

Appendix for 15.247

Product Name: Smart Lock

Test Model: F11S

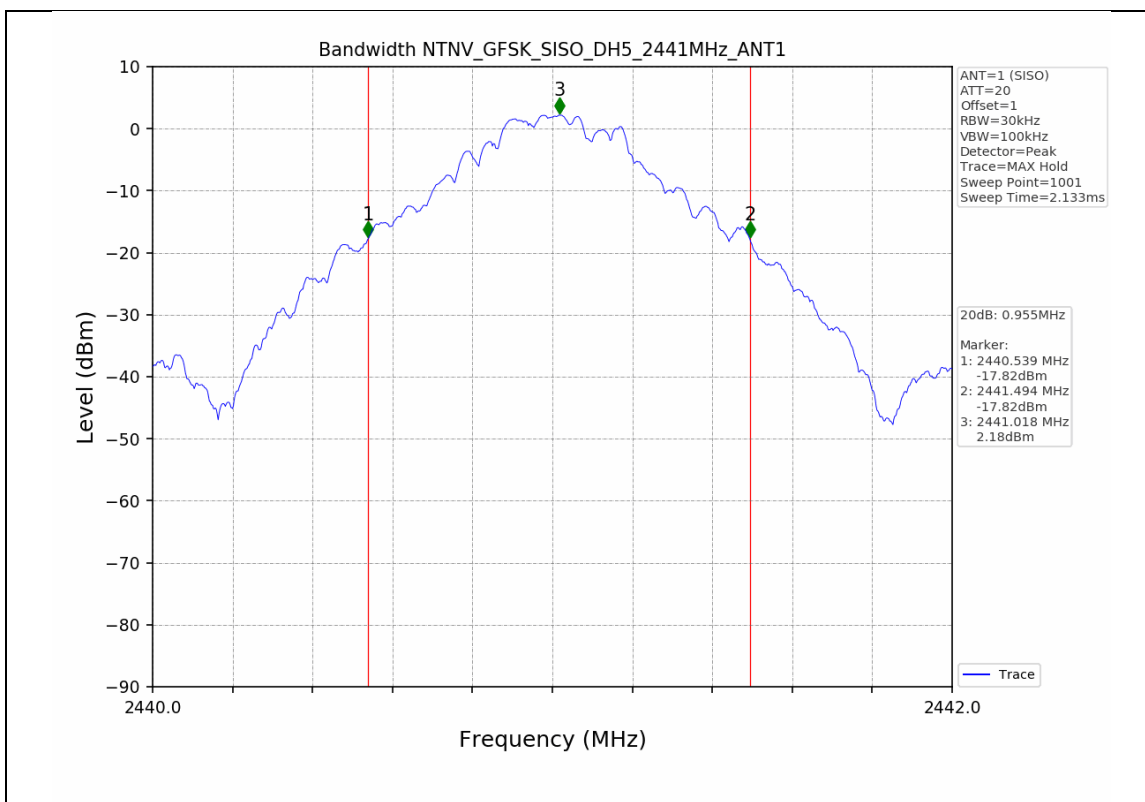
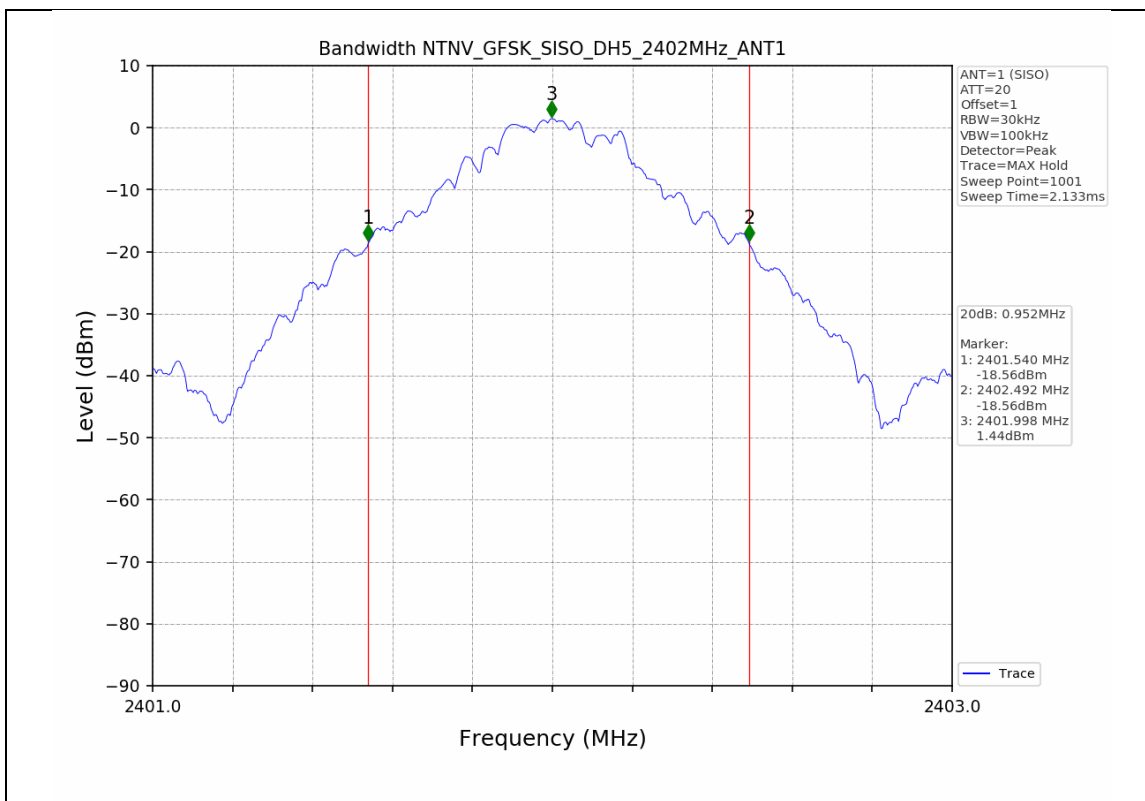
1. Bandwidth

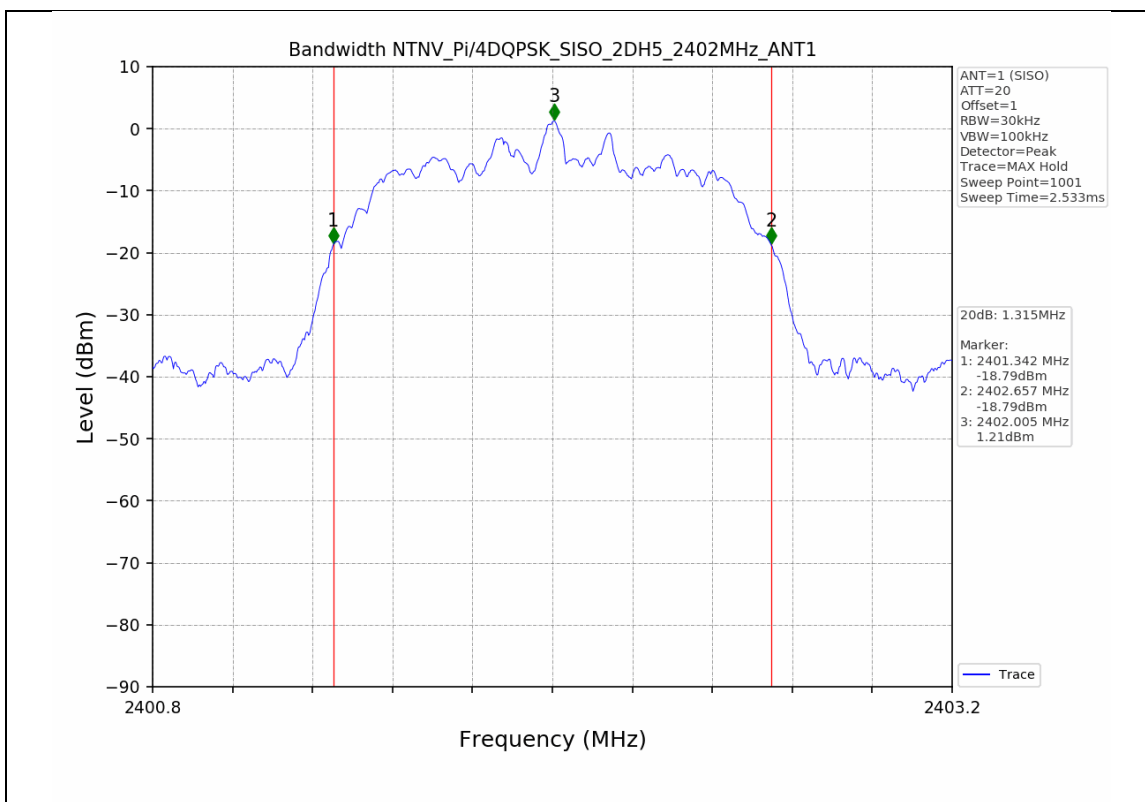
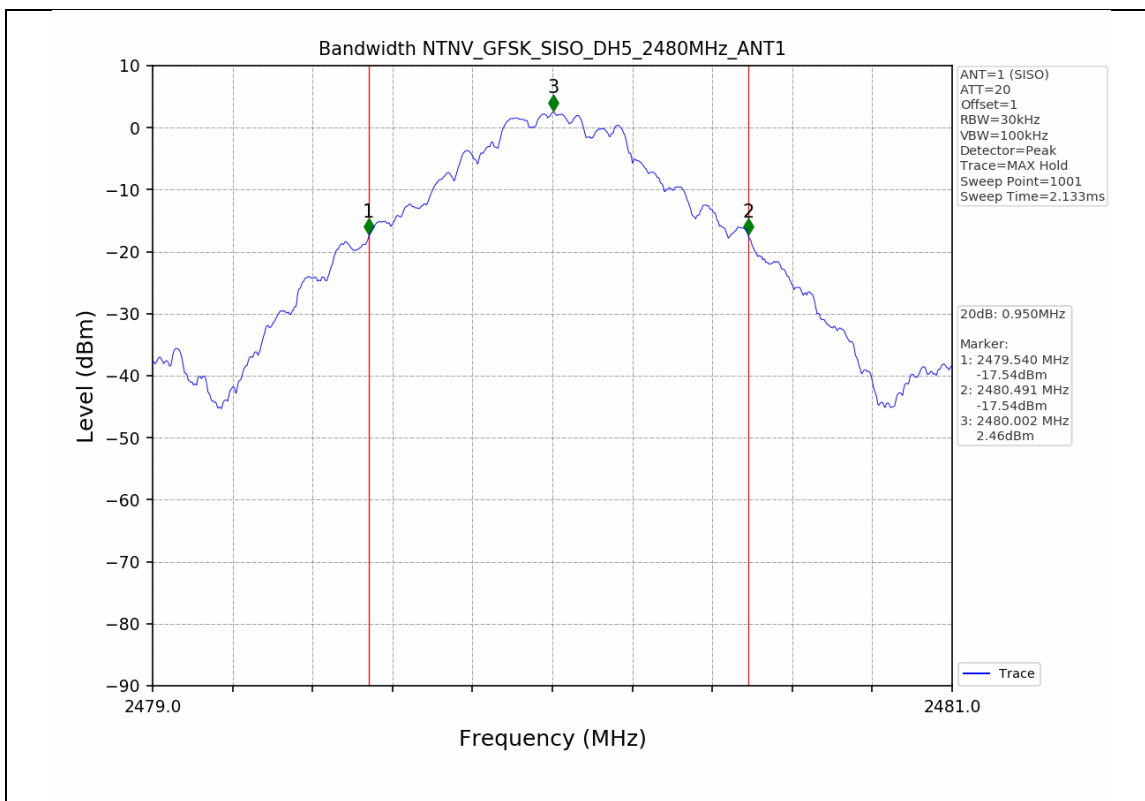
1.1 Test Result

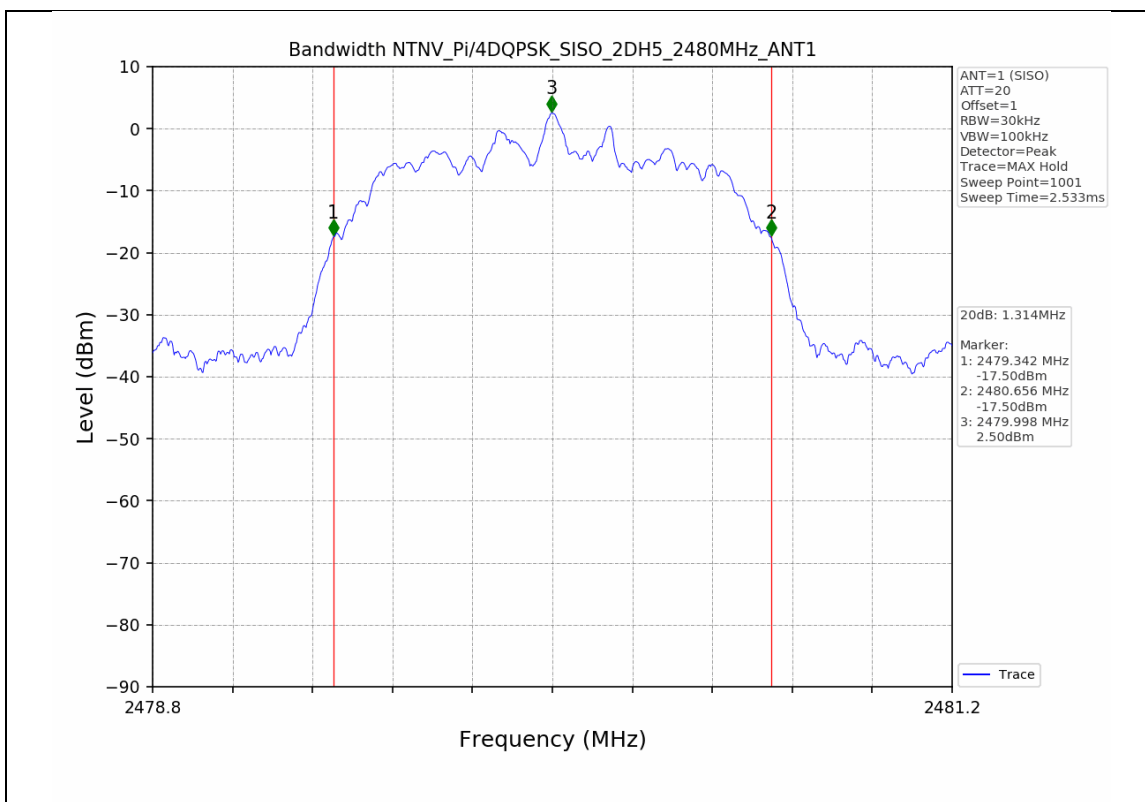
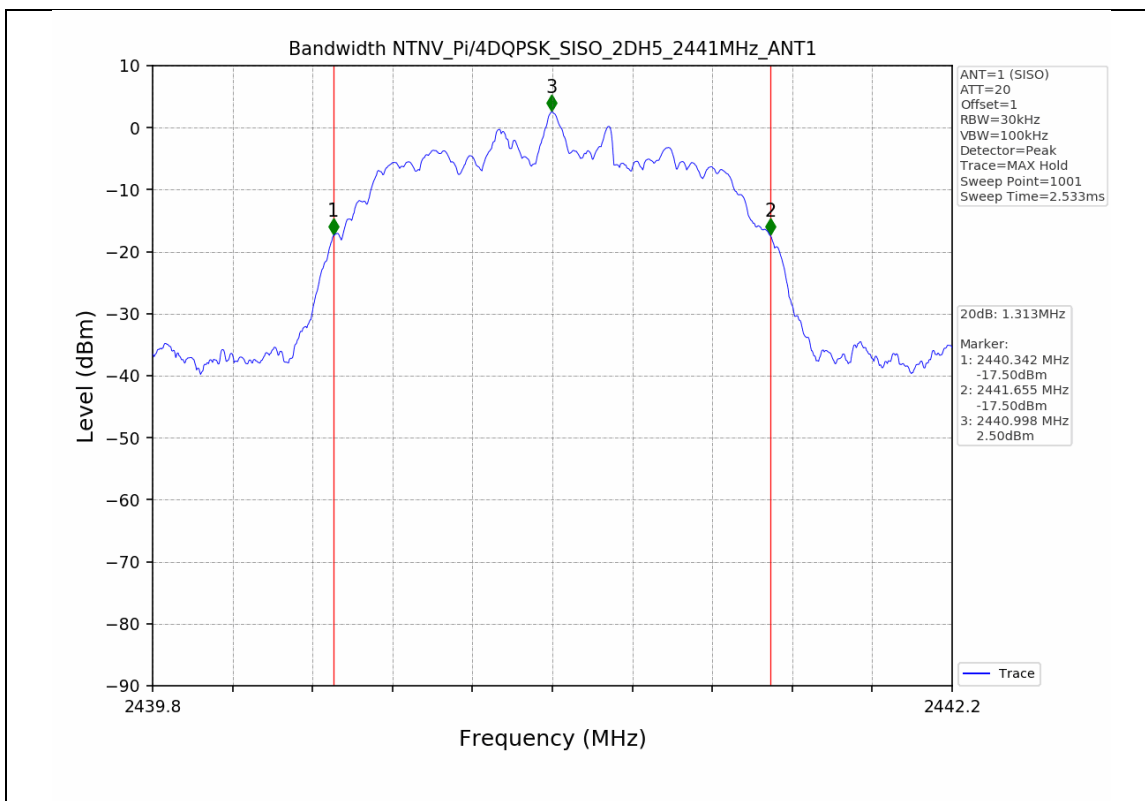
Test Mode	Frequency (MHz)	TX Type	ANT No.	20dB Bandwidth	Verdict
				Test Result (MHz)	
GFSK	2402	SISO	1	0.952	PASS
	2441	SISO	1	0.955	PASS
	2480	SISO	1	0.950	PASS
Pi/4DQPSK	2402	SISO	1	1.315	PASS
	2441	SISO	1	1.313	PASS
	2480	SISO	1	1.314	PASS
8DPSK	2402	SISO	1	1.315	PASS
	2441	SISO	1	1.312	PASS
	2480	SISO	1	1.320	PASS

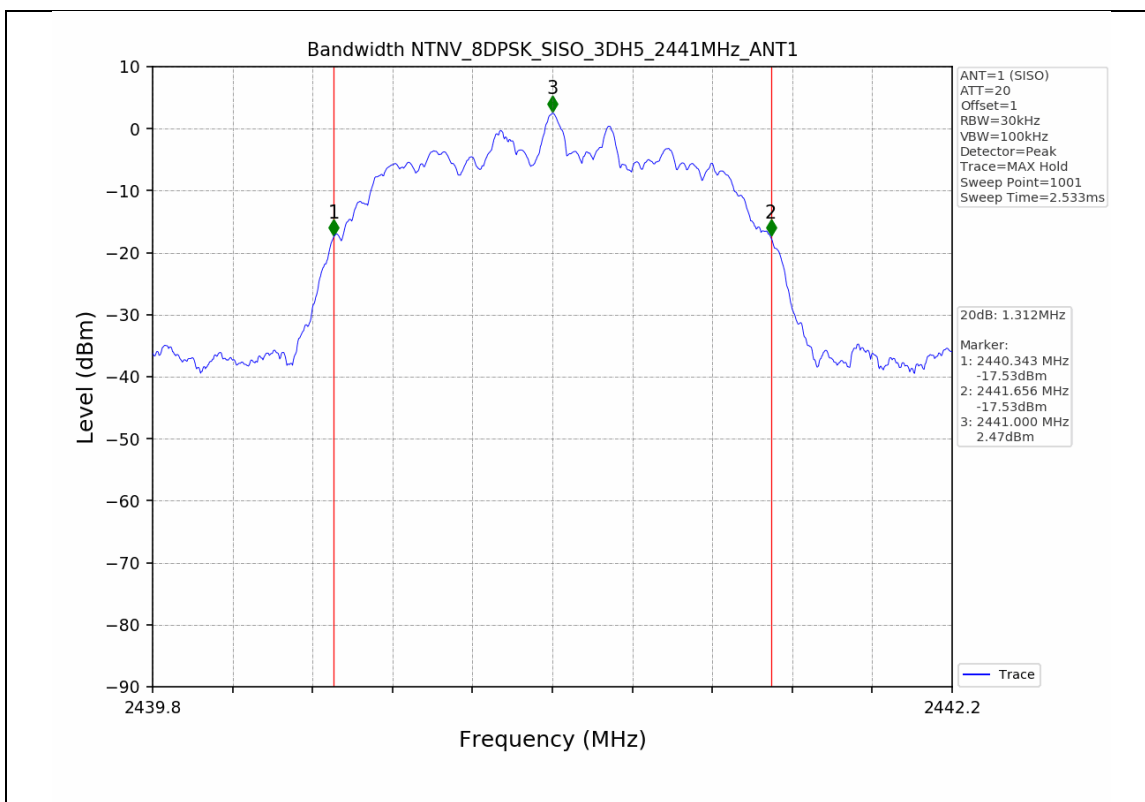
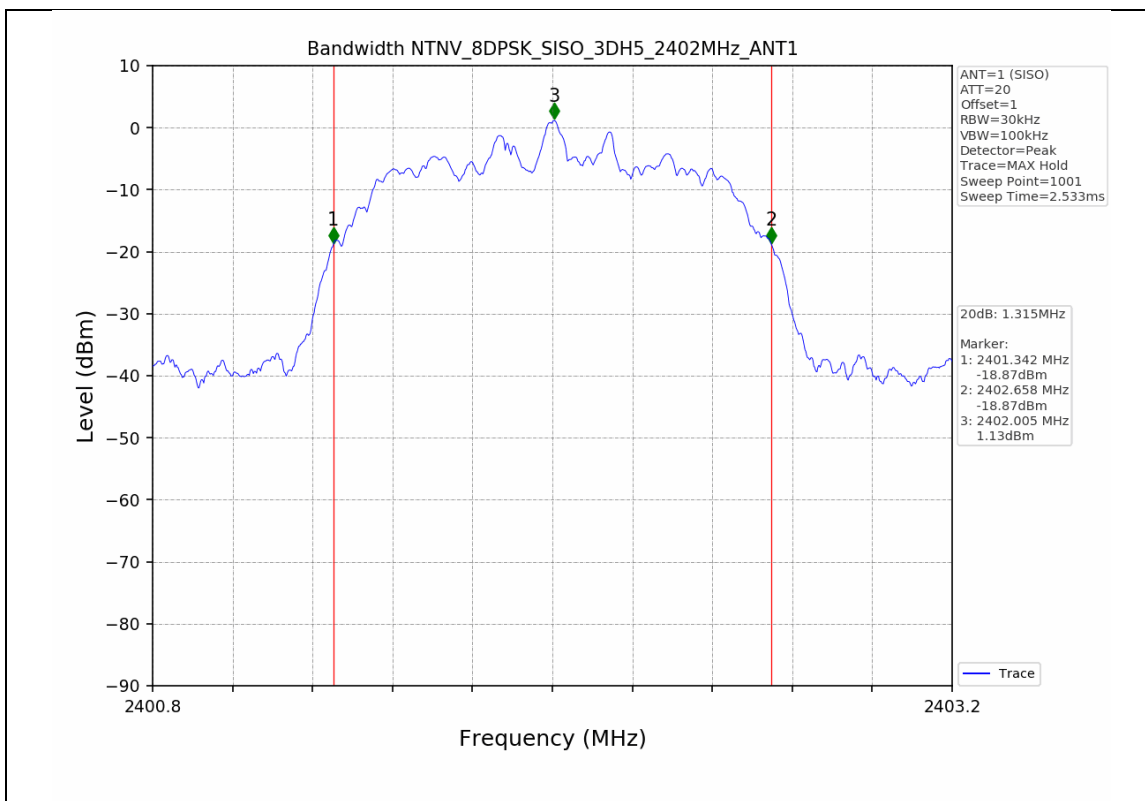
Test Mode	Frequency (MHz)	TX Type	ANT No.	99% Occupied Bandwidth	
				Test Result (MHz)	
GFSK	2402	SISO	1	0.854	Only for Report Use
	2441	SISO	1	0.853	Only for Report Use
	2480	SISO	1	0.856	Only for Report Use
Pi/4DQPSK	2402	SISO	1	1.180	Only for Report Use
	2441	SISO	1	1.182	Only for Report Use
	2480	SISO	1	1.183	Only for Report Use
8DPSK	2402	SISO	1	1.181	Only for Report Use
	2441	SISO	1	1.184	Only for Report Use
	2480	SISO	1	1.187	Only for Report Use

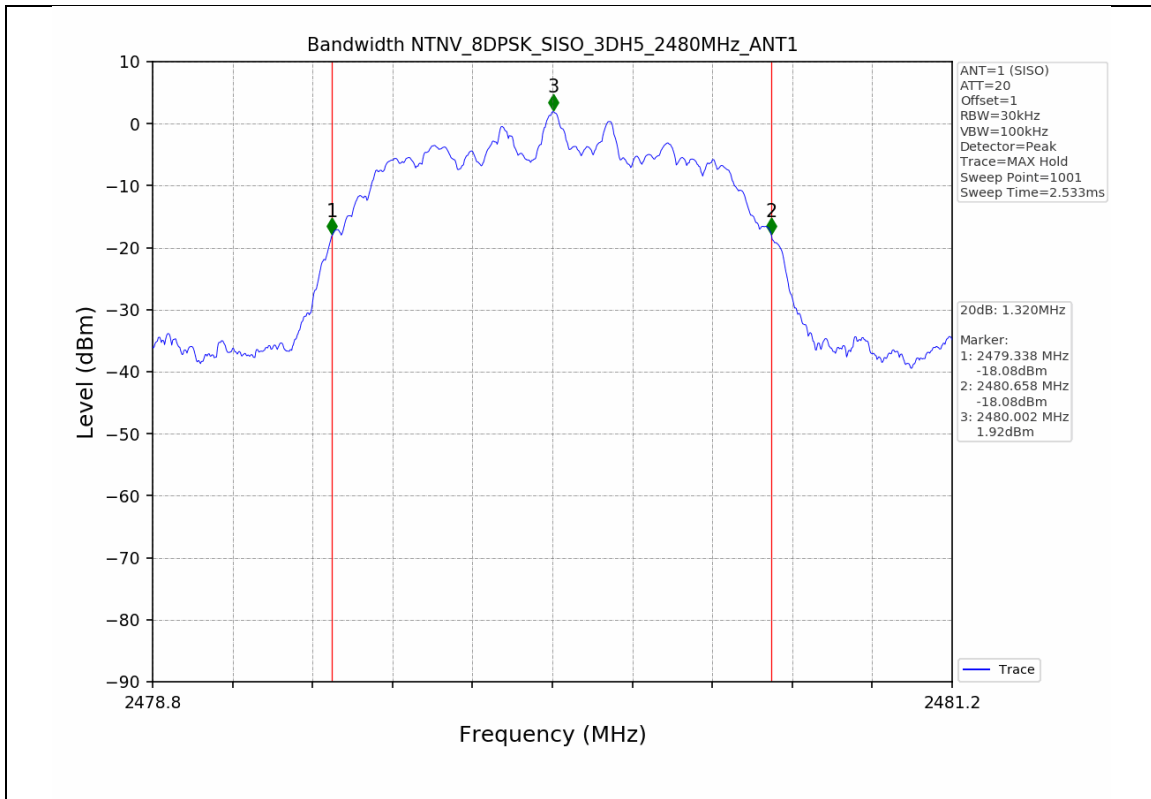
1.2 Test Graph - 20dB Bandwidth



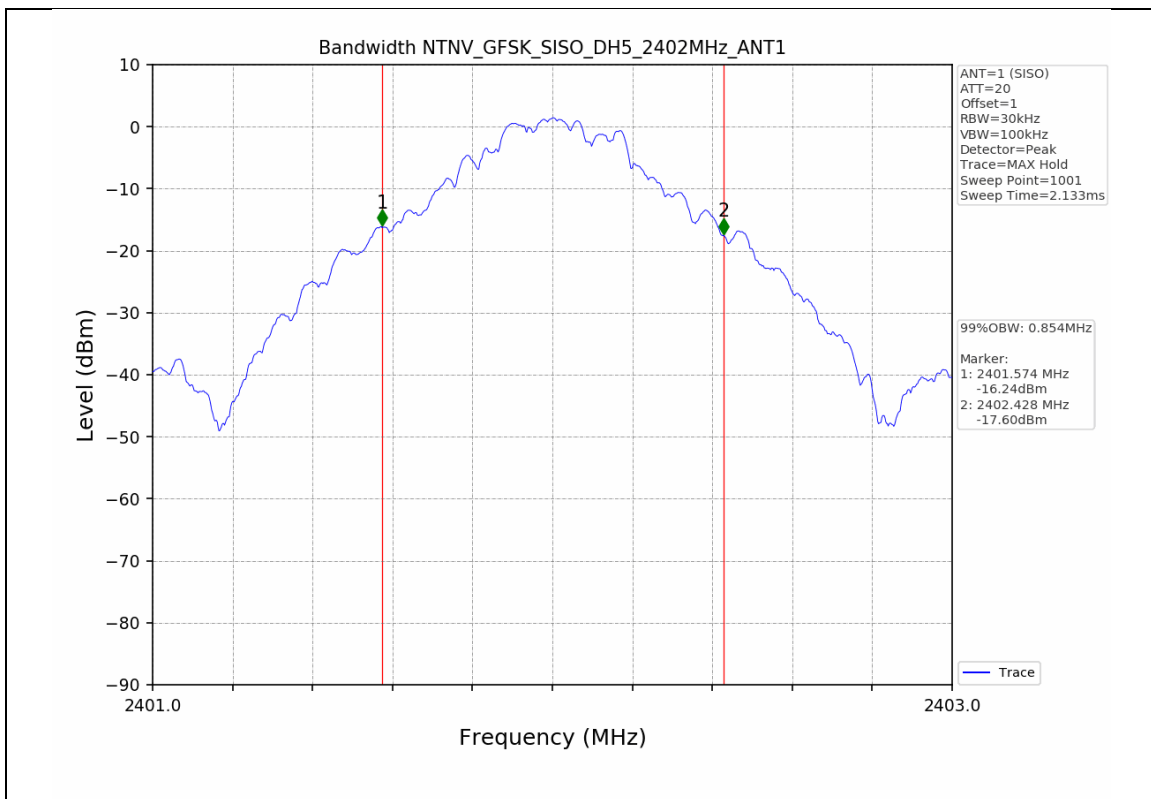


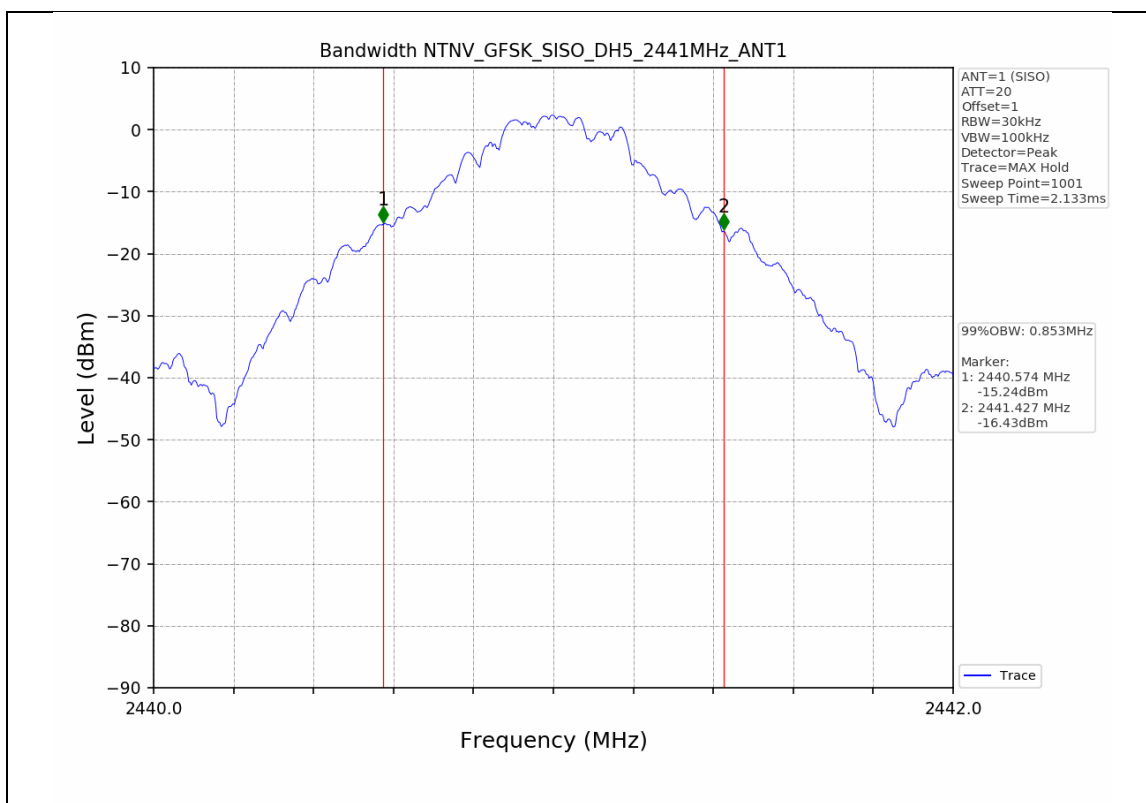


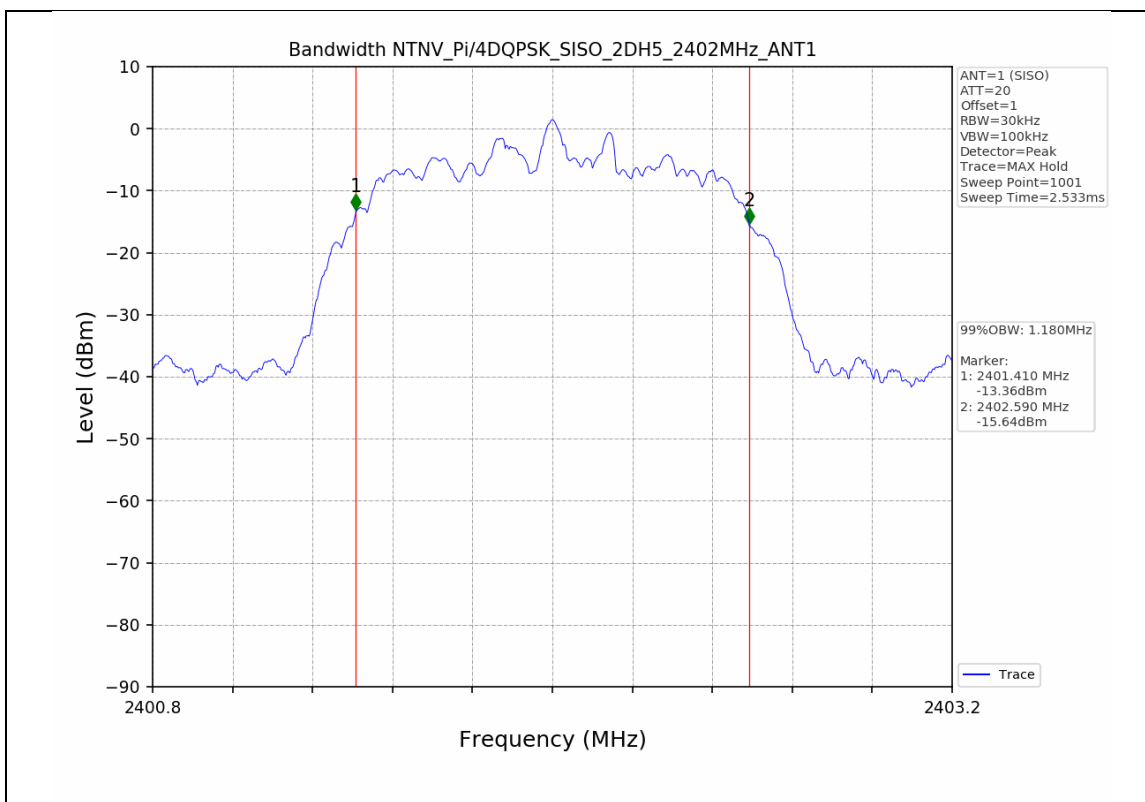
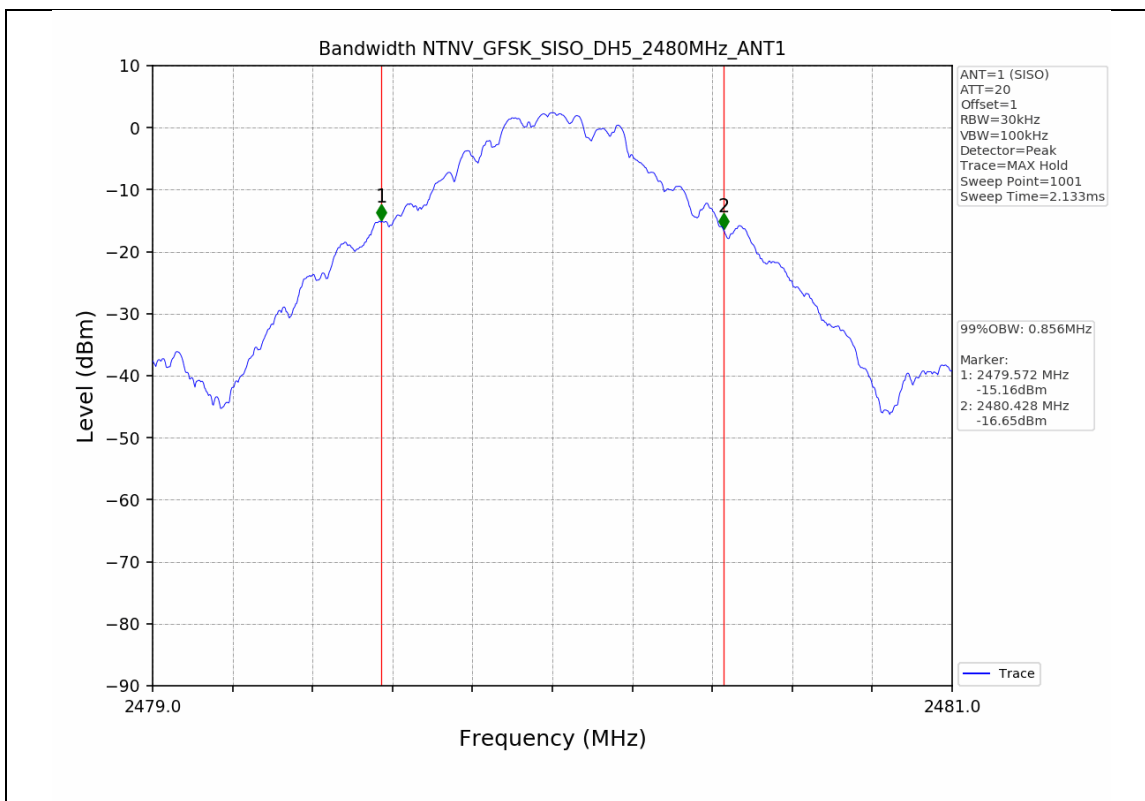


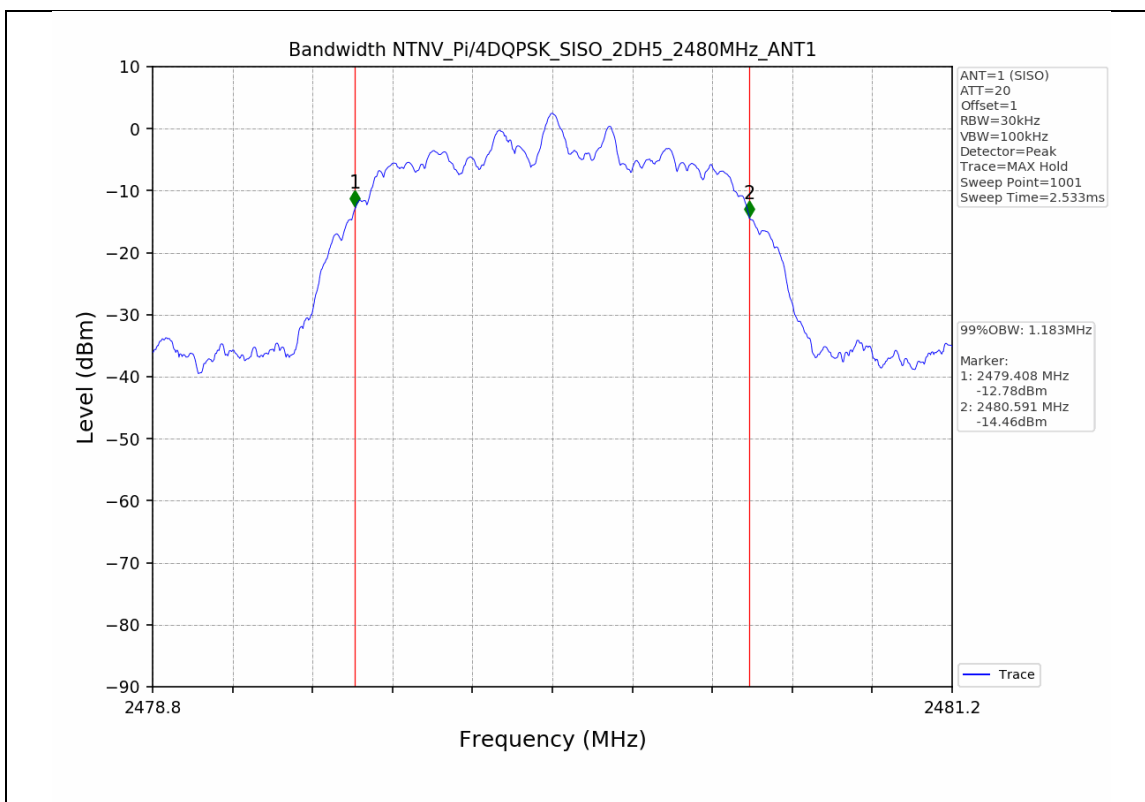
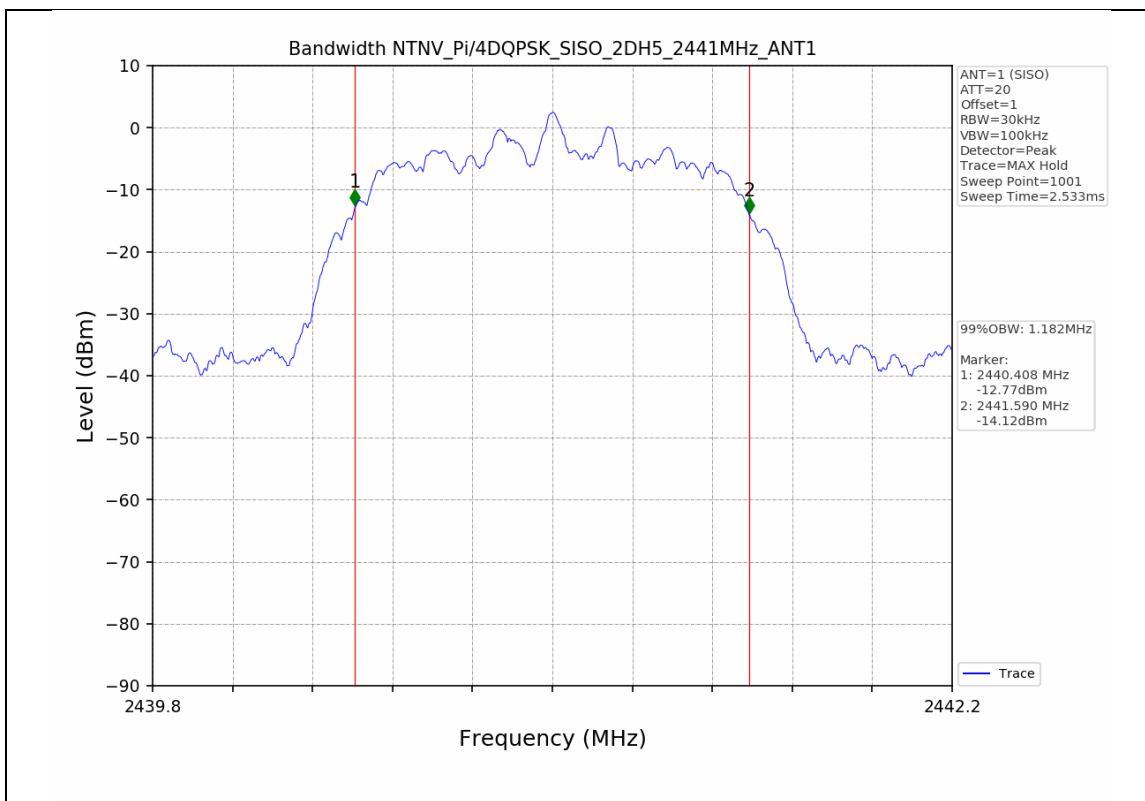


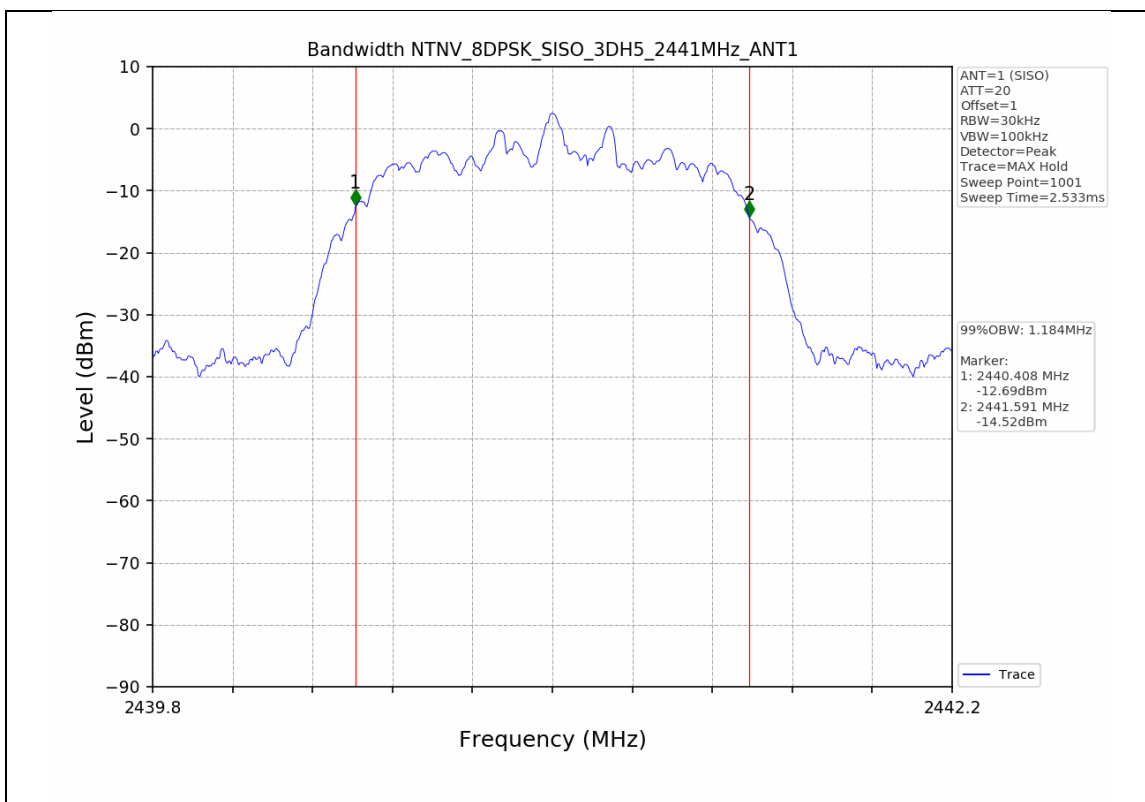
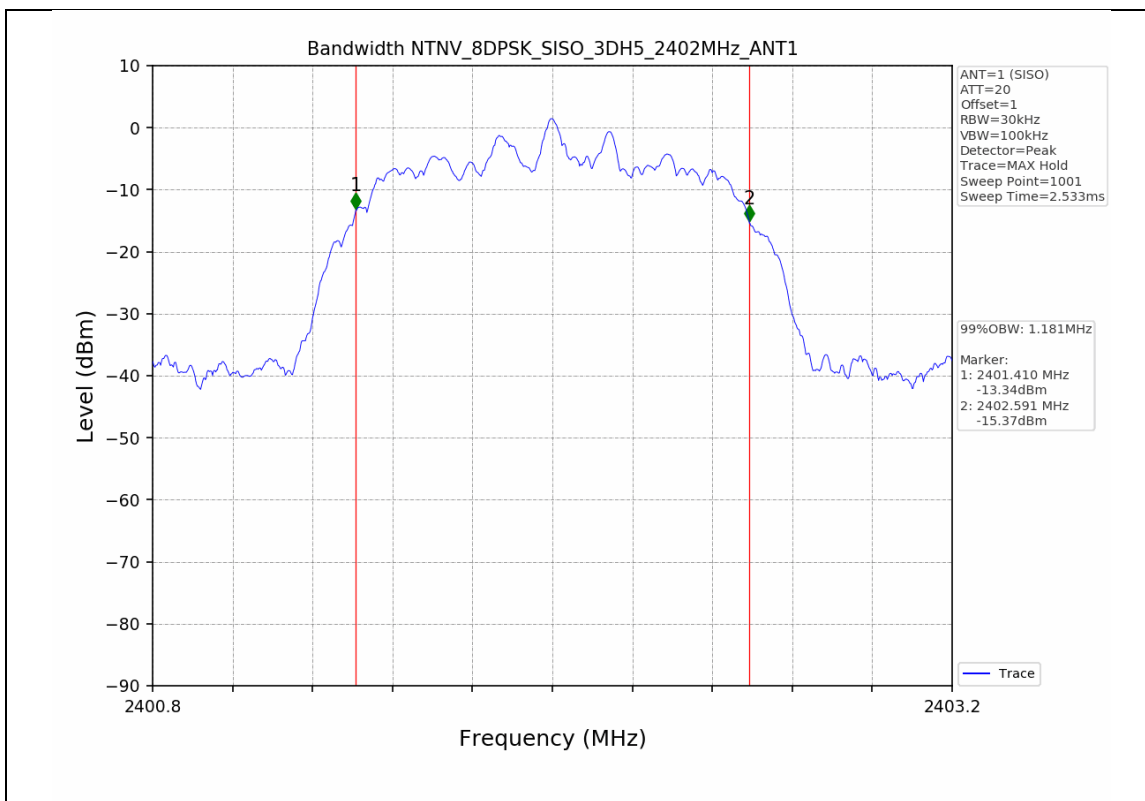
1.3 Test Graph - 99% Occupied Bandwidth

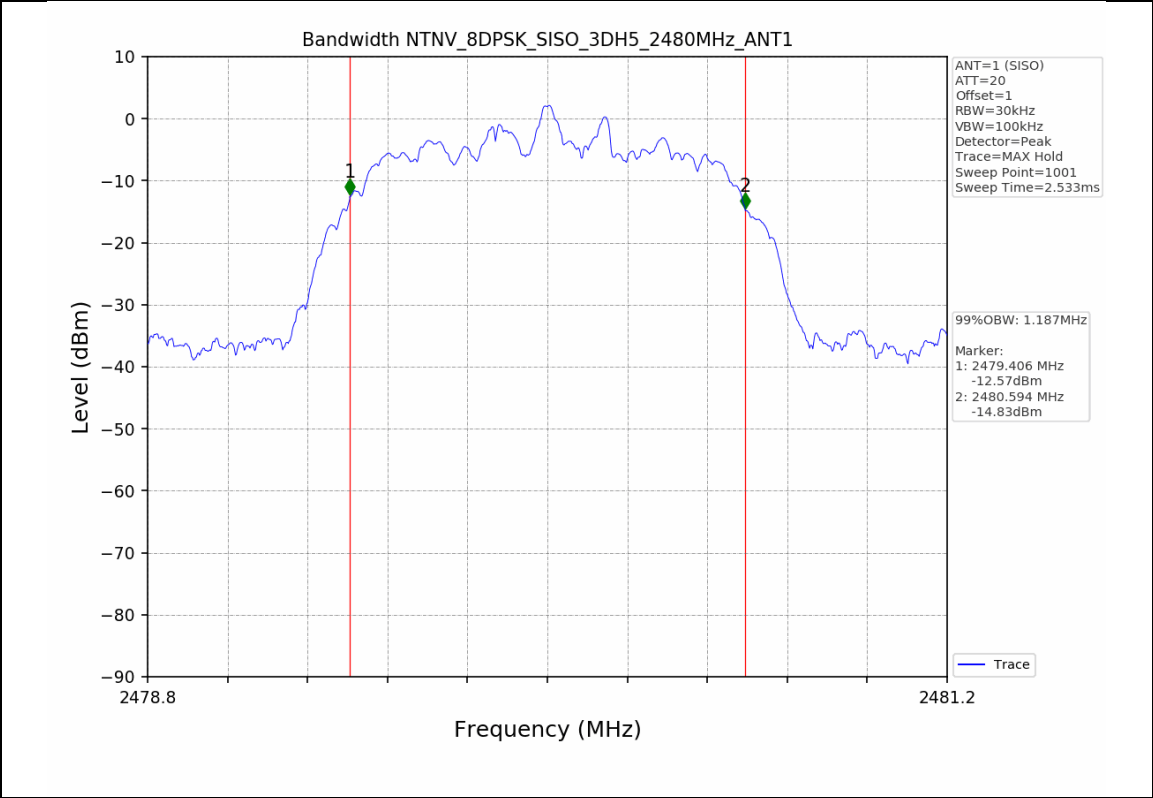










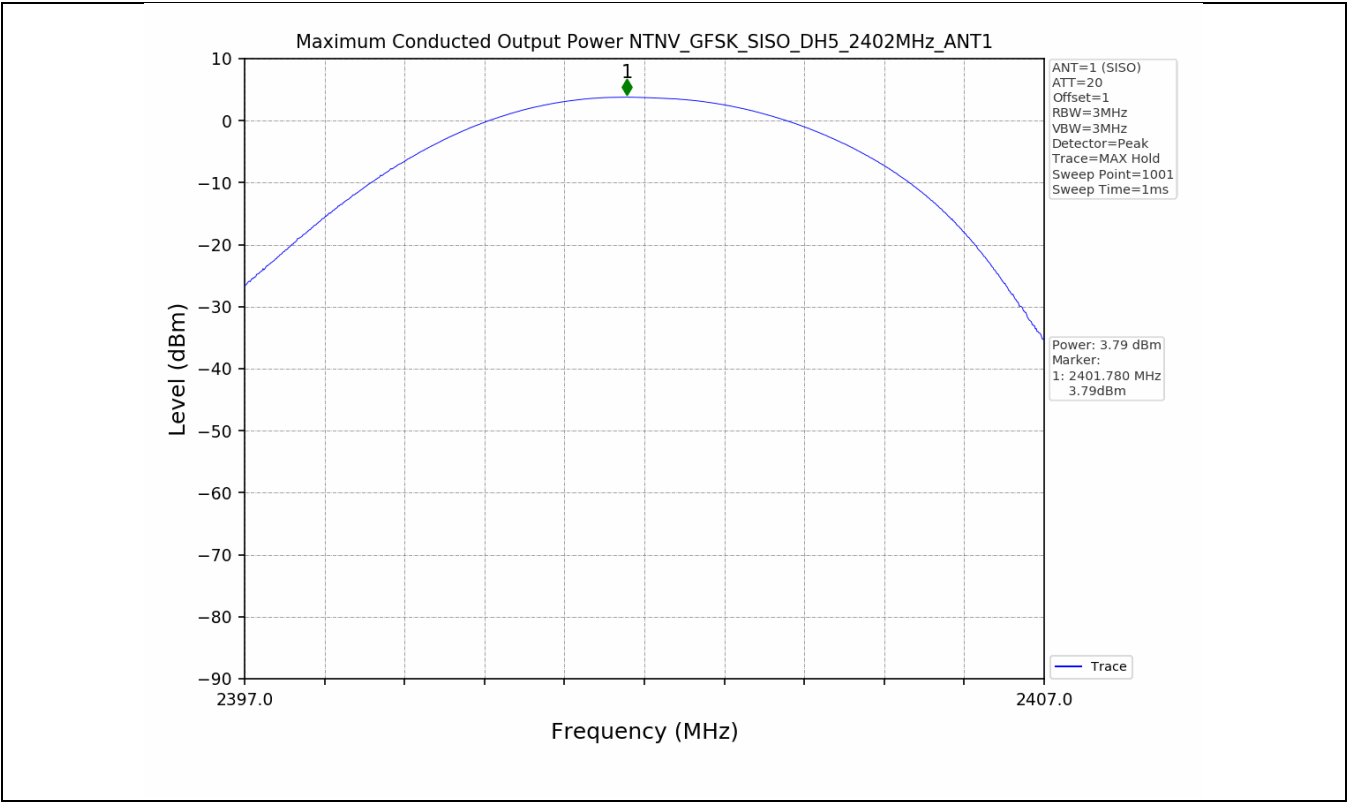


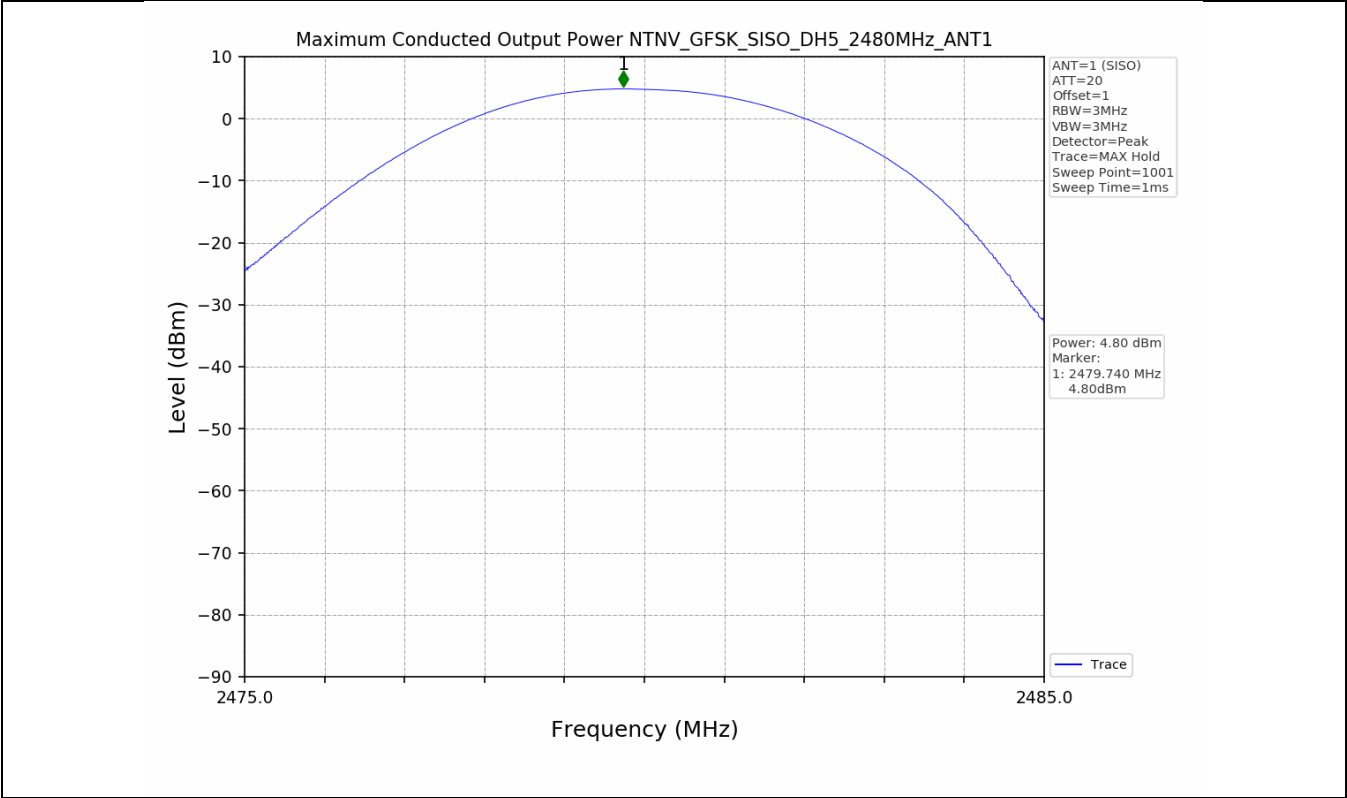
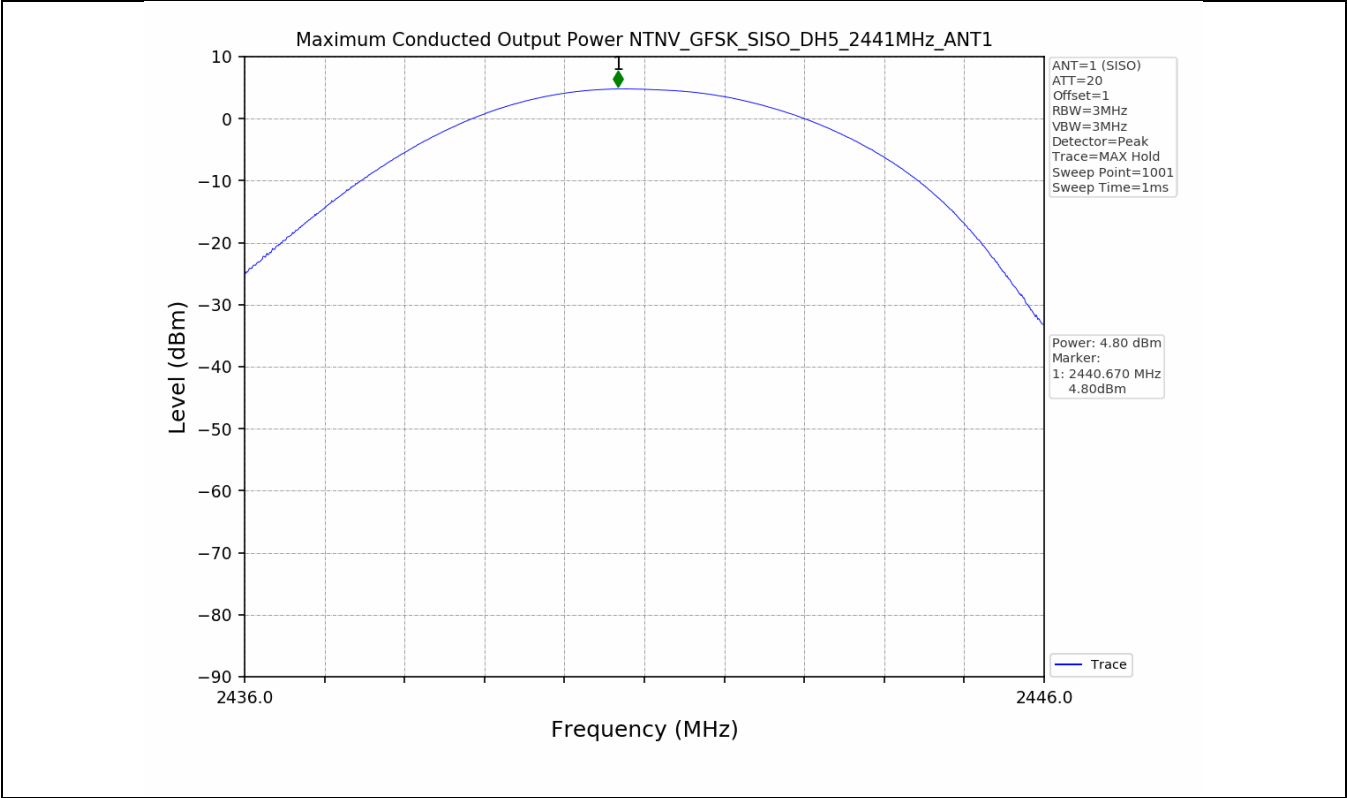
2. Maximum Conducted Output Power

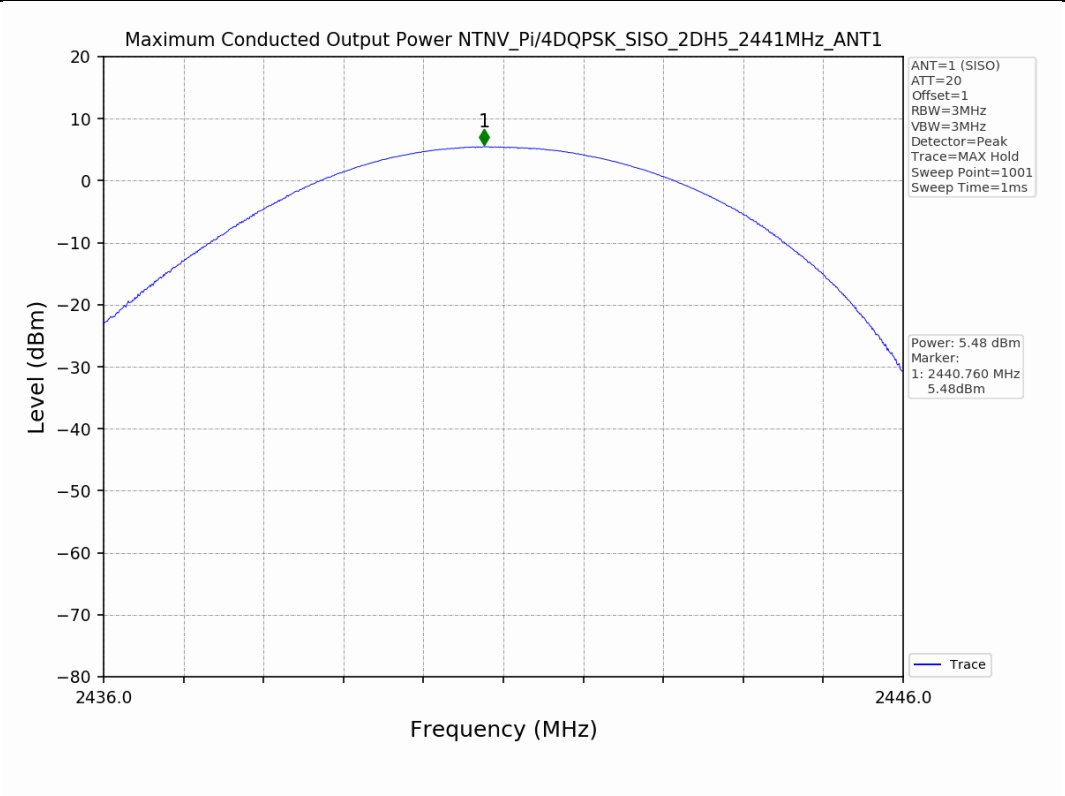
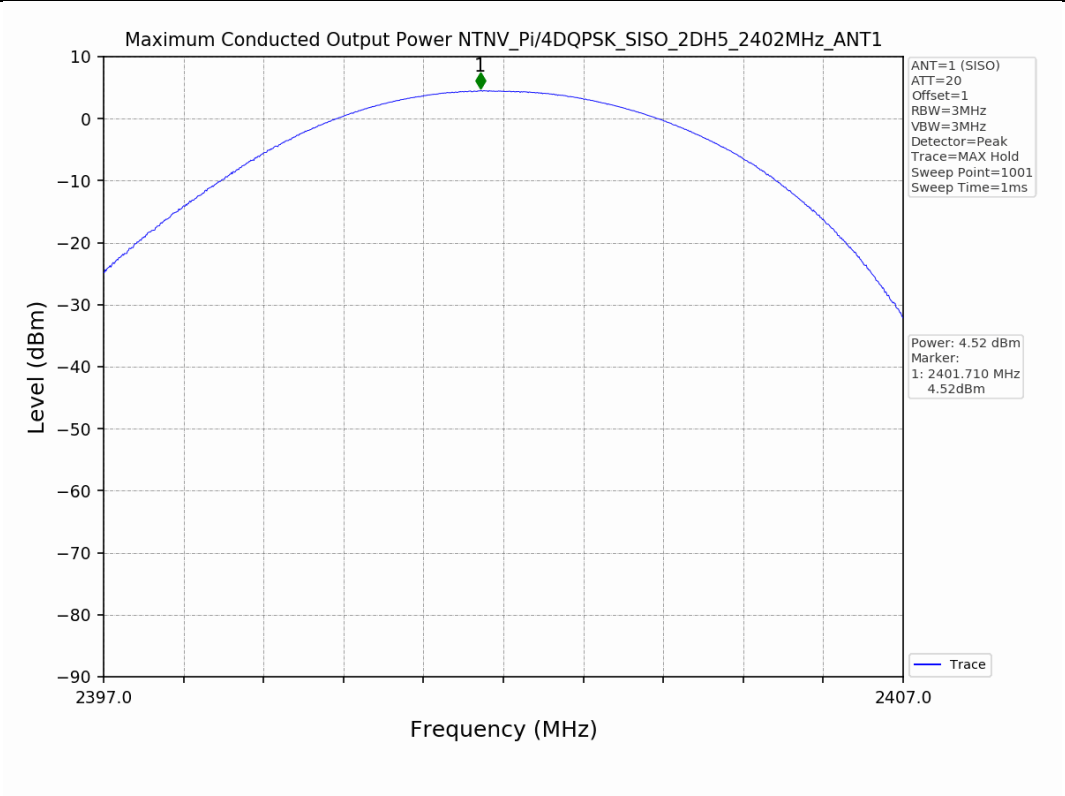
2.1 Test Result

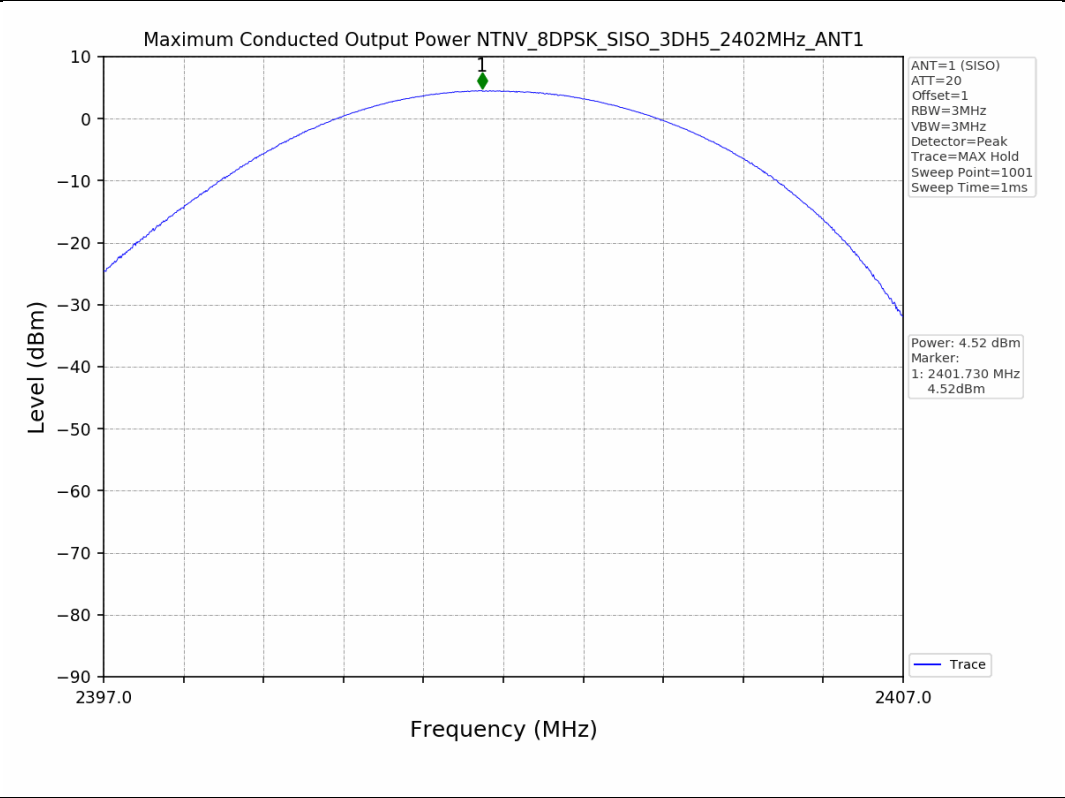
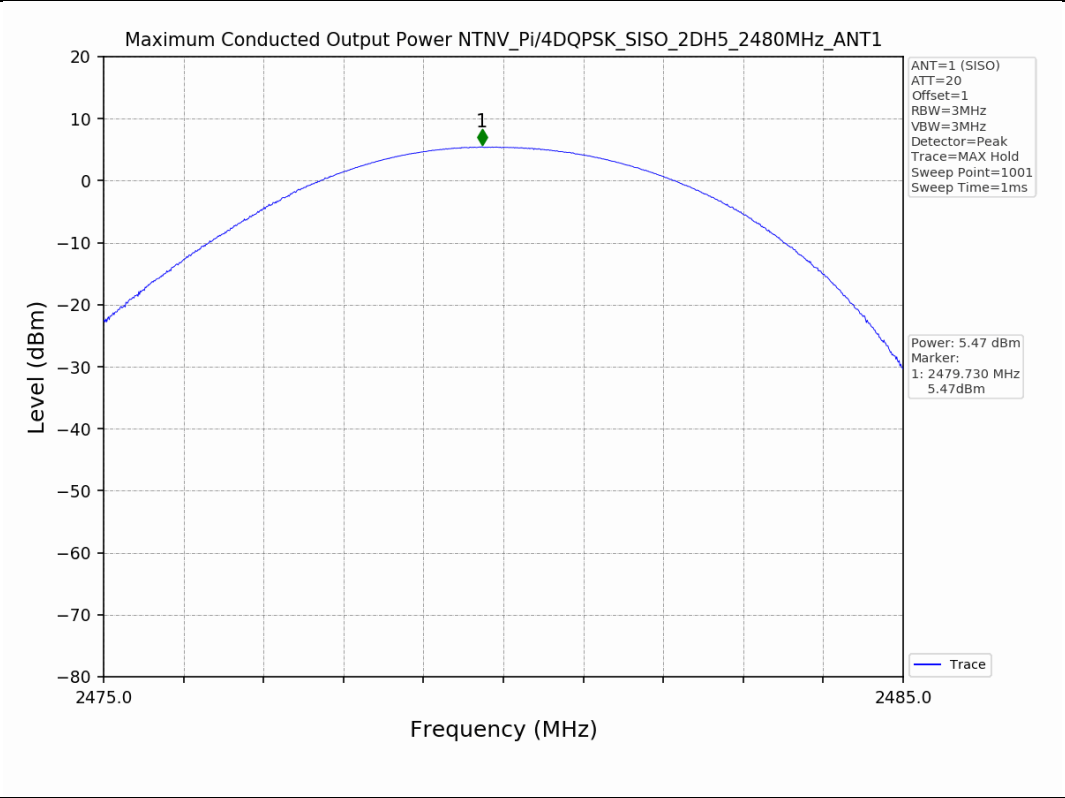
Test Mode	Frequency (MHz)	Tx Type	Measured Peak Output Power (dBm)	Limits (dBm)	Verdict
			Ant 1		
GFSK	2402	SISO	3.79	30	PASS
	2441	SISO	4.80	30	PASS
	2480	SISO	4.80	30	PASS
Pi/4DQPSK	2402	SISO	4.52	20.97	PASS
	2441	SISO	5.48	20.97	PASS
	2480	SISO	5.47	20.97	PASS
8DPSK	2402	SISO	4.52	20.97	PASS
	2441	SISO	5.49	20.97	PASS
	2480	SISO	5.47	20.97	PASS

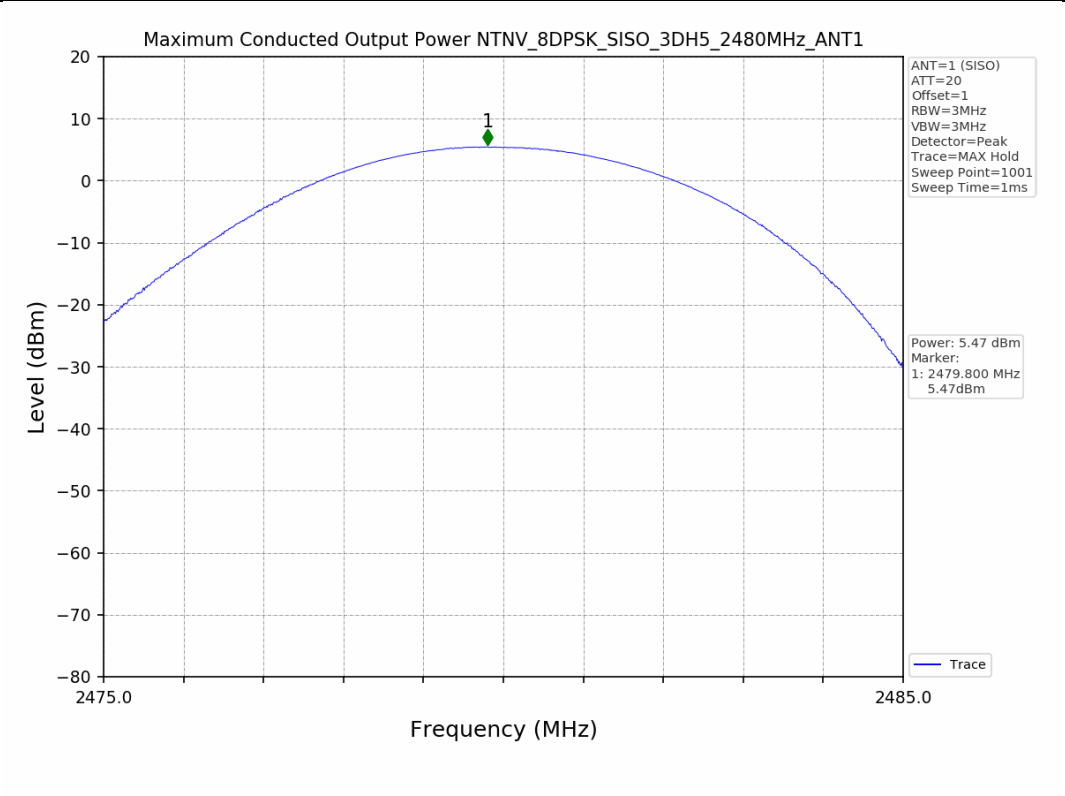
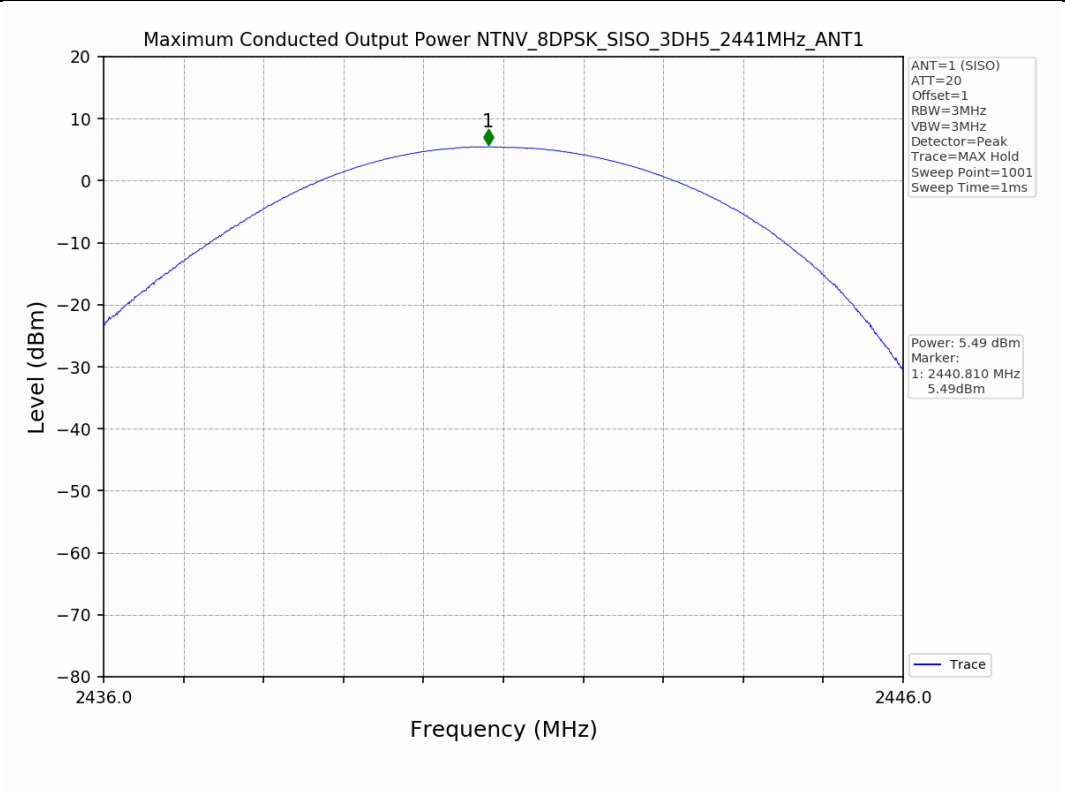
2.2 Test Graph









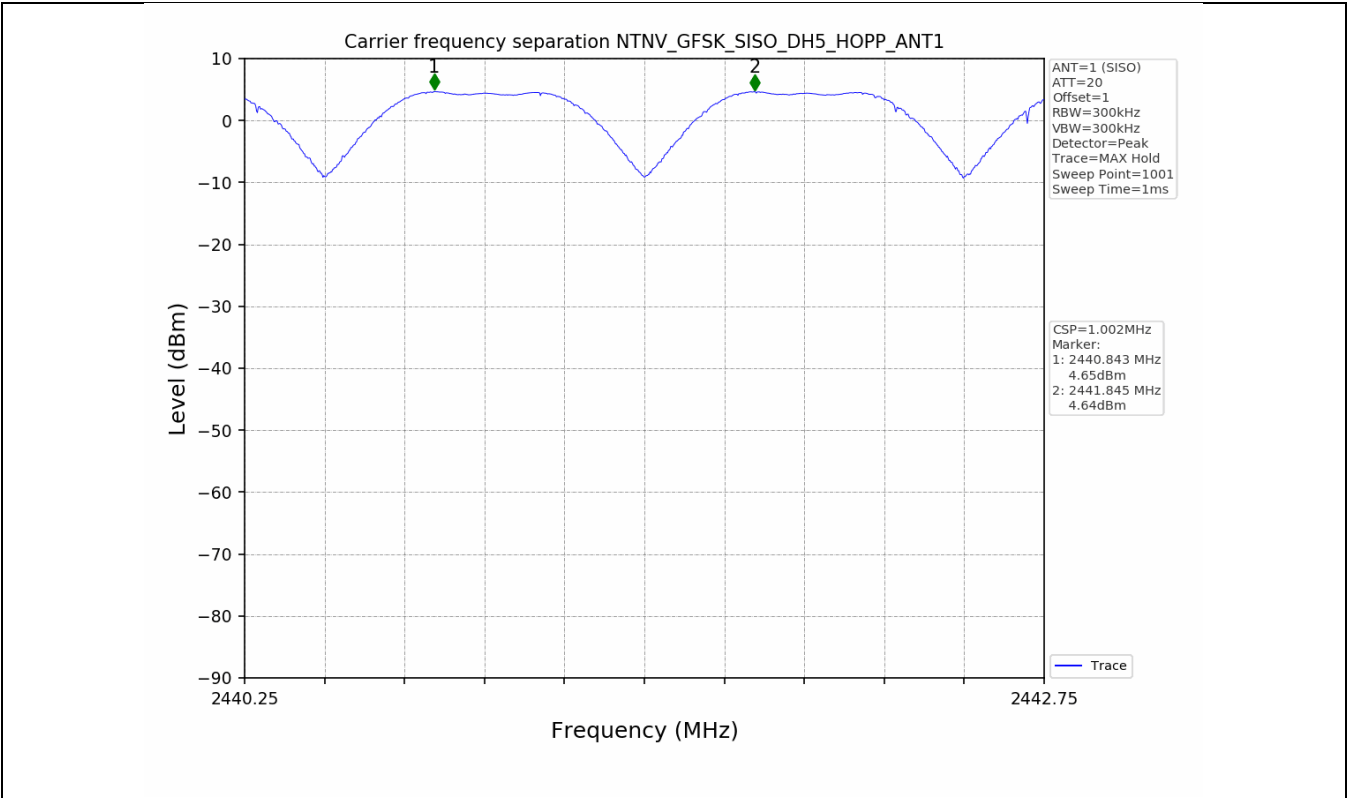


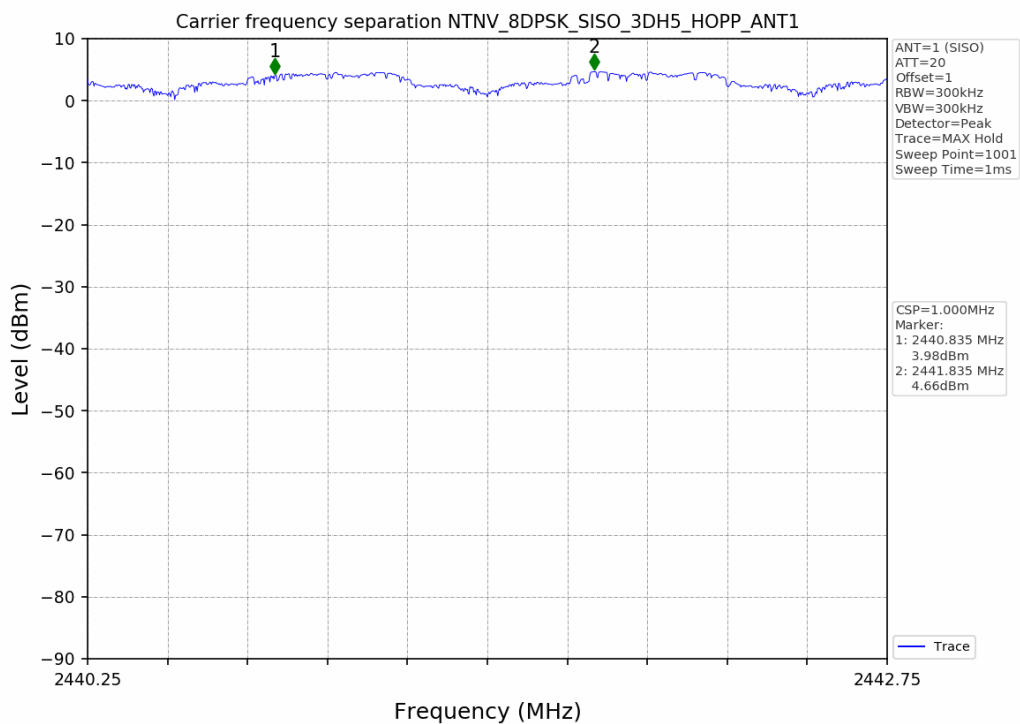
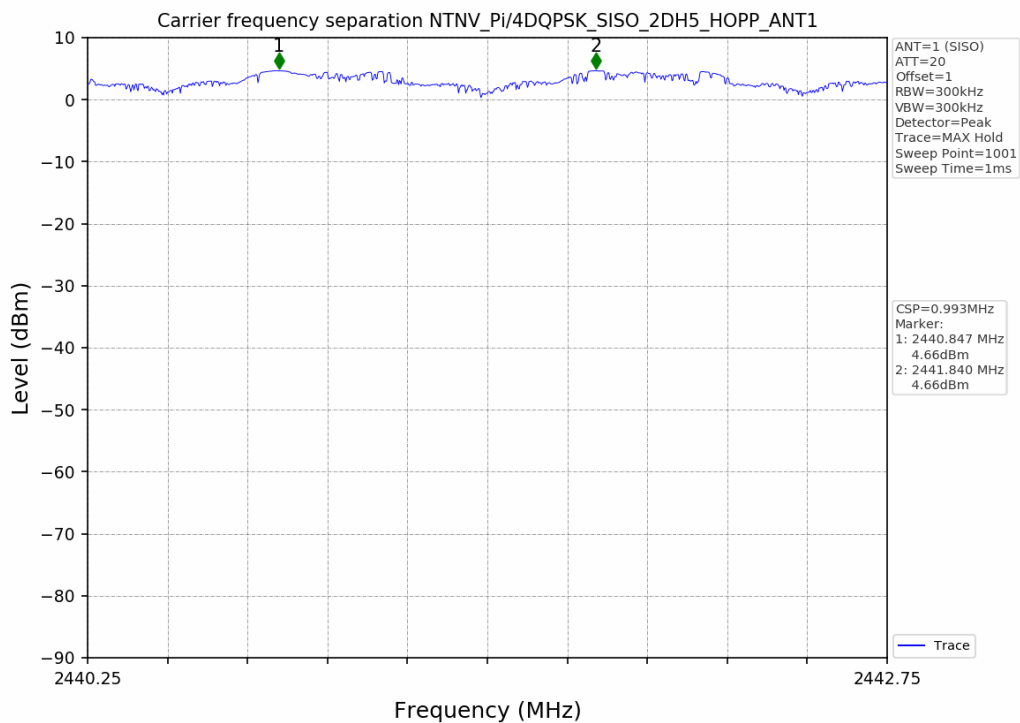
3. Carrier frequency separation

3.1 Test Result

Test Mode	TX Type	ANT No.	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limits (MHz)	Verdict
GFSK	SISO	1	1.002	0.955	≥ 0.955	PASS
Pi/4DQPSK	SISO	1	0.993	1.315	≥ 0.877	PASS
8DPSK	SISO	1	1.000	1.320	≥ 0.880	PASS

3.2 Test Graph



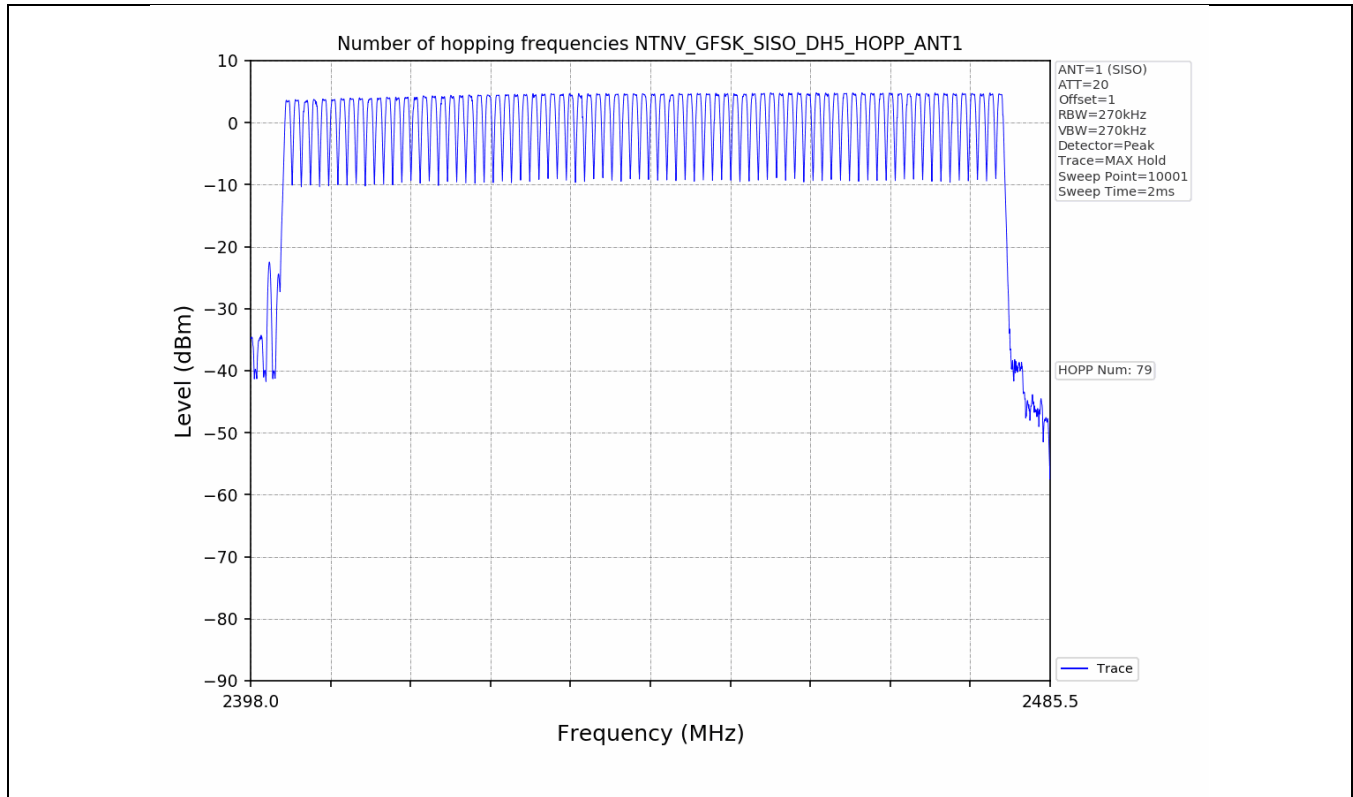


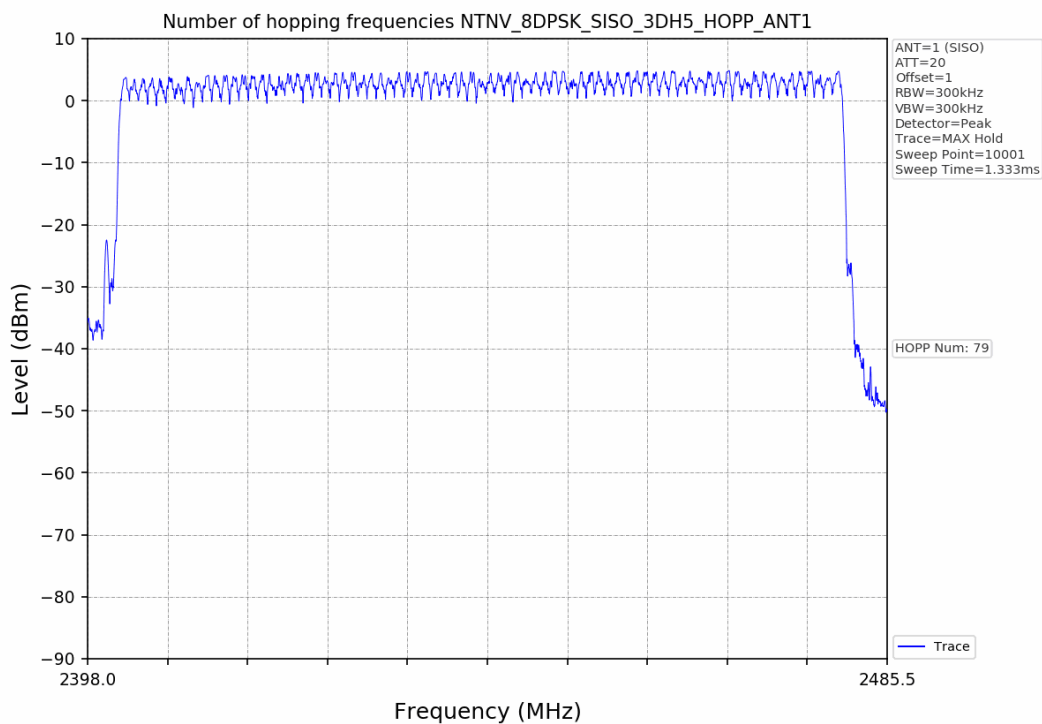
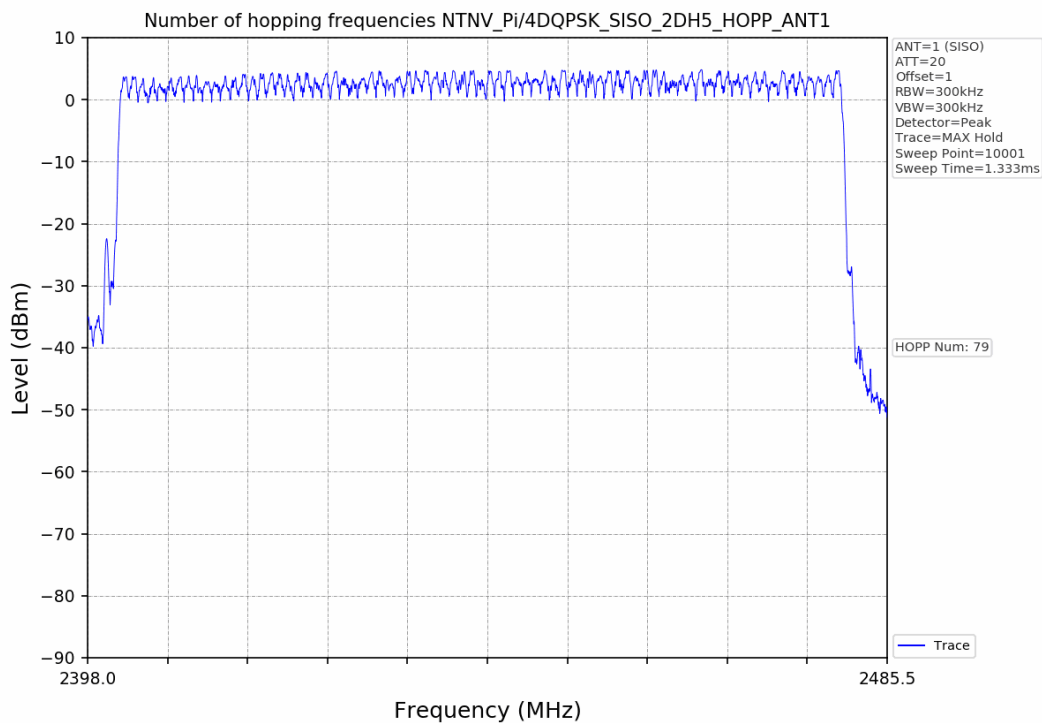
4. Number of hopping frequencies

4.1 Test Result

Test Mode	TX Type	ANT No.	Num of Hopping Frequencies	Limits	Verdict
GFSK	SISO	1	79	≥ 15	PASS
Pi/4DQPSK	SISO	1	79	≥ 15	PASS
8DPSK	SISO	1	79	≥ 15	PASS

4.2 Test Graph



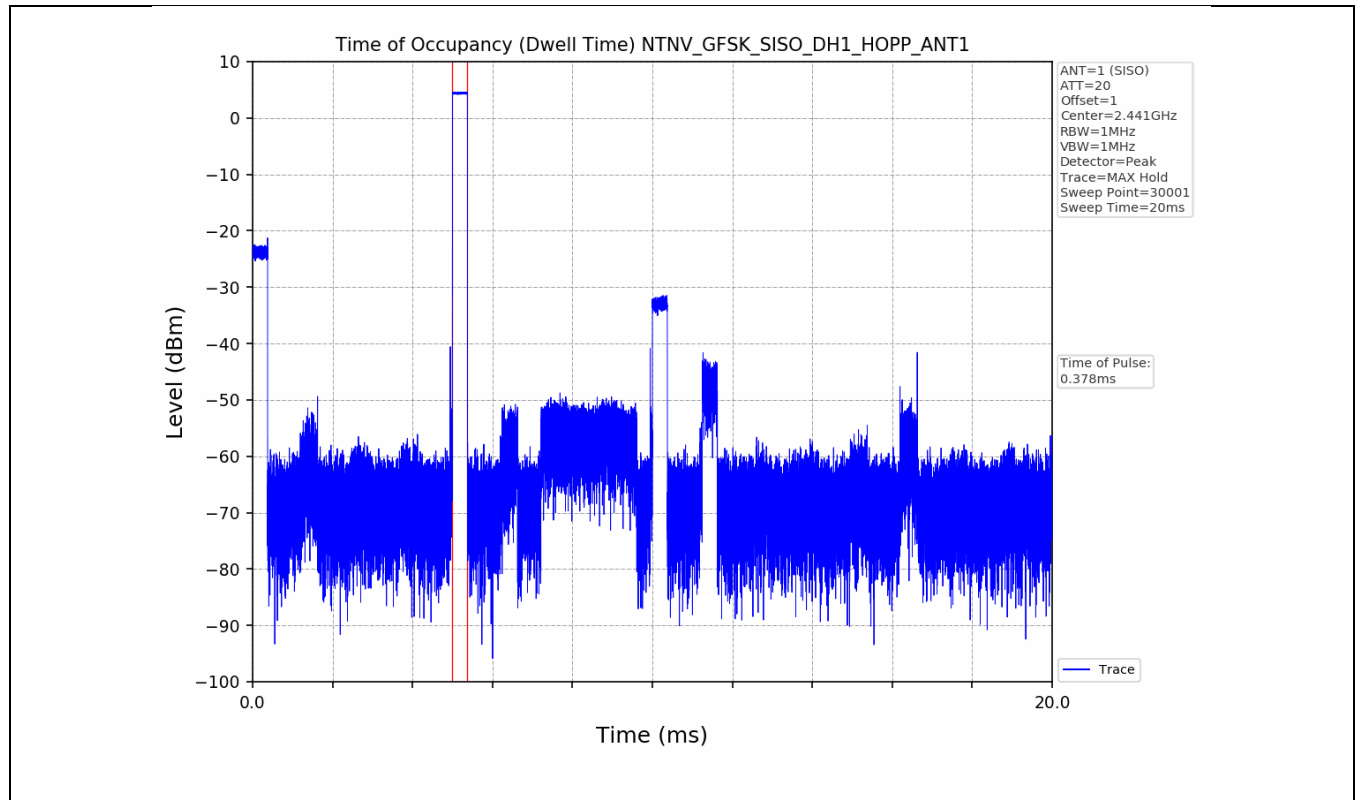


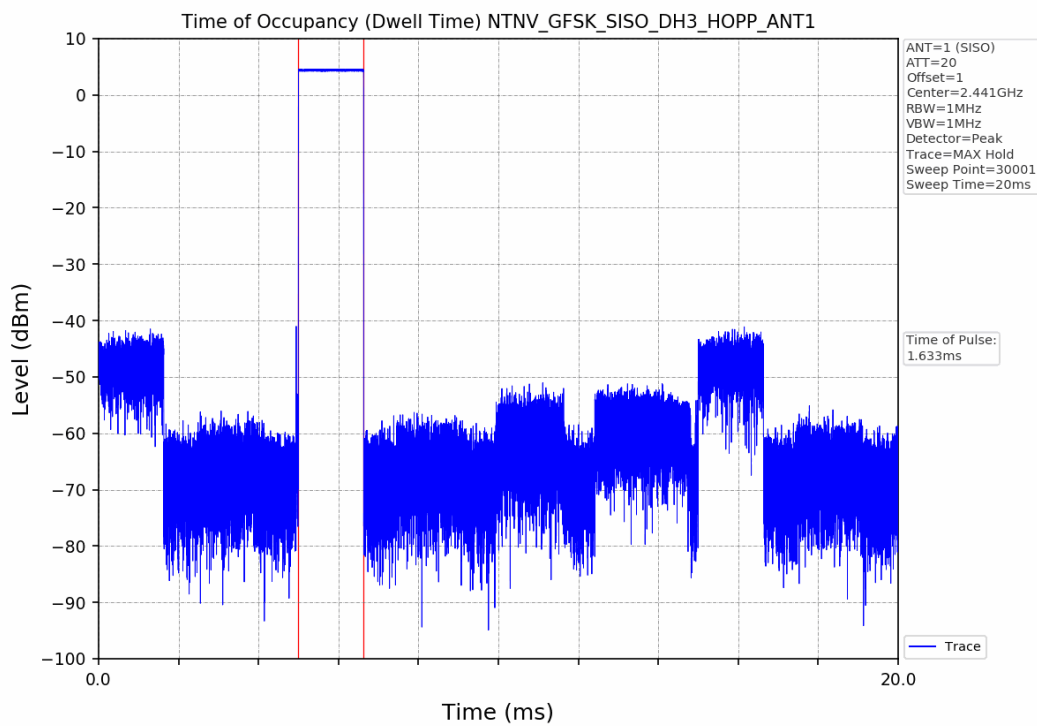
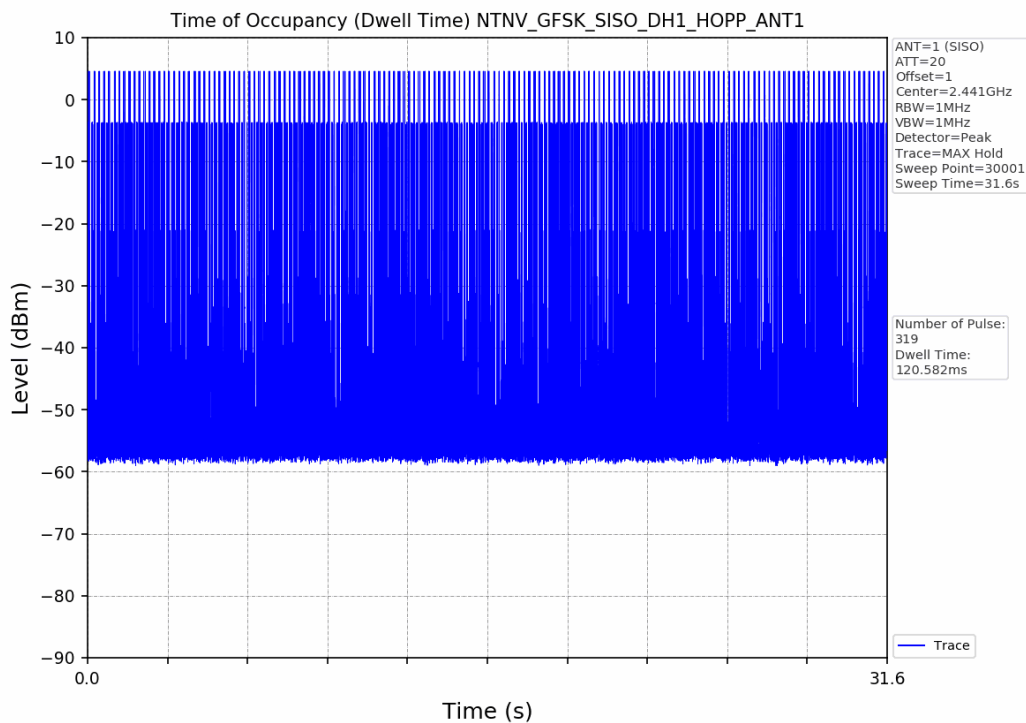
5. Time of Occupancy (Dwell Time)

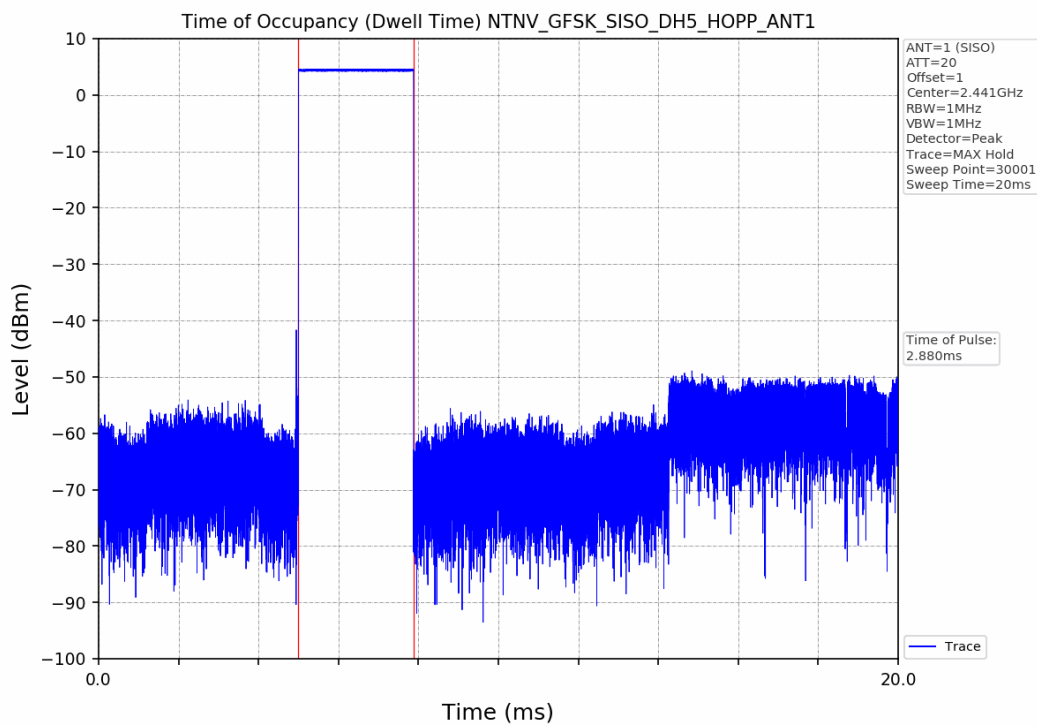
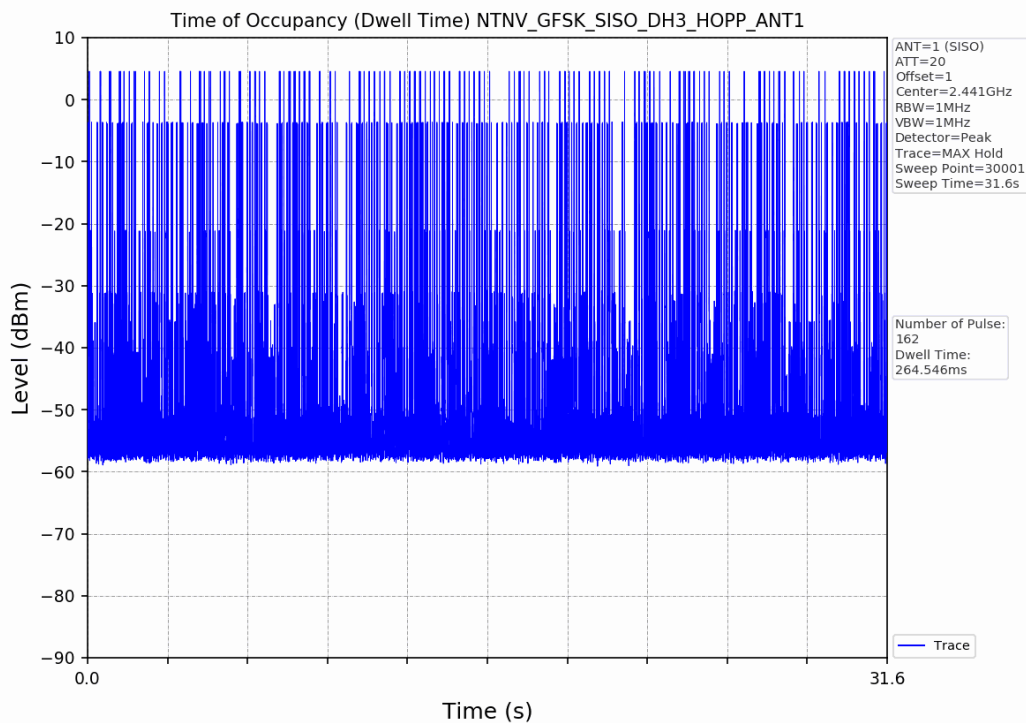
5.1 Test Result

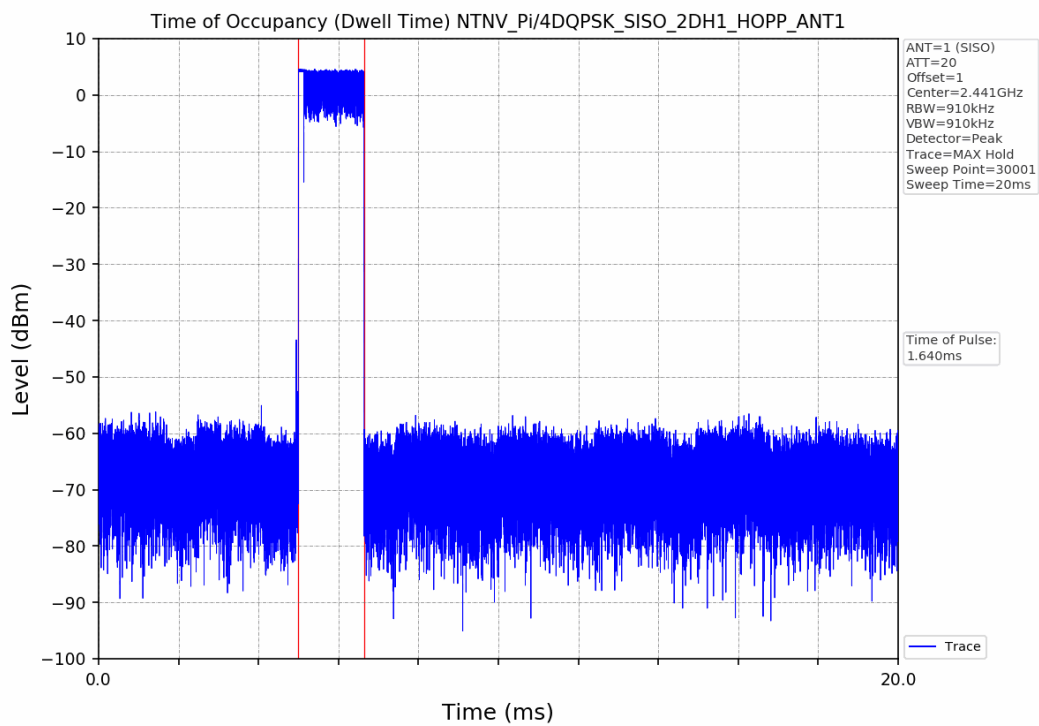
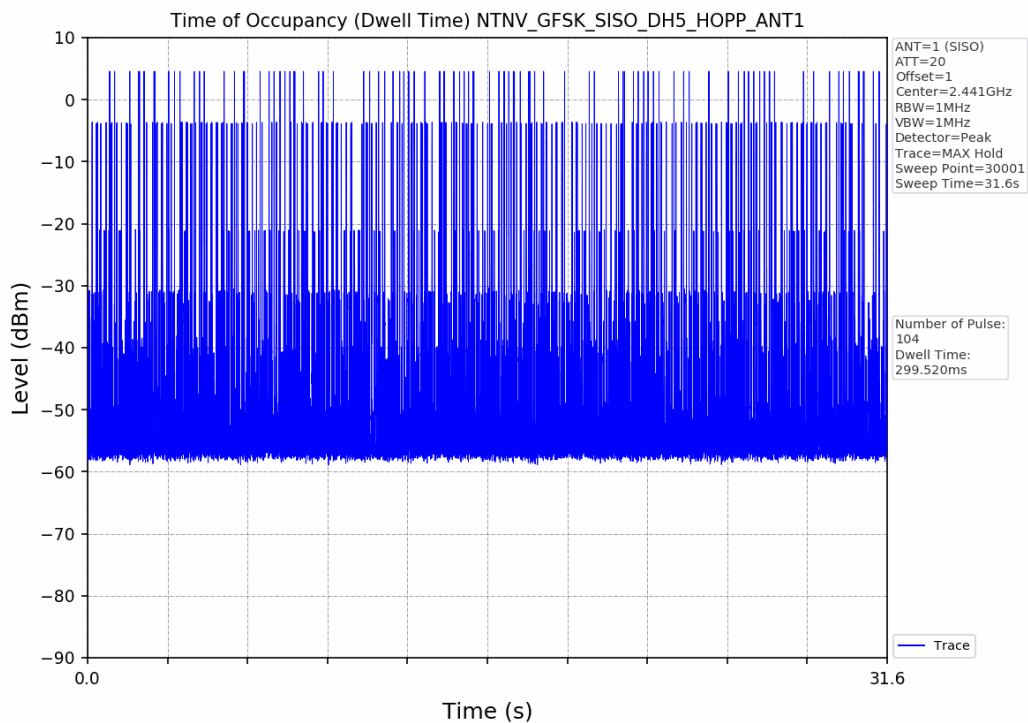
Test Mode	Packet Type	TX Type	ANT No.	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limits (ms)	Verdict
GFSK	DH1	SISO	1	0.378	31.6	319	120.582	≤400	PASS
	DH3	SISO	1	1.633	31.6	162	264.546	≤400	PASS
	DH5	SISO	1	2.880	31.6	104	299.520	≤400	PASS
Pi/4DQ PSK	2DH1	SISO	1	1.640	31.6	154	252.560	≤400	PASS
	2DH3	SISO	1	1.641	31.6	164	269.124	≤400	PASS
	2DH5	SISO	1	2.887	31.6	94	271.378	≤400	PASS
8DPSK	3DH1	SISO	1	1.633	31.6	155	253.115	≤400	PASS
	3DH3	SISO	1	1.639	31.6	154	252.406	≤400	PASS
	3DH5	SISO	1	2.888	31.6	116	335.008	≤400	PASS

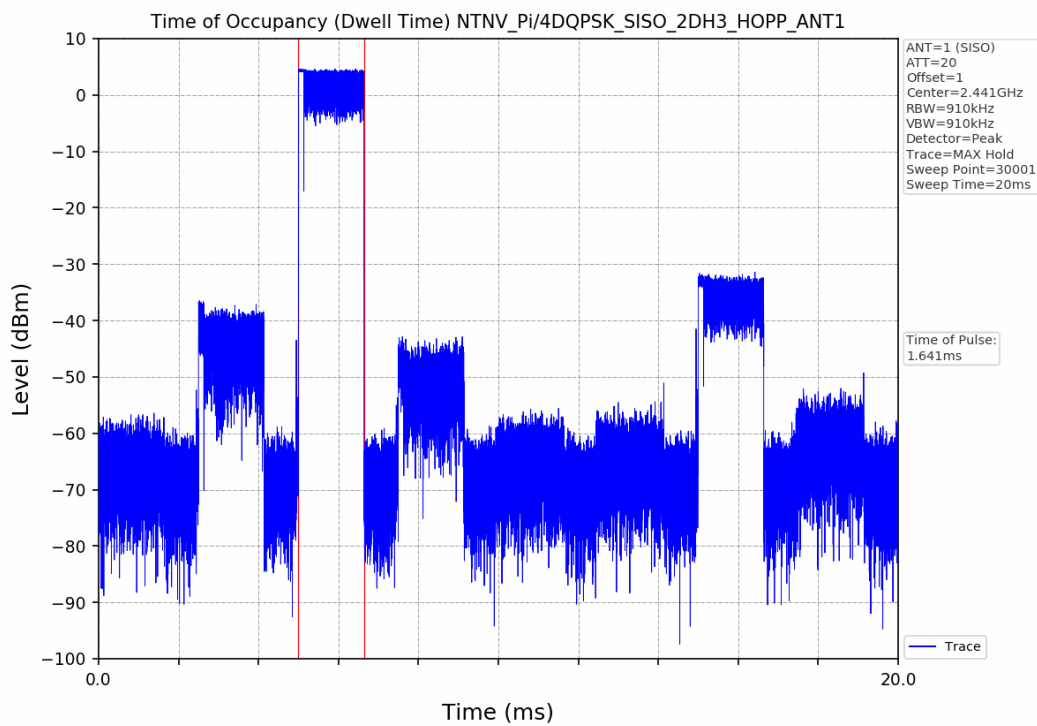
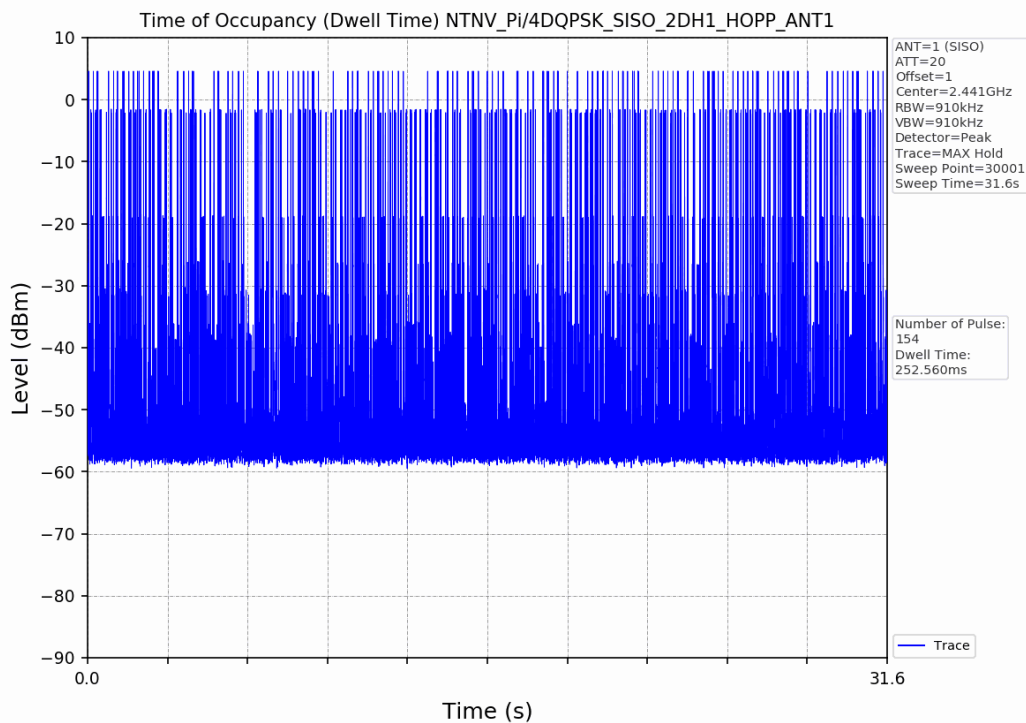
5.2 Test Graph

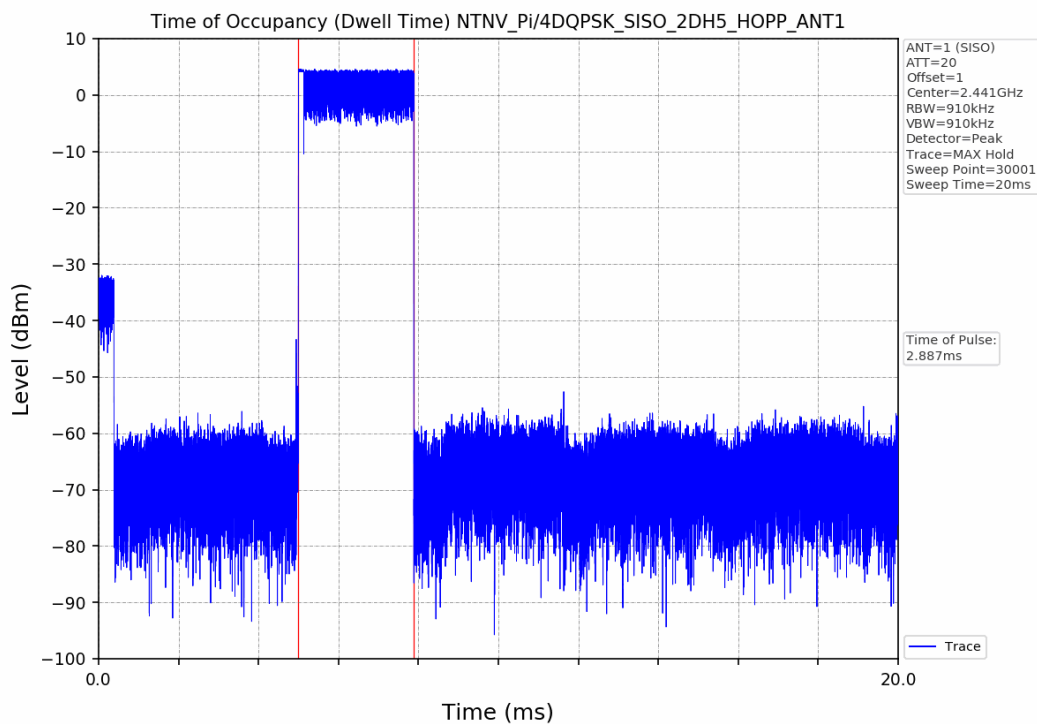
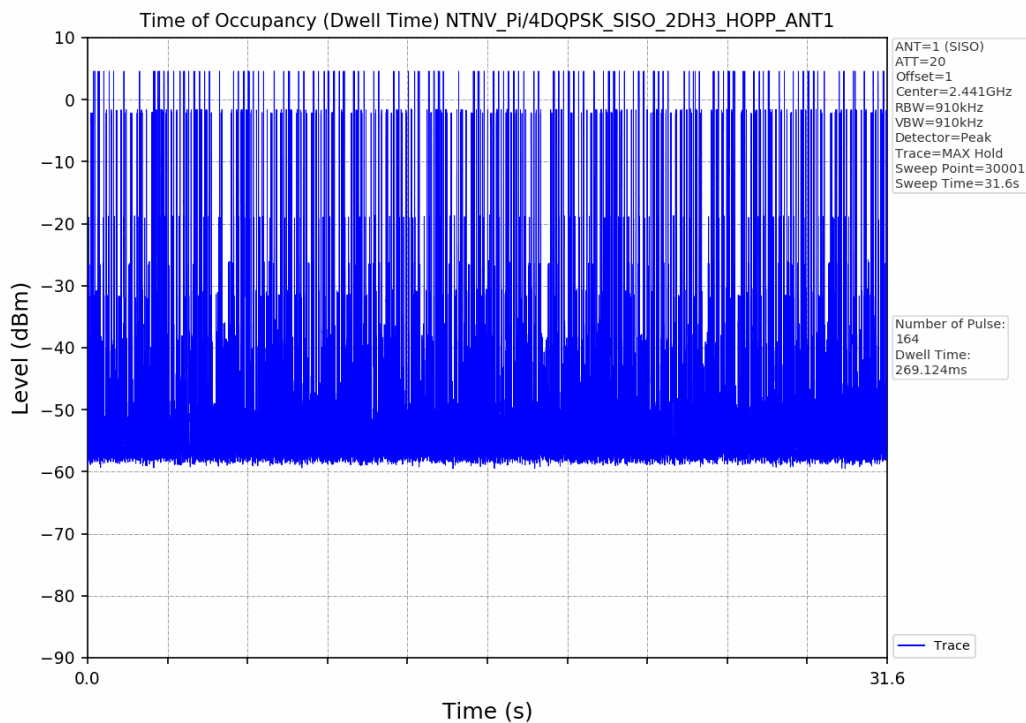


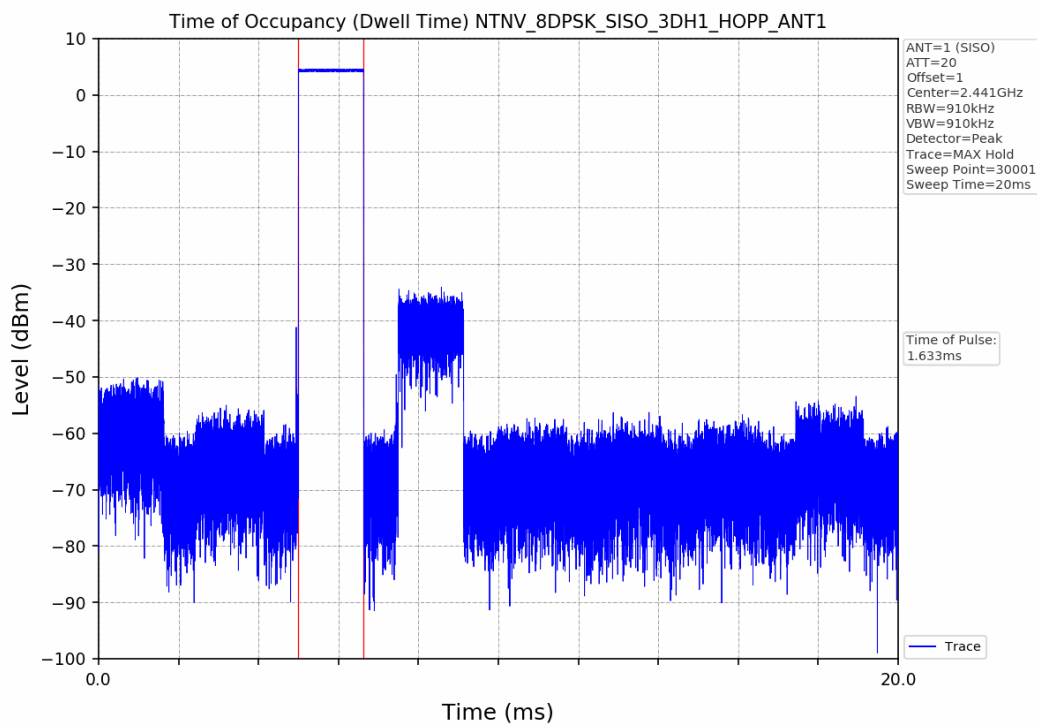
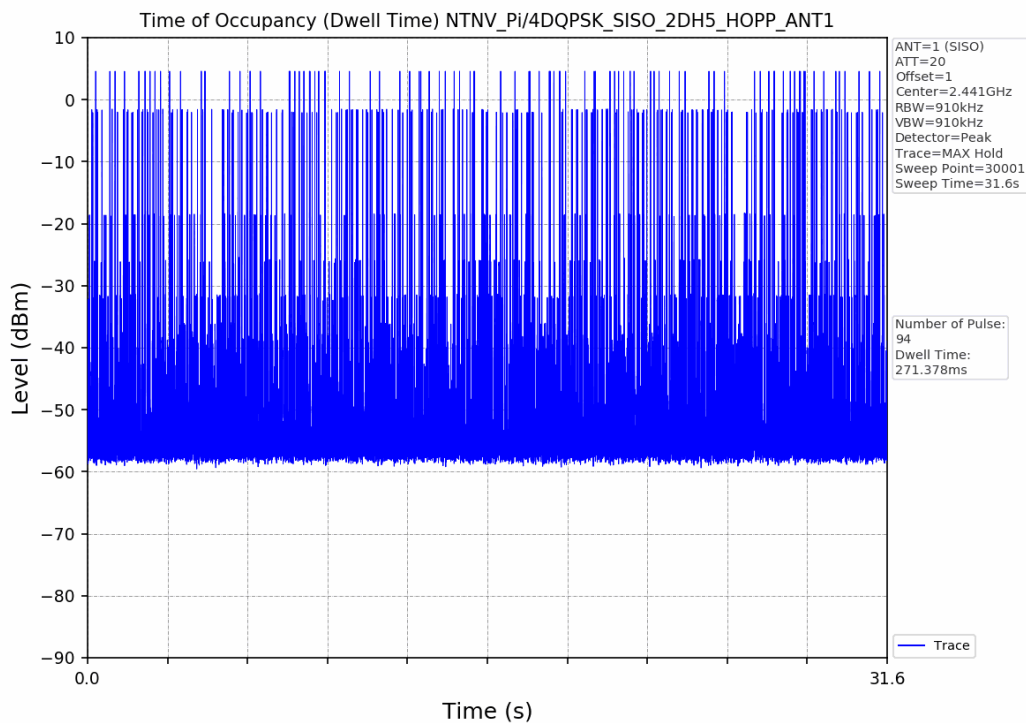


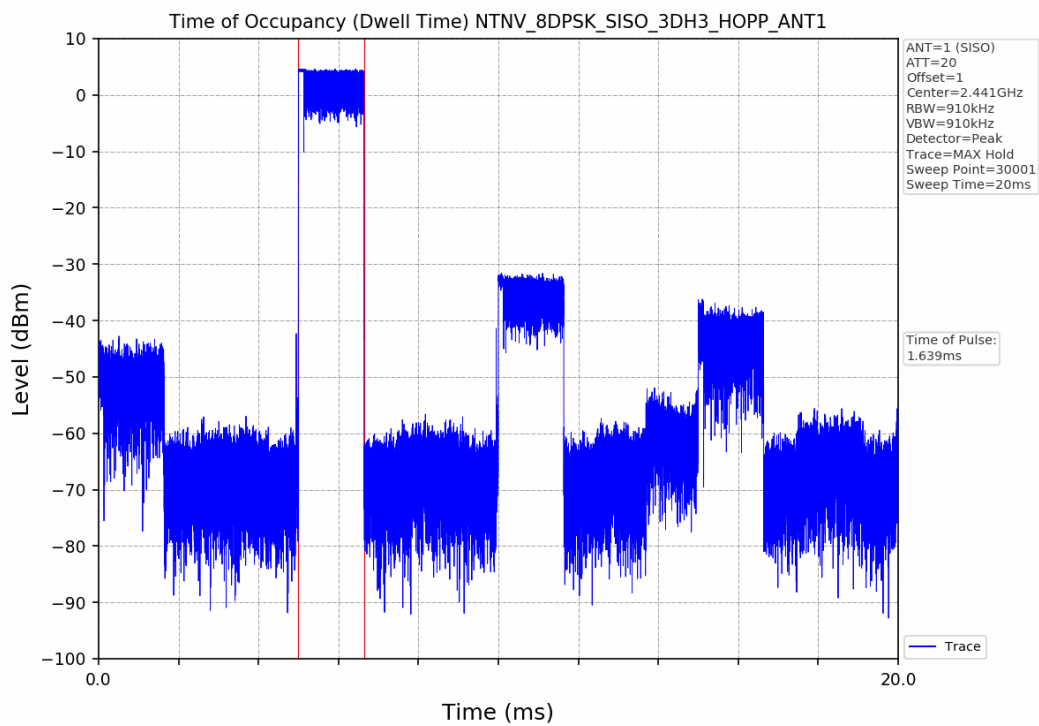
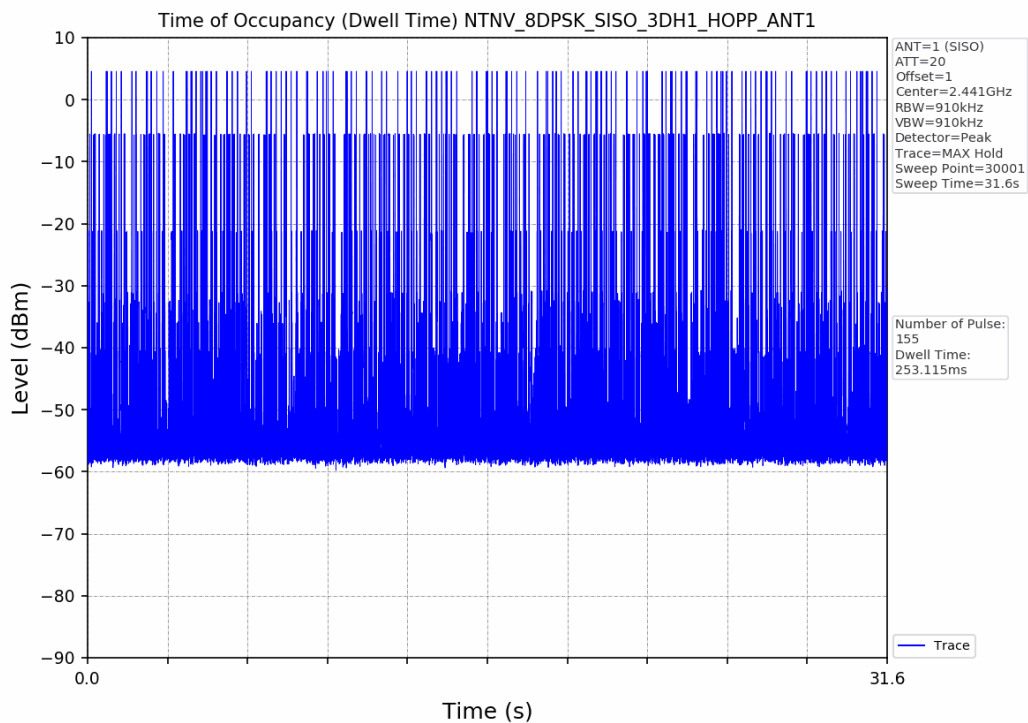


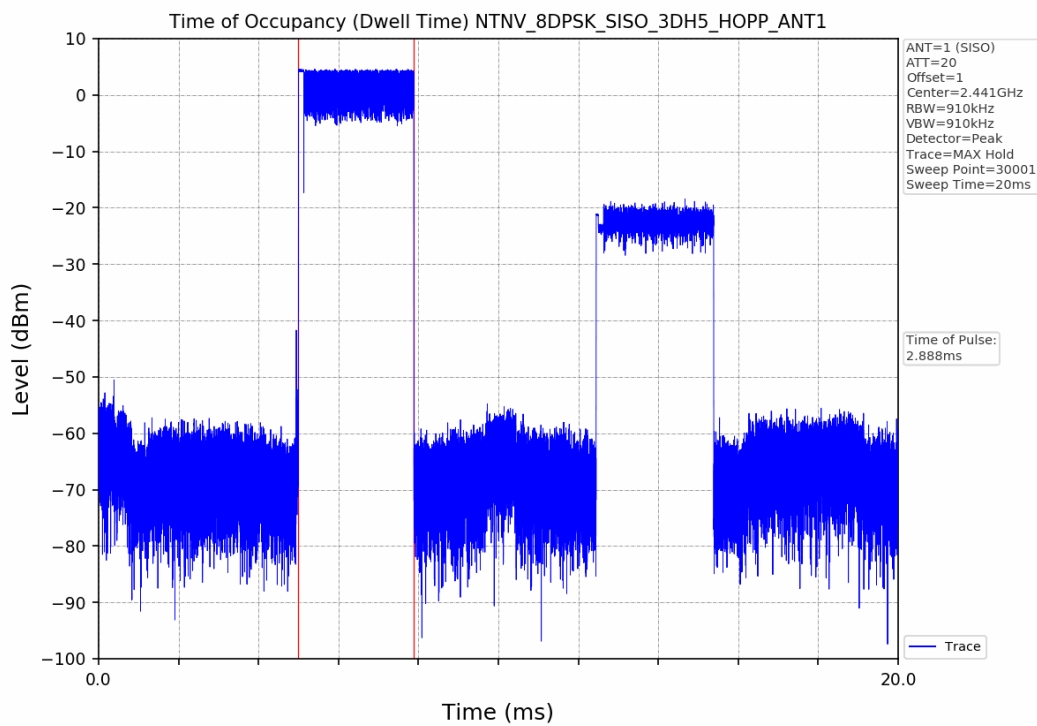
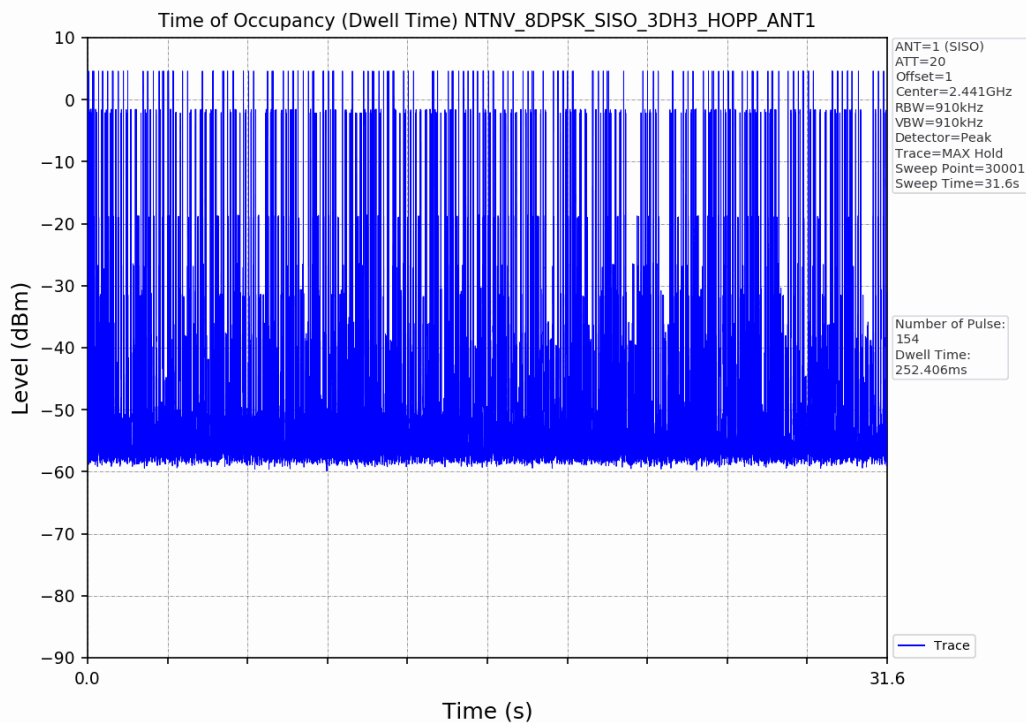


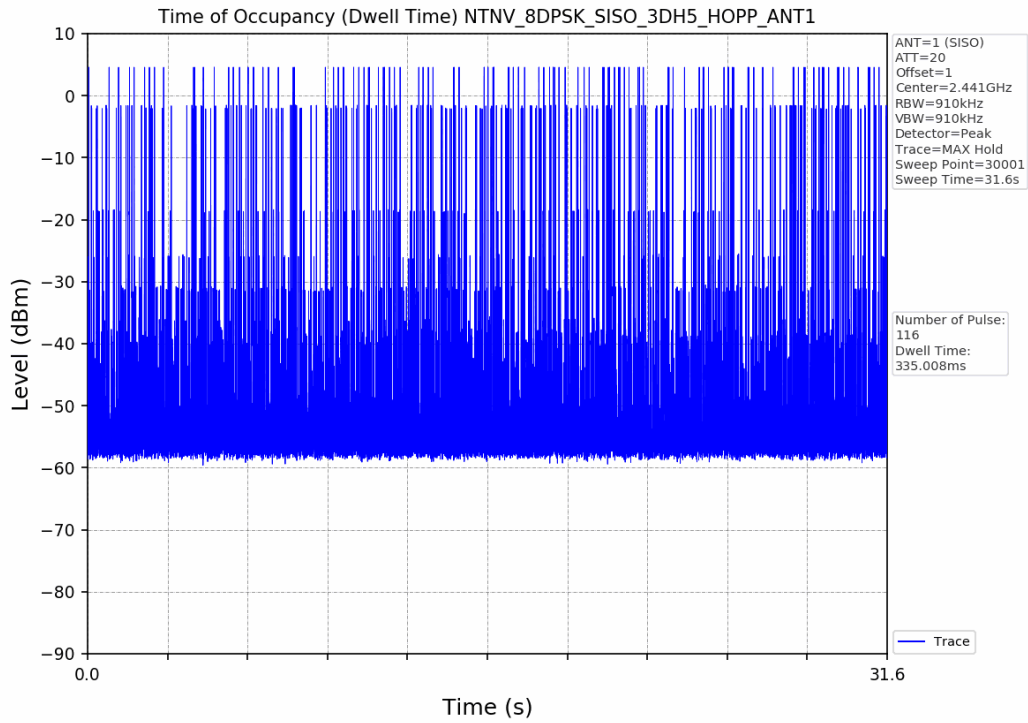










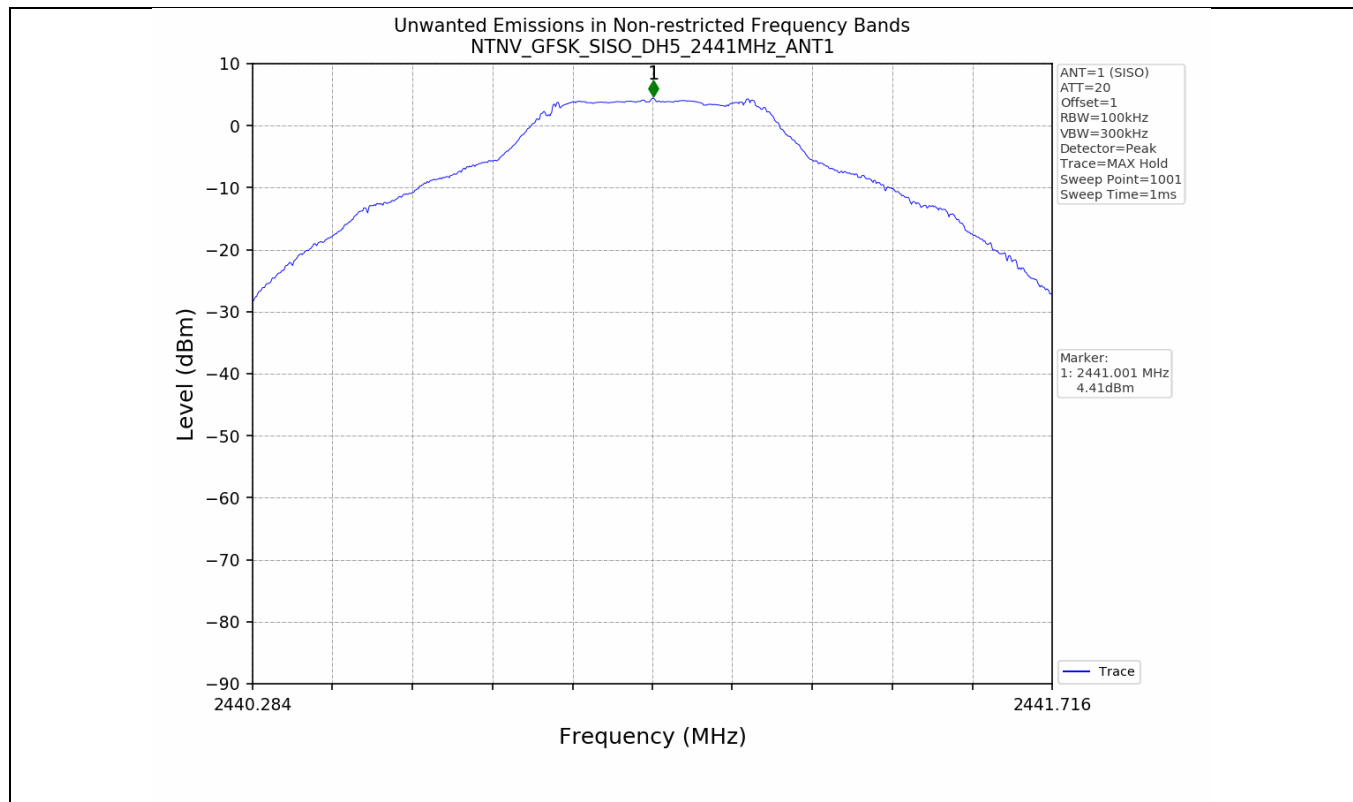


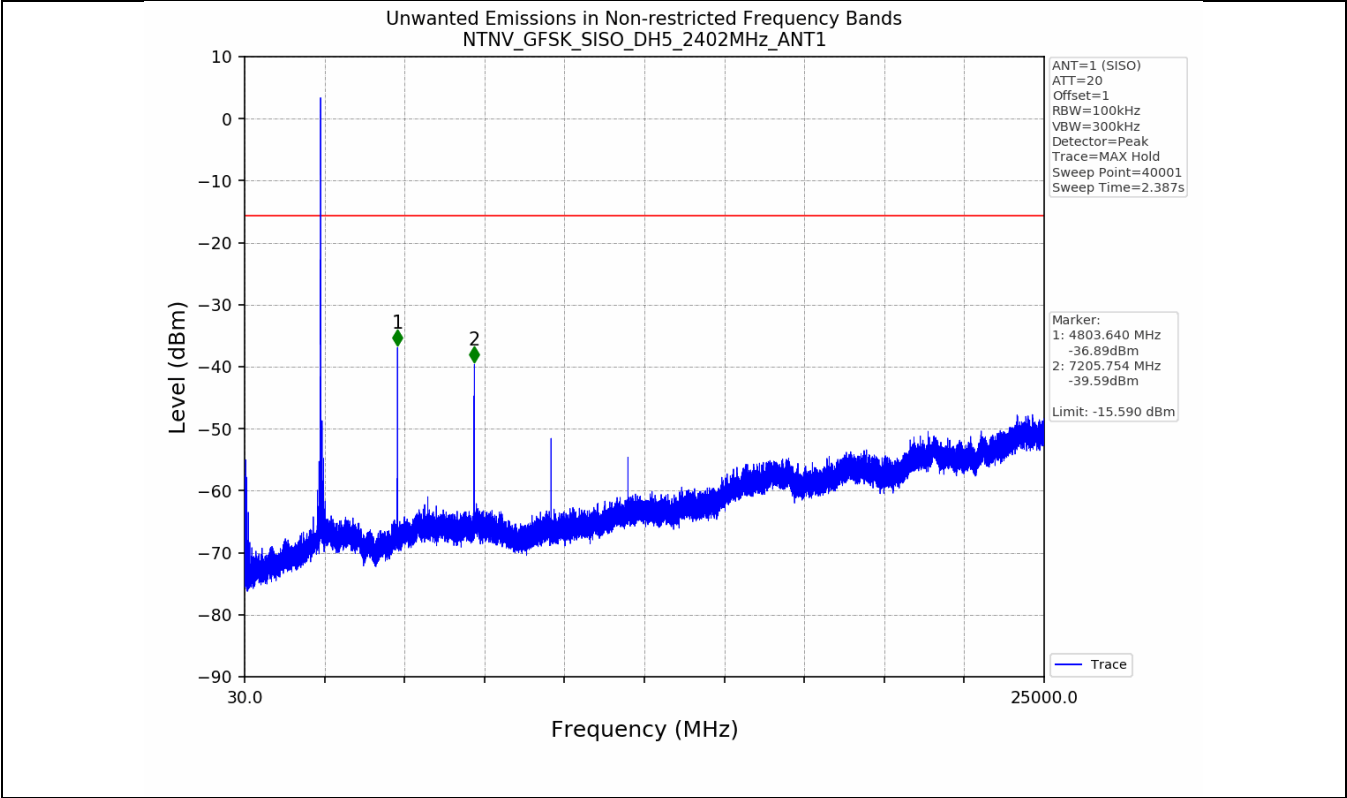
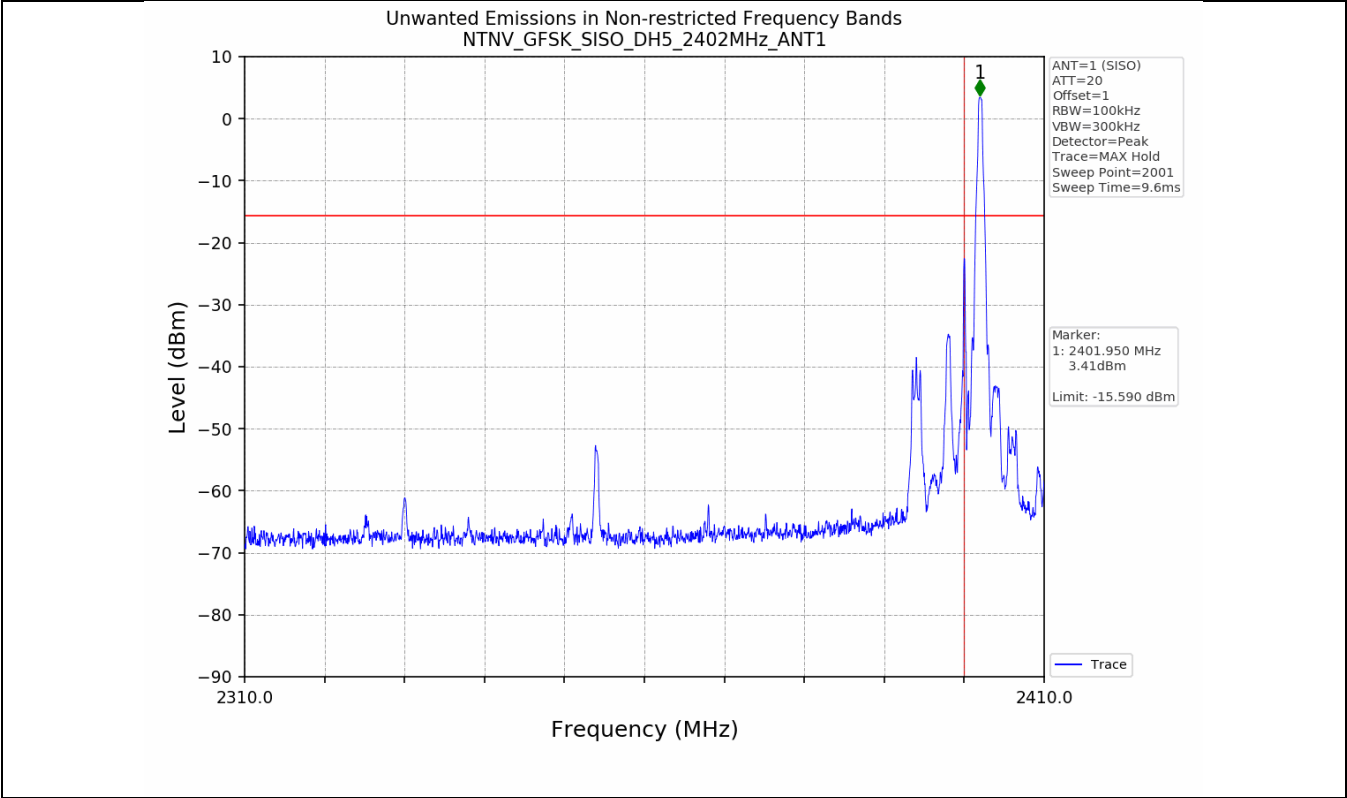
6. Unwanted Emissions in Non-restricted Frequency Bands

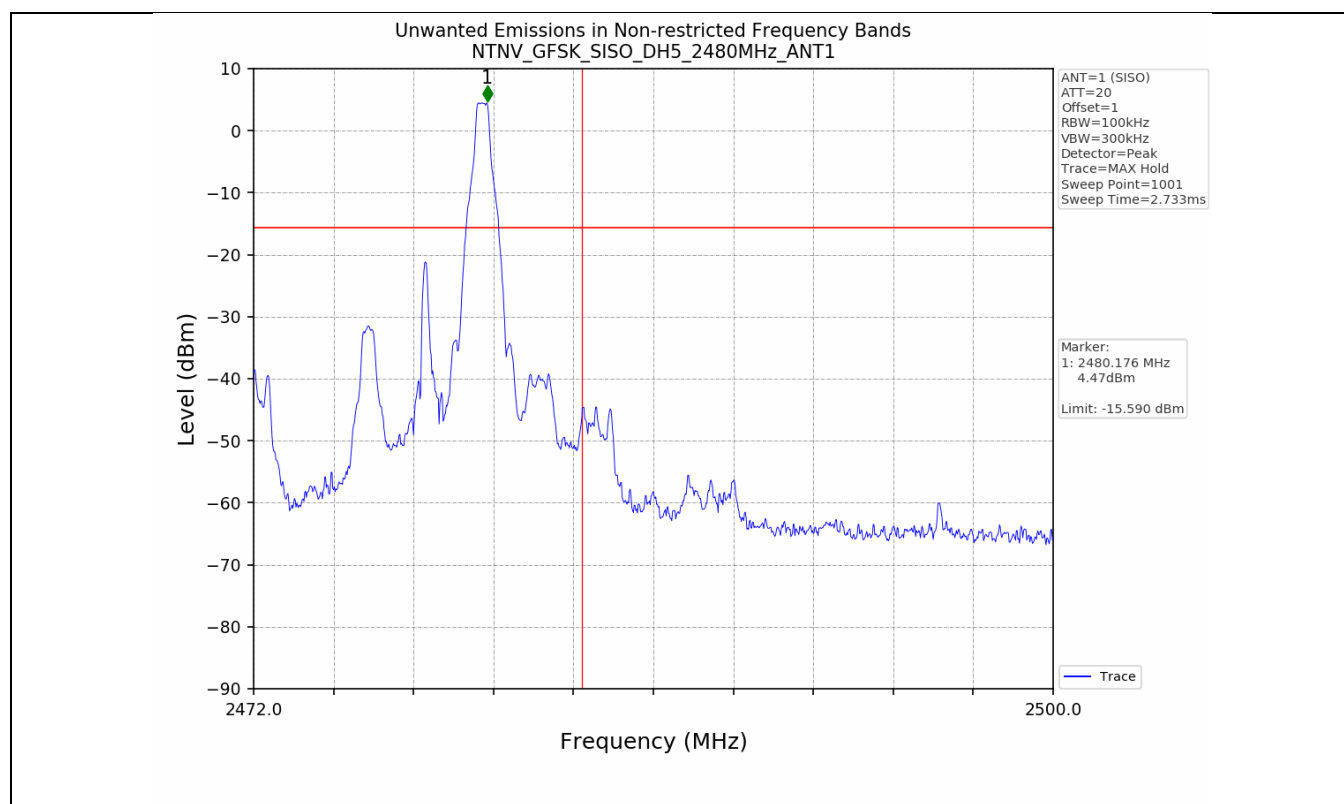
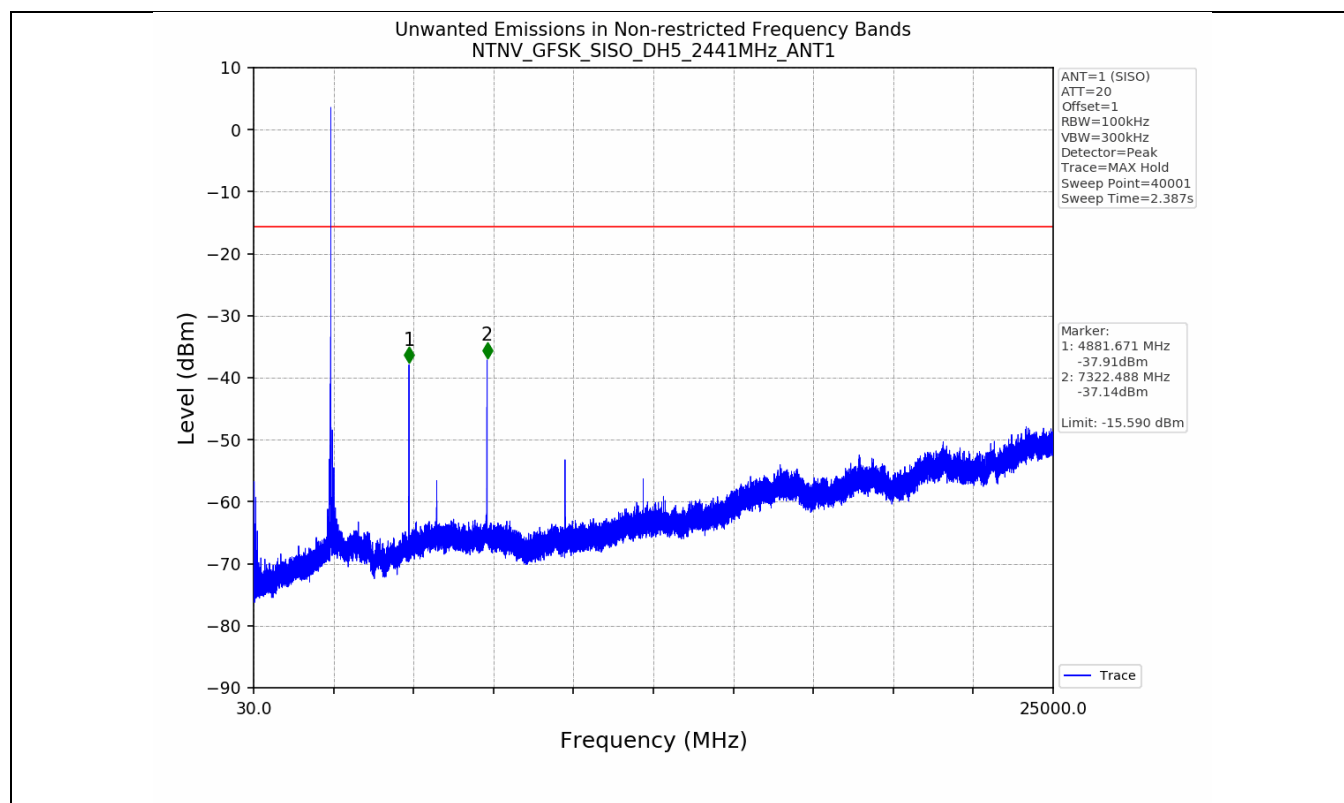
6.1 Test Result

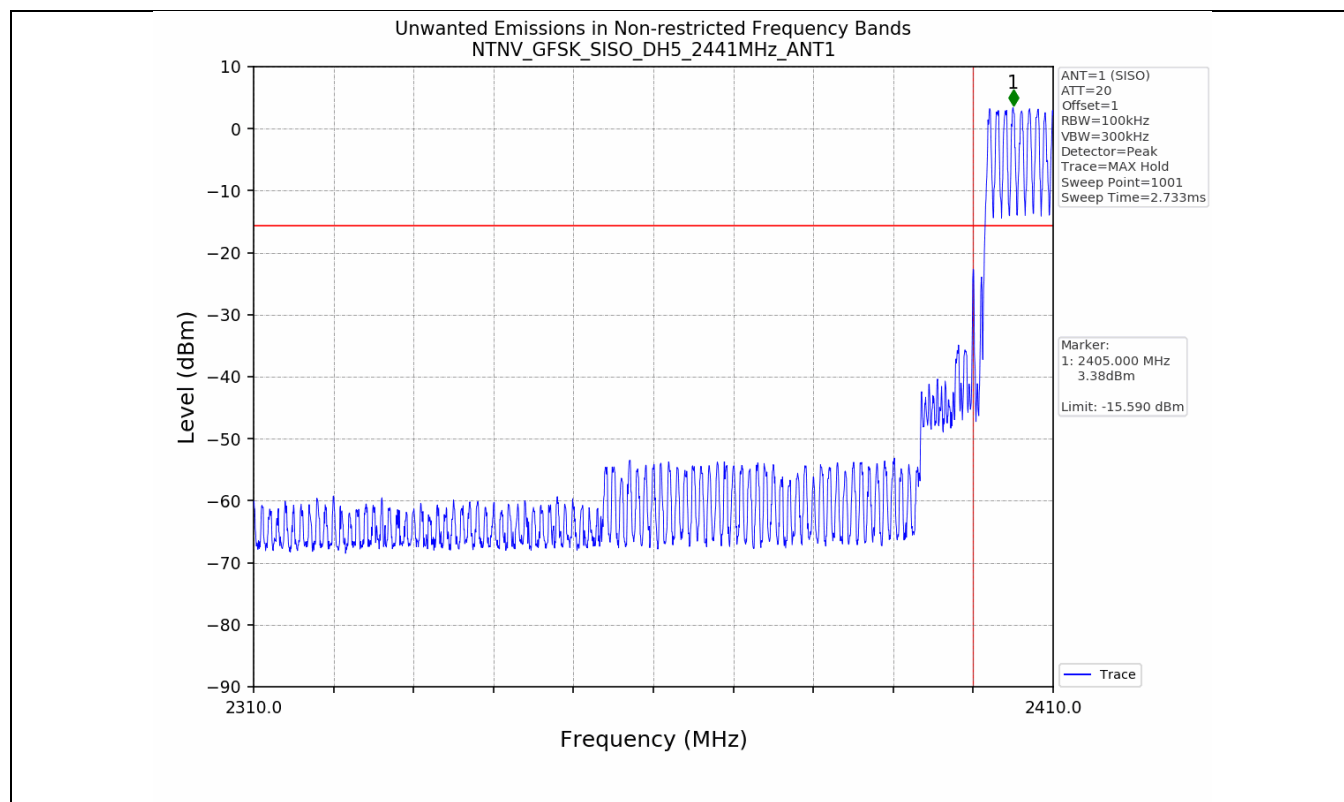
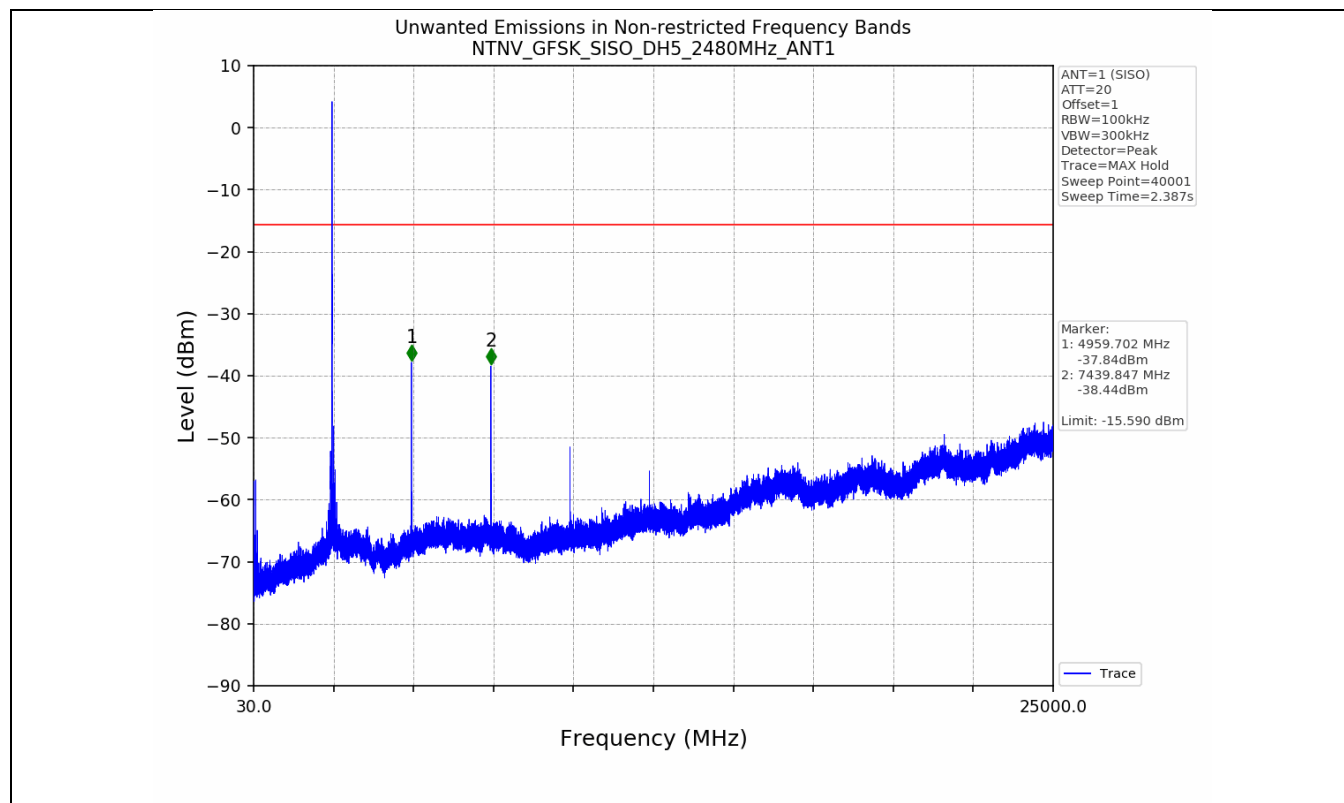
Test Mode	Frequency (MHz)	TX Type	ANT No.	Spurious Conducted Emission (dBm)	Limits (dBm)	Verdict
GFSK	2402	SISO	1	Refer to test graph	-15.59	PASS
	2441	SISO	1	Refer to test graph	-15.59	PASS
	2480	SISO	1	Refer to test graph	-15.59	PASS
	Hopping	SISO	1	Refer to test graph	-15.59	PASS
Pi/4DQPSK	2402	SISO	1	Refer to test graph	-15.42	PASS
	2441	SISO	1	Refer to test graph	-15.42	PASS
	2480	SISO	1	Refer to test graph	-15.42	PASS
	Hopping	SISO	1	Refer to test graph	-15.42	PASS
8DPSK	2402	SISO	1	Refer to test graph	-15.41	PASS
	2441	SISO	1	Refer to test graph	-15.41	PASS
	2480	SISO	1	Refer to test graph	-15.41	PASS
	Hopping	SISO	1	Refer to test graph	-15.41	PASS

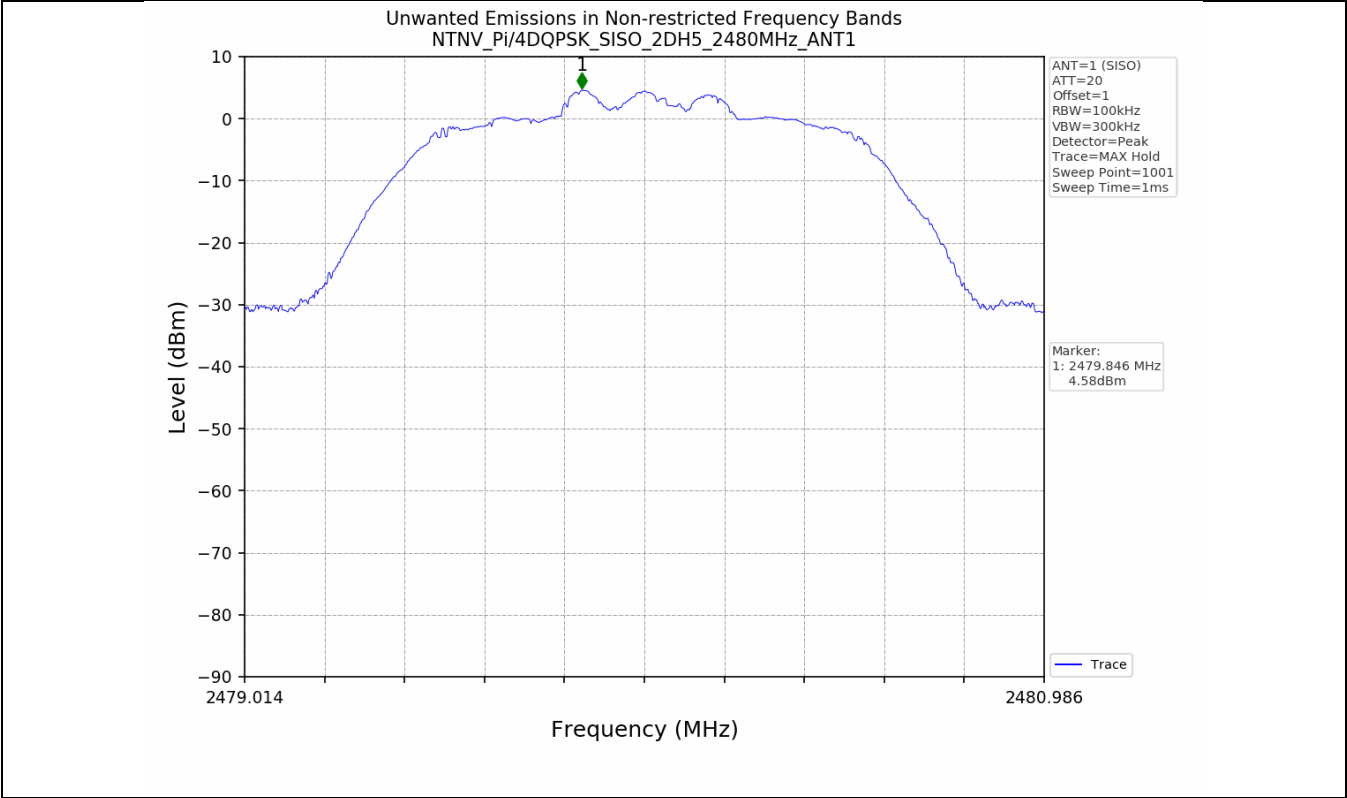
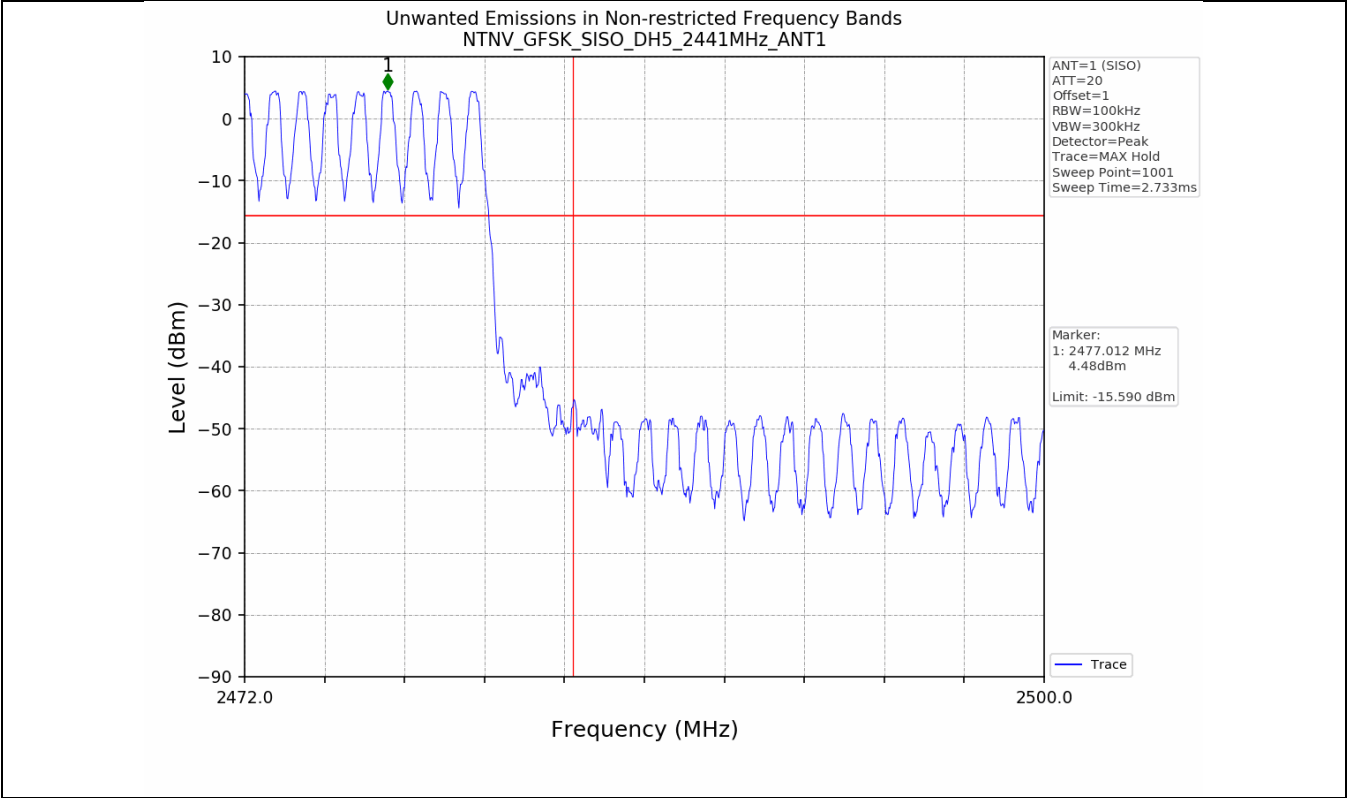
6.2 Test Graph

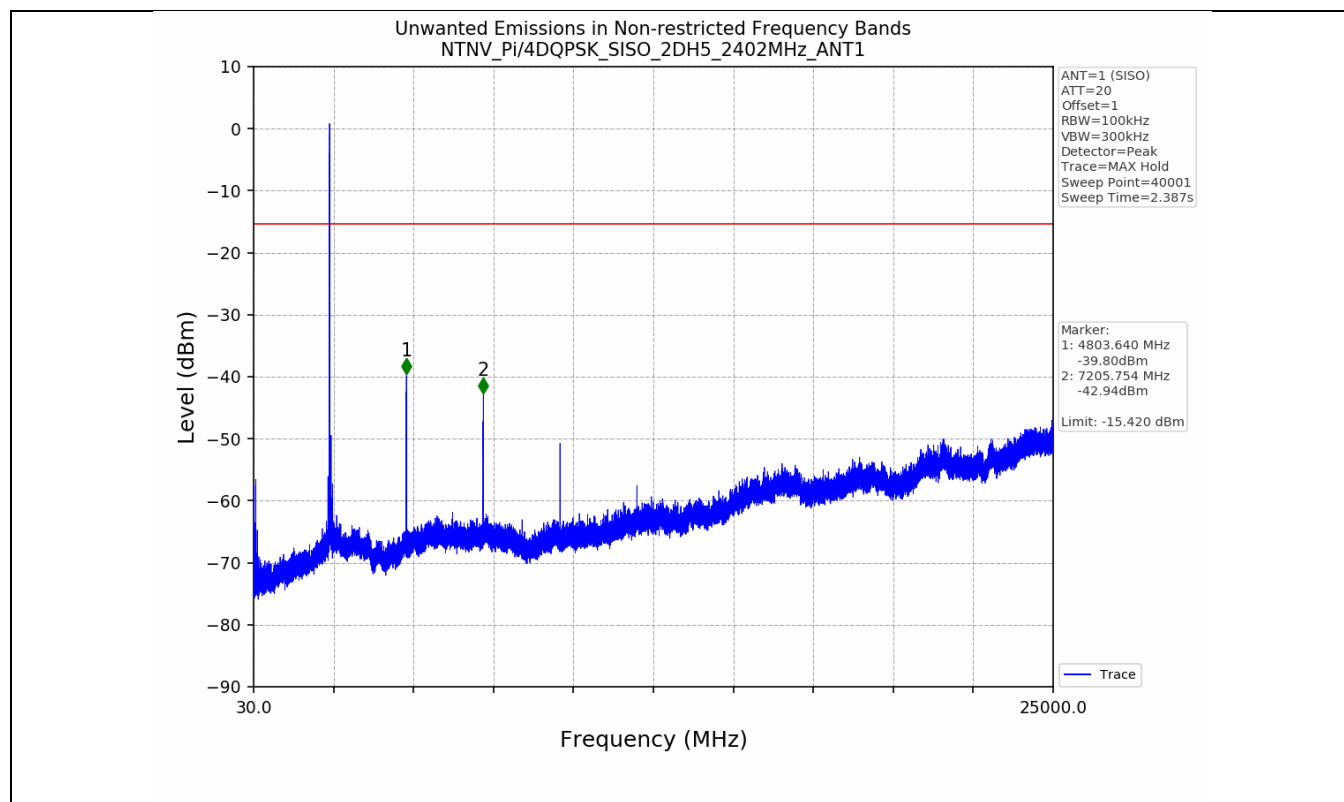
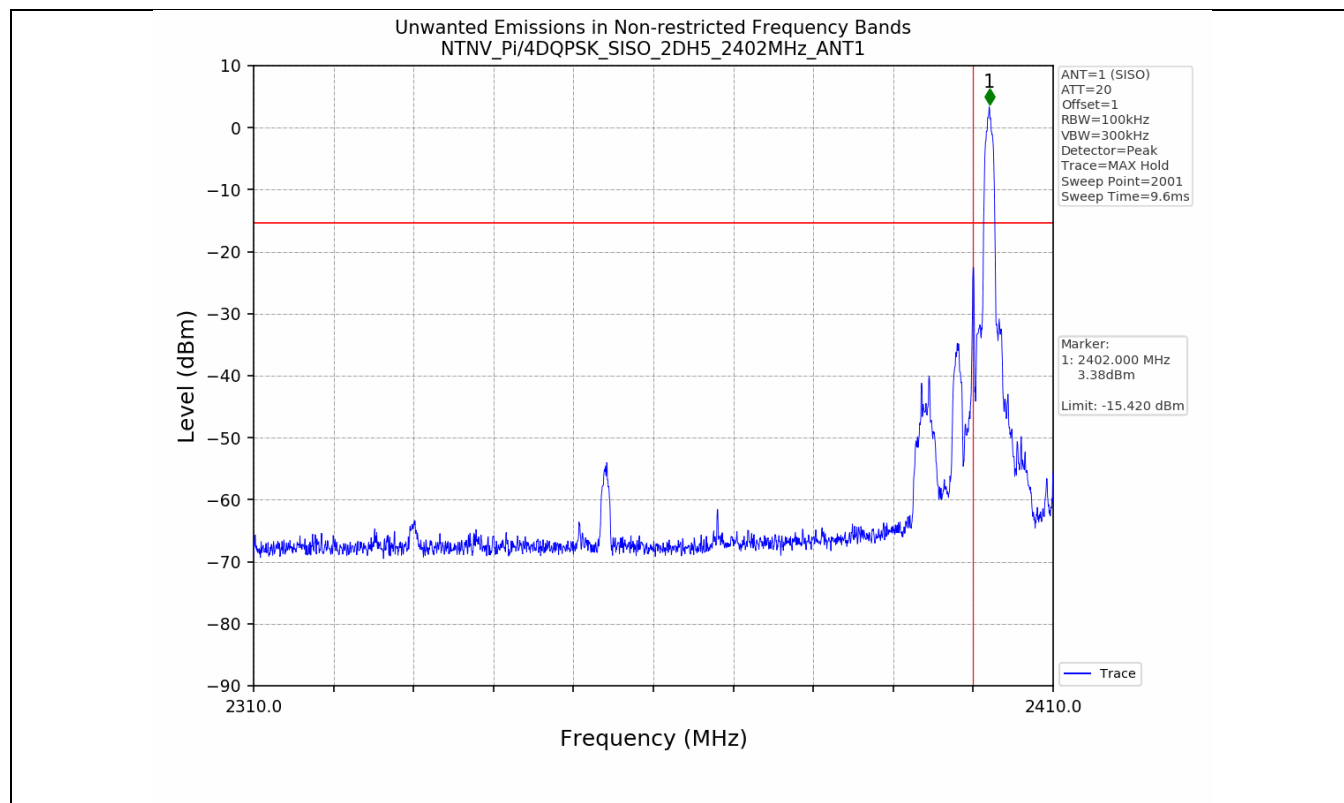


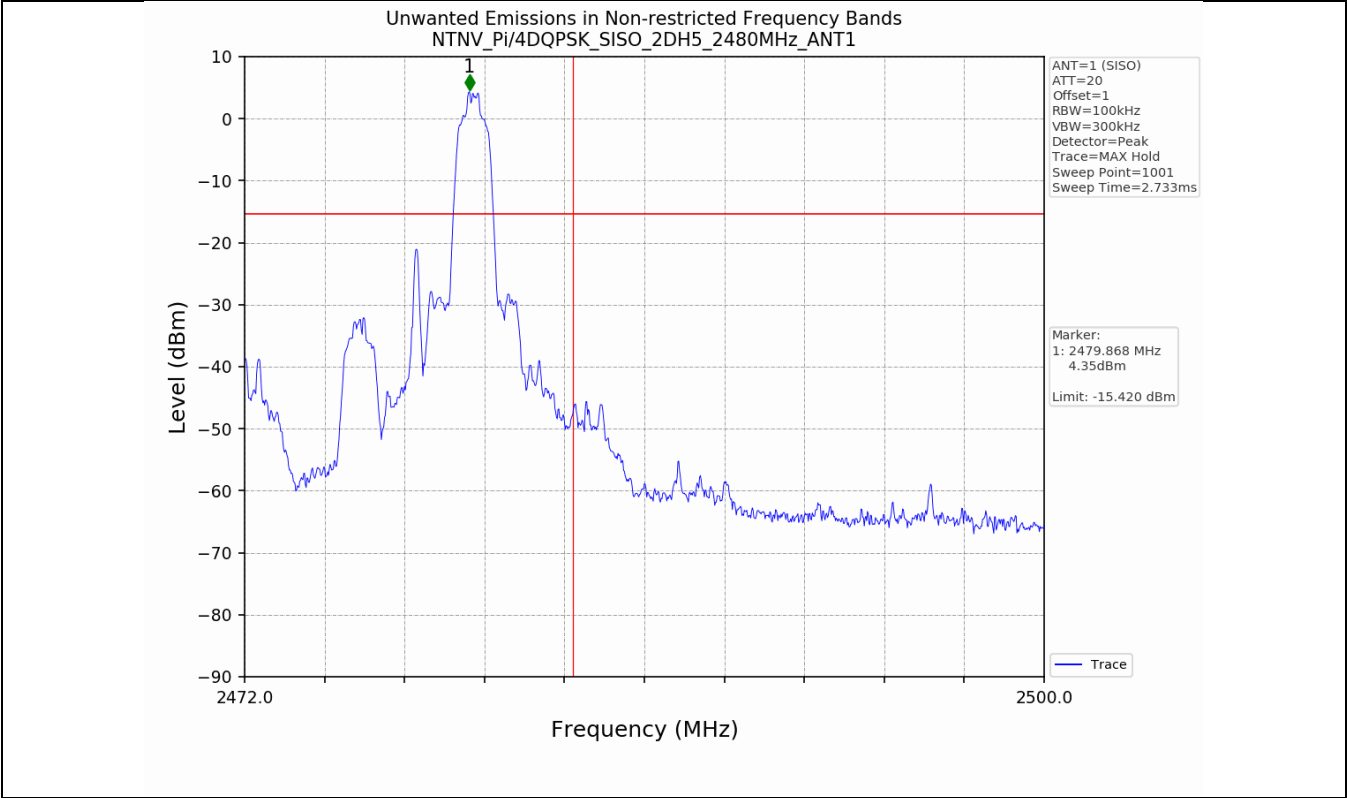
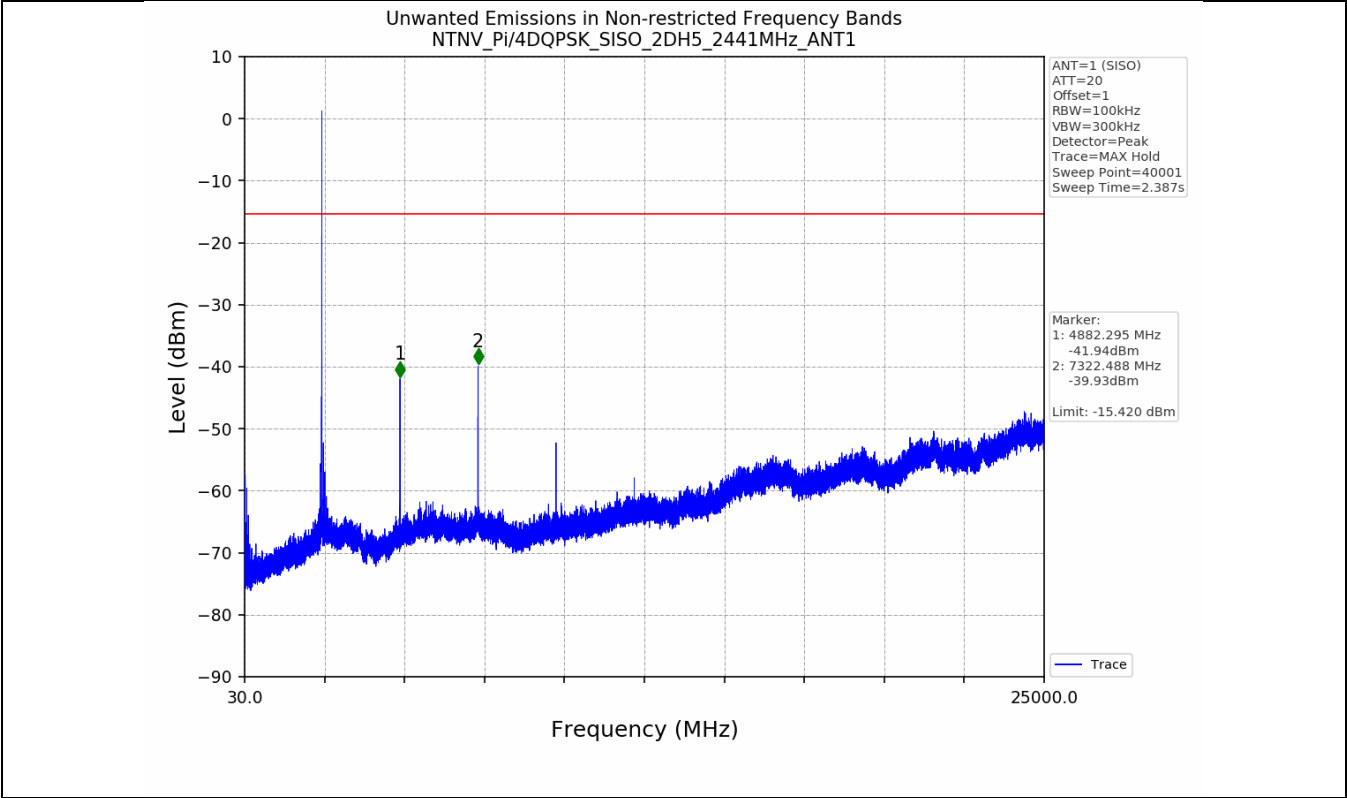


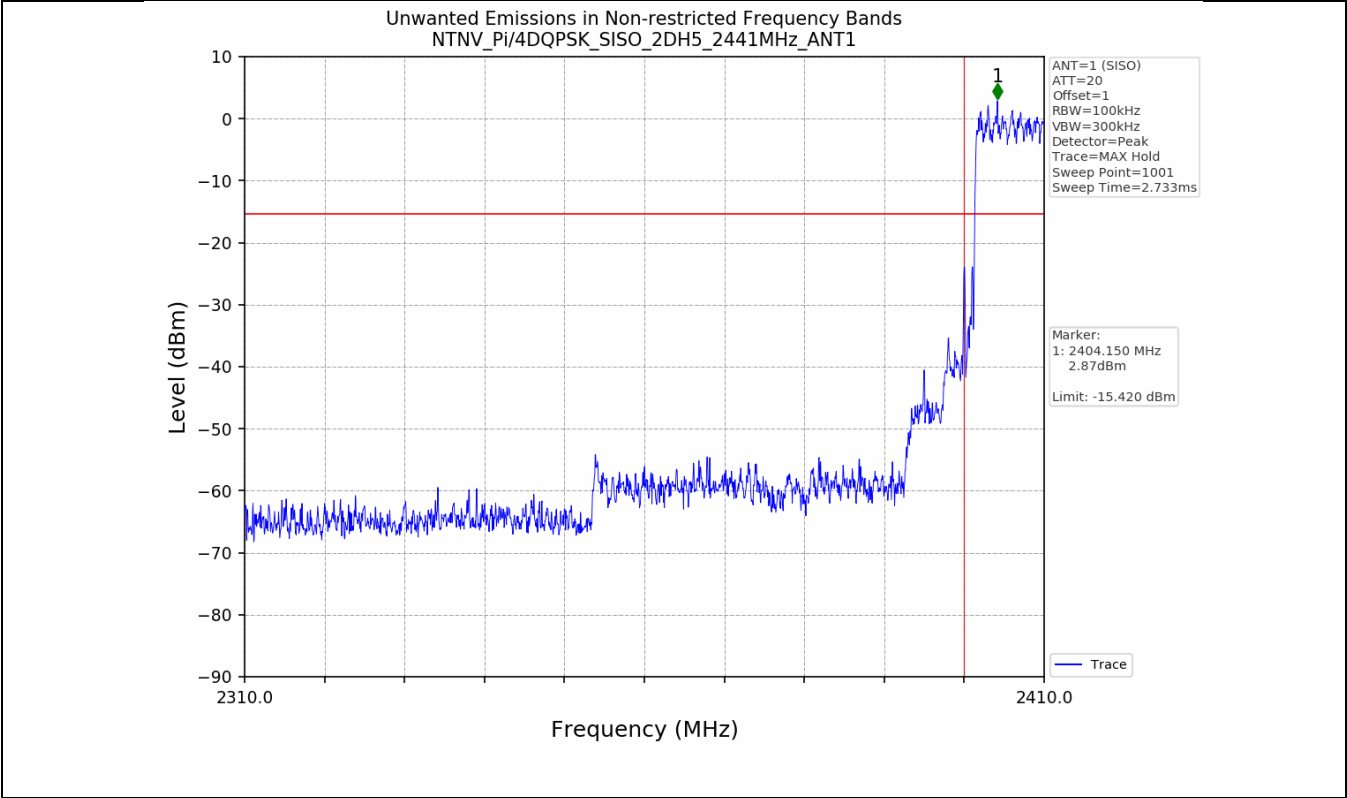
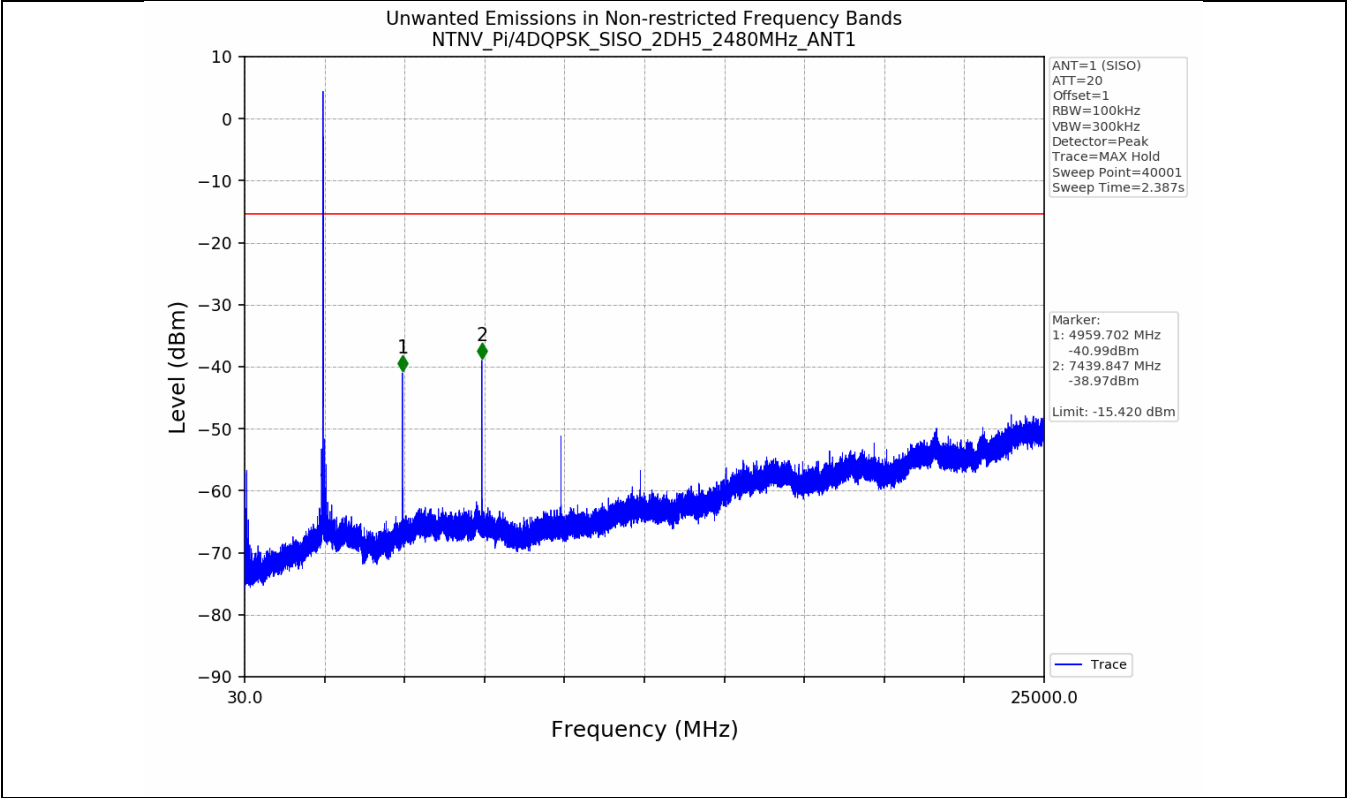


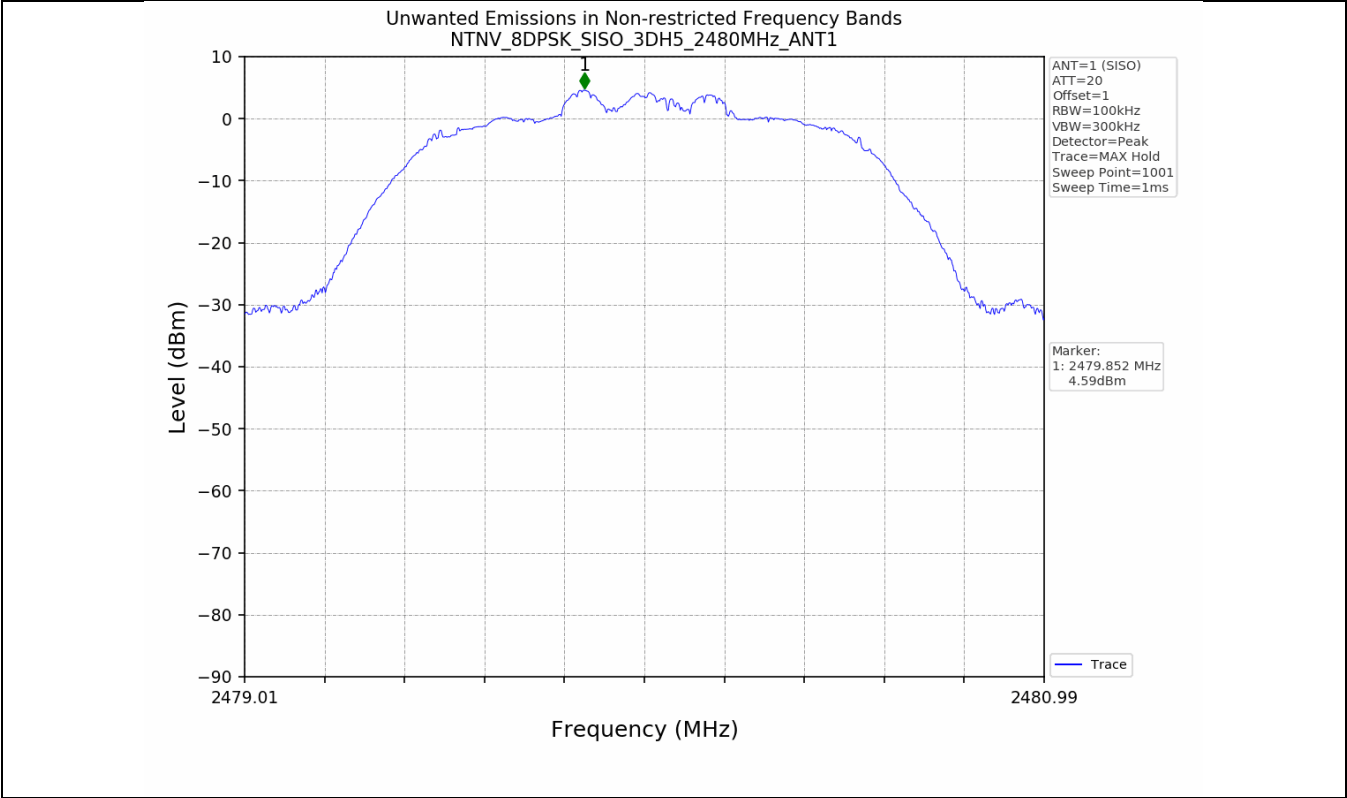
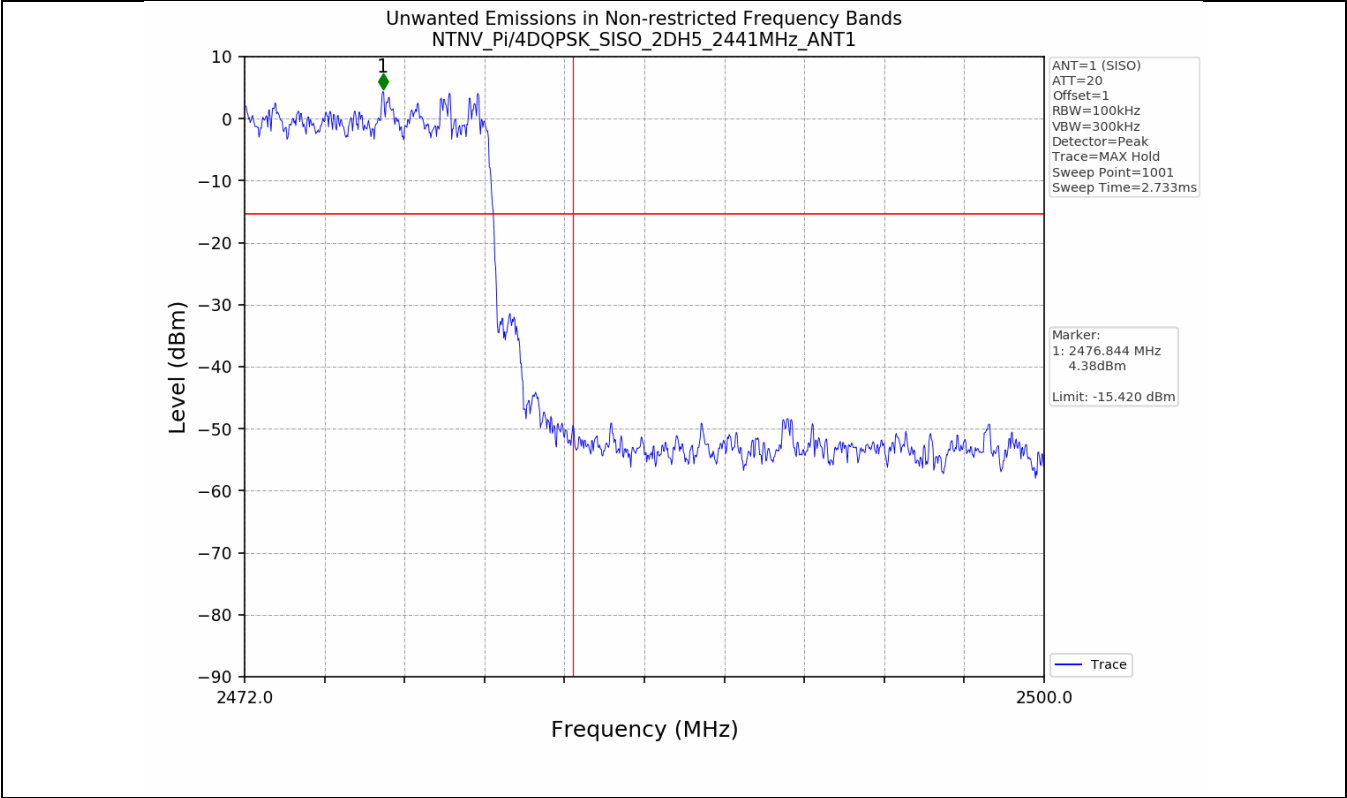


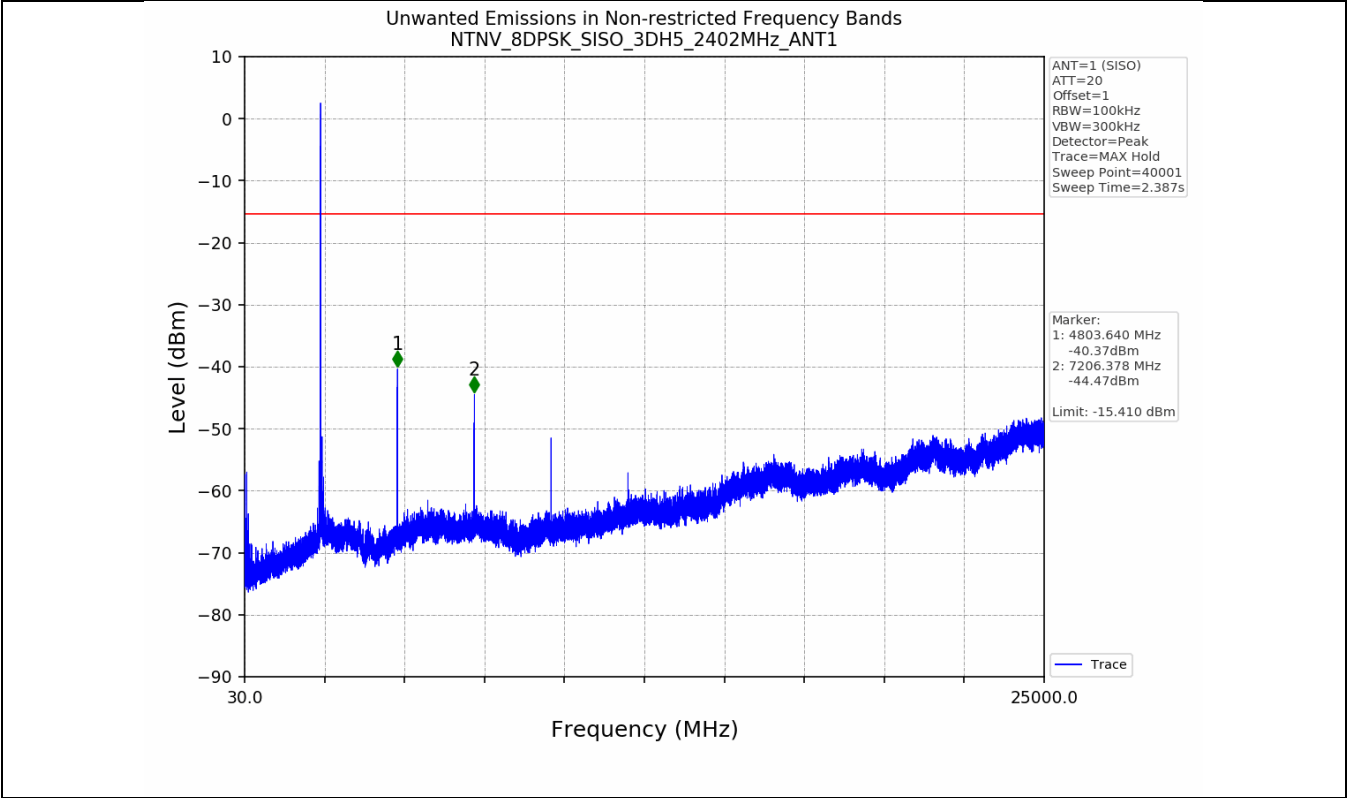
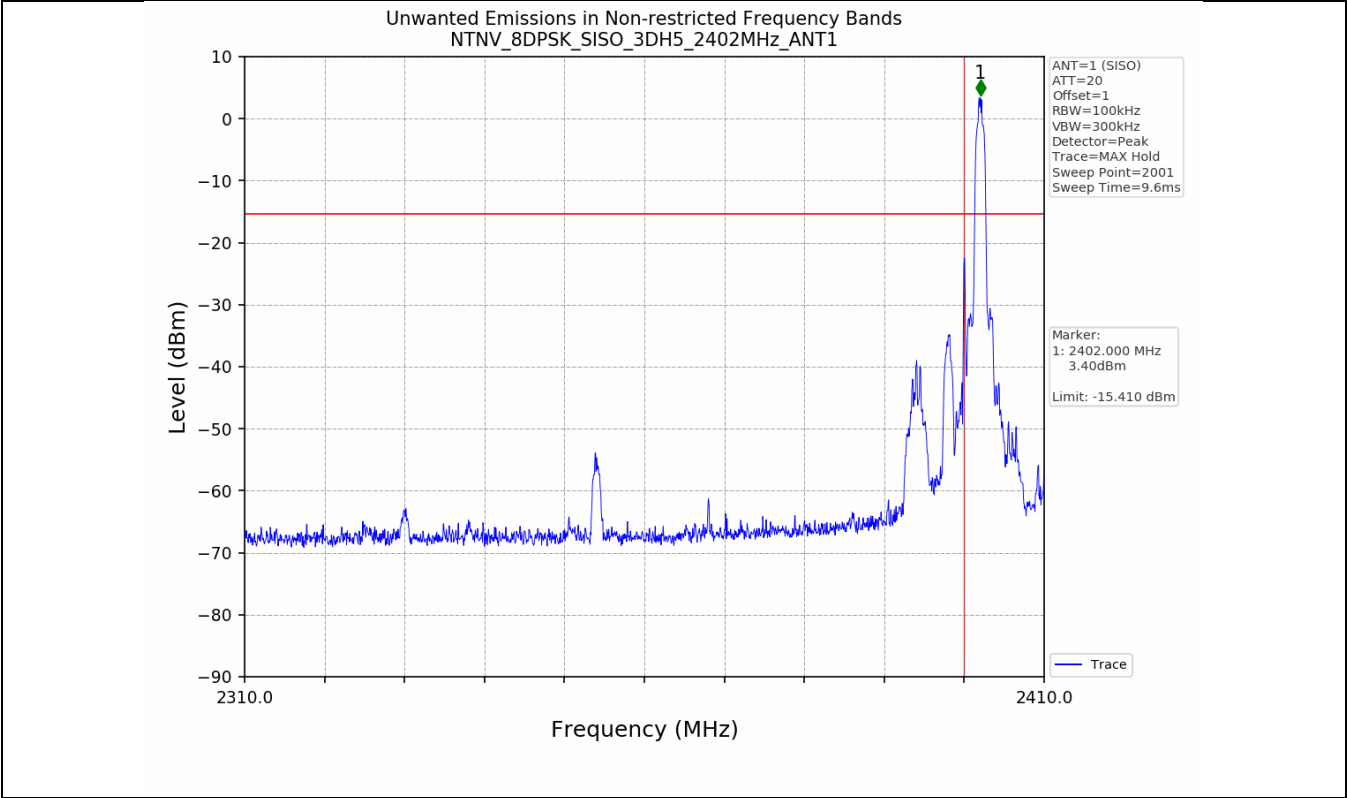


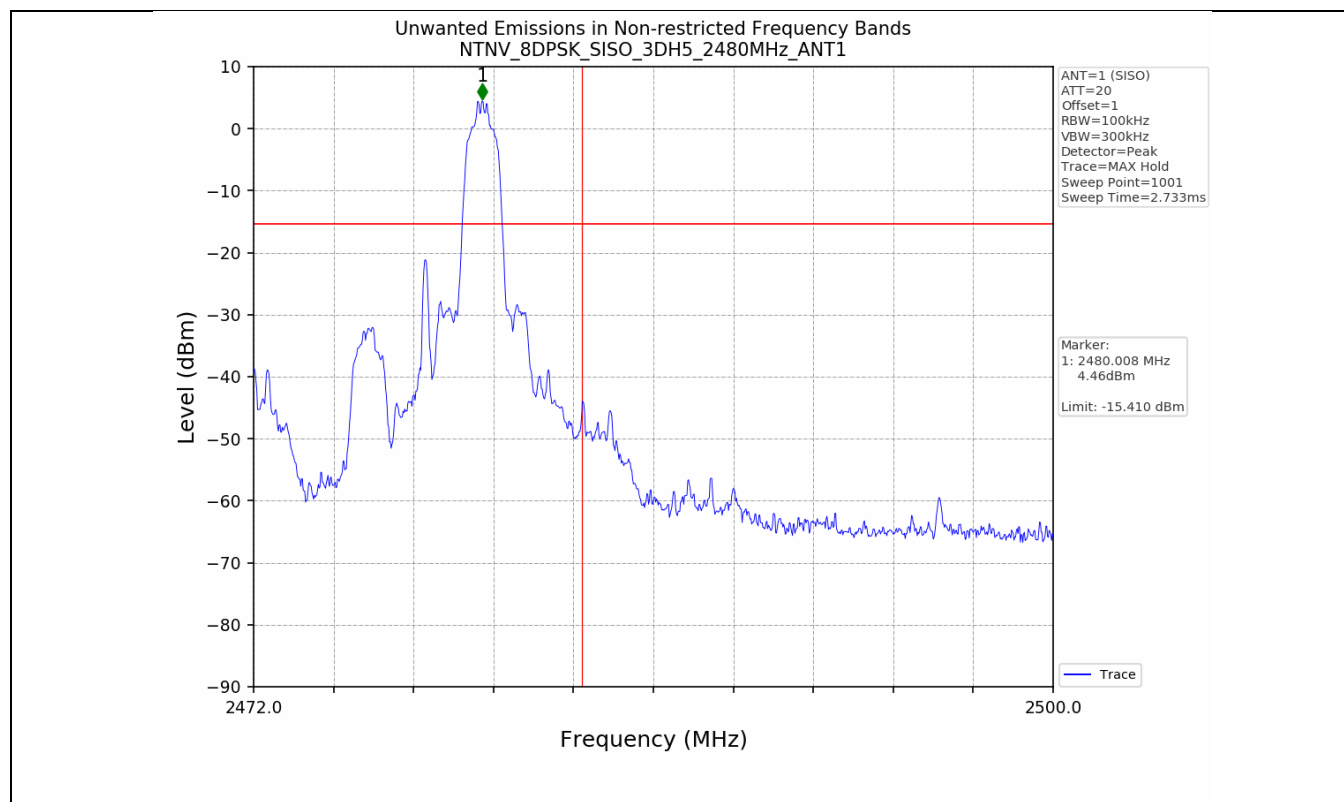
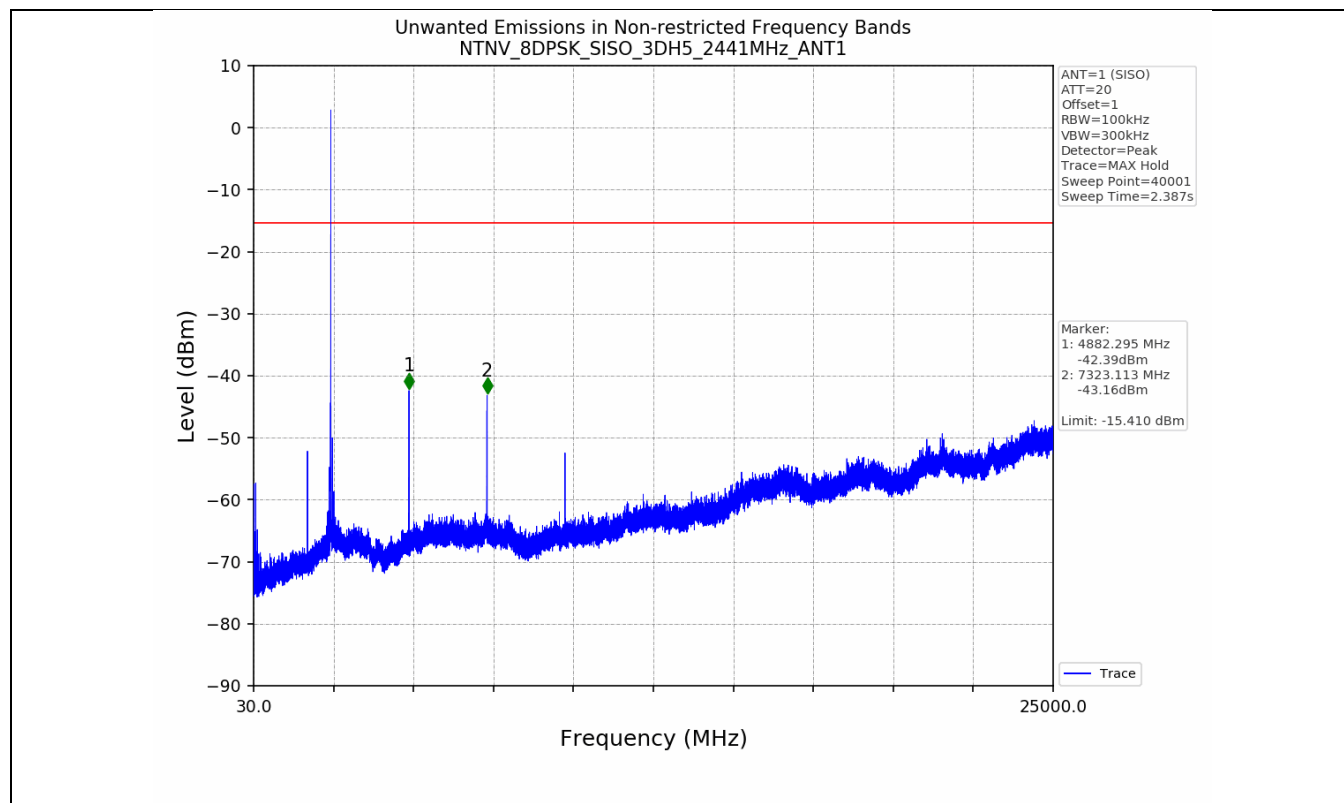


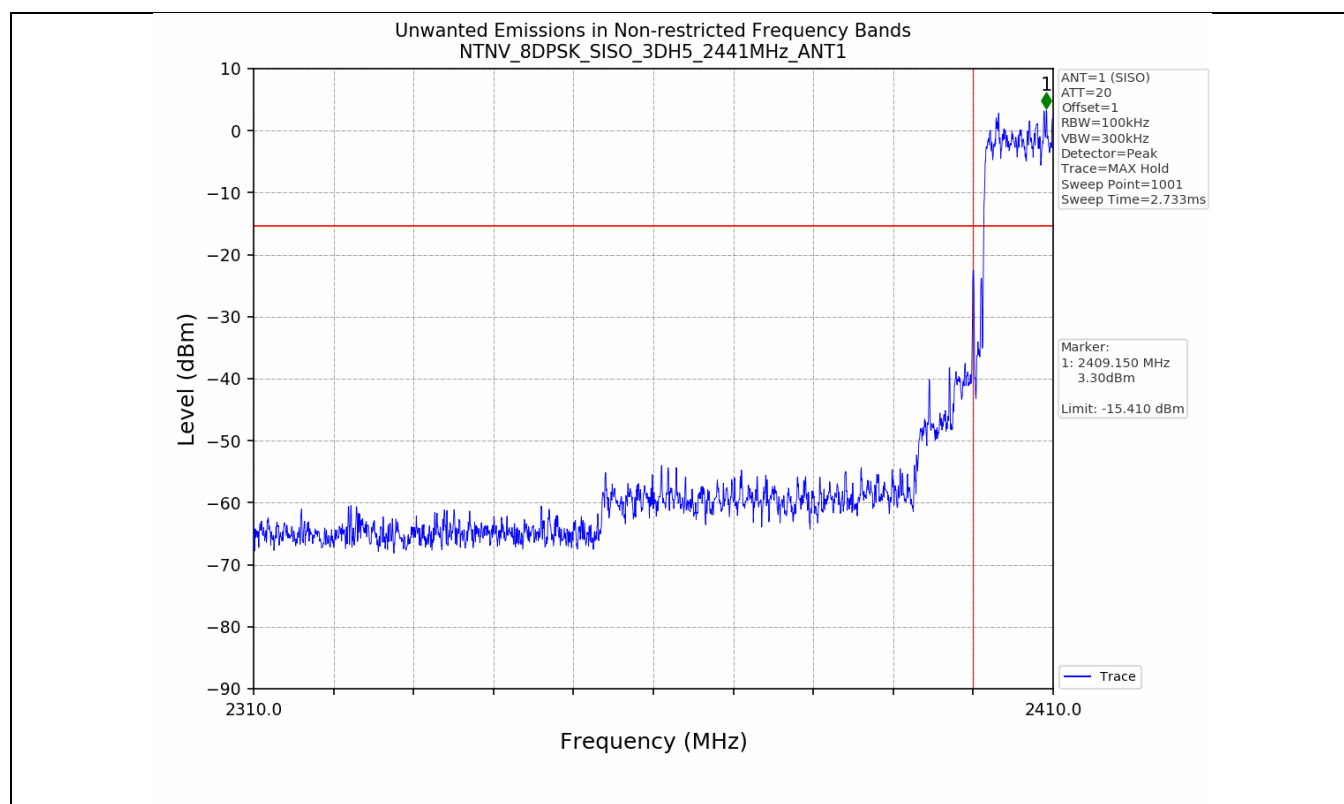
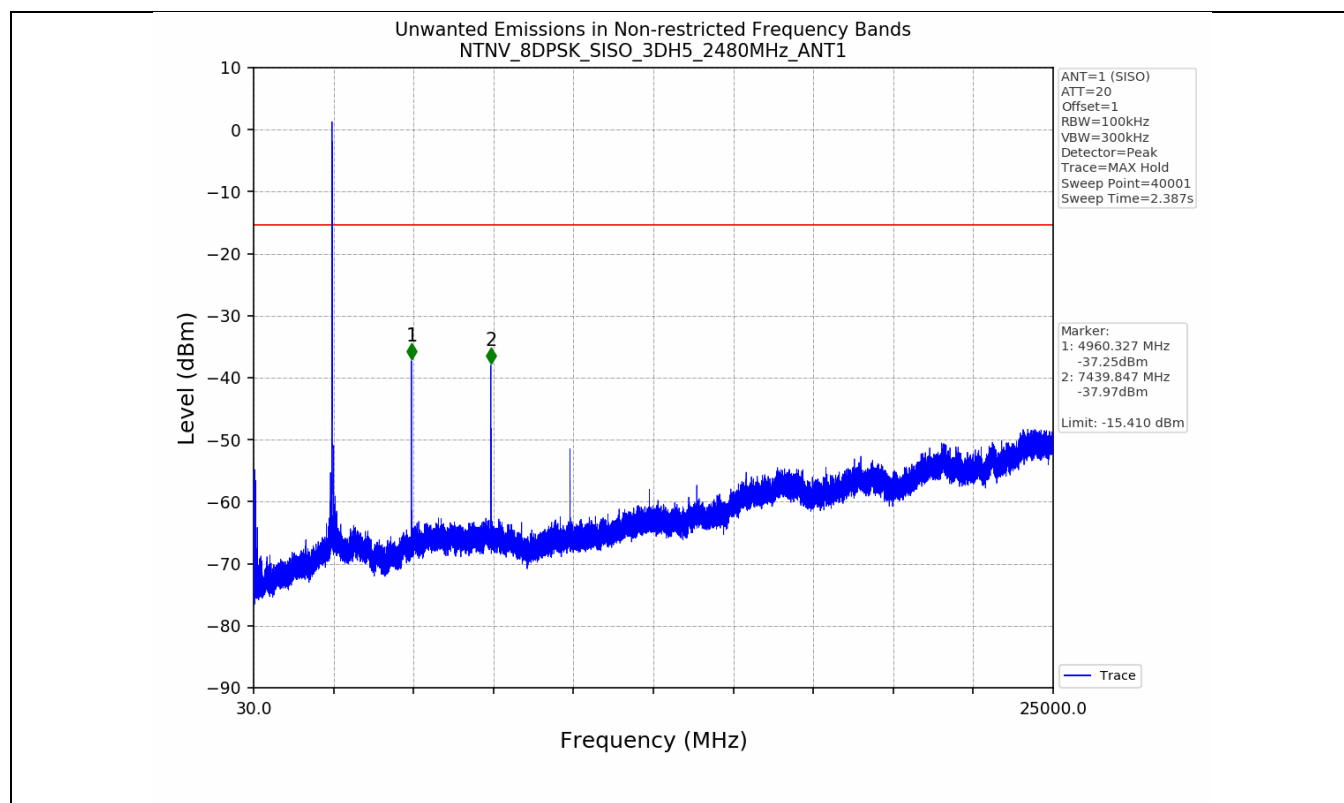


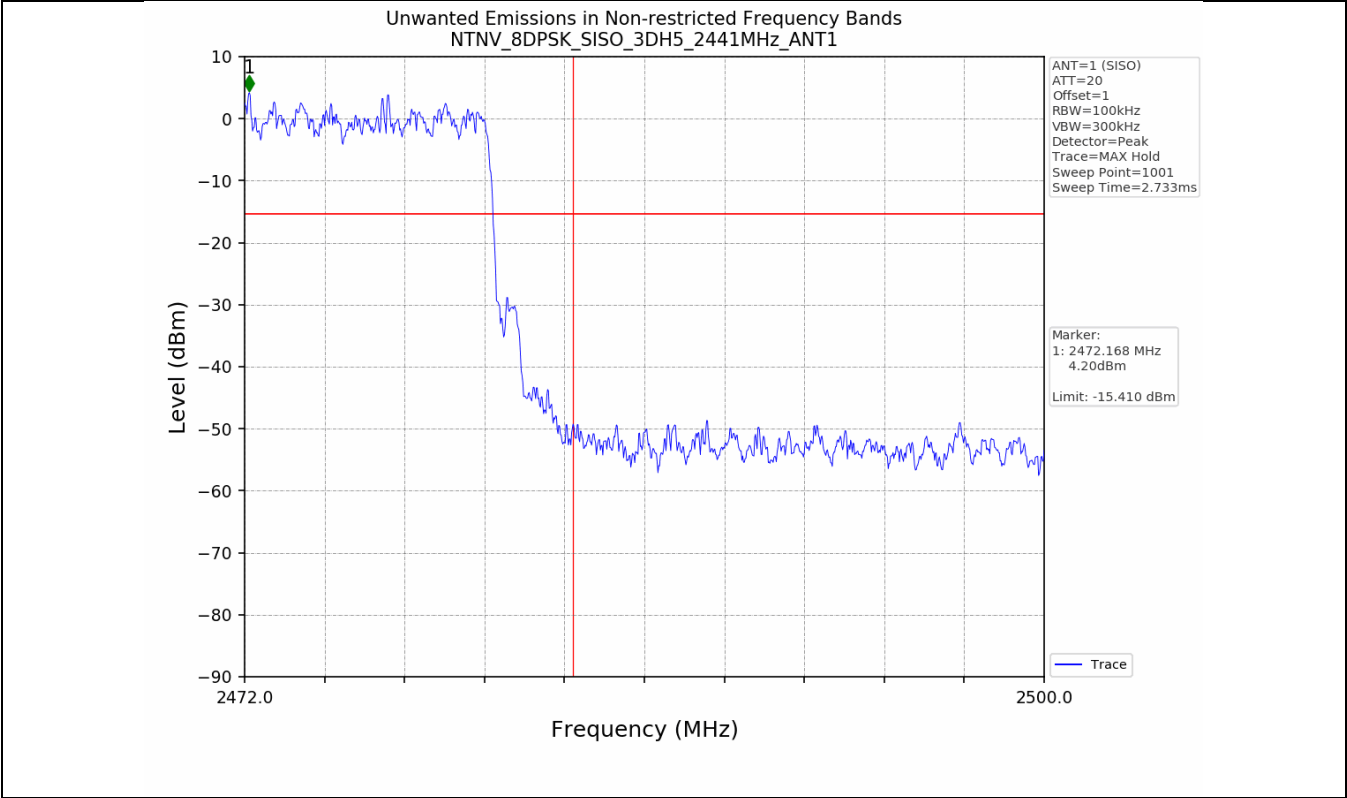












7. Frequency Error

7.1 Test Result

Test Mode	Frequency (MHz)	TX Type	ANT	Measured Frequency (MHz)		Verdict
				Test Result	Limit	
GFSK	2402	SISO	1	2402.00	2400-2483.5	PASS
	2441	SISO	1	2441.00	2400-2483.5	PASS
	2480	SISO	1	2479.99	2400-2483.5	PASS
Pi/4DQPSK	2402	SISO	1	2401.99	2400-2483.5	PASS
	2441	SISO	1	2441.00	2400-2483.5	PASS
	2480	SISO	1	2480.00	2400-2483.5	PASS

7.2 Test Graph

