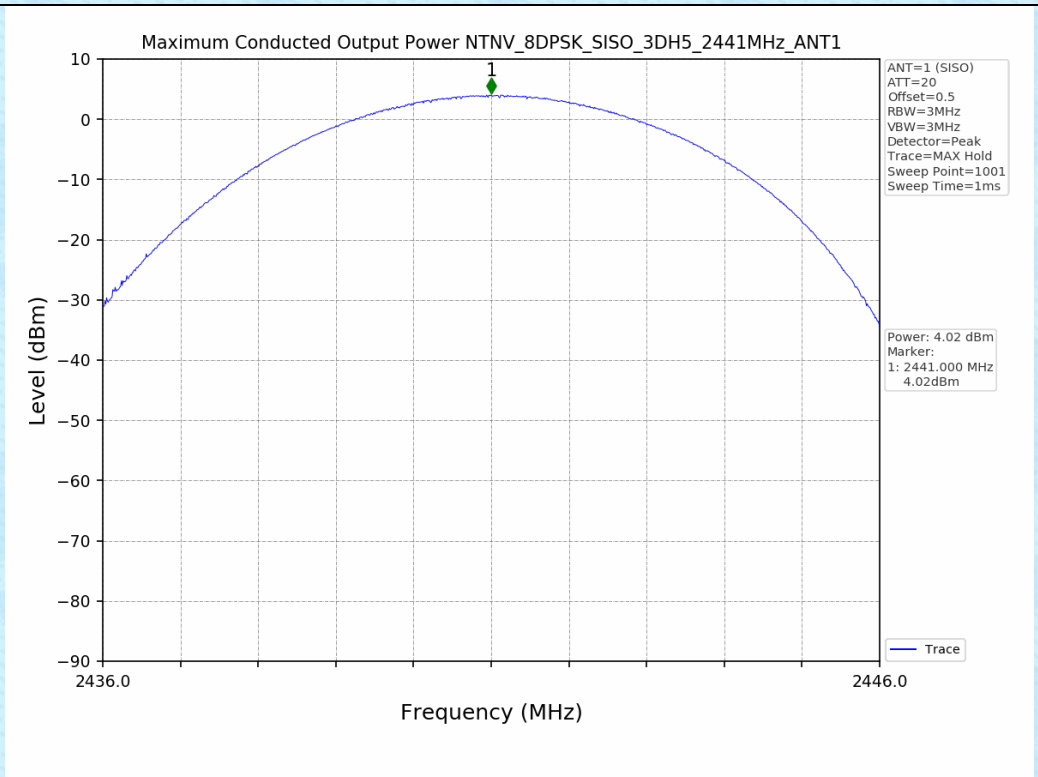

Maximum Conducted Output Power NTNV_GFSK_SISO_DH5_2480MHz_ANT1
ANT=1 (SISO)
ATT=15
Offset=0.5
RBW=3MHz
VBW=3MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Power: 0.50 dBm
Marker:
1: 2479.970 MHz
0.50dBm
Trace
Level (dBm)
Frequency (MHz)
2475.0
2485.0

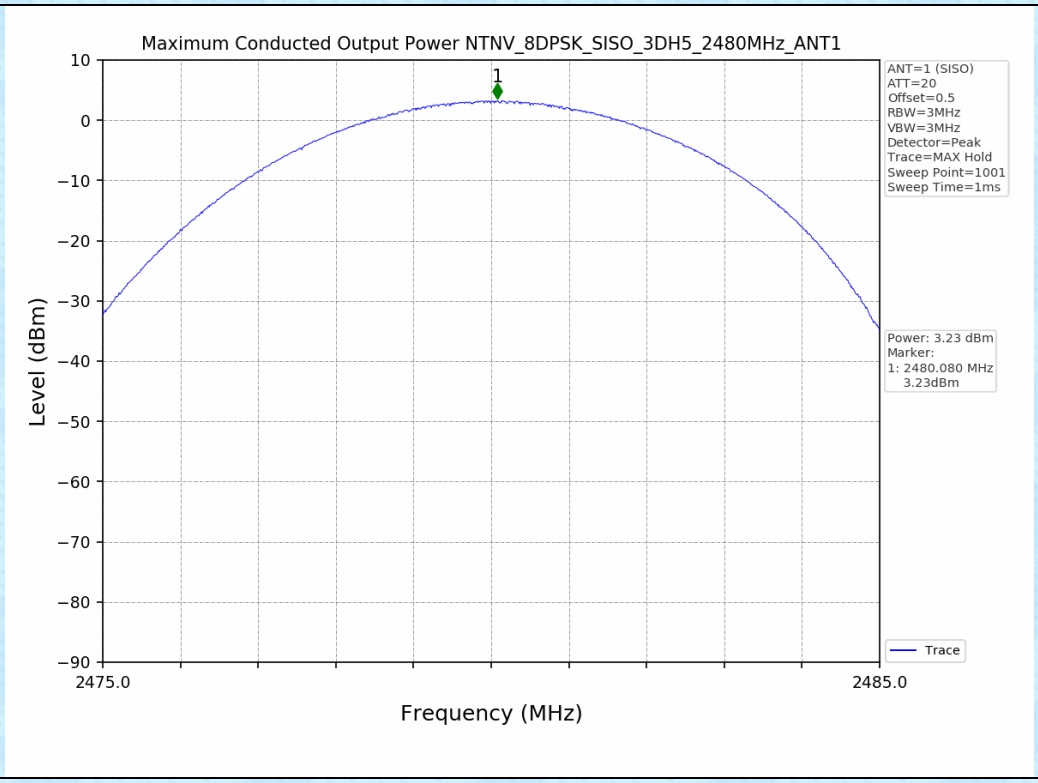

Maximum Conducted Output Power NTNV_Pi/4DQPSK_SISO_2DH5_2402MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=3MHz
VBW=3MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Power: 4.22 dBm
Marker:
1: 2401.870 MHz
4.22dBm
Trace
Level (dBm)
Frequency (MHz)
2397.0
2407.0


Maximum Conducted Output Power NTNV_Pi/4DQPSK_SISO_2DH5_2441MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=3MHz
VBW=3MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Power: 3.57 dBm
Marker:
1: 2440.880 MHz
3.57dBm
Trace
Level (dBm)
Frequency (MHz)
2436.0
2446.0


Maximum Conducted Output Power NTNV_Pi/4DQPSK_SISO_2DH5_2480MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=3MHz
VBW=3MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Power: 2.78 dBm
Marker:
1: 2479.890 MHz
2.78dBm
Trace
Level (dBm)
Frequency (MHz)
2475.0
2485.0


Maximum Conducted Output Power NTNV_8DPSK_SISO_3DH5_2402MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=3MHz
VBW=3MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Power: 4.65 dBm
Marker:
1: 2402.050 MHz
4.65dBm
Trace
Level (dBm)
Frequency (MHz)
2397.0
2407.0


Maximum Conducted Output Power NTNV_8DPSK_SISO_3DH5_2441MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=3MHz
VBW=3MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Power: 4.02 dBm
Marker:
1: 2441.000 MHz
4.02dBm
Trace
Level (dBm)
Frequency (MHz)
2436.0
2446.0

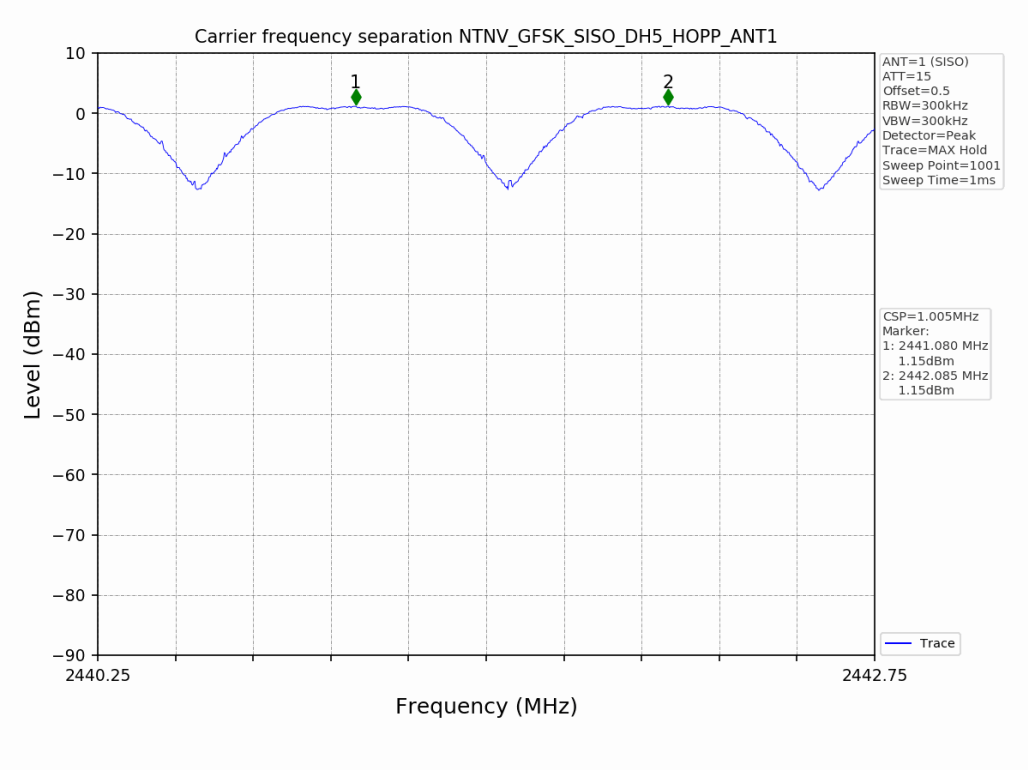

Maximum Conducted Output Power NTNV_8DPSK_SISO_3DH5_2480MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=3MHz
VBW=3MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Power: 3.23 dBm
Marker:
1: 2480.080 MHz
3.23dBm
Trace
Level (dBm)
Frequency (MHz)
2475.0
2485.0

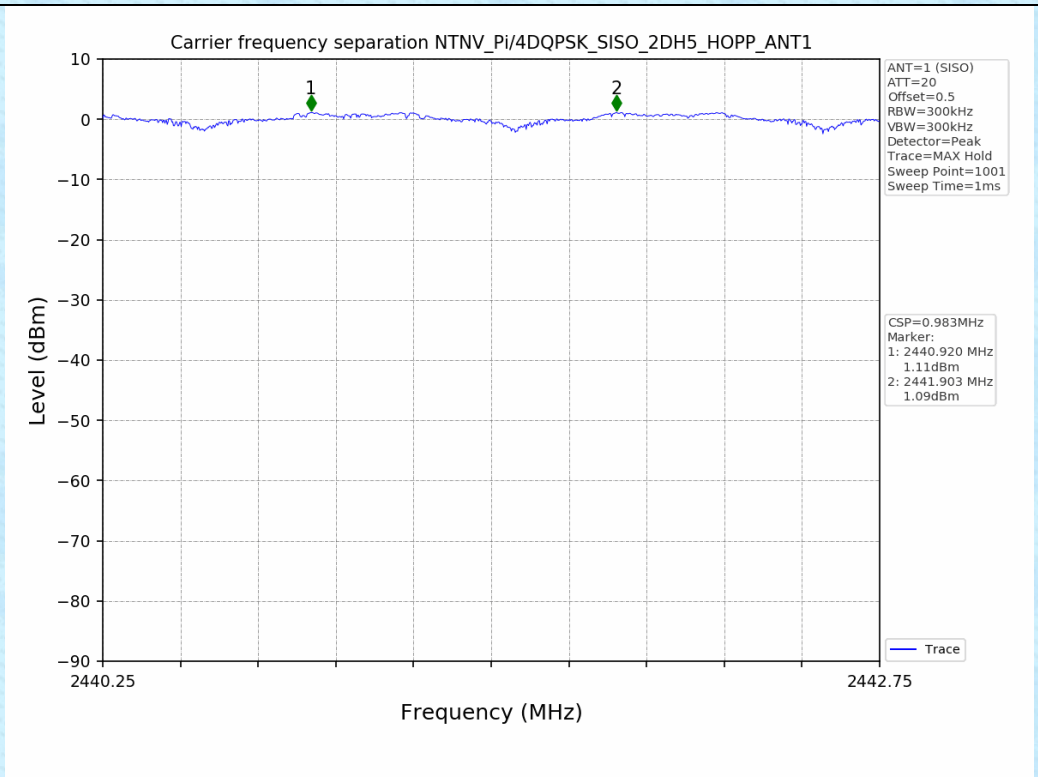
3. Carrier frequency separation

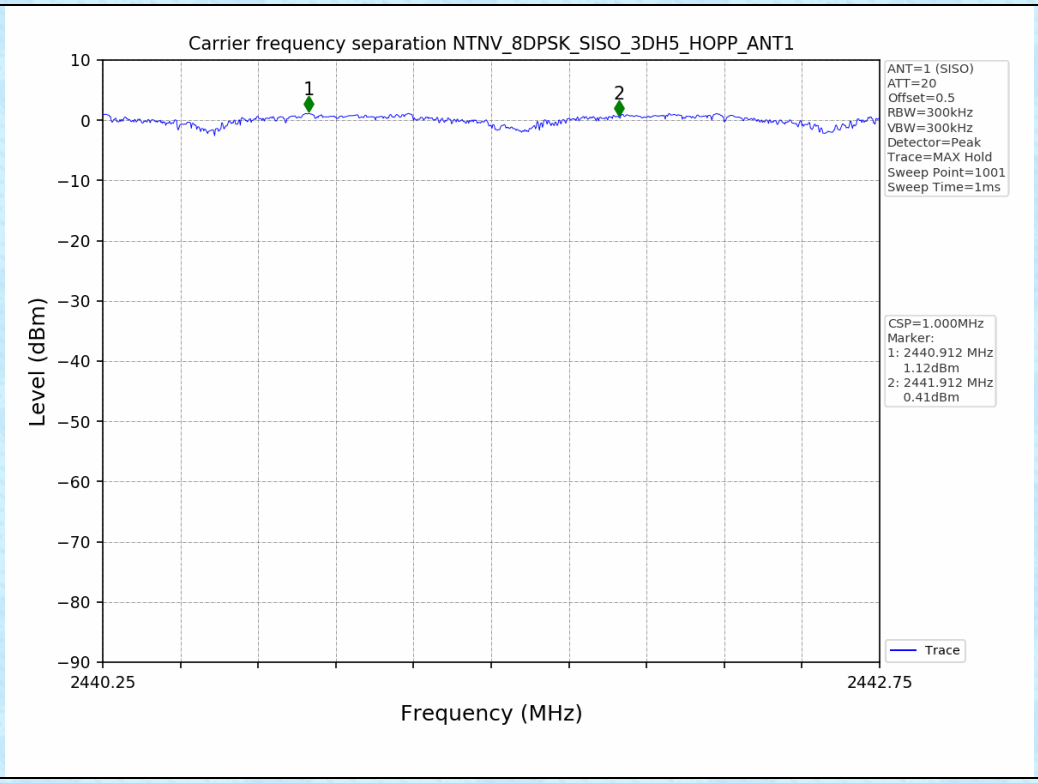
3.1 Test Result

Test Mode	TX Type	ANT No.	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limits (MHz)	Verdict
GFSK	SISO	ANT1	1.005	1.000	≥1.000	PASS
π/4-DQPSK	SISO	ANT1	0.983	1.200	≥0.800	PASS
8-DPSK	SISO	ANT1	1.000	1.200	≥0.800	PASS

3.2 Test Graph




Carrier frequency separation NTNV_Pi/4DQPSK_SISO_2DH5_HOPP_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=300kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
CSP=0.983MHz
Marker:
1: 2440.920 MHz
1.11dBm
2: 2441.903 MHz
1.09dBm
Trace
Level (dBm)
Frequency (MHz)
2440.25
2442.75

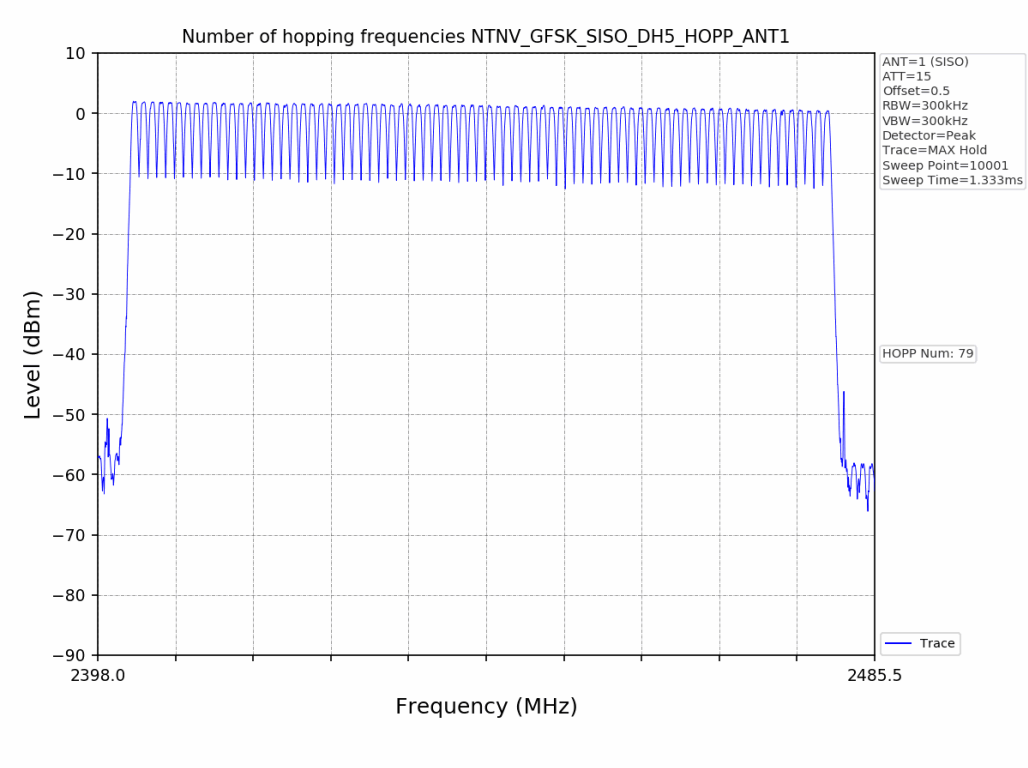

Carrier frequency separation NTNV_8DPSK_SISO_3DH5_HOPP_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=300kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
CSP=1.000MHz
Marker:
1: 2440.912 MHz
1.12dBm
2: 2441.912 MHz
0.41dBm
Trace
Level (dBm)
Frequency (MHz)
2440.25
2442.75

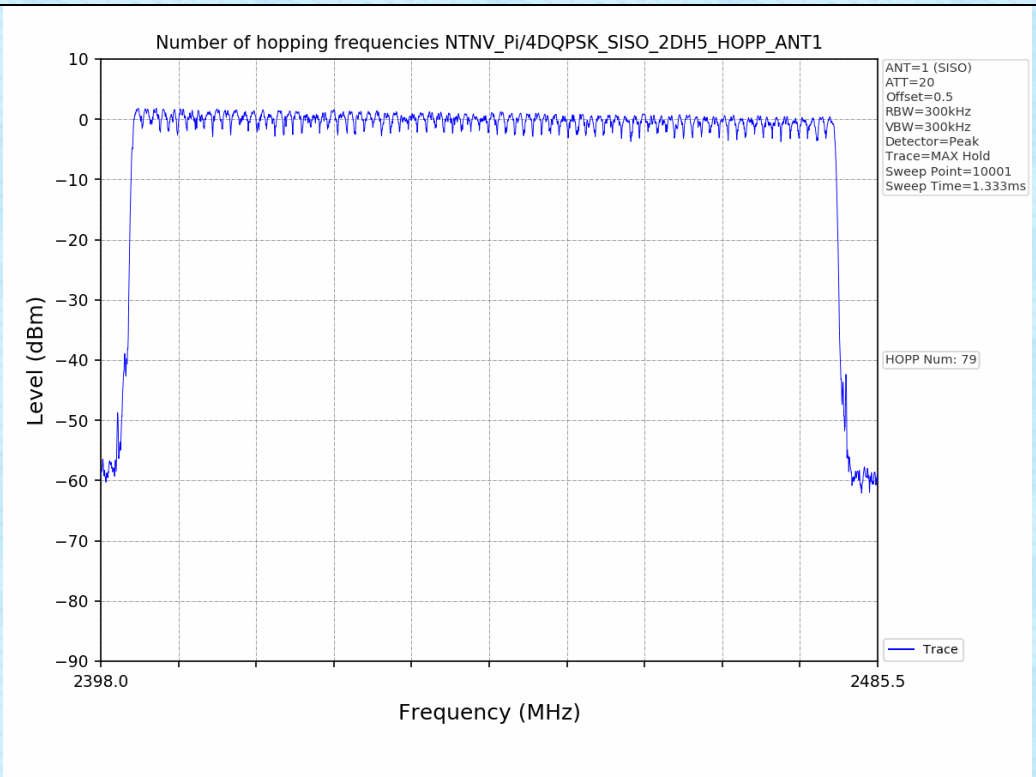
4. Number of hopping frequencies

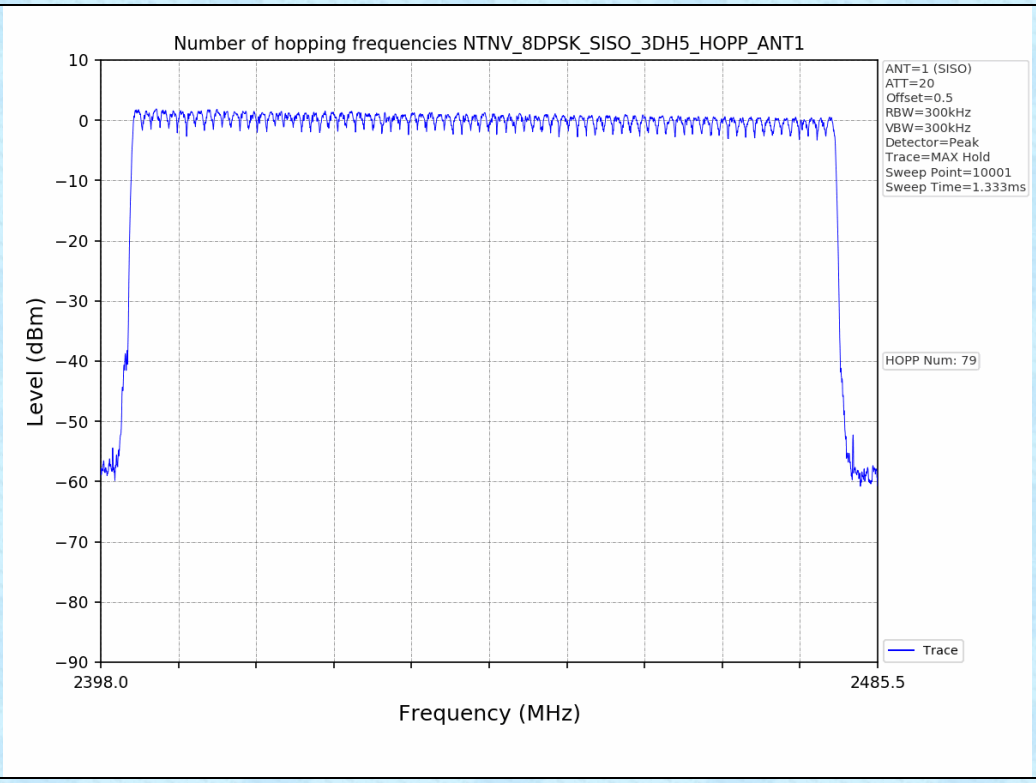
4.1 Test Result

Test Mode	TX Type	ANT No.	Num of Hopping Frequencies	Limits	Verdict
GFSK	SISO	ANT1	79	≥15	PASS
π/4-DQPSK	SISO	ANT1	79	≥15	PASS
8-DPSK	SISO	ANT1	79	≥15	PASS

4.2 Test Graph




Number of hopping frequencies NTNV_Pi/4DQPSK_SISO_2DH5_HOPP_ANT1
Level (dBm)
Frequency (MHz)
2398.0
2485.5
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=300kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=10001
Sweep Time=1.333ms
HOPP Num: 79
Trace

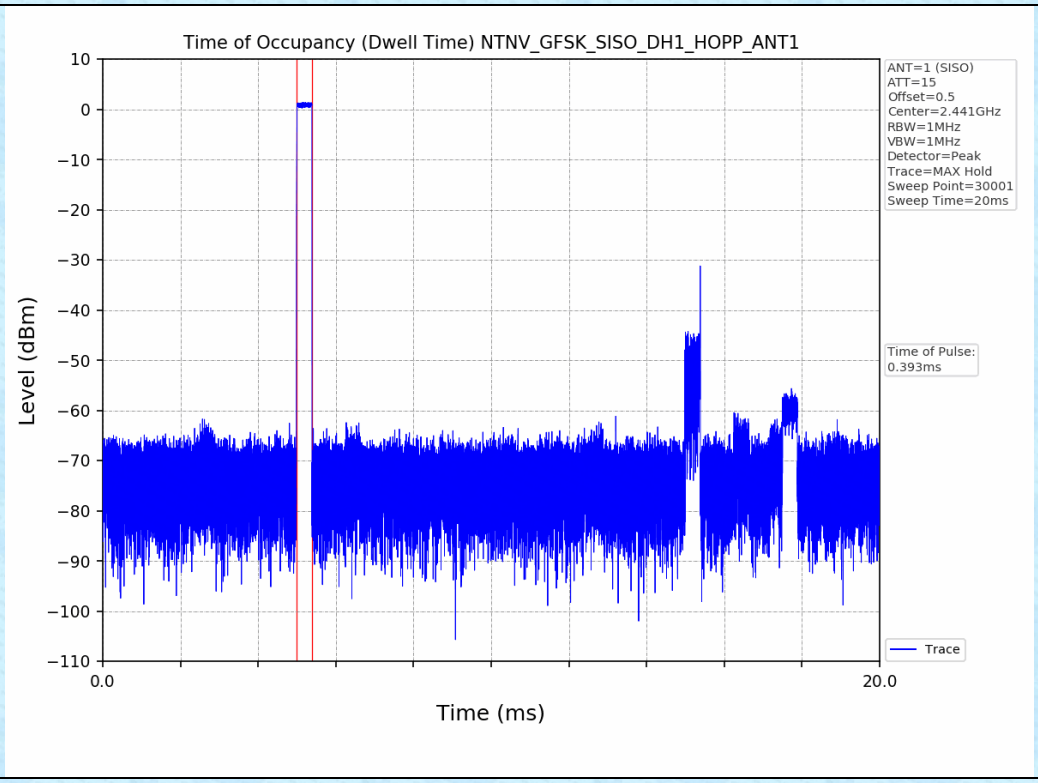

Number of hopping frequencies NTNV_8DPSK_SISO_3DH5_HOPP_ANT1
Level (dBm)
Frequency (MHz)
2398.0
2485.5
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=300kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=10001
Sweep Time=1.333ms
HOPP Num: 79
Trace

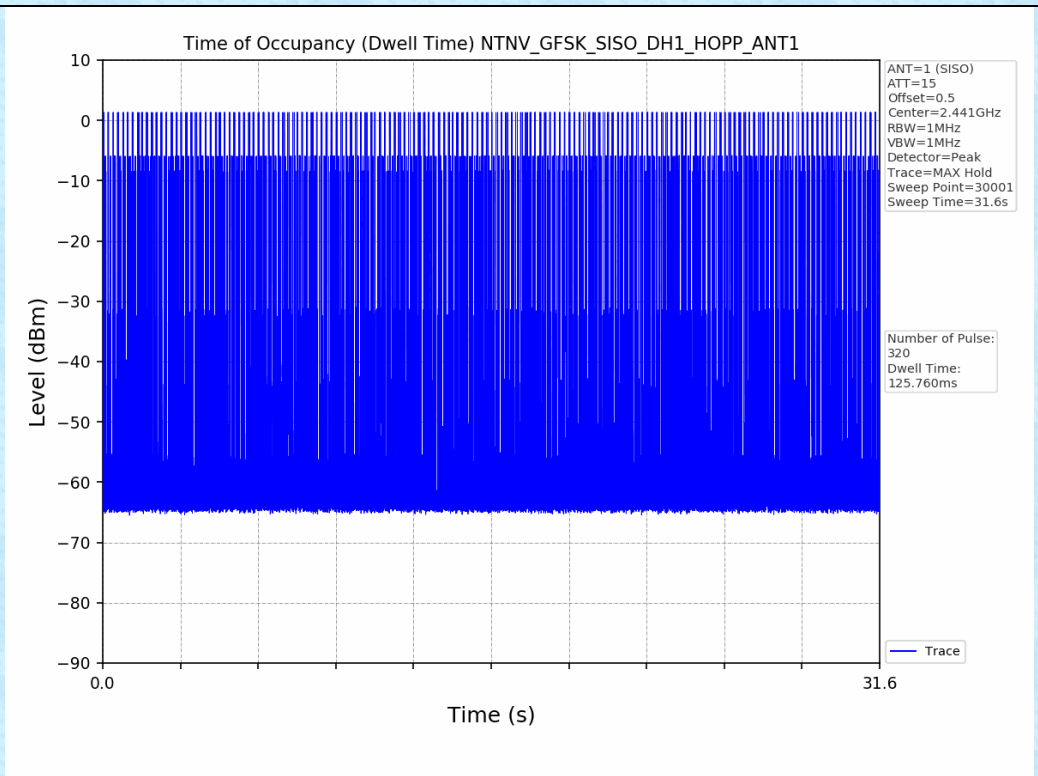
5. Time of Occupancy (Dwell Time)

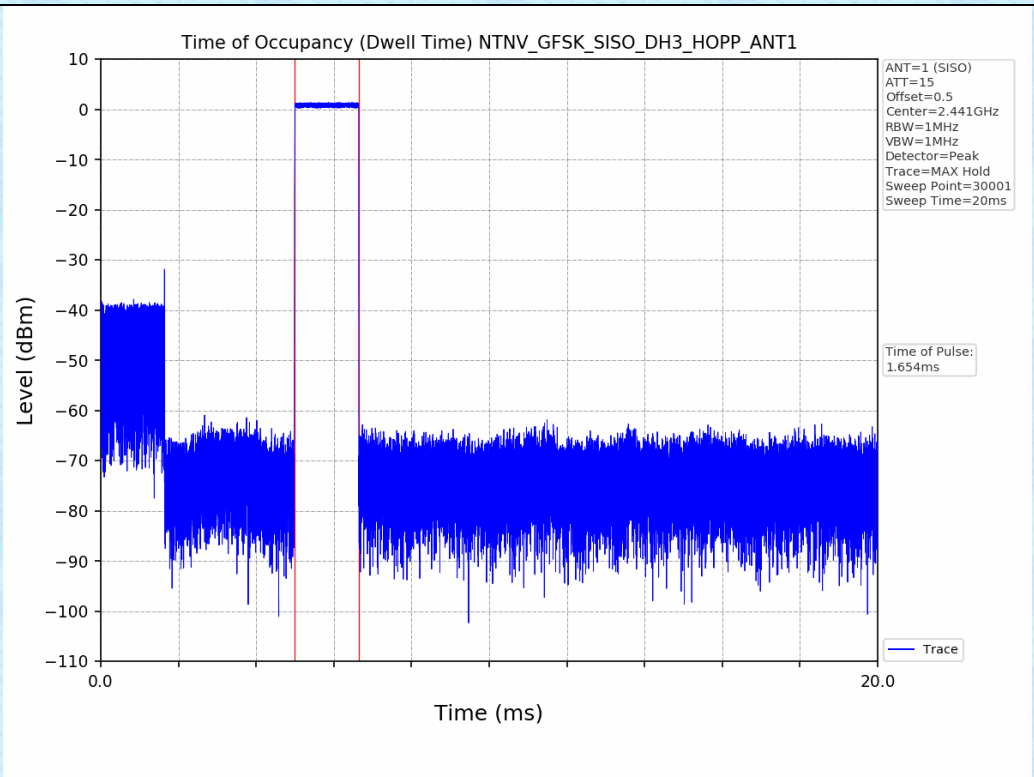
5.1 Test Result

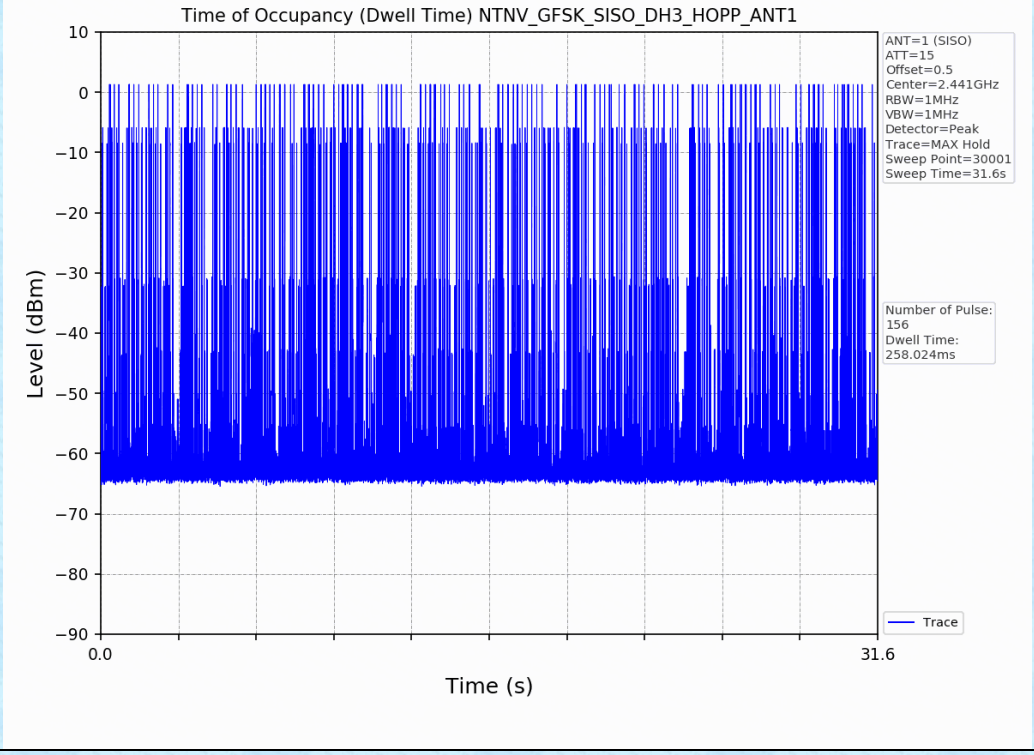
Test Mode	Packet Type	TX Type	ANT No.	Duration of Single Pulse (ms)	Obeservation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limits (ms)	Verdict
GFSK	DH1	SISO	ANT1	0.393	31.6	320	125.760	≤400	PASS
	DH3	SISO	ANT1	1.654	31.6	156	258.024	≤400	PASS
	DH5	SISO	ANT1	2.833	31.6	105	297.465	≤400	PASS
π/4-DQPSK	2DH1	SISO	ANT1	0.402	31.6	320	128.640	≤400	PASS
	2DH3	SISO	ANT1	1.660	31.6	164	272.240	≤400	PASS
	2DH5	SISO	ANT1	2.900	31.6	104	301.600	≤400	PASS
8-DPSK	3DH1	SISO	ANT1	0.408	31.6	320	130.560	≤400	PASS
	3DH3	SISO	ANT1	1.660	31.6	157	260.620	≤400	PASS
	3DH5	SISO	ANT1	2.911	31.6	113	328.943	≤400	PASS

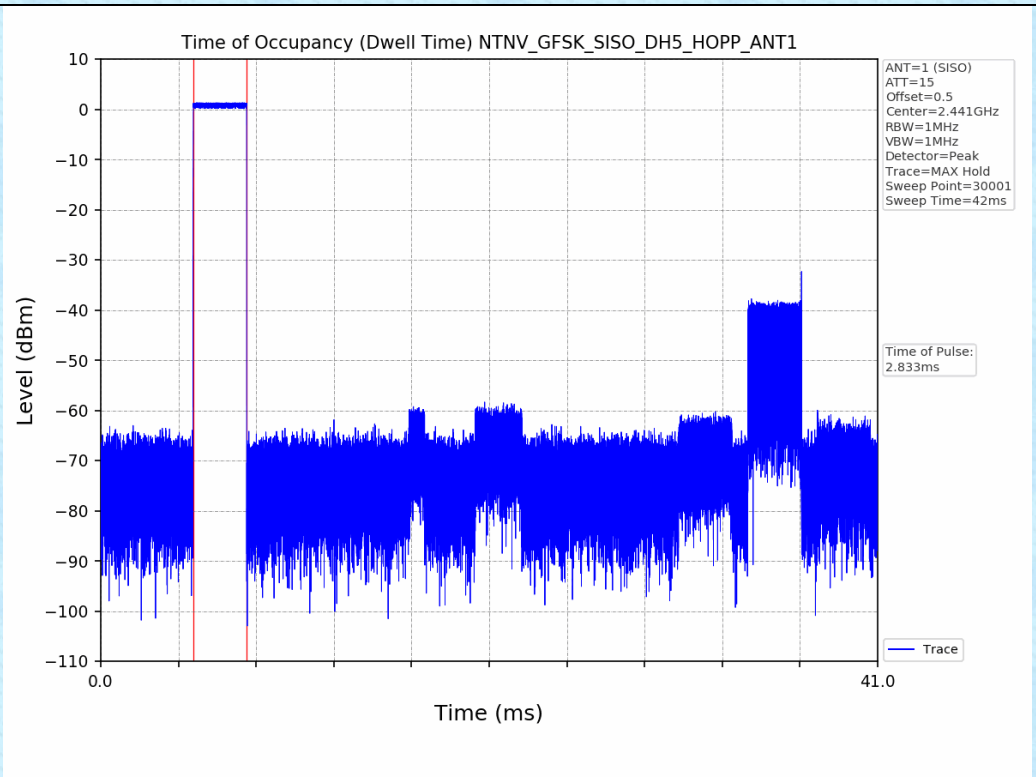
5.2 Test Graph

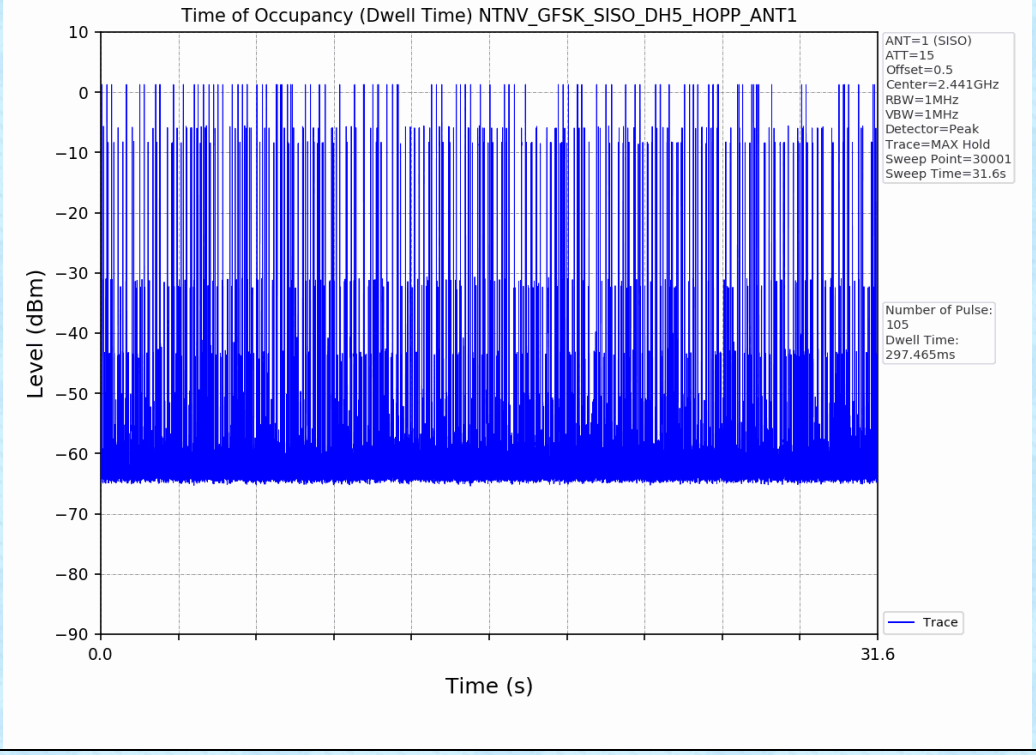


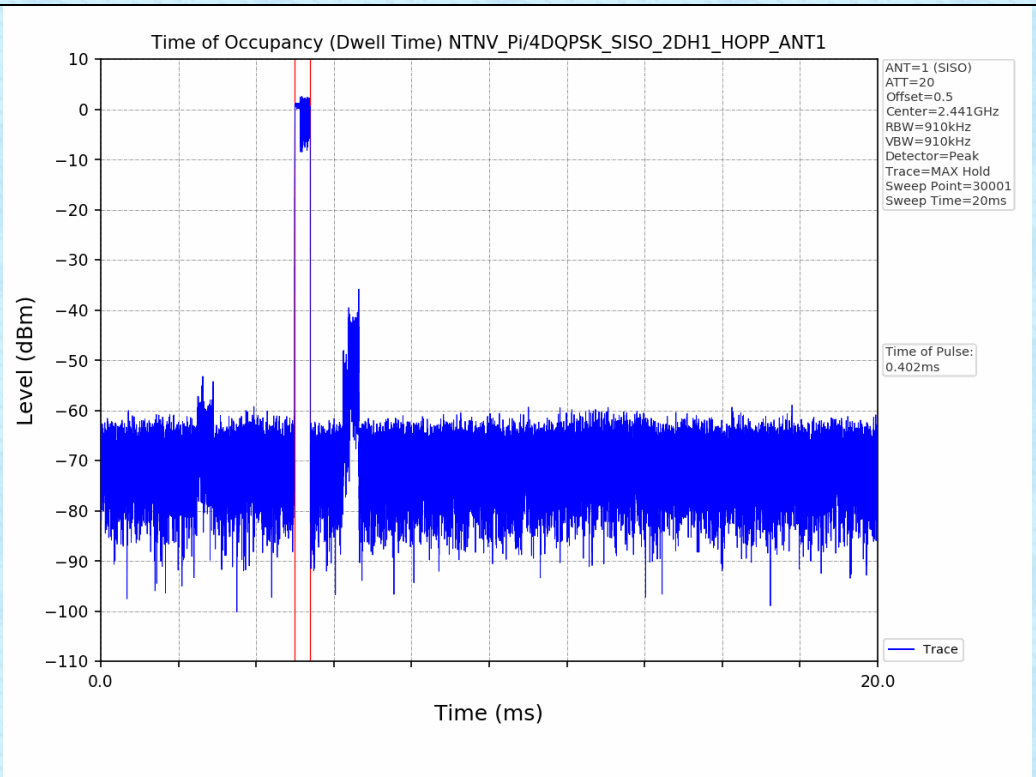


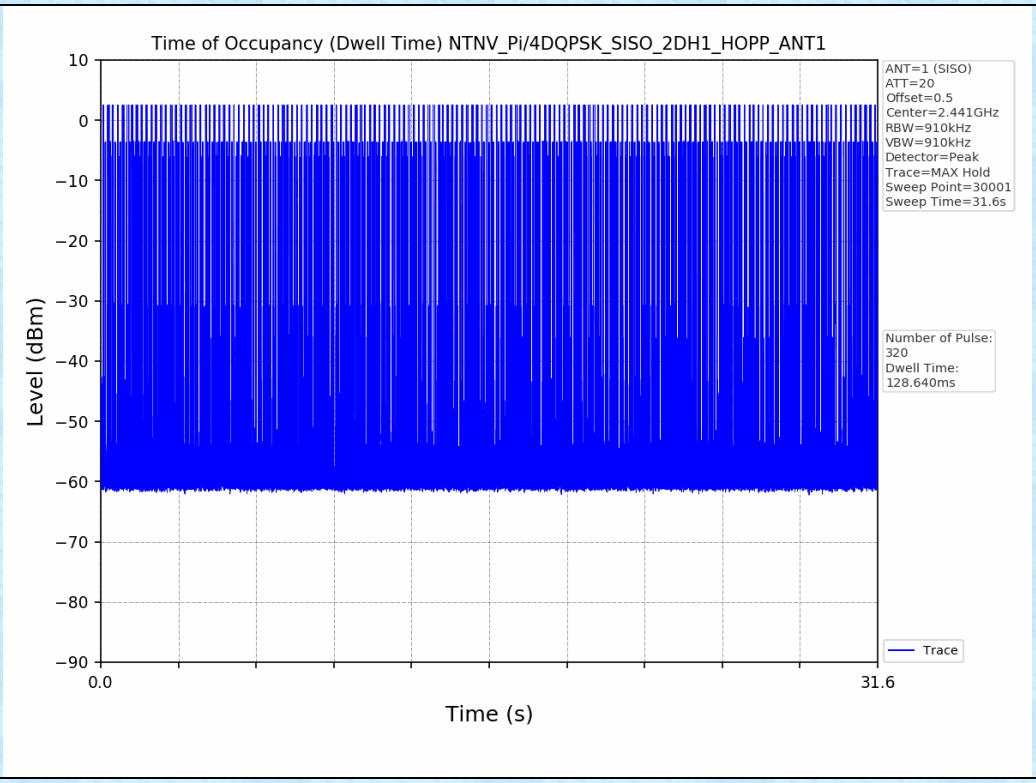

Time of Occupancy (Dwell Time) NTNV_GFSK_SISO_DH3_HOPP_ANT1
Level (dBm)
Time (ms)
0.0
20.0
ANT=1 (SISO)
ATT=15
Offset=0.5
Center=2.441GHz
RBW=1MHz
VBW=1MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=20ms
Time of Pulse:
1.654ms
Trace

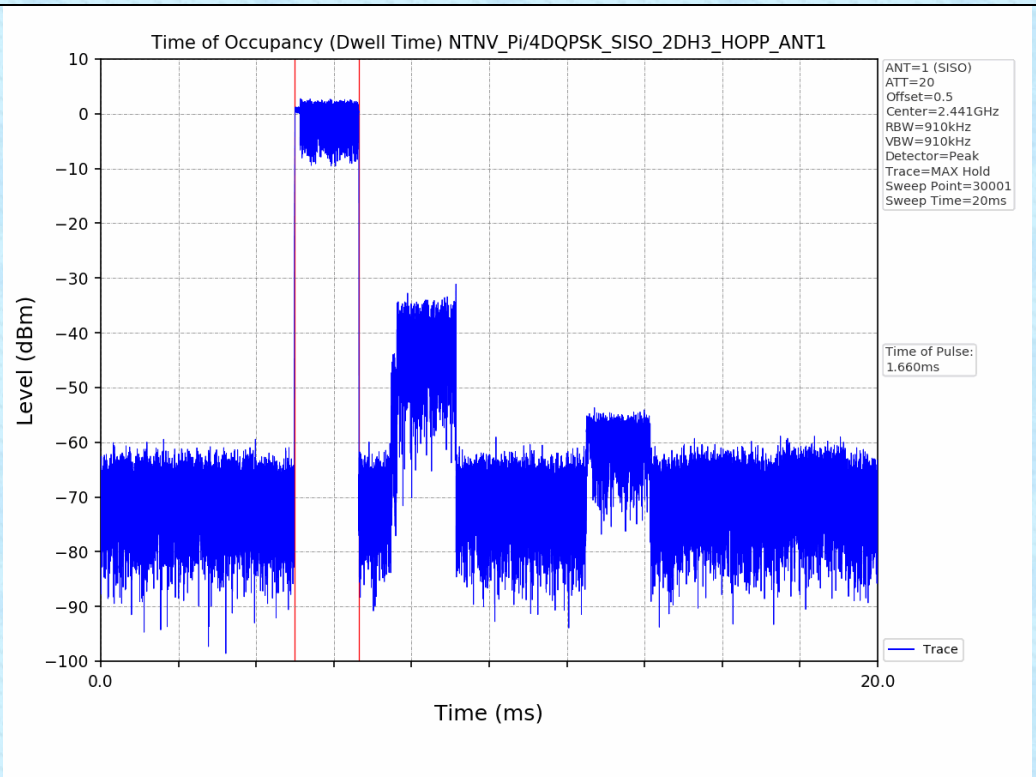

Time of Occupancy (Dwell Time) NTNV_GFSK_SISO_DH3_HOPP_ANT1
Level (dBm)
Time (s)
0.0
31.6
ANT=1 (SISO)
ATT=15
Offset=0.5
Center=2.441GHz
RBW=1MHz
VBW=1MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=31.6s
Number of Pulse:
156
Dwell Time:
258.024ms
Trace

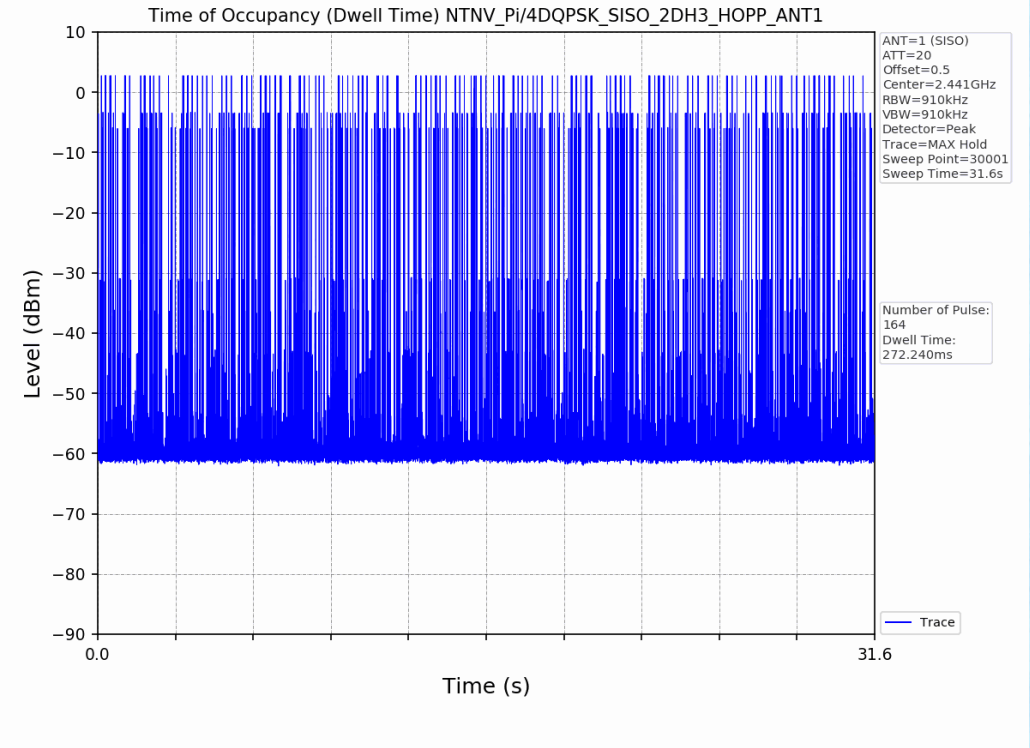

Time of Occupancy (Dwell Time) NTNV_GFSK_SISO_DH5_HOPP_ANT1
Level (dBm)
Time (ms)
0.0
41.0
ANT=1 (SISO)
ATT=15
Offset=0.5
Center=2.441GHz
RBW=1MHz
VBW=1MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=42ms
Time of Pulse:
2.833ms
Trace

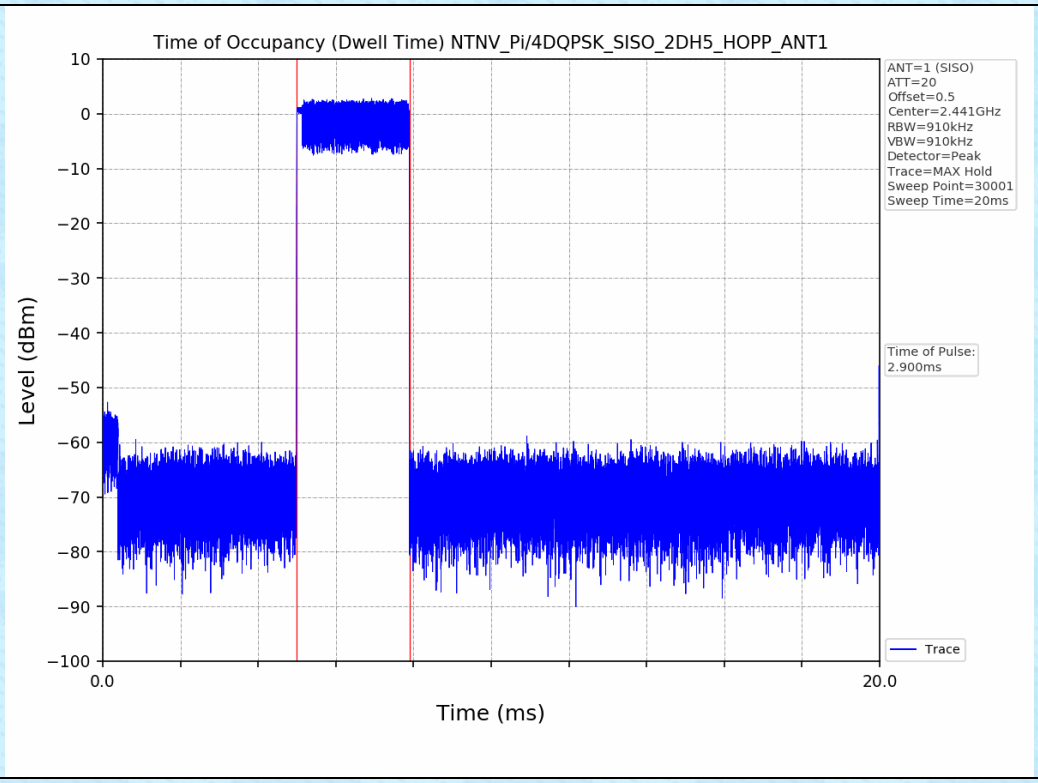

Time of Occupancy (Dwell Time) NTNV_GFSK_SISO_DH5_HOPP_ANT1
Level (dBm)
Time (s)
0.0
31.6
ANT=1 (SISO)
ATT=15
Offset=0.5
Center=2.441GHz
RBW=1MHz
VBW=1MHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=31.6s
Number of Pulse:
105
Dwell Time:
297.465ms
Trace

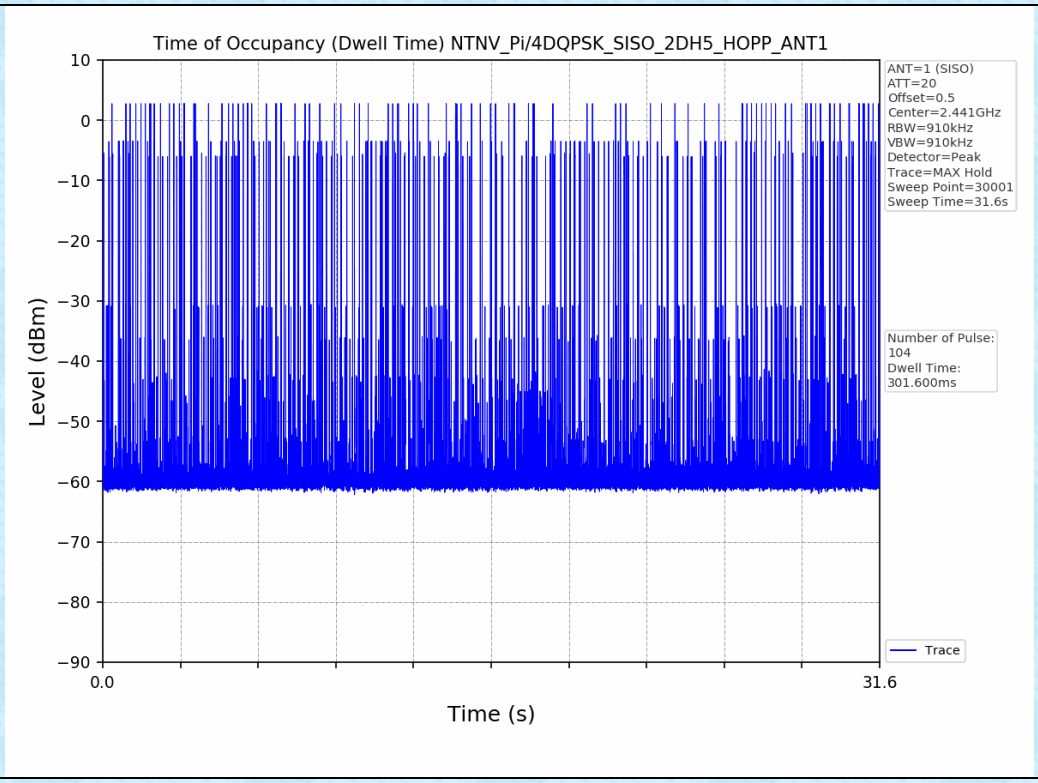

Time of Occupancy (Dwell Time) NTNV_Pi/4DQPSK_SISO_2DH1_HOPP_ANT1
Level (dBm)
Time (ms)
ANT=1 (SISO)
ATT=20
Offset=0.5
Center=2.441GHz
RBW=910kHz
VBW=910kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=20ms
Time of Pulse:
0.402ms
Trace

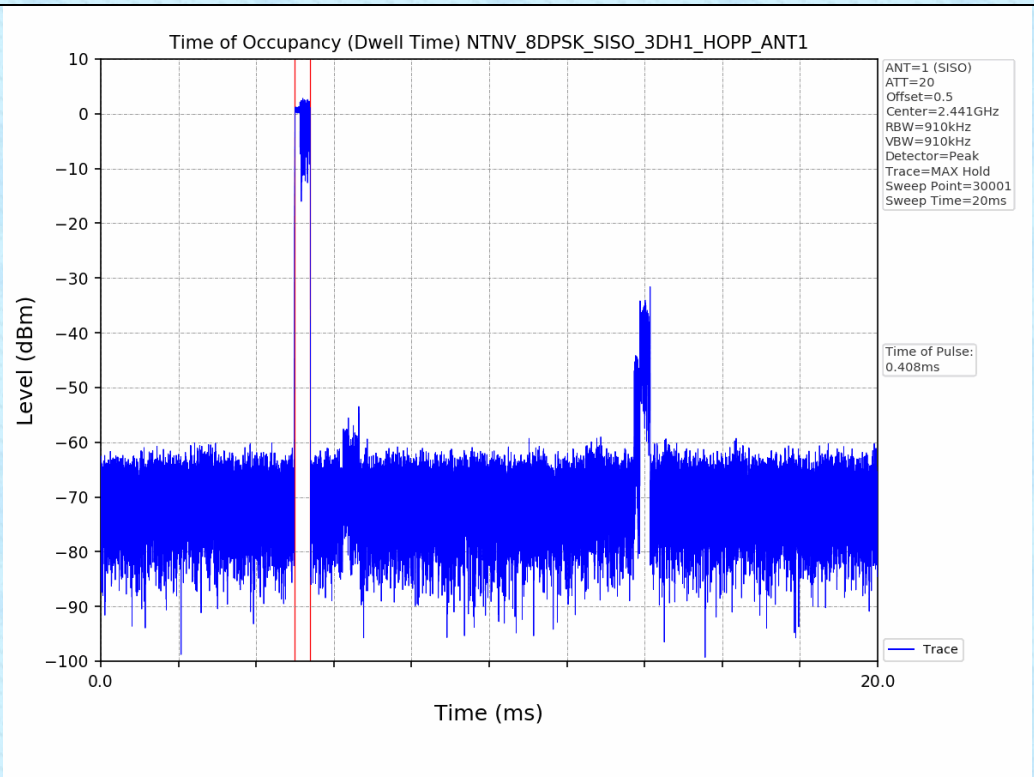

Time of Occupancy (Dwell Time) NTNV_Pi/4DQPSK_SISO_2DH1_HOPP_ANT1
Level (dBm)
Time (s)
ANT=1 (SISO)
ATT=20
Offset=0.5
Center=2.441GHz
RBW=910kHz
VBW=910kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=31.6s
Number of Pulse:
320
Dwell Time:
128.640ms
Trace

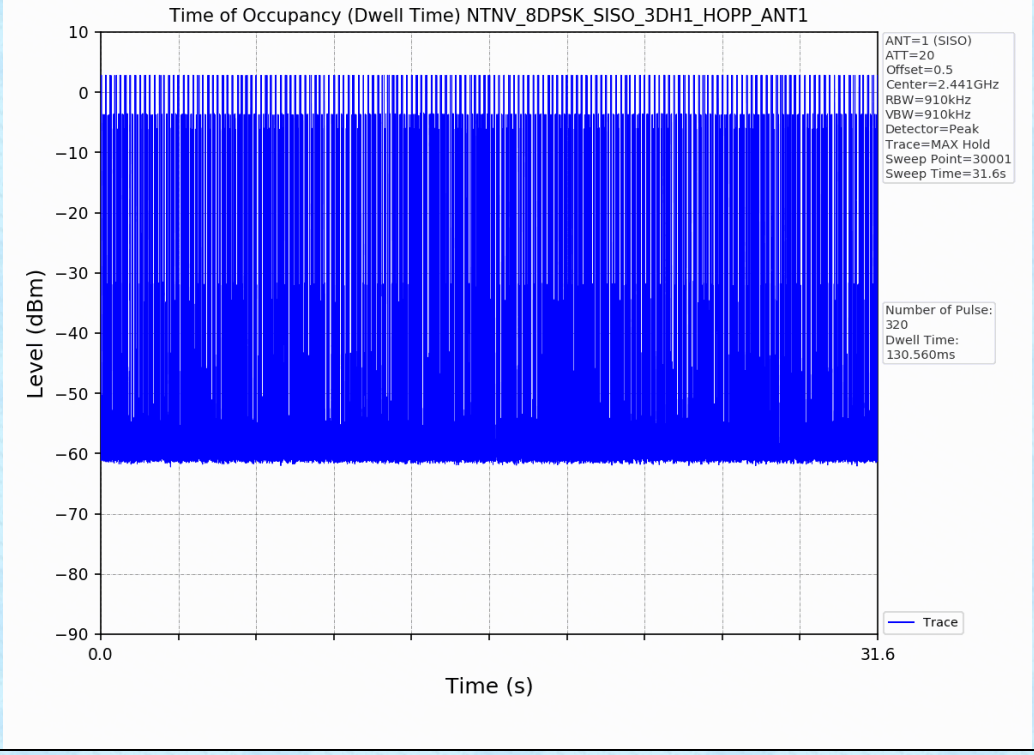

Time of Occupancy (Dwell Time) NTNV_Pi/4DQPSK_SISO_2DH3_HOPP_ANT1
Level (dBm)
Time (ms)
0.0
20.0
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
−100
ANT=1 (SISO)
ATT=20
Offset=0.5
Center=2.441GHz
RBW=910kHz
VBW=910kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=20ms
Time of Pulse:
1.660ms
Trace

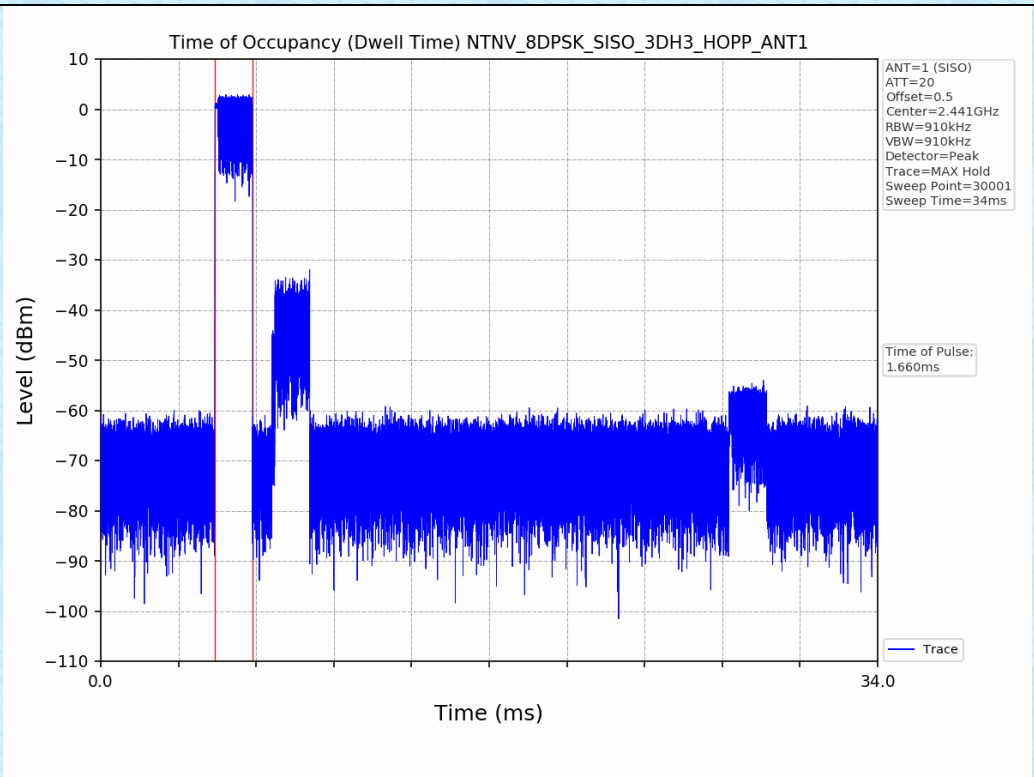

Time of Occupancy (Dwell Time) NTNV_Pi/4DQPSK_SISO_2DH3_HOPP_ANT1
Level (dBm)
Time (s)
0.0
31.6
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
ANT=1 (SISO)
ATT=20
Offset=0.5
Center=2.441GHz
RBW=910kHz
VBW=910kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=31.6s
Number of Pulse:
164
Dwell Time:
272.240ms
Trace

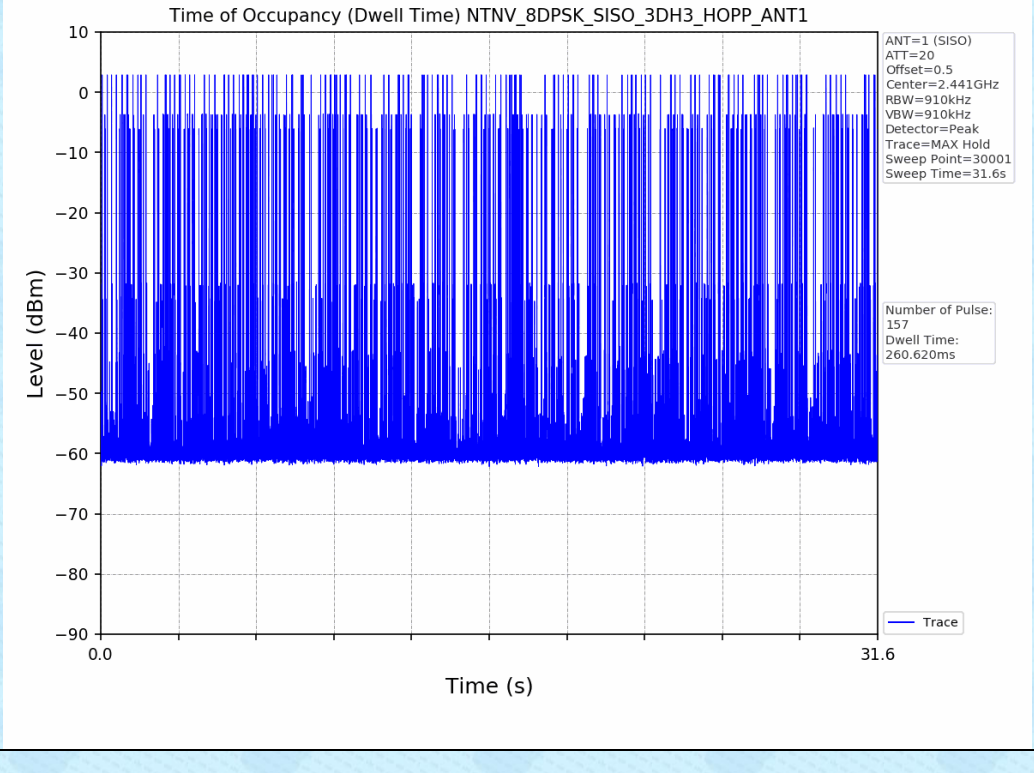

Time of Occupancy (Dwell Time) NTNV_Pi/4DQPSK_SISO_2DH5_HOPP_ANT1
Level (dBm)
Time (ms)
0.0
20.0
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
−100
ANT=1 (SISO)
ATT=20
Offset=0.5
Center=2.441GHz
RBW=910kHz
VBW=910kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=20ms
Time of Pulse:
2.900ms
Trace

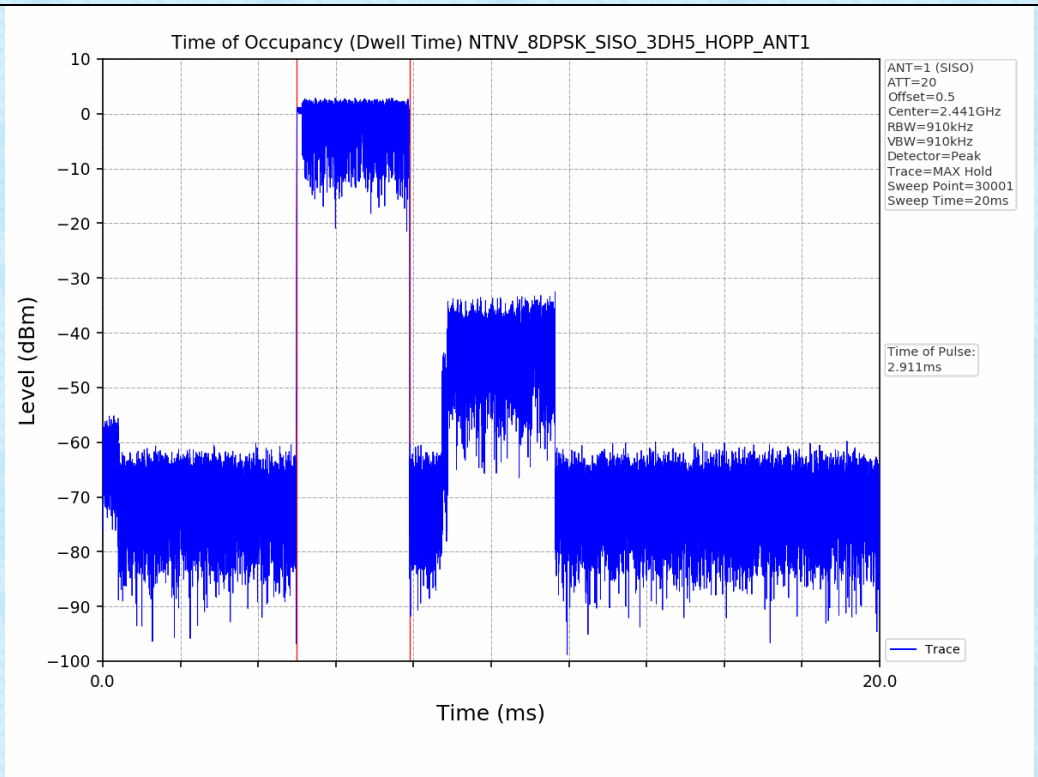

Time of Occupancy (Dwell Time) NTNV_Pi/4DQPSK_SISO_2DH5_HOPP_ANT1
Level (dBm)
Time (s)
0.0
31.6
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
ANT=1 (SISO)
ATT=20
Offset=0.5
Center=2.441GHz
RBW=910kHz
VBW=910kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=31.6s
Number of Pulse:
104
Dwell Time:
301.600ms
Trace

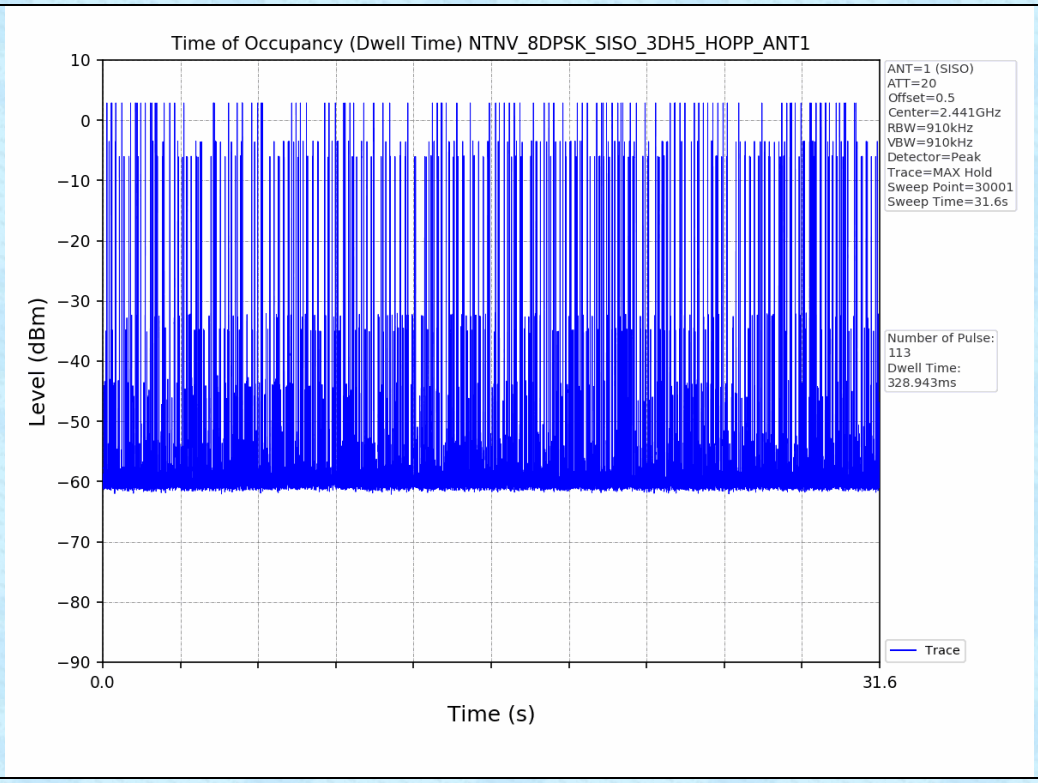

Time of Occupancy (Dwell Time) NTNV_8DPSK_SISO_3DH1_HOPP_ANT1
Level (dBm)
Time (ms)
0.0
20.0
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
−100
ANT=1 (SISO)
ATT=20
Offset=0.5
Center=2.441GHz
RBW=910kHz
VBW=910kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=20ms
Time of Pulse:
0.408ms
Trace


Time of Occupancy (Dwell Time) NTNV_8DPSK_SISO_3DH1_HOPP_ANT1
Level (dBm)
Time (s)
0.0
31.6
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
ANT=1 (SISO)
ATT=20
Offset=0.5
Center=2.441GHz
RBW=910kHz
VBW=910kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=31.6s
Number of Pulse:
320
Dwell Time:
130.560ms
Trace


Time of Occupancy (Dwell Time) NTNV_8DPSK_SISO_3DH3_HOPP_ANT1
Level (dBm)
Time (ms)
0.0
34.0
ANT=1 (SISO)
ATT=20
Offset=0.5
Center=2.441GHz
RBW=910kHz
VBW=910kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=34ms
Time of Pulse:
1.660ms
Trace


Time of Occupancy (Dwell Time) NTNV_8DPSK_SISO_3DH3_HOPP_ANT1
Level (dBm)
Time (s)
0.0
31.6
ANT=1 (SISO)
ATT=20
Offset=0.5
Center=2.441GHz
RBW=910kHz
VBW=910kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=31.6s
Number of Pulse:
157
Dwell Time:
260.620ms
Trace


Time of Occupancy (Dwell Time) NTNV_8DPSK_SISO_3DH5_HOPP_ANT1
Level (dBm)
Time (ms)
0.0
20.0
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
−100
ANT=1 (SISO)
ATT=20
Offset=0.5
Center=2.441GHz
RBW=910kHz
VBW=910kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=20ms
Time of Pulse:
2.911ms
Trace

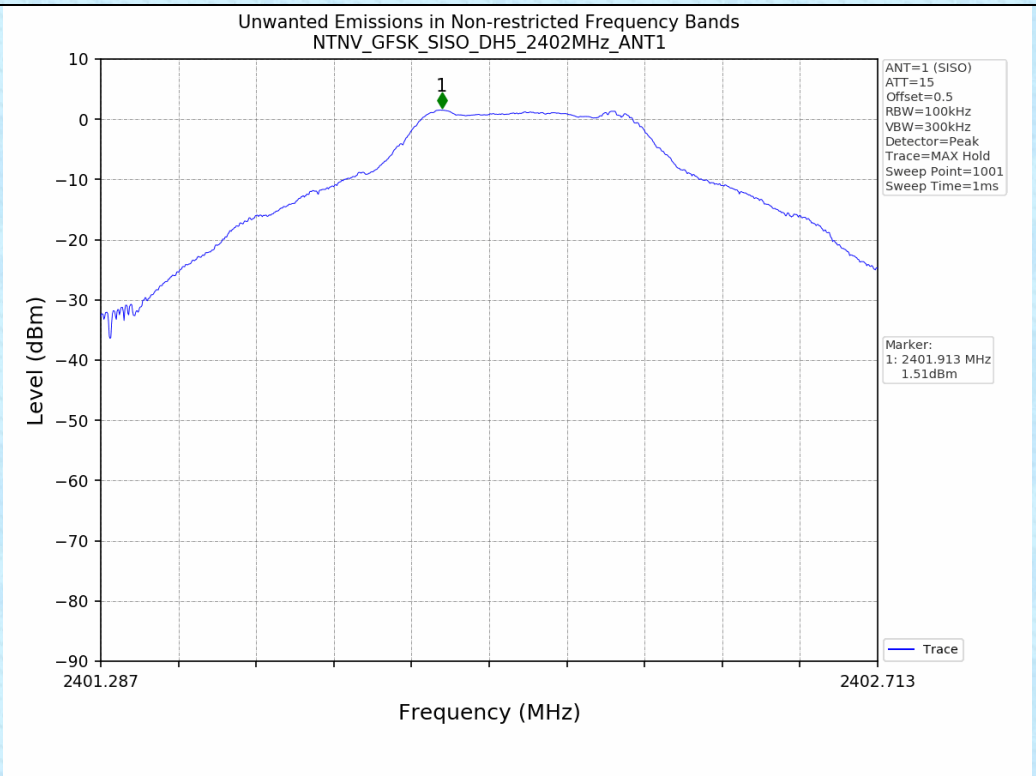

Time of Occupancy (Dwell Time) NTNV_8DPSK_SISO_3DH5_HOPP_ANT1
Level (dBm)
Time (s)
0.0
31.6
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
ANT=1 (SISO)
ATT=20
Offset=0.5
Center=2.441GHz
RBW=910kHz
VBW=910kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=30001
Sweep Time=31.6s
Number of Pulse:
113
Dwell Time:
328.943ms
Trace

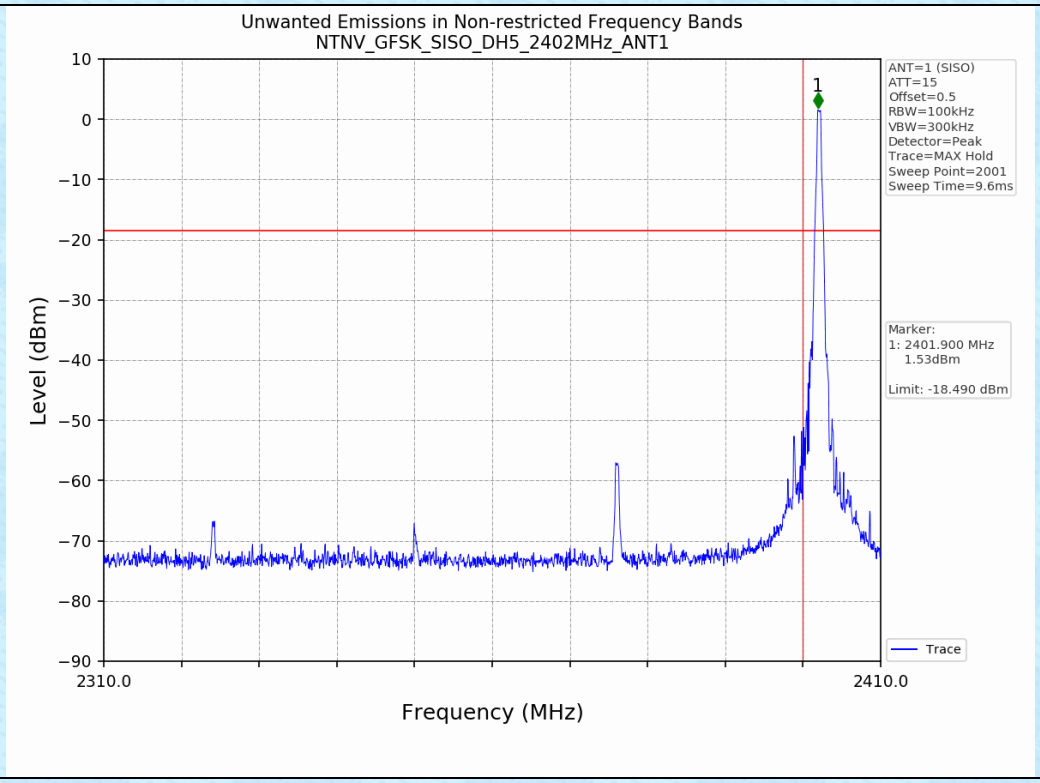
6. Unwanted Emissions in Non-restricted Frequency Bands

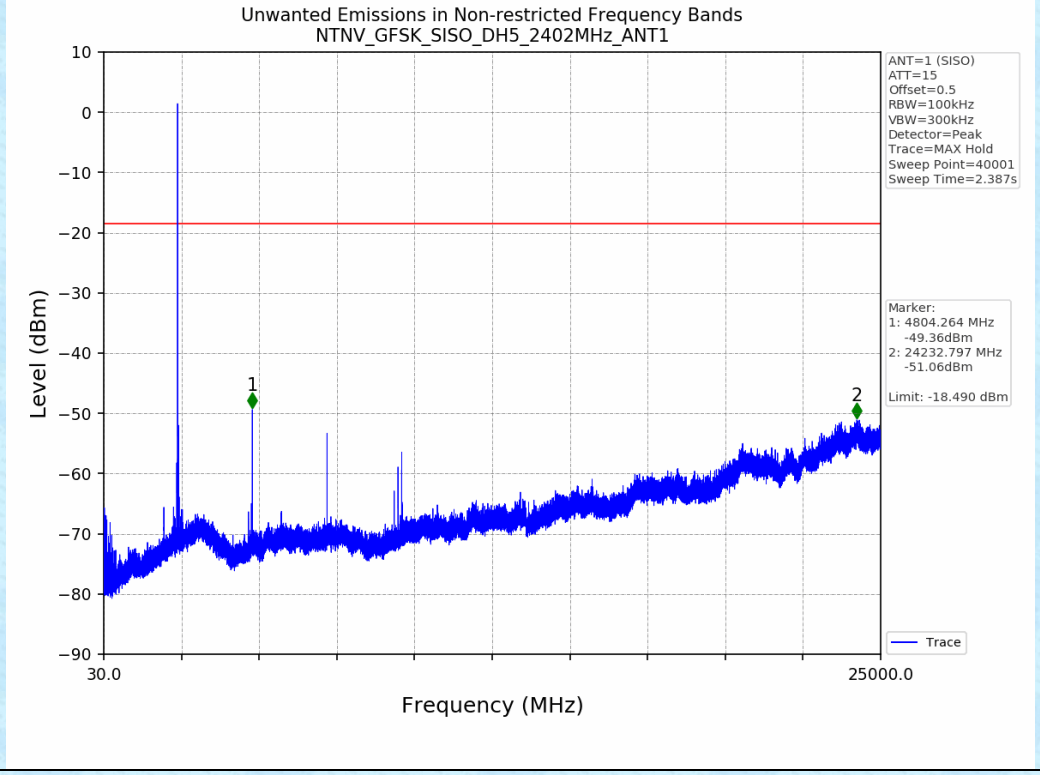
6.1 Test Result

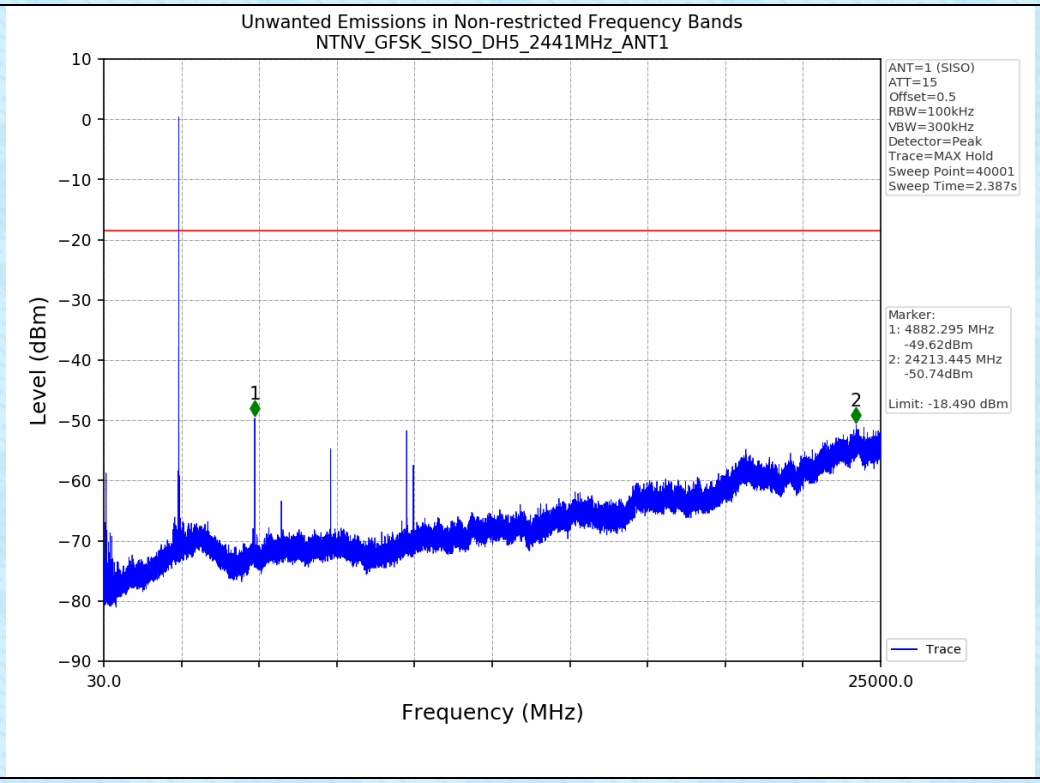
Test Mode	Frequency (MHz)	TX Type	ANT No.	Spurious Conducted Emission (dBm)	Limits (dBm)	Verdict
GFSK	2402	SISO	ANT1	Refer to test graph	-18.49	PASS
	2441	SISO	ANT1	Refer to test graph	-18.49	PASS
	2480	SISO	ANT1	Refer to test graph	-18.49	PASS
	Hopping	SISO	ANT1	Refer to test graph	-18.49	PASS
π/4-DQPSK	2402	SISO	ANT1	Refer to test graph	-18.50	PASS
	2441	SISO	ANT1	Refer to test graph	-18.50	PASS
	2480	SISO	ANT1	Refer to test graph	-18.50	PASS
	Hopping	SISO	ANT1	Refer to test graph	-18.50	PASS
8-DPSK	2402	SISO	ANT1	Refer to test graph	-18.18	PASS
	2441	SISO	ANT1	Refer to test graph	-18.18	PASS
	2480	SISO	ANT1	Refer to test graph	-18.18	PASS
	Hopping	SISO	ANT1	Refer to test graph	-18.18	PASS

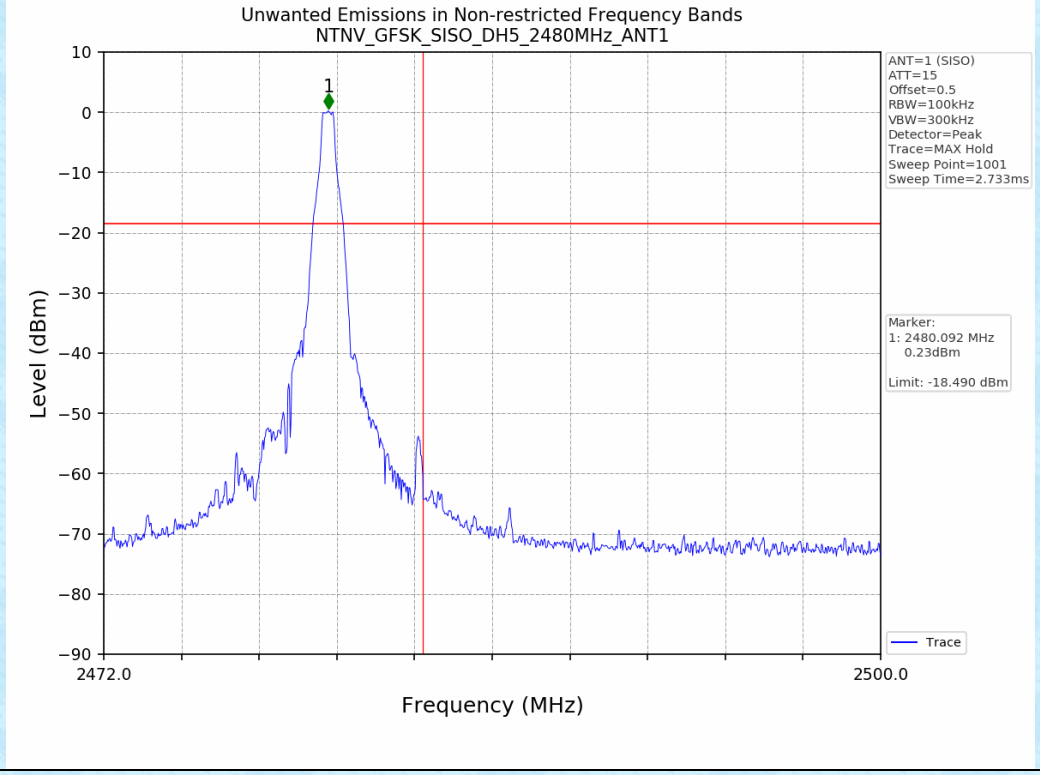
6.2 Test Graph

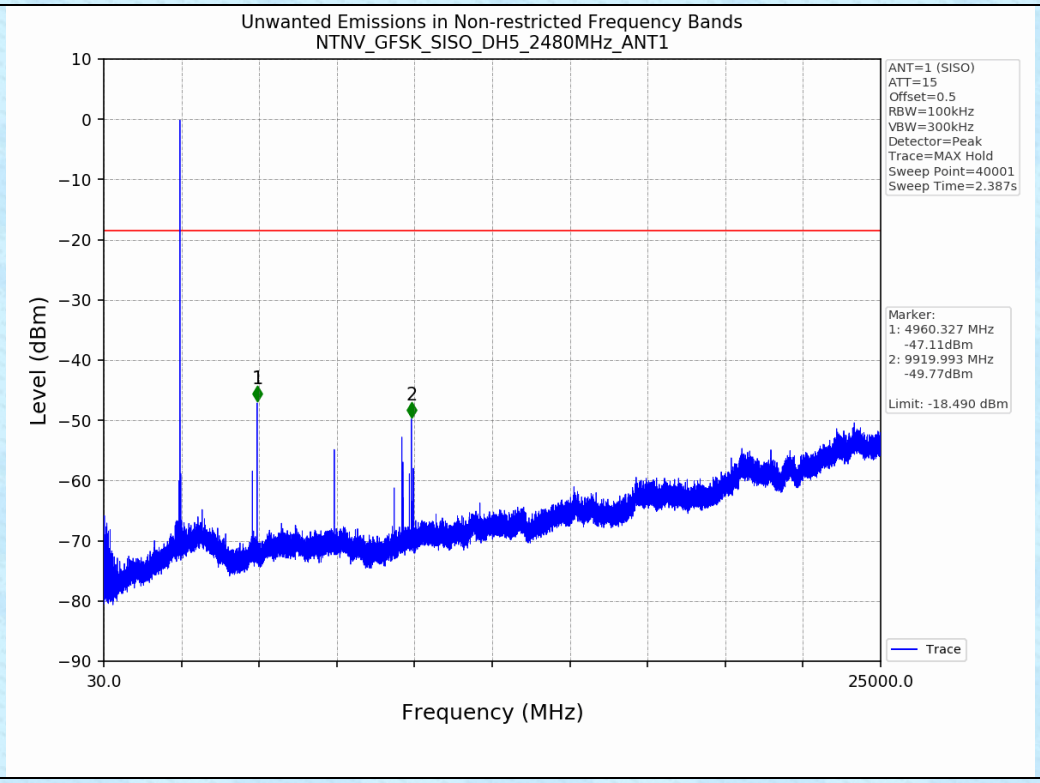


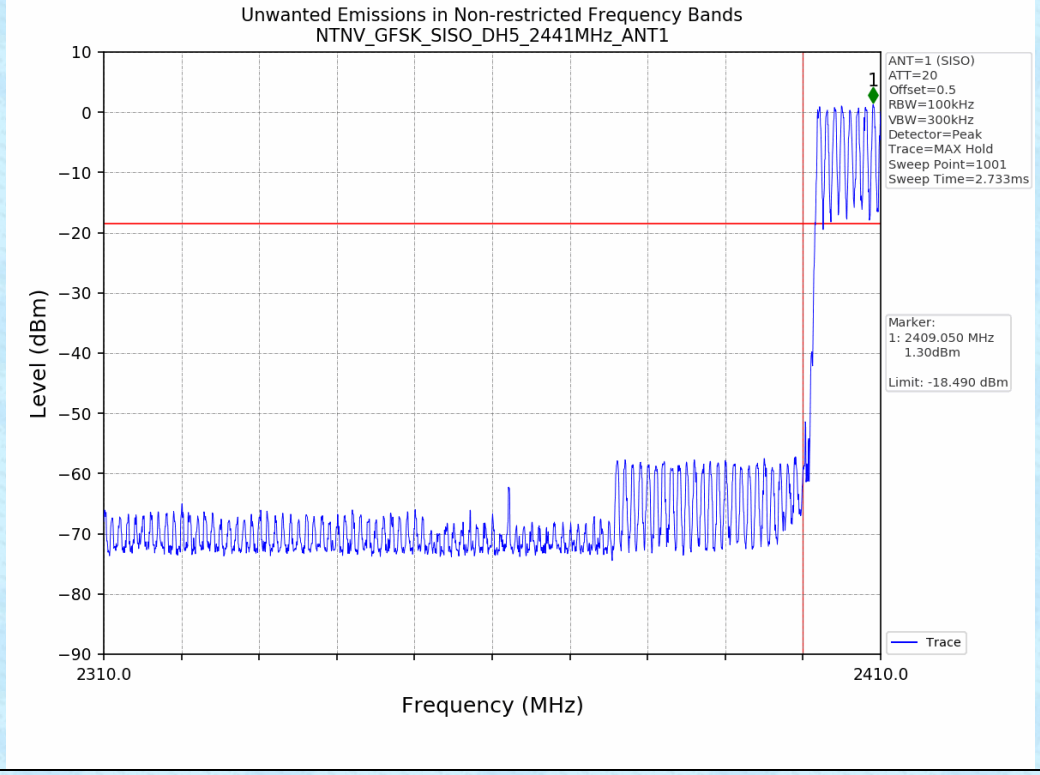

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_GFSK_SISO_DH5_2402MHz_ANT1
ANT=1 (SISO)
ATT=15
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=2001
Sweep Time=9.6ms
Marker:
1: 2401.900 MHz
1.53dBm
Limit: -18.490 dBm
Trace
Level (dBm)
Frequency (MHz)
2310.0
2410.0

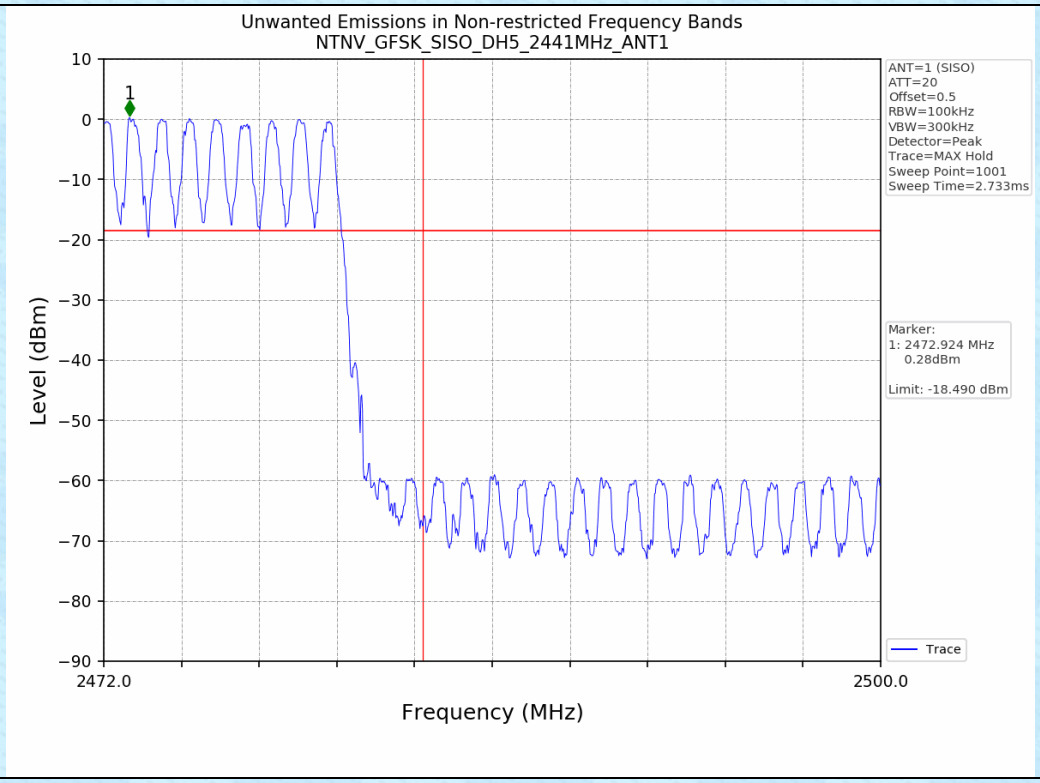

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_GFSK_SISO_DH5_2402MHz_ANT1
ANT=1 (SISO)
ATT=15
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=40001
Sweep Time=2.387s
Marker:
1: 4804.264 MHz
-49.36dBm
2: 24232.797 MHz
-51.06dBm
Limit: -18.490 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

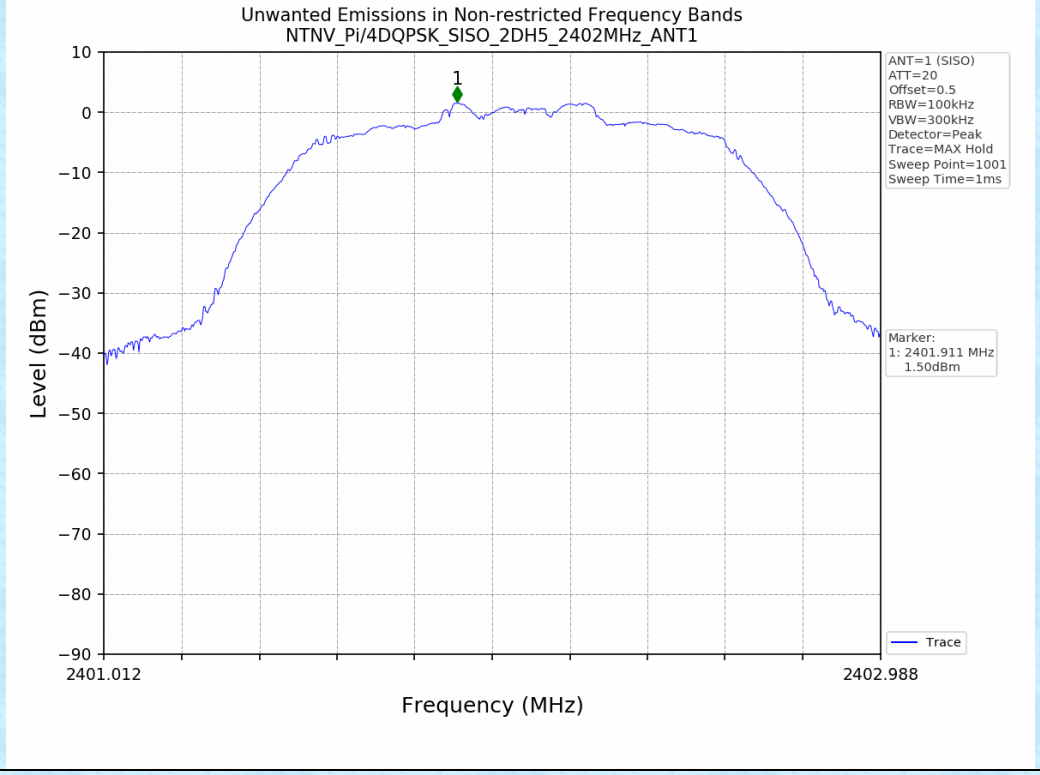

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_GFSK_SISO_DH5_2441MHz_ANT1
ANT=1 (SISO)
ATT=15
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=40001
Sweep Time=2.387s
Marker:
1: 4882.295 MHz
-49.62dBm
2: 24213.445 MHz
-50.74dBm
Limit: -18.490 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

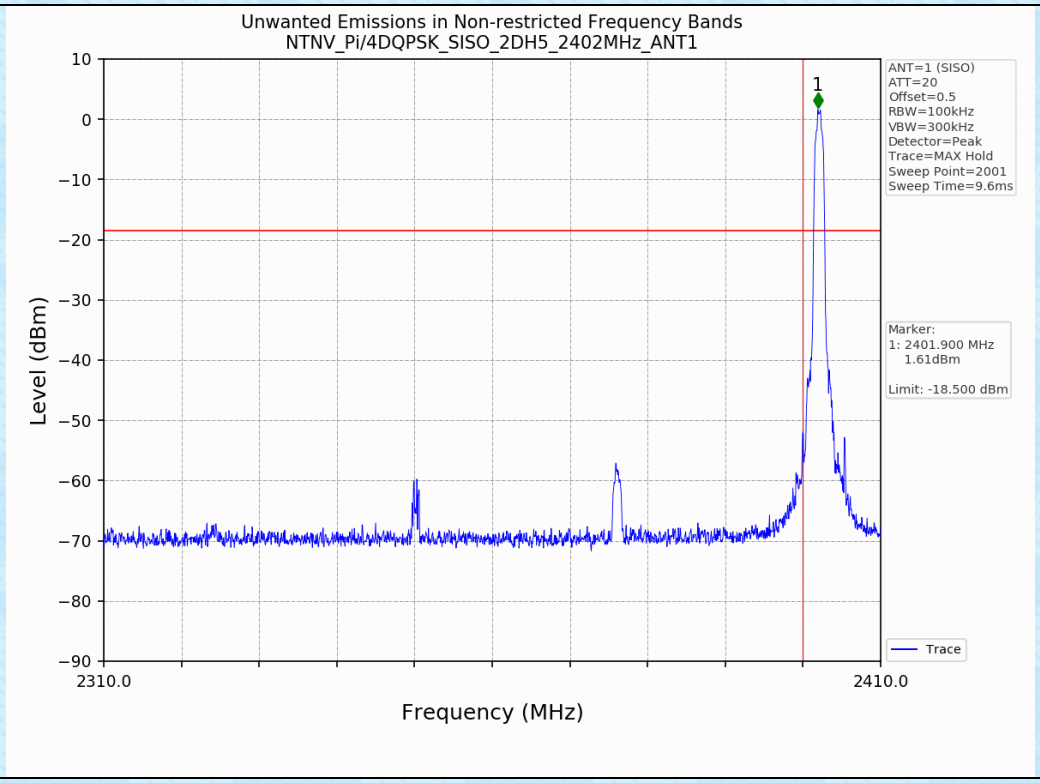

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_GFSK_SISO_DH5_2480MHz_ANT1
ANT=1 (SISO)
ATT=15
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.733ms
Marker:
1: 2480.092 MHz
0.23dBm
Limit: -18.490 dBm
Trace
Level (dBm)
Frequency (MHz)
2472.0
2500.0

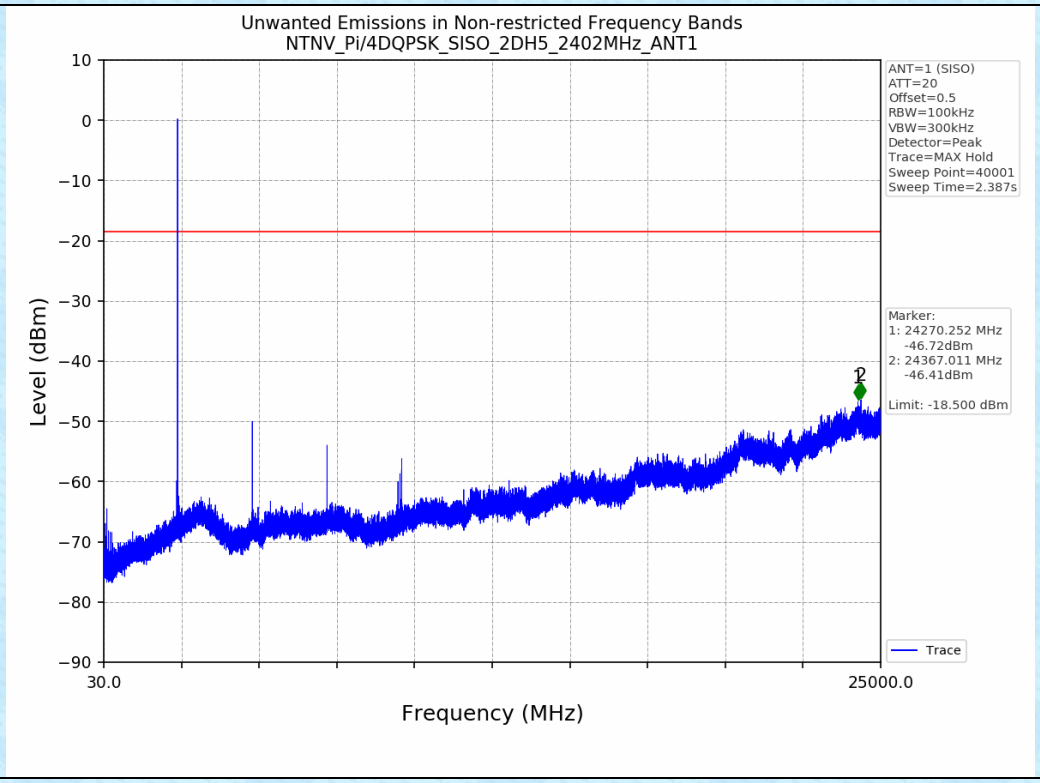

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_GFSK_SISO_DH5_2480MHz_ANT1
ANT=1 (SISO)
ATT=15
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=40001
Sweep Time=2.387s
Marker:
1: 4960.327 MHz
-47.11dBm
2: 9919.993 MHz
-49.77dBm
Limit: -18.490 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

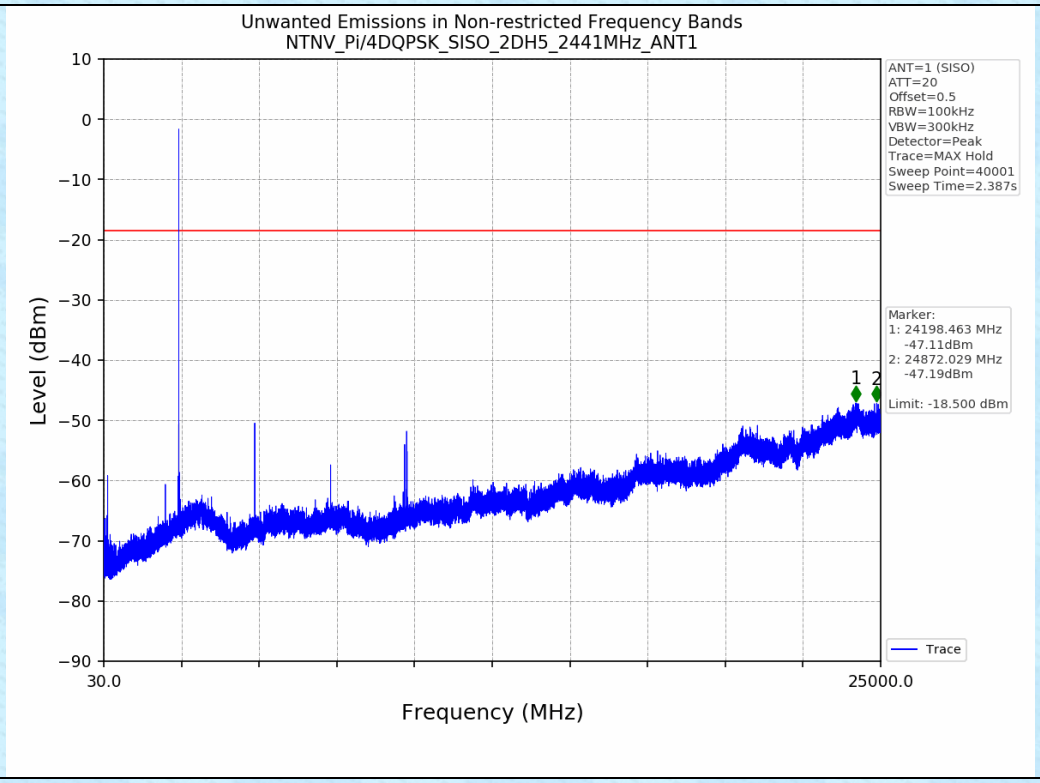

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_GFSK_SISO_DH5_2441MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.733ms
Marker:
1: 2409.050 MHz
1.30dBm
Limit: -18.490 dBm
Trace
Level (dBm)
Frequency (MHz)
2310.0
2410.0

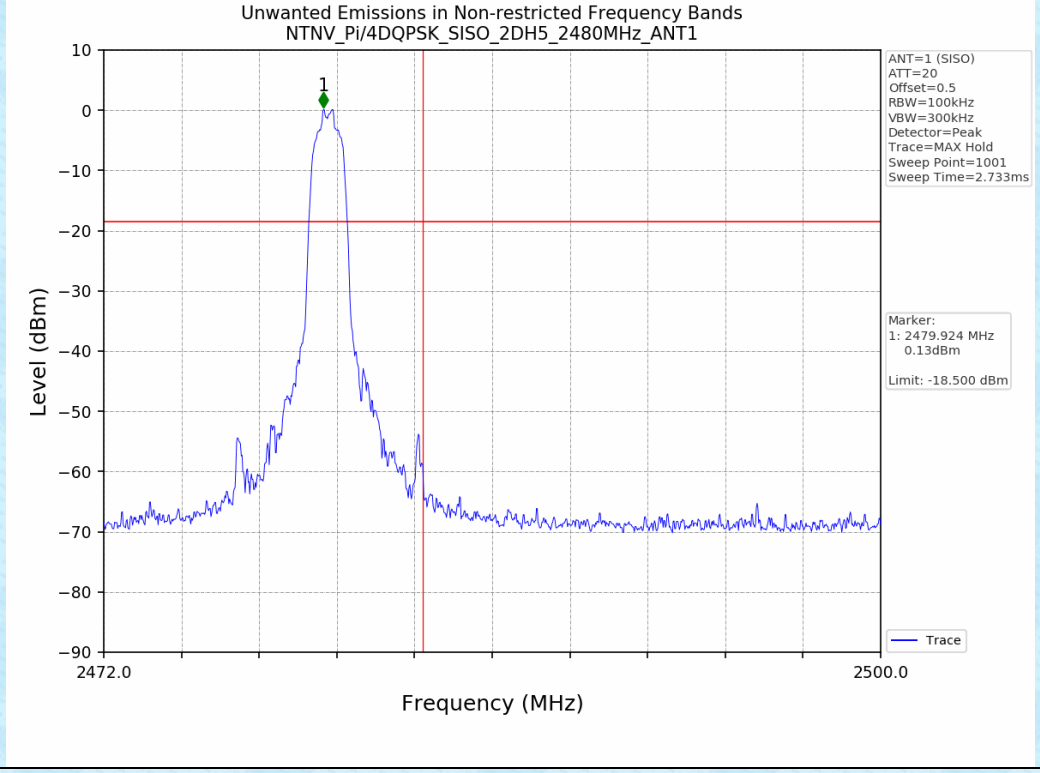

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_GFSK_SISO_DH5_2441MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.733ms
Marker:
1: 2472.924 MHz
0.28dBm
Limit: -18.490 dBm
Trace
Level (dBm)
Frequency (MHz)
2472.0
2500.0

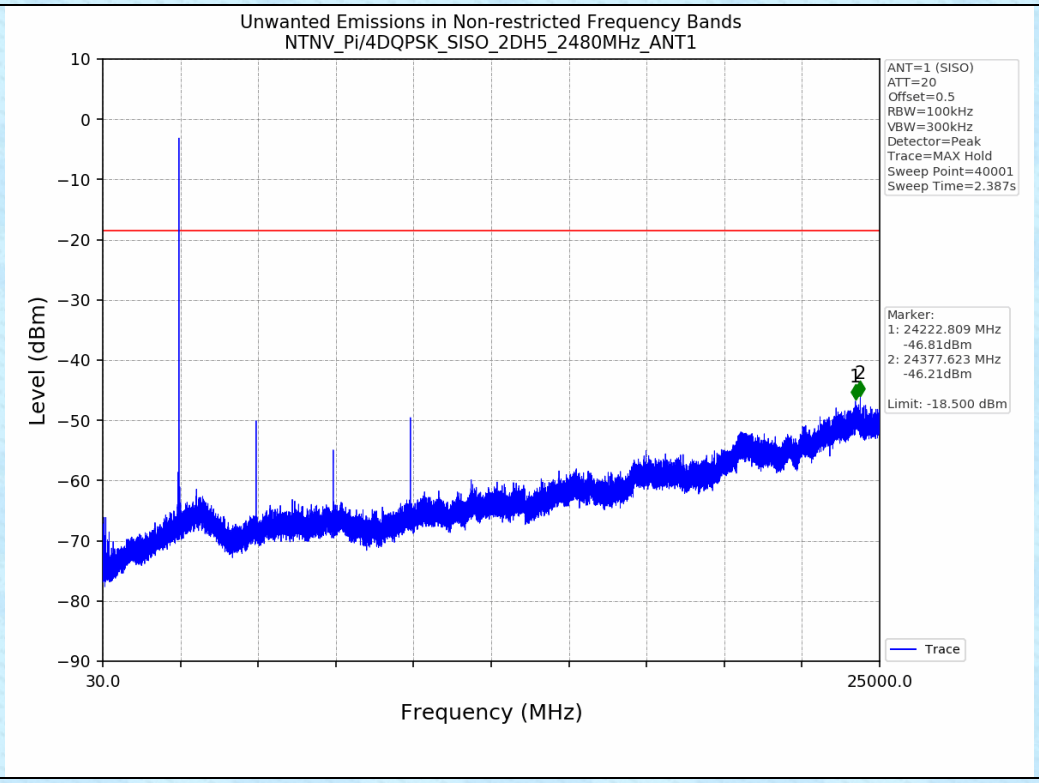

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_Pi/4DQPSK_SISO_2DH5_2402MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Marker:
1: 2401.911 MHz
1.50dBm
Trace
Level (dBm)
Frequency (MHz)
2401.012
2402.988

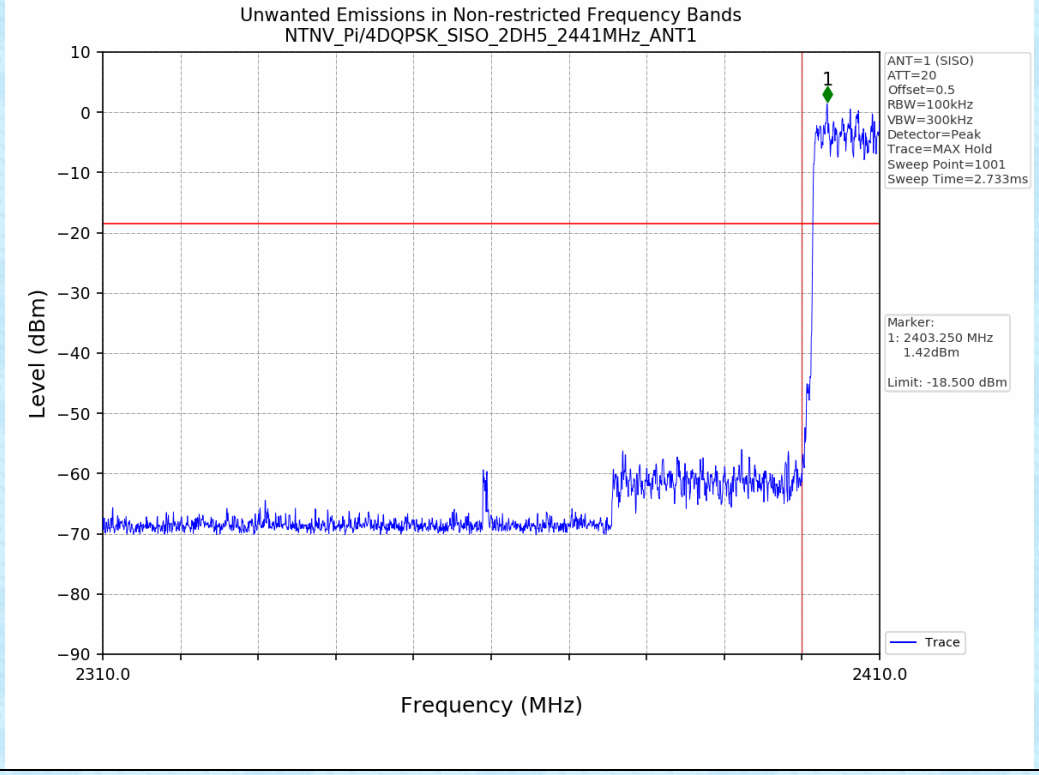

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_Pi/4DQPSK_SISO_2DH5_2402MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=2001
Sweep Time=9.6ms
Marker:
1: 2401.900 MHz
1.61dBm
Limit: -18.500 dBm
Trace
Level (dBm)
Frequency (MHz)
2310.0
2410.0

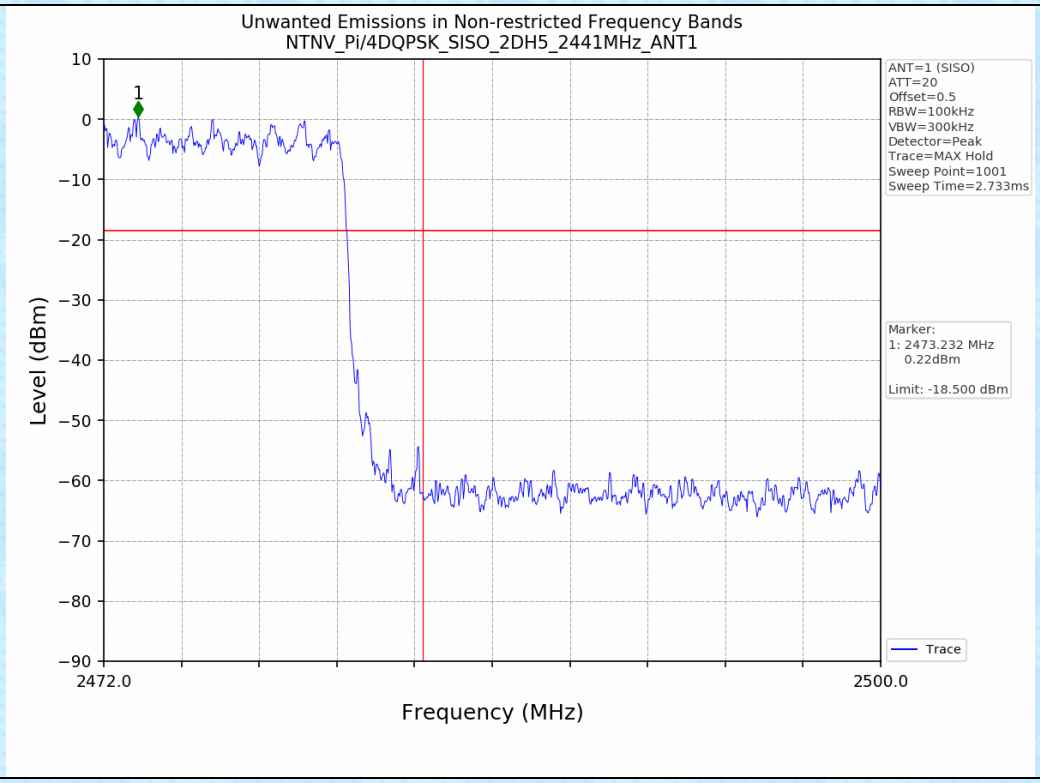

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_Pi/4DQPSK_SISO_2DH5_2402MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=40001
Sweep Time=2.387s
Marker:
1: 24270.252 MHz
-46.72dBm
2: 24367.011 MHz
-46.41dBm
Limit: -18.500 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

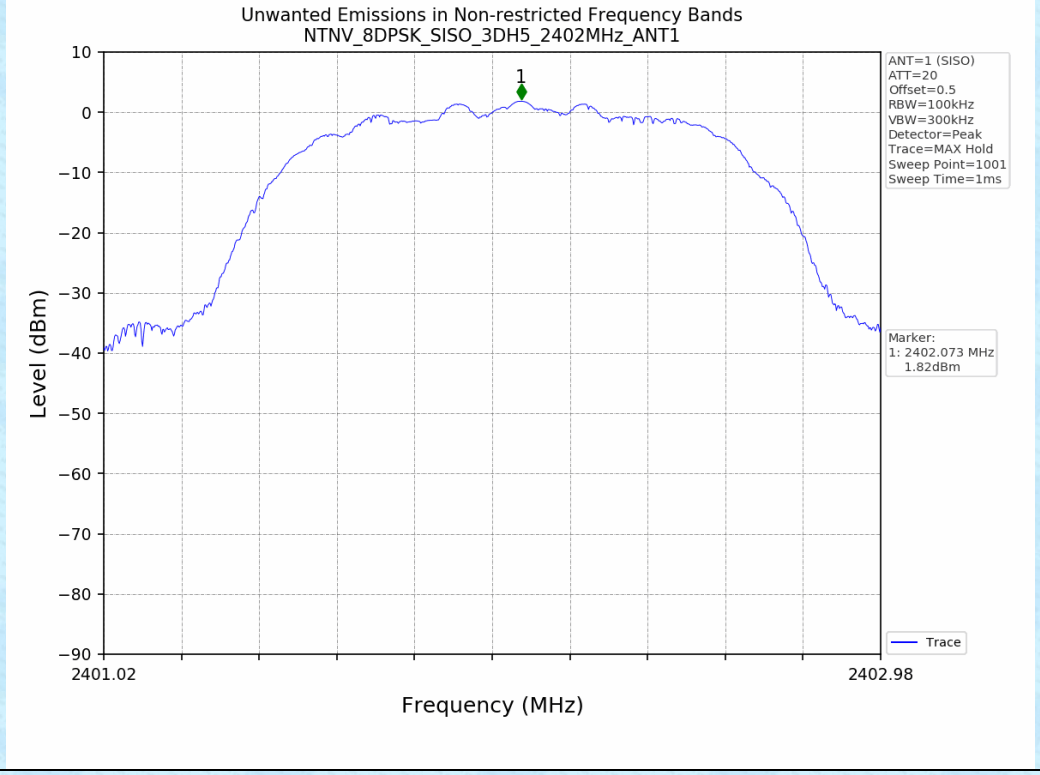

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_Pi/4DQPSK_SISO_2DH5_2441MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=40001
Sweep Time=2.387s
Marker:
1: 24198.463 MHz
-47.11dBm
2: 24872.029 MHz
-47.19dBm
Limit: -18.500 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

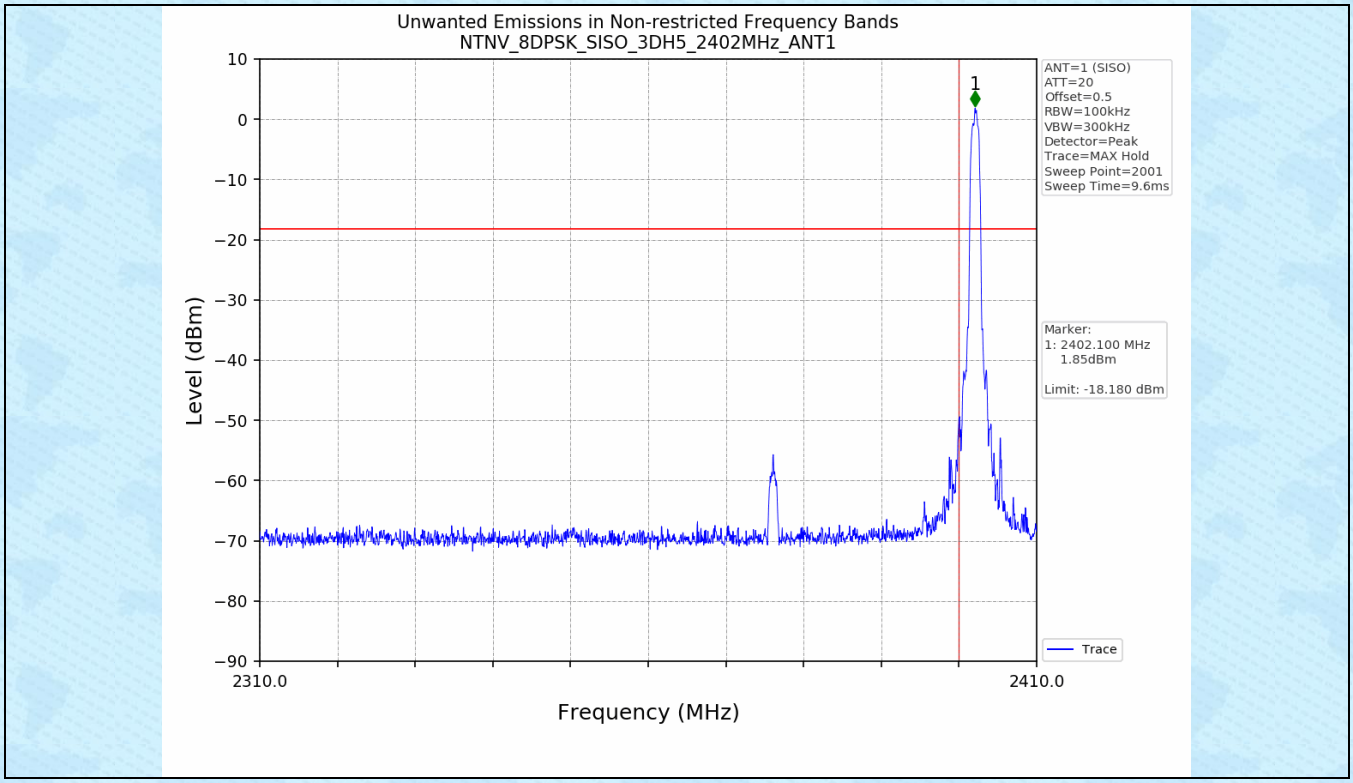

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_Pi/4DQPSK_SISO_2DH5_2480MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.733ms
Marker:
1: 2479.924 MHz
0.13dBm
Limit: -18.500 dBm
Trace
Level (dBm)
Frequency (MHz)
2472.0
2500.0

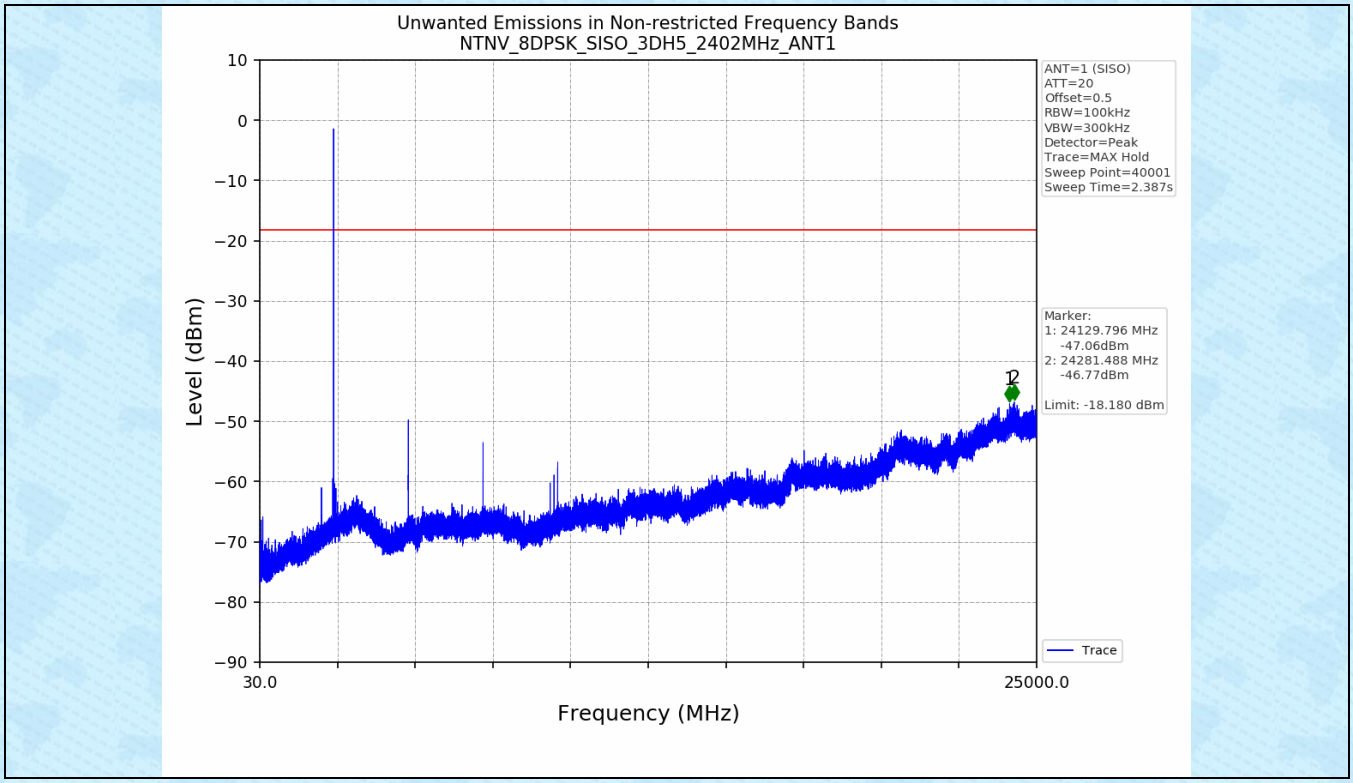

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_Pi/4DQPSK_SISO_2DH5_2480MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=40001
Sweep Time=2.387s
Marker:
1: 24222.809 MHz
-46.81dBm
2: 24377.623 MHz
-46.21dBm
Limit: -18.500 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

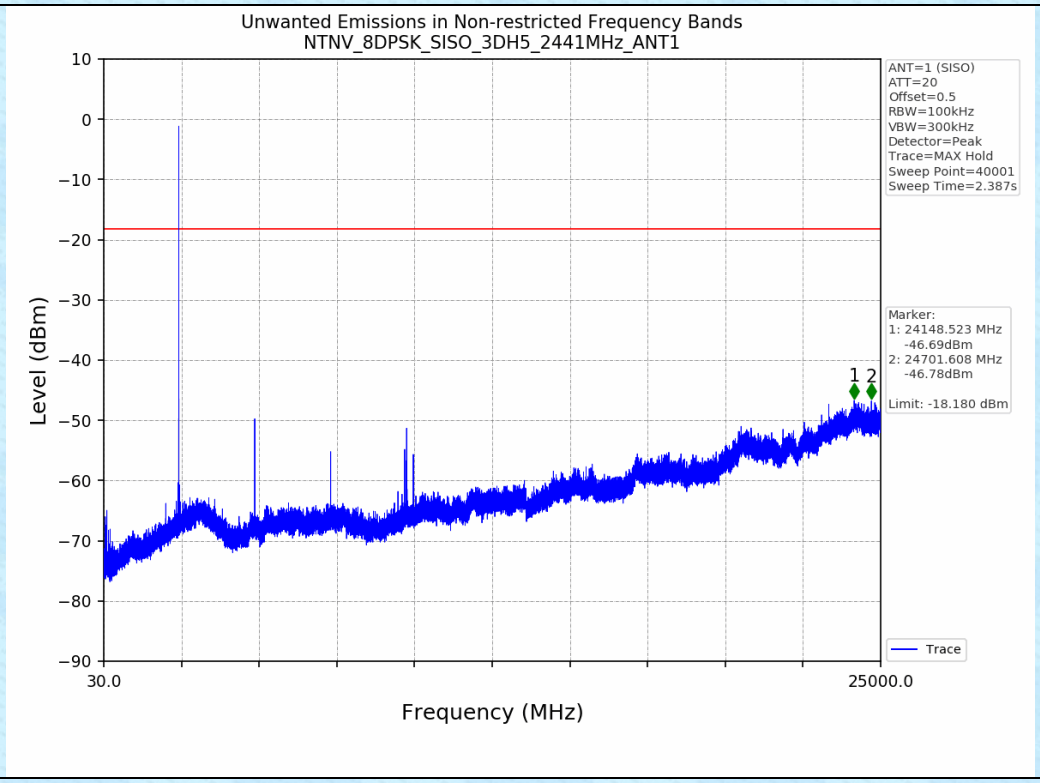

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_Pi/4DQPSK_SISO_2DH5_2441MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.733ms
Marker:
1: 2403.250 MHz
1.42dBm
Limit: -18.500 dBm
Trace
Level (dBm)
Frequency (MHz)
2310.0
2410.0

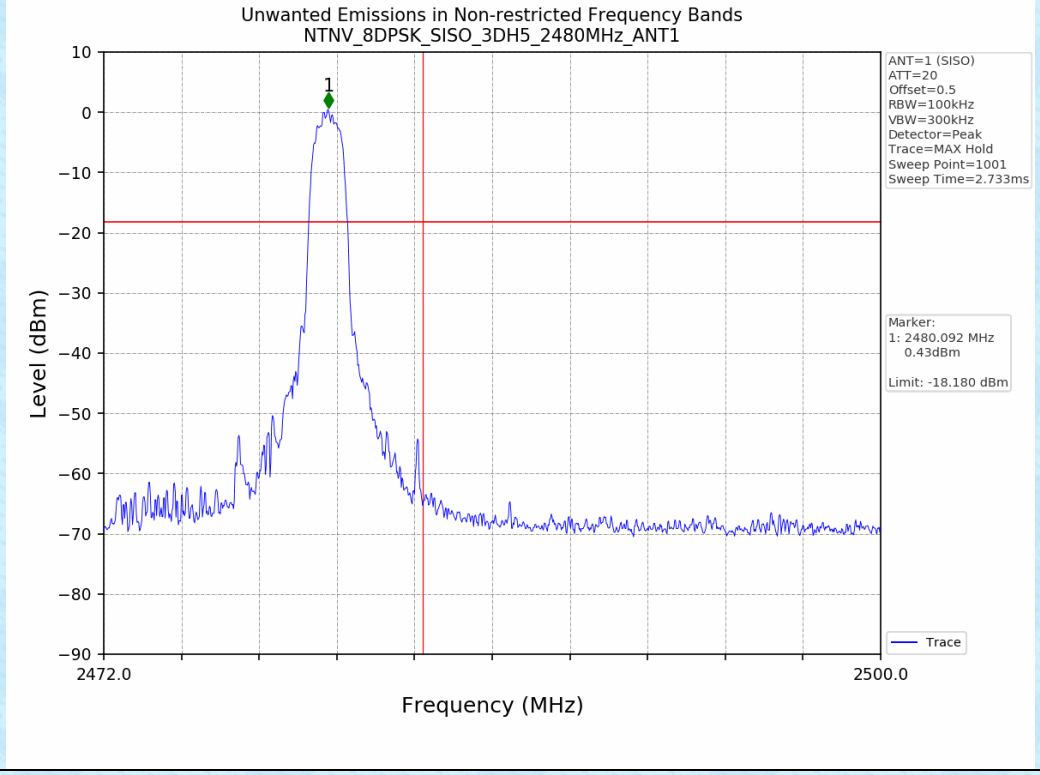

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_Pi/4DQPSK_SISO_2DH5_2441MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.733ms
Marker:
1: 2473.232 MHz
0.22dBm
Limit: -18.500 dBm
Trace
Level (dBm)
Frequency (MHz)
2472.0
2500.0

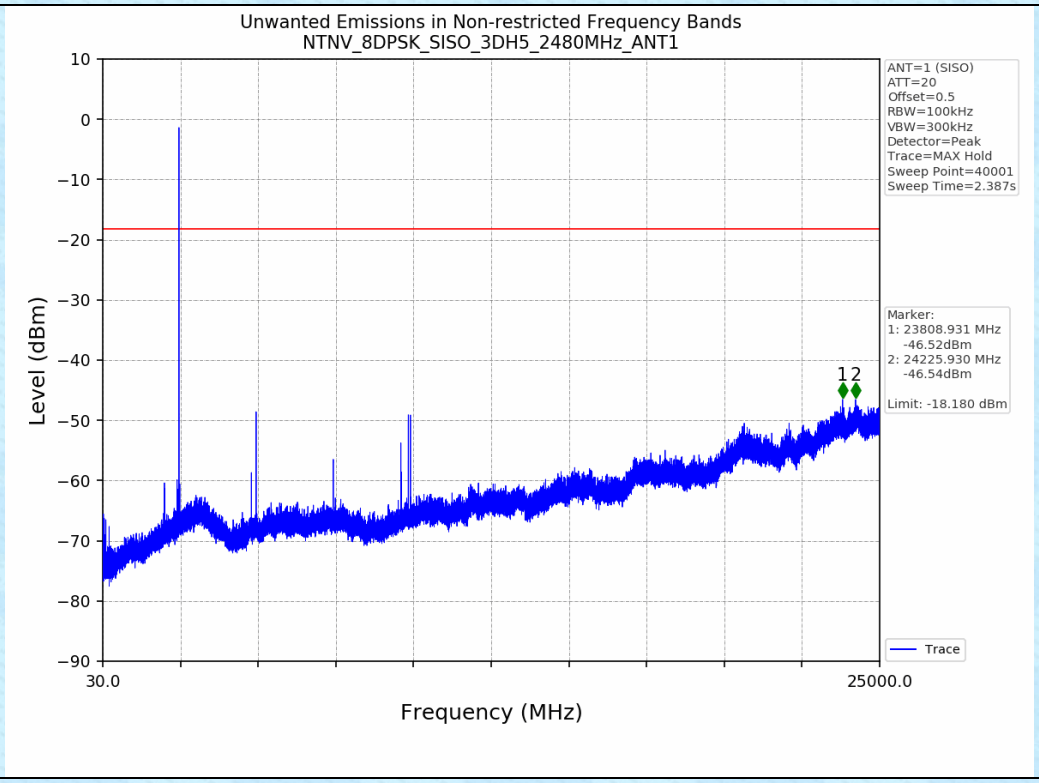

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_8DPSK_SISO_3DH5_2402MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=1ms
Marker:
1: 2402.073 MHz
1.82dBm
Trace
Level (dBm)
Frequency (MHz)
2401.02
2402.98

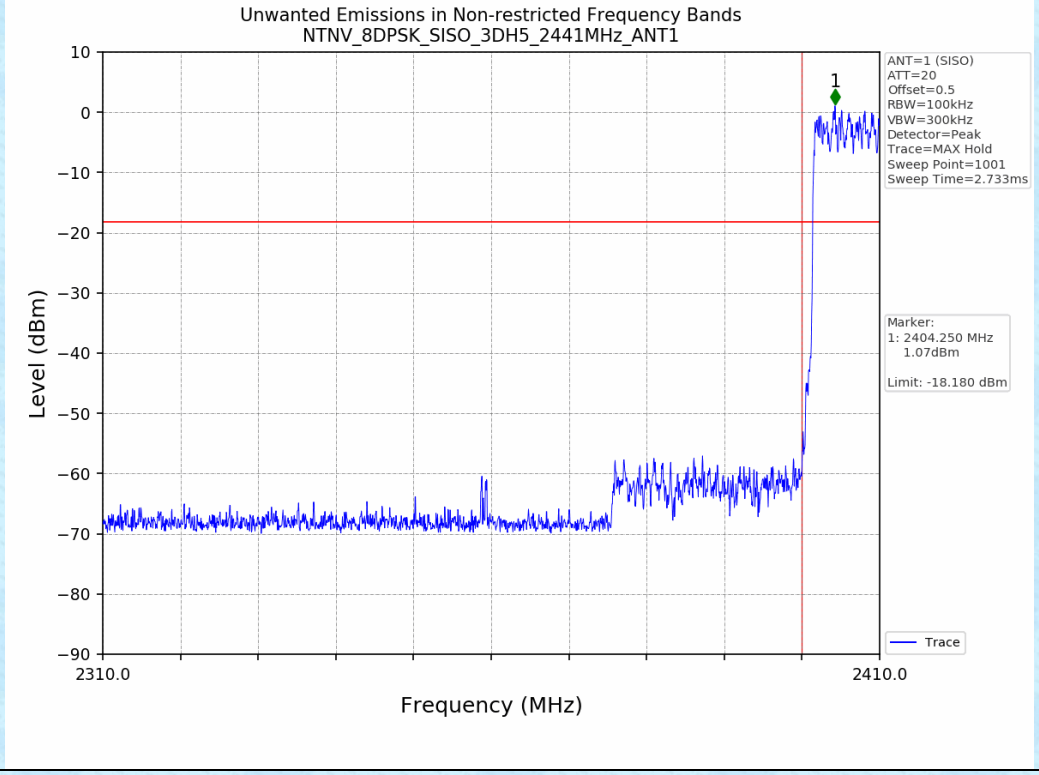

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_8DPSK_SISO_3DH5_2402MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=2001
Sweep Time=9.6ms
Marker:
1: 2402.100 MHz
1.85dBm
Limit: -18.180 dBm
Trace
Level (dBm)
Frequency (MHz)
2310.0
2410.0

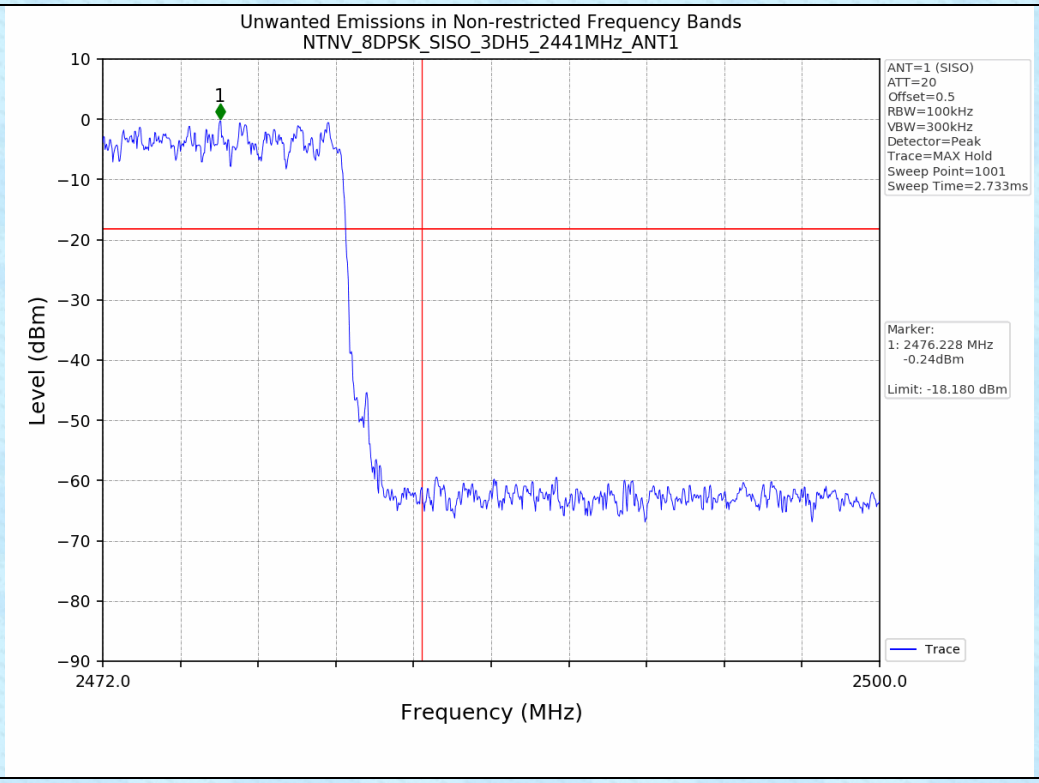

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_8DPSK_SISO_3DH5_2402MHz_ANT1
ANT=1 (SISO)
ATT=20
Offset=0.5
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=40001
Sweep Time=2.387s
Marker:
1: 24129.796 MHz
-47.06dBm
2: 24281.488 MHz
-46.77dBm
Limit: -18.180 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0


Unwanted Emissions in Non-restricted Frequency Bands
NTNV_8DPSK_SISO_3DH5_2441MHz_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: 24148.523 MHz
-46.69dBm
2: 24701.608 MHz
-46.78dBm
Limit: -18.180 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0


Unwanted Emissions in Non-restricted Frequency Bands
NTNV_8DPSK_SISO_3DH5_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: 2480.092 MHz
0.43dBm
Limit: -18.180 dBm
Trace
Level (dBm)
Frequency (MHz)
2472.0
2500.0


Unwanted Emissions in Non-restricted Frequency Bands
NTNV_8DPSK_SISO_3DH5_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: 23808.931 MHz
-46.52dBm
2: 24225.930 MHz
-46.54dBm
Limit: -18.180 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0


Unwanted Emissions in Non-restricted Frequency Bands
NTNV_8DPSK_SISO_3DH5_2441MHz_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: 2404.250 MHz
1.07dBm
Limit: -18.180 dBm
Trace
Level (dBm)
Frequency (MHz)
2310.0
2410.0


Unwanted Emissions in Non-restricted Frequency Bands
NTNV_8DPSK_SISO_3DH5_2441MHz_ANT1
Level (dBm)
Frequency (MHz)
2472.0
2500.0
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
1
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: 2476.228 MHz
-0.24dBm
Limit: -18.180 dBm
Trace

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