

Annex for Bluetooth BR&EDR Part 15.247

Test Report No.: CTL2001181021-WF01

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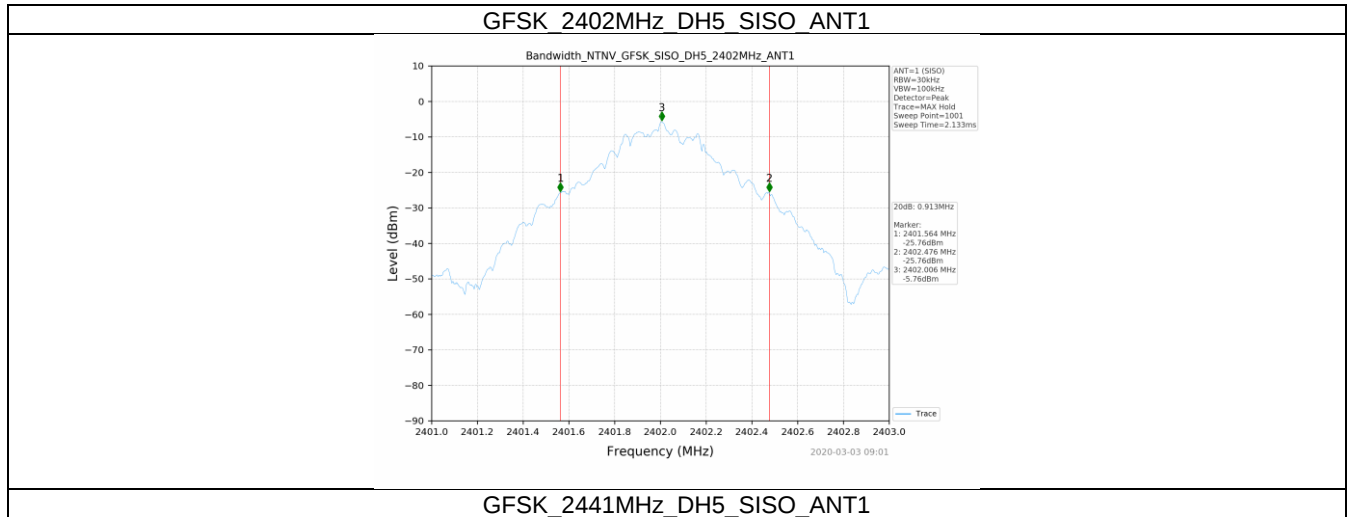
1. Bandwidth

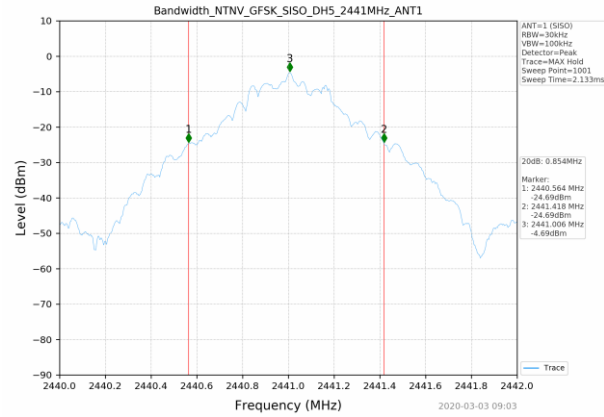
1.1 Test Result

Test Mode	Frequency (MHz)	TX Type	ANT No.	20dB Bandwidth	Verdict
				Test Result (MHz)	
GFSK	2402	SISO	1	0.913	PASS
	2441	SISO	1	0.854	PASS
	2480	SISO	1	0.928	PASS
Pi/4DQPSK	2402	SISO	1	1.245	PASS
	2441	SISO	1	1.246	PASS
	2480	SISO	1	1.244	PASS
8DPSK	2402	SISO	1	1.249	PASS
	2441	SISO	1	1.242	PASS
	2480	SISO	1	1.247	PASS

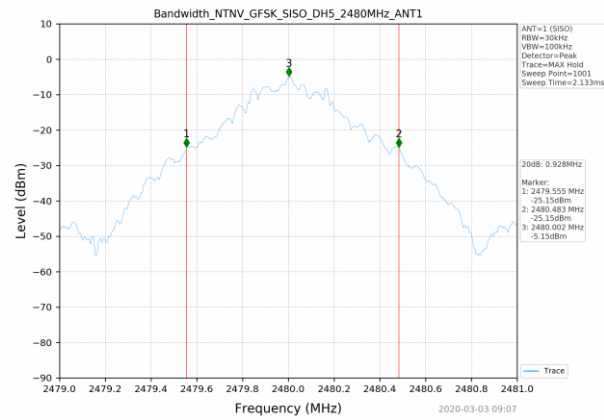
Test Mode	Frequency (MHz)	TX Type	ANT No.	99% Occupied Bandwidth	
				Test Result (MHz)	
GFSK	2402	SISO	1	0.851	Only for Report Use
	2441	SISO	1	0.846	Only for Report Use
	2480	SISO	1	0.852	Only for Report Use
Pi/4DQPSK	2402	SISO	1	1.171	Only for Report Use
	2441	SISO	1	1.173	Only for Report Use
	2480	SISO	1	1.168	Only for Report Use
8DPSK	2402	SISO	1	1.170	Only for Report Use
	2441	SISO	1	1.170	Only for Report Use
	2480	SISO	1	1.172	Only for Report Use

1.2 Test Graph - 20dB Bandwidth

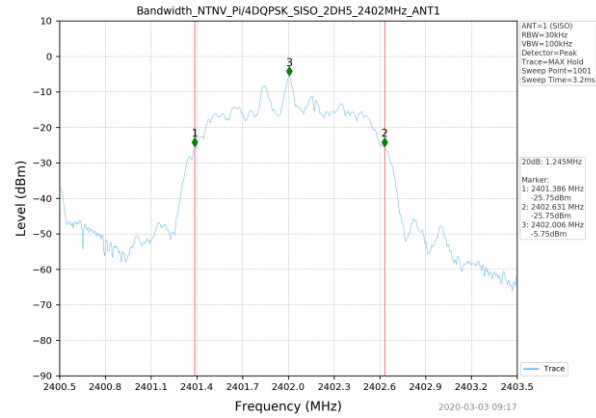




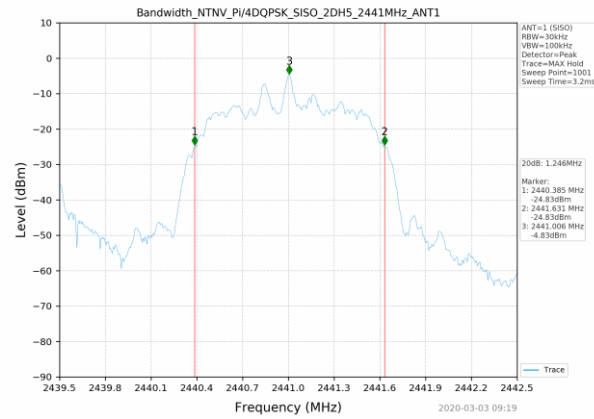
GFSK_2480MHz_DH5_SISO_ANT1



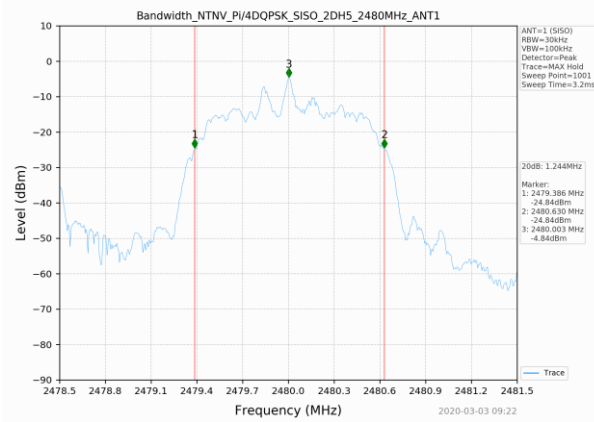
Pi/4DQPSK_2402MHz_2DH5_SISO_ANT1



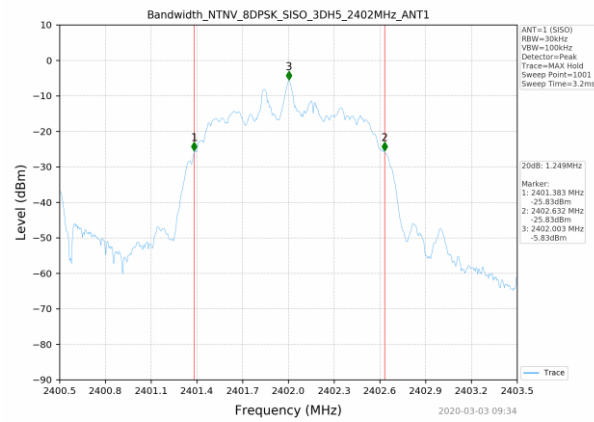
Pi/4DQPSK_2441MHz_2DH5_SISO_ANT1



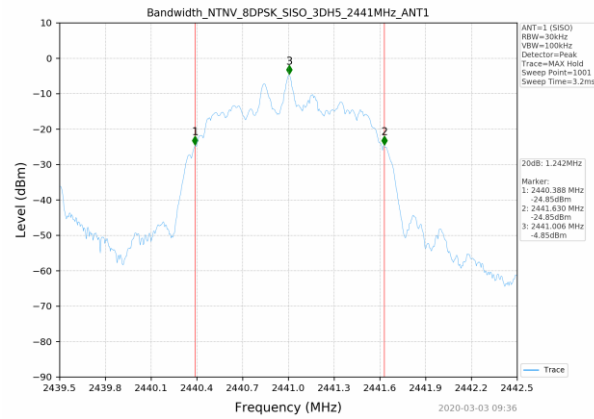
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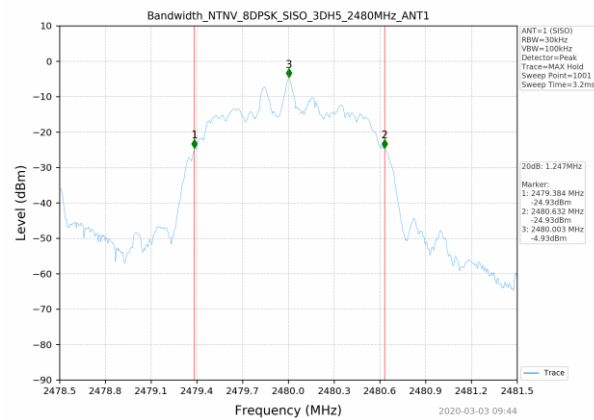
8DPSK_2402MHz_3DH5_SISO_ANT1



8DPSK_2441MHz_3DH5_SISO_ANT1

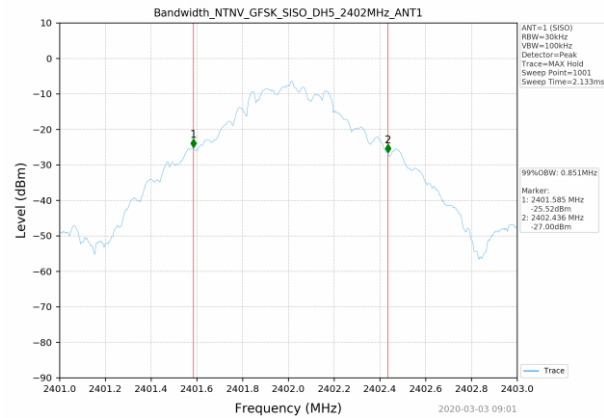


8DPSK_2480MHz_3DH5_SISO_ANT1

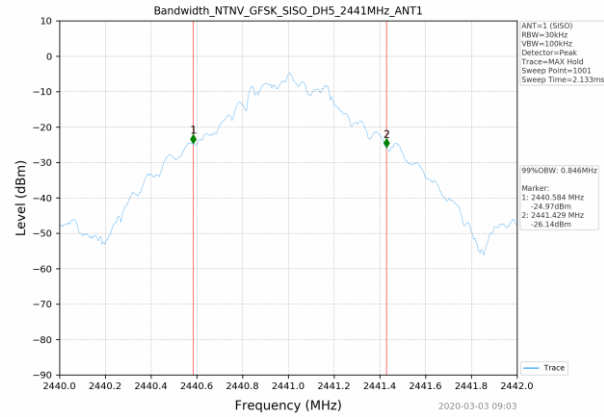


1.3 Test Graph - 99% Occupied Bandwidth

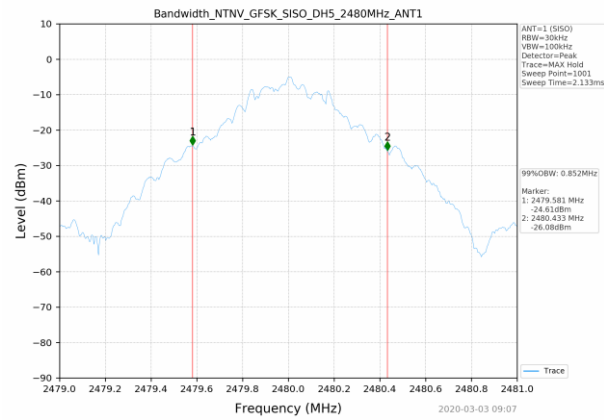
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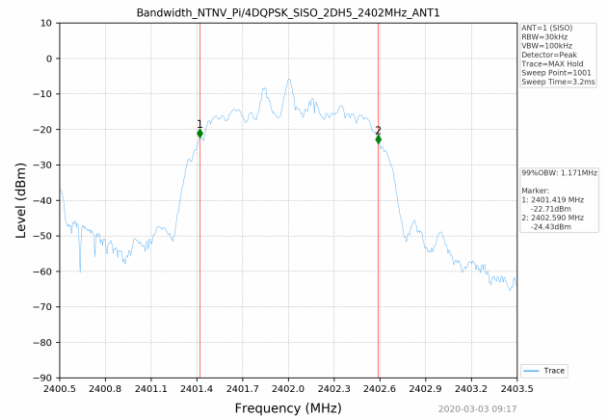
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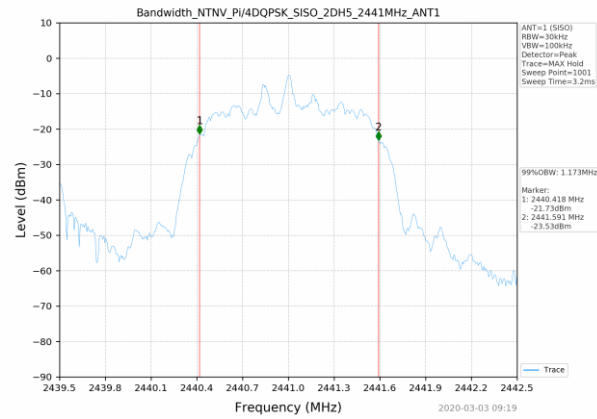
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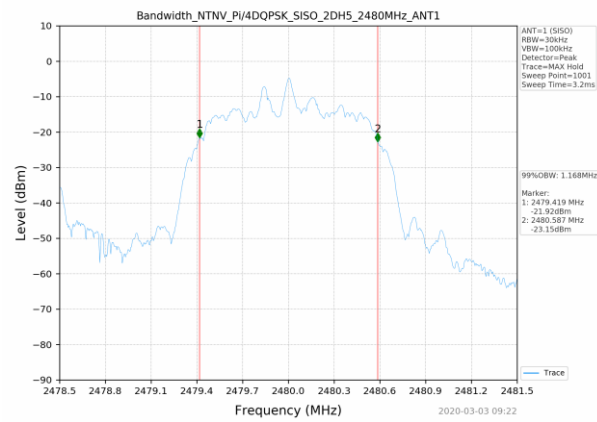
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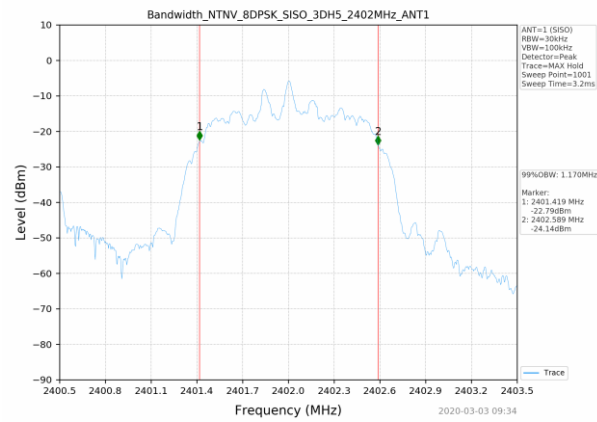
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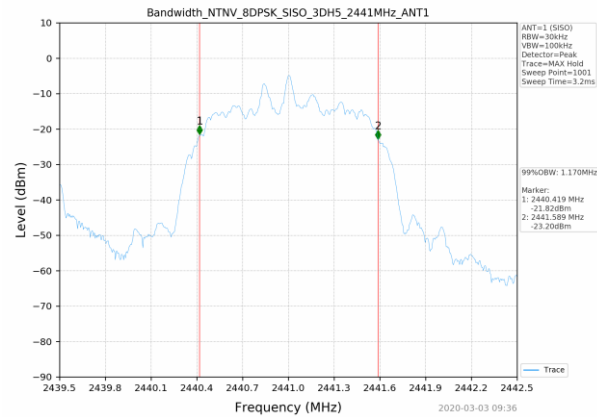
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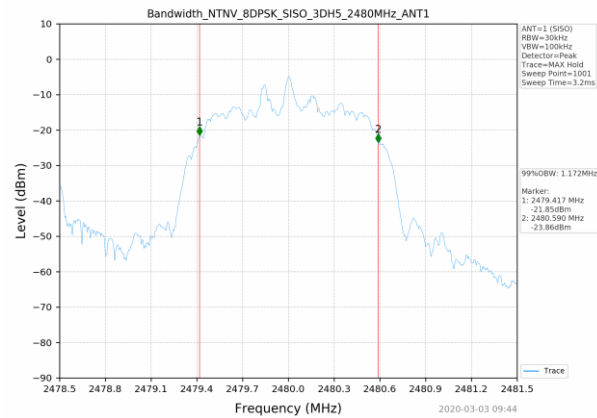
8DPSK_2402MHz_3DH5_SISO_ANT1



8DPSK_2441MHz_3DH5_SISO_ANT1



8DPSK_2480MHz_3DH5_SISO_ANT1



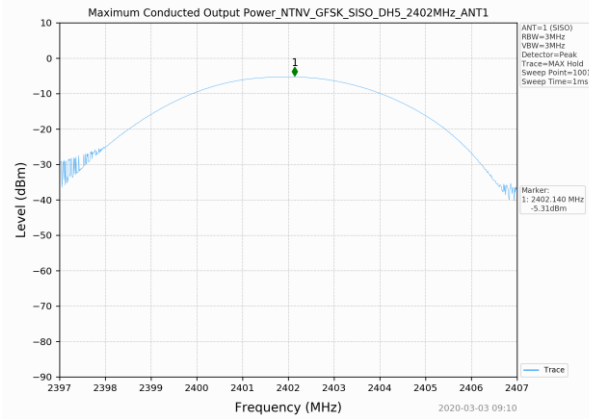
2. Maximum Conducted Output Power

2.1 Test Result

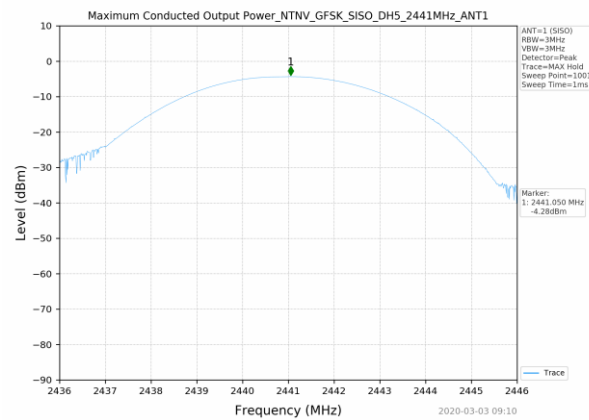
Test Mode	Frequency (MHz)	Tx Type	Measured Peak Output Power (dBm)	Limits (dBm)	Verdict
			Ant 1		
GFSK	2402	SISO	-5.31	30	PASS
	2441	SISO	-4.28	30	PASS
	2480	SISO	-4.35	30	PASS
Pi/4DQPSK	2402	SISO	-4.46	20.97	PASS
	2441	SISO	-3.50	20.97	PASS
	2480	SISO	-3.46	20.97	PASS
8DPSK	2402	SISO	-4.47	20.97	PASS
	2441	SISO	-3.52	20.97	PASS
	2480	SISO	-3.53	20.97	PASS

2.2 Test Graph

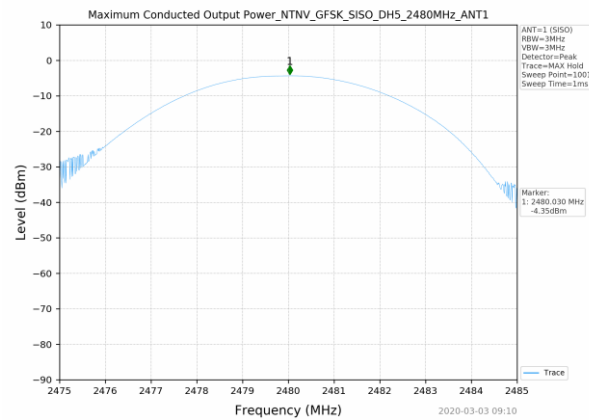
GFSK_2402MHz_DH5_SISO_ANT1



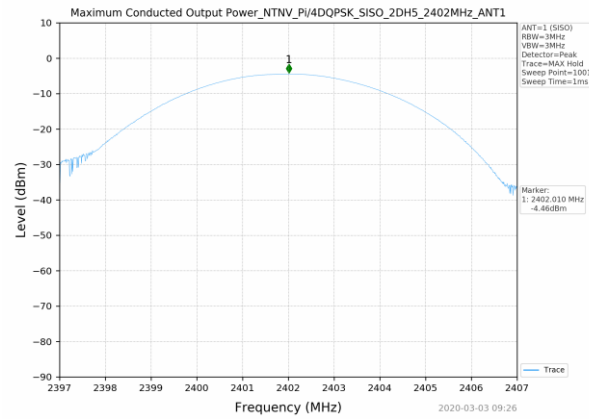
GFSK_2441MHz_DH5_SISO_ANT1



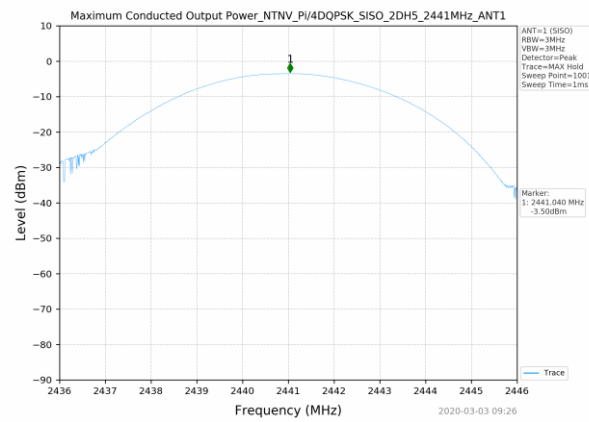
GFSK_2480MHz_DH5_SISO_ANT1



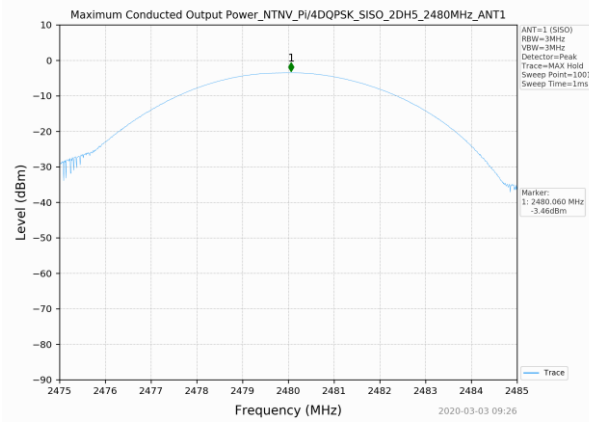
Pi/4DQPSK_2402MHz_2DH5_SISO_ANT1



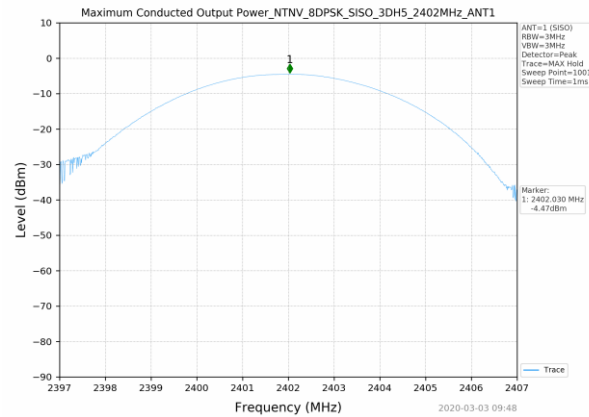
Pi/4DQPSK_2441MHz_2DH5_SISO_ANT1



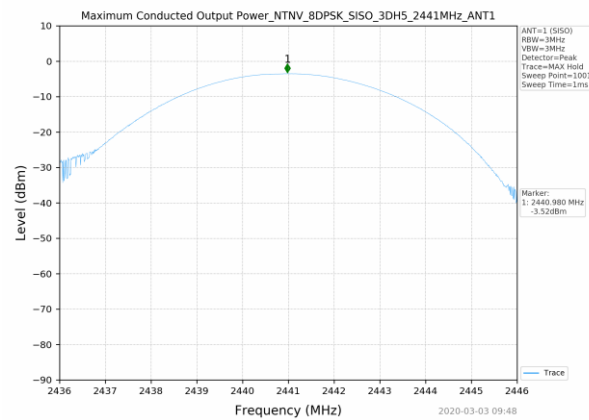
Pi/4DQPSK_2480MHz_2DH5_SISO_ANT1



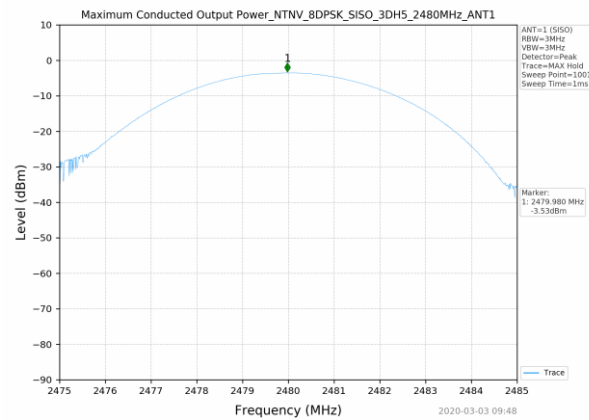
8DPSK_2402MHz_3DH5_SISO_ANT1



8DPSK_2441MHz_3DH5_SISO_ANT1



8DPSK_2480MHz_3DH5_SISO_ANT1



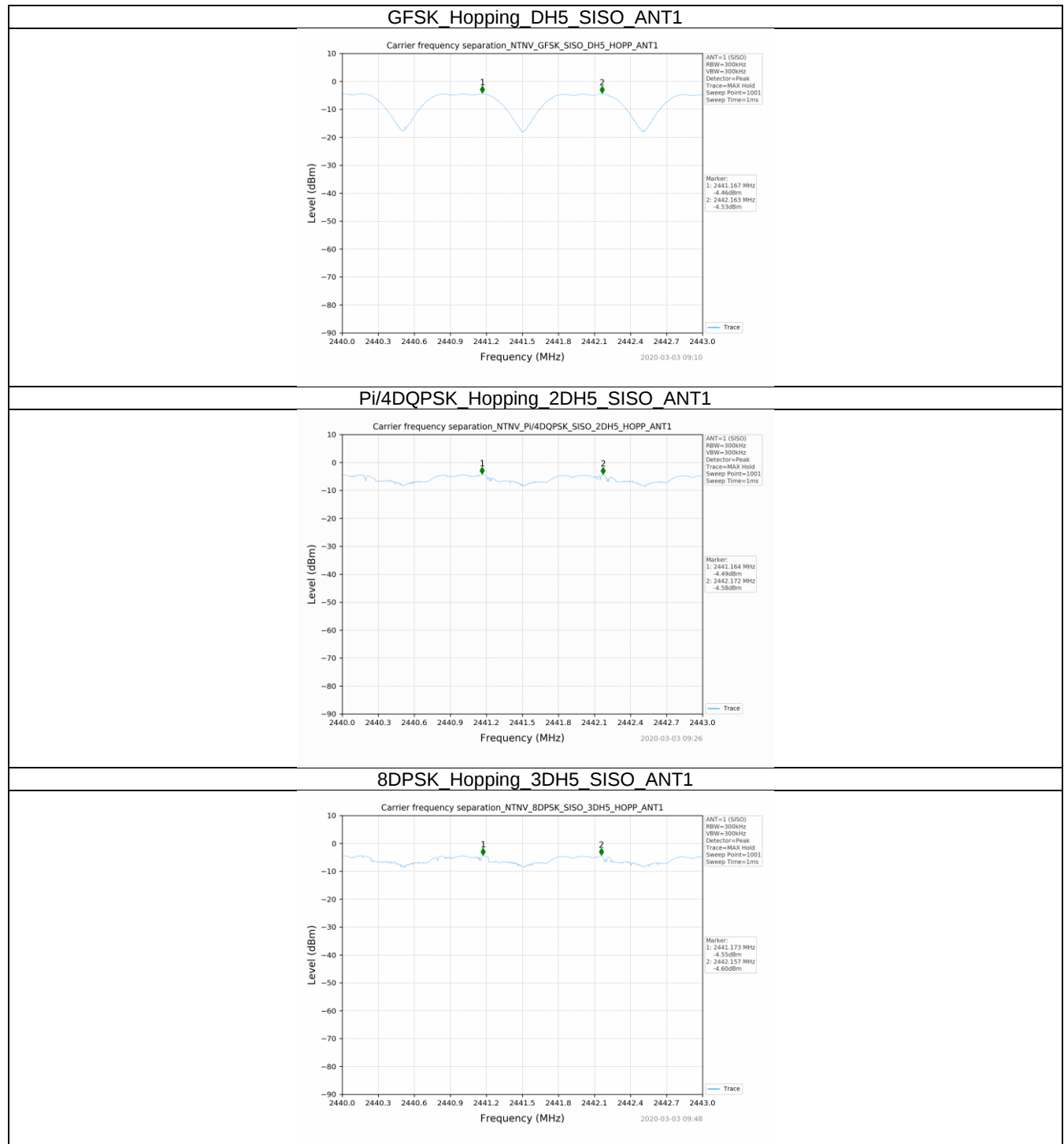
3. Carrier frequency separation

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	0.996	0.928	≥ 0.928	PASS
Pi/4DQPSK	SISO	1	1.008	1.246	≥ 0.831	PASS
8DPSK	SISO	1	0.984	1.249	≥ 0.833	PASS

3.2 Test Graph

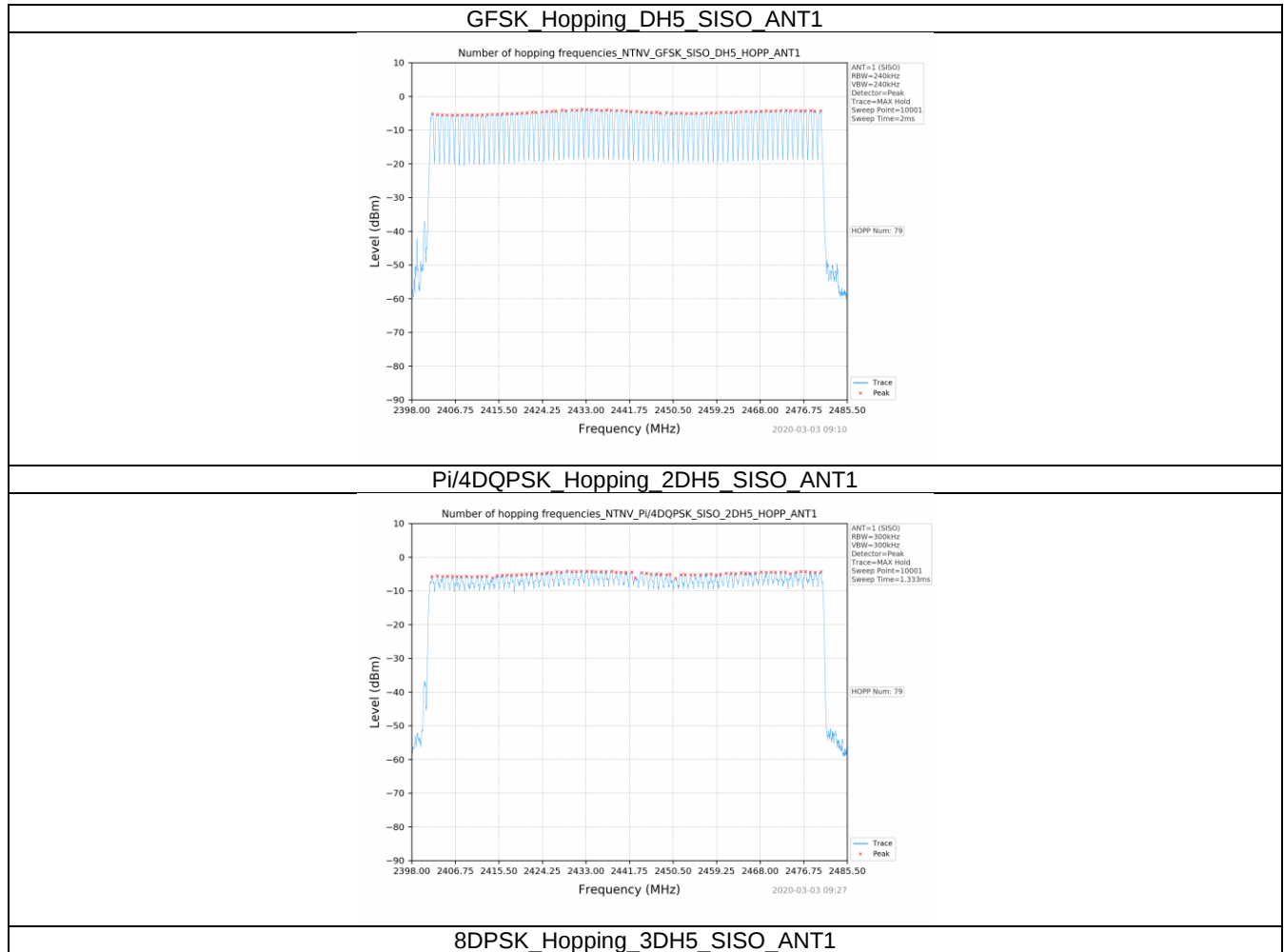


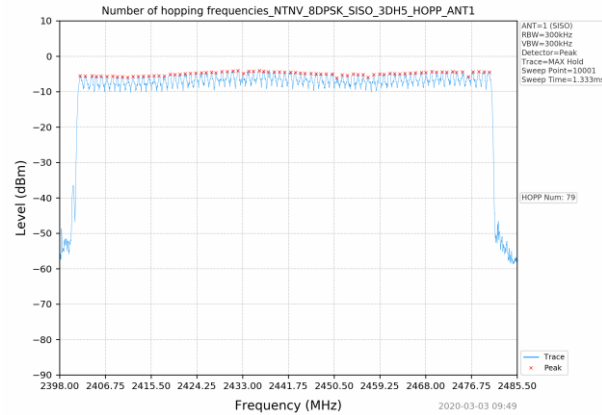
4. Number of hopping frequencies

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

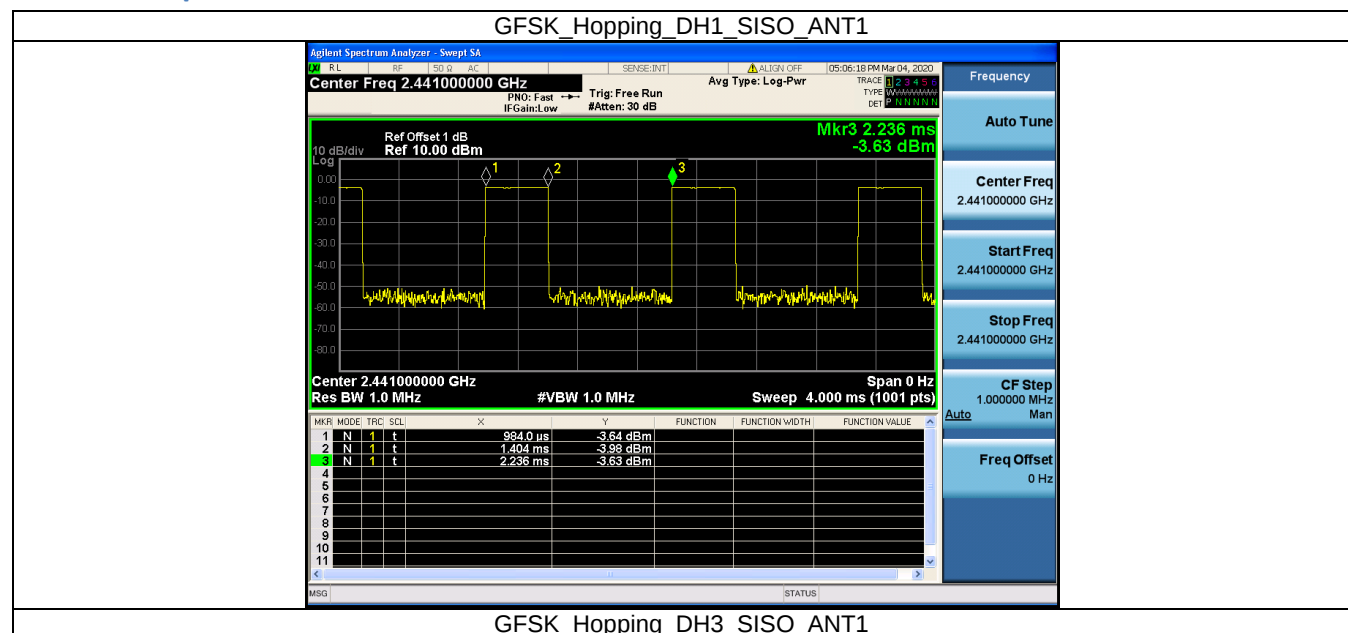


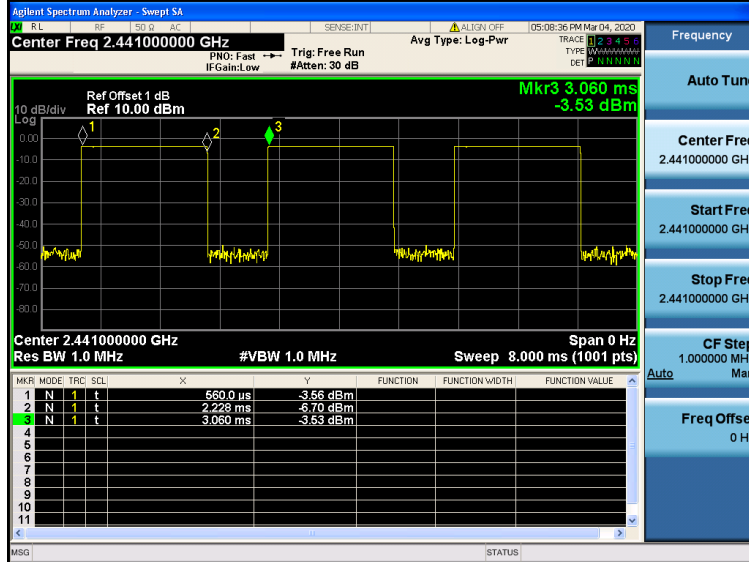


5. Time of occupancy (dwell time)

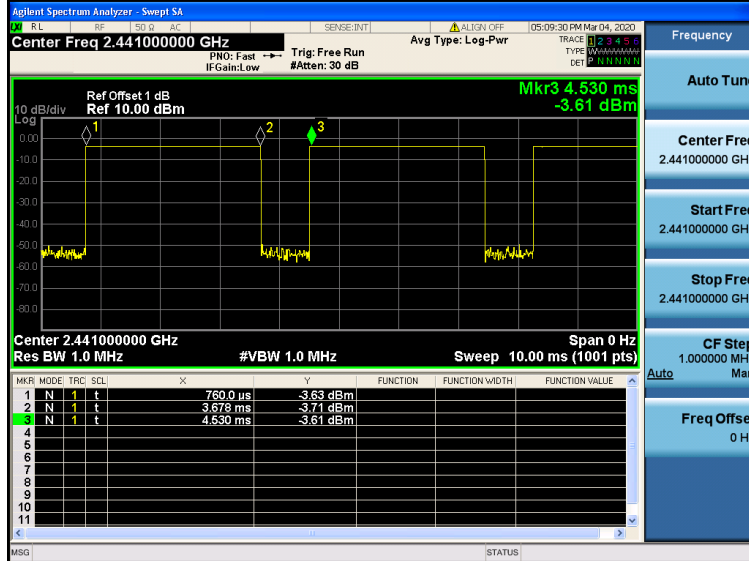
Modulation	Packet	Pulse time (ms)	Dwell time (ms)	Limit (ms)	Result
GFSK	DH1	0.420	134	400	Pass
	DH3	1.668	267		
	DH5	2.918	311		
$\pi/4$ DQPSK	2-DH1	0.420	134	400	Pass
	2-DH3	1.620	259		
	2-DH5	2.918	311		
8DPSK	3-DH1	0.416	133	400	Pass
	3-DH3	1.644	263		
	3-DH5	2.900	309		

5.2 Test Graph

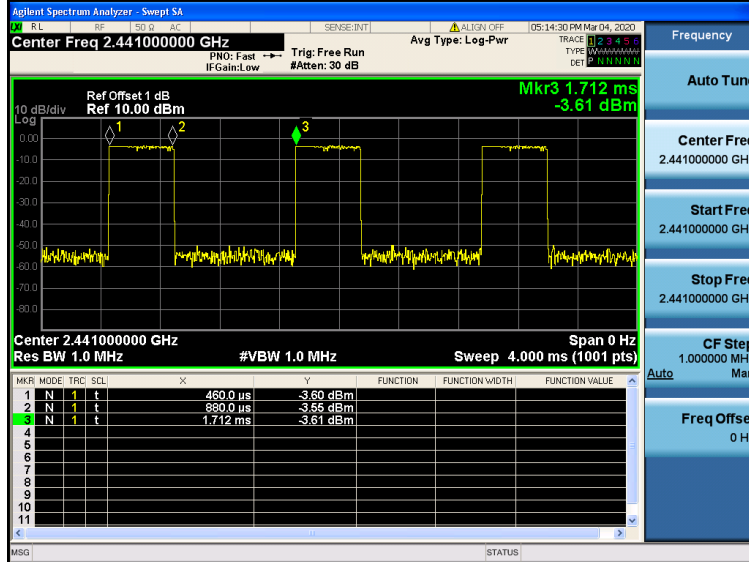




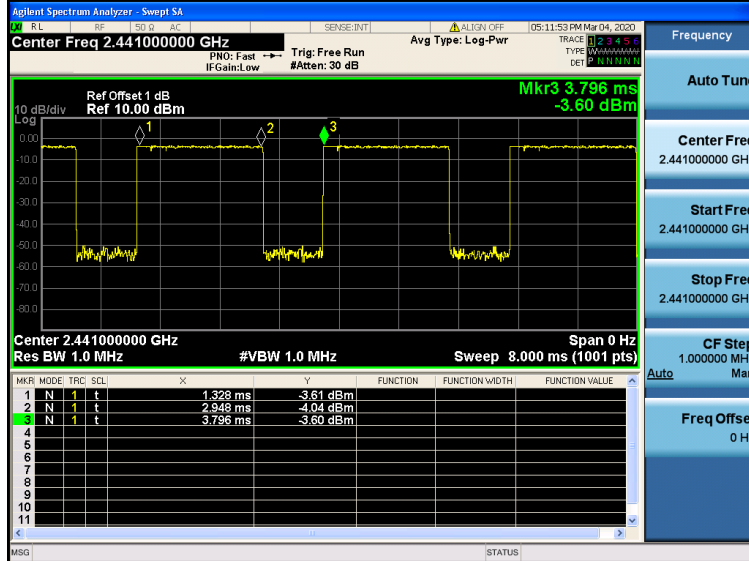
GFSK Hopping DH5 SISO ANT1



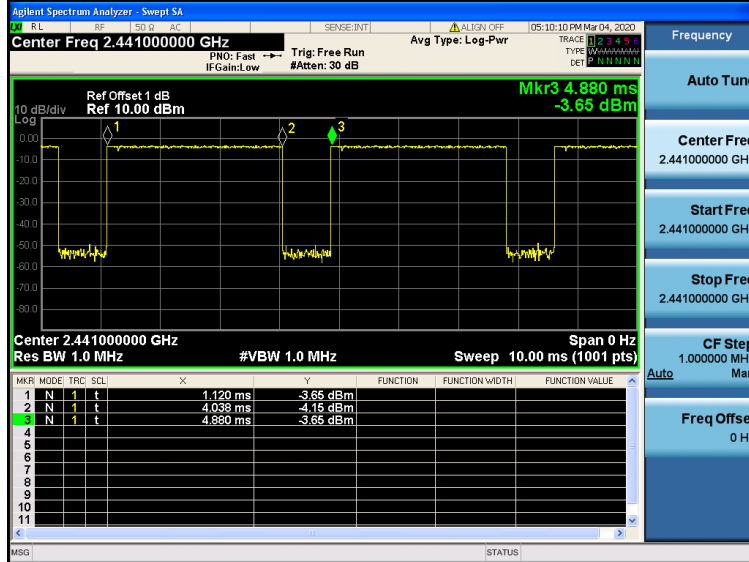
Pi/4DQPSK Hopping 2DH1 SISO ANT1



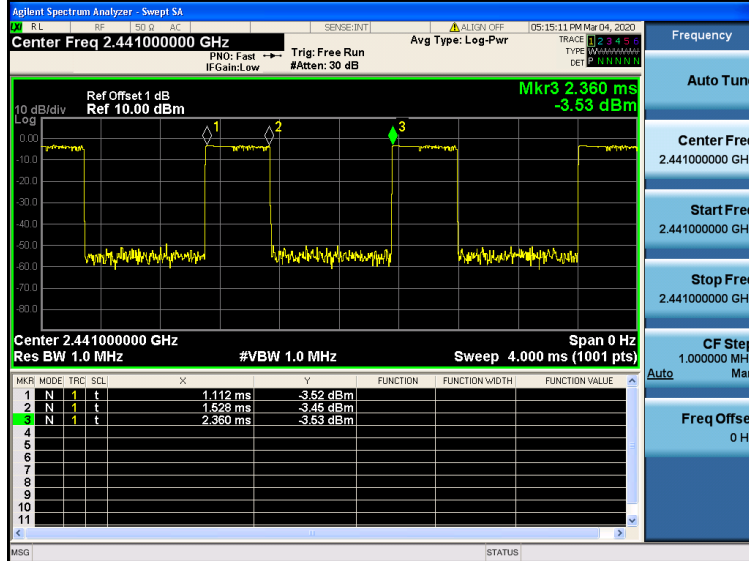
Pi/4DQPSK Hopping 2DH3 SISO ANT1



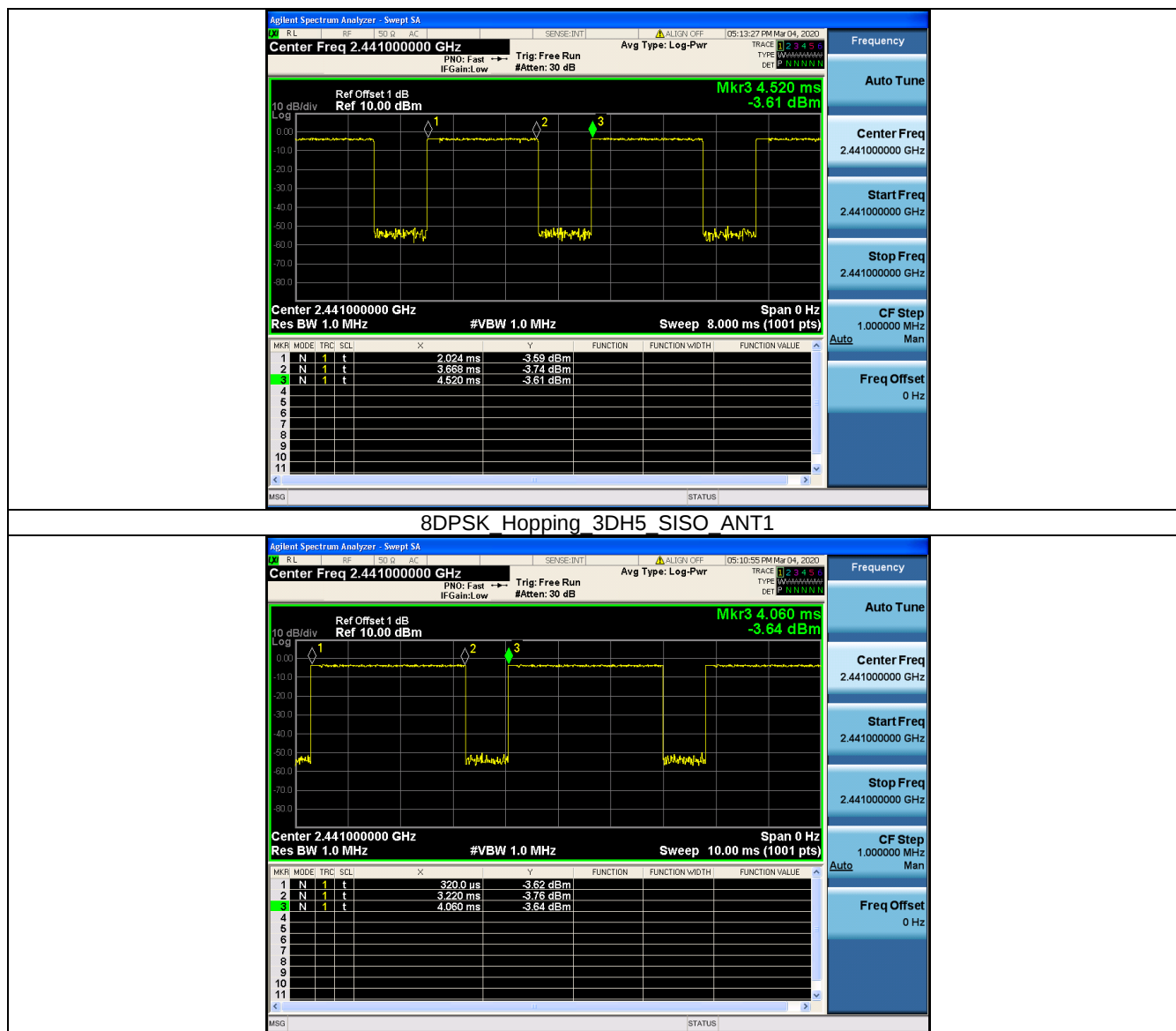
Pi/4DQPSK Hopping 2DH5 SISO ANT1



8DPSK Hopping 3DH1 SISO ANT1



8DPSK Hopping 3DH3 SISO ANT1



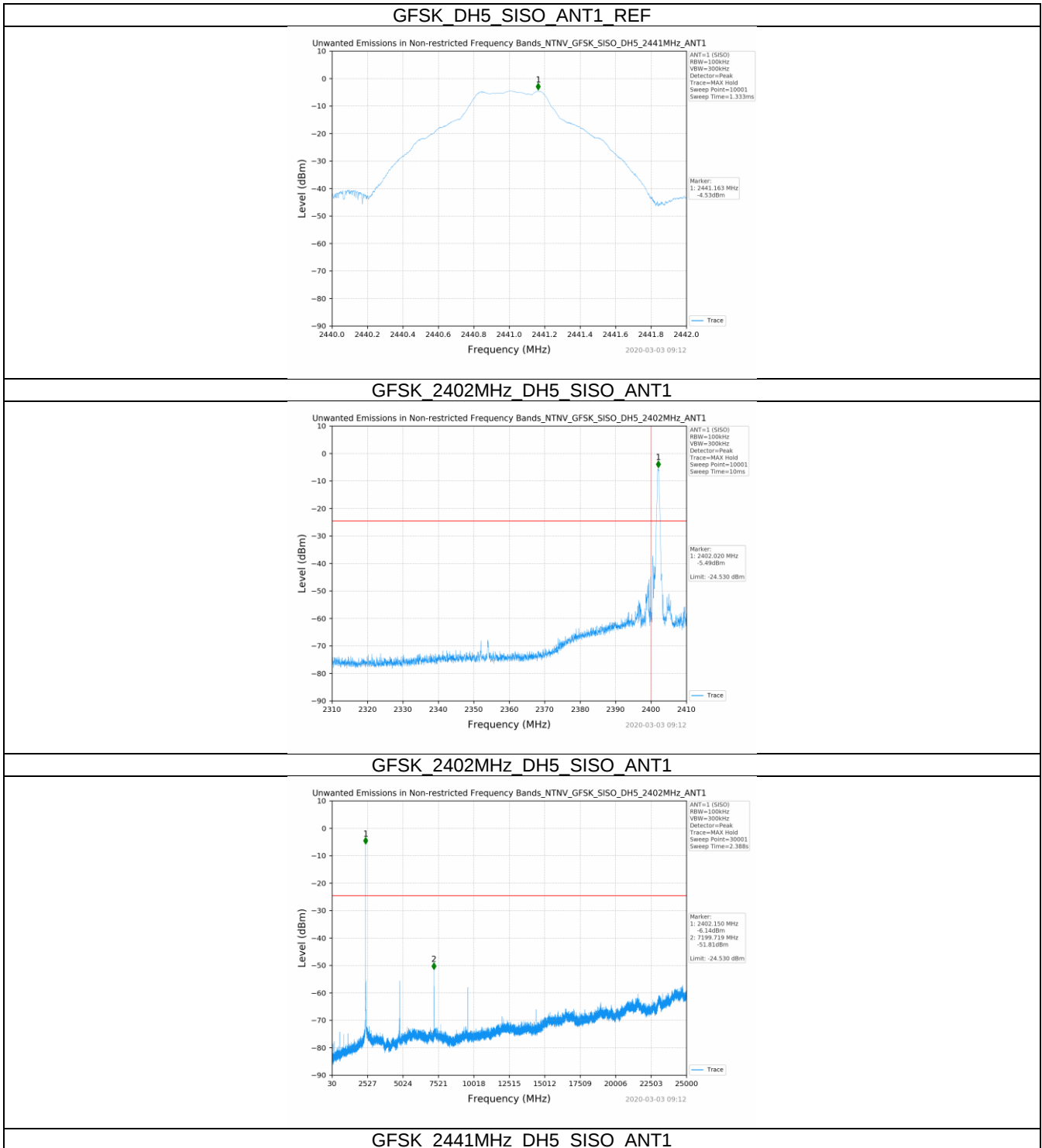
6. Unwanted Emissions in Non-restricted Frequency Bands

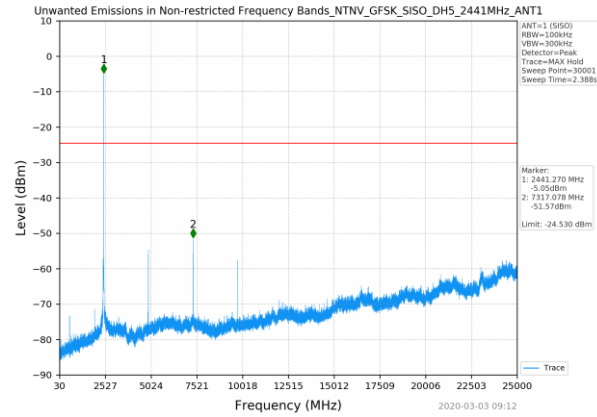
6.1 Test Result

Test Mode	Frequency (MHz)	TX Type	ANT No.	Spurious Conducted Emission (dBm)	Limits (dBm)	Verdict
GFSK	2402	SISO	1	Refer to test graph	-24.53	PASS
	2441	SISO	1	Refer to test graph	-24.53	PASS
	2480	SISO	1	Refer to test graph	-24.53	PASS
	Hopping	SISO	1	Refer to test graph	-24.53	PASS
Pi/4DQPSK	2402	SISO	1	Refer to test graph	-24.67	PASS
	2441	SISO	1	Refer to test graph	-24.67	PASS
	2480	SISO	1	Refer to test graph	-24.67	PASS
	Hopping	SISO	1	Refer to test graph	-24.67	PASS
8DPSK	2402	SISO	1	Refer to test graph	-24.71	PASS
	2441	SISO	1	Refer to test graph	-24.71	PASS

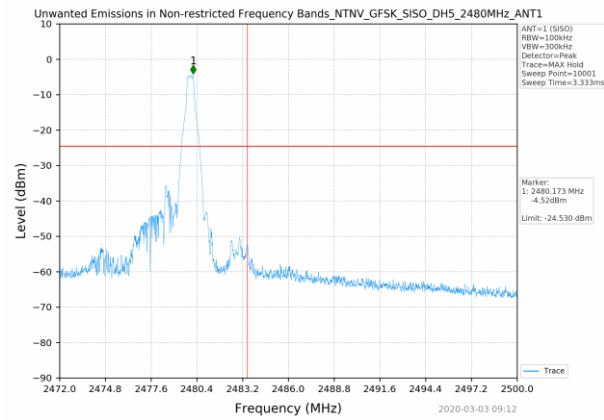
	2480	SISO	1	Refer to test graph	-24.71	PASS
	Hopping	SISO	1	Refer to test graph	-24.71	PASS

6.2 Test Graph

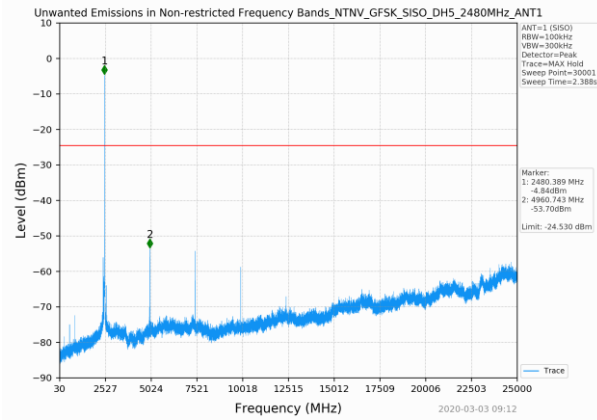




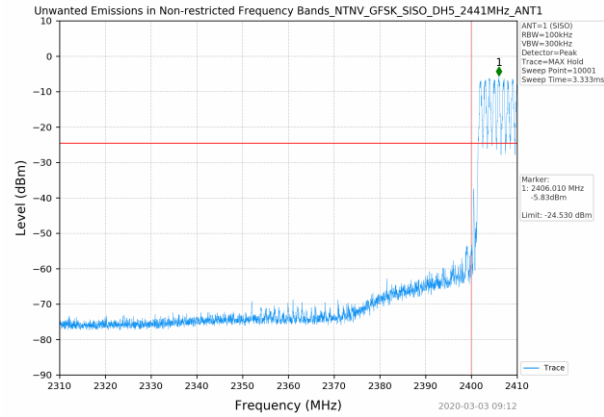
GFSK_2480MHz_DH5_SISO_ANT1



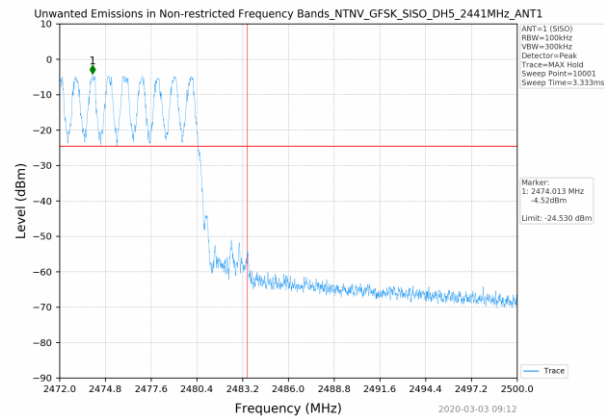
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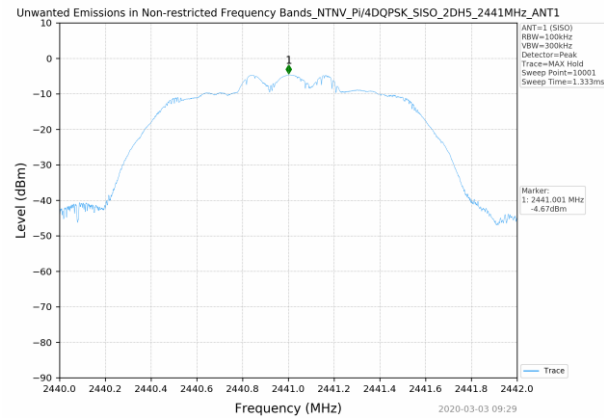
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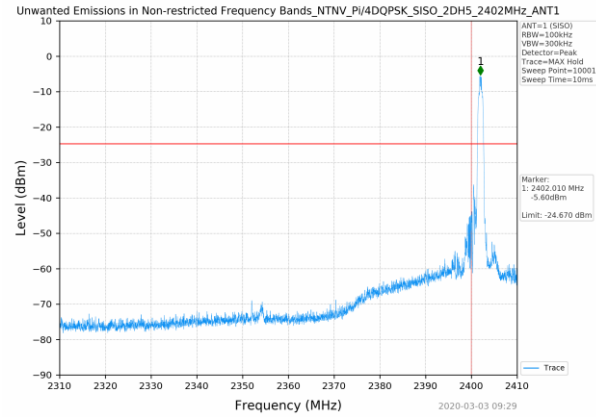
GFSK_Hopping_DH5_SISO_ANT1



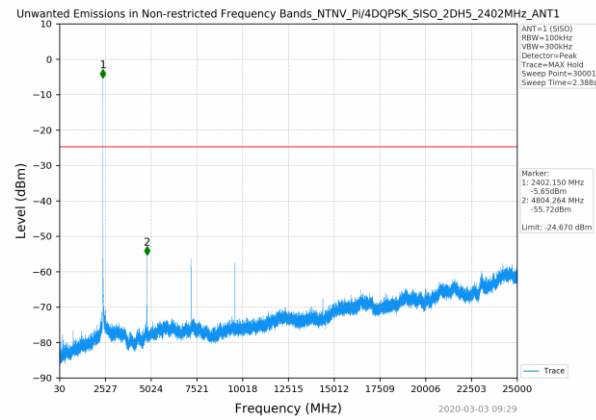
Pi/4DQPSK_2DH5_SISO_ANT1_REF



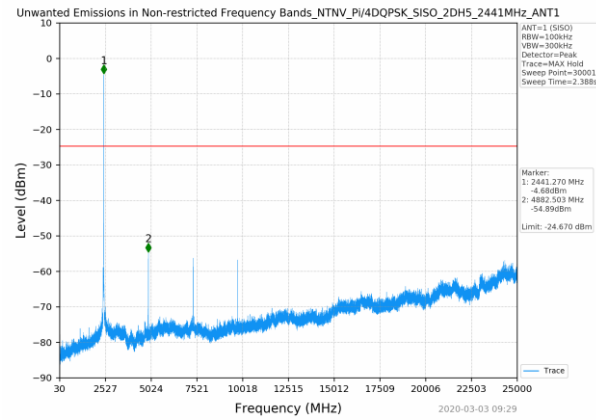
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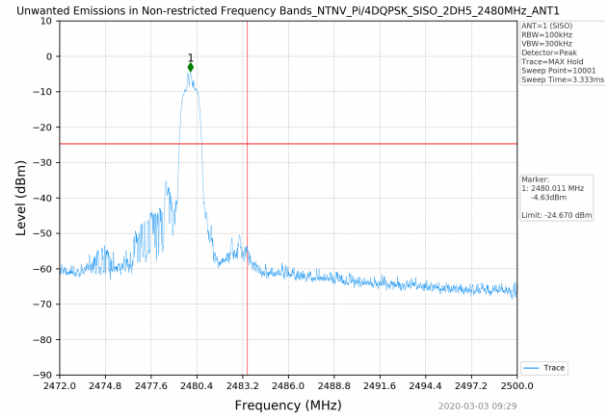
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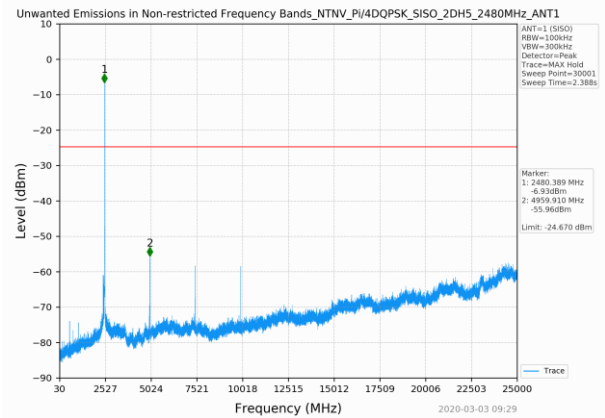
Pi/4DQPSK_2441MHz_2DH5_SISO_ANT1



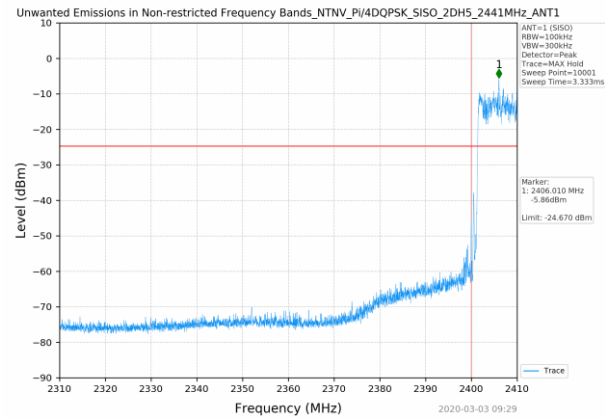
Pi/4DQPSK_2480MHz_2DH5_SISO_ANT1



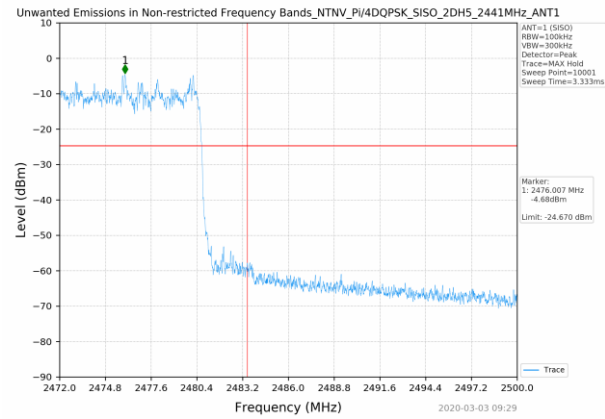
Pi/4DQPSK_2480MHz_2DH5_SISO ANT1



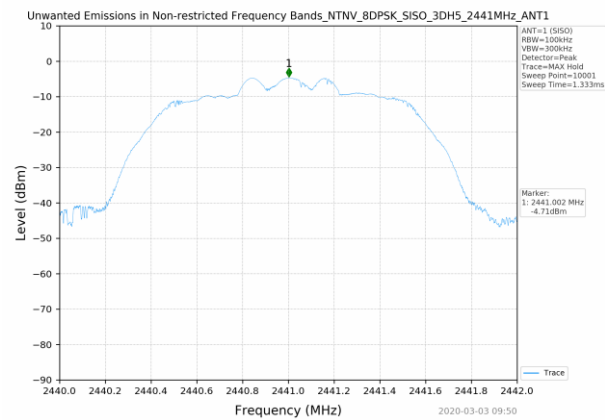
Pi/4DQPSK_Hopping_2DH5_SISO ANT1



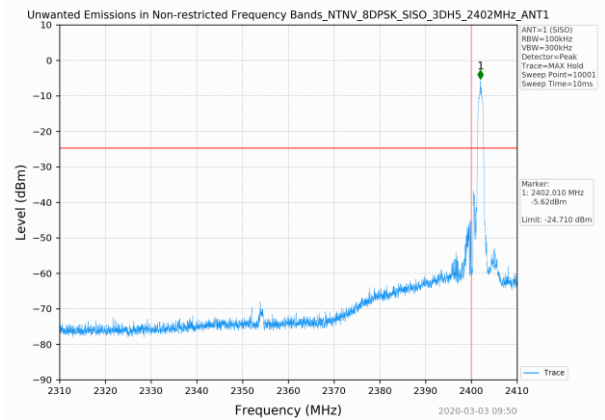
Pi/4DQPSK_Hopping_2DH5_SISO ANT1



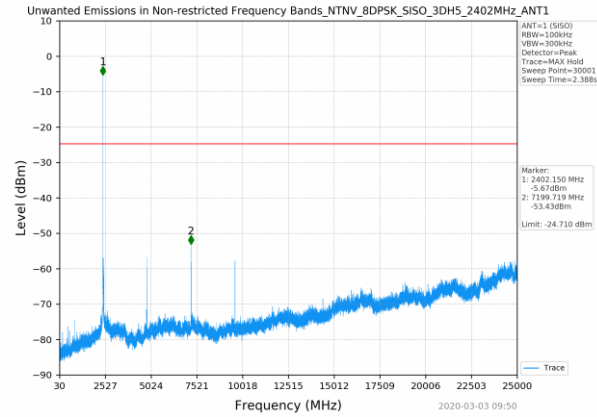
8DPSK_3DH5_SISO_ANT1_REF



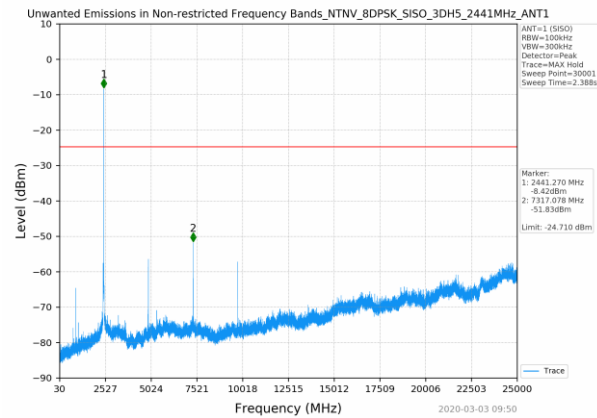
8DPSK_2402MHz_3DH5_SISO_ANT1



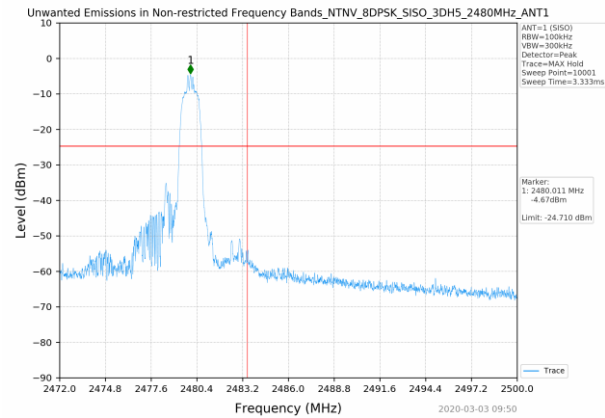
8DPSK_2402MHz_3DH5_SISO_ANT1



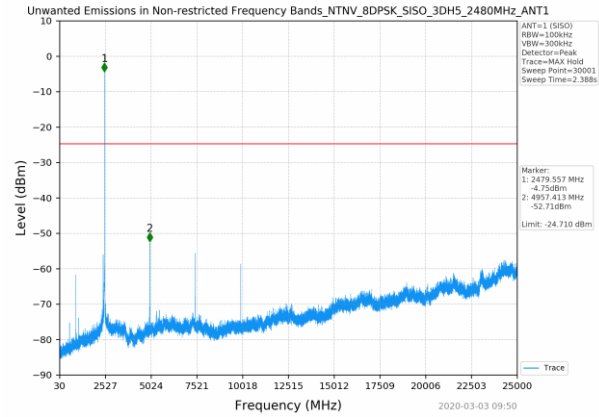
8DPSK_2441MHz_3DH5_SISO_ANT1



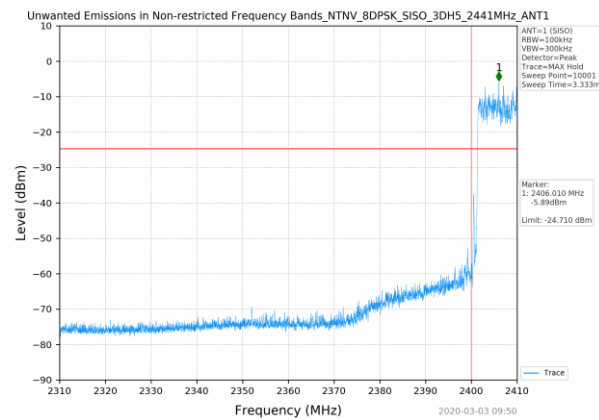
8DPSK_2480MHz_3DH5_SISO_ANT1



8DPSK_2480MHz_3DH5_SISO_ANT1



8DPSK_Hopping_3DH5_SISO_ANT1



8DPSK_Hopping_3DH5_SISO_ANT1

