

Annex for Bluetooth BR&EDR Part 15.247

Test Report No.: CTL2002251011-WF01

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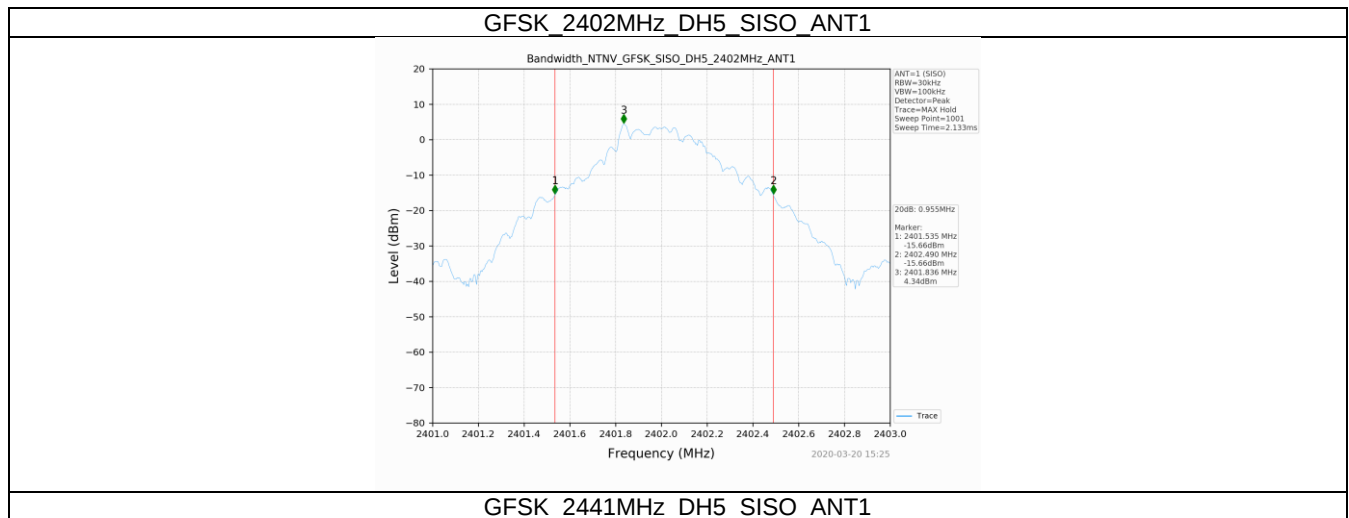
1. Bandwidth

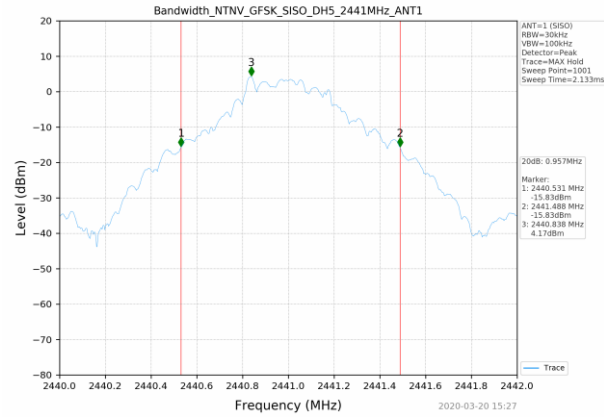
1.1 Test Result

Test Mode	Frequency (MHz)	TX Type	ANT No.	20dB Bandwidth	Verdict
				Test Result (MHz)	
GFSK	2402	SISO	1	0.955	PASS
	2441	SISO	1	0.957	PASS
	2480	SISO	1	0.956	PASS
Pi/4DQPSK	2402	SISO	1	1.311	PASS
	2441	SISO	1	1.289	PASS
	2480	SISO	1	1.290	PASS
8DPSK	2402	SISO	1	1.302	PASS
	2441	SISO	1	1.302	PASS
	2480	SISO	1	1.309	PASS

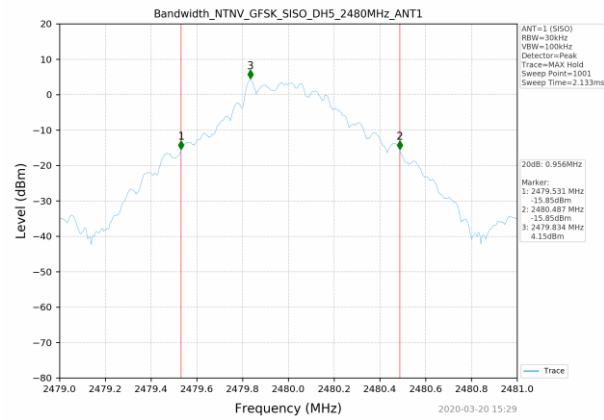
Test Mode	Frequency (MHz)	TX Type	ANT No.	99% Occupied Bandwidth	
				Test Result (MHz)	
GFSK	2402	SISO	1	0.887	Only for Report Use
	2441	SISO	1	0.887	Only for Report Use
	2480	SISO	1	0.890	Only for Report Use
Pi/4DQPSK	2402	SISO	1	1.180	Only for Report Use
	2441	SISO	1	1.179	Only for Report Use
	2480	SISO	1	1.180	Only for Report Use
8DPSK	2402	SISO	1	1.191	Only for Report Use
	2441	SISO	1	1.187	Only for Report Use
	2480	SISO	1	1.188	Only for Report Use

1.2 Test Graph - 20dB Bandwidth

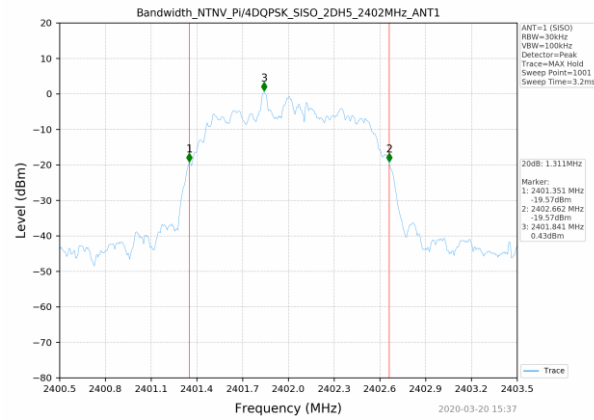




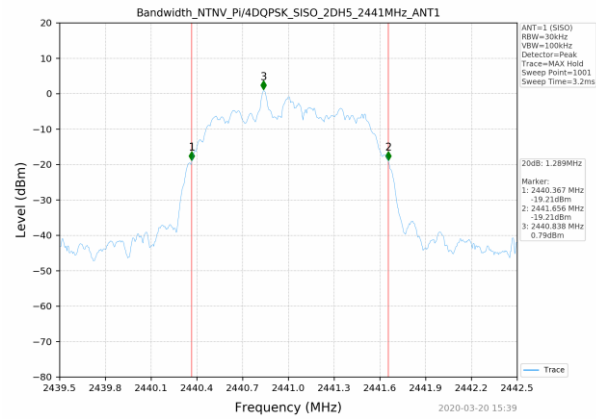
GFSK_2480MHz_DH5_SISO_ANT1



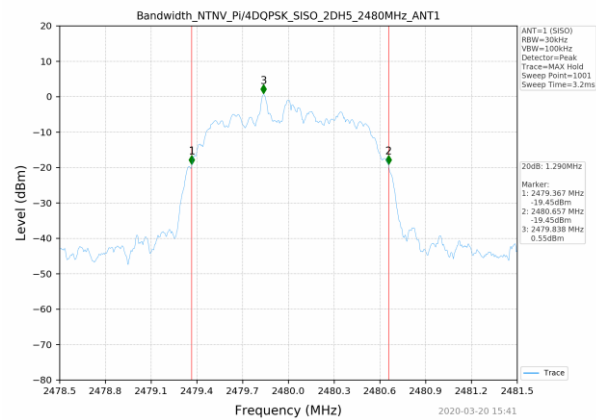
Pi/4DQPSK_2402MHz_2DH5_SISO_ANT1



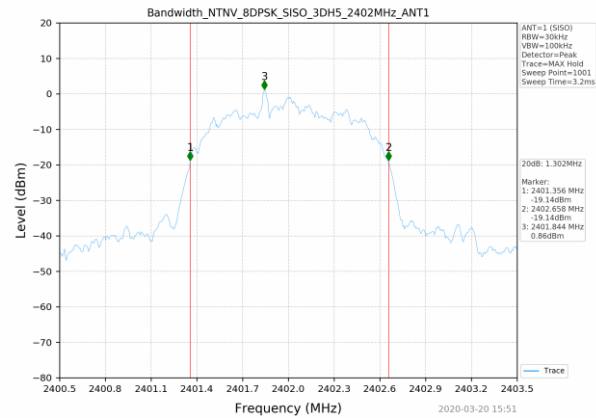
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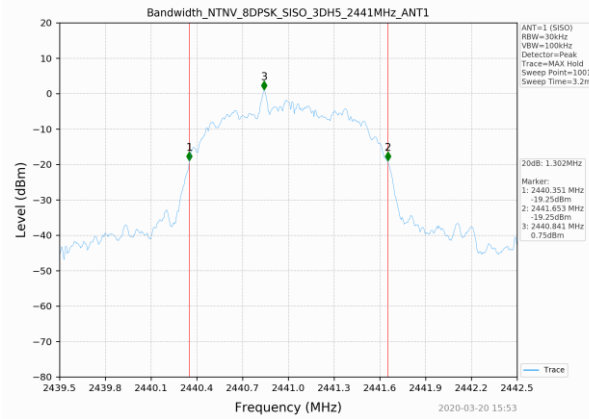
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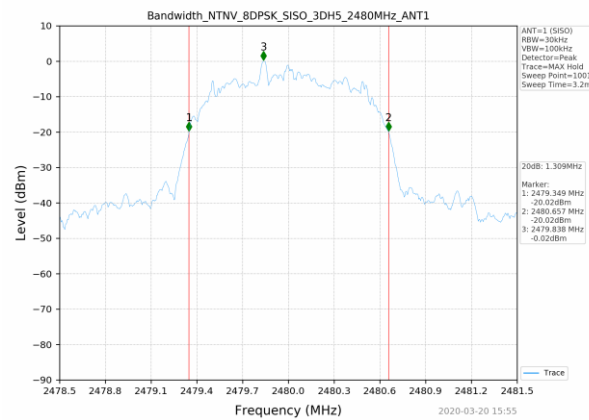
8DPSK_2402MHz_3DH5_SISO_ANT1



8DPSK_2441MHz_3DH5_SISO_ANT1

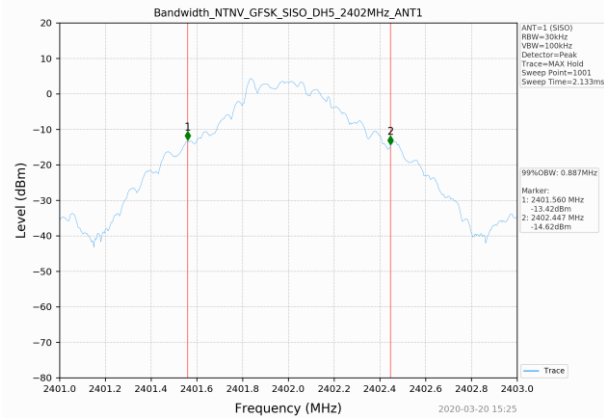


8DPSK 2480MHz 3DH5 SISO ANT1

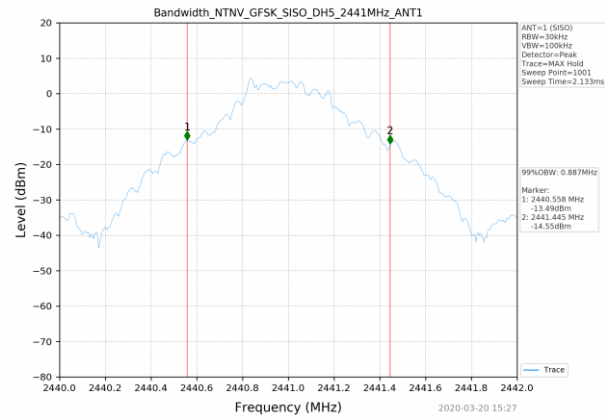


1.3 Test Graph - 99% Occupied Bandwidth

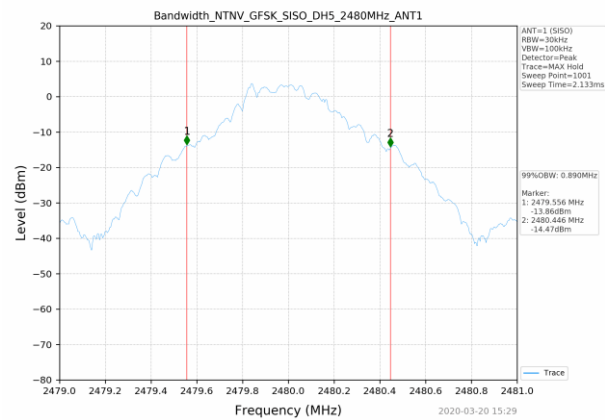
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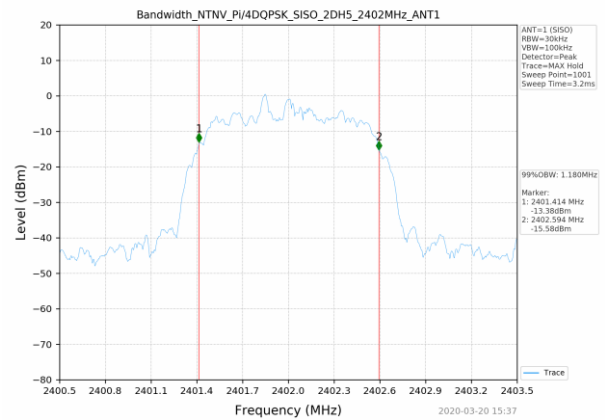
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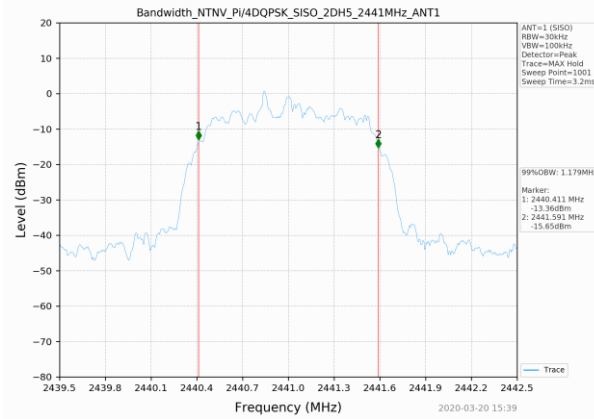
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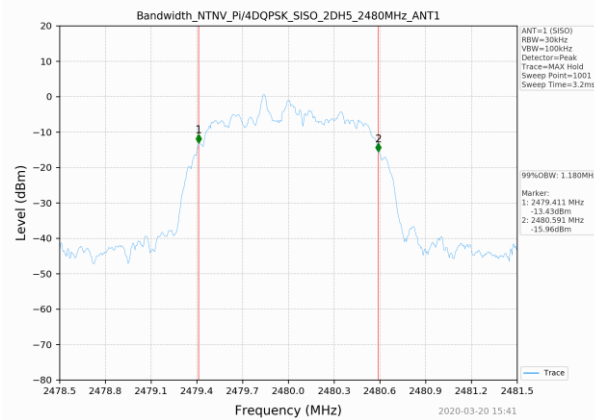
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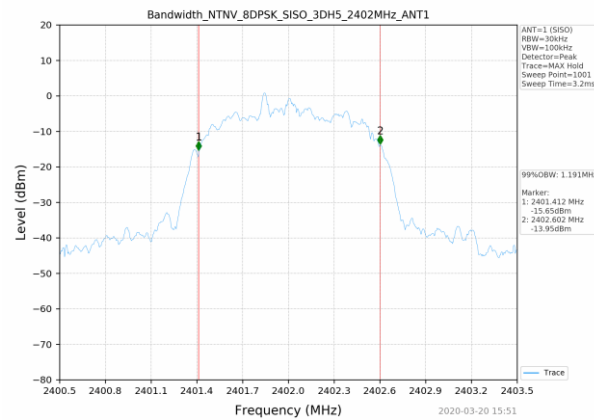
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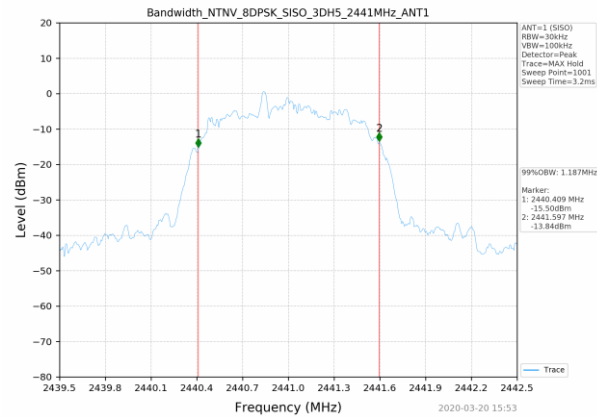
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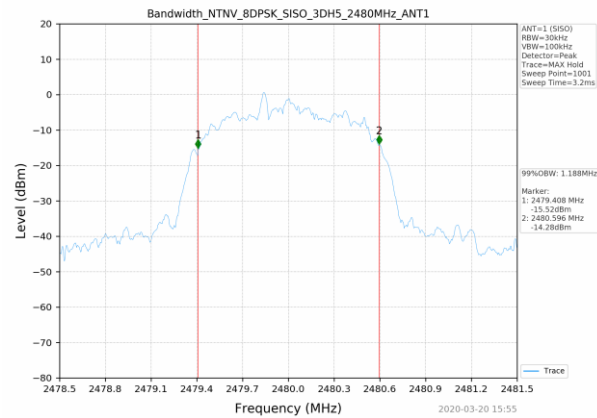
8DPSK_2402MHz_3DH5_SISO_ANT1



8DPSK_2441MHz_3DH5_SISO_ANT1



8DPSK_2480MHz_3DH5_SISO_ANT1



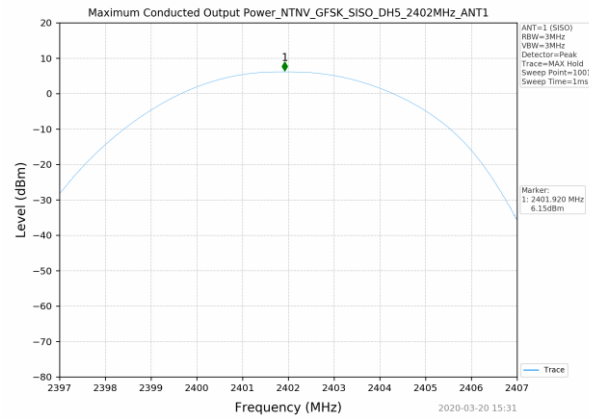
2. Maximum Conducted Output Power

2.1 Test Result

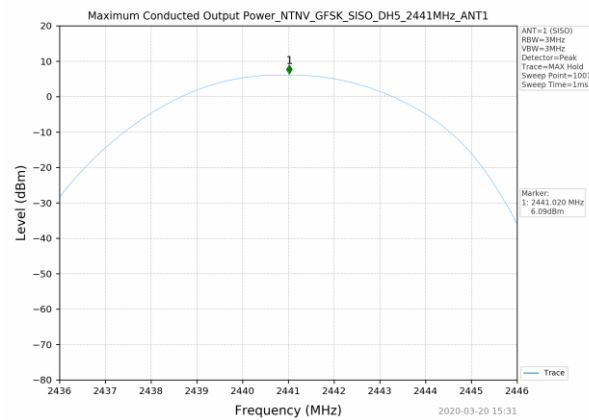
Test Mode	Frequency (MHz)	Tx Type	Measured Peak Output Power (dBm)	Limits (dBm)	Verdict
			Ant 1		
GFSK	2402	SISO	6.15	30	PASS
	2441	SISO	6.09	30	PASS
	2480	SISO	5.90	30	PASS
Pi/4DQPSK	2402	SISO	4.88	20.97	PASS
	2441	SISO	4.85	20.97	PASS
	2480	SISO	4.66	20.97	PASS
8DPSK	2402	SISO	5.45	20.97	PASS
	2441	SISO	5.38	20.97	PASS
	2480	SISO	5.19	20.97	PASS

2.2 Test Graph

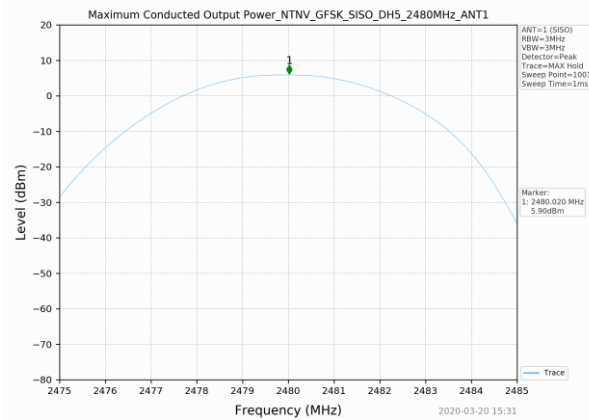
GFSK_2402MHz_DH5_SISO_ANT1



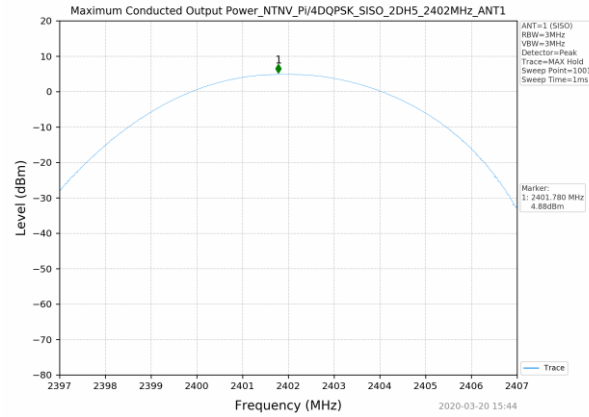
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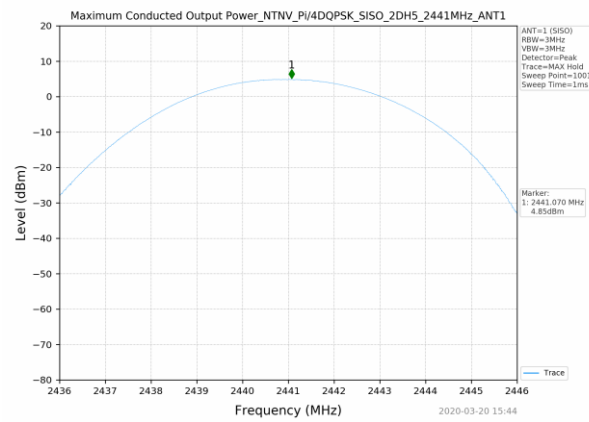
GFSK_2480MHz_DH5_SISO_ANT1



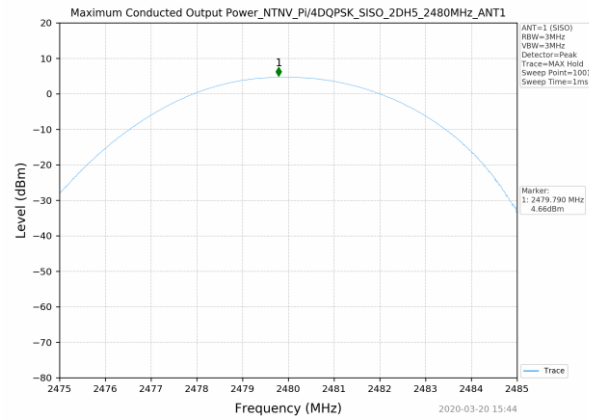
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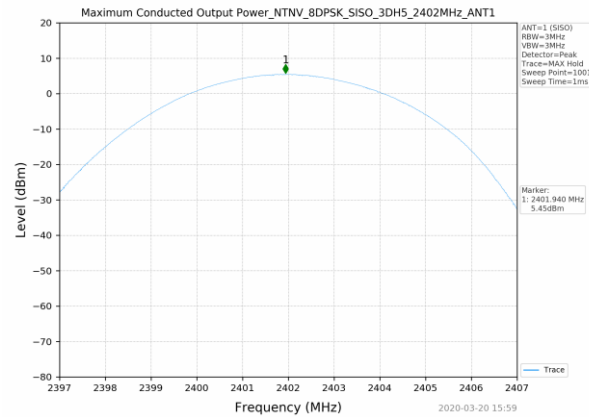
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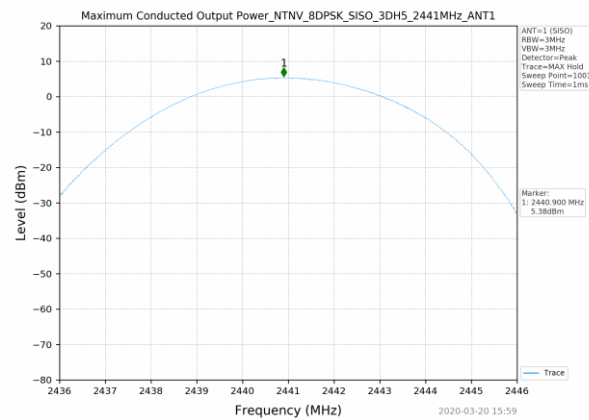
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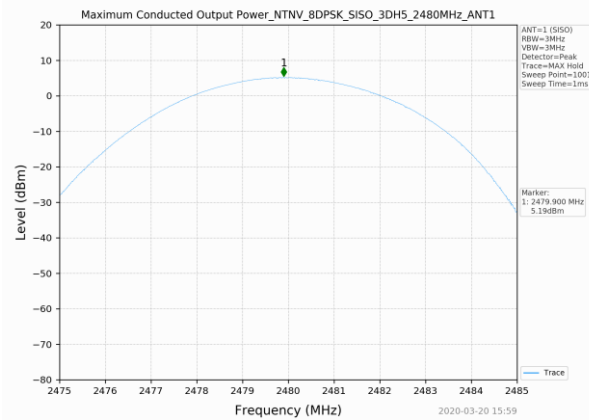
8DPSK_2402MHz_3DH5_SISO_ANT1



8DPSK_2441MHz_3DH5_SISO_ANT1



8DPSK_2480MHz_3DH5_SISO_ANT1



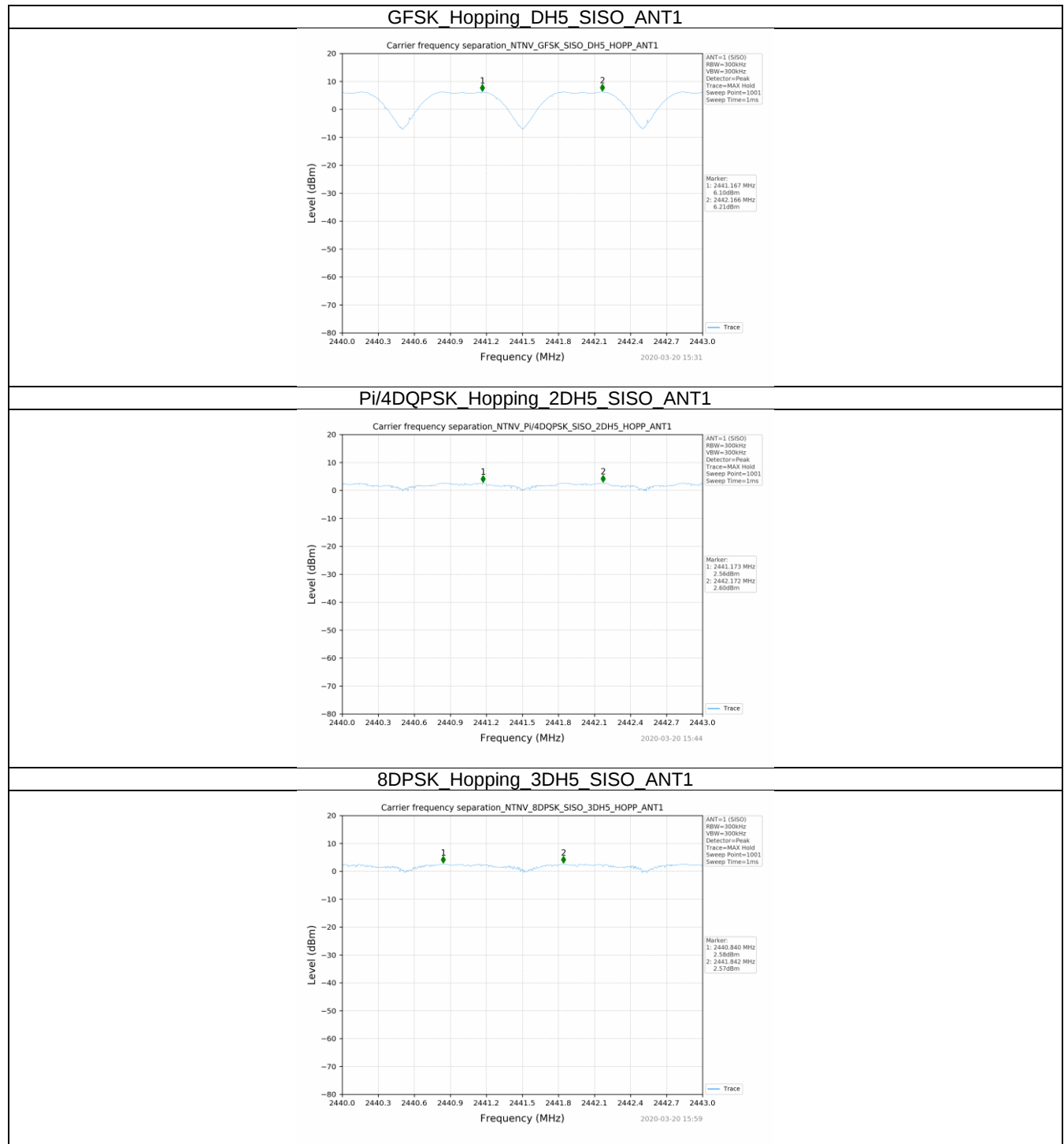
3. Carrier frequency separation

3.1 Test Result

Test Mode	TX Type	ANT No.	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limits (MHz)	Verdict
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GFSK	SISO	1	0.999	0.957	≥ 0.957	PASS
Pi/4DQPSK	SISO	1	0.999	1.311	≥ 0.874	PASS
8DPSK	SISO	1	1.002	1.309	≥ 0.873	PASS

3.2 Test Graph

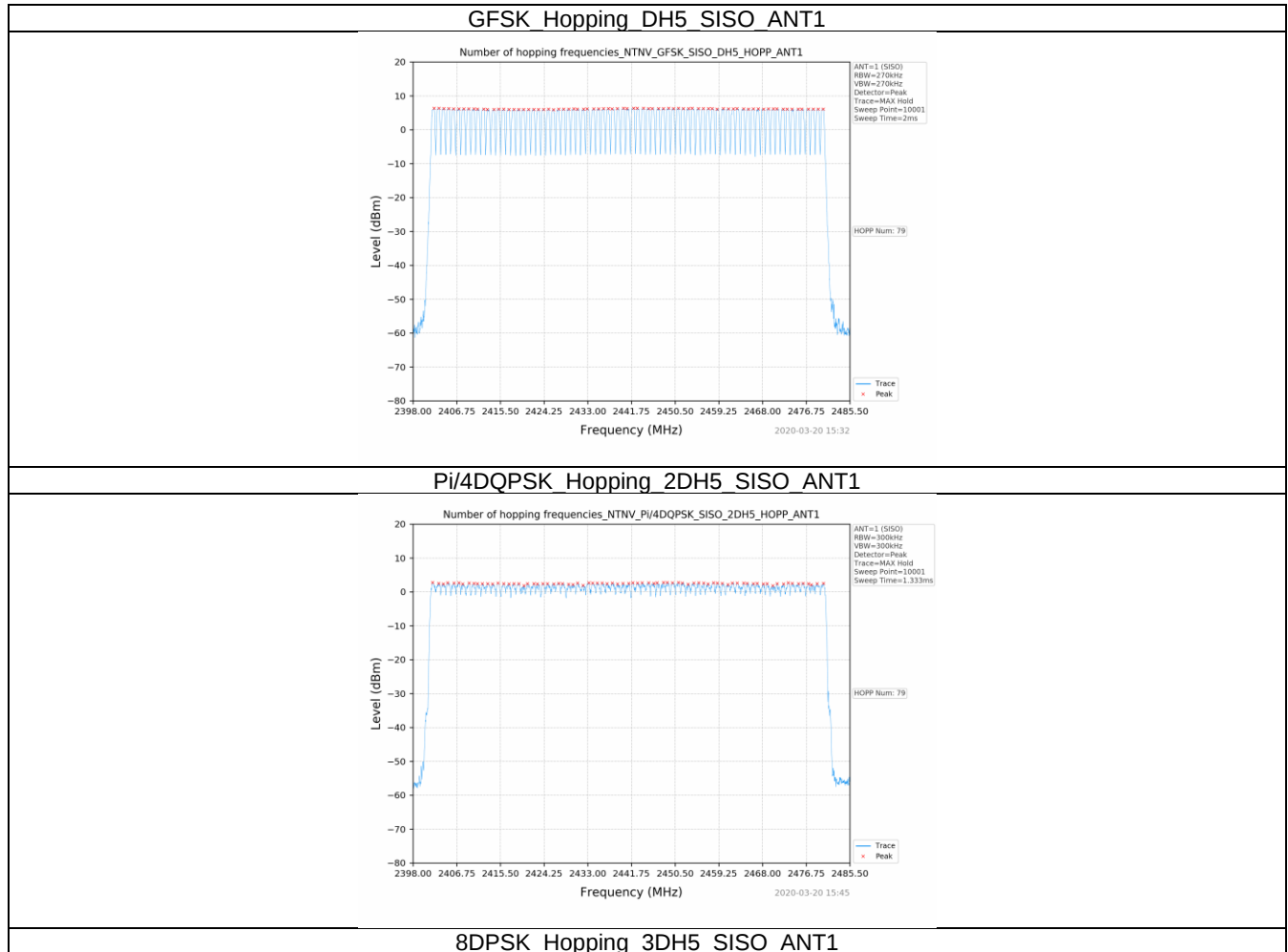


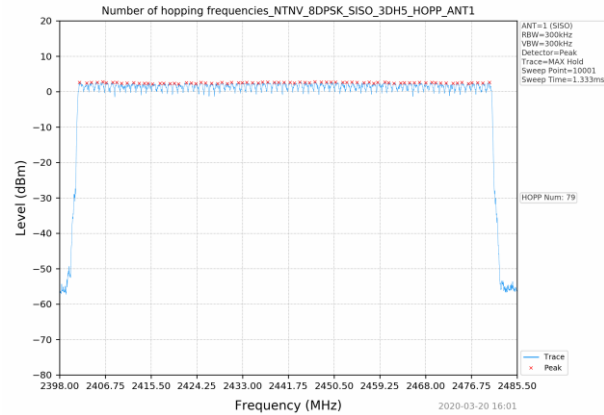
4. Number of hopping frequencies

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



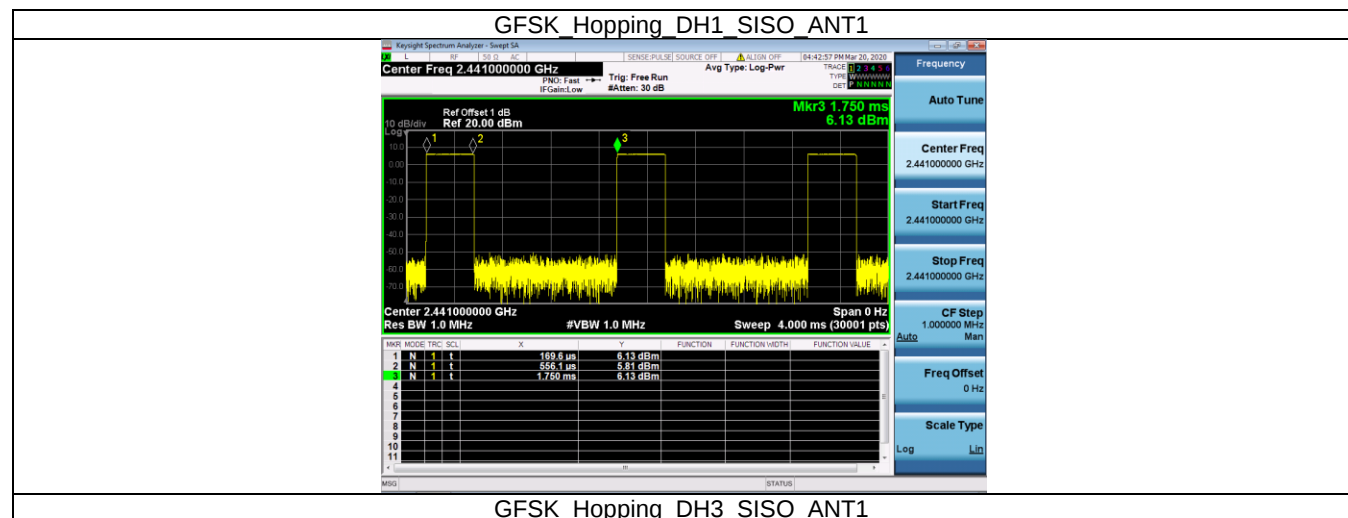


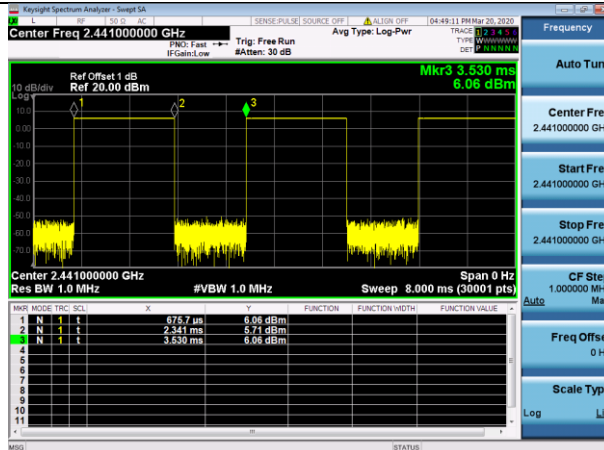
5. Time of occupancy (dwell time)

5.1 Test Result

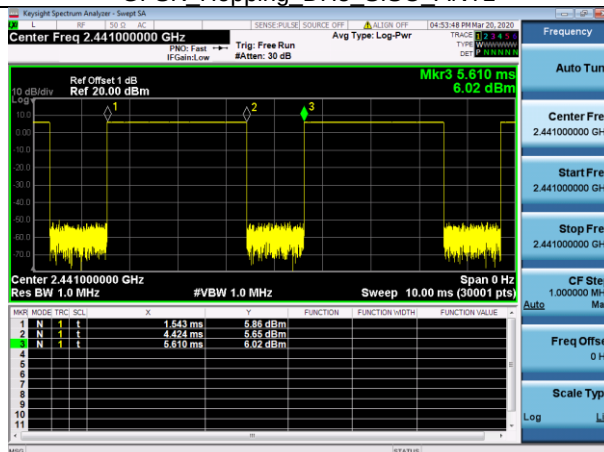
Modulation	Packet	Pulse time (ms)	Dwell time (ms)	Limit (ms)	Result
GFSK	DH1	0.387	124	400	Pass
	DH3	1.665	266		
	DH5	2.881	307		
$\pi/4$ DQPSK	2-DH1	0.401	128	400	Pass
	2-DH3	1.668	267		
	2-DH5	2.908	310		
8DPSK	3-DH1	0.406	130	400	Pass
	3-DH3	1.651	264		
	3-DH5	2.882	307		

5.2 Test Graph

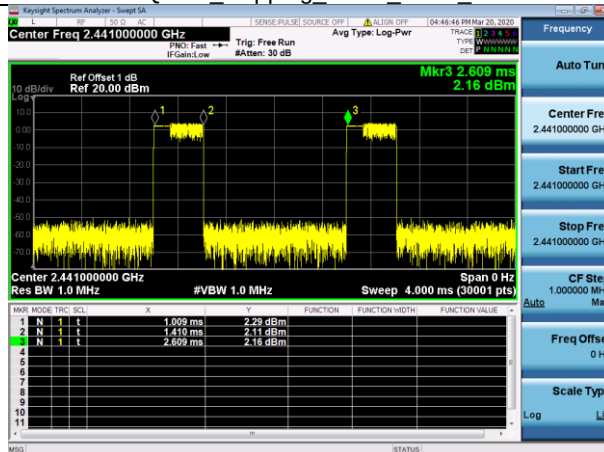




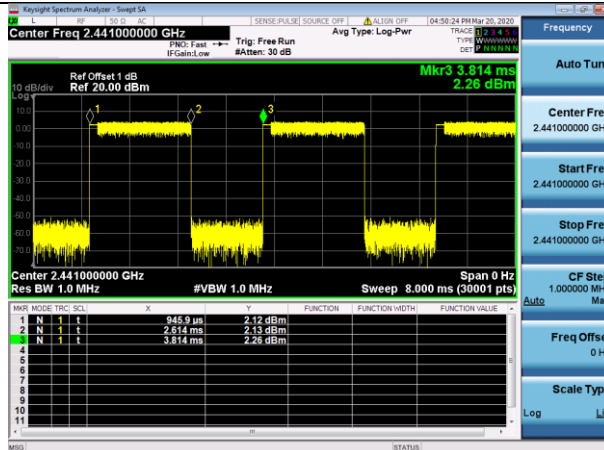
GFSK Hopping DH5 SISO ANT1



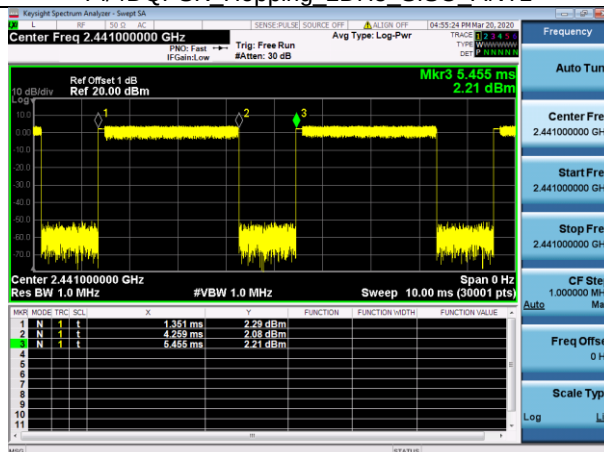
Pi/4DQPSK Hopping 2DH1 SISO ANT1



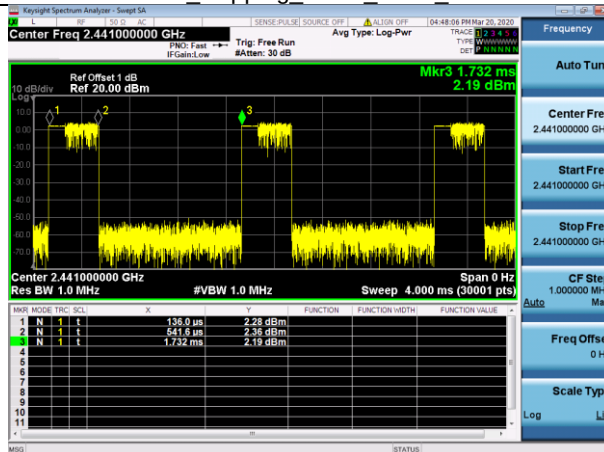
Pi/4DQPSK Hopping 2DH3 SISO ANT1



Pi/4DQPSK Hopping 2DH5 SISO ANT1



8DPSK Hopping 3DH1 SISO ANT1



8DPSK Hopping 3DH3 SISO ANT1



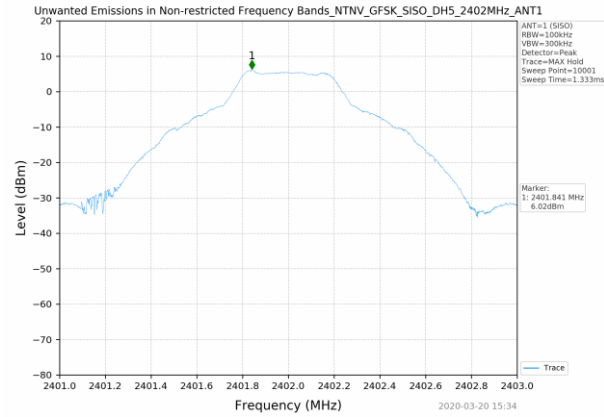
6. Unwanted Emissions in Non-restricted Frequency Bands

6.1 Test Result

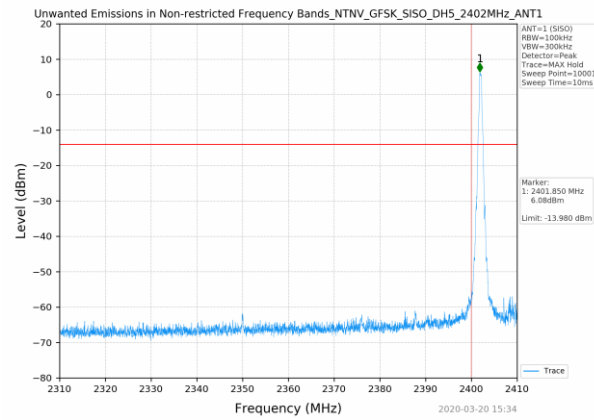
Test Mode	Frequency (MHz)	TX Type	ANT No.	Spurious Conducted Emission (dBm)	Limits (dBm)	Verdict
GFSK	2402	SISO	1	Refer to test graph	-13.98	PASS
	2441	SISO	1	Refer to test graph	-13.98	PASS
	2480	SISO	1	Refer to test graph	-13.98	PASS
	Hopping	SISO	1	Refer to test graph	-13.98	PASS
Pi/4DQPSK	2402	SISO	1	Refer to test graph	-17.55	PASS
	2441	SISO	1	Refer to test graph	-17.55	PASS
	2480	SISO	1	Refer to test graph	-17.55	PASS
	Hopping	SISO	1	Refer to test graph	-17.55	PASS
8DPSK	2402	SISO	1	Refer to test graph	-17.54	PASS
	2441	SISO	1	Refer to test graph	-17.54	PASS
	2480	SISO	1	Refer to test graph	-17.54	PASS
	Hopping	SISO	1	Refer to test graph	-17.54	PASS

6.2 Test Graph

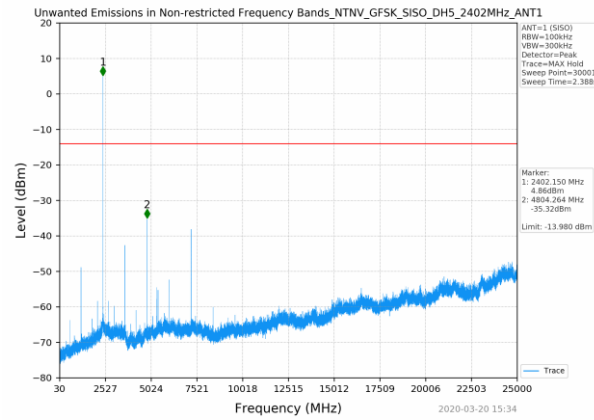
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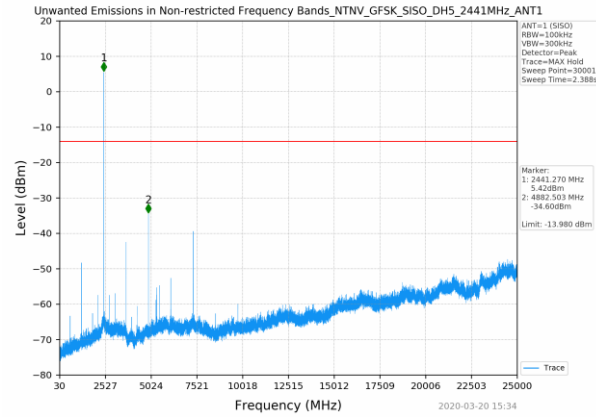
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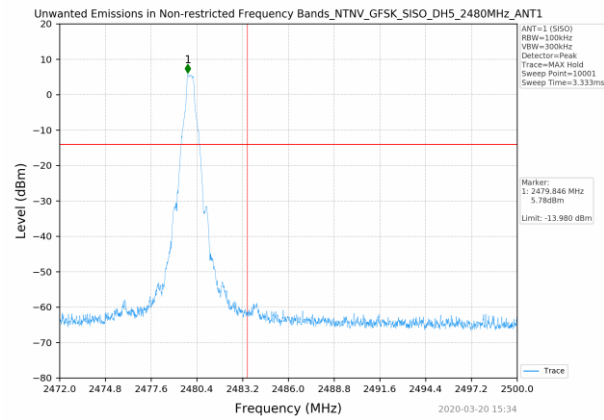
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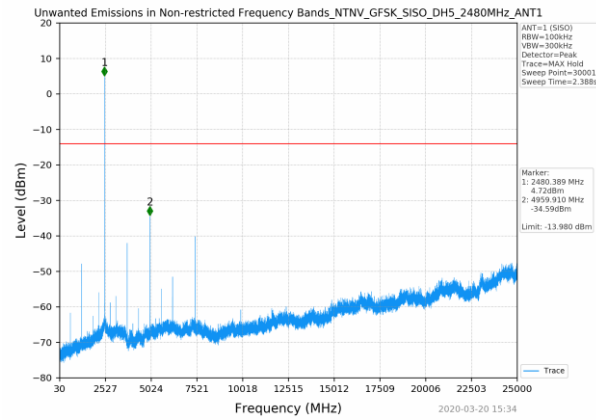
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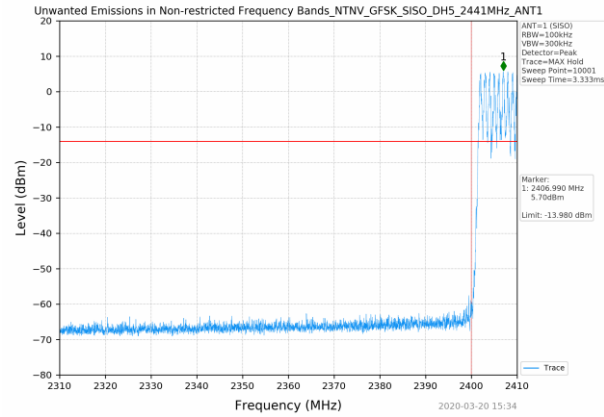
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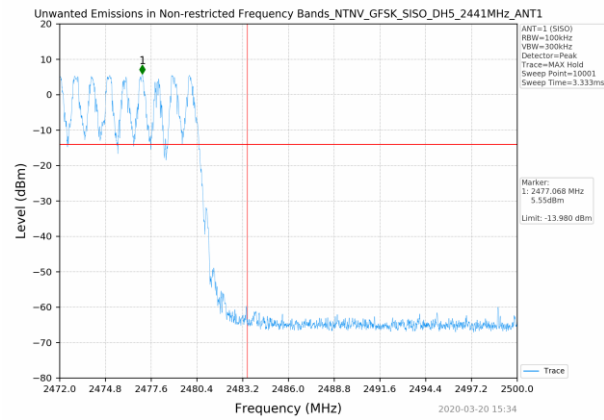
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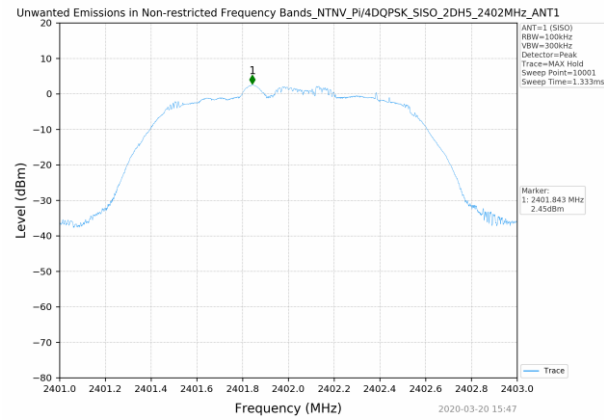
GFSK_Hopping_DH5_SISO_ANT1



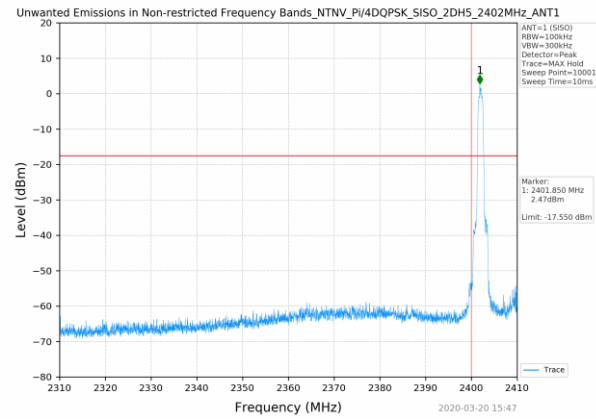
GFSK_Hopping_DH5_SISO_ANT1



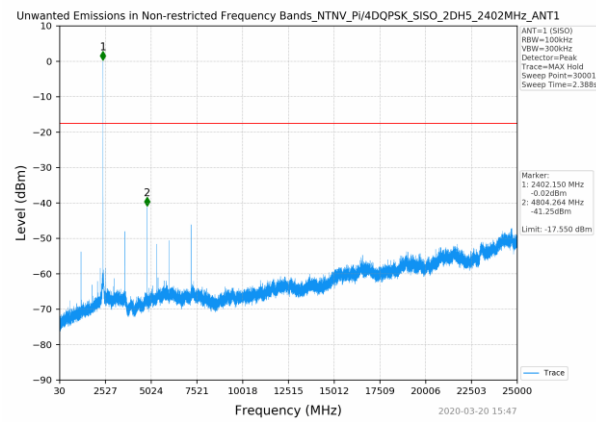
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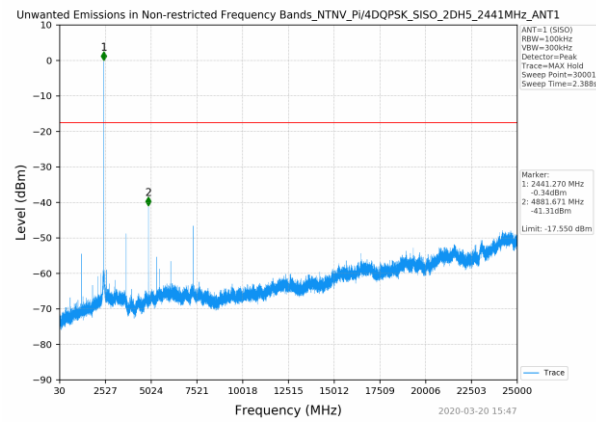
Pi/4QPSK_2402MHz_2DH5_SISO_ANT1



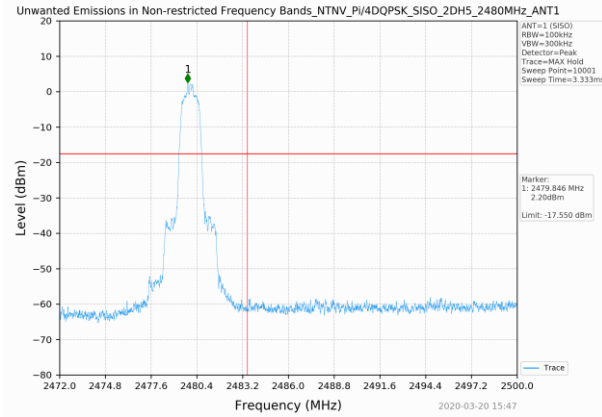
Pi/4DQPSK_2402MHz_2DH5_SISO_ANT1



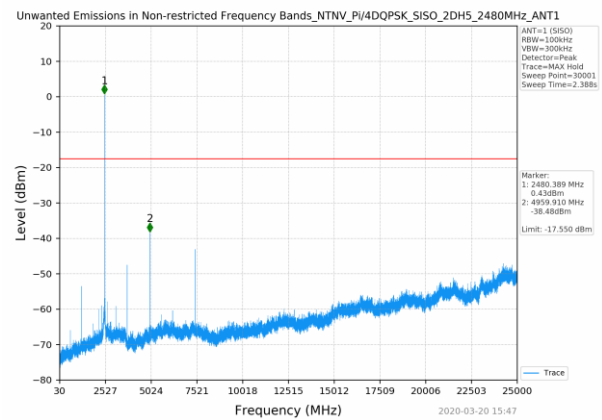
Pi/4DQPSK_2441MHz_2DH5_SISO_ANT1



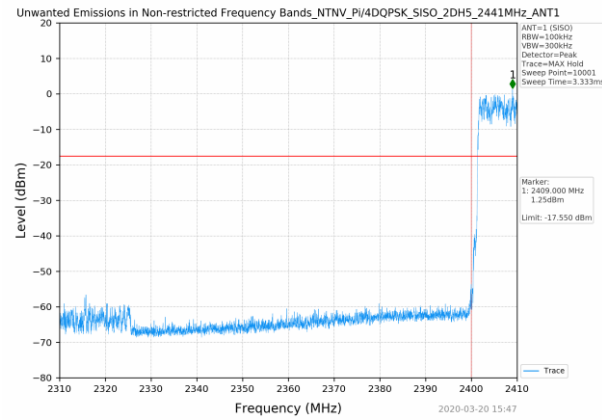
Pi/4DQPSK_2480MHz_2DH5_SISO_ANT1



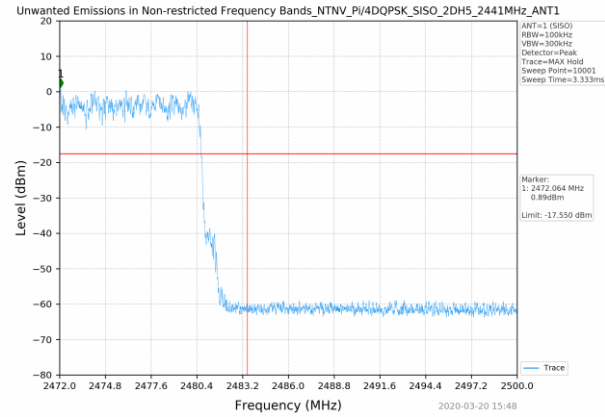
Pi/4DQPSK_2480MHz_2DH5_SISO ANT1



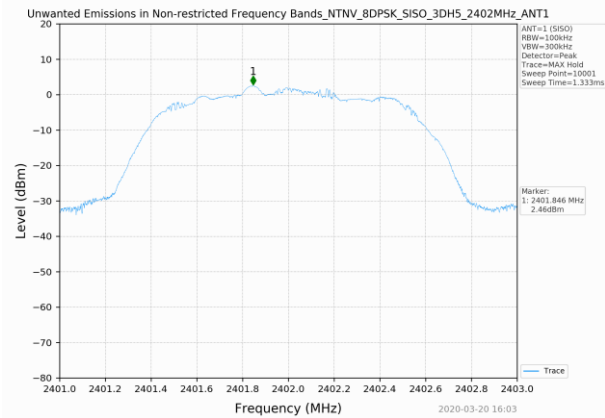
Pi/4DQPSK_Hopping_2DH5_SISO ANT1



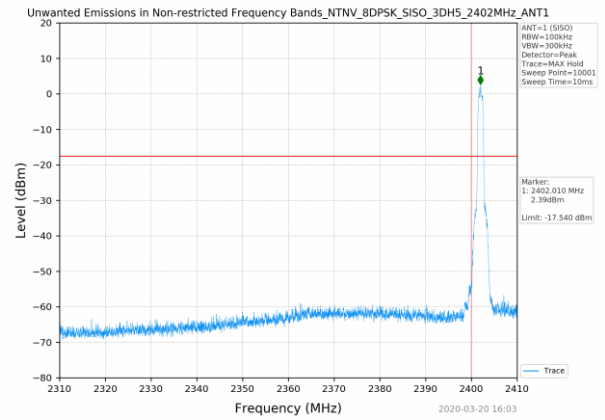
Pi/4DQPSK_Hopping_2DH5_SISO ANT1



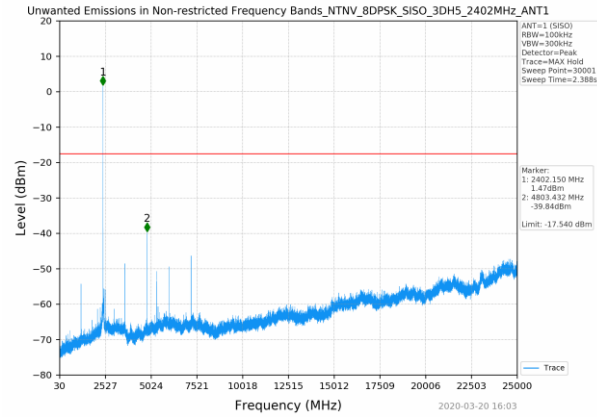
8DPSK_3DH5_SISO_ANT1_REF



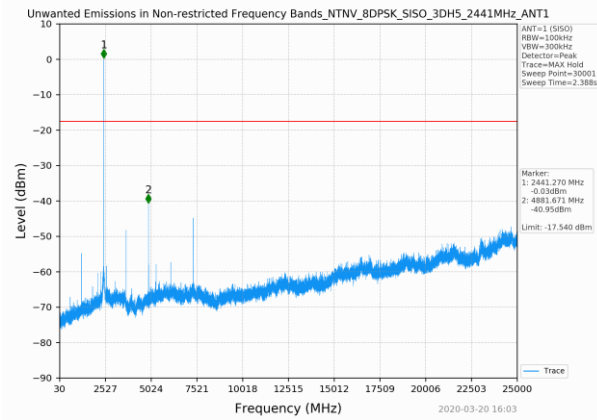
8DPSK_2402MHz_3DH5_SISO_ANT1



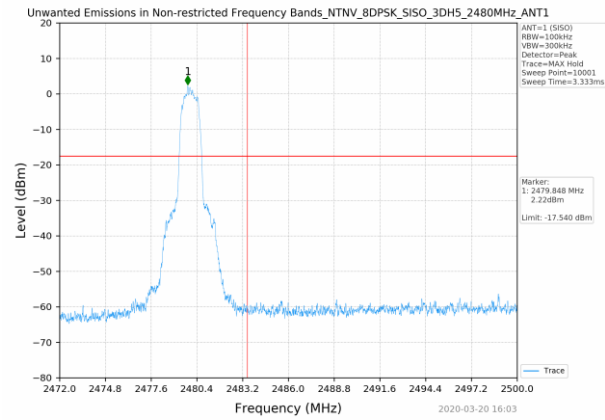
8DPSK_2402MHz_3DH5_SISO_ANT1



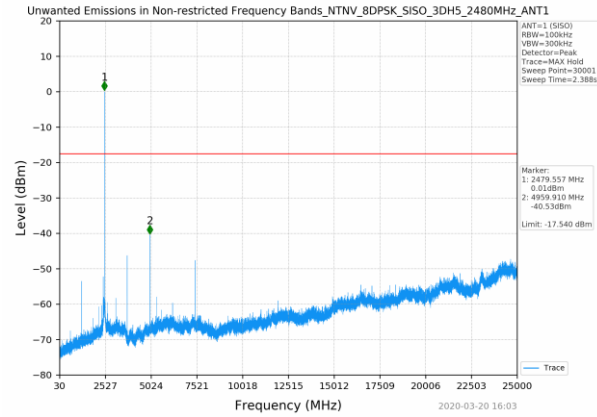
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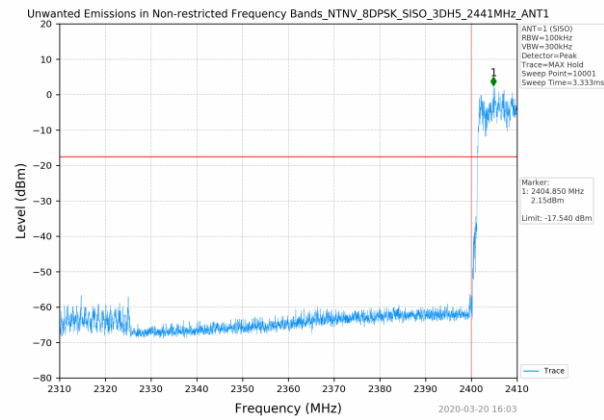
8DPSK_2480MHz_3DH5_SISO_ANT1



8DPSK_2480MHz_3DH5_SISO_ANT1



8DPSK_Hopping_3DH5_SISO_ANT1



8DPSK_Hopping_3DH5_SISO_ANT1

